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Does academic motivation contribute to the self-esteem of students at the graduate level? A case study of universities in the southern districts of Khyber Pakhtunkhwa, Pakistan

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This study explored the impact of students' academic motivation on self-esteem at the graduate level. The respondents of this study were 375 university students enrolled in a Bachelor of Science (BS) program in nine disciplines from all four public sector universities in the southern districts of Khyber Pakhtunkhwa. Two standardized questionnaires, i.e., the Academic Motivation Scale, a tool consisting of 28 items for measuring academic motivation, and Rosenberg's Scale for measuring self-esteem, consisting of 10 items that measure self-respect by assessing both positive and negative emotional states about the self, were used. In light of the objectives and hypotheses, mean, and standard deviation (SD) were used to find out the level of academic motivation and self-esteem of the students. Linear regression was applied to find out the impact of students' academic motivation on their self-esteem. Moreover, an independent t-test was used to explore the difference in academic motivation and self-esteem between male and female students. There was no significant difference in the academic motivation and self-esteem of the students at the graduate level. The results showed that the university students at the graduate level had a high level of academic motivation and self-esteem. A unit change in overall academic motivation, knowledge, and stimulation parts of intrinsic motivation and identified and external regulation of extrinsic motivation bring 0.678, 0.218, 0.223, 0.122 and 0.172 change in self-esteem, respectively, while the constructs i.e., accomplishment (intrinsic motivation), introjected (extrinsic motivation), and amotivation are non-significant as $p > 0.05$.

Introduction

Several theories are instrumental in providing a strong theoretical background to the research study to find out the correlation between academic motivation and self-esteem. Pintrich and De Groot (1990) proposed an expectancy-value theory that determines the role of motivation in achieving goals. Expectancy and value are the two key determinants of this theory. Expectancy is the belief of the students in their ability to do educational tasks and having the sense to have control over

and be responsible for the educational errands they do, which was also considered in Bandura's study in 1997 (Bandura and Wessels, 1997). The second element is value, including intrinsic and extrinsic motivation and the worth that the students assign to the tasks. The second theory was projected by Deci and Ryan (1985), pioneers of this popular theory, and they first presented their manuscript entitled "Self-determination and Intrinsic Motivation in Human Behavior". Ryan and Deci stated that psychological needs are the basic needs of individuals. Motivation plays a key role in fulfilling the needs of individuals. The self-determination theory has been verified and tested experimentally. It distinguishes autonomous motivation from controlled motivation. The work that led to this theory was initiated with experiments investigating the impacts of extrinsic rewards on intrinsic motivation. They propounded a theory of motivation that put forward that individuals are to be driven by the need for and gain self-actualization or fulfillment. There are two main assumptions in this theory. The first assumption is that need is the basic thing that drives human behavior, gaining mastery over challenges, and captivating new experiences that are necessary for evolving a unified sense of self. The second assumption is extrinsic motivation, such as money, rewards, and prizes, and extrinsic motivation, such as to gain new knowledge to get happiness or satisfy one's aesthetic sense. Self-determination theory explains how to achieve psychological growth. The first thing is autonomy, which describes that individuals need to feel in control of their behavior and goals. This feeling enables an individual to take direct action, resulting in a real change that helps him feel determined. The second thing is competence, which means that individuals need to gain mastery or command over skills and tasks because they think that having command over tasks and skills is needed for their success and achievement. This helps them achieve their goals. The third thing is relatedness which means that individuals need to have a sense of attachment with their peers or other individuals in the community (Hagger and Chatzisarantis, 2015).

Maslow (1943) presented his content theory of the hierarchy of needs and explained his theory in terms of the satisfaction of needs. Motivation takes place due to dissatisfaction with these needs, which takes individuals in the proper direction for their fulfillment. Some are biological needs like hunger and thirst, which are fulfilled by food and water. In the same way, some psychological needs like competence and belongingness are necessary for the maintenance of human life. All these needs generate wants, wishes, and desires, which in turn bring motivation to human beings. Maslow's pyramid starts with the basic physiological needs and closes with the need for self-actualization. From the bottom, biological or physical needs have been placed on the first number, which includes nutrition, water, sleep for rest, shelter for accommodation, and medication. Security and self-protection have been placed on the second list, which includes the struggle for the absence of horror, nervousness, and panic and to search for security, stability, and law and order. On the third number, association, affiliation, and belonging to someone and to develop social relationships with choice groups, friends, associates, lovers, and well-wishers. On the top, the last step of the hierarchy, self-actualization, has been placed, which includes self-respect, respect for others' recognition, fame, and glory. McClelland et al. (2015), an American psychologist, presented an achievement

theory with a new approach that was quite different from others. He said that every individual had three main driving motivators. He categorized the needs or motives into three drives, i.e., achievement, affiliation, and power, and observed that internal or external factors are responsible for influencing these drives. The first drive arises out of the psychological need for competence, which means a struggle for excellence against a set standard and is the combination of three sources, i.e., the task itself, competing with himself and competing against others. The motive of a high level can be achieved through socialization, and parents are considered the best social influencers who promote this high level of motive, achieving high standards of living, and this motive can also be developed for personal growth as well (Reeve and Lee, 2014).

