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ENVIRONMENTALLY FRIENDLY CONSUMER BEHAVIOR OF MILLENNIALS IN KAZAKHSTAN

This research explores the environmentally friendly consumer behavior of Millennials in Kazakhstan through a quantitative approach. The study targets the pressing issue of sustainable consumption practices among this generation, which holds significant implications for environmental conservation. This study is aimed at exploration of determinants, patterns, and motivations behind environmentally friendly consumer behavior among Millennials in Kazakhstan. It seeks to identify the main factors influencing their choices, the extent to which eco-consciousness guides their decisions, and the influence of external factors, such as marketing strategies and peer influence.

This research holds both scientific and practical significance contributing to the existing literature and offering insights into the emerging trends of green consumerism among Millennials in a Central Asian context. Moreover, it provides a quantitative assessment of the factors shaping their eco-friendly consumption, allowing for a nuanced understanding of their behavior. The research methodology involves the administration of structured surveys to a representative sample of Millennials in Kazakhstan. Data analysis performed with the use of such statistical methods as regression analysis and hypothesis testing to draw meaningful conclusions.

Preliminary findings suggest that while environmental awareness plays a role in Millennials' consumer choices, other factors such as affordability and convenience also significantly influence their behavior. The research underscores the need for targeted strategies to encourage more sustainable consumption practices among this demographic. In conclusion, this research contributes valuable insights into the environmentally friendly consumer behavior of millennials in Kazakhstan, shedding light on the factors driving their choices and serving as a basis for the development and implementation of effective sustainability campaigns. It has the potential to inform policymakers, marketers, and businesses seeking to align their strategies with the preferences of this eco-conscious generation.

Key words: millennials, environmentally friendly consumer behavior, Kazakhstan, sustainability.

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Қазақстандағы миллениалдардың экологиялық таза тұтынушылық мінез-құлқы

Бұл зерттеуде сандық тәсіл арқылы Қазақстандағы миллениалдардың экологиялық таза тұтынушылық мінез-құлқы зерттеледі. Зерттеу қоршаған ортаны сақтауға айтарлықтай әсер ететін қазіргі ұрпақ арасындағы тұрақты тұтыну тәжірибесінің өзекті мәселесін қарастырады. Бұл зерттеудің мақсаты Қазақстандағы миллениалдар арасында экологиялық таза тұтынушылық мінез-құлықтың негізінде жатқан анықтаушы факторларды, модельдер мен уәждемелерді зерттеу болып табылады. Ол олардың таңдауына әсер ететін негізгі факторларды, экологиялық сананың олардың шешімдерін қаншалықты басқаратынын және маркетингтік стратегиялар мен құрдастарының әсері сияқты сыртқы факторлардың әсерін анықтауға бағытталған.

Бұл зерттеудің әрі ғылыми, әрі практикалық маңызы бар. Ол әдебиетте шектеулі көңіл бөлінген Орталық Азия контекстіндегі миллениалдар арасындағы жасыл тұтынушылықтың жаңа беталыстарының түсінігін ұсына отырып, білімнің жинақталуына үлес қосады. Сондай-ақ бұл олардың мінез-құлқын тереңірек түсінуге мүмкіндік беретін жасыл тұтынуды қалыптастыратын факторлардың сандық көрсеткішін береді. Зерттеу әдістемесі Қазақстанда миллениалдардың өкілдік іріктемесіне құрылымдық сауалнамалар жүргізуді көздейді. Деректерді талдау жиналған мәліметтер негізінде мағыналы қорытынды жасау үшін регрессиялық талдау және гипотезаны тексеру сияқты статистикалық әдістерді қамтиды.

