Pakistan Languages and Humanities Review
www.plhr.org.pk

RESEARCH PAPER

Relationship among Higher Education Students' Research Attitudes, Anxiety, and Self-Efficacy

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ABSTRACT

The study deals with the relationship that exists between research attitude and research anxiety and research self-efficacy among undergraduate students in Lahore studying in both the public and private universities. The researchers used a survey design approach. Simple random selection together with convenience sampling was used for selecting the 500 participants. Three scales were used for the study. Reliability was ensured through pilot testing whereas validity through subject experts. Pearson correlation coefficient (r) was applied for analysis. Findings revealed that research attitude along with research anxiety and research self-efficacy had shown positive relations. Research self-efficacy showed moderate and significant positive relationship with research attitude. It is recommended that the workshops and seminars should be planned not only to share the value and significance of research but also to give practical training and students an opportunity to feel successful in using research in current activities.

| **Keywords:** | Relationship, Research Attitude, Research Anxiety, Research Self-Efficacy, Higher Education Student |

Introduction

A very significant activity in higher learning is research. It assists in the generation of new knowledge, solving issues, and the betterment of society. The outcomes of research of students are greatly dependent on three basic things that entail their attitudes towards research together with the research anxiety and self-efficacy of research. The association between research attitudes and anxiety with self-efficacy that influences the research performance among students should help them learn the research challenges better (Angaiz et al., 2021).

Research attitude implies positive or negative attitude to the research, including cognitive, emotional, and behavioral reactions of an individual (Obaseki & Agu, 2019). Students with positive attitude show that they are much more confident along with being well motivated. Nevertheless, they can evade the research process or get annoyed, in case they hold a negative attitude towards them. Students with good attitude towards statistics are less anxious about statistics. This indicates that students stressed by the perception of research can reduce this stress by being positively guided to change the attitude towards the given subjects tracked by them in research (Dodeen & Alharballeh, 2024).

Research anxiety is the uneasiness, fear, or nervousness that comes when people are conducting a research. Researchers who come across research related tasks, may regard them as stressful or tasking. It may affect their performance in research negatively

because they will experience anxiety and fear as a result of doubt in research. Research anxiety is comprised of four elements that contain the library anxiety in addition to the statistical anxiety, writing anxiety and research language anxiety (Gupta & Singh, 2021). In line with Permatasari et al. (2021) late thesis work has numerous psychological consequences, which hold different symptoms, such as stress, anxiety, fear, restlessness, inability to sleep, and bore.

The students need self confidence in all aspects of the research lifecycle that starts with generating idea and continues up to the time of presentation of final results (Gupta & Singh 2021). Self-efficacy in the case of research defines the academic research success of students along with their capability to remain motivated and persistent (Wajid & Jami, 2020). The research attitude has a positive correlation with research self-efficacy (Mensah et al., 2023). The strong research self-efficacy among the students results in the improved commitment toward the research activities and the possibility to face research problems with a stronger opportunity of interest in pursuing a career in research (Ahmed et al., 2023). The proposed study claims to bridge that gap by looking at the correlation in research attitudes, research anxiety and research self-efficacy among students of higher education in the setting of Punjab.

Literature Review

Research attitude denotes a general characteristic of a person regarding behavior, opinion, and emotion; toward research practices and procedures. Developed through the first-hand experiences, instinctive learning and societal influences, it is formed throughout the course of time (Saini et al., 2020). Positive research attitude implies curiosity, being open-minded, and enthusiastic, which will help engage in research more deeply and obtain better academic results (Lobo-Guerrero, 2023). On the other hand, negative attitudes, which are usually preconditioned by the fear, anxiety, or self-efficacy, lead to the disinvestment and avoidance (Hammad, 2016). Research attitude does not only impact on motivation and participation but it also regulates how individuals perceive research activities and assignments (Saleem et al., 2014). Such aspects as early exposure to academics, having mentors, as well as personal beliefs regarding the worth of research are also critical towards developing these attitudes (Bhaskar & Soundiraraj, 2013).

