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Relationship between cultural diversity awareness and achievement motivation of medical students at the undergraduate level in Pakistan

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This study investigates the relationship between cultural diversity awareness and achievement-oriented goals among undergraduate medical students at the university level. Utilizing the Achievement Motivation Model by [McInerney et al. \(2003\)](#) and the General Fulfillment Aims Orientation Scale (GAGOS), it examines mastery, performance, and social goals. Additionally, it incorporates [Ennejar's \(2021\)](#) cultural diversity awareness model to assess students' attitudes toward cultural diversity. Data were collected from 80 final-year MBBS students through a survey and analyzed using SPSS for descriptive and inferential statistics. Results show that students have a high level of cultural diversity awareness and recognize biases, supporting diverse voices and cultural differences. A significant positive correlation ($r = 0.948$, $p < 0.05$) between cultural diversity awareness and achievement motivation was found, although no significant differences were observed based on gender or age. These findings suggest that enhancing personal development, altruism, and social recognition may boost motivation and that diversity and inclusion programs are crucial for fostering environments that promote achievement motivation.

KEYWORDS

cultural diversity awareness, achievement motivation, survey method, medical students, relationship

1 Introduction

In an increasingly globalized world, cultural diversity within educational institutions has become a significant factor influencing student interactions, learning experiences, and overall academic success. Medical Universities, like many other institutions, hosts a diverse student population. Understanding how cultural diversity awareness affects achievement motivation among these students is crucial for fostering an inclusive and effective learning environment. Cultural diversity awareness refers to recognizing, respecting, and valuing the differences and similarities among individuals from various cultural backgrounds ([Tella, 2007](#)). It is essential in a university setting where students from diverse ethnicities, religions, and socioeconomic statuses converge. Such awareness can enhance social cohesion, reduce prejudice, and promote mutual respect among students. By appreciating different cultural perspectives, students can develop better communication skills, empathy, and adaptability, which are vital for their personal and professional growth

(Tahiroglu and Aktepe, 2015). Achievement motivation is a critical psychological factor that drives students to attain academic success. It encompasses various elements, including mastery goals (the desire to understand and master a subject), performance goals (the aspiration to perform better than others), and social goals (the intention to gain social approval or fit in) (Fatima, 2017). High achievement motivation is often linked to better academic performance, increased persistence, and greater satisfaction with the learning process (Fatima et al., 2018). The relationship between cultural diversity awareness and achievement motivation is complex and multifaceted (Ali et al., 2018).

Competence or efficacy is the essence of achievement. Motivation involves a persistent, directed, and driven behavior. It is widely recognized that an individual's inner drive to succeed is known as achievement motivation (Ali et al., 2023). Research has shown a strong correlation between students' academic achievement and their achievement motivation. Motivation and attitude are identified as the best indicators of student academic performance (Sikhwari, 2014). Highly motivated students tend to excel more effectively than their less motivated peers (Tella, 2007). Over the years, many elements of achievement motivation have been examined. Among the most significant are the goals for achievement in the performance stage, which reflect a preference for an emotion-based approach to success and failure. According to Shor and Bernhard (2003), the sense of accomplishment or failure serves as the motivation for fulfillment. McInerney et al. (1997) suggest that success aspirations represent people's desires for something they've attained or experienced.

The core of the model lies in its success goals, which shape its characterization and value (Li, 2010). Competency is assessed using three criteria: an outdated standard, an intrapersonal standard representing an individual's highest potential, and an interpersonal standard that is widely accepted (Leten et al., 2006). Currently, normative requirements fall under a layer called "performance intention," while absolute and community benchmarks are categorized under "mastery aim." Ability is evaluated based on whether it focuses on a real opportunity worth pursuing (accomplishment) or an adverse possibility one wishes to avoid (failure) (McInerney et al., 1998). Advocates for higher education aim to emphasize positive outcomes in the learning environment for all college students, irrespective of race, background, politics, or religion. Diversity encompasses socioeconomic status, gender, race, and ethnicity (Miller et al., 2007). Tajfel and Turner (2003) assert that a diversity strategy is based on the idea that individuals from various racial and ethnic backgrounds can contribute to diverse settings, such as workplaces and educational institutions. However, the increasing diversity of thought among 21st-century university students presents unique challenges for those who are not adequately prepared to achieve specific goals. All members of the faculty network should understand the concept of achievement motivation in college students, but few recognize how lifestyle choices can influence it. Cultural background can lead to varying reasons for achievement, and the definition of "achievement" itself differs across cultures (Singelis, 2000). Every college student is acutely aware of the consequences of failure and the need for fulfillment. The individual's level of achievement motivation also personally impacts them (Sommers et al., 2008). Earlier studies suggest that people experience less enjoyment when they no longer seek rewards or fear penalties (Rauf et al., 2023). However,

they achieve mastery in their endeavors once they realize it is within their control (Fatima et al., 2018). According to Fatima et al. (2018), each scholar has three main goals: social goals, mastery intentions, and performance intentions. Therefore, this study aims to assess the relationship between cultural diversity and students' motivation for achievement at the undergraduate level at Rawalpindi Medical University.

Medical universities in Pakistan, with their diverse student body, provide a unique context to study the effects of cultural diversity awareness on achievement motivation. Understanding this relationship can help the university develop targeted interventions and policies to enhance cultural awareness among students and faculty. Such initiatives can include cultural competency training, inclusive curricula, and support services that address the specific needs of diverse student groups. Exploring the effect of cultural diversity awareness on the achievement motivation of undergraduate medical students is essential for fostering a supportive and inclusive academic environment at public medical universities. By understanding and addressing the nuances of this relationship, the university can better support its diverse student population, ultimately enhancing their academic success and personal development. The goal of this study is to understand how cultural diversity impacts peer relationships. The research has shown how students from different backgrounds can interact with each other to enhance their learning opportunities. It also examined how a diverse student body could adapt their critical thinking during social interactions with peers. The study was conducted to explore students' perceptions of cultural diversity and achievement-motivated behaviors at the undergraduate level. The diverse backgrounds of students may influence their learning opportunities and affect achievement motivation variables, including mastery, performance, and social goals. Additionally, this study aims to evaluate how cultural diversity awareness is correlated with the students' drive for achievement at the university level.