Алдын ала қорытындылар мыңжылдықтардың тұтынушылық таңдауында экологиялық хабардарлық рөл атқарғанымен, қол жетімділік пен ыңғайлылық сияқты басқа факторлар да олардың мінез-құлқына айтарлықтай әсер ететінін көрсетеді. Зерттеу осы демографияның тұрақты тұтыну тәжірибесін ынталандыру үшін мақсатты стратегиялардың қажеттілігін атап көрсетеді. Қорытындылай келе, бұл зерттеу Қазақстандағы миллениалдар тұтынушыларының экологиялық таза мінез-құлқы туралы құнды түсініктерге ықпал етеді, олардың таңдауына әсер ететін факторларға жарық түсіреді және тиімді тұрақтылық науқандарын дамыту үшін негіз ұсынады. Оның саясаткерлерді, маркетологтарды және өз стратегияларын осы экологиялық саналы ұрпақтың қалауларына сәйкестендіруге ұмтылатын бизнесті хабардар ету мүмкіндігі бар.

Түйін сөздер: миллениалдар, экологиялық таза тұтынушылық мінез-құлық, Қазақстан, тұрақты даму.

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Экологичное потребительское поведение миллениалов в Казахстане

В данном исследовании с помощью количественного метода изучается экологичное потребительское поведение миллениалов в Казахстане. В исследовании рассматривается актуальная проблема ответственного потребления среди представителей этого поколения, что имеет большое значение для защиты окружающей среды. Цель исследования – изучить определяющие факторы, моделей и мотивов экологичного потребительского поведения среди миллениалов в Казахстане. Исследование направлено на определение основных факторов, влияющих на выбор миллениалов, уровня экологической сознательности, которой они руководствуются при принятии решений, а также влияния внешних факторов, таких как маркетинговые стратегии и влияние сверстников.

Исследование имеет как научное, так и практическое значение. Оно вносит вклад в совокупность знаний, позволяя получить представление о возникающих тенденциях экологизации потребления среди миллениалов в Центральной Азии, чему в печатных материалах уделяется мало внимания. Кроме того, в исследовании дана количественная оценка факторов, формирующих культуру экологичного потребления миллениалов, что позволяет лучше понять их поведение. Методология исследования предполагает проведение структурированных опросов миллениалов в Казахстане по репрезентативной выборке. Анализ данных включает в себя такие статистические методы, как регрессионный анализ и проверка гипотез, позволяющие сделать значимые выводы на основе собранных данных.

Предварительные результаты показывают, что, хотя информированность об экологических проблемах и влияет на потребительский выбор миллениалов, другие факторы, такие как доступность и удобство, также значительно воздействуют на их поведение. Исследование подчеркивает необходимость разработки целевых стратегий, направленных на поощрение более ответственного потребления в этой демографической группе. В заключение необходимо отметить, что данное исследование позволяет получить ценные сведения об экологичном потребительском поведении миллениалов в Казахстане, пролить свет на определяющие их выбор факторы и создать основу для разработки эффективных кампаний в области устойчивого развития. Исследование может послужить источником информации для государственных деятелей, участников рынка и предпринимателей, которые хотят выстроить свои стратегии в соответствии с предпочтениями этого экологически осознанного поколения.

Ключевые слова: миллениалы, экологичное потребительское поведение, Казахстан, устойчивость.

Introduction

In recent years, global concerns about environmental sustainability have heightened, prompting individuals, organizations, and governments to reassess their behaviors and practices (Mohan, Robinson, Vodwal & Kumari, 2024). Among these environmental stakeholders, the millennial generation stands out as a demographic with significant potential to shape the future of sustainable consumption (Ruzgys, 2023). Millennials, usually defined as individuals born in a period between 1980s and mid-1990s, have come of age during a period marked by growing awareness of ecological challenges, climate change, and the consequences of unsustainable consumption (Kumar and Pandey

2023). The Republic of Kazakhstan, situated at the crossroads of Asia and Europe, represents a unique context for the study of environmentally friendly consumer behavior among millennials. While Kazakhstan has experienced rapid economic development in recent years, it also faces environmental challenges, such as pollution and resource depletion, which necessitate a shift towards sustainable practices (Tleubergenova et al., 2023).

