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Active mind, active learning: the role of materialism and psychological well-being for the determination of students' academic performance

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Active mind, active learning: the role of materialism and psychological well-being for the determination of students' academic performance

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Abstract: The study was conducted to understand the phenomenon through which materialism impacts students' academic performance. Following the ideas provided by Self-Determination Theory (SDT), a structural model was proposed and validated that analysed the mediating role of psychological well-being between both the constructs. The sub-domains of psychological well-being (self-efficacy, emotional intelligence and social intelligence) and academic performance (student's self-efficacy, engagement and social interaction anxiety) were individually examined in the context of the phenomenon to provide a comprehensive understanding. With the help of self-administered surveys, 452 valid responses were gathered from university students (with business majors) through a questionnaire based on adopted scales. The technique of Partial Least Squares-Structural Equation Modelling (PLS-SEM) was utilised for conducting the analyses. Results of the analyses revealed the negative influence of materialism on all sub-domains of psychological well-being. Additionally, a significant positive relationship was found between all sub-domains of psychological well-being and academic performance. Furthermore, all sub-domains of psychological well-being (except social intelligence between materialism and students' self-efficacy) mediated the relationship between materialism and all three sub-domains of students' academic performance. Both theoretical and practical implications of the results are discussed.

Keywords: active learning; materialism; psychological wellbeing; academic performance.

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1 Introduction

Consumption of products that provide symbolic instead of functional value has become a norm in consumer culture as observed nowadays. This consistently accelerating rise of the luxury market is reflective of changing consumer preferences and lifestyles. Among these consumers (who are) motivated by the conspicuousness of brands, the segment of millennials or generation Y customers is the one filling up the market more than any other customer segment (Giovannini et al., 2015). Based on such reasons, it is estimated that millennials will become the largest customer segment of the luxury market by the year 2025 (Shin et al., 2017).

The conspicuous luxury brands are characterised by quality, scarcity, craftsmanship and most of all, the ability to communicate the superior status of possessor through high prices and prestigious brand image (Ko et al., 2019). This is why, purchases from luxury brands have always been found to be related to and promote conspicuous consumption (Barrera and Ponce, 2021; Dhaliwal et al., 2020; Giovannini et al., 2015). Furthermore, these consumption rationales based on pretentiousness are primarily backed by

materialism or materialistic values (Dev et al., 2018; Long et al., 2021; Zakaria et al., 2020). Since the segments of generation Y and Z consumers have been observed to be rising noticeably within the market of luxury brands (Giovannini et al., 2015; Kapferer and Michaut-Denizeau, 2020), it can reasonably be argued that materialism is increasing within these customer segments. Among many other indicators, the rise of materialism in youth can be observed from their most common priories and goals in life. As King (2020) highlighted, the most important and common criteria for the selection of a job among youngsters is solely based on its ability to pay for their materialistic lifestyle. This is fuelled by the desire to acquire the maximum possible amount of material wealth and such an attitude among students is actually harmful to their learning (King, 2020). As per the basic demographic composition of the markets based on ages and common occupations or activities, the major chunk of these two prominent customer segments (of symbolic brands) is most likely to be in university life or early career development stages.

A plethora of studies have highlighted the negative impact of materialism on an individual's mental well-being, happiness, psychological well-being, quality of life, self-esteem and other important indicators of quality of life and overall well-being (Christopher et al., 2009; Deckop et al., 2010; Dev et al., 2018; Gupta and Singh, 2019; Moldes and Ku, 2020; Nagpaul and Pang, 2017; Wang et al., 2017b). Additionally, materialism has also been widely reported to negatively affect students' academic performance by giving rise to harmful outcomes in the form of depression, anxiety, fear, etc. (Gupta and Singh, 2019; Koly et al., 2021; Wang et al., 2017b; Wynaden et al., 2013), which might lead to a reduction in student engagement, learning, grades, etc. (King, 2020; King and Datu, 2017; Ku et al., 2012, 2014; Wang et al., 2017a).

Following these detrimental effects of materialism on well-being as well as academic performance, this study was undertaken to determine if the negative effects of materialism are caused by compromised mental health (that is the resultant of materialism). The effort was to identify the reason due to which materialism leads to declining academic performance and has always been reported to be negatively associated with it. A very limited number of studies have focused on identifying the phenomenon due to which materialism impacts academic performance. Also, more research is recommended by experts in the domain to combat students from the harmful effects of materialism by understanding its background and overall nature (King, 2020). Taking this ahead, the current study is an effort to contribute to the literature of materialism and its role in education.

The core idea of this research was built on Social Determination Theory (SDT) to describe the attitudinal shift caused due to materialism and highlight how this shift impacts one's psychological wellbeing; that, if taken in the context of education, is crucial to students' academic performance. SDT presents a framework of three major psychological needs due to which positive outcomes are realised (Nagpaul and Pang, 2017). Firstly, it is autonomy which refers to the free will for the selection of activities and choices made. Secondly, it is the want of being capable of getting desired outcomes (competence) and thirdly, the need for belonging with the society and environment (relatedness) (Nagpaul and Pang, 2017; Wang et al., 2017b).

Followed by these teachings from SDT, we propose that materialism amplifies these psychological needs, and these amplified but unmet needs result in dissatisfaction with life which further translates into negative outcomes (psychologically). These negative outcomes deviate students from learning; hence, may lead to poor academic performance.

For testing this theory-based logic, our study is an effort to add to the body of knowledge. We provide empirical evidence for factors and their role due to which materialism has always been associated with compromised psychological well-being. In this attempt, we aim to strengthen the validity of the research by studying the effects of materialism within a population that requires the most psychological stability (students at a tertiary level of education).

2 Literature review

2.1 Materialism

The construct of materialism has always been treated as a complex, multifaceted, and plural instead of a homogenous and unidimensional variable. Its conceptualisation is varied among different disciplines, i.e., Political Philosophy, Geography and Archaeology (Braun and Whatmore, 2010; Witmore, 2014). However, the materialism concept was first introduced and studied in behavioural sciences by Belk (1984), and the scale for tapping the construct in behavioural sciences was developed subsequently which is still used to study materialism and its outcomes.