1.1. Research objectives

This study aims to investigate:

- The level of cultural diversity awareness and achievement-oriented goals among undergraduate medical students at public medical universities.
- How cultural diversity awareness correlates with students' achievement motivation, specifically focusing on mastery, performance, and social goals.
- Mean differences in cultural diversity awareness and achievement motivation of students based on their demographic factors.

1.2 Study framework

This study utilized the achievement motivation model developed by McInerney et al. (2003). The General Fulfillment Aims Orientation Scale (GAGOS) was employed to measure success motivation. GAGOS is composed of three scales with a

total of 15 items, targeting different aspects of motivation: Mastery (e.g., “I am most stimulated when I see my work improve”), General Overall Performance (e.g., “I am most inspired when I am praised”), and Well-Known Social (e.g., “I am most motivated when I work with others”). This scale was designed to capture broad motivation across these three areas. Additionally, the study incorporated a cultural diversity awareness model developed by Ennejar (2021). This model includes a questionnaire aimed at assessing attitudes and perspectives on cultural diversity. It consists of 32 statements related to cultural awareness, prejudice, and inclusion. Participants rate the frequency with which each statement applies to them. The total score is calculated to determine the level of cultural diversity awareness, ranging from very low to very high. Higher scores indicate greater awareness of prejudice and bias, along with a stronger appreciation for diversity.

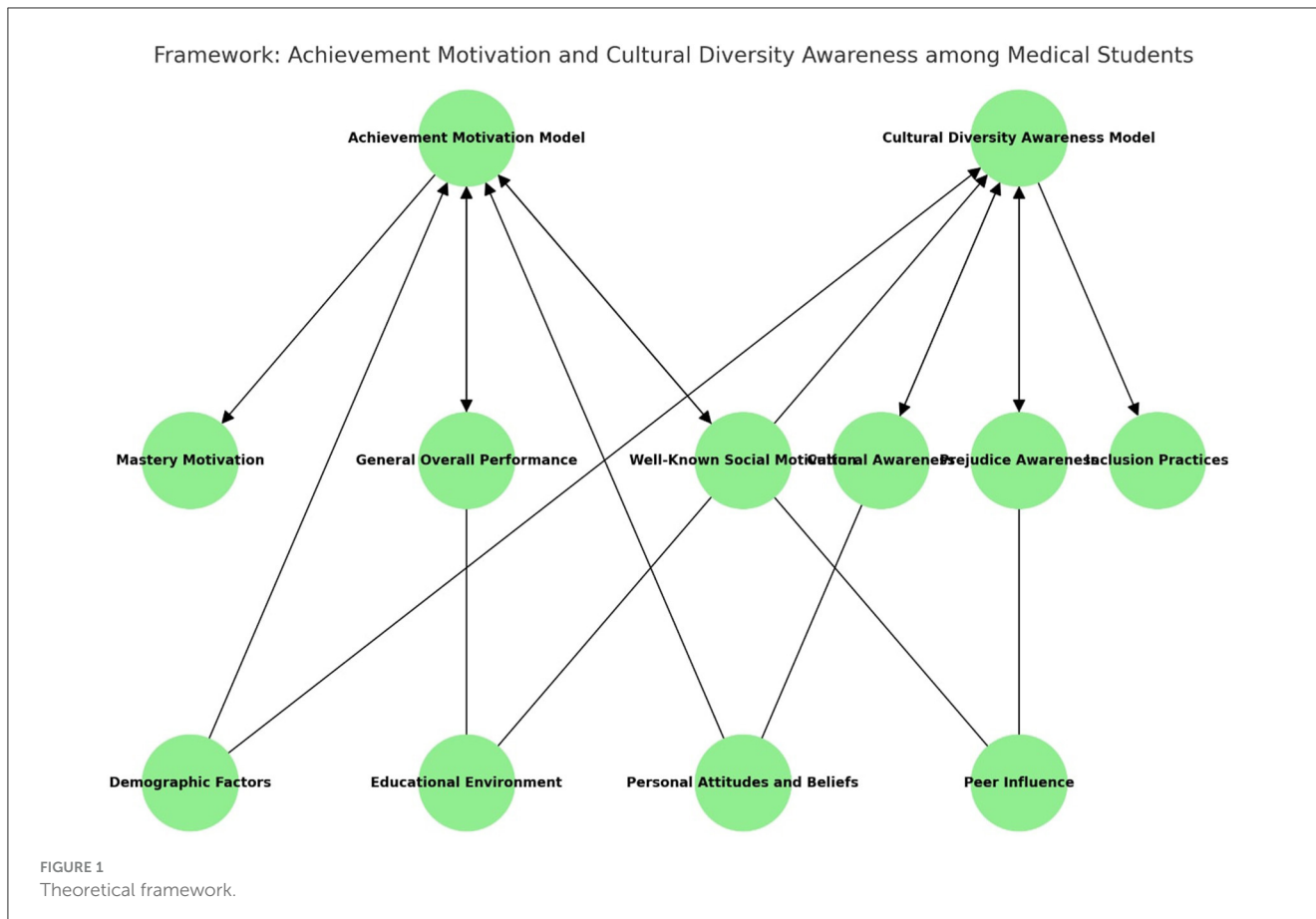
The Achievement Motivation Model is assessed using the General Fulfillment Aims Orientation Scale (GAGOS), which measures Mastery Motivation, General Overall Performance, and Well-Known Social Motivation. The Cultural Diversity Awareness Model is assessed using a questionnaire that evaluates Cultural Awareness, Prejudice Awareness, and Inclusion Practices. Correlational Analysis examined the relationship between different types of motivation and levels of cultural diversity awareness and comparative Analysis compared scores across different demographic groups to understand the influence of cultural diversity awareness on motivation. This framework (Figure 1) sets the stage for correlational analysis to examine relationships between different types of motivation and levels of cultural diversity awareness, as well as comparative analysis across different demographic groups.

