

Buying environmentally sustainable products: The role of materialism and product comparison in purchasing behavior

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ABSTRACT

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Materialism has emerged as a growing global drift in the past decade. This study highlights the influence of materialism on consumers' attitudes and actions regarding the purchase of environmentally sustainable products (ESPs) in a country such as Pakistan, which environmental orientations are in the developing stage. Materialistic perspectives can hinder the formation of positive attitudes towards environmentally sustainable products, especially when consumers engage in product comparisons. To evaluate the effects of materialism and product comparisons on purchasing intentions and behaviors, a survey was conducted among university students. The results revealed that consumers tend to avoid purchasing experience goods primarily because these items require a higher degree of involvement and risk assessment due to their intangible and experiential nature. This avoidance is particularly pronounced when the subjective norms and attitudes toward these goods are influenced by materialistic values, which often prioritize tangible, ownership-oriented products.

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1. Introduction

In the academic arena alongside materialism a growing global concern is sustainability (Jeziarski et al., 2023). Although sustainability is being acknowledged as a goal by many countries, however their actual purchasing practices vary (Moshood et al., 2022). In order to achieve sustainability, customers ought to have environmentally conscious lifestyles (Hellweg et al., 2023). Customers who are more aware of how resources are used and consumed can purchase products that are environmentally sustainable (Yildirim, 2022). But attitude alone won't help customers make sustainable choices; instead, subjective standards, the kinds of available marketplaces, purchase patterns, and their own personal values—including materialism—will impact their purchasing habits (Wielath, 2023), as elucidated by the theory of reasoned action.

The buying habits of consumers are shaped by their social class, family, friends, colleagues and relationships (Ni & Ishii, 2023, Tanveer, 2024). The degree of materialism and product knowledge at hand also have an impact on this buying habit (Wielath, 2023). Though sustainability has emerged as a major global problem, consumers are still reckless and oblivious to the consequences of their consumption and waste, and they have little regard for the preservation of the environment (Thukral et al., 2023, Khan et al., 2022). Thus, this study highlights that there can be a discrepancy between what people say they buy and how they buy it. Materialistic customers exhibit a stronger indulgence in purchasing multiple brands, which is closely linked to brand equity (Wielath, 2023). As a result, while discussing environmentalism, the importance of materialism

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becomes a key factor in influencing consumer behavior (Kaur et al., 2022). Materialism raises purchasing intention, but not always with regard to ESP. It causes a change in perceptions of luxury, rash, and wasteful purchasing, as well as an influence on the subjective standards that permit this kind of extravagant spending (Qiu et al., 2023). Most customers feel pressure to purchase unnecessary products, either due to excessive marketing and advertising or the social attraction of status signaling and celebrity charismatic attraction. This leads to materialistic orientation and thereby environmental insensitivity (Cantor, 2023).

Pakistan has been hit hard by climate change (Noor, Pande, et al., 2023). As a result, a lot of customers have begun to discuss ecologically friendly products (Palmer & Warner, 2022), although many hesitate to make the purchase (Noor, Maqsood, et al., 2023). This study focuses on the possible scenarios that may cause the difference between purchase intention and actual purchase of ESPs. It shows that consumers may have a higher purchase intention towards ESPs but lack the support to buy ESP, either because of materialistic concerns or lower effectivity in product comparison. Thus, unless a customer does a non-materialistic and unbiased product comparison, their intention to purchase does not automatically progress into an actual purchase.

1.1 Statement of Topic

The study investigates the moderating role of materialism on consumer purchase behavior towards environmentally sustainable products in Pakistan, grounded in the Theory of Planned Behavior (TPB). It explores how materialistic values influence the relationship between consumers' attitudes, subjective norms, and their purchase intentions and behaviors regarding eco-friendly products. By conducting a quantitative survey among university students in Lahore, the study seeks to assess the impact of materialism on the likelihood of purchasing environmentally sustainable products despite positive attitudes and social pressures. The research is academically significant as it contributes to the literature on sustainable consumer behavior and materially relevant due to its implications for policy and marketing strategies aimed at promoting environmental sustainability in emerging markets. Through statistical moderation and mediation analysis, the thesis aims to uncover the complex interplay between consumer psychology and materialistic tendencies, providing insights into the barriers and facilitators of sustainable purchasing in a developing country context.

1.2 Research Gap

Previous studies on ESPs have highlighted the nuanced role of materialism in shaping behaviors towards buying such products. However, the moderating effect of materialism on the relationship between consumer attitudes and subjective norms has been overlooked. This oversight extends to a deficiency in cross-cultural explorations, where the bulk of existing research predominantly focuses on Western contexts, leaving a gap in understanding these dynamics in non-Western or developing countries. Additionally, there's a notable divide between the intentions to purchase ESPs and the actual behaviors, with insufficient evidence on how materialistic values influence this transition, suggesting a need for more empirical research.

Moreover, the literature reveals a scarcity of comprehensive models that incorporate factors such as product comparison—weighing price, convenience, and perceived value—and how these factors moderate the move from purchase intentions to actual behavior among consumers with materialistic tendencies. The interplay between socio-demographic factors like age, income, education, and gender with materialism and its impact on ESP purchase behavior is also underexplored. Lastly, the absence of longitudinal studies on the evolution of materialism and consumer behavior towards ESPs highlights a critical gap. Addressing these gaps promises not only to deepen the understanding of consumer engagement with ESPs but also to aid in developing more effective strategies for fostering sustainable consumption patterns across diverse populations. Fig. 1 shows the structure of the proposed method.

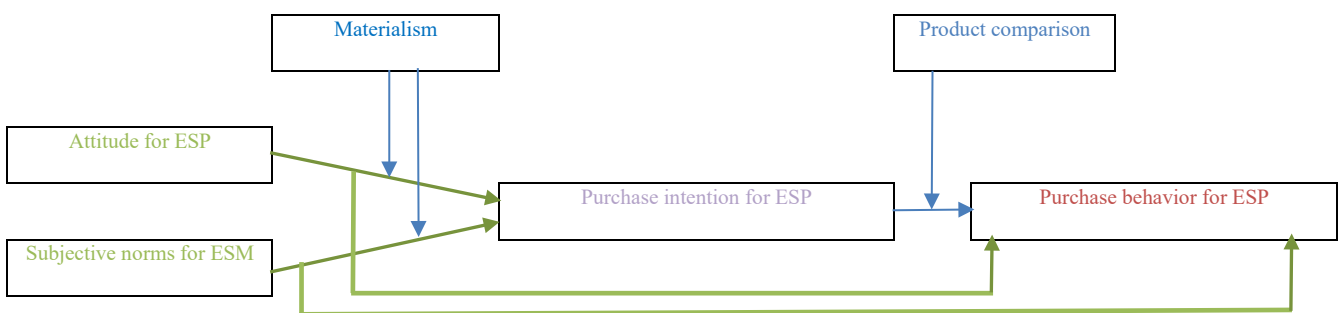


Fig. 1. Regression model

The Theory of Planned Behavior (TPB) has three parts: attitudes, perceived Behavioral control & subjective norms. TPB suggests that consumers' attitude are shaped by subjective norms and when exhibited are further shaped by perceived Behavioral controls (Loh & Hassan, 2021). Any purchase decision that a consumer makes is dependent upon this framework. Thus, buying sustainable products might be the result of consumer's values (materialistic or sustainability) or objective reduction in consumers' impact on the environment, or consumption suitability (price, convenience, availability). The theory suggests that a consumer's goals, motivation, situational context, cognitive and affective processes, and other factors can influence their decision to purchase environmentally sustainable goods (Asif, 2023).