In the past, consumers showed little awareness or interest in environmental issues. However, over the past few decades, a shift has occurred as both consumers and manufacturers have embraced the concepts of sustainable development and eco-friendly products (Minocha & Singh, 2024). Environmental concerns, however, are not new. As Smith (2010) pointed out in his research, guidelines for protecting the environment are found in ancient texts such as the Koran and the Bible. Although the concept of sustainable development has deep historical roots, interest in this topic has surged recently, driven by the growth of the social media and Internet technologies. Today, there is a notable trend of increasing environmental awareness. More and more people are becoming conscious about ecological problems, climate change, air pollution, and waste. Environmental concerns resulted in a growing demand for sustainable products (Dabija, Cheben & Lancaric, 2017). Consumers are concerned about ethical ways of consuming products, recycling, minimizing waste purchasing goods from ethical manufacturers. Purchasing eco-friendly products make consumers feel they make social impact to the community and the planet. According to the research of Joshi and Rahman (2015), consumers can lessen environmental risks by choosing eco-friendly products. These "green" products contribute to reducing waste, lowering carbon footprints, conserving natural resources, and saving energy. These products could be potentially be recycled benefiting several users before being fully utilized.

Moreover, there is a so-called "green consumerism" trend, which becomes a part of people's lifestyles. Nowadays consumers demand an ethical and environmentally friendly production process from the manufacturers or saving the planet's resources during the production. In simpler terms, eco-conscious consumerism refers to the creation, utilization of products and services with a focus on their positive impact on the ecology. From a business standpoint, sustainability has gained significance for corporations. They strive to develop products that are safer for the environment to cater to consumer demands. For instance, a popular clothing retailer,

Zara, has begun eliminating hazardous materials from its supply chain and adopting more energy-efficient practices, crafting garments from recycled materials. Such efforts by businesses cultivate a favorable brand image, encouraging consumers to support these "ethical" companies.

Moreover, there is a so-called "green consumerism" trend, which becomes a part of people's lifestyles. Nowadays consumers demand an ethical and environmentally-friendly production process from the manufacturers or saving the planet's resources during the production. Even as sustainable products gain popularity, many individuals still fail to align their actions with their positive attitudes towards the environment. This discrepancy has been examined by various researchers. For examples it was found that despite understanding the importance of environmental issues, people's behaviors often don't reflect this awareness. To effectively promote environmentally friendly products, marketers must delve into consumer behavior and specifically processes of making consumer decisions (Paul, Modi, and Petal, 2016). However, marketers have faced challenges in selling these products due to consumers' inconsistent desire for them. Past research suggests to explore consumers' readiness to adopt sustainable practices, their attitudes, and consumption habits.

This research is aimed at exploration of consumer behavior of Kazakhstani millennials in terms of environmentally friendly purchasing. The study's findings are expected to be a useful resource for practitioners in revealing insights into buying behavior of young Kazakhstani consumers. The main objective is to determine the factors influencing millennials' attitudes toward eco goods and services and how these factors affect consumer behavior. To accomplish this, quantitative research was conducted to collect relevant data and insights.

Literature review

Millennials encompass individuals born in a period between the 1980s and early 2000s. This group is often characterized as being more progressive, open-minded, and receptive to novel lifestyles. Growing up amid technological advancements, globalization, and economic fluctuations, millennials possess distinct behaviors and perspectives compared to previous generations (Naderi & Van Steenburg, 2018). Despite facing economic challenges, millennials exhibit a willingness to invest in environmentally friendly products, as highlighted in a study by Nielsen (2015). They demonstrate a heightened sensitivity towards environmental is-

sues and tend to favor socially responsible retailers that prioritize environmental conservation efforts. Research exploring millennials' eco-friendly consumer behavior reveals their strong inclination towards sustainability practices compared to older generations (Kwan & Lau, 2023). This inclination is often attributed to increased environmental awareness, facilitated by digital information access, and a moral imperative for ethical behavior (Deepika et al., 2023).