The perceptions of the students with regard to the usefulness and relevance of research in their field of study are strongly associated with the academic involvement as well as performance in research. Students who find meaning in research are more committed, confident, and interested when they consider the relationship to be relevant to their career goals (Rebelo et al., 2012). Such positive feelings increase the motivation to learn and resilience, and in case of a negative perception, one can face stress and withdrawal. Mensah et al. (2023) reveal a close relationship between positive attitude to research and better marks on research courses. Hence, positive research attitudes should be made through nature of educational environments and practice exposure so that research capacity is cultivated among students and the long term academic development could be maintained.

Research Anxiety

Anxiety is a mental reaction that is described as nervousness, care and irritability, which are usually increased during stressful conditions (American Psychological Association, 2022). In academically related environments, research related activities are usually linked to pressure, frustration, and hopes, hence a big cause of anxiety to most

students. Research requirements stress (high workload, challenging materials, pressure, etc.) can provoke psycho-emotional manifestation that envisions fear, stress, and low self-efficacy (Mulya & Indrawati, 2017; Wakhyudin & Putri, 2020). The factors that may cause research anxiety to students include lack of sufficient research skills, fear of failure, time limits, or inability to understand complicated information. These contribute to lack of motivation, avoidance and disengagement with the research activities which continues to affect the academic performance (Rebelo et al., 2012).

Research anxiety denotes explicitly such feeling of nervousness, worry along with cognitive overload in the concern of research activities and courses. Some factors that contribute to it include struggles associated with identifying it as something difficult, bad experiences in the past, and lack of confidence in the ability (Maharajan et al., 2017). Indeed, a low level of anxiety may increase the level of concentration and productivity, whereas, at the high level, it may cause the level of cognitive paralysis and the state of mental exhaustion which may affect not only academic achievements but also personal and professional lives (Zahrakar, 2008). Students with extreme research anxiety also tend to be less competent, overwhelmed and also not willing to participate in a research in future. This type of anxiety can become a major impediment to learning, a decreasing academic perseverance, and restraining scholarly or career prospects when not properly looked after.

Research Self-Efficacy

The research self-efficacy is the belief of the students that they are able to perform research activities and other academic tasks (Ogungbeni & Nwosu, 2021). It has been reported by several studies that when there is an increase in self-efficacy it has resulted in a reduction of academic stress, time management, and perseverance in research work (Christy & Soetjiningsih, 2024; Triwahyuni & Qodariah, 2022). Strong self-efficacy also gives students an advantage since they develop more confidence in their skills and will feel less anxious and procrastinate during thesis writing (Barus et al., 2022). Nevertheless, despite the presence of sufficient research skills, not all students can be productive because of the lack of motivation, support by the institutions or productive mentorship (Adekunle & Madukoma, 2022). Topic selection, literature search, supervisor response, and multiple revisions of the thesis usually present a difficult situation to student motivation and confidence, thus making it probable that the process will develop into delays and stress.

Self-efficacy is protective in nature by increasing the ability of the students to deal with the challenges of the research, low levels of procrastination and sustaining motivation during stressful situations. It is also negatively associated with academic anxiety, which means that students who have a higher self-efficacy develop lesser distress when working on their theses (Lusi et al., 2023). Slow completion when working on the thesis is also associated with low confidence and inappropriate time management, which will not cause problems when students feel confident that they will achieve success (Wiratmo et al., 2022). Thus, it is important to increase research self-efficacy among students through systematic academic guidance, advising and skills development. By having empowered students, chances are better to create quality research and also be able to move through the thesis experience, much more productively as well as with a lot of resilience which required universities to adopt interventions which focus on addressing both academic and emotional aspects of research productivity.