2. The proposed study

2.1 Attitude and Purchase Intention

The purchase patterns of a consumer are influenced by attitudes, emotions, purchase situation and contexts and the product use itself, including its discard (Wang et al., 2022). Consumer opinions have a big impact on what they buy and intentions to buy take place at particular times and locations (Sutisna & Handra, 2022). Customers are willing to spend more for products that they feel positively about, particularly those that are environmentally friendly (Kreczmańska-Gigol & Gigol, 2022). Their purchase decision is shaped by the intention and attitude they have towards that product (Hoang Yen & Hoang, 2023). The positive attitude towards ESP is based on past positive experience with the product (Fielden Burns & Rico Garcia, 2022), agreeability of others in the social setup (Saif & Shaheen, 2022) and self-satisfaction with the ESP (Phillips et al., 2022). The Theory of Planned action also emphasizes how a positive attitude toward an action leads to a positive intention to buy, which in turn shapes the purchasing behavior of the customer (Khan et al., 2023). Therefore, it is hypothesized that;

H₁: *There is a significant positive relationship between attitude towards ESP and consumer purchase intention of ESP.*

2.2 Subjective Norms and Purchase Intention

Social influences and subjective norms have a big impact on how consumers behave. Purchase intentions can be strongly influenced by these standards, which stem from social, familial, or group affiliations, particularly with regard to ESP (Singh et al., 2022). This pressure is typically felt by environmentally conscious consumers as they choose which products to purchase. Normative beliefs, or the conviction that others are acting in accordance with these rules, and result evaluations, or assessments of each belief, are two essential elements of subjective norms (Van Tonder et al., 2023). Consumers are motivated to purchase ESPs when they feel a social pressure or societal direction towards it (Li et al., 2022) or in other words, when ESPs become trendy (Hill et al., 2022). Thus, the above discussion proposes the following hypothesis:

H₂: *There is a significant positive relationship between subjective norms towards ESP and consumer purchase intention of ESP.*

2.3 Materialism and Environmentalism

Materialism, a value that emphasizes the worth of money and belongings, has a significant impact on how happy and fulfilled a person is in life (Shrum et al., 2022). It encompasses elements like acquisition as a means of pursuing happiness, possession-defined success, and acquisition centrality (Pupelis & Šeinauskienė, 2023). While low materialistic customers are typically more sensitive to environmental issues, high materialistic consumers could be less concerned with other people and the environment (Tarka et al., 2022; Tanveer et al., 2022).

Materialism is a way of exhibiting success and happiness via possession of material goods and it is a growing trend, especially among young consumers (Shafqat et al., 2023). Materialists frequently turn to expensive products and well-known brands in their quest for status and fulfillment (Tarka et al., 2022). However, environmentalism is a reflection of a person's concern for the state of the environment and is an opposing value to materialism (Kramarczyk & Alemany Oliver, 2022).

The environmentally conscious consumers have a favorable attitude toward ecologically friendly items and feel that human activities, if rightly aligned, have the ability to bring about sustainable changes (Prinzing, 2023). Whereas the materialists typically have higher purchasing intentions (Shrum et al., 2022), with little reference to the environmental impact. Their assumption that possessing material stuff leads to happiness influences their purchasing habits. Their intention to purchase ecologically friendly goods may increase as a result of this belief, if it is linked to success and happiness (Kim & Oh, 2022).

The purchasing attitudes regarding ESPs are shaped by values and beliefs, related to usage and disposal of products and understanding of consumption impacts on the environment (Taufique, 2022). These are deeply rooted ideals that are also impacted by consumer's personality (Sreekumar et al., 2023). Thus the positive attitude towards ESPs highly correlates with intention to buy ESPs (Manwanina Kiumba et al., 2023). Nonetheless, materialistic orientations can overshadow environmental issues (Tarka et al., 2022). Because buying is the primary means of achieving personal fulfillment, high materialism frequently results in a disregard for the effects on the environment.

Therefore, it proposes the following hypothesis:

H_{3a}: *Materialism negatively moderates the relationship between attitude for ESP and consumer purchase intention of ESP.*

2.4 Materialism and Subjective Norms

Subjective standards, often known as society expectations, have the power to shape people's behavior, including their choices for environmentally friendly goods (Roh et al., 2022). Materialism may have an impact on these norms, which are frequently linked to community or collective thought, and may result in environmental deterioration (Tarka et al., 2022; Shrum et al., 2022; Moldes et al., 2022). The relationship between materialism and subjective norms suggests that while environmentally conscious consumers typically exhibit positive attitudes towards environmentally sustainable products (ESPs) (Nogueira et al., 2023), believing that their actions can lead to sustainable change, materialists driven by the belief that possession of material goods equates to happiness and success (Tuncel, 2022), may show a superficial increase in the intention to purchase ESPs if these products are perceived as status-enhancing or linked to personal success (Mohammad & Quoquab, 2024). However, this intention is often not deeply rooted in environmental concern but in how these products reflect on their social standing (Yuan et al., 2022). Thus, materialism can distort the influence of subjective norms on purchasing behavior, where the social pressures and expectations to appear successful and affluent can override genuine environmental considerations. Consequently, a positive predisposition towards ESPs is strongly associated with the intention to purchase such items (Wang et al., 2023). However, this relationship is complicated by materialism, which tends to overshadow environmental concerns. Materialists view acquisition as a path to personal satisfaction, often ignoring the environmental consequences of their consumption habits (Kramarczyk & Alemany Oliver, 2022). Thus, even if subjective norms suggest a favorable disposition towards environmental responsibility, materialistic values can skew consumer behavior towards prioritizing personal gain over environmental benefits (Shang et al., 2023), diminishing the influence of pro-environmental subjective norms on actual purchase behaviors of ESPs.

Thus, the following hypothesis proposed here:

H_{3b}: *Materialism moderates the relationship between subjective norms and consumer purchase intention of ESP.*

2.5 Moderating Role of Product Comparison between Purchase Intention & Purchase Behavior

Price sensitivity, defined as the degree of consumer awareness and response to price discrepancies between certain goods and services, can be used to compare items (Bhutto et al., 2022). The length of time a product is used before being thrown away is known as its longevity (Shi et al., 2022). and Repairability (the ability of the component to carry out its intended function under specified circumstances up until a specific point in time) (Dangal et al., 2022). The purchase intention towards ESP is a strong indicator that the consumer will indulge in environmentally conscious final purchase decisions (Pennanen et al., 2024).

Before making a purchase, consumers frequently compare products and evaluate its worth in light of their selections and evaluative criteria (Polyporis et al., 2022). This comparison can be analytical, with reasoning and logic at its core, or holistic, with feelings and awareness at its core. Sometimes the comparison is social as well, specifically when the product is used publicly such as mobile phones (Kozinets, 2022). If customers believe their decisions are less significant than those of others, these comparisons may cause them to become dissatisfied (Amoozad Mahdiraji et al., 2022). The consumer compares new items on the basis of cost, durability, and services offered by the company (Sader et al., 2022). The above discussion proposes hypothesis:

H₄: *Product comparison moderates the relationship between purchase intention and purchase behavior of ESP.*

2.6 Consumer Attitude and Purchase Behavior of ESPs

Consumer attitudes and purchasing intentions are shaped by internal product assessments and associations (Ratnasari et al., 2023). There are two kinds of attitudes: general, which indicates a propensity for activity, and specialized, which strongly predicts behavior (Mansoor et al., 2022). These attitudes are influenced by consumer experiences and perceptions. Particularly millennials possess knowledge that helps them reduce risks when they physically shop, which influences their purchasing behavior and results in a favorable attitude toward environmentally friendly products (Cirillo et al., 2022). The above discussion proposes the hypothesis:

H_{5a}: *Purchase intention of ESP mediates the relationship between attitude and purchase behavior of ESP.*

2.7 Subjective Norms and Purchase Behavior of ESPs

Purchase intentions and consumer behavior can be greatly influenced by subjective norms, also known as perceived societal pressures, especially when it comes to environmentally friendly products. Peers, family, and friends are often the sources of this impact (Brock Baskin et al., 2023). Thus, the hypothesis is:

H5b: *Purchase intention of ESP mediates the relationship between subjective norms and purchase behavior of ESP.*

2.8 Impact of Purchase Intention on Purchase Behavior

According to Rehman et al. (2019), a consumer's goal is to undertake a particular behavior. The theory of planned behavior (TPB) may easily express the intention-behavior relationship because actual consumer behavior has been found to stem from behavioral intentions in a variety of research disciplines (Nadeem et al., 2022). Consumer purchasing behavior, to put it simply, encompasses all actions made during the purchase of a product, some of which may require multiple decisions (Forghani et al., 2022). Studies reveal that this behavior is greatly impacted by the quality of the purchase. The right structure and attractive design of a product might convince people to buy or utilize it. Buying behavior can also be influenced by a diverse product design (Yin et al., 2022). As a result, the kind of product information can influence consumer choice. So, the hypothesis from purchase intention to purchase behavior in the light of ESP is:

H6: *There is a positive significance relationship between purchase intention towards ESP and purchase behavior of ESP.*

3. Research Methodology

The study employs a descriptive and correlational methodology along with deductive reasoning (Mansi et al., 2022). It concentrates on late teenagers (18–25 years old) because of their high degrees of materialism. A cross-sectional survey with 180 respondents from each of the four randomly chosen Lahore institutions was used to gather data. The study employs a quantitative methodology and analytical statistics to produce results in accordance with the positivist paradigm (Ehwi et al., 2022). Examining the moderating effects of materialism and product comparison on consumer purchasing behavior is the goal of this study. It was decided to use a sample size of 600 using the 'rule of 10' (Rahman, 2023). The study, which focuses on university students between the ages of 18 and 24, compares ecologically friendly products using item response theory. Four randomly chosen universities offering business studies were included in the sample, which was derived from Lahore's universities totaling twenty. A five-point Likert scale is used in the study to assess characteristics such as attitude, subjective norms, materialism, buying intention, product comparison, and purchasing behavior toward ecologically sustainable products (Duong, 2022). A variety of measures were used for each variable: the Consumption Value Scale measured purchase intention, the Thurstone scale measured attitude, the Testing Alternatives Measures measured subjective norms, the Materialism Value Scale measured materialism (Häder, 2022), the Attention to Feelings scale measured product comparison, and the Purchase Decision Involvement Scale measured purchase behavior (Bergamaschi et al., 2022).

