

# **Sponsoring Academic Integrity: The Role of Human and Informational Sources of Scholarship in Adoption of Plagiarism-Avoiding Techniques among Research Students of Social Sciences**

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## **ABSTRACT**

Plagiarism is a serious offense that defies the ethics of scholarship and research. Research students need to pay substantive attention to the dynamics and contours of plagiarism in their creative, ethical, and academic endeavors. Scholarship avenues such as online tutorials and work assignments are important sources of instructions for plagiarism-avoidance among students. The current study explores the frequency of consultation of scholarship avenues and the usage of plagiarism-avoidance techniques among research students in social sciences. The study also recommends a scale to investigate plagiarism-avoidance techniques. Furthermore, it also examines the level of the study in predicting the usage of plagiarism-avoidance. Using the online survey technique, 108 research students from Pakistan were sampled. The questionnaire was uploaded on several student-based research groups of social media, including; Facebook, and Yahoo groups. Bivariate linear regression analysis was used for hypothesis testing. Findings revealed that scholarship avenues lead to greater usage of plagiarism-avoidance techniques among research students ( $R^2=0.065$ ). Supervisors, class-fellows, colleagues, and faculty of the department are prominent human scholarship avenues. Similarly, articles and books from the web, books from the library, the anti-plagiarism policy of the Higher Education Commission

(HEC), and lectures delivered in the classroom were leading informational scholarship avenues. Stage of the study and consultation of the scholarship avenues were predictors of usage of plagiarism-avoidance techniques. It is recommended that (i) plagiarism-avoidance is promoted through prevention rather than detection, and that (ii) scholarship avenues (e.g. delivering lectures, institutional policy, and interaction with relevant websites) are used for enhancing awareness about intellectual dishonesty.

**Keywords:** Scholarship avenues, plagiarism-avoidance, consultation, research student, social sciences, Pakistan

## INTRODUCTION

Plagiarism is acknowledged as an important detrimental factor to scholarship and research. Research students need to pay substantive attention to the dynamics and contours of plagiarism for their creative, ethical, and academic endeavors. Development and understanding of a broad-based definition of plagiarism can help in avoiding plagiarism (Jameson, 1993). Plagiarism is an attempt to pass off someone else's work as your own (Giles, 2005). While, plagiarism avoidance is defined as differentiating between "common knowledge" and "original" ideas (Hensley, 2011). Plagiarism-avoiding techniques include: (i) summarizing and paraphrasing, (ii) quoting and citation practice, (ii) careful selection of writing topics, and (iii) correct referencing (McDonnell, 2004; Wingate 2006; Abasi & Graves, 2008; Helgesson, 2014). Wiwanitkit (2013) argued that plagiarism-avoiding techniques included rechecking before submission or pre-submission screening. Similarly, the emphasis on academic literacy also supports plagiarism avoidance (Gourlay & Greig, 2007).

For producing original research findings, students must first learn and understand the research process by availing the help of accessible “scholarship avenues” (Sciammarella, 2009). Indubitably, students understand plagiarism-avoidance, but a lack of knowledge of techniques can render them in difficult situations (Löfström & Kupila, 2013). This study introduces a “*soft*” way to look at plagiarism by identifying the usage pattern of different scholarship (human and informational) avenues among research students and planning for efficient instruction instead of adopting “*hard*” mechanisms for penalizing plagiarized works. Scholarship refers to the process of teaching, learning, and research, which is built around information production, translation, and transmission. It is referred to as the “rational inquiry that involves critical analysis” to create new things (Vaughan, 1988). The results of this inquiry are subject to evaluation by qualified individuals or senior professionals.

The scholarship is divided into four different categories within the professorate, including: (i) the scholarship of discovery, (ii) scholarship of integration, (iii) scholarship of application, and (iv) scholarship of teaching (Boyer, 1991). In addition, there is the emergence of digital scholarship and the growth of telecommunication technology which have made it possible to transmit scholarship through social networking sites (Liona, 2007). Scholarship avenues are the ways used to provide access to education, research, and scholarship. Scholarship avenues are also defined as the means available for promoting scholarship among the research community. For the current study, scholarship avenues have been divided into different categories including informational, institutional, and human avenues.

