Drivers of Zero-Waste Purchase Decisions : The Mediating Role of the Theory of Planned Behavior

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Abstract

Purpose : This study aimed to examine the mediating role of three antecedents of the theory of planned behavior (TPB) between the new environmental paradigm (NEP) and purchase intention via extending the TPB and stimulus-organism-response (S-O-R) paradigm.

Methodology: A self-administered questionnaire collected data from 239 individuals with prior knowledge of ZW products. Confirmatory factor analysis (CFA) was employed in SPSS AMOS 21 to examine the validity and reliability of the study. The bootstrapping method was used with structural equation modeling (SEM) to analyze the suggested framework and hypotheses.

Findings : NEP positively influenced the purchase intention of ecologically concerned Indian consumers. The attitude (ATT) and perceived behavioral control (PBC) partially mediated the association between NEP and purchase intention. However, the mediating role of subjective norms (SNs) was non-significant.

Practical Implications : This study's empirical findings could assist interested academicians, policymakers, and marketers attain "responsible consumption and production," the 12th sustainable development goal.

Originality : This study integrated the S-O-R model and TPB, significantly contributing to the current knowledge of ZW lifestyle. The proposed framework incorporated NEP, which further enhanced the understanding of TPB. This research thoroughly investigated the TPB mediation function in bridging the gap between NEP and customers' intention to purchase ZW products.

Keywords : **zero-waste, theory of planned behavior, S-O-R model, new environmental paradigm, purchase intention**

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A plethora of existing scientific literature provides statistical evidence of environmental degradation. According to the Intergovernmental Panel on Climate Change (IPCC), humankind's interaction with nature has increased the average global temperature by 0.85°C from 1880 until 2012 (IPCC, 2013). Worldwide, outdoor air pollution causes 4.2 million preventable deaths yearly (World Health Organization (WHO), 2022). Thus, necessary attention is required toward cleaner transportation, energy-saving home appliances, and efficient solid waste management systems.

The packaging waste generated from private households is liable for about one-third of the total environmental pollution (Prakash & Pathak, 2017). Approximately 6.3 billion tons of plastic were produced from 1950 to 2015 (Geyer et al., 2017). From this, 9% of the garbage was recycled, while 12% was burned. Most of the 79% were dumped in landfills or the environment, destroying the natural habitat. Municipal solid waste landfills could be

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sources of harmful microplastic with plastic particles smaller than 5 mm (He et al., 2019). Studies have confirmed the presence of microplastics in oceans that ultimately contaminate seafood (Eriksen et al., 2014; Rochman et al., 2015). Additionally, a recent study by Ragusa et al. (2022) detected microplastic contamination in 26 out of 34 women's breast milk. Since the situation is alarming, individuals, as well as organizations, must make an effort to reduce their carbon footprints through mindful consumption patterns to avoid repercussions of rising pollution, climate change, human distress, and animal endangerment (Chekima et al., 2016).

Post-pandemic consumers are more concerned about the environment, which increases their awareness of the zero-waste (ZW) movement (Park et al., 2022). Grand View Research (2021) estimated that the worldwide ZW packaging market would be valued at $241.2 billion in 2022. From 2023 to 2030, it is expected to expand at a compound annual growth rate of 9.6% as developing economies become more conscious of snowballing packaging waste. Additionally, this report revealed that the Asia Pacific area earned a revenue share of over 45% in 2022. Specifically in India, the survey by Bain & Company stated that 20% of consumers were willing to pay more for eco-friendly brands in the succeeding three years (Faelli et al., 2023). Therefore, unconventional ZW stores, such as Adrish–Zero-waste Organic Store, 7 to 9 Green stores, Ecoindian, Zero Waste Eco-Store, and Arani Ecosteps, are increasing their operations in India by offering a range of sustainable and plastic-free products offline as well as online. However, scant literature examines purchase intention toward ZW products (Spiteri, 2021), and limited variables are explored in the theory of planned behavior (TPB) (Joshi & Rahman, 2016; Ting et al., 2019). Thus, this study addresses these gaps by identifying factors impacting consumers' pro-environmental intentions. The TPB model is extended by including the new environmental paradigm (NEP) variable to evaluate consumers' ZW purchase intention. The following research questions are formulated to achieve the aims of the study:

- ***RQ1 :*** Does NEP impact consumer purchase intention toward ZW products?