4. Results and Data Analysis

4.1 Preparation of The Survey Data for Analysis

After a preliminary review of the data for missing information, eight incomplete questionnaires were eliminated. After then, 8 more comments were eliminated after the remaining 712 responses were examined for unengaged responses. The Mahalanobis test was used to examine the final 704 questionnaires for outliers, and six more were rejected because of their extreme results. There were 698 questionnaires in the final count for analysis. To comprehend the connection between the underlying components and the outcome variables, exploratory factor analysis, or EFA, was employed. Primary component analysis in SPSS software and Equamax with Kaiser Normalization for the extraction and rotation techniques, respectively, were used in the analysis.

4.2 Respondent's Characteristics

There were 698 responders in all, with 37.2% of them being women and 62.8% being men. The target audience for the survey was customers ranging in age from 18 to 46 (conscious, energetic) and 80% of customers had an age range between 19–25 and the rest between 26–32. In addition, with regard to age, 72.2% of the population was unemployed, indicating a restricted and reliant source of income. Given that the respondents were selected from business institutions, 90.7% of them had solid knowledge of consumer behavior and procedures. Next, a gender-based cross-tabulation of the variables was created. The details are given in Table 1.

Table 1
Respondents Characteristics by Gender

Variables	Category	Gender				Total	
		Female		Male		Freq	%
		Freq	%	Freq	%		
Age	Below 18	5	41.7	7	58.3	12	1.7
	19-25	207	38.3	333	61.7	540	77.4
	26-32	36	32.4	75	67.6	111	15.9
	33-39	4	23.5	13	76.5	17	2.4
	40-46	5	45.5	6	54.5	11	1.6
	Above 46	3	42.9	4	57.1	7	1.0
Marital Status	Single	227	37.0	386	63.0	613	87.8
	Married	33	38.8	52	61.2	85	12.2
Employment Status	Unemployed	206	40.9	298	59.1	504	72.2
	Employed	54	27.8	140	72.2	194	27.8
Dependent Children	Yes	30	46.2	35	53.8	65	9.3
	No	230	36.3	403	63.7	633	90.7
Economic Class	Lower	0	0.0	14	100.0	14	2.0
	Lower Middle	14	25.9	40	74.1	54	7.7
	Middle	142	35.8	255	64.2	397	56.9
	Upper Middle	85	42.5	115	57.5	200	28.7
	Upper	19	57.6	14	42.4	33	4.7
Income	Fixed Salary	64	31.2	141	68.8	205	29.4
	Small Business	18	20.7	69	79.3	87	12.5
	Large Business	9	32.1	19	67.9	28	4.0
	Contractual	6	54.5	5	45.5	11	1.6
	Dependent	163	44.4	204	55.6	367	52.6
Total		260	37.2	438	62.8	698	100.0

4.3 Reliability of the Measurement Scales

Table 2
Reliability of the Measurement Scales

Variables	Items	Cronbach's Alpha
Attitude	11	0.89
Subjective Norms	7	0.80
Materialism	14	0.92
Product Comparison	7	0.92
Purchase Intention	9	0.86
Purchase Behavior	11	0.93

The highest reliability was shown by purchase behavior with 0.93, along with materialism and product comparison having 0.92 respectively. Table 2 also shows that all variables show good reliability in terms of statistical significance ranging from 0.80 to 0.93.

4.4 Validity Statistics

Convergent and divergent validity of the variables are shown in Table 3. Values of Average variance extracted (AVE), Composite reliability (CR) are shown in the table. Value greater than 0.5 for all the study variables indicating the convergent validity of the variables (Cheung et al., 2023). Composite reliability of the variables was greater than 0.7 whereas the factor loading was also above the cutoff point of 0.6 (Table 4), indicating the uni-dimensionality of the variables (Di Cagno et al., 2023).

Table 3
Validity Analysis of Variables

	Mean	Std. D	AVE	CR	ATT	SN	PI	MAT	PC	PB
Attitude	2.97	0.68	.57	.89	.76					
Subjective Norms	2.88	0.80	.51	.80	.36	.71				
Purchase Intention	3.14	0.61	.56	.86	.28	.33	.75			
Materialism	2.57	0.96	.50	.92	.41	.47	.31	.70		
Product Comparison	2.93	0.69	.69	.92	.41	.46	.29	.52	.83	
Purchase Behavior	3.19	0.71	.74	.93	.33	.32	.73	.34	.32	.86

The study's instruments for determining consumer purchase behavior towards environmentally sustainable products show good convergent and discriminant validity, as indicated by the values of AVE and CR. The mean and standard deviation of all the variables were obtained and Table 3 shows that most variables' SD values are close to the mean, indicating a good sample size, except for materialism.

4.5 Correlation Matrix

The correlation matrix given in Table 4 confirmed the intended direction of the association between variables. The relationships between the study variables were highly significant with p value <0.01. The correlation between income and subjective norms showed negative yet significant with p value <0.05 (coefficient= -0.090; p<0.05). The relationship between dependent children with subjective norms, economic class with materialism, income with attitude showed significant value (p<0.05). Correlation table mentioned below shows statistically significant connection between purchase behavior of ESP as this is a dependent variable and all other study variables have a positive significant relationship with it, i.e., p < 0.01.

Table 4
Correlations Matrix

VARIABLES	ATT	PC	SN	MAT	PI	PB	DEP.CH	GEN	MS	EMP	AGE	EC	INC
ATT	1												
PC	.411**	1											
SN	.365**	.456**	1										
MAT	.406**	.524**	.469**	1									
PI	.279**	.287**	.330**	.306**	1								
PB	.329**	.321**	.322**	.341**	.725**	1							
DEP.CH	-.002	-0.20	.078*	.010	-.033	-.036	1						
GEN	.032	.044	.016	.039	-.045	-.064	-.059	1					
MS	.0047	.046	-.072	.007	.020	.038	-.665**	.012	1				
EMP	-.008	-.011	.010	.017	.052	.003	.318**	.121**	-.434**	1			
AGE	.064	.056	-.003	.059	.049	.051	-.544**	-.026	.660**	-.412**	1		
EC	.275**	.043	-.018	.075*	.042	.038	.018	.160**	-.137**	.184**	-.071	1	
INC	.087*	.007	-.090*	-.038	.107**	.072	.296**	.153**	-.416**	.701**	-.373**	.275**	1

Notes: Bi-variable Pearson Correlations; Alpha=Cronbach's Alpha=*p<.05; **p<.01 **Correlation is significant at the 0.01 level (2-tailed) *Correlation is significant at the 0.05 level (2-tailed)
ATT=Attitude, PC=Product Comparison, SN=Subjective Norms, MAT=Materialism, PI=Purchase Intention, PB=Product Behavior, DEP.CH=Dependent Children, GEN=Gender, MS=Marital Status, EMP=Employment, EC=Economic Class, INC=Income

4.6 Hypotheses Testing

Hypothesis testing presented a prominent way of empirically testing and validating the claims made in the proposed theoretical model. Regression analysis-RA (Gao et al., 2022) has been utilized for direct and mediation testing, and Hayes was utilized for the testing of moderation hypothesis.

Table 5
Bootstrapping-Purchase Intention to Purchase Behavior

Path of Variables	Coefficient	Sig.	Confidence Interval		Result
			Upper	Lower	
			PI → PB	0.702	

Note: **=Significance, i.e; p<0.01, 99% significance

Table 6
Bootstrapping Mediation Results

Total Effects with Attitude					
Path of Variables	Coefficient	CR	Sig.	Confidence Interval	
				Upper	Lower
ATT → PI	0.280	7.673	**	0.352	0.208
Direct Effect					
ATT → PB	0.141	5.153	**	0.195	0.087
Indirect Effect					
Path of Variables	Coefficient	Sig.	Confidence Interval		Result
			Upper	Lower	
ATT → PI → PB	0.197	**	0.254	0.143	Full Mediation

Note: **=Significance, i.e; p<0.01, 99% significance

Table 7
Bootstrapping Mediation Results

Total Effects with Subjective Norms					
Path of Variables	Coefficient	CR	Sig.	Confidence Interval	
				Upper	Lower
SN → PI	0.373	9.226	**	0.452	0.293
Direct Effect					
SN → PB	0.107	3.384	**	0.169	0.045
Indirect Effect					
Path of Variables	Coefficient	Sig.	Confidence Interval		Result
			Upper	Lower	
SN → PI → PB	0.264	**	0.330	0.202	Full Mediation

Note: **=Significance, i.e; p<0.01, 99% significance

4.7 Moderation of Materialism with Attitude

Moderation was verified through process moderation, and the results are shown in Table 8. The coefficient for attitude was positive and highly significant (0.213; CI = 0.073 to 0.316; significant). The two-way interaction between attitude and materialism (0.579; CI = 0.243 to 0.791; significant) was positive. The r-square of the model was 0.352, and it was also significant. Therefore, the data supported that materialism moderates the relationship between attitude and purchase intention of consumer for ESP, *accepting hypothesis 3a*.