Further studies, such as the one by Squires (2019), illustrate millennials' preference for eco-conscious practices, such as patronizing green hotels and purchasing organic and locally sourced products. Businesses recognize marketing to millennials as a lucrative opportunity highlighting them as the most influential and consumption-focused generation in today's market. Projections indicate a substantial market opportunity of $54.3 billion for catering to millennial preferences (Lu, Bock & Joseph, 2013). Given their significant purchasing power, millennials wield considerable influence over the buying decisions of both their peers and parents. As such, attracting millennials has become imperative for businesses seeking to thrive in today's market landscape. As highlighted by Lu, Bock and Joseph (2013), millennials represent a very informed group of consumers. Therefore, it is reasonable to assume that their education will enhance their awareness of environmental issues and the benefits of being eco consumers. However, the extent to which millennials prioritize environmental friendliness remains contested. They prioritize quality, accessibility, and affordability (Naderi & Van Steenburg, 2018).

The Theory of Planned Behavior (TPB) was proposed by Ajzen and Fishbein to extent on the Theory of Reasoned Action (TRA). It offers insights into how individuals' behaviors can be influenced and changed over time. The TRA considers attitudes and subjective norms as predictors of intention. However, TPB provides a better explanation of consumer behavior towards green products in comparison with TRA (Setyawan et al., 2018). Similarly, empirical studies on eco-friendly product consumption have shown that TPB more effectively predicts purchasing intention in comparison with TRA (Paul et al., 2016). Specifically, TPB considers factors that influence an individual's intentions, which, in turn, drive behavioral change. Intention is seen as a measure of the motivational factors behind a behavior, indicating the level of effort a person plans to perform the behavior. Although some behaviors fit this model well, most are influenced by other factors, such as resources, time, skills. These factors collectively determine the extent to which people can control their actions (Ajzen, 1991). Under the TPB, it's proposed that individuals make decisions logically, influenced by their attitudes, societal expectations (subjective norms), and their sense of control over the behavior. These elements subtly underlie decision-making processes, though they're not always overtly considered. The stronger an individual's positive attitude, societal approval, and sense of control, the more they are willing to get engaged in the behavior. TPB breaks down beliefs into three types, namely outcomes of behavior, societal expectations, and those about factors facilitating or impeding the behavior. These beliefs respectively lead to perceived societal pressure, attitudes towards the behavior, and perceived difficulty or ease in performing the behavior. The impact of each on behavioral intention varies, with some situations being influenced by only one or a combination of these factors (Ajzen, 1991).

Attitudes involve evaluation, both positive or negative, of a specific behavior and are formed from personal feelings, thoughts, and predispositions towards elements in their environment. This bias influences reactions and actions towards the attitude object. In the case of eco-friendly products or services, there is a noticeable link between positive attitudes and the intention to buy across different cultures (Paul et al., 2016). Some studies show those who value ecological sustainability are more inclined to choose environmentally-friendly packaging (Birgelen, Semeijn & Keicher, 2009). Subjective norm can be explained as the societal pressure perceived by the person to engage in certain behaviors, shaped by an individual's understanding of what people who are important in their life would say or think about the behavior (Ajzen, 1991). This perception can greatly influence an individual's intentions, especially in marketing and consumer behavior scenarios (Paul et al., 2016). Perceived behavioral control demonstrates the level of easiness of performing a particular behavior. This perception is influenced by internal factors like personal skills and determination, as well as external resources and support. It has a direct effect on behavior; the more control people perceive they have, the more effort they'll invest in achieving their goals. This concept has been linked to intentions in several areas, including eco-friendly practices (Paul et al., 2016). While Theory of Planed Behavior was extensively applied to study attitudes and behaviors towards eco-friendly products, it's not without criticisms. For instance, its application to ethical consumer behavior has been questioned

due to its lack of emphasis on the affective, or emotional, aspects that influence ethical choices. There is also debate over the clarity of the relationship between beliefs and intentions (Nombulelo, 2021). Thus, Ajzen (1991) acknowledges that TPB can incorporate additional elements to better explain variations in intentions or behaviors.

Based on the literature review, the following hypotheses were stated:

Hypothesis 1a: Attitude to environmentally friendly products is related to behavioral intention to purchase.