Academic motivation drives the students toward one or more precise goals (Küçüközkan, 2015). This motivation takes place in two ways. Firstly, a student gets motivated by his satisfaction or happiness, and the factors direct him to behave in a way that comes from his inner world, independent of the elements outside of the individual (Ural, 2009). These inherently rewarding sources bring a basic positive change in the behavior of the students and they show volunteerism, willingness, and the ability to make a choice, generating intrinsic results for the students and having meaningful results for them (Erdogan, 2013). Thus, the students will not expect any external reward but will grasp and learn the topic willingly because they will see their interest in it. In the real sense, the students feel satisfaction and happiness, so intrinsic motivation is more profitable and advantageous than extrinsic motivation. This kind of motivation is developed in students, and a dedicated teacher accepts it as a challenge. Secondly, extrinsic motivation takes place when some external factors, like awards, prizes, money, certificates, and punishment, assist in drawing the attention of an individual to behave in a particular way from the external world and independent of him. Rewards, punishment, and social support are the factors that are directly related to extrinsic motivation (Erdogan, 2013). The student or individual is motivated by the benefits that cause different actions to be performed by him. In the present educational scenario, extrinsic motivation is more advantageous than intrinsic motivation because sometimes the inner potentials of the students are only triggered by extrinsic motivation (Deci and Ryan, 2016). The attention of the students is to be drawn through academic motivation and the task is to be done in a shorter period, minimize distractions, and easily perceive the tasks (Tahiroglu and Aktepe, 2015). There are some extra motivational mechanisms that not only enhance students' self-esteem but are directly related to their academic achievement. Intrinsic goal orientation, extrinsic goal orientation, the value of the subject, control of learning beliefs, self-confidence, and test anxiety are some of the motivational mechanisms that are concerned with learning attainment (Aktan and Tezci, 2013). In addition to this, motivational mechanisms need to have three further sub-components, i.e., the value of the subject that is affected by the internal and external goal orientation; expectation, where learning beliefs and self-sufficiency exert influence upon it; and performance and excitement, which are influenced by test uneasiness and the level of the student's self-esteem (Lin, 2012). Moreover, these additional components are used to help the students understand and learn things. Learning attainment and efficacy may be different according to the curiosity,

wishes, and needs of individuals (Tahiroglu and Aktepe, 2015). Keeping the situation in mind, most of the research studies have shown a positive correlation between internal motivation and learning attainment, especially at the graduate level (Hayenga and Corpus, 2010). Academic motivation cannot be investigated in the real sense, as these studies do not provide complete information about the factors influencing students' academic motivation and their learning attainment. Academic motivation stimulates and assists teaching–learning activities to achieve the goal of learning attainment (Bostanpira and Shahrakipur, 2017). Some motivational techniques are used in teaching and are considered the basic skills of teaching. These techniques are: glow, observe, demonstrate, engage, embrace, provide, listen, and yield. A teacher is supposed to have a shining face so that the students may be drawn toward him. Observation is the second technique where a teacher is supposed to be very careful while observing the performance of the students on both sides, the positive side and the negative side. The students who perform well must be recognized, and those who make mistakes must be corrected. Thus, many conflicts and problems among the students can be resolved. The teacher should own the shortcomings and weaknesses of the students. The teacher is the helper and supporter of the students. Universities can increase or decrease academic motivation, self-efficiency, and the value probability of students for their better learning attainment and self-sufficiency. Educational experts and researchers think it is the most important factor in ensuring the students' continuous achievement. Various tough and new challenging tasks are to be tackled, time management is to be enhanced, and different skills and capabilities of the students are boosted, leading to better learning attainment (Jolehar and Farhadi, 2018). Academic motivation predicts the impacts of the tasks and stimulates the students to achieve desirable goals (Rafii et al., 2019). Some specific educational goal or purpose is the goal of academic motivation that coerces a student to behave in a specific way. Goals or purposes energize an individual to make him do things in a proper manner and at a proper time to easily achieve the targets. To achieve high marks in the examination, a student must burn the midnight oil. Motivation determines direction, as it is considered an invisible force that takes an individual or student beyond their limits. The low level of academic motivation of students is a challenging issue in the education system in almost many countries, and as a result, the governments and families of the students face huge economic losses due to this menace (Liu et al., 2018).

Self-esteem measures a person's values or worth subjectively and has nothing to do with the objective characteristics of an individual (Orth et al., 2018). Self-esteem is thought to be the personal evaluation of a person (MacDonald and Leary, 2012). Self-worth, self-regard, and self-respect are some of the equivalents that are used for self-esteem. The values of an individual are measured subjectively in terms of self-esteem (Sharma and Shirsath, 2014). Two types of self-esteem have been mentioned: high self-esteem and low self-esteem. Students demonstrating excellent school performance give themselves worth, have trust and confidence in their abilities and have high self-esteem, while studies have shown that students with poor performance in their school suffer from feelings of ineffectiveness, failure, frustration, and a lack of expectations, thus having low self-esteem. Moreover, intellectual