Table 8
Moderation Table (Attitude with Materialism)

Dependent	Purchase Intention			
Independent	Coefficient	SE	LLCI	ULCI
Attitude	.213**	.012	.073	.316
Materialism	.145**	.049	.021	.303
Two-Way Interaction				
Attitude × Materialism	.579**	.003	.243	.791
Control Variable				
Income	.029	.033	-.035	.094
R-Square	.352			

Note: *p < 0.05, **p < 0.01

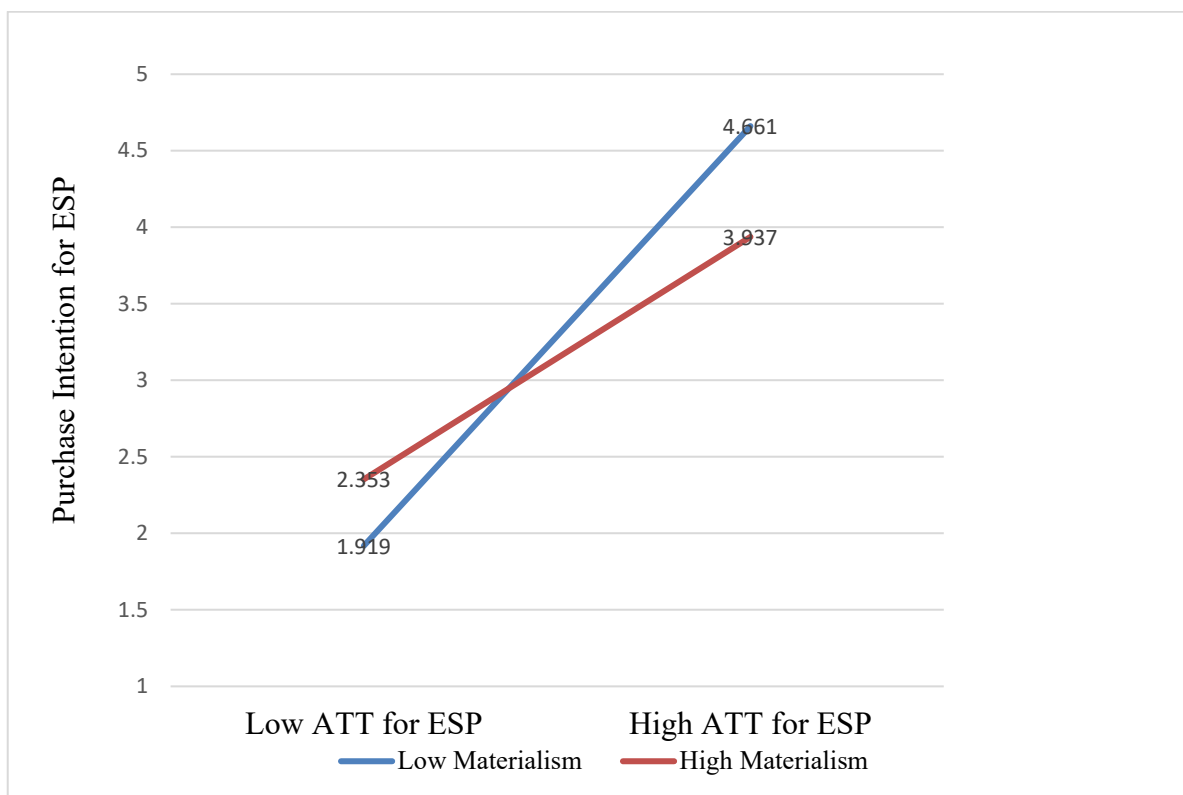


Fig. 2. Effect of Levels of Attitude * Materialism on Purchase Intention

Fig. 2 depicts the moderation of materialism on the attitude-purchase intention relationship. The graph shows that when the attitude for ESP is low the purchase intention for ESP is also low. The high materialist will have shown a low level of PI at low level of ESP attitude and a high level of PI at high level of ESP attitude. However, this will be greater for low materialists whose rate of change is greater than that of high materialists. This shows that when the attitude for ESPs largely develops, low materialists start showing greater intention to purchase ESPs compared to high materialists who do not show a greater aspiration towards PI of ESPs even when the attitude for ESPs is developed. In other words, the ESP attitude and ESP Purchase intention level of consumers having low materialism if it increases, it will be more than the consumers having high materialism, as shown by the slope of the low materialists. The gap between the two slopes indicates that the moderation is significant.

4.8 Moderation of Materialism with Subjective Norms

Process moderation was tested, and the results are shown in Table 9. The coefficient for the subjective norm was positive and highly significant (0.425; CI = 0.298 to 0.545; significant). The two-way interaction between subjective norm and materialism

(0.642; CI = 0.304 to 0.749; significant). The r-square of the model was 0.399, and it was also significant. Therefore, the data supported that materialism moderates the relationship between subjective norm and consumer purchase intention of ESP, *accepting the hypothesis 3b*.

Table 9

Moderation Table (Subjective Norm with Materialism)

Dependent Independent	Purchase Intention			
	Coefficient	SE	LLCI	ULCI
Subjective Norms	.425**	.007	.298	.545
Materialism	.123*	.038	.091	.371
Two-Way Interaction				
SN × MAT	.642**	.013	.304	.749
Control Variable				
Income	.017	.033	-.047	.081
R-Square	.399			

Note: *p < 0.05, **p < 0.01

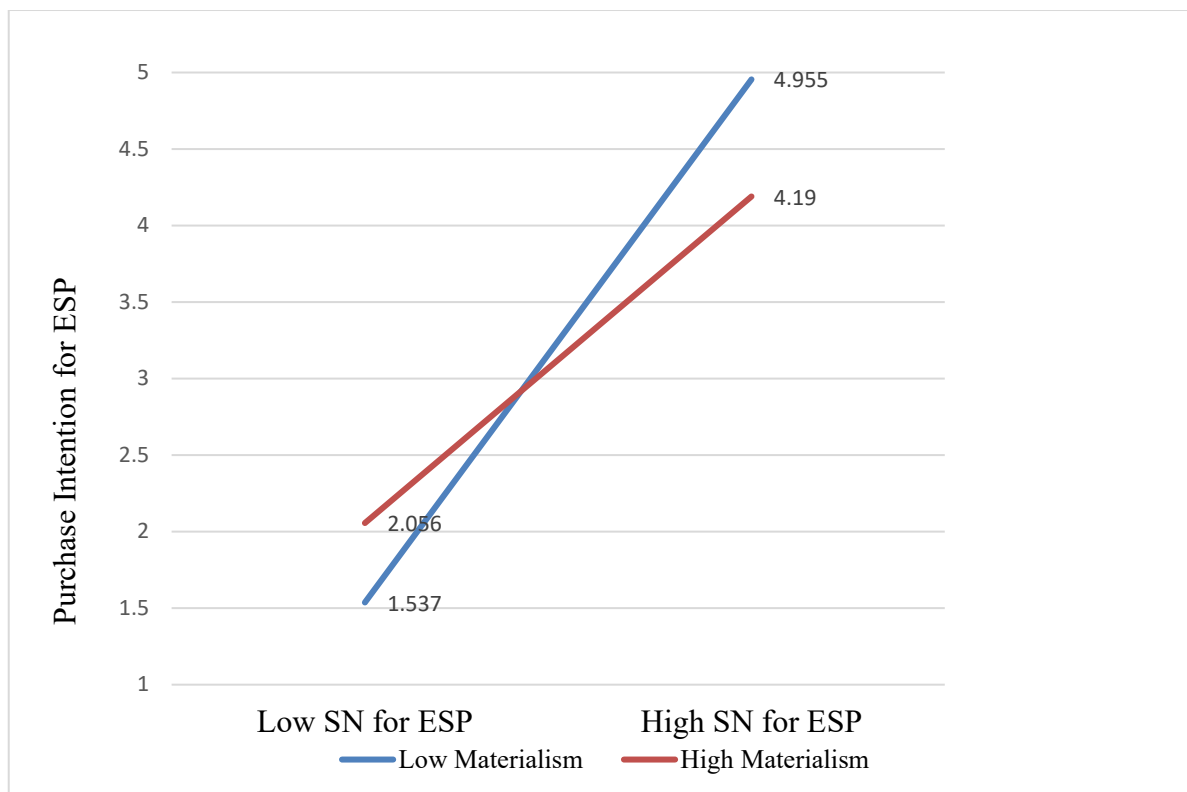
**Fig. 3.** Effect of Levels of Subjective Norms * Materialism on Purchase Intention

Fig. 3 depicts the moderation of materialism on the subjective norm-purchase intention relationship. The graph shows that when subjective norms for ESP are low the purchase intention for ESP is also low. The high materialist will have shown a low level of PI at low level of ESP subjective norms and a high level of PI at high level of ESP subjective norms. However, this will be greater for low materialists whose rate of change is greater than that of high materialists. This shows that when the subjective norm for ESPs develops to a great extent, low materialists start showing greater intention to purchase ESPs compared to high materialists who do not show a greater aspiration towards PI of ESPs even when the subjective norm for ESPs is developed. In other words, the ESP subjective norms and ESP Purchase intention level of consumers having low materialism if it increases, it will be more than the consumers having high materialism, as shown by the slope of the low materialists. The gap between the two slopes indicates that moderation is significant.

