

AN INVESTIGATION INTO CONSUMER PURCHASE INTENTIONS FOR ECO-FRIENDLY PRODUCTS: ANALYZING AGE AND GENDER DIFFERENCES

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Abstract: The main aim of this study is to investigate the factors that influence a consumer's intention to purchase environmentally sustainable products, with particular attention to the interplay of age and gender demographics. Precisely, the study probes a spectrum of influences, including consumers' attitudes, subjective norms, environmental knowledge, eco-labeling, and willingness to pay a premium price for eco-conscious products. We examined the sources from which consumers learn about eco-friendly products and the elements that drive their green purchasing decisions. The study showed significant differences in consumer attitudes, environmental awareness and eco-labels by gender, while willingness to pay higher prices and willingness to purchase green products differed by age group. Among the 5 hypotheses proposed in the study, the hypothesis that environmental knowledge has a positive effect on the intention to purchase green products was rejected.

Keywords: attitudes, subjective norms, environmental knowledge, eco-labeling, willingness to pay, green purchase intention

БАЙГАЛЬД ЭЭЛТЭЙ БҮТЭЭГДЭХҮҮНИЙГ ХУДАЛДАН АВАХ ХҮСЭЛ ЭРМЭЛЭЛИЙГ ТОДОРХОЙЛОХ СУДАЛГАА: НАС, ХҮЙСИЙН ЯЛГААТАЙ БАЙДАЛ

Хураангуй: Энэхүү судалгааны ажлаар хэрэглэгчийн байгальд ээлтэй, ногоон бүтээгдэхүүн худалдан авах хүсэл эрмэлзэлд нөлөөлөх хүчин зүйлсийг нас, хүйсээр харьцуулан тодорхойлохыг зорьлоо. Ногоон бүтээгдэхүүн худалдан авах эрмэлзэлд нөлөөлөх хандлага, субъектив хэм хэмжээ, байгаль орчны талаарх мэдлэг, бүтээгдэхүүний эко шошго болон илүү өндөр үнэ төлөхөд бэлэн байдал гэсэн хүчин зүйлсийн хамаарлыг судалсан. Мөн хэрэглэгчид байгальд ээлтэй ногоон бүтээгдэхүүний талаарх мэдээллийг ямар сувгаас авдаг болохыг тодруулав. Судалгаанаас хэрэглэгчийн хандлага, байгаль орчны мэдлэг болон эко шошго хүйсээс хамаарч тодорхой ялгаатай байсан бол өндөр үнэ төлөхөд бэлэн байдал болон ногоон бүтээгдэхүүн худалдан авах эрмэлзлийн хувьд насны бүлгээс хамаарч ялгаатай үр дүн гарсан. Судалгаанд дэвшүүлсэн 5 таамаглалаас ногоон бүтээгдэхүүн худалдан авах хүсэл эрмэлзэлд байгаль орчны мэдлэг эерэг нөлөөтэй байдаг гэсэн таамаглал няцаагдсан.

Түлхүүр үгс: хандлага, субъектив хэм хэмжээ, байгаль орчны талаарх мэдлэг, эко шошго, өндөр үнэ төлөхөд бэлэн байдал, ногоон худалдан авах хүсэл эрмэлзэл

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Introduction

A pivotal challenge confronting both Mongolia and the broader international community is the pursuit of sustainable development, which encompasses a range of environmental concerns. Nation-states are actively endeavoring to curtail greenhouse gas emissions to the fullest extent, promote a favorable business environment for eco-conscious enterprises, and advocate for the adoption of green production and consumption practices (Han et al., 2009)

. Green development is one of the operational goals to be implemented in 2021-2030 within the framework in Vision 2050 long-term development policy of Mongolia. Within the framework of the goal, increase the consumption and production productivity by introducing environmentally friendly, efficient and advanced technologies, and develop a waste-free economy to save natural resources (“Vision 2050”, 2020).

The fulfillment of sustainable development principles is not solely contingent upon governmental and industrial actions; it is intrinsically linked to consumers’ daily purchasing choices and consumption habits. These individual decisions significantly shape market dynamics and exert influence on the socio-economic framework, thereby serving as a cornerstone for sustainable progress. Consumers’ engagement extends beyond mere consumption to encompass responsible purchasing behaviors, active involvement in sustainability initiatives, and the need to foster a culture of green consumption. Such comprehensive participation is essential for realizing the Sustainable Development Goals’ long-term objectives and surmounting the myriad of sustainability hurdles that contemporary society encounters (Sumarwan, 2022; Yildirim, 2020).

Understanding the determinants that motivate consumers to opt for environmentally sustainable purchases holds substantial import for both commercial entities and policy makers. Such insights can significantly propel the actualization of the Sustainable Development Goals, catalyzing their comprehensive implementation.