2 Literature review

A subculture represents a blend of human knowledge, attitudes, awareness, and actions. According to Sadiq et al. (2023) a cultural group is often defined by shared values, objectives, and attitudes. Reviewing previous studies highlights the importance of lifestyle in human existence, as it encompasses various aspects of life. Regardless of age, gender, or ethnicity, lifestyle is closely linked to human behavior. This phenomenon has an immediate impact, influencing all facets of human life, including perspectives, fundamental assumptions, perceptions, and dating behaviors (Brunstein and Heckhausen, 2018). Variations among humans, such as gender, race, ethnicity, and social standing, are referred to as diversity. Earlier research suggests that diversity is a strategy to highlight the contributions individuals from various racial and ethnic backgrounds bring to workplaces, educational institutions, and other settings (Singh, 2011). European academic systems have adopted a diversity-focused approach as a recent and advanced stage of their ongoing development. Despite this, even in the early 21st century, public education remains institutionally and hierarchically rooted in the disciplinary framework of 19th-century “nationalizing nationalisms,” acting as a strictly regulated and protected core national area (Wigfield et al., 2021). Discussions of multiculturalism, identity politics, anti-discrimination laws, and academic settings often use the

concept of diversity ambiguously (De Dreu and Weingart, 2003). The impact of cultural diversity on creativity and innovation has been a topic of debate in management and economics. Research indicates that cultural diversity is a “double-edged sword,” which may or may not positively influence creativity (Sommers et al., 2008).

Achievement motivation is essential for students’ academic satisfaction and is a key concern for nearly all university stakeholders (Deci and Ryan, 2000). Numerous studies indicate that cultural diversity, among other factors, influences achievement motivation (Dede and Yaman, 2008). Due to cultural differences between home and school, parents, teachers, and mothers may address the issue from distinct perspectives (Devine et al., 2012). According to McClelland, the primary objective of the faculty network is to support every student’s success. Therefore, it must acknowledge the significant impact that the cultural diversity of its population has on achievement motivation. Motivation is a crucial factor influencing human behavior and performance (Ely and Thomas, 2001). Education researchers and practitioners emphasize that motivation is one of the most vital elements for ensuring a student’s lifelong success. Motivation is defined as a significant desire that either inherently exists within a person or develops as they gain knowledge (Grant, 2007). Achievement motivation is typically described as an individual’s innate drive to accomplish tasks. Guay et al. (2010) suggest that motivation and mindset are likely the best predictors of a student’s overall academic success. A strong relationship between motivation and academic fulfillment has been identified, impacting college students’ educational success (Sikhwari, 2014). It is well-documented that highly motivated students outperform their less motivated peers academically (Tella, 2007). The connection between motivation and achievement indicates that motivation deeply influences academic mastery (Dede and Yaman, 2008). Studies on motivation highlight its importance in understanding individuals’ accomplishments (Harrison and Klein, 2007). The effectiveness and fulfillment of learning can vary based on other motivational factors such as interest, need, and desire (Tahiroglu and Aktepe, 2015). Research suggests a strong correlation between achievement and intrinsic motivation (Fatima and Ali, 2021). Many psychologists are renowned for their research on the link between fulfillment and motivation. Historical studies, particularly those by McClelland (1961), underscore the uniqueness of needs, including the need for affiliation and achievement. Theories like the achievement motive examine the values and beliefs associated with academic achievement motivation (Henderlong and Lepper, 2002). Achievement motivation can be distinguished as either collectivist, focusing on group goals, or individualistic (Kaplan and Maehr, 2007). Research shows that Filipino students prioritize social approval and school reputation more than American students, who emphasize personal development and competition (Kian et al., 2014). Several studies indicate that goal orientation is highly correlated with achievement outcomes in different cultural groups, suggesting that mastery learning is a suitable focus in diverse cultural contexts (Fatima, 2017). Motivation is seen as the driving force needed to achieve aspirations and the means to sustain that drive. Similar to learning, decision-making, planning, organizing, and checking, motivation forms a strong foundation



for cognitive behaviors. Thus, achievement is an adventure-oriented activity that evaluates a person’s performance against either internal or external criteria, which may involve competing with others or adhering to a standard of excellence. In the field of fulfillment motivational studies, the concept of success intention evolved within a social cognitive framework. Achievement purpose theorists have identified two main types of fulfillment goals: the motivation that develops potential and the motive to either demonstrate or avoid showing a lack of functionality (Fatima et al., 2018).

Research establishing the link between academic performance in math and science and achievement motivation shows differing motivations between underachievers and overachievers in each subject. While no significant correlation was found between achievement motivation and performance in math and science, there is a notable difference in the achievement motivation of overachievers and underachievers in math, but not in science (Fatima, 2022). A study on middle school students from diverse economic and ethnic backgrounds found that understanding classroom knowledge fosters motivation, engagement, and fulfillment. The analysis highlights three key conclusions: lecture activities that emphasize effort and comprehension in a challenging study environment can enhance student motivation and achievement; changes in classroom practices are linked to shifts in student motivation; and students’ success is significantly predicted by their motivational beliefs (Fatima and Ali, 2021). Interest in achievement motivation is related to changes in students’

strategies, as shown in numerous studies aimed at identifying what motivates children (Atkinson, 1999). Scholars and practitioners are interested in cultural diversity, which includes acquired needs, developmental stages, personal orientations, and cognitive schemas that distinguish individuals from their surroundings from an early age. Poor performers are motivated differently and often come from disadvantaged backgrounds (Singelis, 2000). University instructors and professionals should observe how parents socialize their university students at home while helping parents understand the college’s culture and teachers’ expectations. Shor and Bernhard (2003) emphasize that such communication is essential for creating continuity between the faculty and the home. It is recognized that students, especially unique ones, have goals focused on growth, mastery, and ability or performance targets showcasing their capacity. Mastery and performance goals implicitly emphasize individualism and personal aspirations (McInerney et al., 1997). Early literature on achievement motivation highlights the growing significance of social influences, such as friends, family, and community. Scholars have identified social factors in the classroom that impact student motivation (Rauf et al., 2023). Pursuing social goals can help individuals prepare, direct, and empower themselves to achieve more. Social and educational aims can motivate students, with research indicating that the effectiveness of cooperative learning is partly due to students’ readiness to succeed for the group’s benefit. Grant (2007) concludes that pragmatic goals combined with educational aspirations directly affect achievement. Many social objectives seek to win the approval or companionship