- ***RQ2 :*** Do attitude (ATT), perceived behavioral control (PBC), and subjective norms (SNs) mediate the relationship between NEP and purchase intention?

This paper suggests a framework based on TPB proposed by Ajzen (1985) and the S-O-R paradigm given by Mehrabian and Russell (1974) to comprehend the role of stimulus (S) for NEP on the dimensions of TPB or organism (O), which ultimately affects consumers' response (R) or purchase intention. The proposed relationship in TPB is the first effort to test Indian consumers' purchase intention toward ZW products. The rest of the manuscript includes a literature review, research methodology, results, discussion, and conclusion sections.

Literature Review

Zero-Waste Products

Palmer (2009) stated that the best way to avoid waste is to reuse everything over and over—perpetually. Moreover, this can only be done if reuse is designed into all products right from the start. It does no good to design ultimate discard into a product and then struggle after discard to find some way to reuse the bare materials, as recycling does today. Thus, it is prudent to switch over ZW products rather than draft policies to recycle and manage solid waste. According to Chekima et al. (2016), the problem of reducing solid waste could be resolved by adopting sustainable consumption. ZW is a novel concept that allows products in ZW packaging to be recycled or reused once microorganisms in the natural environment degrade them. Additionally, a product designed in a sustainable way that can be used or reused for an extended period and supplied in biodegradable packaging or without packaging is known as a zero-waste product (Zaman, 2015).

Theory of Planned Behavior

The literature review reflects that TPB is the most widely used socio-psychological model to test the green consumption framework (Linge et al., 2022; Pop et al., 2020; Sreen et al., 2018; Sharief & Panghal, 2023; Yarimoglu & Binboga, 2019). The theory proposes that ATT toward behavior, PBC (perceived ease/difficulty in performing the behavior), and SNs (perceived societal pressure to engage or not engage to perform the behavior) are the determinants of behavioral intention. Further, the purchase intention of individuals is a conclusive factor influencing their actual behavior (Ajzen, 1991). Researchers have explored TPB to understand consumers' perceptions toward ZW or sustainably packaged products (Moorthy et al., 2021; Săplăcan & Márton, 2019; Valentin, 2021).

Attitudes evaluate the readiness of consumers to purchase green products due to their environmental efficacy (Kirmani & Khan, 2016). Hence, Februadi et al. (2022) discovered a significant relationship between consumers' attitudes and willingness to pay for menstrual cups. PBC and SNs of consumers reflect the self-control and social influence affecting their ability to function pro-environmentally (Wu et al., 2021). Similarly, researchers have confirmed a significant impact of PBC and SNs on consumers' ZW purchase intention (Hashim et al., 2018; Pratiwi et al., 2021; Săplăcan & Márton, 2019; Valentin, 2021).

The theory of planned behavior (TPB) permits researchers to investigate the impact of non-volitional determinants, social context, and personal determinants on intention (Han et al., 2010). It is a well-grounded theory in analyzing consumers' green buying behavior (Kumar et al., 2021). The TPB model is widely used to conclude various fields of sustainable consumption, including fast-moving consumer goods (Pop et al., 2020; Valentin, 2021), cosmetics (Shimul et al., 2022), fashion (Neerattiparambil & Belli, 2020), energy (Srivastava & Mahendar, 2018; Waris & Hameed, 2020), food (Kate et al., 2024), real estate (Zahan et al., 2020), and many more. Hence, the authors extended TPB in this study to understand under-researched ZW consumption behavior.

Stimulus-Organism-Response Model

The proposed framework suggests that NEP motivates consumers' purchase intention toward ZW products. The literature review reveals that pro-environmental orientation is essential in studying the purchase intention of green-packaged products (Prakash et al., 2019; Moorthy et al., 2021). Hence, this study examined NEP as the external influencing factor of ZW product adoption. The term "organism" is related to consumers' emotions or perceptions of stimuli and their planned outcome intentions (Xu et al., 2020). Previous studies investigated the impact of environmental concerns or NEP scale on ATT, PBC, and SNs (Maichum et al., 2016; Paul et al., 2016; Prakash et al., 2019; Setyawan et al., 2018; Sari et al., 2021). Thus, the impact of NEP on ATT, PBC, and SNs is explored in this study to draw inferences on the relationship between ecological concern and the dimensions of TPB. Response in the S-O-R model represents consumers' final decision, which manifests either an avoidance approach or behavior (Sherman et al., 1997). Prior research on ZW consumption has explored consumers' intention to purchase ZW products (Februadi et al., 2022; Valentin, 2021). Therefore, the current study assesses consumers' purchase intention (PI) concerning ZW products.