The construct of materialism has been conceptualised differently by different scholars. Following the advances in the conceptualisation of the construct, it would not be wrong to assert that it evolved with the passage of time. Belk (1984) referred to the concept of materialism as the tendency of an individual to value worldly possessions. Furthermore, materialism was found to be composed of certain behaviours and attitudes. These included possessiveness (characterised by efforts to maintain ownership of [tangible and valued] possessions), non-generosity (characterised by lack of spirit to share the tangible possessions), and envy (characterised by disliking or abhorrence towards others who are perceived to be more happy, successful and/or entitled to desirable possessions) (Belk, 1984). Following this, Rassuli and Hollander (1986) related the concept of materialism to a lifestyle choice and orientation. This lifestyle was characterised by the attention and interest towards gaining and acquiring material or worldly possessions (Rassuli and Hollander, 1986). Putting all this together, materialism was also described in terms of an individual's lifestyle dominated by dedication towards the acquisition of tangible, material and/or valued possessions that is also backed by the snubbing of spiritual and intellectual matters (Richins and Dawson, 1992).Summing up, where Belk (1984) defined materialism in terms of a 'personality trait' due to which an individual is focused on and interested in acquiring worldly possessions by prioritising and perceiving them as of primary importance, Richins and Dawson (1992) described the construct in terms of 'personal value' due to which an individual is more likely to place importance toward material objects or possessions.

Later studies in psychology and other behavioural sciences viewed materialism in terms of wealth in relation to the individual's longing or desire for its accumulation. Materialism is defined in terms of a person's heightened preference for the acquisition and ownership of wealth and tangible possessions (Kashdan and Breen, 2007). Subsequently, materialism is also expressed as a significant desire for owning wealth, money, physical goods (that are highly valued monetarily) and such desire is asserted to be backed by the ignorance of other factors in life (Nagpaul and Pang, 2017) e.g., spiritual or other intrinsic ones.

2.2 Materialism and psychological well-being

Since materialism is reflected by the need and attention of the individual towards the acquisition of material possessions in a manner that this interest of accumulating wealth and material objects makes him/her ignorant of the non-material (i.e., spiritual) aspects of life (Kashdan and Breen, 2007; Nagpaul and Pang, 2017), an individual with high materialistic values is more likely to find a purpose of life in materialistic goals and motives (Richins and Dawson, 1992). This may mean that materialism leads to a belief that happiness can be availed through or in the form of owning material and valued (monetary-based) possessions. Following this idea, a vast amount of research in the area focused on testing the relationships between materialism (or materialistic values) and other psychological variables like mental health (Wang et al., 2017a), self-esteem (Gupta and Singh, 2019), etc. Even though materialism can be a derivative of happiness for those who view success and life's accomplishments in material possessions, it cannot significantly add to one's satisfaction with life (Long et al., 2021).

A very limited amount of research has indicated a neutral or positive connection between materialism and mental or psychological health and even this minimal amount of research did not provide any direct or concrete positive relationship. Dunn et al. (2011), for instance, highlighted eight principles through which consumers could derive additional happiness from spending their money, i.e., gaining experience rather than objects or helping others through money. Even if the presented concept or principle is logically understood, materialism is seen to have a negative impact on happiness in this study too. On the other hand, there exists a huge amount of research evidence where materialistic values were confirmed to be associated with 'problematic outcomes' (Christopher et al., 2009). These outcomes (of materialism and materialistic values) include anxiety, depression (Kasser and Ahuvia, 2002), poor mental health (Wang et al., 2017a), envy (Dev et al., 2018), diminishing self-esteem (Gupta and Singh, 2019), plummeting satisfaction with life (Richins and Dawson, 1992), negative emotions, decreased happiness, lost sense of life's meaning (Kashdan and Breen, 2007) and fears regarding negative evaluation from others (Christopher et al., 2009). Additionally, materialistic individuals are also known to be dissatisfied with their job or profession (Deckop et al., 2010) and are also found to lead unhappy married life (Carroll et al., 2011).

Materialism is not only positively associated with indicators of poor psychological well-being, e.g., depression (Muñiz-Velázquez et al., 2017), but, materialistically-driven lifestyles and values are harmful to both individual as well as societal well-being (Moldes and Ku, 2020). Stronger evidence for the negative association between materialism and psychological health or well-being can also be found from longitudinal studies which also concluded and proved an inverse relationship between both the variables (Wang et al., 2017a). Based on these literary thoughts, it is hypothesised:

H1: Materialism shares a negative relationship with psychological well-being.

Through defining mental well-being as psychological positive outcomes of cognitive processes, Fen et al. (2013) conceptualised the construct of psychological well-being (as a part of overall well-being) to be composed of three major dimensions which included cognitive efficacy, emotional intelligence, and social intelligence (Fen et al., 2013). As defined by Fen et al. (2013), Efficacy is an individual's perceived opinion about his/her capabilities and skills (Cobo-Rendón et al., 2020; Duffy et al., 2020; Górnik-Durose,

2020). Emotional intelligence is the individual's ability to handle and process emotional information (Salami, 2010) and social intelligence is the individual's awareness, knowledge and ability to form, handle and deal with social relationships (Fen et al., 2013).

2.3 Psychological well-being and students' academic performance

Psychological well-being is responsible for strengthening an individual's meaning of life by aiding towards defining one's purpose in life (Jayawickreme et al., 2012). It is not an unusual fact that students are more exposed to both psychosocial and psychological concerns such as abusiveness, depression, anxiety, etc. during their higher education attainment (Wynaden et al., 2013). This means students' mental well-being is at more risk during their college/university lives. Among the major resources which contribute toward the students' learning and success during their university lives, psychological well-being is an important factor for the quality of education acquired by the student (Salami, 2010). Put it another way, negative psychological outcomes, such as depression, are the obvious predictors of declining academic performance achieved by the students in the form of decreased grades scored (Eisenberg et al., 2009).