Hypothesis 1b: Attitude to environmentally friendly products is related to adoption behavior.

Hypothesis 2a: Subjective norm is related to behavioral intention.

Hypothesis 2b: Subjective norm is related to adoption behavior.

Hypothesis 3a: Perceived behavioral control is related to behavioral intention to purchase.

Hypothesis 3b: Perceived behavioral control is related to adoption behavior.

Hypothesis 4: Behavioral intention is related to adoption behavior.

The conceptual model proposed in this study, as shown in Figure 1, is based on the Theory of Planned Behavior (Ajzen, 1991). According to the TPB model, social norms, attitudes, and perceived behavioral control affect consumer intentions and adoption behavior (Ajzen, 1991). Additionally, it is anticipated that behavioral intention will affect adoption behavior.
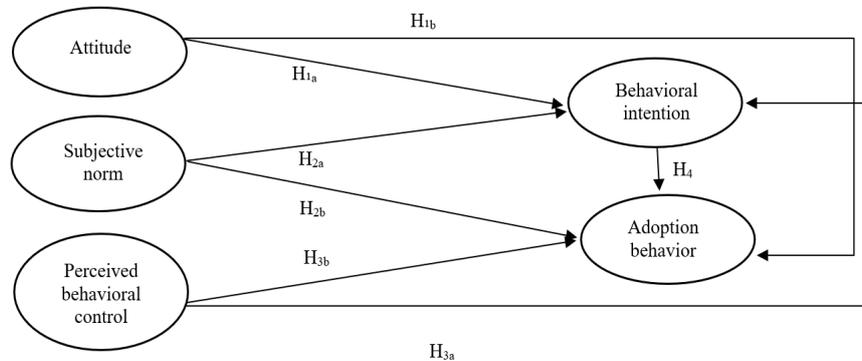

Figure 1 – Conceptual model
Note – this figure is completed by the authors based on the Theory of Planned Behavior (Ajzen, 1991)

Methodology

To address the research objective of this study, a quantitative approach was applied to investigate trends of Kazakhstani millennial consumers towards adopting environmentally friendly consumption patterns. A survey method was applied online for collecting data among millennials in Kazakhstan who are aware of eco-friendly products. Surveys are efficient for examining a variety of variables and require minimal time and cost to design and implement. Additionally, online surveys allow for quick outreach to individuals across different regions of Kazakhstan. Purposive sampling was implemented. The participants for the study were carefully chosen to meet the age criteria, ensuring their relevance to the research aims. Consequently, an online self-completion survey was administered via Google Forms. The survey remained open for four weeks, with an average completion time of 10 minutes. Participants were briefed on the study's purpose before beginning the questionnaire. Researchers provided their email addresses for any questions or concerns, though no participants contacted them. To ensure confidentiality, respondents were not asked to provide their personal information.

The questionnaire comprised 27 questions, divided into two sections: four questions on demographic variables and 23 on behaviors related to eco-friendly products. Demographic part consisted of age, gender, employment, and income. In the second part, participants evaluated a series of statements using five-point rating scales validated in prior studies. The construct measures for "intention behavior," "adoption behavior", "attitudes," "subjective norms," and "perceived behavioral control" were adapted from past research (Chen & Tung, 2014; Emekci, 2019; Nekmahmud et al, 2022; Nombulelo, 2021; Wang et al., 2016). The questionnaire was tested using a pilot test with 5 respondents. The

results confirmed that the questionnaire design effectively supported the study's research hypotheses. The links to electronic questionnaire were sent out, yielding 152 responses, which met the target sample size requirement of 150. The survey data was downloaded from Google Forms. The raw data was cleaned and coded for further analysis. Descriptive analysis was used to summarize the demographic profile of respondents, while factor analysis determined the item loadings for each variable. Reliability was assessed by Cronbach's alpha coefficient and sampling adequacy by KMO. Final analysis was performed with multiple regression analysis.

Results and discussion

An online survey has generated 152 completed questionnaires. The sample characteristics are illustrated in Table 1.