New Environmental Paradigm

Dunlap and Van Liere (1978) developed the NEP scale, which was further modified by Dunlap (2008) to evaluate the rising support for the ecological worldview accurately. NEP emphasizes the principle of humankind's capability to disturb nature's balance, reduce the extension of human civilization, and their dominance over nature. Stern et al. (1999) proposed the value-belief-norm model integrating personal value theory, norm activation

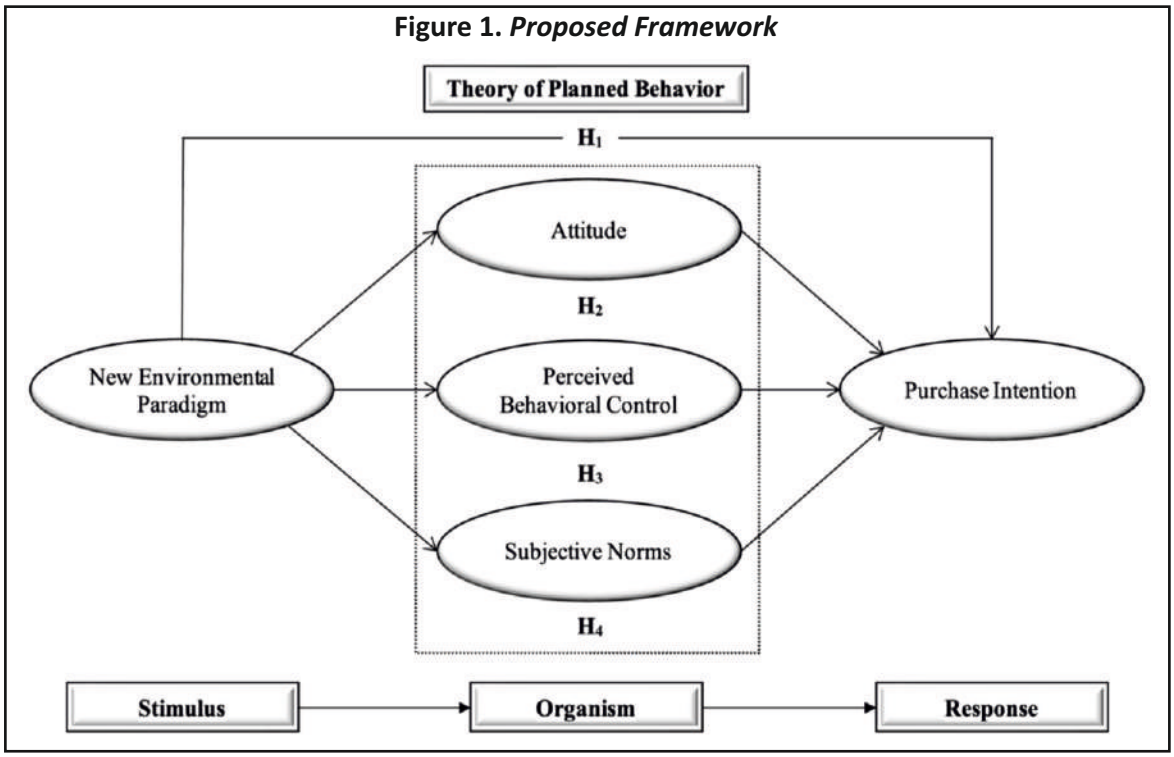
theory, and NEP. Literature reflects that NEP influences individuals' environmental concerns (Verma et al., 2019). Thus, researchers often use NEP scales to assess the influence of consumers' attitudes toward the environment (do Paço et al., 2013; Shen & Chen, 2020; Sari et al., 2021). Prior studies confirm that NEP improves predictive power and is crucial in anticipating ATT, PBC, and SNs (Nowacki et al., 2021; Park et al., 2018). Paul et al. (2016) determined the mediating role of TPB between environmental concern and green product PI. Studies on ZW affirm the positive impact of environmental concern on consumers' intention to purchase (Hashim et al., 2018; Mateedulsatit, 2018; Moorthy et al., 2021; Spiteri, 2021). However, the literature shows that researchers have not utilized NEP to understand consumers' intention to purchase ZW.