It is also suggested that the psychological stress that one might encounter during the pursuit of educational or academic goals may strengthen his/her psychological well-being (Juhl et al., 2017) and psychological well-being is a significant contributor toward the academic performance achieved by the students as the research supports a positive association between psychological well-being and academic performance (Cobo-Rendón et al., 2020). This claim of the positive effect of psychological well-being on academic performance is also backed by the fact that negative indicators of mental health (e.g., depression and anxiety) have been consistently found to be negatively associated with the grades secured by university students (Duffy et al., 2020), as well as their academic achievement (Spence et al., 2020). Similarly, a study conducted to identify and highlight the key constructs associated with the academic performance of Bangladeshi university students concluded by establishing a strong correlation between the poor academic performance of students and the symptoms of depression (Koly et al., 2021). Based on these findings following hypothesis was proposed:

H2: Psychological wellbeing positively affects the student's academic performance.

Since the other two constructs of this study (materialism and psychological well-being) are well understood and documented in terms of affective/subjective measures, it would be more relevant and valid if academic performance is also treated and measured by using subjective measures. Following this, the current study conceptualises the construct of students' academic performance by treating it to be composed of three subjective subdomains. These include efficacy (Meuter et al., 2005), student engagement (Skinner et al., 2009) and social interaction anxiety (Lee et al., 2014). Implementing this delineation of the students' academic performance along with the conceptualisation of psychological well-being as recommended by Fen et al. (2013).

2.4 Materialism, psychological well-being and student's academic performance

Based on cross-sectional as well as longitudinal data, Ku et al. (2012) found materialism to be negatively associated with the performance of students in the school. Materialism is

responsible for decreasing the academic performance of students by negatively affecting their proficiency or expertise over the subjects studied. This deterioration results in a serious decline in the academic performance of students in the long run that is reflected through declining grades and an overall reduction in academic performance (Ku et al., 2014). As highlighted by King and Datu (2017), materialism shares a negative association with the indicators through which students' learning and engagement with studies is analysed, observed and measured. Materialistically driven students are less likely to be engaged with education and this as a whole negatively impacts their learning. Furthermore, relying on the data collected and analysed using surveys as well as linguistic analysis, King (2020) presented concrete evidence of the negative association between materialism and the academic engagement of students. In other words, the greater the levels of materialism, the lower will be the student's engagement with the academic activities (King, 2020) which ultimately results in compromised academic performance of students. It is perceptible from the above evidence that materialism causes a decline in students' academic performance by negatively affecting their engagement and learning processes.

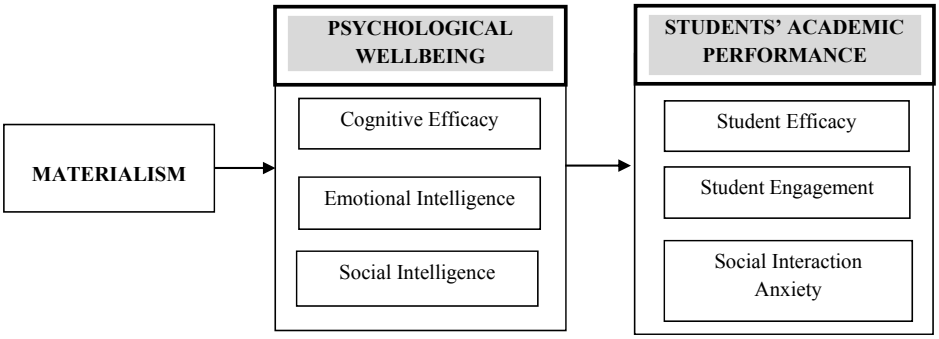
On the other hand, materialistically driven individuals tend to be lesser happy with their lives than individuals with less focus on materialism (Kasser, 2016). Materialism is indicative of the extent to which an individual treats the accumulation and acquisition of worldly or material possessions as of the highest priority as compared to other non-material aspects in life (Kasser, 2018). Additionally, Kasser (2018) also reported that people with high materialistic values have lower well-being than the ones with lesser orientation and inclination toward materialistic goals and their achievement. Not only materialism is linked with poor quality of life in the form of decreased happiness but it is also known to adversely impact the well-being of an individual especially psychological (Muñiz-Velázquez et al., 2017; Moldes and Ku, 2020).

Considering these pieces of evidence based on associations between materialism, psychological well-being and academic performance, the current research proposed that the negative effects of materialism are reflected in the form of poor academic performance among the students because materialism negatively affects their psychological well-being and this effect of decreased psychological well-being (caused by materialism) is responsible for a decline in the academic performance. Hence, we proposed that the negative effect of materialism on academic performance is indirect and mediated through psychological well-being. Following this, the last hypothesis of our study is presented.

H3: The negative effect of materialism on academic performance is mediated by psychological well-being.

As per the conceptualisation of both constructs relevant to this study, on a dimensional level, both constructs are treated to be composed of three dimensions. For psychological well-being, these dimensions include cognitive efficacy, emotional intelligence and social intelligence (Fen et al., 2013). On the other hand, the three dimensions for academic performance include students' self-efficacy (Meuter et al., 2005), engagement (Skinner et al., 2009) and social interaction anxiety (Lee et al., 2014). Considering this, H3 reflects that all three dimensions of psychological well-being would mediate the relationship between materialism and all three dimensions of academic performance.

Figure 1 Conceptual model of the study



3 Methodology

3.1 Population and sampling

Since the research was focused on understanding the negative effect of materialism on academic performance and most of the previous studies in the domain were conducted by taking and analysing the data of students from schools (King and Datu, 2017; Ku et al., 2012; 2014), this research work was aimed at studying the phenomenon by taking into account the data from university students. Additionally, the discipline/department of business studies was chosen to keep our focus on a specific group of students.

