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Analyzing the Sociodemographic and Psychological Factors Influencing the Intention to Consume Single-Use Plastics Among University Students: A Cross-Sectional Quantitative Study

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ABSTRACT

The rising use of disposable plastics among Indonesian university students contributes to the growing problem of plastic waste, making it essential to understand the factors shaping their intentions to use single-use plastics. This research aims to determine the impact of sociodemographic factors (age, education level, and economic status) and psychological factors (subjective norms, emotional motivation, and beliefs) on the intention to use disposable plastic among university students. The study contributes by integrating the Theory of Planned Behaviour (TPB) and the Value-Belief-Norm (VBN) Theory to explain the intention to consume single-use plastics in the Indonesian context, identifying the belief variable as the most dominant factor influencing behavioral intention. The research employed a quantitative descriptive-analytical approach with a cross-sectional design, conducted from April to June 2024. A total of 125 respondents were selected using purposive sampling. Data were collected through questionnaires developed based on the TPB and VBN frameworks, then analyzed using descriptive statistical tests and multivariate logistic regression to identify significant predictors of behavioral intention. The results show that sociodemographic factors, age (p = 0.002), education level (p = 0.000), and economic status (p = 0.000), significantly influence the intention to consume disposable plastics. Likewise, psychological factors, subjective norms (p = 0.001), emotional motivation (p = 0.000), and beliefs (p = 0.000), also have a significant effect, with beliefs emerging as the most dominant factor (Exp(B) = 10.234). The study implies that efforts to reduce single-use plastic consumption among university students should focus on strengthening environmental education and transforming social norms to foster sustainable behaviors. Furthermore, future research with longitudinal designs and broader populations is recommended to enhance the generalizability of these findings.

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I. INTRODUCTION

Plastic is a material commonly used in various aspects of people's lives, including product packaging, kitchen equipment, medical equipment, toys, and more [1]. Thus, the ever-increasing demand for plastic has led to a drastic increase in the amount of plastic waste, which is in line with the global production of plastic waste, which continues to rise globally, and only 9% is recycled [2]. Furthermore, according to data from the Indonesian Plastic Industry Association (Inaplas) and the Central Statistics Agency (BPS), Indonesia generates approximately 64 million tons of plastic waste annually, with around 3.2 million tons of it ending up in the sea [3]. Through Ministerial Regulation Number P.75 of 2019, producers are required to develop, implement, and report a waste reduction roadmap. The target is a 30% reduction by 2029 compared to 2019 [4]. In line with this, the Ministry of Environment and Forestry launched the Indonesia Free from Plastic Waste program to reduce plastic waste. This program aims to achieve a 30% reduction in waste and a 70% increase in waste management by 2025, in accordance with Presidential Regulation Number 97 of 2017. The Ministry of Environment and Forestry also aims to halt new landfill construction by 2030. However, research indicates that

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consumers often disregard applicable legal regulations and continue to use plastic bags [5]. Single-use plastics account for approximately 50% of total global plastic production, equivalent to 100 to 150 million tons annually. This type of plastic encompasses a wide range of commonly used consumer products designed for single use [6]. However, most of it is not recycled and is highly susceptible to becoming waste, polluting the environment.

Negative impacts on the environment include damage to natural systems and cycles caused by the unwanted introduction of plastic into those systems [7]. The implementation of a behavior is influenced by the intention to do it and the level of behavioral control felt by the individual. Consumer purchase intentions are closely linked to deeper psychological processes within consumers. Consumer evaluations of a product are not limited to intrinsic characteristics and functions but are increasingly influenced by subjective emotional experiences, emotional resonance, and a sense of self-attachment. Consumers have different motivations in purchasing a product and may seek practical value from products that are perceived as healthy and safe, or hedonic value from products that are symbolic and sustainable, so they focus on product information in different ways [6].

The PVC model is based on widely recognized psychological theories, particularly the Value-Belief-Norm (VBN) theory. This theory explains that pro-environmental behavior is formed through sequential stages. A person's personal values shape certain beliefs, and these beliefs then give rise to personal norms that ultimately become guidelines for acting in a pro-environmental manner [8]. Pro-environmental behavior refers to positive consumer actions in protecting the natural environment. Previous research has extensively utilized psychological theories to understand the intention to reduce single-use plastic consumption. One such theory is the Theory of Planned Behavior (TPB) used by Hasan (2015) at Universiti Putra Malaysia, which showed that attitudes and perceived behavioral control influence students' intention to reduce plastic consumption [9]. However, this study was limited to measuring only two main factors without considering other psychological dimensions such as subjective norms and emotional motivation.

Furthermore, Ghazali et al. (2019) used the Value-Belief-Norm (VBN) theory and identified six types of pro-environmental behaviors that require special effort or sacrifice [10]. While these findings provide insight into pro-environmental behavior, this study did not specifically examine the relationship between personal values and single-use plastic consumption. Oguge et al. (2021) applied the Theory of Considered Goals (TRA) and found that attitudes and subjective norms influence the intention to recycle [11]. However, this study did not consider perceived behavioral control, which also plays a significant role in such intentions.

