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A 2x2 achievement goals orientations model in the light of some variables among postgraduate students

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ABSTRACT

The aim of this research is to determine the prevalence of achievement goal orientations among university postgraduate students, how these orientations correlate with their grades, and how they vary based on age, gender, and stage of study. A quantitative descriptive approach was employed, surveying 320 postgraduate students from King Saud University's College of Education. The findings revealed that students had a very high mastery approach orientation, whereas their performance avoidance, performance approach, and mastery avoidance orientations were moderate. There was no significant relationship between academic achievement and performance approach orientation. However, a positive correlation was found between mastery approach orientation and academic achievement, while performance avoidance and mastery avoidance orientations showed significant negative correlations with academic achievement. The study also found that performance approach and performance avoidance orientations did not significantly differ by study stage. Conversely, significant differences were observed in the mastery approach and mastery avoidance orientations, with Ph.D. students demonstrating a higher mastery approach orientation but M.A. students demonstrating a higher mastery avoidance orientation. Male students exhibited higher performance approach and performance avoidance orientations compared to female students, although no gender differences were observed in mastery approach and mastery avoidance orientations. Additionally, older students performed better in performance avoidance orientation when the results were analyzed by age.

Contribution/Originality: This study adds to the literature on achievement goal orientations, the importance of these orientations for adult learners, the impact of these orientations on their academic achievement, and the differences in them according to age, gender, and stage of study.

1. INTRODUCTION

A student's level of motivation determines how much effort they put into their studies and how active and productive they remain during their time in school. Particularly important motivating factors for learners, especially adults, are achievement goal orientations. Although earlier understandings of achievement motivation laid the foundation for accomplishment goal orientation theory, its formal study did not begin until the late 1970s.

Anderman and Patrick (2012) noted that several distinguished scholars from the University of Illinois—including Martin Maehr, Carole Ames, John Nicholls, and Carol Dweck—significantly influenced this concept. The

imagined framework for achieving success, known as achievement goal orientation, and Guan, Xiang, Land, and Hamilton (2023) considered it a critical component of learning motivation. This concept has thus become essential in understanding the factors that drive individuals to study.

As a theoretical framework, social cognition theory provides the groundwork for understanding achievement goal orientations and the factors that motivate learners to reach them. Motives and behaviors in the classroom are the focus of this theory. Different definitions of achieving goal orientations tend to converge within the larger framework of social cognitive theory. Among these explanations are:

- The ultimate destination toward which one's efforts are aimed (Barkur, Govindan, & Kamath, 2013).
- Everything that a person thinks, feels, does, and concentrates on while they work to accomplish their objectives (Pintrich, Roeser, & De Groot, 1994).
- What motivates people to take part in activities that test their skills (Elliot, 2005).
- How students frame their goals shapes their beliefs and the ways they employ cognitive methods for self-regulation (Anderman & Patrick, 2012).
- The motivations, objectives, and intentions driving individuals' achievement-related behaviors (Bong, 2012).

Specifically, this study defines achievement goal orientations as "individuals' attitudes and beliefs about themselves and their performance in educational tasks, which are reflected in their interpretations and reactions in educational and achievement situations."

According to proponents of the achievement goal orientation theory, it is the driving force behind any endeavor. How a person feels after achieving or failing to achieve a goal is highly dependent on the nature of the objective itself. These thinkers have done a lot of work to figure out what kinds of learning objectives help students the most, including ones that encourage positive emotional responses, cognitive methods, and actions in the classroom (Was, 2006). Students tend to behave in ways they believe will help them achieve their goals and complete their learning tasks. Motivation is also influenced by a learner's self-belief in their ability to achieve desired outcomes, which is represented by positive outcome expectations, and their perceived ability to learn and perform, represented by high self-efficacy (Schunk, 2016). Thus, understanding the reasons behind a learner's behaviors in educational contexts can be achieved by examining their achievement goals. It can be determined whether a student is focused on academically appropriate goals and whether they are driven by a desire to acquire knowledge through goal orientation (Aslan & Aktas, 2020).

According to Ambrose, Bridges, DiPietro, Lovett, and Norman (2010) studying at the university level demands a higher degree of autonomy, leading students to question what, when, and how to study and learn. Students' motivation is a key factor in determining their academic behavior, level of persistence, and overall course of study.

Achievement goal orientation models, while sharing many similarities, differ in their definitions and names for goals. They also differ in the suggested number of goal orientations, as well as the role and form that these goals assume. Furthermore, the extent to which one's goal orientations are personal differs among models (Pintrich, 2000; Pintrich & Blazevski, 2004). While the general frameworks of theories and models dealing with achievement goal orientations converge significantly, they differ in their approach, focus, and areas of interest.

At first, there were two main orientations of thought when it came to objectives: the performance goal orientation and the mastery goal orientation (Hulleman & Senko, 2010). These orientations represent the types of goals that students aim to achieve in learning situations, the various reasons that motivate them to engage in tasks, and the different criteria they use to define success (Senko, 2016).