Multistage (two-staged) sampling (simple random and convenient) technique was employed to obtain the sample of the study. Out of 56 universities in Punjab (Pakistan) that offer business studies/degree programs, nine public and nine private universities were selected by using simple random sampling (with the help of the SPSS random sampling function). The students of business schools of these 18 universities were then selected as a final sample population and data was collected from them by recruiting them using a convenience sampling approach.

The sample size was determined by following the item-response theory according to which 10 responses are required for ensuring adequate statistical power of the results obtained through the analytical technique of Structural Equation Modelling or SEM (Mcquitty, 2004). Since the final questionnaire was left with 40 items after pretesting, the appropriate sample size was calculated to be 400 (40 items * 10 responses per item).

3.2 Data collection

Following the descriptive research design, primary data was collected using the survey method because of the relevance of this method to gather descriptive data which can be used to understand the relationships between latent constructs (Sharda and Bhat, 2019). The data collection process was administered by expert and trained research assistants who disseminated the questionnaire among the respondents and ensured the objective collection of responses while resolving any queries of the respondents on the spot. The respondents were approached by the trained researcher by getting permission from the head of institutions.

3.3 Measurement instrument

A self-administered questionnaire based on adapted scales was used for data collection through self-dissemination. This questionnaire was mainly comprised of two major sections. The first section required respondent's demographic information and the second section was primarily designed to tap the latent constructs that are of interest to this research.

The section for measuring the relevant constructs was composed of Likert Scale items to which the respondent was required to highlight the extent of consensus to the given item. Three facets of materialism and three sub-domains of psychological well-being and academic performance were measured. Table 1 presents the summary of sources from which scales were originally adopted.

As illustrated by Table 1, the total number of items was 61. This initially adapted questionnaire was sent to subject experts for their recommendation about the instrument's relevancy to the research objectives. Following the recommendations by experts, 10 items were removed and a questionnaire consisting of 51 items was then used for pretesting with a total of 100 respondents. Finally, 11 items were deleted due to reliability and validity issues indicated in the form of insufficient outer loadings, and out of 51 total items, 40 items were retained for the final phase of data collection.

Table 1 Specifications and sources of adapted scales

S. No.	*Construct*	*Sub-Domains/ Facets*	*Items per facet*	*Total items per scale*	*Source*
1	Materialism	Centrality	7	18	(Richins, 2004)
		Success	6		
		Happiness	5		
2	Psychological Well-Being	Cognitive efficacy	4	20	(Fen et al., 2013)
		Emotional intelligence	10		
		Social intelligence	6		
3	Academic Performance	Self-Efficacy	5	23	(Meuter et al., 2005)
		Engagement	10		(Skinner et al., 2009)
		Social interaction Anxiety	8		(Lee et al., 2014)
Total items of questionnaire				61	

3.4 Sample profile

A total of 530 questionnaires were distributed among the potential respondents of the study from which 498 questionnaires were returned. This makes the response rate 93.9%. During the screening process, 40 responses were discarded because of incomplete and/or unengaged responses, and 452 genuine responses were retained for inclusion into the final statistical analysis.

A total of 256 male and 196 female students participated in the study. The majority of students (214) had marketing as a major field of study, while, 155 students had major in Finance. Furthermore, the demographic part of the questionnaire required respondent's

details about family structure, overall grades, degree program, etc. The demographic summary of the study's participants is provided in Table 2.

Table 2 Demographic summary of respondents

Variable	*Category*	*Frequency*	*%*	*Variable*	*Category*	*Frequency*	*%*
Gender	Male	256	56.6	University Type	Public	237	52.4
	Female	196	43.4		Private	215	47.6
Age (Years)	Below18	70	15.5	CGPA (out of 4.00)	Below 2	22	4.9
	18–20	110	24.3		2–2.5	20	4.4
	21–23	206	45.6		2.5–3	128	28.3
	24–26	50	11.1		3–3.5	236	52.2
	Above 26	16	3.5		3.5–4	46	10.2
Family income (PKR/month)	10,000–30,000	101	22.3	Specialisation	Marketing	214	47.3
	30,001–50,000	231	51.1		Finance	155	34.3
	50,001–70,000	93	20.6		Human resources	83	18.4
	70,001–90,000	27	6.0				

3.5 Data analyses

The two software that were used to handle the data and perform hypotheses testing included SPSS (version 21) and SmartPLS (version 3.2.9). SPSS was used to handle responses with an acceptable proportion of missing values and to obtain descriptive statistics of the collected data. Additionally, SmartPLS was utilised to run Partial Least Squares-Structure Equation Modelling (PLS-SEM) for testing the relationships of variables as presented in the hypothesised conceptual model of the study.

PLS-SEM is a variance-based statistical technique and is gaining a lot of attention in behavioural research domains including business, hospitality and management research (Ali et al., 2018a). Its superiority over covariance-based SEM lies in its capability of running complex models with limited sample size without compromising on the accuracy of the results along with a better approach for performing mediation analysis (Hair et al., 2019a). PLS-SEM also promises better predictive and statistical power (Hair et al., 2011).

4 Results

As recommended by Hair et al. (2014), for testing the conceptual model and structural relationships between the latent constructs in PLS-SEM, a two-staged analytical procedure was adopted. The measurement or outer model is analysed at the first and the structural or inner model is tested on the second stage of analysis (Hair et al., 2014).

4.1 Measurement model

As a part of measurement model assessment, reliability and validity of the scales used to tap variables of the study were examined. The Cronbach alpha and Composite Reliability (CR) values were notified to assess the reliability of the measurement model whereas convergent and discriminant validity were analysed for ensuring construct validity within the measurement model.

4.1.1 Reliability

The Cronbach alpha as well as CR values for all the indicators are presented in Table 3. As can be seen, all scales used were found to be reliable as the value of Cronbach alpha and CR for all the adapted scales are greater than 0.70 (Hair et al., 2014).