Based on the literature review, the following hypotheses are proposed:

- **H_1 :** NEP would affect purchase intention for ZW products.
- **H_2 :** Attitude mediates the relationship between NEP and ZW purchase intentions.
- **H_3 :** Perceived behavioral control mediates the relationship between NEP and ZW purchase intentions.
- **H_4 :** Subjective norms mediate the relationship between NEP and ZW purchase intentions.

Based on the literature review, the relationship between constructs and the proposed hypothesis is described in Figure 1.

Figure 1. ***Proposed Framework***



Research Methodology

Measurement Instrument

A 5-point Likert scale evaluated the responses provided by the participants (1 = "*strongly disagree*" to

5 = "*strongly agree*"). Three questions adopted from Nowacki et al. (2021) estimated the NEP. In the case of measuring ATT, four items were adapted from Do Valle et al. (2005) and Kumar et al. (2017). Three items were adapted from Kumar et al. (2017) to assess SNs. The six PBC items that assess consumers' perceptions of the simplicity or complexity of behavior were adapted from Paul et al. (2016). Finally, three items adapted from Paul et al. (2016) were used to measure purchase intention.

Sample and Procedure

We minimized biases in the ZW store selection process by relying on recommendations from external sources. The top two articles produced by a Google search for "best zero-waste stores in India" were reviewed to make a selection (Chauhan, 2021; Nath, 2024). The leading ZW businesses with more than 10,000 Instagram followers were selected since, compared to Facebook or YouTube, Instagram is the most popular and active platform for ZW communities (Spiteri, 2021). The Instagram handles of ZW stores are 'barenecessities_zerowasteindia,' 'adrishzerowaste,' 'brownlivingindia,' 'onearth_products,' and 'theorganicworldindia.' Every seller offers ZW products to their customers; some have brick-and-mortar stores, while others only conduct business online.

Four experts from academia and industry were consulted to evaluate the questionnaire's face and content validity. Based on the suggestions given by these experts, a few minor modifications were made. Following these adjustments, the self-administered questionnaire was tested via a pilot study with 50 participants to determine the reliability of the items in the questionnaire. The results indicated good internal consistency and estimated Cronbach's alpha value exceeded the predetermined cutoff of 0.70 (Hair Jr. et al., 1998). Five hundred questionnaires were circulated, and responses were gathered anonymously to prevent data bias. A filter question was used to guarantee that the data was collected from people familiar with ZW products. The survey was administered from 1 September to 31 December 2022. We received responses from 239 eligible participants, representing a response rate of 47.80%. According to Hinkin (1995), the sample size for items used to measure a construct should range from 1:4 to at least 1:10. The sample size of 239 with 21 items is greater than the required threshold of 10 cases per item (239 > 21*10 = 210).

The convergent and discriminant validity of all the scales were tested, and CFA was used to confirm the goodness of fit of each scale. Skewness and kurtosis values were within the permissible range, establishing the normalcy of the data. The proposed framework and hypotheses were examined in AMOS using the bootstrapping approach and SEM. The Monte Carlo bootstrapping method was applied to test the mediation effect of TPB between NEP and PI. This study generated 2,000 bootstrap samples at a 95% confidence interval. The mediating effect was analyzed by assessing the total, indirect, and direct effects (Preacher & Hayes, 2008). First, the total effect must be statistically significant to evaluate the mediating role of the suggested variables. Next, the indirect effect was checked for significance. Lastly, the significance level of the direct effect represented partial or full mediation; a significant direct effect suggested partial mediation, and an insignificant direct effect indicated full mediation.

Profile of the Respondents

The last portion of the questionnaire focused on participants' demographic information, as shown in Table 1. Knowing the demographic makeup of potential ZW product buyers was crucial, given that ZW is still a relatively new idea for consumers and marketers in India. An intriguing finding was revealed in Table 1: more women (60%) than men had adopted ZW products. Approximately 50% of the sample comprised of highly educated people with sufficient monthly household income (49% ≤ ₹ 100,000) from various national geographical areas.