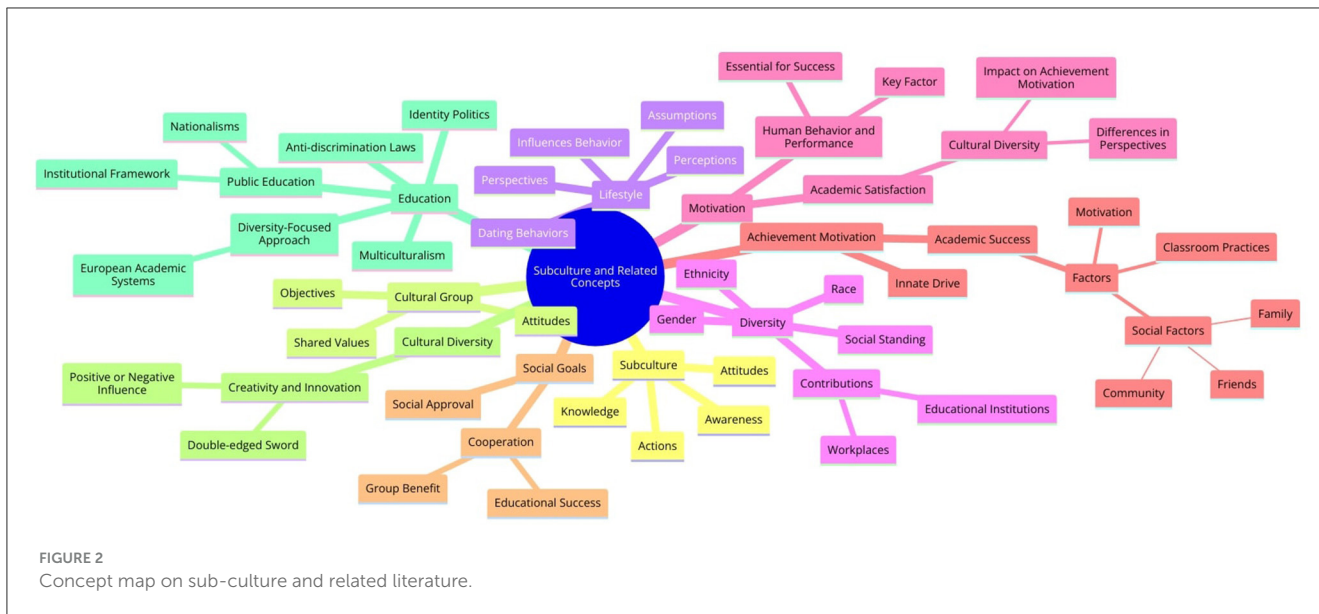


FIGURE 2
Concept map on sub-culture and related literature.

of others (Ely and Thomas, 2001). The motivation for success is traditionally linked to various social goals. Cultural perspectives on achievement, social goals, education, reward and criticism, and peer and individual approval of student motivation have been extensively studied (Singh, 2011). All the above description regarding cultural and sub-cultural related literature is reflected in Figure 2.

2.1 Research gaps in cultural diversity and achievement motivation

Scholarly achievement and the concept of scholastic accomplishment have been studied concerning familial relationships. Two primary motivational goal strategies—authority and performance goals—have often received the most attention. Individuals focused on authority prioritize self-awareness and acquiring new skills and knowledge. In contrast, those focused on performance worry about maintaining high standards and outperforming others (Kaplan and Maehr, 2007). Research has explored the pursuit of various goals, emphasizing the liberating and insightful effects of authority and performance goals (Devine et al., 2012). While the benefits of dominance goals are not widely discussed, performance goals show mixed results, including negative, neutral, and positive outcomes on performance metrics (Wigfield et al., 2021). Though not as extensively analyzed as dominance and performance goals, social goals constitute another significant category (McInerney et al., 1997). Social objectives focus on achieving in academic settings to fulfill social aims. Few direct connections between social objectives and academic achievement have been established in the literature (Dede and Yaman, 2008).

The term “culture” refers to a complex set of traits, decisions, and associated behaviors that shape individuals’ lives and reflect their challenges and actions. These beliefs, customs, and behaviors evolve within social contexts, influenced by the people in

those environments, irrespective of personal preferences or new information (Shor and Bernhard, 2003). While it is widely acknowledged that culture impacts education, few emphasize whether it is beneficial or detrimental. However, students exposed to a robust cultural curriculum often share a common understanding and are effectively motivated (Miller et al., 2007).

Achievement proposals significantly aid students’ academic success (McInerney et al., 1998). It is well-documented that social differences impact motivation for achievement (Li, 2010). Due to social differences between home and school, parents and teachers may approach the issue from different perspectives (Leten et al., 2006). A school network must understand how achievement thinking varies socially to enhance the accomplishment of all students. While most faculty members should support students in achieving their goals, some may believe that culture influences this process. The concept of “achievement” is socially constructed, and students may have different approaches to achieving based on their cultural backgrounds (Tella, 2007).

A crucial aspect of understanding intrinsic motivation is acknowledged across disciplines, including cross-cultural research and education (Sommers et al., 2008). Culture is the deeply ingrained combination of language, beliefs, and practices that influence every aspect of an individual’s life, constantly evolving (Singelis, 2000). Our way of life is adaptable and can be viewed as a mechanical aspect of life, showcasing wonders in the classroom or understood as a collection of data, a physical phenomenon, or unique qualities. Cultural diversity awareness plays a significant role in the academic environment, influencing the motivation and performance of students. This literature review summarizes existing research on the impact of cultural diversity awareness on the achievement motivation of undergraduate medical students, with a specific focus on Rawalpindi Medical University. It also identifies gaps in the current literature. McInerney et al. (1997) highlighted the foundational role of motivation in academic success, suggesting that a culturally aware environment can enhance student motivation by fostering a sense of belonging

for calculating the sample size and it was also confirmed by Krejcie and Morgan (1970) table for determining the sample from the accessible population.

$$Yamane\ Formula\ n = \frac{N}{1 + N(e)^2}$$

where n = sample size, N = total population (=100); e = margin of error

$$n = \frac{100}{1 + 100(0.05)^2} = 80$$

After obtaining proper consent from the institutes and participants, 80 final-year MBBS students were recruited from 30th January to 28th March 2022. The Board of Ethical Committee of Air University, Islamabad (Certificate no: 622-FSS/MPhilEDU/F-17) had approved this topic for investigation.