4.1.2 Convergent validity

The extent to which all the indicators used for measuring the construct are related to one another in terms of representing the construct that is intended to be measured is referred to as convergent validity (Sekaran and Bougie, 2016). As depicted by Table 3, the outer loadings of all indicators of all constructs were higher than the threshold value of 0.6 (Gholami et al., 2013). Additionally, the CR for each construct was also higher than 0.70 and Average Variance Extracted (AVE) for all the variables greater than 0.50 (Ali et al., 2018b). Hence, the measurement model was confirmed to be convergently valid.

Table 3 Reliability and convergent validity

Variable	*Item*	*Loading*	*α*	*CR*	*AVE*
Materialism (MAT)	MATR1	0.832	0.892	0.908	0.513
	MATR2	0.7			
	MATR3	0.698			
	MATR4	0.828			
	MATR5	0.68			
	MATR8	0.801			
	MATR9	0.663			
	MATR11	0.648			
	MATR13	0.663			
	MATR14	0.603			
	MATR15	0.613			
Cognitive efficacy (CE)	COGEF1	0.769	0.748	0.856	0.666
	COGEF2	0.839			
	COGEF3	0.838			
Emotional intelligence (EI)	EMINT1	0912	0.852	0.902	0.70
	EMINT3	0.696			
	EMINT5	0.805			
	EMINT6	0.914			

Table 3 Reliability and convergent validity (continued)

Variable	*Item*	*Loading*	*α*	*CR*	*AVE*
Social intelligence (SI)	SOCINT1	0.751	0.851	0.89	0.576
	SOCINT2	0.678			
	SOCINT3	0.777			
	SOCINT4	0.661			
	SOCINT5	0.774			
	SOCINT6	0.891			
Student's self efficacy (SSE)	STUDSE1	0.762	0.824	0.873	0.536
	STUDSE2	0.708			
	STUDSE3	0.622			
	STUDSE4	0.723			
	STUDSE5	0.675			
	STUDSE6	0.876			
Student's engagement (SE)	STUDEN1	0.76	0.799	0.871	0.632
	STUDEN3	0.627			
	STUDEN5	0.825			
	STUDEN6	0.935			
Social interaction anxiety (SIA)	SIANX1	0.825	0.855	0.891	0.578
	SIANX2	0.764			
	SIANX4	0.769			
	SIANX5	0.799			
	SIANX6	0.644			
	SIANX8	0.747			

4.1.3 Discriminant validity

The extent to which the scale can differentiate the variable (that is intended to be measured) from other ones is referred to as discriminant validity. Discriminant validity of the measurement validity was assessed using the Heterotrait-Monotrait (HTMT) ratio of correlations, criterion suggested by Fornell and Larcker (1981) and cross-loadings.

Table 4 Fornell and Larcker criterion (comparison of AVE with squared correlations)

Construct	*CE*	*EI*	*MAT*	*SI*	*SIA*	*SSE*	*SE*
CE	**0.816**						
EI	0.667	**0.837**					
MAT	–0.583	–0.572	**0.692**				
SI	0.597	0.629	–0.556	**0.759**			
SIA	0.632	0.687	–0.178	0.635	**0.76**		
SSE	0.725	0.66	–0.221	0.57	0.603	**0.732**	
SE	0.588	0.584	–0.195	0.637	0.568	0.643	**0.795**

The HTMT correlation values of all the constructs were found to be lower than the threshold of 0.9 (Hair et al., 2019b). Also, the AVE for each particular construct was higher than the squared correlation of that construct with other latent variables of the study. This satisfied the second condition for the establishment of discriminant validity (Fornell and Larcker, 1981). Finally, the outer loading of each indicator on the respective variable was higher than 0.50 and each indicator loaded significantly higher on the respective variable that it measured rather than other variables. This confirmed the last requirement of cross-loading for assuring discriminant validity of the measurement model (Henseler et al., 2014). Hence, the discriminant validity of the measurement model was also ensured. Tables 4 and 5 present Fornell and Larcker criterion and HTMT correlation values, respectively.

Table 5 HTMT correlation values

Construct	*CE*	*EI*	*MAT*	*SI*	*SIA*	*SSE*	*SE*
CE							
EI	0.84						
MAT	0.401	0.277					
SI	0.729	0.726	0.254				
SIA	0.767	0.782	0.174	0.711			
SSE	0.81	0.78	0.226	0.656	0.697		
SE	0.751	0.7	0.209	0.762	0.667	0.768	

4.2 Structural model

Before moving on to testing hypotheses as a part of structural model evaluation, it is necessary to ensure that none of the predicting variable (s) influences another in the model of the study. For checking this collinearity issue, Variance Inflation Factor (VIF) values were examined and as can be seen for Table 6, all constructs' VIF values are below the threshold value of 3.

Table 6 Inner VIF values

	CE	*EI*	*MAT*	*SI*	*SIA*	*SSE*	*SE*
CE					1.987		1.987
EI					2.115		2.115
MAT	1	1		1			
SI					1.825		1.825
SIA							
SE							

4.2.1 Hypothesis testing

For testing hypotheses and evaluation of the structural model, path co-efficient (β), variance explained (R^2), predictive accuracy (Q^2), and effect sizes (f^2) were noticed as recommended by Hair et al. (2019a, 2019b).

Materialism showed significant negative relationship with all three sub-domains of psychological well-being which included cognitive efficacy (β = –0.162, p < 0.05), emotional intelligence (β = –0.285, p < 0.05) and social intelligence (β = –0.253, p < 0.05). Hence, the first hypothesis (H1) that claimed negative relationship of materialism with psychological well-being was fully supported.

H2 suggested the existence of positive relationship between psychological well-being and student's academic performance. For this, all three sub-domains of psychological well-being were tested for their interrelation with all three conceptualised three sub-domains of student's academic performance. The results of structural model evaluation confirmed a significant positive relationship of cognitive efficacy with students' self-efficacy (β = 0.497, p < 0.05), students' engagement (β = 0.252, p < 0.05) and social interaction anxiety (β = 0.254, p < 0.05). Also, a significant positive affect of emotional intelligence with students' self-efficacy (β = 0.272, p < 0.05), student engagement (β = 0.191, p < 0.05) and social interaction anxiety (β = 0.37, p < 0.05). The last sub-domain social intelligence also shared a positive relation with all sub-domains of academic performance that included students, self-efficacy (β = 0.119, p < 0.05), students' engagement (β = 0.378, p < 0.05) and social interaction anxiety (β = 0.272, p < 0.05). Hence, H2 (H2a–H2i) was also fully supported.