Table 1. ***Demographic Information of the Respondents***

Demographics	Frequency	Percentage (%)
Gender		
Male	86	35.98
Female	144	60.25
Prefer not to say	9	3.77
Age		
< 20 years	18	7.53
20–30 years	130	54.39
31–40 years	75	31.38
41–50 years	15	6.28
Above 50	1	0.42
Education		
Higher Secondary	22	9.21
Graduate	92	38.49
Post-Graduate	111	46.44
Doctorate	7	2.93
Others	7	2.93
Household Income (Monthly)		
≤ ₹ 100,000[a]	118	49.37
₹ 100,001–150,000	29	12.13
₹ 150,001–200,000	29	12.13
More than ₹ 200,000	63	26.37
Region		
Northern	71	29.71
Southern	82	34.31
Eastern	19	7.95
Western	39	16.32
North-Eastern	4	1.67
Central	24	10.04

Note. [a] On 29 April 2023, $1 = ₹ 81.83; https://www.moneycontrol.com/currency/bse-usdinr-price.html

Analysis and Results

Measurement Model

Several indices were used to assess the measurement model fit: $\chi^2/df = 2.01$, comparative fit index (CFI) = 0.96, Tucker - Lewis index (TLI) = 0.96, root mean square error of approximation (RMSEA) = 0.06, goodness-of-fit index (GFI) = 0.87. According to Hair Jr. et al. (2005), a good fit is recommended to have an RMSEA value of 0.08 or below. CFI and TLI values of 0.90 or higher indicate a good model fit (Hair Jr. et al., 2005). Hair Jr. et al. (2010) stated that all the metrics met the advised threshold, showing that the model fits the data well. Composite reliability values ranged from 0.90 to 0.95, and Cronbach's alpha values spanned from 0.89 to 0.95. All values

exceeded the cutoff limit of 0.70, demonstrating the construct's reliability (Fornell & Larcker, 1981). The constructs' convergent and discriminant validity were established for the proposed research paradigm.

Average variance extracted (AVE) values should be over 0.50 to indicate the convergent validity of the constructs (Fornell & Larcker, 1981). The AVE values of all the constructs were higher than the cutoff value of 0.50, as shown in Table 2. Convergent validity was established as composite reliability values were higher than the AVE values (Hair Jr. et al., 2010). All items had factor loadings over the minimum threshold of 0.50

Table 2. ***Reliability and Validity Indicators***

Construct	Cronbach's Alpha	Indicators	AVE	Composite Reliability	Factor Loading	Source(s)
NEP	0.91	Humans must live in harmony with nature in order to survive *[NEP1].*	0.77	0.91	0.87	(Nowacki et al., 2021)
		When humans interfere with nature, it often produces disastrous consequences *[NEP2].*			0.85	
		If things continue on their present course, we will soon experience a major ecological disaster *[NEP3].*			0.91	
ATT	0.94	I believe using ZW products will help reduce pollution *[ATT1].*	0.81	0.94	0.92	(Do Valle et al., 2005; Kumar
		I believe using ZW products will help reduce pollution *[ATT2].*			0.91	et al., 2017)
		I believe using ZW products will help reduce the wasteful use of natural resources *[ATT3].*			0.90	
		I believe using zero-waste products will help conserve natural resources *[ATT4].*			0.86	
PBC	0.90	I believe I can purchase ZW products *[PBC1].*	0.62	0.91	0.80	(Paul et al., 2016)
		I feel that purchasing ZW products is totally within my control *[PBC2].*			0.75	
		If it were entirely up to me, I am confident that I would purchase ZW products *[PBC3].*			0.83	
		I have the resources, time, and willingness to purchase ZW products *[PBC4].*			0.75	
		I see myself capable of purchasing ZW products in the future *[PBC5].*			0.87	
		There are likely to be plenty of opportunities for me to purchase ZW products *[PBC6].*			0.70	
SNs	0.90	My friends expects me to purchase ZW products *[SN1].*	0.75	0.90	0.88	(Kumar
		My family expects me to purchase ZW products *[SN2].*			0.93	et al., 2017)
		The society expects me to purchase ZW products *[SN3].*			0.79	
PI	0.94	I will consider buying ZW products because they will be less polluting in the coming times *[PI1].*	0.79	0.95	0.95	(Paul et al., 2016)
		I will consider switching to ZW products for ecological reasons *[PI2].*			0.93	
		I plan to spend more on ZW products than regular ones *[PI3].*			0.71	
		I expect to purchase ZW products in the future because of their positive environmental contribution *[PI4].*			0.94	
		I definitely want to purchase ZW products in the near future *[PI5].*			0.87	