### **Informational Scholarship Avenues**

Informational avenue is referred to as, academic content, traditional websites, and social networking sites developed by individuals, universities, university libraries, and academic

departments that host offline and online content, journals, and books for researchers to learn plagiarism-avoidance. Informational avenues include workshops and seminars (Ferree & Pfeifer, 2011; Fenster, 2016; Zafron, 2012), online tutorials (Dee & Jacob, 2012), institutional policies (Gullifer & Tyson, 2014), and specific discipline-based training programs (Barry, 2006; Newton, Wright, & Newton, 2014; Fisher & Partin, 2014). The internet is an important informational scholarship avenue that provides access to several forms and types of electronic resources including electronic journals, technical specifications, full-text articles, and hosts of other document sources (Thanuskodi, 2011). Previous research has emphasized the role of websites (Burkill & Abbey, 2004) and online scientific journals (Kumar, Priya, Musalaiah & Nagasree, 2015) as a vehicle of plagiarism-avoidance for students. Websites can provide quick access to information resources such as instructional material in multimedia form, tutorial manuals, and citation style guides for the guidance of students.

### **Institutional Scholarship Avenues**

Institutional avenues include a combination of instruction sources through workshops, seminars, lectures, and presentations conducted in an academic or research setting. The aim is to inform and educate students on how to avoid plagiarism. Academic literature has highlighted that the websites of universities and libraries must incorporate the academic integrity policy of the institution, and provide links for students to seek information about academic writing and various citation styles (Sciammarella, 2009; Mounce 2004). Students need instruction about plagiarism at the time of admission to the university and relevant resources including a booklet for citations, workshops, and seminars on writing skills and provisions of online tutorials (Kwong, Ng, Mark & Wong, 2010). Previous literature revealed that more than one tutorial was required to help students with plagiarism (Risquez, O'Dwyer, & Ledwith, 2011). Institutional avenues have also

helped students in the identification of research topics and gaps, shaping their research constructs and understanding of the ethical principles that ultimately created that environment of academic integrity in institutions of higher education (Franken, 2013).

Academic institutions also need to make efforts to understand the situational factors (alienation, prior cheating, definitional ambiguity, and academic backgrounds) that may trigger students to engage in plagiarism (Ellahi, Mushtaq, & Khan, 2013). Environmental facilitators such as a positive research environment, sufficient constructive communication, and time and space can help students to avoid plagiarism even if they have a background in cheating (Walsh, Anders, & Hancock, 2013). The introduction of research assessment exercises in higher education institutes, which has informal mechanisms for the development of researchers, has a significant influence on plagiarism avoidance (Raddon, 2011). Bombaro (2007) found that sessions on plagiarism avoidance helped students to retain the knowledge of plagiarism rules and to recognize problem areas in their writing. Students did appear to possess the necessary skills in successful avoidance of plagiarism (Stappenbelt et al., 2009), but repeating awareness sessions were important (Carroll, 2002), and so was the communication of a code of conduct (McCabe, 2000). Homework assignments about correct citation and referencing increased students' confidence in using plagiarism avoidance techniques (Elander et al., 2010); whereas, plagiarism detection software was also extremely effective in preventing plagiarism (Davis & Carroll, 2009).

### **Human Scholarship Avenues**

Academic literature has highlighted the role of human scholarship avenues including learning advisers, library staff, and course lecturers in plagiarism avoidance (Duff et al., 2006). Prominent human scholarship avenues include professionals working in the higher education sector, such as

senior researchers and university professors (Risque et al., 2013). In addition, colleagues and peers, as human scholarship avenues, with research backgrounds and publications can also help in plagiarism-avoidance (Chowdhry, 2016).

The scholarship avenues such as staff and academic institutions have a wider role in the promotion of knowledge of acquiring academic skills and strategies of plagiarism avoidance among students (Katsarou, 2015). Some argue that the role of academic librarians and library websites as the means of communication about plagiarism and academic misconduct is paramount (Amsberry, 2009). Others recommend that online tutorials are adequate instruction for plagiarism-avoidance (Holt et al., 2014). The role of academic institutions which provide support through study materials, faculty booklets, and online students' resources for plagiarism avoidance and promotion of academic integrity is also critical (Allan et. al., 2005). Attending anti-plagiarism workshops, seminars, or online tutorials have been found to help in plagiarism avoidance among research students (Sutherland-Smith, 2010). Similarly, reinforcement of online tutorials in the class environment among students has shown a decline in plagiarism (Burgess-Proctor et al., 2014).