Literature review

Green consumption is the choice of eco-friendly products and services, considering their environmental impact. On the other hand, impulsive purchasing can cause significant ecological damage, highlighting the crucial role of consumer behavior in environmental preservation (Gallo et al., 2023). Green consumption, often equated with sustainable consumption, is characterized by consumer practices that aim to reduce environmental harm by choosing eco-friendly products. These practices contribute to public health through reduced consumption, green marketing initiatives, and health advocacy. This approach further includes waste management

and recycling efforts, guiding individuals toward responsible environmental management and prudent resource and energy utilization (Zhao et al., 2020).

The continuum of eco-conscious consumption is demarcated into three distinct segments: the procurement of goods, their application, and the ultimate disposition (Testa et al., 2021).

Concurrently, products deemed 'green' are those that contribute to environmental stewardship across all facets of their existence, from creation through utilization to their final phase of discard. These commodities are typically organic in nature, designed to be benign to the ecosystem, crafted for multiple uses, and optimized for energy efficiency (Gbadamosi, 2016).

The Theory of Planned Behavior (TPB) is extensively employed in scholarly inquiries into consumer purchasing propensities and decision-making processes. This theoretical construct elucidates the impact of non-volitional elements, societal milieu, and personal determinants on individual's intent (Han & Kim, 2010).

The intention to purchase a product is deemed an essential precursor to tangible consumer activity. Intention serve as predictors of consumer behaviour, facilitating the assessment of a consumer's willingness for a particular act or decision. Hence, the stronger the intention preceding a specific behavior, the higher the probability of its actualization (Ajzen, 1991).

In the scholarly examination of consumer behavior, extensive research has been carried out to identify the factors that influence consumer purchase intention for eco-conscious products. The investigation has taken into account several major factors that are thought to motivate the purchase of such items. These factors include consumers' attitudes, subjective norms, environmental knowledge, eco-labeling, and willingness to pay a premium price for eco-conscious products. For instance, consumer attitude plays an important role in purchasing intention. "Behavioral attitudes" refer to how favorable or unfavorable an individual perceives a behavior (Rustagi & Prakash, 2022).

The association between behavior and attitude is robust, with evidence suggesting a significant correlation. Positive attitudes are often found to be predictive of positive behavioral outcomes. (Handayani, 2017).

A number of researchers have found that consumers with a positive attitude toward the environment tend to buy green (Cheah & Phau, 2011).

Furthermore, Karekles, Carlson and Muehling concluded in their research that if the consumer perceives the environmental impact of the product to be low, the willingness to buy these products is high. Also, social groups such as family, friends, and colleagues play an important role in consumer purchase intentions. "When consumers believe that their 'important individuals' approve of green buying behavior, they tend to adopt it. In other words, subjective norms are positively

related to consumers' green purchasing intentions (Bong Ko & Jin, 2017; Yeon Kim & Chung, 2011).

In addition, environmental awareness and concern are the main motivations for people to buy green and environmentally friendly products (Fryxell & Lo, 2003).

Furthermore, the acquisition of environmental knowledge is posited to shape individual attitudes towards the environment (Leonidou & Leonidou, 2011). In concordance, Simanjuntak and colleagues have articulated that such knowledge strongly influences one's stance on environmental matters, subsequently informing their purchasing decisions (Simanjuntak et al., 2023). The consumer can also find out whether the product is environmentally friendly through the label. Empirical study indicates that environmental concerns among consumers significantly affect their perception of eco-labels, in this manner encouraging a tendency towards the buying of green products (Wang et al., 2022) Although eco-friendly products typically come with a higher price tag (Nasir, 2014), Environmentally aware consumers tend to be less sensitive to price (Olson, 2012), showing a propensity to proceed with the purchase (Nasir, 2014; Olson, 2012)

Based on the Theory of Planned Behavior and a thorough literature review, the following hypotheses were formulated. The general expectation is that:

H1: A positive consumer attitude has a significant effect on green purchase intention.

H2: Subjective norms positively influence attitude towards green purchase intention.

H3: Environmental knowledge positively influences attitude towards green purchase intention.

H4: Eco-labeling positively influences attitude towards green purchase intention.

H5: Willingness to pay positively influences attitude towards green purchase intention

Research methodology

The research is designed to explore the factors that shape consumer intentions to buy green products, with a focus on age and gender demographics. The study engaged 346 individuals aged 18 to 55, using a random sampling approach for data collection by an online survey conducted in January-February 2024. The questionnaire is structured into three sections: the initial segment gauges general attitudes towards eco-friendly products, followed by 29 key questions that explore six dimensions using a Likert scale. The concluding section gathers demographic data, including age, gender, educational background, and income levels.