3.4 Instrument

Students were asked to complete a questionnaire to get information on their beliefs about cultural diversity and motivation for achievement. The heads of the researcher's college and university permitted them. The researcher then chose a participant and set aside time to concentrate on getting the respondent to fill out the questionnaire. Three factors were included in the standardized research inventory on accomplishment motivation: social, mastery, and performance goal lines. In 1997, McInerney became more advanced. There were 15 items total, five in each dimension of the study's inventory. Together, these three aspects have been utilized to gauge people's success-oriented conduct (Fatima et al., 2018). The general fulfillment aims Orientation Scale (GAGOS), which is based on three scales with 15 items, is used to measure success motivation (McInerney et al., 1997; Fatima, 2022). Known as Mastery (e.g., "I am most stimulated when I see my work improve"), General Overall Performance (e.g., "I am most inspired whilst I'm praised"), and Well-Known Social (e.g., "I am most motivated once I work with others"), the GAGOS was created to measure widespread motivation in these three aim regions. This questionnaire was a standardized questionnaire that was validated by McInerney et al. (1998) and it was also validated in the context of Pakistan by Fatima et al. (2018).

Another questionnaire that was developed by Ennejar (2021) consisted of 32 statements related to cultural awareness, prejudice, and inclusion was used. It was validated by the Illinois State Board of Education administers public education in the state of Illinois. Participants rate the frequency with which each statement applies to them. The total score is calculated to determine the level of cultural diversity awareness, ranging from very low to very high. Higher scores indicate greater awareness of prejudice and bias, along with a stronger appreciation for diversity. All of the components are combined into one tool. An identical justification for the survey's purpose was given to participants before each session. The purpose of reading the questionnaire aloud to the students was to: (a) make sure that most respondents finished the survey in the allotted time; (b) help some students who struggled with reading and language; (c) ensure that administration strategies remained consistent from elementary school to high school; and (d) help slow newcomers.

TABLE 1 Reliability of the instrument.

S. No	Variables	No. of items	Cronbach alpha
1	Achievement motivation	15	0.814
2	Cultural diversity	32	0.871

Students completed the five-factor Likert scale to easily measure their reviews regarding cultural diversity awareness and achievement motivation. This self-assessment, which consisted of two surveys, was made to gauge participants' attitudes and actions toward cultural diversity and accomplishment. A higher assessment score shows that they have a keen awareness of bias and prejudice. High scorers have relationships with others that respect differences. A lower assessment score indicates that participants may not be fully aware of their biased behavior toward other people, as well as that they are oblivious to prejudice and bias. People with low scores interact with others in a way that does not respect variety. The participants were in the extremely low range if their score was between 15 and 32, and if it was between 75 and 160, they were in the extremely high range.

3.5 Validity and reliability of the instrument

The content validity was examined by five of AIR University Islamabad's social science specialists. According to Fatima et al. (2018), content validity provides the reader and researcher with assurance regarding the instrument utilized in the study. Researchers asked them to evaluate whether the questions comprehensively covered the construct and whether they were clear, relevant, and appropriate. Experts rated each item on relevance and clarity, and then researchers calculated a CVR to quantify their agreement.

$$CVR = \frac{ne - N/2}{N/2}$$

For the Cultural diversity awareness and achievement motivation scale, the CVR was 1. The CVR value ranges from -1 to $+1$ (Ayre and Scally, 2014). A CVR of $+1$ means all experts agree that the item is essential. The reliability of the instrument was checked by Cronbach's alpha (see Table 1).

The degree to which measurements are repeated when they are taken by multiple participants at different times to gauge a skill is known as reliability. According to the Rule of Thumb for Reliability Coefficient, Table 1's reliability was deemed outstanding and acceptable. For cultural variation and accomplishment motivation, the Cronbach Alpha values were (0.871) and (0.814), respectively. Nunnally and Bernstein (1994) recommend in a book that fundamental research instruments should have a dependability of at least 0.70 for the initial stages of the study. An appropriate level of internal consistency reliability is generally considered to be approximately 0.80, however, a higher threshold is frequently suggested for applied settings or for making decisions regarding specific persons. This threshold lowers the

TABLE 2 Percentage response regarding cultural diversity.