Finally, H3 proposed a mediating role of psychological well-being in the negative relationship of materialism with students' academic performance. To test this, the mediation of all three psychological well-being sub-domains was analysed between materialism and three sub-domains of students' academic performance.

Cognitive efficacy was found to be significantly mediating the negative relationship of materialism with all three sub-domains of students' academic performance which included student's self-efficacy (β = –0.186, p < 0.05), students' engagement (β = –0.094, p < 0.05) and social interaction anxiety (β = –0.095, p < 0.05). The psychological well-being's second sub-domain emotional intelligence also significantly mediated the relationship of materialism with student's self-efficacy (β = –0.078, p < 0.05), student's engagement (β = –0.054, p < 0.05) and social interaction anxiety (β = –0.105, p < 0.05). The mediating role of social intelligence was also found between materialism and students' engagement (β = –0.095, p < 0.05) as well as social interaction anxiety (β = –0.065, p < 0.05) but social intelligence was not found to be mediating the relationship of materialism and students' self-efficacy (β = –0.03, p > 0.05). Keeping in view these results of mediation analysis, H3a, H3b, H3c, H3d, H3e, H3f, H3h and H3i were supported whereas H3g was rejected. All the results of structural model/hypotheses testing are given in Table 7.

In addition to reviewing the impact of each variable on another, the total variance explained (R^2) due to predicting variables in endogenous variables was also tested. As per the guidelines of Henseler et al. (2009) where 0.25, 0.50 and 0.75 are interpreted as weak, moderate, and substantial, the variance explained for cognitive efficacy (21.7%), emotional intelligence (16.3%) and social intelligence (14.1%) was found to be weak whereas R^2 of student's self-efficacy (59.3%), student's engagement (49.2%) and social interaction anxiety (57.3%) was noted to be moderate (Henseler et al., 2009). Table 8 presents the variances explained for each endogenous construct in the tested model. The tested structural model's output (bootstrap) results provided (as provided by SmartPLS software) are presented in Figure 2.

Table 7 Hypotheses testing results

Hypothesis		*Relation*	*B*	*T Statistic*	*P-Value*	f^2	*Support*
	H1a	MAT→CE	–0.373	6.283	0.000	0.162	YES
H1	H1b	MAT→EI	–0.285	4.857	0.000	0.088	YES
	H1c	MAT→SI	–0.253	3.837	0.000	0.068	YES
	H2a	CE→SSE	0.497	7.273	0.000	0.288	YES
	H2b	CE→SE	0.252	2.814	0.002	0.059	YES
	H2c	CE→SIA	0.254	3.12	0.001	0.072	YES
	H2d	EI→SSE	0.272	4.11	0.000	0.086	YES
H2	H2e	EI→SE	0.191	2.163	0.015	0.034	YES
	H2f	EI→SIA	0.37	4.078	0.000	0.151	YES
	H2g	SI→SSE	0.119	1.96	0.025	0.019	NO
	H2h	SI→SE	0.378	4.695	0.000	0.154	YES
	H2i	SI→SIA	0.272	4.505	0.000	0.095	YES
	H3a	MAT→CE→SSE	–0.186	4.626	0.000	0.159	YES
	H3b	MAT→C→SE	–0.094	2.546	0.005	0.091	YES
	H3c	MAT→CE→SIA	–0.095	2.801	0.002	0.146	YES
	H3d	MAT→EI→SSE	–0.078	3.097	0.001	0.086	YES
H3	H3e	MAT→EI→SE	–0.054	1.977	0.024	0.083	YES
	H3f	MAT→EI→SIA	–0.105	3.101	0.001	0.083	YES
	H3g	MAT→SI→SSE	–0.03	1.573	0.582	0.013	NO
	H3h	MAT→SI→SE	–0.095	2.706	0.002	0.152	YES
	H3i	MAT→SI→SIA	–0.069	2.713	0.003	0.033	YES

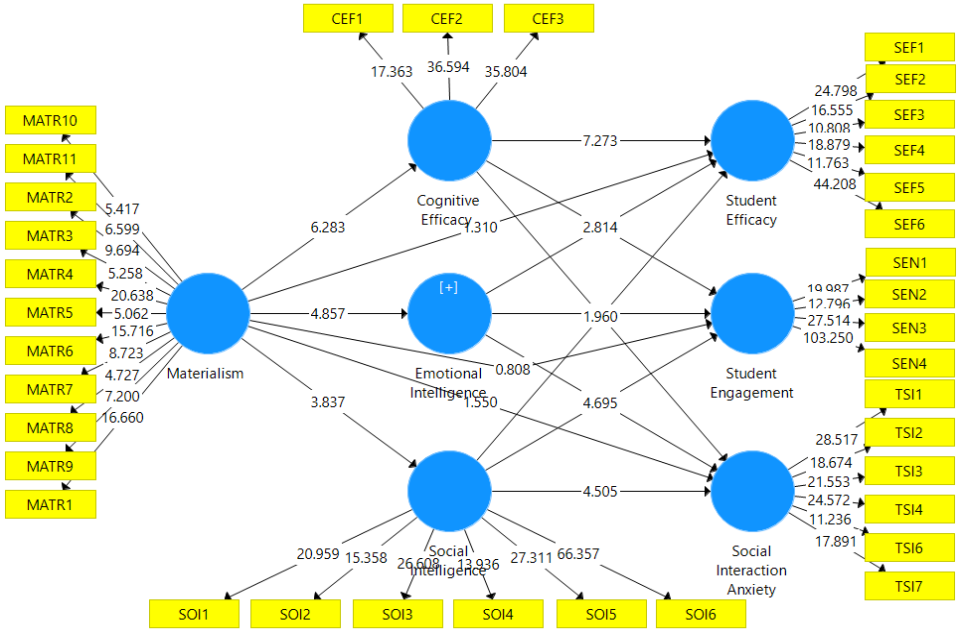
MAT = Materialism
CE = Cognitive Efficacy
EI = Emotional Intelligence
SI = Social Intelligence
SSE = Student's Self Efficacy
SE = Student Engagement
SIA = Social Interaction Anxiety