potentials such as reasoning and oral fluency are much more helpful in developing high self-esteem in students. Students who lack cognitive abilities tend to have low self-esteem. The most widely analyzed subjects are literature, mathematics, and language. The focus of the whole education system is on boosting the students' self-esteem, and all the strategies are made to achieve this objective (Moradi et al., 2018). On the other hand, high self-esteem enhances not only academic motivation but also the working conditions of the individual (Gurhan et al., 2017). There are so many factors that affect the self-esteem of students in one way or another. Self-reliance, a feeling of safekeeping, individuality, a sense of belonging, and a feeling of proficiency and competency are the most important factors that enhance the self-esteem of the students. Self-esteem and psychological aspects matter a lot in the comprehensive development of the students, which are overlooked by the teachers in the educational institutions as the groups of the students are made only based on their academic abilities just to control the problems of discipline in the educational institutions. Contrary to this, students' self-esteem is influenced and developed by witnessing the behavior of their teachers in the classrooms, which is not always advantageous on the part of the teachers as well as students, influencing students' self-esteem negatively. Thus, long-lasting results are not achieved. Only behavior modification theories can help develop and maintain the level of the students' self-esteem (Chua, 2012). Stets and Burke (2014), in a research study, referred to three dimensions of self-esteem, i.e., worth-based, efficacy-based, and authenticity-based, and then showed an association between these three dimensions and the three motives of the self.

The results of a study show a direct impact of academic motivation on self-esteem, which boosts and enhances the learning efficiency of students (Christensen et al., 2017). Raeisoon et al. (2014) conducted a research study on the direct relationship between academic motivation and self-esteem. Lai (2011) carried out a research study on motivation and it was concluded that complex ideas, perceptions, values, interests, and behaviors constituted the self-esteem of an individual and it increased with time as the individual grew. Intrinsic motivation was more stable than extrinsic motivation regarding achieving higher learning outcomes. Cognition is the main factor that affects university students' academic motivation. For a long time, researchers and scholars have been in search of finding out the correlation between general self-sufficiency and learning attainment (Van Thac and Chou, 2020). It is quite clear from these research studies that not only the intrinsic motivation and behavior of the individuals are influenced by self-efficacy, but the learning attainment, growth, development, and psychological endurance of the individuals are also affected by it in a very positive manner. Individuals with higher self-sufficiency tend to have higher learning attainment and are more motivated toward learning (Trautner and Schwinger, 2020). Academically motivated students show conformity behaviors to different educational issues and challenges more easily than those who have no academic pursuits (Masland and Lease, 2013). It has been observed that self-sufficiency is not only the verbal expression of individuals based on their self-analysis or perception, but it involves a complicated cognitive process, and it has been observed that individuals having various self-efficacies express

various behaviors for learning. It has also been perceived that students with high self-efficacy are supposed to have a high degree of influence on individual health conformity. Rahimi (2016) and Damota et al. (2019) conducted their research studies and proved that gender has an impact on a student's self-esteem, but this impact does not remain the same and differs for students at different levels. A significant difference has been observed in the students' self-esteem regarding their gender at different levels. However, the case is not the same everywhere, as most of the research studies have shown no substantial difference in students' self-esteem regarding their gender. Topçu and Leana-Taşcilar (2016) conducted research at Istanbul University, Turkey, to explore the role of academic motivation and self-esteem in learning attainment. These researchers proved that there is a positive impact of academic motivation and self-esteem on learning attainment, as both of these variables enhance the learning attainment of the students. Christensen et al. (2017) confirmed a positive correlation between academic motivation and self-esteem and proved a positive impact of academic motivation on boosting the self-esteem of students, which in turn enhances their learning efficiency. Sharifzadeh and Khojasteh (2018), in their research, have shown a direct relationship between academic motivation and self-esteem. Intrinsic motivation is the motivation for learning and pleasure, while extrinsic motivation is the motivation for some rewards and the fear of failure or punishment. Intrinsic motivation makes the students strive, acquire, initiate innovative ideas, and utilize their potential to achieve learning attainment. However, the distress of failure or punishment acts as a demotivating factor that hinders attaining the desired objectives. All three types of motivation cover intrinsic and extrinsic characteristics expressed by motivation to achieve the desired results.

Since 1950, academic motivation and self-esteem have been considered key elements in the entire teaching–learning process. Arshad et al. (2015), Department of Applied Psychology, Govt. Postgraduate College of Science Faisalabad, Pakistan, published his article through their joint venture, which assessed the self-esteem and academic performance among university students. A significant relationship was found between students' self-esteem and their learning attainment, while a significant difference was found between self-esteem and the academic performance scores of male and female students. The research indicated that female students have high scores on academic performance as compared to male students, and male students have high scores on self-esteem as compared to female students. Subon et al. (2020) explored the correlation between self-esteem and academic achievement among undergraduates at a private-sector university in Malaysia. A significant difference in self-esteem and learning attainment between male and female students was found. The research was conducted by Aryana (2010) on the relationship between self-esteem and academic achievement amongst pre-university students, highlighting the relationship between self-esteem and learning attainment in pre-university students. The results of the research study showed that there was a significant positive relationship between students' self-esteem and their learning attainment, and a significant difference was found in the academic achievement of male and female students, while no significant difference was found in the self-esteem of male and female students. Studies have shown that students who get motivated