4.9 Moderation of Product Comparison with Purchase Behavior

The moderation was tested through process moderation. The results are shown in Table 10. The coefficient for product comparison was positive and highly significant (0.135; CI = 0.017 to 0.347; significant). The two-way interaction between purchase intention and product comparison (0.623; CI = 0.396 to 0.782; significant). The r-square of the model was 0.489, and it was also significant. Therefore, the data supported *hypothesis 4*.

Table 10

Moderation Table (Purchase Intention with Product Comparison)

Dependent Independent	Coefficient	SE	Purchase Behavior	
			LLCI	ULCI
PI	.135**	.022	.017	.347
PC	.197**	.037	.024	.403
Two-Way Interaction				
PI × PC	.623**	.006	.396	.782
Control Variable				
Income	.002	.024	-.046	.050
R-Square	.489			

Note: *p < 0.05, **p < 0.01

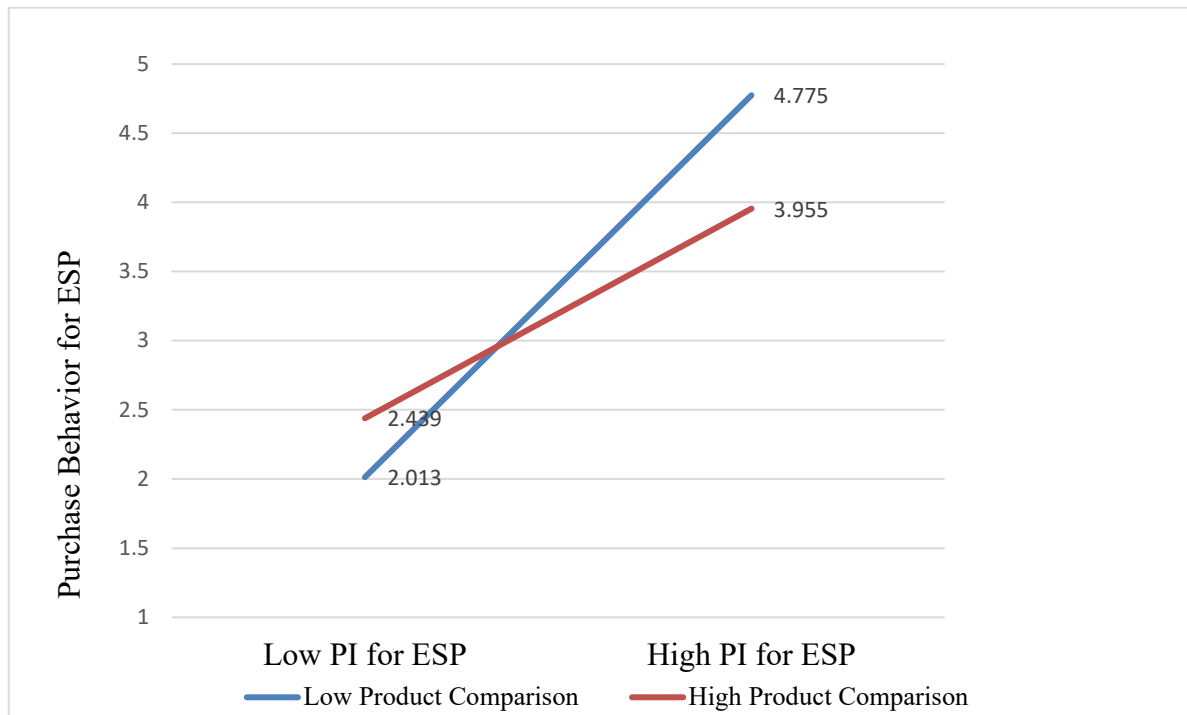
**Fig. 4.** Effect of Levels of Purchase Intention * Product Comparison on Purchase Behavior

Fig. 4 depicts the moderation of product comparison on the purchase intention-purchase behavior relationship. The graph depicts that when purchase intention for ESP is low the purchase behavior for ESP is also low. The high product comparison will show a low level of PB at low level of ESP PI and a high level of PB at high level of ESP PI. However, this will be greater for low product comparison whose rate of change is greater than that of high product comparison. This shows that when the purchase intention for ESPs largely develops, low levels of product comparison start showing greater intention to purchase ESPs compared to high levels of product comparison who do not show a greater aspiration towards PB of ESPs even when the PI for ESPs is developed. In other words, the ESP PI and ESP PB level of consumers having low PCS if it increases, it will be more than the consumers having high levels of PCS, as shown by the slope of the low level of PCS. The gap between the two slopes indicates that moderation is significant.

5. Discussion

The value of materialism becomes an important determinant of consumer behavior as two values (environmentalism) oppose each other. Consumers may want to purchase environmentally friendly products or show a preference for recycled products but when it comes to actual purchase, they exhibit materialism and often indulge in buying more than required (Khalid & Qadeer, 2021) (Kim et al., 2021). The study also indicated that the product comparison and materialism had the moderating effect towards the final purchase behavior of ESPs. The results indicated that the structural model had a good fit, attitude was the most important element of the purchase intention of ESPs.

The connection between attitude and purchase intention of ESP was found to be positive and significant. The result was according to the expected findings obtained by (Ishak et al., 2021; Kumar et al., 2021) who explored the attitudinal behavior of consumers for ESP in line with the theory of planned behavior (Ahmad et al., 2021) and other similar studies (Akbar et al., 2021).

Subjective norms, which are perceived social pressure, were found to be positive and significantly impacting purchase intention. Many studies have also discussed the similar effects of subjective norms on the purchase behavior (Jain, 2020); Noor et al., 2020; (S. Wang et al., 2020). Also, previous studies highlighted that the dimension of collective self highly affects the individual's decision-making process. The collective self is dependent with socialization to other members or with a group to attain a mutual interest (Zheng et al., 2022). Greater are the chances of subjective norms influencing the purchase intention (Pristl et al., 2021).

Generally, consumers may socially talk about the importance of environmental sustainability and how consumers can make a difference by buying and investing in ESP. However, when it comes to actual purchase, the decision is often tipped off towards products that have a higher materialistic relevance. In other words, there may be a social pressure to purchase and consume products that fulfil other objectives different from environmental sustainability. Previous studies (Kumar et al., 2021; Lestari et al., 2020; Vahdat et al., 2021) have also shown that consumers have social pressure like the pressure of friends, peers or family members on their purchase intention. Therefore, the results suggest *that the impact of subjective norms would be greater as compared to attitude on consumer's purchase intention for ESPs, collectively than individually.*

The moderating impact was also tested between purchase intention and purchase behavior of ESPs. The results of the study provide support to the developed hypotheses. During the decision-making process, consumers took into consideration various factors including price sensitivity, check repair facility, longevity of use of product, risk factor to make their purchases towards ESP. The findings suggest the importance of the product comparison process to determine the final purchase behavior of consumers. The result of this research confirmed that product comparison was a strong predictor of purchase intention. This finding is consistent with previous research (Chetioui et al., 2020; Jain, 2020; Lim & An, 2021).

Consumers engage themselves in purchasing ESP to fulfil their needs. This is in arrangement with previous studies that found that consumers do compare between products in order to reach their final decision (Binge et al., 2020; Testa et al., 2020; Zak & Hasprova, 2020). Due to growing awareness about ESP, consumers have higher expectation, how their product will affect the environment and consumers do more quality search about those products which are environment friendly. Hence, findings suggest that product comparison is worth incorporating towards final purchase decisions.