The mastery goal orientation increases focus on developing abilities and encourages both cognitive and emotional processes. It emphasizes enhancing individuals' skills and expanding their mastery, prompting learners to explore the best methods to improve their abilities or achieve mastery (Dweck & Leggett, 1988). In contrast, learners who adopt a performance goal orientation concentrate on their performance, comparing themselves with others and evaluating their competence. Their achievement behaviors are often driven by external motivations

(Koller, 2000). These learners seek to perform well in tests and gain recognition from others, which serve as external sources of motivation (Zheng et al., 2019).

Building on the binary models of achievement goal orientations, researchers introduced the trichotomous model, which categorizes three distinct orientations in academic settings. This model divides performance goal orientation into two types: performance avoidance and performance approach (Bong, 2012; Putri & Saleh, 2020).

The quadruple (2×2) model of achievement goal orientations built upon the trichotomous model and introduced four distinct types of achievement objectives. Discussions concerning the classic aspects of goal attainment (approach and avoidance) as well as mastery and performance gave rise to this idea (Elliot & McGregor, 2001). Four main types of achievement goal orientation have been identified in recognition of these differences: mastery approach, mastery avoidance, performance avoidance, and performance approach (Butler, 2012; Elliot & Church, 1997). Similar to the trichotomous model, this model categorizes performance goals as either approach or avoidance. However, it advances the framework by also differentiating mastery goals into mastery approach and mastery avoidance. Students who are more focused on showing off their skills are known as performance approach goal-oriented. These learners tend to be more invested in their work as they see it as an opportunity to prove their superior skills to others, which brings them satisfaction in their academic endeavors. However, failure can lead to a negative self-view, potentially altering their school experience (Putri & Saleh, 2020).

Students who are more concerned with avoiding embarrassment than with actually improving their performance are known as performance avoidance goal-oriented (Bembenutty, 2001). They work hard to avoid being seen as performing poorly. As students fear failing or getting poor grades, they lose interest in completing academic work and avoid difficult tasks (Putri & Saleh, 2020). A learner with a mastery approach goal orientation is one who checks their work against predetermined or task-specific criteria to ensure it is correct (Linnenbrink & Pintrich, 2000). This mindset also represents the student's drive to grow intellectually and develop their skills (Elliot & McGregor, 2001).According to Elliot and McGregor (2001) those with a mastery avoidance goal orientation tend to favor tasks that have a good chance of being completed successfully and have an aversion to learning anything new. Learning with a mastery avoidance perspective emphasizes the avoidance of errors and performing tasks incorrectly (Linnenbrink & Pintrich, 2000). Learners with this orientation also tend to avoid situations where obstacles may hinder their learning (Putri & Saleh, 2020).

1.1. Research Significance

The significance of this research lies in the enhanced understanding it provides regarding the levels of achievement goal orientations among postgraduate students. At this advanced educational stage, setting goals with high precision and awareness is crucial. This research hopes to learn more about the nature of the relationship between academic success and each of the four orientations of accomplishment goals and determine if there's a positive or negative correlation between them. Additionally, it examines the impact of gender, age, and study stage on achievement goal orientations. Educational institutions will gain from this study's results because they will shed light on the characteristics and real-world uses of achievement target orientations. This knowledge will assist university officials and professors in enriching their understanding of these orientations specific to this age group, encouraging them to guide students to focus on these goals and emphasize their importance.

1.2. Research Questions

The purpose of this study is to look at the characteristics and scope of the four achievement goal orientations (performance approach, performance avoidance, mastery avoidance, and mastery approach) and how they differ and relate to another across various study variables. The research questions are as follows:

1. What are the levels of achievement goal orientations among postgraduate students in the College of Education at King Saud University?

2. Are there relationships between achievement goal orientations and academic achievement among these students?
3. Are there statistically significant differences in achievement goal orientations according to the study stage (M.A./Ph.D.)?
4. Are there statistically significant differences in achievement goal orientations according to gender (male/female)?
5. Are there statistically significant differences in achievement goal orientations according to age group (22–28 years, 29–36 years, and 37 years and over)?

2. LITERATURE REVIEW

There are numerous previous studies whose objectives align with those of the current research. The researcher has drawn valuable insights by comparing the results of the current study with these previous findings, although inconsistencies were observed among the outcomes. The following paragraphs present and categorize these studies and their results according to the research variables.

2.1. Level of Achievement Goals Orientations

Some previous studies have demonstrated a moderate level of three achievement goal orientations among students: performance approach (e.g., (Al-Zadjali, 2014; Chen & Wong, 2015; Crippen, Biesinger, Muis, & Orgill, 2009)), performance avoidance (e.g., (Al-Zadjali, 2014; Alotaibi, 2016; Chen & Wong, 2015; Neroni, Meijs, Leontjevas, Kirschner, & De Groot, 2018; Ng'ang'a, Mwaura, & Dinga, 2018)), and mastery avoidance (e.g., (Al-Zadjali, 2014; Alasqah, 2022; Alotaibi, 2016; Crippen et al., 2009)).