show better output and efficiency in class, and students with high self-esteem strive better for their desired goals. Thus, academic motivation affects the self-esteem of the students positively, and in the same way, self-esteem is considered an important and key determinant of the academic motivation of the students. Academic motivation and self-esteem both determine the behavior of the students in the learning process. A research study conducted by Sivrikaya (2019) concluded that self-esteem determines not only the academic motivation of the students but also ensures their success, showing a persuasive impact on the students' learning and academic motivation. Moreover, research studies also show that academically motivated individuals have a history of high self-esteem (Ghilay and Ghilay, 2015). In the same way, no significant difference was found in male and female students' self-esteem. The findings of Kharsah and Latada (2016) confirmed a positive correlation between self-esteem and learning attainment. The young adolescents of the United States were compared with those of England, and for this, qualitative and quantitative data were collected from the students of both states from the beginning to the end of the academic year. Quantitative results showed that low self-esteem was related to multiple indicators of late-year students' learning attainment. However, country differences matter a lot, as British students show higher self-perceptions regarding their learning attainment than students in the United States (Booth and Gerard, 2011). Akinleke (2012) discovered the impact of anxiety and self-esteem on learning attainment, selecting 250 students from the polytechnic institute as a sample. Two questionnaires were handed over to them that took 40–45 min to be completed by the students. This process was done during duty hours. First, the data were collected through the questionnaires, and the GPA was also collected. Then the GPA of the students was compared with scores obtained from the questionnaires. A positive correlation was found between self-esteem and learning attainment, while students with low anxiety had higher learning attainment. It was a unique study in the sense that the findings of the research were helpful for all the stakeholders to assist the students in dealing with their basic problems, i.e., anxiety and the process of learning. These findings were also helpful in mastering the challenges that were likely to result in higher learning attainment among the students.

Educational challenges may pose serious threats to the growth and continuous development of the students, which may adversely cause their dropouts and thus put their future and professional careers at risk (Ansary and Luthar, 2009). These challenges may be overcome through the increasing recognition and critical role of academic motivation in the learning attainment of students (Jiang and Kleitman, 2015; Suprayogi et al., 2019). Ahmed et al. (2018) explored that students' academic motivation and self-esteem have a positive impact on their engagement in different learning activities, and in the same way, Talsma et al. (2018) investigated and concluded reciprocally that high learning attainment has a positive impact on academic motivation and self-esteem. Thus, the importance of self-esteem from the perspective of the challenges faced by the students cannot be ignored in any way. Arshad et al. (2015) and Liu et al. (2018), through their empirical research study, have shown a positive correlation between students' self-esteem and learning attainment. Academic motivation and self-esteem are the key determinant factors in an educational setting and students who are academically motivated and have high self-esteem

face the challenges boldly. Through their research study, Soufi et al. (2014) found that different variables of academic motivation and various learning techniques determine the role of academic motivation. Therefore, high self-esteem has not only an impact on academic motivation but also brings improvement to the working and psychological conditions of the students. Most countries face the most serious problem in the education system: the students' academic motivation, which is thought to be a real cause of social, cultural, and economic loss to families and governments. A high level of academic influence on students' learning attainment has been a key indicator not only in evaluating the educational setup but also in ensuring a bright future for the community as well (Liu et al., 2018).

Research objectives

In this research work, we aim to achieve the following research objectives:

- To assess the academic motivation of graduate-level students in the universities of southern districts of Khyber Pakhtunkhwa.
- To examine the self-esteem of graduate-level students in the universities of southern districts of Khyber Pakhtunkhwa.
- To find out the impact of students' academic motivation on their self-esteem at the graduate level.
- To compare students' academic motivation and self-esteem gender-wise at the graduate level.

Hypotheses

- Ho1. There is no significant impact of students' academic motivation on their self-esteem at the graduate level.
- Ho2. There is no significant difference in the mean scores of academic motivation and self-esteem of male and female students at the graduate level.

Research problem

Academic motivation and self-esteem are the most important terms that are deeply related to the students, especially at the graduate level, where students are more mature and respond in a good manner when their opinions are sought out through different statements in the questionnaire. So, collecting data from the students at universities was thought to be the best source for this research study. Overall, the benefits of high self-esteem are mostly related to enhanced initiative and pleasant feelings (Hagger and Chatzisarantis, 2015). Most of the research studies have been conducted at the primary and secondary or postgraduate levels, while this study was carried out at the graduate level. Rehman and Haider (2013) conducted a research study and found a positive impact of academic motivation on self-esteem at the secondary level. In the same way, Gbollie and Keamu (2017) conducted a research study and explored the impact of motivation on students' learning outcomes at the secondary level. In this research, the data

have been collected from graduate-level students. Moreover, nine disciplines have been selected unanimously from each of the four public sector universities. In addition to this, the respondents have been selected from southern districts who have similarities in their culture, traditions, physical and academic environment, and even ethnic background, etc. Consequently, all these things will give originality to the research study and will open new horizons for the researcher in the future. The impact of academic motivation on self-esteem was found while applying and using linear regression. The area of the research is important, but this area has not been focused on Pakistan. Keeping in mind the importance of the area, it was felt greatly necessary to conduct an extensive study on the topic, "Impact of students' academic motivation on their self-esteem at the graduate level."

Methodology

Research design

A quantitative inferential survey research design was thought to be the most appropriate to infer the concrete results, as the study is descriptive-analytical inferential in nature. In a survey research design, the survey is used as a tool for the collection of data (Tessler et al., 2019). The respondents respond to the items on the survey in numerical order. This design is used to respond to statements that involve describing, comparing or searching for relationships between variables (Creswell et al., 2014). This design is used in the social sciences where a researcher wants to collect data from a large sample size (Aarons, 2020) and where the group is focused, not an individual. Descriptive and inferential statistics are used. The data collected from the respondents fulfill all the above conditions, so this design is quite fit to examine sociological and psychological variables such as academic motivation and self-esteem in their natural forms. Both versions, i.e., the English version and the Urdu version, were used to collect the data from Bachelor of Science (BS) students.