Research Attitude, Anxiety, and Self-Efficacy

Research attitude, research anxiety and research self-efficacy constitute highly related concepts in terms of psychology and have a sizeable influence on student academia research activity and performance. Positive research attitude is a characteristic which demonstrates eagerness to conduct research, interest in research and a sense of confidence in research (Mensah et al., 2023; Saleem et al., 2014). In contrast, unfavorable attitude toward research is one of the causes of disengagement leading to the development of feelings of incompetence, a factor which increases anxiety and decreoses self-belief (Rezaei & Zamani-Miandashti, 2013). Research anxiety has been proven to cause avoidance behaviors and have an unfavorable impact on how students view research thus undermining their academic persistence and success (Gubalani et al., 2022; Obaseki & Agu, 2019). High anxiety and poor attitude levels at the same time make students less interested in the research and more prone to procrastination, as well as emotional fatigue, and low anxiety and positive attitudes lead to a higher willingness to engage in research activity (Angaiz et al., 2021; Christy & Soetjiningsih, 2024).

The connection between the research attitude and anxiety is mediated by the self-efficacy, which is the opinion about possibility to perform research tasks successfully. Positive attitudes and reduced levels of anxiety are associated with high self-efficacy that helps students enjoy better academic performance and resilience when faced with research challenges (Lusi et al., 2023; Robinos et al., 2022). Research self-efficacy does not only promote perseverance and productive problem-solving but also dampens the negative impacts of anxiety, particularly at stressful moments like finishing one thesis (Barus et al., 2022; Wiratmo et al., 2022). The self-efficacy and anxiety are increased even more by metacognitive awareness and academic assistance, as it provides cognitive skills and study skills to students (Wajid & Jami, 2020). Finally, the cultivating of productive research behaviors and academic success in university students depends on the supportive academic environment that encourages positive attitudes, develops self-efficacy, and decreases anxiety (Razavi et al., 2017; Liu et al., 2019).