Other studies have shown a high level of the four achievement goal orientations among students: performance approach (e.g., (Aboouf, 2020; Alasqah, 2022; Almuskari & Aldhafri, 2020; Alotaibi, 2016; Alsaidi, 2021; Banimufarrej & Alawneh, 2014; Hall, Hanna, Hanna, & Hall, 2015; Magno, 2012; Ng'ang'a et al., 2018)), performance avoidance (e.g., (Aboouf, 2020; Alasqah, 2022; Alsaidi, 2021; Banimufarrej & Alawneh, 2014; Crippen et al., 2009; Hall et al., 2015; Magno, 2012)), mastery avoidance (e.g., (Aboouf, 2020; Hall et al., 2015; Magno, 2012)), and mastery approach (e.g., (Al-Zadjali, 2014; Alasqah, 2022; Almuskari & Aldhafri, 2020; Alsaidi, 2021; Crippen et al., 2009; Hall et al., 2015; Magno, 2012; Neroni et al., 2018; Ng'ang'a et al., 2018)).

Conversely, some studies have indicated a low level of the four achievement goal orientations among students: performance approach (e.g., (Barkur et al., 2013; Neroni et al., 2018)), performance avoidance (e.g., Barkur et al. (2013)), mastery avoidance (e.g., (Barkur et al., 2013; Neroni et al., 2018; Ng'ang'a et al., 2018)), and mastery approach (e.g., (Aboouf, 2020; Alotaibi, 2016)).

2.2. Relationship between Achievement Goal Orientations and Academic Achievement

Some previous studies indicate a relationship between performance approach goal orientations and academic achievement (e.g., (Alsaidi & Aldhafri, 2021; Alsaidi, 2021; Barzegar, 2012; Chen & Wong, 2015; Crippen et al., 2009; Hassan, 2016; Neroni et al., 2018; Ng'ang'a et al., 2018; Rivers, 2021)). Conversely, other studies show no relationship between them (e.g., (Al-Zadjali, 2014; Alasqah, 2022; Barkur et al., 2013; Hall et al., 2015; Magno, 2012; Uyar, Genc, & Yasar, 2018)).

Additionally, some studies reveal a positive relationship between performance avoidance goal orientations and academic achievement (e.g., (Alasqah, 2022; Almuskari & Aldhafri, 2020; Ng'ang'a et al., 2018)), while others indicate a negative relationship (e.g., (Al-Zadjali, 2014; Alsaidi & Aldhafri, 2021; Alsaidi, 2021; Barzegar, 2012; Hassan, 2016; Neroni et al., 2018)). However, other research suggests no relationship between performance avoidance goal orientations and academic achievement (e.g., (Barkur et al., 2013; Chen & Wong, 2015; Crippen et al., 2009; Hall et al., 2015; Magno, 2012; Rivers, 2021; Uyar et al., 2018)).

Some previous studies indicate a positive relationship between mastery avoidance goal orientations and academic achievement (e.g., (Barkur et al., 2013; Ng'ang'a et al., 2018)), while others suggest a negative relationship (e.g., (Al-Zadjali, 2014; Alsaidi & Aldhafri, 2021; Barzegar, 2012; Crippen et al., 2009; Hall et al., 2015)). There are also studies that report no relationship between these variables (e.g., (Alasqah, 2022; Almuskari & Aldhafri, 2020; Alsaidi, 2021; Magno, 2012; Neroni et al., 2018; Uyar et al., 2018)).

Similarly, some studies have found a positive relationship between mastery approach goal orientations and academic achievement (e.g., (Al-Zadjali, 2014; Alsaidi & Aldhafri, 2021; Alsaidi, 2021; Barzegar, 2012; Crippen et al., 2009; Ng'ang'a et al., 2018; Uyar et al., 2018)), while others indicate no relationship (e.g., (Alasqah, 2022; Almuskari & Aldhafri, 2020; Hall et al., 2015; Magno, 2012; Neroni et al., 2018)).

2.3. Differences in Achievement Goal Orientations According to Study Stage, Gender, and Age

2.3.1. Study Stage

Regarding the impact of academic level on accomplishment goal orientations, prior studies have shown contradictory results. Hall et al. (2015) discovered that pupils at lower academic levels have more statistically significant differences in performance approach and mastery approach orientations. Performance avoidance and approach orientations did not differ significantly by study stage, according to a study by Soyer and Kirikkanat (2019).

2.3.2. Gender

Findings from studies examining the gender gap in achieving goal orientations are similarly contradictory. According to Aboouf (2020) there are notable gender variations in performance approach and avoidance favoring males. Conversely, other studies found differences in performance approach favoring females (e.g., (Almuskari & Aldhafri, 2020; Ng'ang'a et al., 2018)) and in performance avoidance also favoring females (e.g., (Almuskari & Aldhafri, 2020; Banimufarrej & Alawneh, 2014; Ng'ang'a et al., 2018)). Additional research indicates no gender differences in performance approach (e.g., (Banimufarrej & Alawneh, 2014; Hall et al., 2015; Soyer & Kirikkanat, 2019)) or in performance avoidance (e.g., (Hall et al., 2015; Soyer & Kirikkanat, 2019)).