Regarding gender distribution, the study observed a higher representation of

female participants. The age demographics were evenly distributed. As for educational attainment, a significant majority of the respondents, constituting 76.1%, possessed a higher education degree.

Table 1. Demographic Profile of Respondents

Total numbers of respondents (n=346)		Frequency	Percentage (%)
Gender	Male	116	33.5%
	Female	230	66.5%
Age, years	16-25	110	31.8%
	26-35	93	26.9%
	36-45	72	20.8%
	46-55	71	20.5%
Education	Junior high school or below	14	4.0%
	Senior high school	69	19.9%
	College diploma	13	3.8%
	Above than bachelor's degree	250	72.3%
Household monthly income (thousand MNT)	up to 2,000,000 MNT	146	42.2%
	2,000,001 - 4,000,000 MNT	123	35.5%
	more than 4,000,001	77	22.3%

Data analysis and results

The research shows that digital platforms, social media, family, and friends are the main sources to get information of green products. A comparative analysis of age demographics reveals a divergence in information sources: the younger cohort, aged 16-25, mostly get information by the Internet and social media, whereas individuals aged 46-55 are more inclined to rely on family, friends, traditional media, and sales staffs. Traditional media appears as a significant source across age cohorts, with 24.5% of the younger group and 43.7% of the older group engaging with such channels. In terms of gender, the data suggests a higher engagement with digital information sources among women, with 83.5% employing the Internet and social networks, compared to 70.7% of men.

Table 2. Informational Sources on Eco-Friendly and Green Products: Distribution of preferences by age group and gender

Source of information	Age groups				Gender	
	16-25	26-35	36-45	46-55	эрэгтэй	эмэгтэй
Internet and social network information	81.8%	77.4%	79.2%	77.5%	70.7%	83.5%
Family and friends	51.8%	48.4%	50.0%	56.3%	54.3%	50.0%

Traditional medias; television, radio, billboards, newspapers and magazines	24.5%	31.2%	30.6%	43.7%	33.6%	30.4%
Store and sales staff	16.4%	21.5%	12.5%	29.6%	15.5%	21.7%
Others	16.4%	14.0%	15.3%	21.1%	16.4%	16.5%

The survey's findings indicate that the primary considerations for consumers selecting eco-friendly products are product packaging (49.1%), product quality (47.4%), and environmental impact (43.9%). It is observed that with advancing age, there is an increased emphasis on the quality and cost of the product, as well as the reputation of the manufacturer. Conversely, younger consumers place greater importance on packaging, environmental implications, and the social responsibility of the product. Gender-based analysis revealed minimal variance in preferences; however, a notable distinction is that women tend to prioritize price, whereas men are more influenced by the environmental policies and social responsibilities upheld by the producing organization.

Table 3. Key factors for selecting eco-friendly green products: Percentage distribution across age groups and gender

Key factors	Age groups				Gender	
	16-25	26-35	36-45	46-55	Male	Female
Product packaging (eco-friendly)	53.6%	52.7%	44.4%	42.3%	50.0%	48.7%
Product quality	40.9%	45.2%	51.4%	56.3%	44.8%	48.7%
Impact of the product on the environment	46.4%	46.2%	43.1%	38.0%	43.1%	44.3%
Eco-label certification of products	20.9%	31.2%	29.2%	29.6%	24.1%	28.7%
Advice and information provided by the seller	22.7%	20.4%	15.3%	21.1%	19.8%	20.4%
Product price	12.7%	18.3%	20.8%	29.6%	14.7%	21.7%
Product and brand reputation	17.3%	21.5%	16.7%	21.1%	19.8%	18.7%
Corporate environmental policy and social responsibility	20.0%	14.0%	8.3%	12.7%	18.1%	12.6%
Reputation of the manufacturer	9.1%	11.8%	11.1%	18.3%	12.1%	12.2%

To evaluate the reliability of the research questionnaire's variables, the Cronbach's alpha coefficient was employed. The resultant values exceeded 0.9, indicating a high degree of internal consistency and thus affirming the questionnaire's comprehensive

representation of the factors in question.

Table 4. Reliability analysis

Variables		Number of items	Cronbach's alpha
Consumer attitudes	CA	4	0.937
Subjective norms	SN	5	0.929
Environmental knowledge	EK	6	0.956
Eco-labeling	EL	6	0.922
Willingness to pay a premium price	WTP	3	0.926
Green purchase intention	GPI	5	0.951
Total	-	29	0.978

Table 5 indicates that the total mean of all females (Ave=3.44-4.00) is higher than that of males (Ave=3.12-3.61). It reveals that females' scores have a small amount of variation rather than males. Results of statistical analysis of independent-samples t-test also reveal that the p -value is between 0.02 and 0.049, by consumer attitudes, environmental knowledge and products eco-labeling. This means that there was a significant difference between the total mean males and the total mean females. In contrast, subjective norms, WTP and green purchase intention were not significant for gender.