Academic literature has revealed through a comparative study of several websites (avenues of scholarship) devoted to the issue of plagiarism that libraries have emerged as the prominent leaders for plagiarism prevention efforts (Maxymuk, 2006). In addition, Dewey (2009) identified that the role of the library requires effective strategies, communication techniques, funding approaches, and pedagogies for connecting people with scholarship. Through analysis of the faculty perception, Tabsh and colleagues (2012) concluded that collaboration among faculty was the solution to the issue of plagiarism. They further highlighted

that faculty need to instill honest academic conduct and help students to avoid fabrication, plagiarism, and other dishonest practices so the environment of scholarly traditions is promoted.

Academicians need to emphasize nourishing ethical and moral values among students through the inclusion of the course of ethics in the curriculum (Nazir & Aslam, 2010). Students need a comprehensive understanding of the awareness about the nuance and attitude of different student populations regarding academic dishonesty (Chapman & Lupton, 2004). Plagiarism-themed courses by faculty members and research instructors can help in the improvement of knowledge, skills, and the strategies of plagiarism avoidance (Estow et al., 2011). The professor-student relationship can heavily influence student research production and academic integrity (Abasi & Graves, 2008). In all, among human scholarship avenues, the role of the librarian and faculty is pivotal in the usage of academic information for citation and referencing styles, copyright, and plagiarism-avoidance (Gunnarsson et al., 2014).

### **Plagiarism Avoidance Techniques**

Exposure to the topic of plagiarism (Estow et al., 2011), guidance on the cautious practice of writing (Landau et al., 2002), and regular plagiarism training to students can play a pivotal role in the adoption of plagiarism avoidance strategies (Holt, 2012). Lack of instructional guidance and less focus on class-based taught skills regarding plagiarism lead to inability to follow plagiarism avoidance (Stappenbelt, 2012; Payne & Ireland, 2015). Overall, it is agreed that corrective rather than punitive measures help to guide the attitude of students towards plagiarism avoidance (Ibegbulam & Eze, 2015). Hannabuss (2001) argued that academic institutions are the key gatekeepers in encouraging students for plagiarism avoidance, through acknowledgment and citation of sources, recognition of library and internet materials, and guidance over the development of ideas.

Different plagiarism-avoidance strategies are used by academic institutes such as (i) forming partnerships among librarians and faculty members, (ii) offering instructional sessions, and (iii) informing students about useful internet search strategies (Auer & Kripner, 2001). Bakhtiyari et al. (2014) categorized some ethical (extensive reading, periodic self-reading, proof-reading, etc.) and non-ethical (usage of a dictionary, direct translation, etc.) strategies of plagiarism-avoidance for students and authors. Strategies that assist students' plagiarism avoidance include general understandings of plagiarism issues, note-taking skills, acknowledgment processes, and stimulation of creative thinking (Williamson et al., 2007; Basu & Chandra, 2015). Planning the time is required for the completion of the study, joining the group of experienced researchers, and notice-taking while reading the article is listed as strategies of plagiarism-avoidance (Chowdhry, 2016).

### ***Study aim***

In lieu of the above, the current study aims to: (i) determine the usage patterns of different informational and institutional scholarship avenues among research students, (ii) measure the frequency of consultation with human scholarship avenues based on gender and stage of the study, and (iii) explore the association between usage of scholarship avenues and usage of plagiarism-avoidance techniques among research students. Avenues of scholarship about plagiarism are important sources of instructions for research students intending to learn how to avoid plagiarism. Students need proper education and guidance of citation and proper referencing for plagiarism-avoidance (Gunnarsson, Kulesza & Pettersson, 2014). These avenues offer opportunities for education and guidance to research students to get access to implicit and explicit knowledge about plagiarism. Avenues connect research students with scholarships and provide them the required impulse and guidance to continue their research with confidence and

integrity. Therefore, the understanding of the usage pattern of scholarship avenues is very important for academic entities to develop effective methods for guiding research students about ethical research. Scholarship avenues help students not only in plagiarism-avoidance but also encourage them to produce innovative research and scholarship (Deckert, 1993; Yeo, 2007).