Regarding mastery avoidance, studies by Hall et al. (2015); Soyer and Kirikkanat (2019) and Almuskari and Aldhafri (2020) reported no gender differences. However, Aboouf (2020) found differences in this orientation favoring males. For mastery approach, some studies indicated gender differences favoring males (e.g., (Aboouf, 2020; Ng'ang'a et al., 2018)) and favoring females (Almuskari & Aldhafri, 2020). In contrast, Hall et al. (2015) reported no gender differences in this orientation.

2.3.3. Age

According to a prior study by Soyer and Kirikkanat (2019) there are no differences in performance approach and performance avoidance orientations. After reviewing these earlier studies, it's clear that there's a lot of disagreement about how achievement goal orientations vary by gender, study stage, and age, as well as how they relate to academic success. This discrepancy highlights the significance of the present research, which seeks to confirm the degree to which students in Saudi Arabia have accomplishment goal orientations, the nature of this relationship, and the ways in which these orientations differ within the Saudi educational setting.

3. METHODOLOGY

3.1. Research Design

The research adopted a comparative descriptive method, suitable for the nature of the study and the type of data required. This method investigates the phenomenon within a real-world context, accurately characterizing it and identifying its features and differences based on the variables studied.

3.2. Research Population and Participants

During the 2022–23 academic year, 1,832 postgraduate students from the College of Education at Saudi Arabia's King Saud University constituted the research population. A basic random sampling technique was employed to select a sample of 320 postgraduate students, following Steven Thompson's calculation. The acceptable margin of error was 0.05. Additionally, the scale's internal consistency and the reliability of the data collection instruments were assessed using Cronbach's alpha with a pilot study involving 46 students.

3.3. Procedure

The study procedure involved several steps:

1. Reviewing theoretical frameworks and previous studies on achievement goal orientations.
2. Examining various goal orientation measures to select the most appropriate scale for this study.
3. Testing the selected scale's psychometric properties through a pilot study.
4. Administering the finalized scale to the study sample.
5. Collecting and analyzing the data.
6. Discussing the results and providing recommendations and suggestions.

3.4. Data Analysis

The SPSS software package was employed to perform statistical analyses. This included the reliability test, specifically Cronbach's Alpha Coefficient, along with measures of central tendency and dispersion. Spearman's rank and Pearson's correlation coefficients were also used, as well as the Mann–Whitney U and Kruskal–Wallis tests for group differences.

3.5. Instrument

The study utilized the 2×2 achievement goal orientation scale as presented in Appendix Table 9, which was developed by Elliot and McGregor (2001) and eventually translated into Arabic by Al-Watban (2013). There are a total of 12 items on this scale, and three of them measure each of the four potential orientations toward goal attainment: performance approach, mastery avoidance, performance, and completion. Total scores, ranging from 3 to 15, are recorded for each orientation using a five-point Likert scale.

3.6. Reliability and Validity Tests

The reliability of this scale has been confirmed by numerous studies, both in its original English version and in various translations. The scale's authors, Elliot and McGregor (2001) validated its reliability using Cronbach's alpha for each of the four orientations through three sub-studies conducted at the University of Rochester in New York, with reliability coefficients ranging from 0.82 to 0.96. The Arabic version by Al-Watban (2013) also confirmed its reliability, with Cronbach's alpha coefficients for the four orientations ranging from 0.65 to 0.78.

In the current research, the reliability of the four orientations was evaluated using Cronbach's alpha with a pilot sample of 46 students. The coefficients were robust, ranging from 0.81 to 0.91 (see Table 1).

Table 1. Cronbach's alpha coefficients of the dimensions of the achievement goal orientation scale (N = 46).

Orientation	No. of items	Cronbach's alpha coefficient
Performance approach	3	0.91
Performance avoidance	3	0.81
Mastery avoidance	3	0.84
Mastery approach	3	0.88

Elliot and McGregor (2001) who developed the scale, verified the factorial validity of the quadrilateral model of achievement goal orientations through exploratory factor analysis of the scale's items. The analysis identified four independent factors, explaining 81.5% of the total variance. This indicates that each of the four orientations represents a distinct goal structure that is empirically separable and internally consistent.

By using the pilot sample to calculate the Pearson correlation coefficient between each dimension's items and the dimension's total score (excluding the item's score), internal consistency was also confirmed. All correlation coefficients were found to be statistically significant, ranging from 0.52 to 0.87, indicating moderate to strong correlations (see Table 2).

Table 2. Internal consistency - the correlation coefficient between the degree of each item and the total degree of the item's dimension for the achievement goals orientation scale (N = 46).

Item	Relationship to the total degree of the dimension	Item	Relationship to the total degree of the dimension
1	0.84**	7	0.67**
2	0.80**	8	0.87**
3	0.84**	9	0.62**
4	0.70**	10	0.70**
5	0.52**	11	0.80**
6	0.80**	12	0.85**

Note: ** $p < 0.01$.

The data shows that the Achievement Goal Orientation Scale (and its sub-dimensions) had high levels of validity and reliability according to a review of the literature on the scale's psychometric qualities. Hence, it served to resolve the research inquiries.