Population of the study

All the students studying in nine disciplines at the four public sector universities at the graduate level in the southern districts constitute the population. The approximate size of the population in this study was 1991 students (male = 1,595 and female = 396). These students have been registered in the BS program in nine disciplines at the four universities.

The sampling processes

A systematic random sampling technique was used where every second respondent was taken from the concerned list of respondents from the four public sector universities in the southern districts of Khyber Pakhtunkhwa, namely, Gomal University Dera Ismail Khan, University of Science and Technology Bannu, Khushal Khan Khatak University Karak, and Kohat University of Science and Technology Kohat as shown in Table 1. The sampling

TABLE 1 University-based detail of the number of male and female students.

S. No	Name of the university	Frequency			Percentage		
		M	*F*	Total	*M*	*F*	Total
1	Gomal University, Dera Ismail Khan	72	41	113	19.2	11	30.2
2	University of Science and Technology, Bannu	53	26	79	14.1	6.9	21
3	Khushal Khan Khatak University, Karak	45	24	69	12	6.4	18.4
4	Kohat University of Science and Technology, Kohat	82	32	114	21.9	8.5	30.4
	Overall	252	123	375	67.2	32.8	100

TABLE 2 Cronbach's alpha values for various constructs of academic motivation and self-esteem.

S. No	Academic motivation	Items	Alpha value
1	Knowledge (intrinsic motivation)	4	0.91
2	Accomplishment (intrinsic motivation)	4	0.89
3	Stimulation (intrinsic motivation)	4	0.88
4	Identified (extrinsic motivation)	4	0.84
5	Introjected (extrinsic motivation)	4	0.87
6	External regulation (extrinsic motivation)	4	0.93
7	Amotivation	4	0.92
	Total	28	0.89
Self-esteem			
1	Positive statements (items)	5	0.88
2	Negative statements (items)	5	0.76
	Total	10	0.82

size comprised 375 students, of whom 255 were male students and 120 were female students, registered in 9 disciplines at the graduate level in 4 public sector universities in the southern districts of Khyber Pakhtunkhwa while using the Morgan (1970) formula, which is considered quite authentic (Chuan and Penyelidikan, 2006). The desired data were gathered from the students of the respective departments to authenticate the results of the research study, and it was considered an unbiased representation of the total population (Turner, 2020). The study period comprised 2 years, i.e., with effect from January 2021 to December 2023.

Research tool

In this research study, a standardized form of questionnaire consisting of 28 items was used to measure the academic motivation of the university students. This tool was first developed by Vallerand and Blssonnette (1992). This tool was used by Orsini (2017) in his research study to measure the academic motivation of students in a dental school. The statements in the questionnaire belong to extrinsic motivation, intrinsic motivation, and amotivation.

Rosenberg (1965) measured self-respect by assessing both positive and negative emotional states about the self. The tool

recognized itself as a self-reporting instrument for assessing the self-esteem of an individual. So, the same standardized scale was used in the present research study on a 5-point Likert scale format to suit the research study. Equal weightage was given to positive and negative statements in the tool.

Validation and reliability of the tool

Standardized forms of tools were used for measuring the academic motivation and self-esteem of the students. The scale about academic motivation was accepted almost by all the experts, as no single item was dropped. The items were made relevant to local Pakistani culture and context so that the respondents may be able to understand and respond, in a better way, to the items in the questionnaire. The same was the case with the questionnaire about self-esteem, and all the items were accepted in the same position as no single item was dropped. Cronbach's alpha values were calculated for each construct as well as for the whole variable to measure the reliability of items of academic motivation. The alpha value ranges from 0.84 to 0.93 while the value for the whole scale is 0.84, which is thought to be authentic. The alpha value for self-esteem ranges from 0.76 to 0.88, while the value for the whole scale is 0.82, which is thought to be reasonable (see Table 2).

The procedure and process for data collection

After assuring the heads of the nine selected departments of each of the four public sector universities in the southern districts of Khyber Pakhtunkhwa of the secrecy and use of the data for academic and research purposes and showing them the questionnaires with a letter of request from the competent authority, they granted formal permission to collect the data from the graduate level students. The questionnaires were distributed among the respondents personally. All the required data were collected on the spot from the graduate-level students. Those students who could not respond on the spot were requested to send the filled-out questionnaires through the post office or e-mail. A total of 400 questionnaires on academic motivation and the same number of questionnaires on self-esteem were distributed among the respondents of the selected departments of the four universities, 380 usable questionnaires were returned with a response rate of 95%.

TABLE 3 Mean scores and standard deviation of different constructs of academic motivation.

S. No	Category	Mean	Standard deviation
Academic motivation			
1	Toward knowledge (IM)	4.41	0.38
2	Toward accomplishment (IM)	3.50	0.50
3	To experience stimulation (IM)	4.44	0.34
4	Identified (EM)	3.88	0.68
5	Introjected (EM)	4.45	0.35
6	External regulation (EM)	4.18	0.55
7	Amotivation	4.46	0.30
8	Overall academic motivation	4.15	0.47
Self-esteem			
9	Depreciation	4.10	0.50
10	Appreciation	4.20	0.46
11	Overall self-esteem	4.15	0.48

TABLE 4 Model summary of regression for predicting students' self-esteem.