Findings of the study also found support for the mediating consequence of purchase intention in connection between attitude and subjective norms towards ESP. The results were consistent with (Chen et al., 2020); Khatoon et al., 2020; (J. Wang et al., 2020), which suggests that purchase intention plays a vibrant role as a mediator. It also proves that purchase intention can mediate with the actual behavior (Pisitsankhakarn & Vassanadumrongdee, 2020); (Verma, 2021) and also suggests that individual's belief can employ an effect on their intention, which in turn, can affect their actual behavior.

When consumers are environmentally conscious their behavior is positive towards ESPs and they compare the products on this basis. Naturally their choices are influenced, and they tend to purchase ESP products (Matharu et al., 2020); (Pereira et al., 2020). However, if they are low on environmentalism their purchasing Behavior is more materialistic and non-environmentally conscious for the environment, they don't compare products on this basis and refrain from buying ESP products (Pekkanen, 2021). This shows that consumers' purchase Behavior for ESPs will be influenced by the purchase intention they have based.

This study is differentiated from the earlier studies based on inclusion of sustainable purchase Behavior exhibited by the consumer. Here we see how materialism has impacted the consumer decision making process and the consumers compare the products to reach the final decision in buying ESPs. The study focuses on the general view of sustainability by using the variables' attitude and subjective norms towards ESP and sees the influence of materialism on purchase intention from a consumer-centric view. The findings that materialism have an impact on consumer purchase intention of ESP are in accordance with these previous studies (Ates, 2020; Kang & Moreno, 2020; Matson, 2021; Quoquab & Mohammad, 2020; Sreen et al., 2020; Waris & Hameed, 2020). Thus, materialism plays a moderating role between attitude, subjective norms and purchase intention. However, a lot of evidence was not found in this regard, as this being an under researched area.

6. Implications

There are numerous important implications on the basis of results gained from the study. The study can serve as a reference to examine the theory of planned behavior (TPB) regarding the value of environmentalism and its impact in various geographical areas and cultural backgrounds. The attitude towards ESPs is in early phases in Pakistan and the subjective norms are also shaping up. Also, materialism is a strong consumer value that hinders the attitudes and subjective norms towards ESPs to develop strongly. In general understanding, purchase intention leads to purchase behavior. However, this study contends that purchase behavior is not reached automatically after intention. Rather the consumer compares the alternatives on the basis of *price, longevity, risks, repairability and convenience*. Thus, the final purchase decision may not be in favor of ESPs even after having a strong purchase intention.

Beliefs are related to the benefits or disadvantages that are perceived to be associated with environmentally sustainable products. A consumer's perception of these advantages and disadvantages is referred to as their attitude. The perceived social pressure to act in an environmentally responsible manner is the subject of subjective norms. In addition, the behavioral reasoning theory can be utilized by marketers to design sustainable goods that are in line with consumers' subjective norms, beliefs, and attitudes. Products, for instance, that are simple to use, reasonably priced, and provide users with observable advantages may be more likely to be adopted. The social thinking hypothesis gives a valuable structure to understanding and advancing naturally maintainable items. Sustainable products have the potential to mainstream and contribute to a more sustainable future by influencing consumers' beliefs, attitudes, and subjective norms.

The conclusions can also help the policy makers in the market to frame such policies which can be beneficial to the consumers to habituate their purchase intentions for ESPs. So, marketers should take measures in their marketing strategy, however, the findings of this study showed that environmentalism and concern for the environment is still in its early phase. So, study implies that in order to have a more convincing power to convert purchase intention to purchase behavior, the value of materialism has to be shunned down through social media. Decision makers and strategists need to keep in mind that materialism is the strongest value and can influence attitude and subjective norms of consumers. There is the need to design such strategies that could develop the awareness of target consumers. Some concerns are always there for the validity of the claims made by marketers for the environmentally sustainable products.

10. Practical applications of environmentalism in green conservation

The interplay between materialism and consumer behavior towards environmentally sustainable products (ESPs) underscores several practical strategies for bolstering green conservation efforts. Educating consumers through targeted campaigns about the environmental impacts of their purchase decisions and the benefits of ESPs is a foundational approach to shifting consumption patterns towards sustainability. This education can be further reinforced through the strategic use of green labelling and eco-certifications, which make the environmental footprint of products transparent, guiding consumers towards more sustainable choices. Additionally, community-based environmental programs can harness the collective power of social norms to promote sustainable consumption, demonstrating the importance of communal efforts in conservation.

On the incentives front, offering tangible benefits for choosing ESPs, such as discounts or tax advantages, can motivate consumers to prioritize environmentally friendly products. In parallel, leveraging the influence of social media and popular influencers to advocate for green conservation can amplify the message, reaching a broader audience and encouraging a cultural shift towards environmentalism. Furthermore, advocating for policy support and establishing regulatory frameworks that encourage the production and consumption of ESPs create an ecosystem where green conservation is not just encouraged but becomes the norm. These strategies collectively represent a comprehensive approach to integrating environmentalism into everyday consumer behavior, fostering a more sustainable relationship between humans and the environment.

11. Conclusion

Materialism is a strong force that can moderate personal attitude and subjective norms. Moderating effect of product comparison shows that purchase intention does not automatically translate into purchase Behavior, rather there are layers to it. Most consumers in Pakistan don't know about ESPs, but those who know, when asked whether they would purchase the ESPs, they would agree to it. However, in practice they don't buy ESPs. Even when the subjective norms and attitude may somewhat have developed the understanding and importance of ESPs in consumer's lives, when it comes to final purchase it is the product comparison that becomes more important than the personal preference for a product. This is more pronounced for those who exhibit higher materialism.

12. Limitations and Direction for Future Research

Materialism has an impact on consumers' attitude and subjective norms to take them away from ESP and choose those products which have social value. This study did not categorize the respondents according to the materialism score. In future, it can be divided according to the materialism score and see how those impacts on consumer purchase behavior. The present study was managed in Lahore, i.e., Lahore is a metropolitan city and therefore general awareness level about ESP is probably higher than rural area and consumers of rural areas have less knowledge about comparing products and less knowledge about environmental issues and sensitivity towards ESP might not be there. In future, studies can be done on rural and urban area comparison to determine the purchase behavior of these area's consumers in respect of ESPs. Future research can also include subjective norms as a moderator in line with the theory of reasoned action.

References

Ahmad, W., Ghazanfar, S., Ibrahim, M., Nazim, M., & Nadeem, A. H. (2021). Consumer's purchasing Behavior for green packaging in an emerging market. *PalArch's Journal of Archaeology of Egypt/Egyptology*, 18(08), 4792-4811.