4. RESULTS

For the first research question, means and standard deviations of achievement goal orientations were computed (see Table 3). The items were rated on a five-point Likert scale, and the levels of achievement goal orientations were assessed using the following mean value criteria: very high (4.20 to 5.00), high (3.40 to 4.19), medium (2.60 to 3.39), low (1.80 to 2.59), or very low (1.00 to 1.79).

Table 3. The mean, standard deviation, and level of achievement goal orientations (N = 320).

Achievement Goal Orientation	No. of items	Mean	Standard deviation	Level of achievement goal orientation
Performance approach	3	3.28	1.165	Moderate
Performance avoidance	3	3.35	0.988	Moderate
Mastery avoidance	3	3.04	0.997	Moderate
Mastery approach	3	4.35	0.549	Very high

Table 3 shows that the levels for three goal orientations were in the moderate range, with mean values of 3.28, 3.35, and 3.04. On the other hand, the mastery approach orientation fell within the very high range, with a mean of 4.35. This indicates that most students prefer the mastery approach, with performance avoidance and performance approach being less common, and mastery avoidance being the least favored orientation.

In order to investigate the second research question, Spearman's rank correlation coefficient, a non-parametric measure, was used to examine the relationship between the four achievement goal orientations and academic performance, considering the non-normal distribution of the data (see Table 4).

Table 4. Spearman's correlation coefficients between the ranks of the four achievement goal orientations and the ranks of academic achievement (N=320).

Goal orientation	Academic achievement
Performance approach	-0.090
Performance avoidance	-0.176**
Mastery avoidance	-0.178**
Mastery approach	0.149**

Note: ** $p < 0.01$.

Table 4 shows that there was no statistically significant correlation between performance approach orientation and academic achievement. However, there are significant negative relationships ($p < 0.01$) between both performance avoidance and mastery avoidance orientations and academic achievement. Furthermore, the table shows a statistically significant positive correlation ($p < 0.01$) between the mastery approach orientation and academic achievement. In order to address the third research question, the Mann–Whitney U test, a non-parametric method, was employed because of the non-normality of the data distribution. This test examined the variations in mean ranks of achievement goal orientations according to academic stage (M.A./Ph.D.). The findings are displayed in Table 5.

Table 5. The differences between the mean ranks of achievement goal orientations according to study stage (M.A./Ph.D.) (N=320).

Goal orientation	Study stage	N	Mean rank	Sum of ranks	Mann–Whitney U	Sig.
Performance approach	Ph.D.	151	165.08	24926.50	12068.500	0.400
	M.A.	169	156.41	26433.50		
Performance avoidance	Ph.D.	151	168.81	25491.00	11504.000	0.127
	M.A.	169	153.07	25869.00		
Mastery avoidance	Ph.D.	151	149.19	22528.00	11052.000	0.038*
	M.A.	169	170.60	28832.00		
Mastery approach	Ph.D.	151	177.32	26775.00	10220.000	0.002**
	M.A.	169	145.47	24585.00		

Note: ** = $p < 0.01$.
* = $p < 0.05$.

Table 5 shows no statistically significant differences in performance approach and performance avoidance orientations based on the study stage. However, there are statistically significant differences ($p < 0.05$) in mastery avoidance orientation, favoring the M.A. stage. Additionally, statistically significant differences ($p < 0.01$) in mastery approach orientation were found, favoring the Ph.D. stage. To address the fourth research question, the Mann–Whitney U test, a non-parametric method, was employed due to the non-normal distribution of the data to assess the differences in mean ranks of achievement goal orientations by gender (see Table 6). Table 6 demonstrates statistically significant differences ($p < 0.01$) in performance approach orientation by gender, favoring males. There are also significant differences ($p < 0.05$) in performance avoidance orientation, again favoring males. However, the table reveals no significant differences by gender in mastery avoidance and mastery approach orientations.

Table 6. The differences between the mean ranks of achievement goal orientations according to gender (N=320).

Goal orientation	Gender	N	Mean rank	Sum of ranks	Mann–Whitney U	Sig.
Performance approach	Male	95	194.12	18441.50	7493.500	0.000**
	Female	225	146.30	32918.50		
Performance avoidance	Male	95	180.46	17143.50	8791.500	0.012*
	Female	225	152.07	34216.50		
Mastery avoidance	Male	95	170.67	16214.00	9721.000	0.199
	Female	225	156.20	35146.00		
Mastery approach	Male	95	152.88	14523.50	9963.500	0.328
	Female	225	163.72	36836.50		

Note: ** $p < 0.01$.
* $p < 0.05$.

For the fifth research question, the Kruskal–Wallis Test, a non-parametric method, was used due to the non-normal distribution of the data to examine the differences in mean ranks across three age stages. Additionally, post hoc comparisons were performed using the Mann–Whitney U test to identify the direction of differences in performance avoidance orientation among the three age stages (see Tables 7 and 8).

Table 7. The differences between the mean ranks of achievement goal orientations according to age (Between 22–28 years, between 29–36 years, and 37 years and over) (N=320).