N	Items	SD (1)	DA (2)	N (3)	A (4)	SA (5)	Mean
1	I am aware of my own biases and how they affect my thinking	1.3	10	7.5	60	21.3	3.90
2	I can honestly assess my strengths and weaknesses in the area of diversity and try to improve myself	0	3.8	6.3	60	30	4.16
3	I assume good intent and ask for clarification when I don't understand what was said or implied	0	2.5	6.3	60	31.3	4.20
4	I challenge others when they make racial/ethnic/sexually offensive comments or jokes	11.3	16.3	6.3	35	31.3	3.58
5	I speak up if I witness another person being humiliated or discriminated against	1.3	20	16.3	36.3	26.3	3.66
6	I do not participate in jokes that are derogatory to any individual group	1.3	16.3	28.8	40	13.8	3.48
7	I don't believe that my having a friend of color means that I'm culturally competent	2.5	13.8	33.8	17.5	32.5	3.63
8	I understand why a lack of diversity in my social circle may be perceived as excluding others	10	28.8	33.8	10	17.5	2.96
9	I realize that people of other cultures have a need to support one another and connect as a group	12.5	30	18.8	21.3	17.5	3.01
10	I do not make assumptions about a person or individual group until I have verified the facts on my own	15	33.8	22.5	16.3	12.5	2.77
11	I have multiple friends from a variety of ethnicities and abilities	0	0	2.5	73.8	23.8	4.21
12	I connect easily with people who look different from me and am able to communicate easily with them	30	0	0	70	0	4.30
13	I'm interested in the ideas and beliefs of people who don't think and believe as I do, and I respect their opinions even when I disagree	1.3	0	2.5	70	26.3	4.21
14	I work to make sure people who are different from me are heard and accepted	0	0	1.3	70	28.8	4.27
15	I recognize and avoid language that reinforces stereotypes	0	1.3	6.3	53.8	38.8	4.30
16	I know others' stereotypes associated with my ethnicity	0	1.3	2.5	70	26.3	4.21
17	I encourage people who are culturally different from myself to speak out on their issues and concerns, and I validate their issues and concerns	1.3	2.5	7.5	56.3	32.5	4.16
18	I avoid assuming that others will have the same reaction as I do when discussing or viewing an issue	1.3	0	2.5	60	36.3	4.30
19	I understand that I'm a product of my upbringing and believe there are valid beliefs other than my own	0	1.3	1.3	61.3	36.3	4.32
20	I do not take physical characteristics into account when interacting with others or when making decisions about others' competence or ability	1.3	1.3	3.8	58.8	35	4.25
21	I recognize that others stereotype me, and I try to overcome their perceptions	0	5.0	11.3	57.5	26.3	4.05
22	I include people who are culturally different from myself in team decision-making processes that impact the	0	3.8	10.0	46.3	40	4.2
23	I actively seek opportunities to connect with people who are different from me and seek to build rapport with them	2.5	1.3	18.8	52.5	25	3.96
24	I believe "color blindness" is counterproductive and devalues a person's culture or history	1.3	5.0	7.5	58.8	27.5	4.06
25	I avoid generalizing behaviors or attitudes of one individual in a group to others	2.5	0	7.5	57.5	32.5	4.17
26	I actively convey that employees or students of varying backgrounds are as skilled and competent as others	1.3	10	7.5	60	21.3	3.90
27	I do not try to justify acts of discrimination to make the victim feel better. I validate his/her assessment of what occurred	0	3.8	6.3	60	30	4.16
28	I try to learn about and appreciate the richness of other cultures and honor their holidays and events	0	2.5	6.3	60	31.3	4.20
29	I believe there are policies and practices in place that negatively impact people outside the majority culture	11.3	16.3	6.3	35	31.3	3.58
30	I understand the definition of internalized racism and how it impacts people of color	1.3	20	16.3	36.3	26.3	3.66
31	I believe that race is a social construct, not a scientific fact	1.3	16.3	28.8	40	13.8	3.48
32	I know and accept that people's experiences and background impact how they interact with and trust me	2.5	13.8	33.8	17.5	32.5	3.63

TABLE 3 Percentage responses regarding achievement motivation.

N	Items	SD (1)	DA (2)	N (3)	A (4)	SA (5)	Mean
1	I am motivated when I work with others	0	0	2.5	73.8	23.8	4.21
2	I am motivated when I am in a group	30	0	0	70	0	4.30
3	I am motivated when I am helping others	1.3	0	2.5	70	26.3	4.21
4	I am motivated when I am showing concern for others	0	0	1.3	70	28.8	4.27
5	I am motivated when I notice that others	0	1.3	6.3	53.8	38.8	4.30
6	I am motivated when I see my work improve	0	1.3	2.5	70	26.3	4.21
7	I am motivated when I am good at something	1.3	2.5	7.5	56.3	32.5	4.16
8	I am motivated when I solve a problem	1.3	0	2.5	60	36.3	4.30
9	I am motivated when I am becoming better at my work	0	1.3	1.3	61.3	36.3	4.32
10	I am motivated when I am confident that I can do my university work	1.3	1.3	3.8	58.8	35	4.25
11	I am motivated when get a reward	0	5.0	11.3	57.5	26.3	4.05
12	I am motivated when I get good marks	0	3.8	10.0	46.3	40	4.2
13	I am motivated when I am in charge of a group	2.5	1.3	18.8	52.5	25	3.96
14	I am motivated when I am praised	1.3	5.0	7.5	58.8	27.5	4.06
15	I am motivated when I am doing better than others	2.5	0	7.5	57.5	32.5	4.17

possibility of measurement error and helps guarantee that the measure is trustworthy enough for use in making decisions.

4 Data analysis and its interpretation

Descriptive statistics (Percentage and Mean values) were used to assess the participants' responses about cultural diversity awareness and achievement motivation at the university level (See Tables 2, 3).

Table 2 presents survey results assessing respondents' awareness, attitudes, and behaviors related to diversity and inclusion. Statements like "I can honestly assess my strengths and weaknesses in the area of diversity and try to improve myself" (Mean: 4.16) and "I am aware of my own biases and how they affect my thinking" (Mean: 3.90) show a strong self-awareness among respondents. High agreement with "I assume good intent and ask for clarification when I don't understand what was said or implied" (Mean: 4.20) indicates a positive approach toward communication and understanding. Statements such as "I work to make sure people who are different from me are heard and accepted" (Mean: 4.27) and "I encourage people who are culturally different from myself to speak out on their issues and concerns and I validate their issues and concerns" (Mean: 4.16) highlight active efforts to support and include diverse voices. High ratings for "I recognize and avoid language that reinforces stereotypes" (Mean: 4.30) and "I avoid assuming that others will have the same reaction as I do when discussing or viewing an issue" (Mean: 4.30) show a strong commitment to avoiding stereotypes and assumptions. Statements like "I understand that I'm a product of my upbringing and believe there are valid beliefs other than my own" (Mean: 4.32) and "I try to learn about and appreciate the richness of other cultures and

honor their holidays and events" (Mean: 4.20) reflect a recognition and appreciation of cultural diversity. This table's results indicate that respondents generally demonstrate high awareness of their own biases, make efforts to improve in the area of diversity, and actively support inclusive practices. They value understanding and appreciating cultural differences, avoid reinforcing stereotypes, and assume good intent in communications. These insights can guide the development of diversity and inclusion programs, emphasizing continued education, active support for diverse voices, and strategies to mitigate biases and stereotypes.

Table 2 presents a survey examining various motivational factors and how respondents rate their agreement with each statement. The results indicate a generally high level of motivation across a range of scenarios. Respondents show the strongest agreement with statements related to social and collaborative contexts, such as working with others (mean score 4.21) and being in a group (mean score 4.30). Helping others (mean score 4.21) and showing concern for others (mean score 4.27) also receive high agreement, suggesting that social interactions and altruism are significant motivational factors. The importance of personal achievement and improvement is evident in the high scores for statements about seeing work improve (mean score of 4.21), solving problems (mean score of 4.30), and becoming better at one's work (mean score of 4.32). Confidence in academic abilities (mean score of 4.25) and achieving good marks (mean score of 4.20) also play crucial roles in motivation. While extrinsic rewards like receiving praise (mean score 4.06) and getting rewards (mean score 4.05) are motivational, they appear slightly less influential than intrinsic factors. Interestingly, competitive motivation, such as doing better than others (mean score 4.17), and leadership roles, like being in charge of a group (mean score 3.96), are present but not as prominent. Overall, the data highlights that respondents

TABLE 4 Correlation between cultural diversity and achievement motivation ($N = 80$).