Model	R	R^2	SE	F	Significance	F
1	0.68	0.46	0.3354	327.39	0.000	0.17
2	0.72	0.51	0.3193	200.46	0.000	0.18
3	0.72	0.53	0.3152	140.61	0.000	0.20
4	0.74	0.55	0.3096	112.97	0.000	0.18
5	0.74	0.55	0.7079	92.37	0.000	0.12

Data organization

A specific code was given to each student's response in the questionnaire on the top of the right corner, and in the same way, a separate code was allotted to each district as well as to gender. There was also biographical data where separate codes were assigned to the variables.

Data analysis

The data were analyzed using a statistical package for social sciences (SPSS), version 23. Descriptive statistics were applied just to find out the mean and standard deviation (SD) of the academic motivation and self-esteem of the students. Linear regression was used to find out the impact of academic motivation on the self-esteem of the students. Linear regression was predicted based on several assumptions. There exists a linear relationship between the dependent variable and independent variable, using scatterplots that show a straight line rather than a curve one. The second assumption is the normality of the data. The data were normally distributed because the differences between observed and predicted values were normally distributed by using the Kolmogorov–Smirnov formula. The third assumption was that correlation coefficients were ideally below 0.80. The fourth assumption was that the sample size was large enough. To find the difference in the self-esteem of male and female students at a graduate level, an independent t-test was applied to find concrete results. Five assumptions were used for the t-test. The first assumption was that the data were continuous and normally distributed. The second assumption was that data were collected randomly, the true representation of the population. The third assumption was that the significance level was 0.05. The fourth assumption was that the

sample size was large. The fifth assumption was homogeneity, or equality of variance in the data.

Results

Table 3 shows the mean score and SD of the different constructs of academic motivation and self-esteem. The mean scores of the "knowledge" and "stimulation" parts of intrinsic motivation and the "introjected" and "external regulation" parts of extrinsic motivation show higher values. Moreover, the mean score of overall academic motivation is high as well. On the other hand, the "accomplishment" part of intrinsic motivation and the "identified" part of extrinsic motivation fall within the range of the average level, which means that students at the graduate level are motivated intrinsically as well as extrinsically. The mean score and SD of overall self-esteem fall in the range of higher values, which means that the students had high self-esteem.

Table 4 reveals the results of the linear regression on predictors of overall academic motivation. Five models have come into existence where the predictors of the 5th model best interpret the overall academic motivation. The R^2 (coefficient of determination) value is 0.55, showing that 55% of the change in the criterion variable, i.e., self-esteem, is determined by five of the predictors, i.e., overall academic motivation, identified and external regulation parts of the extrinsic motivation, stimulation, and knowledge parts of the intrinsic motivation. The Cohen value of the 5th model is 0.12, showing a small effect size but significant at 0.05 and even at 0.01, 0.001 level of significance.

Table 5 reveals the results of the regression in predicting self-esteem. Five models have come into existence in the coefficient of regression, where the 5th model is considered the best one and quite reasonable, as this model offers a list of the predictors that best illuminate the overall academic motivation. Moreover, the predictors in it best explain self-esteem. In the 5th model, a unit change in overall academic motivation, knowledge and stimulation parts of intrinsic motivation, and identified and external regulation of extrinsic motivation bring 0.678, 0.218, 0.223, 0.122, and 0.172 change, respectively, in self-esteem, while the constructs i.e., accomplishment (intrinsic motivation), introjected (extrinsic motivation) and amotivation have been excluded from the model because their results are non-significant as the $p > 0.05$.

Table 6 pinpoints the comparison of academic motivation and self-esteem between male and female students. An independent t-test was used as the data collected were continuous. A systematic random sampling technique has been applied for the sample size.

TABLE 5 Coefficient of regression (self-esteem).

Model		Standardized coefficient		
		B	T	Sig (p)
1	Constant		6.280	0.000
	Academic motivation	0.684	18.094	0.000
2	Constant		5.027	0.000
	Academic motivation	0.572	14.272	0.000
	Identified (extrinsic motivation)	0.252	6.295	0.000
3	Constant		2.828	0.005
	Academic motivation	0.555	13,881	0.000
	Identified (extrinsic motivation)	0.221	5.426	0.000
	External regulation (extrinsic motivation)	0.123	3.254	0.001
4	Constant		4.759	0.000
	Academic motivation	0.579	14.566	0.000
	Identified (extrinsic motivation)	0.201	4.968	0.000
	External regulation (extrinsic motivation)	0.145	3.860	0.000
	Stimulation (intrinsic motivation)	0.137	3.821	0.000
5	Constant		5.106	0.000
	Academic motivation	0.678	11.461	0.000
	Identified (extrinsic motivation)	0.218	5.332	0.000
	External regulation (extrinsic motivation)	0.223	4.365	0.000
	Stimulation (extrinsic motivation)	0.122	3.356	0.001
	Knowledge (intrinsic motivation)	0.172	2.41	0.026

TABLE 6 Comparison of academic motivation and self-esteem between male and female students at the graduate level.