Goal orientation	Age	N	Mean rank	Chi-square	df	Sig.
Performance approach	22–28 years	78	149.53	4.483	2	0.106
	29–36 years	108	152.60			
	37 years and over	134	173.26			
Performance avoidance	22–28 years	78	138.85	7.050	2	0.029*
	29–36 years	108	159.83			
	37 years and over	134	173.64			
Mastery avoidance	22–28 years	78	161.72	1.231	2	0.540
	29–36 years	108	167.37			
	37 years and over	134	154.25			
Mastery approach	22–28 years	78	156.17	0.395	2	0.821
	29–36 years	108	159.31			
	37 years and over	134	163.98			

Note: * $p < 0.05$.

Table 8. Post hoc comparisons between the three age stages for the performance avoidance orientation.

Age	37 years and over		29–36 years	
	Mann–Whitney U	Sig.	Mann–Whitney U	Sig.
22–28 years	4118.000	0.010*	3631.000	0.107
29–36 years	6583.000	0.225		

Note: * $p < 0.05$.

Table 7 indicates that there are no statistically significant differences in performance approach, mastery avoidance, and mastery approach orientations among the three age stages (22–28 years, 29–36 years, and 37 years and over). However, there are significant differences ($p < 0.05$) in performance avoidance orientation depending on age stage. The post hoc comparisons in Table 8 show statistically significant differences ($p < 0.05$) in performance avoidance orientation among the 22–28 years and 37 years and over age groups, with the older age group (37 years and over) scoring higher. There were no significant differences in performance avoidance between the 22–28 and 29–36 age groups, as well as between 29–36 years and 37 years and over.

5. DISCUSSION

5.1. Level of Achievement Goal Orientations

Numerous studies have explored achievement goal orientations and their variation according to study stages, gender, and age, and their relation to academic achievement. Some of these studies align with the findings of this study, which revealed a moderate level of the three achievement goal orientations among students: performance approach (e.g., (Al-Zadjali, 2014; Chen & Wong, 2015; Crippen et al., 2009)), performance avoidance (e.g., (Al-Zadjali, 2014; Alotaibi, 2016; Chen & Wong, 2015; Neroni et al., 2018; Ng'ang'a et al., 2018)), and mastery avoidance (e.g., (Al-Zadjali, 2014; Alasqah, 2022; Almuskari & Aldhafri, 2020; Alotaibi, 2016; Alsaidi, 2021; Crippen et al., 2009)). Conversely, other studies have reported different levels of the three achievement goal orientations among students: performance approach (e.g., (Aboouf, 2020; Alasqah, 2022; Almuskari & Aldhafri, 2020; Alotaibi, 2016; Alsaidi, 2021; Banimufarrej & Alawneh, 2014; Barkur et al., 2013; Hall et al., 2015; Magno, 2012; Neroni et al., 2018; Ng'ang'a et al., 2018)), performance avoidance (e.g., (Aboouf, 2020; Alasqah, 2022; Alsaidi, 2021; Banimufarrej & Alawneh, 2014; Barkur et al., 2013; Crippen et al., 2009; Hall et al., 2015; Magno, 2012)), and mastery avoidance (e.g., (Aboouf, 2020; Barkur et al., 2013; Hall et al., 2015; Magno, 2012; Neroni et al., 2018;

Ng'ang'a et al., 2018)). Several studies (e.g., (Al-Zadjali, 2014; Alasqah, 2022; Almuskari & Aldhafri, 2020; Alsaidi, 2021; Crippen et al., 2009; Hall et al., 2015; Magno, 2012; Neroni et al., 2018; Ng'ang'a et al., 2018)) corroborate the results of the present study, which indicated a high level of mastery approach goal orientation among students. In contrast, other research (e.g., (Aboouf, 2020; Alotaibi, 2016)) found a low level of mastery approach goal orientation among students. The elevated mastery approach goal orientation observed among postgraduate students may be attributed to the nature of their academic and life stages. These adult students have typically experienced numerous educational and life challenges, enabling them to appreciate that the ultimate goal of learning is mastery and a deep understanding of educational subjects, which can be practically advantageous.

On the other hand, students exhibited moderate levels in the other three goal orientations. This might be because, at this educational stage, students are less concerned with external evaluations, whether positive or negative. They may not be motivated to display their abilities in front of others, and competition among peers might be less prevalent due to the nature of the academic environment and the frequent change of classmates as subjects vary. Consequently, there is less emphasis on performance and more on mastery.