Theoretical Framework

Three concepts form the major theories on which the study is based, namely, Social Cognitive Theory (Bandura, 1986), the Theory of Planned Behavior (Ajzen, 1991) and Protection Motivation Theory (Rogers, 1975). According to Bandura and his Social Cognitive Theory, the most influential behavioral determinant is self-efficacy, namely, the people acquire confidence by means of direct experience, learning by observation, as well as control of emotions. Good research self-efficacy makes students motivated, more resilient, and improve their attitudes toward research and decrease the level of anxiety (Bandura, 1986; Rezaei et al., 2013). The Theory of Planned Behavior also tells us that attitude, subjective norm, and perceived behavioral control (i.e. self-efficacy) that form part of students influence their intention to participate in the research process (Ajzen, 1991; Papanastasiou, 2005). Moreover, in the Protection Motivation Theory developed by Rogers, it is assumed that the perceptions of study related distresses results in coping activities depending on the amount of self-efficacy a student possesses; high self-efficacy results in adaptive engagement whereas low self-efficacy results in avoidance and anxiousness (Rogers, 1975; Wilson & Onwuegbuzie, 2001). The combination of these theories gives an overview of the interactions of the research attitudes, anxiety as well as self-efficacy to determine how students behave in academics.
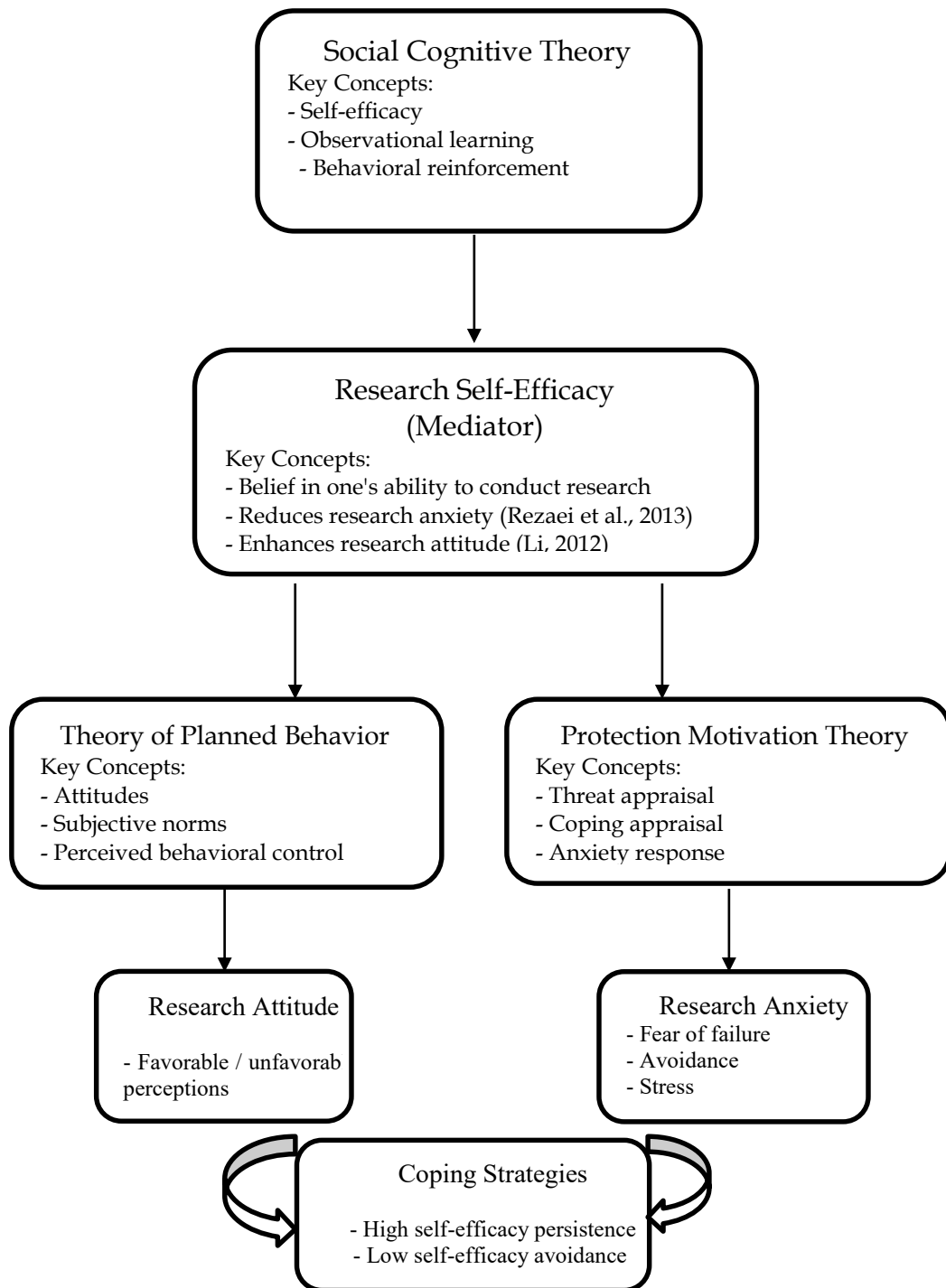
Figure 1 Theoretical Framework of the study

Research Hypotheses

The hypotheses of the study are:

H_{01}: There is no significant relationship between research attitude and research anxiety among higher education students.

H_{02}: There is no significant relationship between research attitude and research self-efficacy among higher education students.

H_{03}: There is no significant relationship between research anxiety and research self-efficacy among higher education students.

Material and Methods

Research Design

The quantitative, correlational type of research study was applicable in the study helping to investigate the relationship between research attitudes, research anxiety, and research self-efficacy in students pursuing higher education (Creswell & Creswell, 2018). Based on the positivism paradigm, such a design employs systematic actions and employs scientific methods of generating the knowledge (Fraenkel et al., 2012; nCohen et al., 2018). A structured questionnaire was used to collect data that could be responded to in a standardized manner and analysis performed on them without variable manipulation.

Population and Sample

The research sample included students pursuing their MA, MPhil, and PHD programs in the public and the private universities of Lahore. According to the Punjab Higher Education Commission, it is and 15 state and 21 non-state universities. Seven universities (3 public, 4 private), were picked with convenience sampling. Next the simple random sampling was used to select 500 students (250 in each sector) with a varying academic background. This was the sampling strategy that was to achieve adequate representation as well as a statistical power of generalizing results to the student population of higher education in Punjab.