The current study also highlights the inclination of research students towards different scholarship avenues so its implications might provide a guideline for the university administration to revise the current pattern of information access. This study also contributes to the empirical literature on scholarship avenues for research students studying in Pakistani universities. In a developing country like Pakistan, where there is less budget allocation for higher educational institutes, plagiarism avoidance is a neglected area. Thus the study findings also aim to provide effective guidance about plagiarism to the higher education sector, university administrations, academic departments, and libraries, so they can improve policy to support students in the academic integrity of their research work.

## **METHODS**

### **Ethics**

This study got ethical approval from the Ethical Research Review Committee of Government Degree College, Pindi-Bhattian, where the first author was serving as a Lecturer prior to the data collection period.

### **Sampling**

A quantitative cross-sectional survey was used for this study. The survey was administered to research students from the Social Sciences in seven universities of Pakistan. The sampled universities belonged to six different cities, including: 1) University of the Punjab, Lahore; 2)

University of Sargodha, Sargodha; 3) Quaid-e- Azam University, Islamabad; 4) Minhaj University, Lahore; 5) Government College University, Faisalabad; 6) University of Gujrat, Gujrat; and 7) the University of Sindh, Jamshoro.

### **Survey**

An online survey was used to mitigate the effects of social desirability bias among the respondents. An online questionnaire was constructed using google forms and the link is given in the additional materials section. The questionnaire consisted of three sections. The first section included demographic questions, such as the level of study (MPhil and Ph.D. study), stage of study (coursework and thesis-writing), name of the university, and gender. The next section was about the consultation of scholarship avenues. It was divided further into informational and human scholarship avenues.

Human scholarship avenues enlisted thirteen different questions such as; consultation with supervisor of MPhil/Ph.D., class fellows, colleagues, faculty of the department, friends, and family members. Items related to informational scholarship avenues included fourteen questions including; consultation from articles and books from the web, anti-plagiarism policy of HEC, lectures delivered in the classroom, presentation/assignment presented by a fellow in the classroom, material/links available on university websites, and books from the library shelf. The third section included seventeen questions about plagiarism-avoidance strategies such as: listing the writers and their viewpoints discovered during research, taking notes while studying relevant research material, using quotes for the exact words copied, providing a reference for the paraphrased and adapted material, avoiding quoting indirect sources and quoting both original and secondary sources. A five-point Likert scale was used ranging from Always (5), Usually (4), Occasionally (3), Rarely (2) to Never (1).

## Data Collection

To increase the robustness, validity, and reliability of the questionnaire, pilot-testing was conducted with a sample of 10 respondents who were not included in the final sample. Feedback from the pilot test led to the improvement of some of the questions by making them more simple and clear. The final questionnaire was uploaded on different yahoo groups, Facebook groups, and social media groups of research students. It was also uploaded on the Pakistan Library and Automation Group (PakLAG) and Yahoo group of library professionals, as most of the research students of library science are members of this group. The questionnaire was also shared on All Pakistan Sociological Network (APSN) and Forum of Social Sciences (FOSS). The data was collected between January 2014 to April 2014. A total of 108 complete questionnaires were received and used for the final analysis.