Note. *NEP* = New Environmental Paradigm; *ATT* = Attitudes; *PBC* = Perceived Behavioral Control; *SNs* = Subjective Norms; *PI* = Purchase Intention.

Table 3. ***Correlations of the Constructs***

Variables	*NEP*	*ATT*	*PBC*	*SNs*	*PI*
NEP	***0.88***				
ATT	0.73*	***0.90***			
PBC	0.70*	0.75*	***0.79***		
SNs	0.16	0.31*	0.38*	***0.87***	
PI	0.79*	0.76*	0.74*	0.23	***0.89***

Note. Italic elements represent the square root of the AVE values; * $p < 0.001$.

(Hair Jr. et al., 1998), ranging from 0.70 to 0.95 (Table 2). The model showed that the square root of AVE values on the diagonal for each construct was higher than their correlation with other constructs, establishing the discriminant validity (Table 3) (Fornell & Larcker, 1981; Hair Jr. et al., 2010). This finding supports convergent and discriminant validity of constructs in the proposed study model.

Hypothesis Testing

The suggested model confirms the constructs' validity and reliability using SEM. Several metrics assessed how well the structural model fit the data: $\chi^2/df = 2.35$, CFI = 0.95, TLI = 0.94, RMSEA = 0.07, GFI = 0.85. These indicators met the suggested level, showing that the structural model fits the data well (Hair Jr. et al., 2005). The structural model explained the variance for the different dependent variables: 55% for PBC, 59% for ATT, and 71% for PI. The results reveal that NEP ($\beta = 0.43$, $p < 0.001$) significantly influences the intention to purchase ZW products. Hence, H1 is supported, confirming that the environmental awareness of an individual positively impacts his/her ZW purchase intention. The findings of the hypothesis testing are reported in Table 4.

Table 4. ***Result of the Structural Model***

Path	Path Coefficient (β)	Critical Ratio	*p*-value	Hypothesis	Result
NEP → *PI*	0.43	4.59	< 0.001	H1	**Supported**

Note. *NEP* = New Environmental Paradigm; *PI* = Purchase Intention.

Table 5. ***The Mediation Results***

Path	Standardized Path Coefficient	Bias-Corrected Confidence Intervals		*p*-value	Hypothesis	Result
		Lower	Upper			
			Indirect Effects			
(1) *NEP* → *ATT* → *PI*	0.225	0.120	0.385	0.001	H2	**Partial Mediation**
(2) *NEP* → *PBC* → *PI*	0.191	0.089	0.326	0.001	H3	**Partial Mediation**
(3) *NEP* → *SNs* → *PI*	–0.006	–0.310	0.010	0.384	H4	**Non-Mediation**
			Direct Effects			
(4) *NEP* → *PI*	0.429	0.287	0.575	0.001		
			Total Effects			
Total (1+2+3+4)	0.810	0.683	0.889	0.001		

Note. *NEP* = New Environmental Paradigm; *ATT* = Attitudes; *PBC* = Perceived Behavioral Control; *SNs* = Subjective Norms; *PI* = Purchase Intention.

The mediation effect of TPB between NEP and PI is examined using the Monte Carlo bootstrapping approach. The analysis produced 2,000 bootstrap samples with a 95% confidence level in this investigation. As illustrated in Table 5, the total effect is statistically significant in assessing the mediating role of TPB. In indirect effects, there is no zero between ATT and PBC's lower and upper limits (Preacher & Hayes, 2008). This result represents that the two paths: (a) $NEP \rightarrow ATT \rightarrow PI$ ($\beta = 0.225$; $p < 0.001$) and (b) $NEP \rightarrow PBC \rightarrow PI$ ($\beta = 0.191$; $p < 0.001$) achieved significant effects. However, SN has an insignificant mediating relationship between NEP and PI ($\beta = -0.006$; $p = 0.384$). The direct effect also represents a statistically significant level. Thus, the results indicate that ATT and PBC partially mediate the relationship between NEP and ZW purchase intention. Furthermore, SNs of consumers have no mediating effect between environmental concern and their intention to purchase ZW products.