Research Instrumentation

The questionnaire included four parts namely demographics, research attitudes, research anxiety, research self-efficacy.The Attitude towards Research (ATR) Scale by Papanastasiou (2005) was adapted to 18 questions in a 5- point Likert scale named Research Attitude. The reliability coefficient carried out during pilot testing was 0.70. Research Anxiety was a measure of the ATR Scale anxiety component redeveloped as 40-items and has reliability coefficient of 0.88. Research Self-Efficacy was a 27-items scale itemized after Rezaei et al. (2013), on a 5 Likert point scale and showed a reliability = 0.89.

Validity and reliability

Four peers and three experts in educational research were used to review the instrument to guarantee construct validity. Relevance and clarity were tested on a pilot sample of 200 graduate students followed by some adjustments to achieve clarity. The reliability scores at the end of the reliability testing period- 0.70 (attitudes), 0.88 (anxiety) and 0.89 (self-efficacy) ensured that the instruments would be valid and reliable in the main study.

Data Collection

The researcher has created a questionnaire using Google form to gather responses of MA, M.Phil., and Ph.D. students via the Internet. The researcher went to the universities and personally gave out the questionnaires and ascertained that there would be anonymity and participation by the participants of course must be voluntary. The researcher collected the data at the different departments of the university within four weeks.

Data Analysis

Upon the collection of data, it was analyzed. Frequencies and computations of mean and SD were used in the descriptive statistical study. The Pearson correlation coefficient (r) analysis had been performed using SPSS software to explain variable relationships based on inferential statistics.

Ethical Consideration

The researcher obtained the permission of the study participants to the study. Confidentiality of all the data obtained with the help of the participants was strictly guaranteed and the researcher could use it within confines of the research. The researcher was greatly concerned with ethics in all the aspects of the study.

Results

The data was collected from 4 private universities and 3 public universities. From 500 students 64 from PhD level, 172 form MPhil level and 264 from MA level selected form private and public universities. After demographic information, further results are shown under different research hypothesis of the study.

Table 1
Correlation between Research Attitude and Research Anxiety

		Total Research Attitude	Total Research Anxiety
Total Research attitude	Pearson Correlation		.145**
	Sig. (2-tailed)		.001
Total Research Anxiety	Pearson Correlation	.145**	
	Sig. (2-tailed)	.001	

** Correlation is significant at the 0.01 level

The results of a Pearson correlation coefficient examination between research attitude and research anxiety emerge in Table 1 through data collected from 500 participants. The study produced significant evidence regarding the weak positive relationship between the variables using statistics that show $r = .145$, $n = 500$, $p < .01$. These findings indicate that research attitude and research anxiety show an important yet minor direct relationship between them. The analysis data from Table 4.2 showed both statistical significance at $p < .01$ and a correlation value of .145 which leads to reject H_{01}.

Table 2
Correlation between Research Attitude and Research Self-Efficacy

		Total Research Attitude	Total Research Self-Efficacy
Total Research Attitude	Pearson Correlation		.301**
	Sig. (2-tailed)		.000
Total Research Self-Efficacy	Pearson Correlation	.301**	
	Sig. (2-tailed)	.000	

** Correlation is significant at the 0.01 level

A sample of 500 individuals provided data for Pearson correlation analysis between research attitude and research self-efficacy that generated results presented in Table 2. The study demonstrates a moderate positive link between these variables with a value of $r = .301$ and $n = 500$ and $p < .01$. Research self-efficacy shows a significant

moderate positive connection with research attitude according to this result. Therefore null hypothesis **H_{02}** is rejected.

Table 3
Correlation between Research Anxiety and Research Self-Efficacy

		Total Research Anxiety	Total Research Self-Efficacy
Total Research Anxiety	Pearson Correlation		.277**
	Sig. (2-tailed)		.000
Total Research Self-Efficacy	Pearson Correlation	.277**	
	Sig. (2-tailed)	.000	

** Correlation is significant at the 0.01 level

Table 3 displays the Pearson correlation results that connect research anxiety with research self-efficacy through a study of 500 participants. The research data showed a moderately strong positive connection between these variables at $r = .277$ and $n = 500$ with $p < .01$. These findings demonstrate a significant relationship that shows research anxiety and research self-efficacy has a moderate level of correlation. **H_{03}** is rejected.