- Akbar, K., Yongsheng, J., Waheed, A., Afzal, F., & Mahsud, M. (2021). Impact of green practices on consumers' sustainable purchase intentions: Humans' management adopting green strategies in Pakistan. *Human Systems Management, 40*(3), 339-351.
- Amoozad Mahdiraji, H., Hafeez, K., Kord, H., & Abbasi Kamardi, A. (2022). Analysing the voice of customers by a hybrid fuzzy decision-making approach in a developing country's automotive market. *Management Decision, 60*(2), 399-425.
- Bergamaschi, O. B. N., Ferraz, S. B., & Martins, R. M. (2022). "Young, wild and green?" analyzing the influence of environmental affect on young consumers' intent to purchase green products. *REMark, 21*(2), 232.
- Bhutto, M. H., Tariq, B., Azhar, S., Ahmed, K., Khuwaja, F. M., & Han, H. (2022). Predicting consumer purchase intention toward hybrid vehicles: testing the moderating role of price sensitivity. *European Business Review, 34*(1), 62-84.
- Brock Baskin, M. E., Hart, T. A., Bajaj, A., Gerlich, R. N., Drumheller, K. D., & Kinsky, E. S. (2023). Subjective norms and social media: predicting ethical perception and consumer intentions during a secondary crisis. *Ethics & Behavior, 33*(1), 70-88.
- Cantor, N. (2023). *Inventing the Middle Ages: The lives, works, and ideas of the great medievalists of the twentieth century*. Lutterworth Press.
- Chen, Y.-S., Chang, T.-W., Li, H.-X., & Chen, Y.-R. (2020). The influence of green brand affect on green purchase intentions: The mediation effects of green brand associations and green brand attitude. *International Journal of Environmental Research and Public Health, 17*(11), 4089.
- Cheung, G. W., Cooper-Thomas, H. D., Lau, R. S., & Wang, L. C. (2023). Reporting reliability, convergent and discriminant validity with structural equation modeling: A review and best-practice recommendations. *Asia Pacific Journal of Management, 1*-39.
- Cirillo, A., Maggi, B., Sciascia, S., Lazzarotti, V., & Visconti, F. (2022). Exploring family millennials' involvement in family business internationalization: Who should be their leader? *Journal of family business strategy, 13*(3), 100455.
- Dangal, S., Faludi, J., & Balkenende, R. (2022). Design Aspects in Repairability Scoring Systems: Comparing Their Objectivity and Completeness. *Sustainability, 14*(14), 8634.
- Di Cagno, D., Güth, W., Puca, M., & Sbriglia, P. (2023). Intention-based social influence in (non) strategic sharing experiments. *Journal of the Economic Science Association, 1*-18.
- Duong, C. D. (2022). Big Five personality traits and green consumption: bridging the attitude-intention-behavior gap. *Asia Pacific Journal of Marketing and Logistics, 34*(6), 1123-1144.
- Ehwi, R. J., Oti-Sarpong, K., Shojaei, R., & Burgess, G. (2022). Offsite manufacturing research: a systematic review of methodologies used. *Construction management and economics, 40*(1), 1-24.
- Fielden Burns, L. V., & Rico Garcia, M. (2022). Intercultural and linguistic competences for engineering ESP classes: A didactic framework proposal through problem-based learning. *International Journal of Applied Linguistics, 32*(1), 3-24.
- Forghani, E., Sheikh, R., Hosseini, S. M. H., & Sana, S. S. (2022). The impact of digital marketing strategies on customer's buying behavior in online shopping using the rough set theory. *International journal of system assurance engineering and management, 1*-16.
- Gao, J., Pham, Q. H. P., & Polio, C. (2022). The role of theory in quantitative and qualitative second language learning research: A corpus-based analysis. *Research Methods in Applied Linguistics, 1*(2), 100006.
- Häder, M. (2022). Research and Investigation Planning. In *Empirical Social Research: An Introduction* (pp. 63-124). Springer.
- Hellweg, S., Benetto, E., Huijbregts, M. A., Verones, F., & Wood, R. (2023). Life-cycle assessment to guide solutions for the triple planetary crisis. *Nature Reviews Earth & Environment, 4*(7), 471-486.
- Hill, T., Canniford, R., & Eckhardt, G. M. (2022). The roar of the crowd: How interaction ritual chains create social atmospheres. *Journal of Marketing, 86*(3), 121-139.
- Hoang Yen, N. T., & Hoang, D. P. (2023). The formation of attitudes and intention towards green purchase: An analysis of internal and external mechanisms. *Cogent Business & Management, 10*(1), 2192844.
- Ishak, L. N. A., Fuza, Z. I. M., Ridham, M. A., & Othman, S. A. A. (2021). Customers Awareness and Purchase Behavior towards Organic Food. *Social Sciences, 11*(16), 130-139.
- Jain, S. (2020). Assessing the moderating effect of subjective norm on luxury purchase intention: a study of Gen Y consumers in India. *International Journal of Retail & Distribution Management*.
- Jeziarski, W., Krawczyk, D. A., & Sadowska, B. (2023). The Impact of Climate Change and Window Parameters on Energy Demand and CO2 Emissions in a Building with Various Heat Sources. *Energies, 16*(15), 5675.
- Kaur, J., Parida, R., Ghosh, S., & Lavuri, R. (2022). Impact of materialism on purchase intention of sustainable luxury goods: An empirical study in India. *Society and Business Review, 17*(1), 22-44.
- Khalid, A., & Qadeer, F. (2021). Curbing the materialism-loneliness-happiness trap by two conscious interventions: A double randomized experiment. *Available at SSRN*.
- Khan, Y., Hameed, I., & Akram, U. (2023). What drives attitude, purchase intention and consumer buying behavior toward organic food? A self-determination theory and theory of planned behavior perspective. *British Food Journal, 125*(7), 2572-2587.
- Khan, S. A. R., Yu, Z., Umar, M., & Tanveer, M. (2022). Green capabilities and green purchasing practices: A strategy striving towards sustainable operations. *Business Strategy and the Environment, 31*(4), 1719-1729.
- Kim, I., Jung, H. J., & Lee, Y. (2021). Consumers' value and risk perceptions of circular fashion: Comparison between secondhand, upcycled, and recycled clothing. *Sustainability, 13*(3), 1208.

- Kim, Y., & Oh, K. W. (2022). The effect of materialism and impression management purchase motivation on purchase intention for luxury athleisure products: the moderating effect of sustainability. *Journal of Product & Brand Management*, 31(8), 1222-1234.
- Kozinets, R. V. (2022). Algorithmic branding through platform assemblages: core conceptions and research directions for a new era of marketing and service management. *Journal of Service Management*, 33(3), 437-452.
- Kramarczyk, J., & Alemany Oliver, M. (2022). Accumulative vs. appreciative expressions of materialism: Revising materialism in light of polish simplifiers and new materialism. *Journal of Business Ethics*, 175(4), 701-719.
- Kreczmańska-Gigol, K., & Gigol, T. (2022). The impact of consumers' green skepticism on the purchase of energy-efficient and environmentally friendly products. *Energies*, 15(6), 2077.
- Kumar, A., Prakash, G., & Kumar, G. (2021). Does environmentally responsible purchase intention matter for consumers? A predictive sustainable model developed through an empirical study. *Journal of Retailing and Consumer Services*, 58, 102270.
- Li, J.-Y., Kim, J. K., & Alharbi, K. (2022). Exploring the role of issue involvement and brand attachment in shaping consumer response toward corporate social advocacy (CSA) initiatives: The case of Nike's Colin Kaepernick campaign. *International Journal of Advertising*, 41(2), 233-257.
- Loh, Z., & Hassan, S. H. (2021). Consumers' attitudes, perceived risks and perceived benefits towards repurchase intention of food truck products. *British Food Journal*.
- Mansi, S. A., Teresa, M. M., Seri, S., Tonin, P., Rotshtein, P., & Porcaro, C. (2022). Frontal Intrinsic Connectivity Networks Support Contradiction Identification During Inductive and Deductive Reasoning. *Cognitive Computation*, 14(2), 677-692.
- Mansoor, M., Saeed, A., Rustandi Kartawinata, B., & Naqi Khan, M. K. (2022). Derivers of green buying behavior for organic skincare products through an interplay of green brand evaluation and green advertisement. *Journal of global fashion marketing*, 13(4), 328-343.
- Manwanina Kiumba, N., Luminet, O., Chang, B., & Mopendo Mwisomi, E. (2023). Individual and collective factors influencing consumer attitudes and Behavior towards edible insects in Kinshasa: a pilot study. *Health Psychology and Behavioral Medicine*, 11(1), 2229411.
- Matharu, M., Jain, R., & Kamboj, S. (2020). Understanding the impact of lifestyle on sustainable consumption behavior: a sharing economy perspective. *Management of environmental quality: An international Journal*.
- Mohammad, J., & Quoquab, F. (2024). The role of mindfulness and frugality in mitigating food waste and enhancing social well-being. *Environment, Development and Sustainability*, 1-26.
- Moldes, O., Dineva, D., & Ku, L. (2022). Has the COVID-19 pandemic made us more materialistic? The effect of COVID-19 and lockdown restrictions on the endorsement of materialism. *Psychology & Marketing*, 39(5), 892-905.
- Moshood, T. D., Nawansir, G., Mahmud, F., Mohamad, F., Ahmad, M. H., & AbdulGhani, A. (2022). Sustainability of biodegradable plastics: New problem or solution to solve the global plastic pollution? *Current Research in Green and Sustainable Chemistry*, 5, 100273.
- Nadeem, M., Junaid, M., & Hameed, I. (2022). Factors Influencing Environmentally Sustainable Consumer Behavior- Extended Theory of Planned Behavior (TPB) in the Context of Haze Governance. *Abasyn University Journal of Social Sciences*, 15(2).
- Ni, S., & Ishii, K. (2023). The relationship between consumer behavior and subjective well-being in Chinese teahouses and cafes: A social capital perspective. *Journal of Leisure Research*, 1-24.
- Nogueira, M., Dias, F., & Santos, V. (2023). Sustainable mobility choices: Exploring the impact of consumers' values, attitudes, perceived Behavioral control and subjective norms on the likelihood to choose sustainable mobility options. *Journal of Consumer Behavior*, 22(2), 511-528.
- Noor, R., Maqsood, A., Baig, A., Pande, C. B., Zahra, S. M., Saad, A., Anwar, M., & Singh, S. K. (2023). A comprehensive review on water pollution, South Asia Region: Pakistan. *Urban Climate*, 48, 101413.
- Noor, R., Pande, C. B., Zahra, S. M., Maqsood, A., Baig, A., Misaal, M. A., Noor, R. S., Abbas, Q., & Anwar, M. (2023). Review of Various Impacts of Climate Change in South Asia Region, Specifically Pakistan. In *Climate Change Impacts on Natural Resources, Ecosystems and Agricultural Systems* (pp. 269-296). Springer.
- Palmer, T. G., & Warner, M. (2022). *Development with dignity: self-determination, localization, and the end to poverty*. Taylor & Francis.
- Pekkanen, T.-L. (2021). What constrains the sustainability of our day-to-day consumption? A multi-epistemological inquiry into culture and institutions.
- Pennanen, K., Malila, R.-M., & Luomala, H. T. (2024). Is it me or others who matter? The interplay between consumer values vis-à-vis status and affiliation motives as shapers of meat alternative interest. *Appetite*, 192, 107114.
- Pereira, R. P. T., Filimonau, V., & Ribeiro, G. M. (2020). Projecting the carbon footprint of tourist accommodation at the 2030 FIFA World Cup™. *Cleaner and Responsible Consumption*, 1, 100004.
- Phillips, N., Carpenter, R., Mangan, E., & Burns, L. (2022). Predictors of Relationship Satisfaction: What's Perfection got to do with it. *Journal of Psychology*, 10(1), 39-56.
- Pisitsankhakharn, R., & Vassanadumrongdee, S. (2020). Enhancing purchase intention in circular economy: An empirical evidence of remanufactured automotive product in Thailand. *Resources, Conservation and Recycling*, 156, 104702.
- Polyportis, A., Mugge, R., & Magnier, L. (2022). Consumer acceptance of products made from recycled materials: A scoping review. *Resources, Conservation and Recycling*, 186, 106533.