Table 5. Average factor ratings for eco-friendly green products and statistical significance of determinants by gender

Factors	Gender		F	Sig.
	Male (n=116)	Female (n=230)		
Consumer attitudes	3.61	4.00	5.888	.016
Subjective norms	3.13	3.58	1.040	.308
Environmental knowledge	3.42	3.88	9.566	.002
Eco-labeling	3.15	3.44	3.899	.049
Willingness to pay a premium price	3.12	3.49	1.400	.238
Green purchase intention	3.29	3.68	1.382	.241

Source: Sample survey result 2024 (Independent Samples Test).

The comparative analysis of the mean values for the six principal factors associated with eco-friendly green products reveals that the cohort aged 36-45 exhibited the highest ratings. In contrast, the group aged 26-35 registered the lowest scores, trailing the overall average by 0.05 to 0.16 points.

Further, a granular regression analysis segmented by four distinct age groups revealed that consumer attitudes, subjective norms environmental knowledge and eco-labeling did not hold statistical significance in predicting the intent to purchase eco-

friendly and green products. Contrastingly, willingness to pay and environmentally friendly products were significant in between cohort aged 26-35 and 36-45.

Table 6. Average factor ratings for eco-friendly green products and statistical significance of determinants by age groups

Factors	Age groups				F	Sig.
	16-25	26-35	36-45	46-55		
Consumer attitudes	3.90	3.77	4.02	3.80	3.579	.060
Subjective norms	3.42	3.29	3.63	3.44	3.061	.082
Environmental knowledge	3.71	3.57	3.95	3.72	3.114	.080
Eco-labeling	3.34	3.29	3.44	3.30	3.547	.061
Willingness to pay a premium price	3.44	3.25	3.43	3.34	7.561	.007
Green purchase intention	3.55	3.44	3.72	3.52	7.617	.006

Source: Sample survey result 2024 (Independent Samples Test).

In the comparative analysis of determinants shaping the purchase intentions across various age demographics, the regression model elucidated that a higher willingness to pay (0.507) and the presence of eco-labels (0.245) significantly sway the inclination towards procuring environmentally sustainable products.

Table 7. Moderating effects between variables and green purchase intention

	Coefficient	t	p	R ²	p
Consumer attitude	.112	2.270	.024		
Subjective norms	.102	2.377	.018		
Environmental knowledge	.065	1.386	.167	.830	.000
Eco-labeling	.245	6.745	.000		
Willingness to pay a premium price	.507	14.813	.000		

Source: Data compiled by authors

Table 8. Summary of Hypotheses

No		Result	Decision
H1	A positive consumer attitude has a significant effect on green purchase intention.	Significant	Accepted
H2	Subjective norms positively influence attitude towards green purchase intention.	Significant	Accepted
H3	Environmental knowledge positively influences attitude towards green purchase intention.	Insignificant	Rejected
H4	Eco-labeling positively influences attitude towards green purchase intention.	Significant	Accepted
H5	Willingness to pay positively influences attitude towards green purchase intention	Significant	Accepted

Conclusion

The main aim of this study is to investigate the factors that influence a consumer's intention to purchase environmentally sustainable products, with particular attention to the interplay of age and gender demographics. The study engaged 346 individuals aged 18 to 55, using a random sampling approach for data collection by an online survey conducted in January-February 2024.

In terms of gender, the data suggests a higher engagement with digital information sources among women, with 83.5% employing the Internet and social networks, compared to 70.7% of men. Also, a comparative analysis of age demographics reveals a divergence in information sources: the younger cohort, aged 16-25, mostly get information by the Internet and social media. The survey's findings indicate that the primary considerations for consumers selecting eco-friendly products are product packaging (49.1%), product quality (47.4%), and environmental impact (43.9%).

There was a significant difference between males and females by consumer attitudes, environmental knowledge and products eco-labeling. Also, willingness to pay and environmentally friendly products were significant in between cohort aged 26-35 and 36-45 in Mongolian consumers. The analytical outcomes indicate that among the five postulated hypotheses, only one were not supported: the proposition that consumers' environmental knowledge positively influence green purchase intentions were refuted. In contrast, the assertions that consumer attitude, subjective norms, eco-labels and an increased willingness to pay bolster the likelihood of purchasing eco-friendly products received empirical support.

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