Principal Component Analysis was used to perform Confirmatory Factor Analysis. Then sample was evaluated using Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO). Cronbach's alphas were calculated to ensure reliability. All items included in the questionnaire produced high loadings (greater than 0.5). The KMO values range between 0.72 and 0.84, confirming that the sample is adequate for analysis. The values of Cronbach's alpha were in a range from 0.74 to 0.87, demonstrating high degree of internal consistency within this sample.

Multiple regression analysis was conducted to identify factors influencing purchase intention and adoption. The results of the two regression models are presented in Tables 3 and 4. The proposed models demonstrated good fit, with R-squared values of 0.57 and 0.52. The results of this study revealed that attitude and PBC are significantly related to behavioral intention, while subjective norm is not significantly related to behavioral intention (see Table 3). For adoption behavior, attitudes, perceived behavioral control and subjective norm were significantly related to adoption (see Table 4).

Table 1 – Study sample characteristics

Characteristic	Categories	%	n
Age	Under 18	20.4	31
	19-20	40.8	62
	21-22	25.7	39
	23 and older	13.2	20
Gender	Male	37.5	57
	Female	62.5	95
Income	Below average	7.2	11
	Average	69.1	105
	Above average	23.7	36
Employment	Full-time	16.4	25
	Part-time	21.1	32
	Unemployed	62.5	95

Note – This table categorizes the participants by gender, age, employment status, and income levels. The table is prepared by authors.

Table 2 – Item loadings and reliability measures

Construct / Items	Loadings
Behavioral Intention (KMO 0.816 / Cronbach's alpha 0.87)	
I intend to buy eco goods because of environmental benefits.	0.842
For ecological reasons I consider switching to eco goods.	0.821
I expect buying eco goods in the future because of positive impact	0.886
I will be in favor of eco goods in my future purchases.	0.851
Adoption (KMO 0.764 / Cronbach's alpha /0.82)	

Continuation of the table

Construct / Items	Loadings
To buy eco goods I make a special effort.	0.831
Due to environmental benefits I have switched to buying eco goods.	0.794
I buy the ones that use less electricity and is less harmful to the environment when I have a choice between the same types of goods.	0.712
I undertake a special effort to buy eco goods.	0.884
Attitude (KMO 0.849 / Cronbach's alpha 0.84)	
In my opinion, eco goods are trustworthy.	0.805
For me it would be a good idea to buy eco goods.	0.817
For me it would be a worthwhile decision to buy eco goods.	0.797
My attitude towards purchasing the eco goods is favorable.	0.775
I prefer the eco versions, If I can choose.	0.723
Subjective Norms (KMO 0.756 / Cronbach's alpha 0.81)	
I would be admired if buying the environmentally friendly products.	0.832
I would have a good impression of me, if buying eco goods.	0.851
I would change for better the way I am perceived if buying eco goods.	0.851
I should buy eco goods because important to me people would expect that.	0.691
Perceived Behavioral Control (KMO 0.727 / Cronbach's alpha 0.74)	
I have money to buy eco goods.	0.719
I would buy eco goods, if it were entirely up to me.	0.577
I am capable of buying eco goods.	0.673
I possess financial resources to buy eco goods.	0.744
I have the time to buy eco goods.	0.704
Eco goods are available in the retail stores.	0.554

Note – Table 2 presents the factor analysis results of the study, indicating item loadings, Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO), and Cronbach's alpha for each construct used in the research. Construct measures were adapted from past research (Chen & Tung, 2014; Emekci, 2019; Nekmahmud et al, 2022; Nombulelo, 2021; Wang et al., 2016). This table was compiled by the author and is based on data analysis using SPSS software.

Table 3 – Regression Model 1

Independent Variables	Dependent Variable	Beta	t	Sig.
Consumer Attitudes	Behavioral intention	.449	5.898	.000
Subjective Norms	Behavioral intention	.055	.770	.443
Perceived Behavioral Control	Behavioral intention	.353	5.061	.000

Note – Table 3 was compiled by the authors based on the SPSS software output for multiple regression analysis.