Discussion

This study integrates the S-O-R model and TPB, significantly contributing to the current knowledge of the ZW lifestyle. The proposed framework incorporates NEP, which further enhances the understanding of TPB. The research findings support that NEP is a significant motivating factor impacting customers' ATT, PBC, and SNs, affecting their intentions to buy ZW products. Notably, there is a dearth of research investigating the relationship between NEP and consumers' purchase intention toward ZW products. This study rigorously examines the relationship between NEP and Indian customers' inclination to buy ZW products.

The findings of this study effectively demonstrate that NEP impacts ecologically concerned Indian consumers in terms of their purchase decisions. This result is consistent with earlier research suggesting that an individual's environmental consciousness can significantly impact their PI (Shen & Chen, 2020; Wang et al., 2020). The lack of studies on mediating interactions has left a void in researchers' understanding of zero-waste. This research thoroughly investigates the TPB mediation function in bridging the gap between NEP and customers' intention to purchase ZW products. The results demonstrate that PBC and ATT partially mediate the relationship between NEP and PI. The finding is supported by prior research that ATT mediates environmental concerns and PI (Komara & Yuliati, 2023; Rodrigues et al., 2023). The partial mediation reveals a complex interaction in which consumers' ATT toward the environment influences their purchasing decisions, but it is not the only factor guiding their behavior. The mediating role of PBC suggests that customers' confidence in their ability to make ZW product purchases is essential. This result adds to the growing amount of research stating that when consumers feel empowered to buy eco-friendly products, they are more likely to do so. However, it is intriguing that SN indicates no mediating effect between NEP and ZW purchase intention. This result aligns with Rodrigues et al. (2023), confirming a direct-only non-mediation effect. The absence of mediation may indicate that, in the context of NEP, ZW purchase intentions are not significantly predicted by social pressures or perceived societal standards. SNs related to environmentalism may not be as prevalent in the Indian context as in other cultures. This result could be due to a distinct socio-cultural dynamic wherein individual attitudes and perceived control play a more prominent role in encouraging environmentally conscious purchasing behavior. This insight presents exciting new research opportunities in shaping the components of the TPB in the context of environmental behavior.

The findings point to a complex network of factors influencing consumers' willingness to purchase ZW products. SN stands out, revealing that social influences may take distinct paths to influence consumer decisions, even though ATT and PBC are integral parts of the intermediary fabric that connects environmental ideas to consumer behavior. Hence, this study enhances the TPB framework, providing a more comprehensive explanation of how consumers implement ecological paradigms.

Theoretical Contribution

This research article adds significantly to the body of knowledge in the field of sustainable consumer behavior,

especially when it comes to decisions made about ZW purchases. Although plenty of research has been done on green consumerism in the past, most of it is focused on generic eco-friendly product selections rather than going in-depth with the specifics of ZW product selection (Săplăcan & Márton, 2019; Spiteri, 2021). This study addresses that gap by focusing on the factors that influence ZW buying decisions made by Indian customers, a population that is becoming more and more prominent in the global sustainability movement but is still underrepresented in academic literature.

This study provides an original approach to understanding the intricacies of consumer behavior by integrating the S-O-R model with TPB. It shows the strong applicability of the S-O-R model in a new domain, zero-waste, by defining the NEP as the stimulus that affects the consumers' (organism) psychological and cognitive processes, which, in turn, shapes the ultimate purchase intention (response). Moreover, the proposed framework extends the TPB's traditional ATT, SNs, and PBC components by expanding it to incorporate NEP. This expansion is significant as it presents ecological consciousness as a necessary precondition for intention, adding an environmental aspect to the TPB that is especially relevant when considering ZW consumer behaviors. This innovative theoretical intersection significantly advances the fields of environmental psychology and marketing by offering a more thorough explanation of the foundations of ZW purchasing intentions. The study's empirical focus on Indian consumers further enhances its theoretical contributions. Collecting and examining data from different parts of the nation adds to the relatively new but growing body of knowledge on sustainable consumption in emerging economies.