5.2. Relationship Between Achievement Goal Orientations and Academic Achievement

Academic success is unrelated to the performance approach goal orientation, according to the second question. According to Magno (2012), Barkur et al. (2013), Al-Zadjali (2014), Hall et al. (2015), Uyar et al. (2018) and Alasqah (2022), this result aligns with certain prior research. Conversely, prior studies have demonstrated a correlation between them (e.g., (Almuskari & Aldhafri, 2020; Alsaidi & Aldhafri, 2021; Alsaidi, 2021; Barzegar, 2012; Chen & Wong, 2015; Crippen et al., 2009; Hassan, 2016; Neroni et al., 2018; Ng'ang'a et al., 2018; Rivers, 2021)). The findings reveal a negative correlation between academic success and performance avoidance goal orientations. Similar conclusions have been reached by other research (e.g., (Al-Zadjali, 2014; Alsaidi & Aldhafri, 2021; Alsaidi, 2021; Barzegar, 2012; Hassan, 2016; Neroni et al., 2018)). However, some studies found a positive relationship between them (e.g., (Alasqah, 2022; Almuskari & Aldhafri, 2020; Ng'ang'a et al., 2018)), or no relationship between them (e.g., (Barkur et al., 2013; Chen & Wong, 2015; Crippen et al., 2009; Hall et al., 2015; Magno, 2012; Rivers, 2021; Uyar et al., 2018)). Several studies indicate a negative correlation between academic achievement and the mastery avoidance goal orientation (e.g., (Al-Zadjali, 2014; Alsaidi & Aldhafri, 2021; Barzegar, 2012; Crippen et al., 2009; Hall et al., 2015)). This finding aligns with the second question. Conversely, other studies have shown no relationship (e.g., (Alasqah, 2022; Almuskari & Aldhafri, 2020; Alsaidi, 2021; Magno, 2012; Neroni et al., 2018; Uyar et al., 2018)) or a positive relationship (e.g., (Barkur et al., 2013; Ng'ang'a et al., 2018)).

The results also indicate a positive correlation between academic success and the mastery approach goal orientation (e.g., (Al-Zadjali, 2014; Alsaidi & Aldhafri, 2021; Alsaidi, 2021; Barzegar, 2012; Crippen et al., 2009; Ng'ang'a et al., 2018; Uyar et al., 2018)). However, other studies (e.g., (Alasqah, 2022; Almuskari & Aldhafri, 2020; Hall et al., 2015; Magno, 2012; Neroni et al., 2018)) have not found any correlation between these factors.

Examining the objectives that students have at this stage in their academic careers can shed light on the correlation between the mastery approach goal orientation and academic success. These objectives typically focus on mastering educational material and viewing learning as a personal challenge, which enhances motivation, learning efficacy, and positive emotions. Perseverance and effort, nurtured by these objectives, positively impact academic achievement. A failure to concentrate on the process of mastery while learning, however, explains why the other three goal orientations are either not related to academic success or have a negative correlation with it. Instead, students may concentrate on peer competition and external judgments from colleagues or professors, which can lead to constant tension and anxiety about appearing weak or inferior. This state of stress reduces academic self-efficacy and detracts from focusing on the learning process, prompting students to avoid new or challenging educational situations that test their abilities. Ultimately, these factors negatively impact their academic achievement.

5.3. Differences in Achievement Goals Orientations According to the Study Stage

The findings related to the third question indicate no statistically significant differences in performance approach and performance avoidance orientations based on academic stage (M.A./Ph.D.). This result is in line with the study by Soyer and Kirikkanat (2019) but contradicts Hall et al. (2015) who found significant differences in performance approach orientation favored the lower academic stage. Additionally, the findings show significant differences in mastery avoidance orientation, favoring the M.A. stage, and in mastery approach orientation, favoring the Ph.D. stage. This contrasts with Hall et al. (2015) who reported differences in mastery approach orientation favoring the lower academic stage. The absence of differences in performance orientation may be due to the fact that students in both academic stages do not prioritize performance and achieving the highest grades as distinguishing goals from their peers. The differences in mastery avoidance orientation favoring the master's degree students suggest that they are more hesitant and fearful of failure or appearing unable to learn. These students focus on avoiding errors and not working incorrectly, possibly due to their relatively limited experience and educational practice compared to Ph.D. students. Conversely, the superiority of doctoral students regarding mastery approach orientation may be attributed to their desire to learn new things, improve their abilities, achieve greater self-efficacy, and develop their skills and knowledge. Ph.D. students aim to acquire as much educational content as possible, supported by their extensive educational and practical experience from previous stages.

5.4. Differences in Achievement Goals Orientations According to Gender

The results pertaining to the fourth question show that there are statistically significant differences in performance approach and performance avoidance orientations according to gender, with the differences favoring males. This finding aligns with a previous study by Aboouf (2020). However, other studies have shown differences in performance approach favoring females (e.g., (Almuskari & Aldhafri, 2020; Ng'ang'a et al., 2018)) and in performance avoidance also favoring females (e.g., (Almuskari & Aldhafri, 2020; Banimufarrej & Alawneh, 2014; Ng'ang'a et al., 2018)). Additionally, some studies indicate no statistically significant differences according to gender in performance approach (e.g., (Banimufarrej & Alawneh, 2014; Hall et al., 2015; Soyer & Kirikkanat, 2019)) and performance avoidance (e.g., (Hall et al., 2015; Soyer & Kirikkanat, 2019)).

The results found by Hall et al. (2015), Soyer and Kirikkanat (2019) and Almuskari and Aldhafri (2020) also indicate no statistically significant differences in mastery avoidance orientation based on gender. Conversely, Aboouf (2020) found statistically significant gender-based differences for this orientation.