Table 4 – Regression Model 2

Independent Variables	Dependent Variable	Beta	t	Sig.
Consumer Attitudes	Adoption behavior	.265	3.284	.001
Subjective Norms	Adoption behavior	.313	4.139	.000
Perceived Behavioral Control	Adoption behavior	.266	3.597	.000

Note – Table 4 was compiled by the authors based on the SPSS software output for multiple regression analysis.

Table 5 shows that H1a and H3a are supported. Specifically, both attitude (p=0.000) and PBC (p=0.000) are significantly related to behavioral intention. This finding supports Nombulelo's (2021) research, indicating individuals with positive type of attitudes and strong behavioral control have more chances to demonstrate eco behavior and Paul et al. (2016) finding that attitude is the main predictor of the intention to purchase green products seconded by perceived behavioral control. Hence, attitudes to behavior and perceived behavioral control are crucial in shaping the intention to make environmentally friendly purchases.

Furthermore, finding have not provided support of H2a that proposed that subjective norms are related to behavioral intention. The results show that subjective norms (p=0.443) do not significantly affect behavioral intention. This result is also consistent with findings of Paul et al. (2016), who found that subjective norms were a weak and non-significant predictor of purchase intention. Contrary to previous studies that identified a positive link between subjective norms and behavioral intention, such as Eze et al. (2013), the current study finds no such association. This suggests that the approval of "significant others" may no longer be as influential in the decision to buy environmentally friendly products.

The results indicated that attitudes, subjective norms, and perceived behavioral control are significantly related to adoption behavior thus H1b, H2b, and H3b are supported. These findings are in line with results of Joshi and Rahman (2015), who found that PBC positively affects the adoption of eco products. Nevertheless, other researchers reported lack of correlation between PBC and adoption behavior (Nombulelo, 2021). Finally, this study confirms H4, by showing significant relationship between behavioral intention and adoption behavior, which posited that behavioral intention is related to adoption behavior. Overall, six out of seven hypotheses were supported, with only one hypothesis being rejected (Table 5).

Table 5 – Hypotheses testing results

Hypotheses	p-value	Result
Hypothesis 1a: Attitude to environmentally friendly products is related to behavioral intention to purchase.	0.000*	Supported
Hypothesis 1b: Attitude to environmentally friendly products is related to adoption behavior.	0.001*	Supported
Hypothesis 2a: Subjective norm towards environmentally friendly products is related to behavioral intention.	0.443	Rejected
Hypothesis 2b: Subjective norm towards environmentally friendly products is related to adoption behavior.	0.000*	Supported
Hypothesis 3a: Perceived behavioral control is related to behavioral intention to purchase.	0.000*	Supported
Hypothesis 3b: Perceived behavioral control is related to adoption behavior.	0.000*	Supported
Hypothesis 4: Behavioral intention is related to adoption behavior.	0.000*	Supported

Note – Table 5 was compiled by the authors based on the analysis of data using SPSS software. It presents the results of evaluating the influence of attitudes (ATT), subjective norms (SN), and perceived behavioral control (PBC) on behavioral intention (BI) and adoption behavior (AB) regarding the purchase of environmentally friendly products. The table lists each hypothesis, p-value, and the result (supported or rejected).
*Significant at p-value<0.05

Conclusion

The loss of biodiversity and escalating environmental concerns have prompted a societal shift towards environmentally friendly consumption practices. Consequently, an increasing number of manufacturers are producing eco-friendly products and exploring sustainable business practices. Although there has been a noticeable shift, earlier studies indicate that positive consumer attitudes towards environmental concerns frequently do not result in significant changes in consumption habits. Most consumers continue to overlook environmentally friendly products. Consequently, this research aimed to explore the factors that shape millennials' attitudes toward buying eco-friendly products. The quantitative findings underscore several factors that sustainable manufacturers can target to attain desirable adoption levels, primarily comprising elements of the Theory of Planned

Behavior (TPB), including attitudes, subjective norms, PBC, behavioral intention, and adoption behavior.