Table 8 Variance and predictive relevance of endogenous constructs

Endogenous construct	R^2	*Extent of variance explained*	Q^2	*Size of predictive accuracy*
Cognitive efficacy	0.217	Weak	0.085	Small
Emotional Intelligence	0.163		0.049	
Social intelligence	0.141		0.032	
Student's Self Efficacy	0.593	Moderate	0.288	Medium
Student's Engagement	0.492		0.285	
Social Interaction Anxiety	0.573		0.291	

Adhering to the idea of results' insufficiency indicated by merely relying on R^2 as mentioned by Hair et al. (2019a, 2019b) and extending the scope of analysis performed, the model's predictive accuracy (Q^2) was evaluated. The values of $Q^2 > 0$ are indicative of the model's predictive accuracy and values greater than 0, 0.25 and 0.50 are considered to be small, medium and large (Hair et al., 2019a, 2019b). As depicted by Table 8, the predictive accuracy for cognitive efficacy, emotional intelligence and social intelligence was found to be small and a medium level of predictive accuracy was noted for all sub-domains of students' academic performance.

Figure 2 Structural model results of PLS-SEM analysis



Furthermore, to understand the relative effect caused by each exogenous variable in the study, the effect size (f^2) for each exogenous variable in each relationship was examined to find out the difference in the size of the caused effect that would have been noticed in case of removing the particular predicting variable. As per the criteria by Cohen (1988), the f^2 lesser than 0.15 is deemed small, and greater is considered to be medium (Cohen, 1988; Hair et al., 2019a). Also, the f^2 higher than 0.35 is large (Hair et al., 2019b). The highest effect sizes were recorded for materialism (0.162) and cognitive efficacy (0.288). The f^2 for all predicting variables in each relationship is provided in Table 7.

5 Discussion

This study tested the structural linkages of materialism, psychological wellbeing, and academic performance combined in the proposed model of the study. Three sub-dimensions of psychological well-being (cognitive efficacy, emotional intelligence and

social intelligence) and three sub-dimensions of students' academic performance (Students' Self-Efficacy, students' engagement and social interaction anxiety) were tested individually to obtain an understanding of how materialism impacts person's psychological well-being that is crucial for students to perform well for the achievement of their academic goals. Additionally, the mediating effect of psychological well-being between materialism and students' academic performance was also studied by taking into consideration academic performance and psychological well-being at a sub-dimensional level.

The findings of the study revealed a negative association of materialism with all three facets of psychological wellbeing (cognitive efficacy, emotional intelligence and social intelligence). This means a high level of materialism lowers down the psychological well-being of the students. These results are aligned with the findings of Hope et al. (2014) that materialism is negatively associated with well-being (Górnik-Durose, 2020). Similarly, these findings also reinforce the results of many previous studies claiming that materialism lowers down psychological well-being (Muñiz-Velázquez et al., 2017; Christopher et al., 2009; Kasser, 2018; Moldes and Ku, 2020; Nagpaul and Pang, 2017). This is because, as a person becomes more materialistic, he/she also becomes less happy, socially isolated, less satisfied and task avoidant. Along with the current study's findings, the reported outcomes can also be substantiated through other related studies which reported individual's deflection toward negative attitudes and behaviours as a result of materialistic orientations. For instance, in a study, conducted by Ouyang et al. (2020), materialism was found to engender unproductive behaviours within (insecure) students which eventually prove to be uncontrollable and immutable for the student. Congruent to the current study's results, the detrimental effects of these unproductive results were not only reported to disturb student's mental health but also the relationships with other students (Ouyang et al., 2020). Our results correspond to these findings and extend the argument by empirically proving the negative psychological outcomes' association with the declivity in the students' academic performance.

The self-destructive behaviours arising due to the students' indulgence in a materialistic lifestyle negatively affects overall psychological wellbeing. This, as result, leads toward deteriorating outcomes like anger, depression, anxiety and fear (Kasser, 2016; Wang et al., 2017a, 2017b). The accuracy of these claims can also be corroborated by the fact that less materialistic individuals are found to be more satisfied with life and possess positive emotional traits, e.g., happiness, satisfaction with life, etc. (Dev et al., 2018) that are traits of positive well-being. Following a more analytic approach to this, Sirgy et al. (2021) highlighted a positive effect on one's life satisfaction if the adopted materialistic lifestyle is for the sake of achieving successful status in one's life. On the other hand, the role of materialism remains adverse if an individual adopts such orientations for the pursuit of happiness (Sirgy et al., 2021). Since students at higher or tertiary level education (in Pakistan) are on the lower ladder of academic career, the rationales for material consumption can mainly be attributed to seeking happiness. This interpretation of results provides valid grounds based on which, the findings are also parallel to the ones registered by Sirgy et al. (2021).

As indicated by the results, the most affected sub-dimension of psychological well-being due to materialism is cognitive efficacy. This means negative consequences of materialism to the individual's psychological well-being are most triggered because of declining perceived capabilities and competencies regarding one's self (Cobo-Rendón et al., 2020). This also indicates an idea that compromised psychological well-being, in

response to materialism, is caused due to negative self-evaluation. This justification does align with the results provided by Gupta and Singh (2019). Additionally, this interpretation of results is also congruent with the descriptions and justifications of the materialism's effects on students that are provided by Long et al. (2021) and Ouyang et al. (2020) while researching the uncontrolled and/or problematic use of cellular devices by materialistic students (Long et al., 2021; Ouyang et al., 2020).