Category	N	Mean	SD	df	T	P
Academic motivation						
Male	255	4.16	0.48	373	0.134	0.892
Female	120	4,15	0.44	255		
Self-esteem						
Male	255	3.72	0.46	373	0.266	0.792
Female	120	3.73	0.44	241.5	0.269	

d.f: difference of freedom.

departments, thus helping and encouraging them to take an interest in higher education.

Discussion

This research study stands out from the previous studies based on three main reasons: First, Most of the research studies have been conducted at primary, secondary, or postgraduate levels, while this study was carried out at a graduate level, where students are more mature and respond in a good manner when their opinions are sought out through different statements in the questionnaire. So collecting data from the students of universities was thought to be the best source for this research study, thus producing more reliable and concrete results. Secondly, the respondents were selected from southern districts who have similarities in their culture, traditions, physical and academic environment, and even ethnic background, etc. Consequently, all these things will give originality to the research study and will open new horizons for the researcher in the future (Mayer et al., 2012). Thirdly, in most of the previous research studies, self-esteem has been used as an independent variable, but in this research study, it has been used as a dependent variable, which makes the study unique from the previous studies. Fourthly, the researcher has chosen the sample size proportionately to get more reliable results. Motivation is the central point directing individuals toward the target, and its weakness or strength can be helpful to attain the target or otherwise. Therefore, recognizing the reasons influencing academic motivation in various academic clusters and stages can take us to strategies for eliminating, decreasing, or increasing the motivational factors. This research aims to find out the impact of students' academic motivation on their self-esteem at the graduate level. The results showed a significant relationship between academic motivation and self-esteem (Hakim, 2015). The results reveal diverse impacts of students' academic motivation on their self-esteem. The p-values of regression for different facets are not the same. Some constructs of academic motivation show high mean scores, while others show average mean scores. Overall results reveal that students are academically motivated, which means that students are interested in carrying on BS-level studies in universities. The mean scores of the two facets of self-esteem, i.e., appreciation and depreciation, also show that students at the graduate level have high self-esteem. Almost all the constructs of academic motivation have a positive impact on the self-esteem of students at the graduate level. This diversity in the student's academic motivation is due to various reasons. The family

The data were normally distributed as the significance level was 0.05. A t-test was applied as the sample size was quite large and homogeneous or equal variance existed in the data. Since mean scores and p-values of male and female students indicate that both male and female students are equally motivated academically. Since male and female students have almost the same mean scores and p-values, this indicates that no significant difference has been found between male and female students' self-esteem. There may be so many potential reasons for it. One reason is that parents give equal weightage to their children regarding their education, health, social status, and other basic needs. The female students are treated on par with the male students. The university teachers give equal importance to male and female students because both genders sit in the same class and learn from the same teachers. Male and female students are enthusiastic to contribute to the development of the country because of the increasing demands of both genders. Government policies are also instrumental in encouraging both genders to work in various

background, the diverse economic conditions of their parents, and the number of their siblings do count in this regard. Academic motivation helps to focus the attention of the students on what needs to be done in a shorter period, minimize distractions and easily perceive the tasks (Tahiroglu and Aktepe, 2015). Individuals are driven toward educational goals as the role of academic motivation is very crucial in determining human behavior and performance (Kian et al., 2014; Turan, 2015). Studies among university students have shown a significant impact of academic motivation on self-esteem (Akram and Suneel, 2018).

Based on the findings and results of the study, all the values of academic motivation are positive, showing that the students at the graduate level are academically motivated as the mean score of overall academic motivation is high. There are two basic constructs of self-esteem, i.e., depreciation and appreciation. The mean of overall self-esteem falls in the range of high, indicating that the students at the graduate level in universities are mature enough and have high self-esteem at the graduate level. Since the mean score and p-value of male and female students are almost the same while the t-value is also nearly the same, both genders are equally motivated academically, and the results show no significant difference between male and female students regarding their academic motivation.

In most cases, the previous research studies have endorsed the results of the present study, while some of them have shown otherwise. Since the mean score and p-value of male and female students are almost the same while the t-value is also nearly the same, no difference has been shown in the academic motivation and self-esteem of male and female students at the graduate level. There are five models, and the 5th model provides a list of the five predictors that best explain the overall academic motivation. The 5th model indicates that 55% of the change in the criterion variable, i.e., self-esteem, is determined by five of the predictors: overall academic motivation, identified and external regulation parts of the extrinsic motivation, and stimulation and knowledge parts of the intrinsic motivation. The Cohen value of the 5th model shows a small effect size but is significant at 0.05 and even at the 0.001 level of significance.

In this research study, the diverse impact of students' academic motivation on self-esteem has been shown. The p-values of multiple linear regressions for different facets are not the same. Overall results reveal that students are intrinsically and extrinsically motivated, which means that students are interested in carrying on BS-level studies in universities to gain a positive and permanent change in their behavior and utilize their knowledge, expertise, and new ideas in the market to gain worldly benefits and fulfill the demands of the market. Almost all the constructs of academic motivation have a positive correlation with the self-esteem of the students at the graduate level. This diversity in the student's academic motivation may be due to various reasons. The family background, the diverse economic condition of their parents, and the number of their siblings matter a lot in this regard.