## Data Analysis

**Table 1:**

*Factors analysis of the techniques of plagiarism-avoidance among research students (N=108)*

Plagiarism-avoidance Techniques (Value of Cronbach alpha= 0.79)	Validity
1. I list the writers and their viewpoints discovered during research	.623
2. I identify the sources of all exact wording of ideas, arguments, and facts that borrowed	.760
3. I take notes while studying relevant research material (developing an organized note-taking system)	.597
4. I keep photocopies of sources or save the copies in some folders on personal computer/laptop	.700
5. I keep separate and distinct own ideas and summaries from other's ideas	.676
6. I do analysis and evaluation of what I read	.687
7. I read some sources and then write in my own words	.701
8. I use quotes for the exact words copied	.665
9. I provide a reference for the paraphrased and adapted material	.706
10. I use sources correctly and appropriately (quoting, paraphrasing, and summarizing, etc.)	.696
11. I know the documentation styles/ rules of referencing and use only one consistently (Harvard, APA, MLA, etc.)	.655
12. I acknowledge collaborations	.661
13. I avoid self-plagiarism (Submitting data by misrepresenting already submitted data)	.726

14. I avoid quoting indirect sources, if necessary, then quote both original and secondary sources	.644
15. I use common knowledge, universal facts without citing it	.689
16. I cite derived graphs, tables, statistical information, illustrations, and photographs, etc.	.731
17. I make sure that all cited items have got a place in the bibliography or work cited page	.692

Data were analyzed by using the Software Package for Social Sciences (SPSS-version 24). Bivariate linear regression analysis was used to identify the association between variables, and factor analysis and reliability analysis were used to ensure the reliability, validity, and robustness of the research scales in the study. Table 1 presents the values of reliability and validity for the scale of plagiarism-avoiding techniques. The standardized Cronbach alpha reliability coefficient of 0.79 was obtained for the scale of techniques of plagiarism-avoidance. Similarly, factor analysis was also run to evaluate the validity of categories of the scale of techniques of plagiarism-avoidance. Loadings of the factor analysis were above .60 except ‘I take notes while studying relevant research material’ (.597).

Table 2 presents the values of reliability and validity for the scale of human scholarship avenues. The standardized Cronbach alpha reliability coefficient of 0.909 was obtained for the scale of human scholarship avenues. Loadings of the factor analysis were above .60 except ‘faculty of the department who has taught me (.403).

**Table 2:**

*Factor analysis of the human scholarship avenues among research students (N=108)*

Human Scholarship Avenues (Value of Cronbach alpha= 0.909)	Extraction
1. Supervisor of my MPhil/Ph.D. study	.699
2. Faculty of the department who have taught me	.403
3. Faculty of the department who have not taught me	.622
4. Faculty of my discipline of other universities	.715
5. Faculty of other disciplines of my university	.704
6. Faculty of other disciplines of other universities	.740
7. Library professionals working in my university library	.693
8. Library professionals working in other libraries	.708

9. Class fellows	.657
10. Colleagues	.706
11. Friends and family members	.694
12. Members of online professional Groups (like yahoo groups etc.)	.603
13. Members of social networking groups (like Facebook, Twitter, etc.)	.632

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## RESULTS

### Socio-demographic results

Out of the total 108 respondents, 87 percent of the respondents were doing MPhil and 13 percent of the respondents were studying for Ph.D. in different universities of Pakistan. More than thirty percent of the respondents were from the University of Punjab, 14.8 percent were from the University of Sargodha, and 12.0 percent were from Quaid-e- Azam University. Almost half of the respondents were majors of Sociology, 29.6 percent were from Library Sciences, 19.4 percent were from Psychology, and 9.3 percent were from the discipline of Education. With regard to the stage of the study, 62 percent of the students were doing research work, while 32 percent were still undertaking coursework.

### Descriptive statistics for information avenues for plagiarism avoidance

Table 3 shows informational scholarship avenues used for getting information about plagiarism-avoiding techniques. Articles and books from the web were the leading avenues of information for learning about plagiarism-avoiding techniques (10 percent of users), whereas accessing books from library shelves was also a technique (7 percent of users). Many students (9 percent of users) had studied the anti-plagiarism policy of the Higher Education Commission (HEC) of Pakistan. Interaction with teachers in classrooms was also an important tool to avoid plagiarism (9 percent of users). Preparing assignments and presentations (8 percent of users), and learning from class fellows (8 percent of users) were important plagiarism avoidance techniques. Among websites, the local university website (8 percent of users) was used most to access material for plagiarism

followed by foreign university websites (6 percent of users). Workshops arranged by universities, university libraries, and other universities and libraries, were also popular (combined 18 percent of users).