This study aimed to assess the use of the Theory of Planned Behavior in predicting millennials' intentions to purchase and adoption of eco-friendly products. The findings confirm and extend those of earlier studies (Chaudhary and Bisai, 2018; Nombulelo, 2021) that investigated consumer behavior related to environmentally friendly products using TPB. This research supports TPB, with the exception of the link between subjective norms and behavioral intention. Results indicate that only 6 out of seven independent variables are related to intentions to buy eco products. Specifically, while attitude and perceived behavioral control significantly impacted behavioral intention, subjective norms did not. This suggests that social norms are less influential in shaping millennial consumers' intentions to purchase green products, a finding consistent with Chaudhary and Bisai's (2018) study, which also found no effect of subjective norms on purchase intention.

The study revealed a strong connection between attitudes, subjective norms, and perceived behavioral control in altering consumption patterns toward eco-friendly products. The results represent a significant advancement in understanding consumer behavior in this area, given the challenges of predicting consumer determinants. By understanding the how attitudes, social norms and perceived behavioral control influence environmentally friendly consumer behavior among Millennials in Kazakhstan, practitioners can tailor strategies that encourage sustainable consumption patterns and promote eco-friendly products and services. This research empowers businesses, policymakers, and educators in Kazakhstan to align with the growing demand for sustainability, ultimately leading to a more resilient and green economy.

The study of environmentally friendly consumer behavior among Millennials in Kazakhstan is vital for fostering a culture of environmental responsibility in the region, however this study has several limitations. The purposive sampling was used to collect data. The future research can ensure a more representative sample and apply advanced statistical analysis. In addition, future research could compare millennials with other generations and conduct cross-cultural study.

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Appendix: Survey questions

The survey was administered online in April 2023. The survey was open for 4 weeks.

This survey is a part of academic research on "Environmentally Friendly Consumer Behaviour of Millennials in Kazakhstan". The survey will take approximately 15 minutes of your time. The data will be used only for academic purposes. Your participation is free-willed and your personal data will be fully confidential.

What is your gender?
a) Male
b) Female

What is your age?
a) Under 18 years old
b) 19-20 years old
c) 21-22 years old
d) 23 years or older

What is your employment status?
a)Full-time job
b)Part-time job
c)Unemployed

Please indicate your family income
a)Below average
b)Average
c)Above average

Please express the level of your agreement or disagreement with the statements listed below on a 5-point scale (1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree)

Behavioral Intention (adapted from Nekmahmud et al, 2022; Chen & Tung, 2014)
I intend to buy eco goods because of environmental benefits.
For ecological reasons I consider switching to eco goods.
I expect buying eco goods in the future because of positive impact
I will be in favor of eco goods in my future purchases.

Adoption (adapted from Chen & Tung, 2014)
To buy eco goods I make a special effort.
Due to environmental benefits, I have switched to buying eco goods.
I buy the ones that use less electricity and is less harmful to the environment when I have a choice between the same types of goods.
I undertake a special effort to buy eco goods.

Attitude (adapted from Emekci, 2019; Nekmahmud et al, 2022; Nombulelo, 2021)

In my opinion, eco goods are trustworthy.
For me it would be a good idea to buy eco goods.
For me it would be a worthwhile decision to buy eco goods.
My attitude towards purchasing the eco goods is favorable.
I prefer the eco versions, If I can choose.

Subjective Norms (adapted from Emekci, 2019; Nekmahmud et al, 2022; Nombulelo, 2021)

I would be admired if buying the environmentally friendly products.
I would have a good impression of me, if buying eco goods.
I would change for better the way I am perceived if buying eco goods.
I should buy eco goods because important to me people would expect that.

Perceived Behavioral Control (adapted from Emekci, 2019; Nekmahmud et al, 2022; Nombulelo, 2021)

I have money to buy eco goods.
I would buy eco goods, if it were entirely up to me.
I am capable of buying eco goods.
I possess financial resources to buy eco goods.
I have the time to buy eco goods.

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