- Prinzing, M. (2023). Going green is good for you: why we need to change the way we think about pro-environmental behavior. *Ethics, Policy & Environment*, 26(1), 1-18.
- Pristl, A. C., Kilian, S., & Mann, A. (2021). When does a social norm catch the worm? Disentangling social normative influences on sustainable consumption Behavior. *Journal of Consumer Behavior*, 20(3), 635-654.
- Pupelis, L., & Šeinauskienė, B. (2023). Effect of consumer self-discrepancy on materialism and impulse buying: the role of subjective well-being. *Central European Management Journal*, 31(2), 222-240.
- Qiu, S., Sankar, S., Dooley, L. M., Huang, N., & Tang, W. (2023). How materialism relates to attitude toward corporate social responsibility among Chinese college students? Mediation role of environmental concern. *Environment and Social Psychology*, 8(2).
- Rahman, M. M. (2023). Sample Size Determination for Survey Research and Non-Probability Sampling Techniques: A Review and Set of Recommendations. *Journal of Entrepreneurship, Business and Economics*, 11(1), 42-62.
- Ratnasari, R. T., Prajasari, A. C., & Kassim, S. (2023). Does religious knowledge level affect brand association and purchase intention of luxury cars? Case of the Lexus cars in Indonesia. *Journal of Islamic Marketing*, 14(4), 988-1006.
- Roh, T., Seok, J., & Kim, Y. (2022). Unveiling ways to reach organic purchase: Green perceived value, perceived knowledge, attitude, subjective norm, and trust. *Journal of Retailing and Consumer Services*, 67, 102988.
- Sader, S., Husti, I., & Daroczi, M. (2022). A review of quality 4.0: Definitions, features, technologies, applications, and challenges. *Total Quality Management & Business Excellence*, 33(9-10), 1164-1182.
- Saif, N., & Shaheen, I. (2022). Investigating the Relationship between the Big Five Personality Traits model and Selfie Posting behavior with the moderating role of Culture and Marital status among University Students. *Journal of Innovative Research in Management Sciences*, 1-15.
- Shafqat, T., Ishaq, M. I., & Ahmed, A. (2023). Fashion consumption using minimalism: Exploring the relationship of consumer well-being and social connectedness. *Journal of Retailing and Consumer Services*, 71, 103215.
- Shang, D., Wu, W., & Schroeder, D. (2023). Exploring determinants of the green smart technology product adoption from a sustainability adapted value-belief-norm perspective. *Journal of Retailing and Consumer Services*, 70, 103169.
- Shi, T., Huang, R., & Sarigöllü, E. (2022). Consumer product use behavior throughout the product lifespan: A literature review and research agenda. *Journal of environmental management*, 302, 114114.
- Shrum, L., Chaplin, L. N., & Lowrey, T. M. (2022). Psychological causes, correlates, and consequences of materialism. *Consumer Psychology Review*, 5(1), 69-86.
- Singh, A., Rana, N. P., & Parayitam, S. (2022). Role of social currency in customer experience and co-creation intention in online travel agencies: Moderation of attitude and subjective norms. *International Journal of Information Management Data Insights*, 2(2), 100114.
- Sreekumar, A., Arias, R. A., Otnes, C. C., & Zayer, L. T. (2023). Shining the spotlight on marketplace rituals: a review and research agenda. *Journal of Marketing Management*, 39(13-14), 1166-1196.
- Sutisna, F., & Handra, T. (2022). The theory of planned behavior influences online shopping behavior. *Aptisi Transactions on Management (ATM)*, 6(1), 52-61.
- Tanveer, M. (2024). Cracking the code: The influence of personality traits on knowledge management culture and sharing behavior. *Uncertain Supply Chain Management*, 12. doi: 10.5267/j.uscm.2024.5.015
- Tanveer, M., Khan, S. A. R., Umar, M., Yu, Z., Sajid, M. J., & Haq, I. U. (2022). Waste management and green technology: future trends in circular economy leading towards environmental sustainability. *Environmental Science and Pollution Research*, 29(53), 80161-80178.
- Tarka, P., Harnish, R. J., & Babaev, J. (2022). From materialism to hedonistic shopping values and compulsive buying: A mediation model examining gender differences. *Journal of Consumer Behavior*, 21(4), 786-805.
- Taufique, K. M. R. (2022). Integrating environmental values and emotion in green marketing communications inducing sustainable consumer behavior. *Journal of Marketing Communications*, 28(3), 272-290.
- Thukral, S., Shree, D., & Singhal, S. (2023). Consumer Behavior towards storage, disposal and recycling of e-waste: systematic review and future research prospects. *Benchmarking: An International Journal*, 30(3), 1021-1072.
- Tunçel, N. (2022). Willingness to purchase counterfeit luxury brands: A cross-cultural comparison. *International Journal of Consumer Studies*, 46(2), 494-514.
- Van Tonder, E., Fullerton, S., De Beer, L., & Saunders, S. (2023). Social and personal factors influencing green customer citizenship Behaviors: The role of subjective norm, internal values and attitudes. *Journal of Retailing and Consumer Services*, 71, 103190.
- Verma, P. (2021). The effect of brand engagement and brand love upon overall brand equity and purchase intention: A moderated–mediated model. *Journal of Promotion Management*, 27(1), 103-132.
- Wang, D., Weisstein, F. L., Duan, S., & Choi, P. (2022). Impact of ambivalent attitudes on green purchase intentions: The role of negative moods. *International Journal of Consumer Studies*, 46(1), 182-199.
- Wang, J., Pham, T. L., & Dang, V. T. (2020). Environmental consciousness and organic food purchase intention: a moderated mediation model of perceived food quality and price sensitivity. *International Journal of Environmental Research and Public Health*, 17(3), 850.
- Wang, L., Zhang, Q., & Wong, P. P. W. (2023). Reexamination of consumers' willingness to stay at green hotels: rethinking the role of social identity theory, value-belief-norm theory, and theory of planned behavior. *Journal of Hospitality Marketing & Management*, 1-35.

- Wang, S., Wang, J., Yang, F., Li, J., & Song, J. (2020). Determinants of consumers' remanufactured products purchase intentions: Evidence from China. *International Journal of Production Research*, 58(8), 2368-2383.
- Wielath, A. (2023). Why rent if you can buy?: Exploring Drivers of Collaborative Consumption and Communication Strategies for Consumer Behavior Change. In.
- Yildirim, S. (2022). The consumer role for sustainable development: how consumers contribute sustainable development goals. In *Research Anthology on Measuring and Achieving Sustainable Development Goals* (pp. 872-888). IGI Global.
- Yin, C.-C., Chiu, H.-C., Hsieh, Y.-C., & Kuo, C.-Y. (2022). How to retain customers in omnichannel retailing: Considering the roles of brand experience and purchase behavior. *Journal of Retailing and Consumer Services*, 69, 103070.
- Yuan, R., Liu, M. J., & Blut, M. (2022). What's in it for you? Examining the roles of consumption values and Thaler's acquisition–transaction utility theory in Chinese consumers' green purchase intentions. *European Journal of Marketing*, 56(4), 1065-1107.
- Zheng, Y., Xiao, Z., Zhou, X., & Yang, Z. (2022). The Hierarchical Relationship Between the Relational-Self and the Collective-Self During Attention Processing. *Psychology Research and Behavior Management*, 15, 557.



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