**Table 3:**

*Descriptive statistics of information scholarship avenues used for getting information about plagiarism avoiding techniques (N=108)*

Information Scholarship Avenues about plagiarism	<i>f</i>	Percentage of avenues consulted
1. Articles and books from web	79	10%
2. The anti-plagiarism policy of HEC	73	9%
3. Lectures delivered in the classroom	69	9%
4. Presentation/assignment presented by a fellow in the classroom	63	8%
5. Presentation/assignment prepared and presented by me	59	8%
6. Material/Links available on local university websites in Pakistan	65	8%
7. Books from Library Shelf	53	7%
8. Material/Links available on foreign university websites	49	6%
9. Material/Links available on websites of libraries in Pakistan	43	6%
10. Material/Links available on foreign library websites	41	5%
11. Workshops/seminars/conferences arranged by my university	49	6%
12. Workshop/seminars/conferences by my university library	41	5%
13. Workshop arranged by department of my university	31	4%
14. Workshop/seminars/conferences held by other libraries	25	3%

**Bivariate analysis**

The bivariate analysis confirms that a higher frequency of consultation with scholarship avenues led to greater usage of plagiarism-avoidance techniques among research students (standardized beta=0.271,  $p < 0.01$ , adjusted  $R^2 = 0.065$  and  $F = 8.257$ ). There was a positive association between the stage of the study and usage of plagiarism-avoidance techniques among research students (standardized beta=0.277,  $p < 0.001$ , adjusted  $R^2 = 0.068$  and  $F = 8.631$ ), which means that usage of plagiarism-avoidance techniques was higher among thesis-writing students as compared to students who were undertaking coursework. Additionally, a higher level of the study had no significant effect on usage of plagiarism-avoidance techniques among research students

(standardized beta=0.168, p=0.084, Adjusted R<sup>2</sup>=0.010, and F=3.039). The stage of the study and consultation of scholarship avenues were found to have a significant effect on the usage of plagiarism-avoidance techniques, while the level of the study had no significance with the usage of plagiarism-avoidance techniques.

**Table 4:**

*Bivariate regression analysis of independent and dependent variables (N=108)*

	F	Adjusted R <sup>2</sup>	beta
Consultation with scholarship avenues	8.257	0.065	.271**
Level of the study	3.039	0.010	.168
Stage of the study	8.631	0.068	.277***

Note: \*= $p < 0.05$ , \*\*= $p < 0.01$ , \*\*\*= $p < 0.001$

## DISCUSSION

The current study explored the association of scholarship avenues and techniques of plagiarism-avoidance among research students. Articles and books from the web, anti-plagiarism policy of HEC, and lectures delivered in the classroom were the leading informational scholarship avenues as reported by this study. It is important however to note though that though students are using the HEC website, information is limited to definition, types of plagiarism, and implications of plagiarism. Much more information needs to be added to the HEC site, in order to improve impact and support plagiarism prevention (HEC, 2015). Amsberry (2009) also supports our findings that the role of informational scholarship avenues including lectures, lectures, tutorials, and web-based handouts are important plagiarism avoidance tools. Similarly, other studies corroborate that students use informational scholarship avenues such as websites of journals as a vehicle of plagiarism avoidance and promotion of academic integrity and ethics (Petro, 2014).

In-class work time (Hansen, Stith & Tesdell, 2011) and record-keeping of references (Rosamond, 2002) also help students to avoid plagiarism.

We found that supervisors of MPhil/Ph.D., class fellows, colleagues, and faculty of the department were the prominent human scholarship avenues consulted by the research students of social sciences. Another scholarship agrees that the role of the supervisor is very important in inculcating plagiarism-avoidance techniques among research students (Ireland & English, 2011). Additionally, the role of the supervisor in-class environment through merging informational and human scholarship avenues can help students improve their academic presentation and also findings. In fact, it is argued by some that when supervisors teach plagiarism avoidance it is the most effective strategy for students (Risque, O'Dwyer & Ledwith, 2013). Another study reports that plagiarism avoidance rules are influenced by the cultural values and practices in the learning environment (McDonnell, 2004). Similarly, the traditional pedagogical methods of delivering lectures in the environment of the classroom were found to be beneficial for the students. Ultimately, investment in the strengthening of teaching methodologies is most helpful in the adoption of plagiarism-avoidance among students (Jackson, 2006).