Conclusions

The findings of the current study reveal a positive impact of academic motivation on the self-esteem of university students at

the graduate level. Based on the findings of the study, all the values are positive, showing that graduate-level students are academically motivated, which enhances their self-esteem. The mean score and SD of overall self-esteem fall in the range of higher values, which means that the students had high self-esteem. One of the reasons is that students at the graduate level are mature enough. Different values of mean scores for different facets have been shown. Almost all the constructs of academic motivation have a positive impact on the student's self-esteem at the graduate level. There are five models, and the 5th model provides a list of the five predictors that best explain the overall academic motivation. The R^2 (coefficient of determination) value is 0.55, which means that 55% of the change in self-esteem is determined by five of the predictors: overall academic motivation and its four constructs (i.e., identified, external regulation, stimulation, and knowledge). The Cohen value of the 5th value is 0.12, which shows a small effect size but is significant at 0.05 and even at the 0.001 level of significance. In the 5th model, a unit change in overall academic motivation, knowledge, and stimulation parts of intrinsic motivation and identification of the external regulation of extrinsic motivation brings 0.678, 0.218, 0.223, 0.122, and 0.172 changes, respectively, in the self-esteem of the students. The other three constructs of academic motivation, i.e., accomplishment, introjected, and amotivation, are non-significant. There is no significant difference between students' academic motivation and self-esteem based on their gender.

Applications

1. The research findings indicate a positive impact of academic motivation on self-esteem at the graduate level. The overall academic motivation of university students at graduation is high, which means that the students at the graduate level are academically motivated. The mean score of overall self-esteem is positive and high, which means that students at the graduate level in the universities in southern districts have high self-esteem. The findings of the research study revealed that students at the graduate level are more motivated, which means that they are interested in the BS program to gain knowledge and then utilize their skills in the job market for the betterment and development of society in the future. The basic responsibility of university teachers is to take measures to enhance the academic motivation of students at the graduate level. For this purpose, it is necessary to create an attractive and conducive environment for the students. Parents may be involved in the learning process of their kids by inviting them to participate in educational conferences and seminars. Students may be encouraged by granting meritorious scholarships to deserving students so that they may not face financial problems and may be able to compete with other students.

2. University teachers may be equipped with all types of teaching tactics to make their students capable of integrating the essence of academic motivation and needs to achieve positive and desirable results. These teachers may contribute to helping their students clearly understand so that their critical thinking, self-efficacy for learning, and intrinsic goal orientation may

be enhanced. The students may be encouraged by giving them equal opportunities irrespective of their gender, family background, and economic status. For this purpose, the supportive style of the teachers may help provide varied experiences to the students. This may develop a sense of competition among the students and provide a chance to work with peers and groups. All these techniques are very helpful to enhance their self-esteem and improve their learning attainment. Rewards and praise for the students may assist the university teachers in achieving the goals and targets easily.

3. Parents are also instrumental in building up the self-esteem of their kids by enhancing their academic motivation through planning strategies that may encourage them. Parents, being the essential socializers, can disclose the truth to them and remove their underestimation of academic motivation and self-esteem. This may help their students feel that their parents are their real benefactors and well-wishers. Parents and guardians are proposed to have positive and realistic behavior toward their youngsters' abilities and actual talents, irrespective of their gender. The real potential of the students may be properly exposed by giving them equal weightage and importance on the part of their parents.

Recommendation for further research

The research study was conducted to examine the impact of students' academic motivation on their self-esteem at the graduate level in the southern districts of Khyber Pakhtunkhwa, Pakistan. The data were collected from students in the southern districts of Khyber Pakhtunkhwa who were enrolled in the BS program. Standardized questionnaires were used for students' academic motivation and self-esteem. The limitations of both questionnaires are restricted, so there is a space and a reasonable requirement for further research using various scales and techniques for data collection, such as face-to-face interviews, observation techniques, and peer evaluation. Therefore, it is recommended that the scope of the studies in the future be widened and mixed-method studies be carried out in different environments to get more accurate and verified results. Thus, the results may be more authentic and improved. The results may be used to improve the teaching–learning process at the graduate level in universities. The sample size may be made homogenous by selecting only those respondents who have the same family background and social and economic status. While collecting the data, the social and physical environment may be kept the same, thus concrete and reliable results may be achieved.

Limitations

In this research article, data have been collected only through standardized scales where the respondents' decisions are restricted and limited, so there is a space for other techniques and methods to be used to collect the data, such as face-to-face interviews, observation techniques, and peer evaluation. So, it is proposed that mixed methods can be carried out in different environments and from various perspectives so that the results of the research can be tested and verified. The respondents belong to different families and have different socio-economic backgrounds and statuses. Moreover, the data in various departments have been taken in different physical and social environments, which have also limited the scope of the study. There is a lack of complete homogeneity of culture, social norms, and civilization among the students of the four universities, which has also limited the scope of the study. The structure of the families and the education level of the parents of the students have also affected the results, thus limiting the scope of the study. In addition to this, the behavior, teaching methodology, and interest of the university teachers vary, which affects the academic motivation of the students in one way or another. All these factors have restricted the results of the study.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Ethical approval was not required for the study involving human participants in accordance with the local legislation and institutional requirements. Written informed consent to participate in this study was not required from the participants in accordance with the national legislation and the institutional requirements.

Author contributions

HU: Conceptualization, Data curation, Investigation, Methodology, Software, Writing – original draft, Writing – review & editing. GS: Project administration, Supervision, Writing – review & editing. HK: Supervision, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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