Owing the absence of any specific rules for dress codes and electronic gadgets (e.g., smartphones) in Pakistani universities (like almost all universities worldwide), students use their attires from luxury brands and expensive possessions including cars and other electronic gadgets for constructing their personality and regard these possessions as a part of their personality and reputation management strategy. This is because they consider these material possessions as a part of their extended self (Ahuvia, 2005; Belk, 1988). Such practices give birth to a culture in which materialistic values are well accepted and appraised. Backed by this culture, students are more likely to succumb to materialistic lifestyles, choices and preferences. This in result gives rise to the adoption of an ostentatious lifestyle characterised mainly by materialism, which, according to the results, is detrimental to the students' overall learning abilities (due to affected psychological well-being). These attitudinal changes may significantly harm students' priorities toward the pursuit of education. This could be another set of lenses to look at a way through which materialism may have a negative impact on students' psychological wellbeing.

A positive relationship was also found between psychological well-being and students' academic performance. For analysing the interrelationship of both variables, a comprehensive analysis was performed at the sub-dimensional level of the latent constructs. All three sub-dimensions of both the constructs were examined in relation to one another and a positive relationship was supported on all dimensional levels which also proved a strong influence of psychological well-being in shaping the academic performance of a student. This result aligns with all previous researches undertaken to study the association between psychological well-being and student's academic performance as a whole (Kotzé and Kleynhans, 2013). Cognitive efficacy, emotional intelligence and social intelligence positively influence student's self-efficacy, engagement and social interaction anxiety. However, the strongest relationships on the sub-dimensional level were found to exist between cognitive efficacy and student's self-efficacy as well as social intelligence and student's engagement. This means that (dimensions of psychological well-being) cognitive efficacy and social intelligence play a primary role in shaping the academic achievements of a student. These results correspond to the findings of previous studies which also highlighted the positive role of self and/or cognitive efficacy (Caprara et al., 2011; Cobo-Rendón et al., 2020) as well as emotional intelligence (Salami, 2010) for driving student's academic performance.

Finally, to achieve the last objective of the study, a mediation analysis was performed to evaluate the indirect effect of materialism on academic performance. The primary rationale for testing this mediation was to test and provide the logical reasoning of the phenomenon due to which academic performance is linked inversely to materialism. The results of mediation supported the argument by presenting a significant mediating role of all dimensions of psychological well-being (except social intelligence) for the establishment of a negative relationship between materialism and academic performance (inclusive of all its dimensions as well). This means psychological well-being, which plays an important role in the determination of academic performance, is compromised

due to concern toward materialistic goals and values. As a result of this declivity in psychological well-being, materialism is responsible for worsening students' academic performance. On a sub-dimensional level (of psychological wellbeing), this is especially true for cognitive efficacy and emotional intelligence because these two sub-dimensions are affected the most as a result of materialistic attitudes. These results of the study extend the findings of previous studies that investigated materialism and academic performance (Gupta and Singh, 2019; King, 2020; King and Datu, 2017; Koly et al., 2021; Ku et al., 2012, 2014); by adding on to the process due to which materialism has always been negatively associated with all the indicators of learning such as academic performance.

5.1 Theoretical and practical implications

Through testing and validating a model that linked materialism with academic performance via psychological well-being, the current study contributed towards the results of previous studies which examined the impact of materialism on overall and/or psychological well-being (Górnik-Durose, 2020; Kotzé and Kleynhans, 2013; Lee et al., 2014; Moldes and Ku, 2020; Salami, 2010; Wang et al., 2017a, 2017b) or academic performance (King, 2020; King and Datu, 2017; Ku et al., 2012, 2014) individually. The established link in this study presents a theoretical justification of how materialism deteriorates the student's academic performance by negatively affecting one's psychological health (which is crucial for performing well in studies).

The results of the study also provide insights about practical implications through which students' academic performance could be enhanced by modifying the policies adopted by degree-awarding institutions. Since materialism significantly impacts psychological well-being and hence, students' performance, degree-awarding institutions need to pay attention to crafting operating policies that discourage materialistic attitudes and lifestyles among the students. For example, implementing a specific dress code and banning vehicles' entry into university premises would not only refrain students to flaunt their fancy/luxury outfits and expensive cars (which promotes materialistic values) but would also help to achieve socio-economic equality among students and create a favourable brand image of the educational institution. Similarly, by promoting a standardised learning environment through discouraging acts that give rise to materialism, positive results in students' learning and academic performance could be realised.

With the rise of globalisation and shift from agricultural to a knowledge-based economy, the [managerial] job market (for which [business] students are prepared at university level) is requiring individuals to perform professional tasks which demand more emotional as well as social intelligence. The current study's results call for priority-based efforts to be taken by universities and other degree-awarding institutions so that [business] graduates produced possess the personality characteristics that play a vital role for thriving in the acquisition of knowledge, skills and later in, challenging work places.

5.2 Limitations and future directions

Like every study, the current one has its limitations too. First, the data was collected from business students studying in universities of Punjab, Pakistan.

The choice of student group was made based on relevance to the study but this also narrows down the generalisability of results to a particular group of students. Hence, results may not be representative of the phenomenon studied for the students from other departments/disciplines in Punjab, Pakistan, or universities located in other geographical regions. Future studies could minimise this limitation by testing the model using the data of groups that are not studied in this research.

The research work and analyses were made using survey-based behavioural self-reported data. Such data is prone to social desirability bias because students are less likely to report their negative attitudes and behaviours. Addressing this limitation, future studies could draw on qualitative data by studying the phenomenon through focus groups and other quantitative methods capable of collecting data from students using indirect questions/items.

Finally, the current research focused on identifying the variables due to which materialism has always been negatively related to academic performance. Psychological well-being is one variable through the negative impact that can be well justified. However, future studies could be conducted to investigate other latent constructs that mediate the relationship of materialism with academic performance, e.g., status anxiety.

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