We also found that the stage of the study was a predictor of plagiarism-avoidance among research students. As students at the time of the thesis-writing were more adoptive towards plagiarism avoidance as compared to students at the stage of course work. Previous academic research has approved the phenomenon that year of study had a significant association with the knowledge to avoid plagiarism (Elander et al., 2010). This is because usually students are exposed to theoretical knowledge in the first year of MPhil and Ph.D. programs and in later years they apply the theoretical knowledge in their written research work. Usage of plagiarism-avoidance techniques in these years is helpful for students in the completion of their degrees. But

it lays the foundation of ethical research work in the future. Ahmad and Ullah (2015) aptly argue that the usage of plagiarism-avoidance techniques is critical helps to create ethical scholarship and academic integrity among research students.

Access to human scholarship avenues especially guidance by supervisors and teaching by faculty members inculcates strategies of referencing and citation styles and ultimately creates an inclination of plagiarism-avoidance among university students (Liles & Rozalski, 2004). Evidence of ineffectiveness of awareness strategies about plagiarism-avoidance (Perry, 2010) highlights the insight of informational and human scholarship avenues to internalize these skills and competencies among students. In the same line of reasoning, Hyland (2001) found that despite using plagiarism avoidance techniques students can fall prey to plagiarism because of their inability to recognize the complex pattern of plagiarism and its related norms. Here the role of skill development is key in supporting research students through their academic journey.

### ***Limitations of study***

The current study gathered data from research students of Social Sciences enrolled at Pakistani universities so its findings cannot be generalized to the students of other disciplines or outside the country. Social desirability bias may have influenced the self-reported behavior of the research students about usage of plagiarism avoiding techniques, despite the anonymous nature of the questionnaire. Students were from MPhil and Ph.D. programs so findings cannot generalize on research students of Undergraduate or Masters programs. The current study used a self-structured closed-ended questionnaire and for further in-depth analysis, future research would need to adopt a qualitative approach including in-depth interviews. Other researchers are encouraged to use this survey to further test the validity and reliability of plagiarism-avoidance techniques in other cultures and academic environments. The current research is also limited to

students, whereas future research could include other stakeholders such as supervisors, librarians, and teaching faculty.

### **CONCLUDING IMPLICATIONS**

We conclude that scholarship avenues play a very important role in guiding students to avoid plagiarism in their academic work. The stage of the study and usage of human and informational scholarship avenues have significance with plagiarism avoidance. Adoption of proactive strategies is required to accommodate the needs of the students and continued guidance is needed to support access to needed resources and material to avoid plagiarism. Here the support and planning of faculty, library, and the Higher Education Sector are critical to ensure ethical scholarship. There is also a dire need to develop a culture of cooperation among researchers and libraries and their parent organizations to create and provide access to reading material to increase the awareness and learning capacity of researchers. As a facilitator, academic institutions and teachers, information specialists and librarians, and system administrators need to understand the research environment for students and its implications for originality and plagiarism. The use of social networking sites and social media contact with supervisors is also important so that there is no communication gap between students and scholarship avenues. Finally, the study supports and empowers the new paradigm of plagiarism-avoidance through prevention rather than detection.

#### **Conflict of Interest Statement**

There is no conflict of interest to declare.

#### **Funding**

This study has not received funding.

#### **Ethics**

This study received ethical clearance from the Ethical Research Review Committee of Government Degree College, Pindi-Bhattian.

### **Data sharing and availability statement**

Data is available upon email request from the corresponding author.

### **Author Contributions Statement**

Study conception and design: SA and AU collected the data data collection and analysed it: SA drafted the manuscript preparation, and both authors revised and agreed on the final version of the manuscript.

### **Additional materials**

[https://docs.google.com/forms/d/e/1FAIpQLSdinZsYYH4R66-X6hjbOLK3AfDjrj4o4ok99oiYV16t3zwwgDw/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLSdinZsYYH4R66-X6hjbOLK3AfDjrj4o4ok99oiYV16t3zwwgDw/viewform?usp=sf_link)

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