Variables	Cultural diversity	Achievement motivation
Cultural diversity	1	0.948
Achievement motivation	0.948	1

Sig. (2-tailed) = <0.001.

are predominantly motivated by intrinsic factors related to social interaction, personal growth, and problem-solving, with extrinsic rewards and competition being somewhat less influential but still significant.

4.1. Inferential statistic

The inferential statistic (Pearson Correlation, t -test) was used to test the relationship between Cultural diversity awareness and achievement motivation (See Table 4) and mean differences in the participants' responses with respect to their gender after the normality test.

Table 4 presents the results of a Pearson correlation analysis between cultural diversity and achievement motivation. The value is 0.948, indicating a robust positive correlation between cultural diversity and achievement motivation. This means that cultural diversity also increases significantly as achievement motivation increases. The significance value is $p < 0.001$, which is <0.05, indicating that the correlation is statistically significant. This suggests that the relationship observed between cultural diversity and achievement motivation is not due to chance. A strong and statistically significant positive correlation exists between cultural diversity and achievement motivation. This implies that environments with higher cultural diversity tend to foster greater achievement motivation among individuals.

The 3rd research objective was the mean differences in cultural diversity awareness and achievement motivation of students based on their gender were tested by t -test (see Tables 5, 6).

There is no statistically significant difference in achievement motivation between males and females in this sample since the p -value (0.110) is >0.05.

There is no statistically significant difference in achievement motivation between males and females in this sample since the p -value (0.110) is >0.05.

5 Discussion

The survey results indicate strong self-awareness and efforts to address biases. Research by Devine et al. (2012) shows that bias awareness training can effectively reduce implicit biases and promote more inclusive behaviors. Continuous education and reflection are crucial in fostering an inclusive culture. Statements reflecting support for diverse voices align with the concept of psychological safety. Edmondson (1999) defines psychological safety as a shared belief that the team is safe for interpersonal risk-taking. Environments that encourage open communication and

validate diverse perspectives enhance engagement and innovation. High agreement with statements about appreciating cultural diversity underscores the value of cultural competence. According to Bennett (1993), cultural competence involves recognizing and respecting cultural differences, which is essential for effective cross-cultural interactions. Culturally inclusive practices can reduce misunderstandings and foster mutual respect. Efforts to avoid reinforcing stereotypes and assumptions are critical for creating an inclusive environment. Steele and Aronson (1995) demonstrated that stereotype threat can negatively impact performance. By promoting inclusive language and behaviors, organizations can mitigate the adverse effects of stereotypes and enhance overall productivity. Cultural diversity among students can affect how they perceive and internalize these expectations. For example, students from certain cultural backgrounds may feel greater pressure to excel academically due to cultural values placed on education and career success. Cultural identity significantly influences students' motivation and goal orientation. Students may derive motivation from their cultural heritage, seeking to meet family or community expectations. Additionally, cultural diversity can either affirm or conflict with a student's sense of identity, impacting their confidence and determination in pursuing goals. Cultural diversity within classrooms provides opportunities for cross-cultural interactions and learning.

This study also found that high mean scores for statements related to personal improvement and competence align with Self-Determination Theory (SDT). According to Deci and Ryan (2000), SDT posits that competence is one of the three basic psychological needs that enhance intrinsic motivation. When individuals perceive themselves as capable and proficient, their intrinsic motivation increases, leading to higher engagement and performance. This is supported by research indicating that prosocial behavior enhances wellbeing and motivation. Grant (2007) found that employees who perceive their work as helping others report higher levels of job satisfaction and motivation. The psychological reward of contributing to others' well-being fosters a sense of purpose and fulfillment. The importance of social interactions in motivation is highlighted by high ratings for statements about working with friends and being in a group. Social Identity Theory (Tajfel and Turner, 2003) suggests that individuals derive part of their identity and self-esteem from group memberships. Collaborative environments promote a sense of belonging and collective efficacy, enhancing motivation and performance. Recognition is another critical motivator, albeit slightly less impactful than personal and social factors. According to Herzberg's Two-Factor Theory (Herzberg, 1966), recognition is a significant motivator that satisfies the need for esteem and self-actualization. Regular praise and acknowledgment can boost morale, reinforce positive behaviors, and enhance overall motivation.

The significant positive correlation between cultural diversity and achievement motivation suggests that diverse environments enhance motivation. Ely and Thomas (2001) propose that diversity can lead to better group performance and innovation when managed effectively. Diverse teams bring varied perspectives, which can enhance problem-solving and creativity, thereby increasing motivation and achievement. The findings underscore the importance of personal development, social interaction,

TABLE 5 t-Test for gender regarding cultural diversity (N = 80).

Variable	Gender	N	Mean	SD	t-value	df	sig
Achievement motivation	Male	47	62.65	6.48	-0.684	78	0.110
	Female	33	63.54	4.33			

SD, standard deviation.

TABLE 6 t-Test for gender regarding achievement motivation (N = 80).