Aligned with Hall et al. (2015) the results also show no gender-based statistical differences in mastery approach. However, other research has shown gender disparities in mastery approach (Aboouf, 2020; Almuskari & Aldhafri, 2020; Ng'ang'a et al., 2018).

The differences favoring male students in performance orientations might be understood in the context that male students are more inclined to want to appear favorable in front of their peers and professors. They strive to excel over their peers and prefer to engage in familiar educational tasks, avoiding new tasks due to fear of failure or criticism. Male students might also show less initiative, especially in tasks they perceive as difficult. Additionally, males in Arab society are generally more social, making external standards more influential in the learning process and motivating them to excel over their peers and maintain a favorable appearance.

On the other hand, the absence of differences in the two mastery orientations might be because students, regardless of gender, share similar educational experiences and are studying at an advanced educational stage. This stage requires a greater focus on mastering learning as a primary goal for self-development, improving capabilities, and enhancing academic self-efficacy.

Both male and female students understand that success requires significant effort and avoiding mistakes or failure to master learning, making these factors common between the two genders.

5.5. Differences in Achievement Goals Orientations According to the Age Stages

The final question revealed no statistically significant differences in the three orientations examined across the three age groups (22–28 years, 29–36 years, and 37 years and above), specifically the performance approaches, mastery avoidance, and mastery approaches. Soyer and Kirikkanat (2019) also found no statistically significant differences in the performance approach orientation, which is partially consistent with our findings. Additionally, there are age-specific differences in the performance avoidance orientation, favoring the older age group; however, Soyer and Kirikkanat (2019) did not observe such differences.

The absence of differences in these three orientations can be explained by assuming that age is a non-influencing factor. Learners at this level likely have a maturity level gained through their educational experiences in undergraduate and earlier stages, leading to a clear perception of their goal orientations and ways to achieve them.

The differences favor the older age group in performance avoidance orientation, maybe because older students are more inclined to avoid failure and avoid displaying incompetence or inability to prevent embarrassment in front of their peers and professors. Consequently, they strive to achieve high rankings among their colleagues and avoid any form of failure.

6. CONCLUSION

This research investigated the relationship between academic success and the levels of achievement goal orientations among postgraduate students in the College of Education at King Saud University. The findings showed that the students had moderate levels of achievement goal orientations for three orientations but a very high level for the mastery approach. Positive correlations were found between academic success and performance approach, negative correlations with performance avoidance and mastery avoidance, and positive correlations with mastery approach.

The study also investigated differences based on study stage, gender, and age, finding some variations among these variables, which align with many other studies. The research concludes that even postgraduate students can benefit from focusing on achievement goal orientations to achieve success. This can be achieved by clearly defining learning goals, aiming for mastery and fostering more learning and self-development.

6.1. Implications and Suggestions

Professors and colleges should ensure that their students understand the significance of properly articulating their goals because the results show that there is a modest level of performance avoidance, mastery avoidance, and performance approach to reach goals. They should emphasize how these orientations impact the process of mastering learning and their practical applications in professional and public life. This can be achieved by encouraging students to direct their goals toward mastery rather than focusing on performance or avoidance. Master's students, in particular, require more attention and guidance due to the observed differences in mastery orientation favoring Ph.D. students.

Academic success is positively correlated with a mastery approach orientation, which shows how important it is for students to set their own goals and use them or a task's criteria as metrics for success. Emphasizing mastery during the learning process should be a primary goal for students.

Future research can build on this study by measuring the levels of achievement goal orientations in other educational environments and looking at how these perspectives affect students' performance in the classroom. Additionally, it is suggested to develop a measure of achievement goal orientations tailored to the Arab environment and compatible with the age and academic stage of postgraduate students.

The results concerning gender, age, and academic stage disparities in achieving goal orientations need additional research. It would be exceptionally helpful if there were longitudinal studies that followed students from their first year of high school all the way through their bachelor's and master's degrees to see how their focus on

achievement goals changes. The connection between accomplishment goal orientations and other significant academic characteristics could also be investigated in future studies.

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APPENDIX

Table 9. The 2×2 achievement goals orientation scale.

Number	Statement
1	It is important for me to do better than other students.
2	It is important for me to do well compared to others in this class.
3	My goal in the class is to get a better grade than most of the other students.
4	I worry that I may not learn all that I possibly can in this class.
5	Sometimes I'm afraid that I may not understand the content of this class as thoroughly as I'd like.
6	I am often concerned that I may not learn all that there is to learn in this class.
7	I want to learn as much as possible from this class.
8	It is important for me to understand the content of this course as thoroughly as possible.
9	I desire to completely master the material presented in this class.
10	I just want to avoid doing poorly in this class.
11	My goal in this class in to avoid performing poorly.
12	My fear of performing poorly in this class is often what motivates me.

Note: Elliot and McGregor (2001).

Each statement is rated on a scale from 1 to 5, where 1 indicates "Not at all true of me" and 5 indicates "Very true of me."