Managerial Implications

The proposed framework is perceptive and offers practical advice to marketing professionals, especially those looking to increase the market share of ZW products. The approach is beneficial not only for academics but also for industrial strategists who want to use consumer data to gain a competitive edge. The positive correlation between NEP and PI indicates that consumers with a pro-environmental attitude are not a niche but a substantial and influential group, supporting the strategic segmentation of the market based on environmental consciousness. Marketers can more effectively generate demand by customizing their promotional techniques and developing messaging that aligns with their audience's values to understand the intricacies of this segment.

Furthermore, the study highlights how crucial it is for marketers to guarantee that ZW products are viewed favorably. The link between NEP and PI is mediated through PBC and positive ATT, implying that consumer perceptions of ZW products' ease of use and value influence purchase decisions. To increase the popularity of ZW products, marketers should concentrate on improving their visibility and accessibility both online and offline and educating consumers about their advantages and effectiveness. On a different note, individual-focused marketing could be more successful than messages about social acceptance, considering that SNs were not a significant mediator in the study. The government may provide grants, subsidies, or tax advantages to companies sharing NEP principles. Standards and labels may be created to identify ZW products, helping consumers make informed choices. Public awareness initiatives about the effects of waste on the environment can be beneficial. Lastly, policymakers should develop and implement guidelines that encourage both the production and consumption of ZW products.

Limitations of the Study and Directions for Future Research

Although the current study provides valuable insights into ZW purchase intentions in the Indian context, its limitations must be recognized, as they may suggest new research directions. The most prominent research constraint is the relatively small sample size, which may limit the generalizability of the findings. The smaller

sample provides an inadequate representation of the heterogeneous Indian consumer population. Therefore, future research studies should strive for a more extensive and demographically diverse sample to accurately reflect the intended population and offer solid grounds for generalization. Moreover, only a few variables were included in the study to explain ZW's buying intention. This narrow emphasis might only cover some variables that affect consumer behavior in this situation. Future studies should incorporate more characteristics relevant to ZW purchase behaviors to build upon the current framework. These factors can include, among other things, the effect of digital media on consumer decisions, socioeconomic position, and cultural influences. This research relies on self-reported buying intentions rather than actual purchasing habits. Despite being a strong predictor of behavior, intentions are not always followed through. Future studies should investigate the buying patterns and frequency of ZW product purchases to gain a more thorough understanding.

Additionally, the contextual variety in ZW buying decisions should have been considered in this study. It could be worthwhile to investigate how consumer behavior dynamics alter between various contexts, such as urban versus rural and online versus offline. Subsequent research endeavors may reproduce the framework of the present study in diverse international contexts, thereby augmenting a worldwide understanding of ZW purchasing patterns. Lastly, by considering demographic moderating variables, there is a chance to examine the relationship between purchase intention and actual buying behavior. Numerous sociodemographic characteristics, including age, income, and education, may impact this association. Subsequent research endeavors that integrate these moderating variables could provide intricate perspectives on how distinct demographic groups might behave with their aspirations to acquire ZW products.

Authors' Contribution

Both authors collaborated to establish the conceptual and quantitative frameworks underpinning this empirical investigation. Nidhi Yadav meticulously extracted reputable research papers using a keyword-based filtration strategy to compress the articles into ideas relevant to the study's methodology. Both authors conducted the data collection collaboratively and were responsible for distributing the surveys. Nidhi Yadav performed the numerical analyses and utilized SPSS AMOS 21 to further explain the research findings. Dr. Charu Sijoria comprehensively verified the analytical procedures to guarantee methodological rigor and precision. Her contribution to the research paper went beyond supervision; she also proofread it, which added to its scholarly value and coherence. Nidhi Yadav drafted the manuscript, working closely with the co-author to ensure that the narration was compelling and accurately represented the collaborative investigation procedure of the study.

Conflict of Interest

There are no potential conflicts of interest for the authors to declare. The co-author has read the manuscript and agrees with its contents. There are no financial conflicts of interest to disclose. We certify that the submission is unique and not currently under consideration by another publisher.

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