The analysis of all these hypothesis shows that research attitude holds a minor positive relationship with research anxiety but demonstrates statistical significance. Students who feel increasingly positive towards research tend to develop slightly elevated anxiety in doing research. Students who look at research positively tend to show higher research self-efficacy according to a moderate positive association. Lastly, the correlation between research anxiety and research self-efficacy is also moderately positive, implying that students who experience higher levels of research anxiety often report greater confidence in their research abilities.

Discussion

The relationship between research appraisals by students and their anxieties towards research projects and belief in research skills are critical during the study on performance at higher education levels. Studies indicate that based on the theory of Bandura, individuals who believe that they are efficacious will be persistent despite difficult circumstances and the individuals will make additional effort compared to the individuals who lack confidence. The real success in an academic research is just having the ability to stick into it and do the hard work that students need to offer. That is why good behaviors and study habits are significant (Artino et al., 2012).

The results of the study were aligned with the findings of Muñoz et al. (2018), who demonstrated positive small correlation between the research anxiety and the levels of self-efficacy. Whenever students in undergraduate programs doubt their abilities to complete the tasks associated with a research process their level of anxiety in relation to this particular activity is likely to grow (Muñoz et al., 2018). The earlier research findings are consistent with the contemporary account of self-efficacy based on the effort to originate by students and enhance their positive attitudes toward research-related knowledge (Mensah et al., 2023). The research findings of the present study support the significant role of the self-efficacy to be observed in student research operations.

We could find similar levels of self-efficacy with anxiety and attitudes regarding research by a student that was carried in relation to research in a recent study by Angaiz et al. (2021). The attitudes of students toward research activities have a powerful direct association with research self-efficacy of students. The level of research-self-efficacy is directly proportional to expectations of positive attitudes towards the research. The

medium correlation between research attitude, research anxiety and research self-efficacy are that there is correlation of attitude, research anxiety and research self-efficacy where attitude is positively correlated to effective research self-efficacy behavior which enhances the research attitude.

Conclusion

As observed in the current study, there is a close association between research attitude along with research anxiety and research self-efficacy amongst the students in the higher education field. The current study returned the results that studied variables developed effects that were positive to each other. The research data proves that there exist reasonable relations between research attitude and self-efficacy of researching and research anxiety of the students. Findings on a research self-efficacy of successful students demonstrated that self-efficacy had a significant impact on the research attitude and helped in establishing the research confidence and self-perception of those students. There is sufficient evidence revealing that research self-efficacy and research anxiety have a significant association which ascertains that research self-efficacy is a core research component. The acquired results indicated the weak positive relationship between research attitude and research anxiety. The correlation between these two variables is moderate positive owing to the fact that the positive research perceptions result in higher levels of confidence in research skills. The correlation between search self-efficacy and research anxiety is positive and moderate implying the pivotal role played by the mix of nervousness of the students on their academic endeavors of research development. Research findings indicate that when there is positive attitude of formation of research, then relationship will occur between research self-efficacy and research anxiety that influences student motivation positively.

Recommendations

Based on the research findings, there are certain recommendations and they include:

- To develop self-efficacy in research, it is important that students engage themselves in practice work of research type and as well as direct practical project work.
- Intervention designing teachers are expected to enhance research capacity and efficacy in their students due to the fact that research self-efficacy will result in reduced anxiety tied with research.
- Instructors teaching course-related activities in research ought to utilize a methodology that is likely to enable them to alter the attitude of students concerning research and develop their confidence. The given strategy is also capable of helping the teachers to eliminate any negative attitude students might have toward the research.
- Educational establishments along with staff should help in the creation of settings to encourage research studies since the practice results in more positive self-efficacy levels among the learners and reduced anxiety levels as well as increased academic dedication and involvement.
- It will be possible to merge university workshops and training sessions and have practice of research by students. This method will make them gain confidence and do a better research.

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