Variable	Gender	N	Mean	SD	t-value	df	sig
Achievement motivation	Male	47	23.3191	6.21	1.617	78	0.110
	Female	33	21.2424	4.74			

SD, standard deviation.

and recognition in enhancing motivation. Additionally, they highlight the critical role of diversity and inclusion in fostering a motivated and cohesive environment. Implementing strategies that focus on these areas, supported by continuous education and inclusive practices, can significantly enhance motivation and organizational effectiveness. Future research should explore the longitudinal impacts of these strategies to further validate their effectiveness. The relationship between goal-oriented behavior and cultural diversity among students in Pakistan is complex and dynamic, shaped by various social, cultural, and educational factors. Cultural diversity in Pakistan encompasses a wide range of ethnicities, languages, and traditions. Students from different cultural backgrounds may have differing perspectives on goal-setting and achievement. For instance, some cultural groups may emphasize individual success and personal goal attainment, while others may prioritize communal wellbeing and collective goals. This diversity influences how students approach setting and pursuing their academic and personal objectives. The educational system in Pakistan sets overarching goals and expectations for students, such as achieving high grades in standardized exams or pursuing specific career paths. In summary, the relationship between cultural diversity and goal-oriented behavior among students in Pakistan is intricate and influenced by a myriad of cultural, social, and educational factors. Recognizing and addressing the intersectionality of culture and goal pursuit is essential for fostering inclusive learning environments that support the diverse needs and aspirations of all students. This finding aligns with [Fatima et al. \(2018\)](#), who also found achievement-oriented behavior among students. This outcome is consistent with the findings of [Pintrich and Schunk \(1996\)](#). Additionally, it was discovered that gender and age had little effect on students' perceptions of cultural diversity and achievement-focused behavior in secondary school, echoing the results of [Fatima et al. \(2018\)](#).

This discussion highlights several key insights and contributions to educational practice and achievement such as the findings support the notion that bias awareness training, as suggested by [Devine et al. \(2012\)](#), can reduce implicit biases and promote inclusive behaviors. This is crucial for creating environments where diverse voices are heard and valued, fostering psychological safety as defined by [Edmondson \(1999\)](#). This environment encourages open communication, validating diverse perspectives and thereby enhancing engagement and innovation.

The emphasis on appreciating cultural diversity aligns with the concept of cultural competence described by [Bennett \(1993\)](#). Recognizing and respecting cultural differences is essential for effective cross-cultural interactions, reducing misunderstandings, and fostering mutual respect. This is particularly relevant in educational settings where diverse student backgrounds can influence perceptions and behaviors. The discussion points to the harmful effects of stereotypes, as demonstrated by [Steele and Aronson \(1995\)](#), and emphasizes the importance of inclusive language and behaviors to mitigate these effects. By addressing stereotype threat, educational institutions can create a more supportive environment that enhances student performance and wellbeing. The study underscores the role of competence in enhancing intrinsic motivation, consistent with Self-Determination Theory (SDT) as articulated by [Deci and Ryan \(2000\)](#). Students' perception of their competence is linked to increased engagement and performance, highlighting the importance of fostering a sense of capability and proficiency. The influence of social interactions on motivation is supported by Social Identity Theory ([Tajfel and Turner, 2003](#)). The discussion suggests that collaborative environments, where individuals feel a sense of belonging and collective efficacy, can significantly enhance motivation and performance. [Ely and Thomas \(2001\)](#) propose that diversity, when managed effectively, leads to better group performance and innovation. The positive correlation between cultural diversity and achievement motivation suggests that diverse environments can enhance problem-solving, creativity, and overall achievement.

The findings may not be generalizable beyond the specific sample studied, particularly if the sample size is small or not representative of the broader population. The study's focus on Pakistan may limit its applicability to other cultural contexts. Cultural diversity and its impact on motivation and achievement may vary significantly across different regions and educational systems. The study may not account for changes over time. Longitudinal studies are needed to understand how the observed relationships evolve and to confirm the long-term effectiveness of the proposed strategies. There may be biases in self-reported data, particularly in sensitive areas such as bias awareness and stereotype threat. Social desirability bias could influence participants' responses, skewing the results.

6 Conclusion

Students acknowledged the stereotypes they held about people from different cultures and recognized the importance of ethnicity, tradition, and race in their metropolitan environment. Similarly, the descriptive statistics indicate that most students agreed with achievement-oriented behaviors when they saw improvements in their work, excelled in tasks, resolved problems, improved their performance, collaborated with others, worked with friends, and supported peers. A significant correlation between cultural diversity and achievement motivation underscores the positive impact of diverse environments on motivation levels. Furthermore, there are no significant differences in achievement motivation based on gender. These insights suggest that strategies to enhance motivation should focus on personal development, altruism, and social recognition, while diversity and inclusion programs should continue to emphasize bias mitigation and cultural appreciation to foster inclusive environments that enhance achievement motivation.

7 Recommendations

Peer support networks may form, where students from diverse backgrounds collaborate and encourage each other to strive toward their goals. However, cultural differences may also lead to misunderstandings or conflicts that hinder collaborative goal pursuit. Teachers play a crucial role in fostering goal-oriented behavior among students. Culturally responsive teaching practices that acknowledge and celebrate diversity can create an inclusive classroom environment where all students feel valued and empowered to pursue their goals. Conversely, biases or stereotypes held by educators may inadvertently affect students' self-perception and goal-setting abilities. Establish mentorship opportunities where individuals can learn from more experienced colleagues or peers, fostering a culture of continuous improvement and competence.

Organize regular social events and team-building activities to strengthen interpersonal relationships and create a supportive work or study environment. Establish systems for regular feedback and praise from supervisors and peers, ensuring that positive efforts and accomplishments are noticed and appreciated. Encourage self-reflection exercises where individuals assess their own biases and develop personal action plans for improvement. Promote the use of inclusive language that avoids reinforcing stereotypes. Provide guidelines and training on how to communicate respectfully and inclusively. Comparative studies across different cultural contexts could provide deeper insights into how cultural diversity and competence influence motivation and achievement. Understanding these differences can inform more targeted educational strategies. With the increasing prevalence of digital and hybrid learning environments, future research should investigate how these modalities impact the relationship between cultural diversity, bias awareness, and student motivation. Evaluating the effectiveness of specific interventions, such as cultural competence training and inclusive

teaching practices, can provide actionable insights for educators and policymakers. Further exploration of intersectional factors, such as the interplay between gender, age, socio-economic status, and cultural background, can offer a more nuanced understanding of how these variables collectively influence educational outcomes.

Data availability statement

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

Ethics statement

The Board of Ethical Committee of Air University, Islamabad (Certificate no: 622-FSS/MPhilEDU/F-17) had approved this topic for investigation. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

FF: Conceptualization, Formal analysis, Investigation, Project administration, Supervision, Writing – original draft, Writing – review & editing. SA: Data curation, Formal analysis, Validation, Writing – original draft. FS: Investigation, Resources, Visualization, Formal analysis, Methodology, Writing – original draft. NS: Formal analysis, Methodology, Resources, 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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