Other studies, such as that conducted by Oludoye et al. (2024) in Nigeria, integrated the TPB and VBN to compare their effectiveness in explaining single-use plastic reduction behavior [12]. However, this study is limited because it did not examine the interaction between sociodemographic and psychological factors that could influence individual intentions in more depth. Chi's (2022) study in Vietnam also used VBN, showing that personal values and moral norms influence intentions to choose environmentally friendly plastic products, but did not consider sociodemographic factors that could affect individual intentions [13].

Sebastian (2025) in the United States used the TRA to examine intentions to avoid products with single-use plastic packaging [14]. While these findings are relevant, this study did not account for perceived behavioral control, which is important in understanding intentions to reduce plastic consumption. Another study by Oduro-Appiah et al. (2024) again used TRA in contrast to moral norms and showed that moral norms moderated the relationship between attitudes and intentions to prevent plastic contamination [15]. However, this study also did not examine sociodemographic factors that may influence individual intentions, such as education level and economic background. A common gap in these studies is the lack of integration between these theories, which hinders the provision of a more holistic picture of the factors influencing the intention to reduce single-use plastic consumption, particularly within the social and cultural context of Indonesia. Sociodemographic factors, such as age, education level, and economic status, that influence individual intentions are often overlooked. Therefore, this study aims to fill this gap by integrating the TPB and VBN, as well as considering sociodemographic and psychological factors, to provide a more comprehensive picture of the factors influencing the intention to consume single-use plastic among students at Aufaroyhan University, Padangsidimpuan. This study is expected to offer new insights into efforts to reduce single-use plastic consumption among the younger generation.

This study makes a theoretical and practical contribution to the growing body of literature on pro-environmental behavior. Theoretically, it expands the application of the Theory of Planned Behavior (TPB) and the Value-Belief-Norm (VBN) Theory by integrating sociodemographic variables to explain behavioral intentions regarding single-use plastic consumption, particularly in the Indonesian context, where cultural and socioeconomic dynamics differ from those in prior studies. Practically, this research provides empirical evidence that can inform policymakers, educators, and environmental organizations in designing targeted interventions, such as strengthening environmental education, promoting sustainable consumption values, and reshaping social norms among university students. Through this approach, the study not only deepens understanding of psychological and social determinants of plastic use but also offers actionable insights to support Indonesia's national plastic waste reduction goals.

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II. MATERIALS AND METHOD

A. Dataset

This study uses a quantitative approach with a cross-sectional study design, collected at a specific time, to examine the relationship between the variables studied [16]. The study was conducted at Aufaroyhan University, Padangsidimpuan, from April to June 2024. The study location was chosen due to the diversity of student backgrounds in terms of region of origin, economic conditions, and culture, which have the potential to influence their level of concern and knowledge of environmental issues, especially regarding their intention to consume single-use plastics. The population in this study was all students of Aufaroyhan University, Padangsidimpuan. Sampling was carried out using a purposive sampling technique, with a sample size of 125 students who met the inclusion criteria: willing to participate and have a basic understanding of environmental issues and single-use plastic consumption [17].

B. Research variables

This study categorizes the variables under investigation into two primary categories: sociodemographic factors and psychological factors. This categorization is important for mapping the data and understanding how each factor influences students' intention to consume single-use plastics. Sociodemographic factors consist of age, education level, and economic status. Age is grouped into specific age ranges, such as students aged 18–25 years, 26–30 years, and so on. Respondents' education level is divided based on the degree obtained, such as Bachelor's (S1), Diploma (D3), or Master's (S2). Meanwhile, economic status is categorized into two groups, namely high and low, which is measured by the respondent's income level or social class. Psychological factors include subjective norms, emotional motivation, and beliefs. Subjective norms measure the extent to which an individual's decision is influenced by others, such as family, friends, or society, and are categorized as high or low based on the average score on the Guttman scale. Emotional motivation measures respondents' feelings towards the use of single-use plastics, such as guilt, pride, or anxiety, and is also categorized as high or low based on the calculated average score. Similarly, beliefs measure the extent to which respondents believe that single-use plastic consumption is detrimental to the environment and can be changed by individual action. Belief categorization is also based on average scores, with a mean score of ≥ 4 considered high, and a mean score < 4 considered low.

C. Data Collection

Participants in this study were university students selected based on specific inclusion criteria, representing diverse social, economic, and educational backgrounds. The questionnaire was distributed online to students who had expressed their willingness to participate [18]. Data collection was conducted voluntarily, without coercion, and respondents were provided with information regarding the purpose of the study, the free nature of participation, and the right to withdraw at any time [19]. Students completed the questionnaire without assistance from the researcher to maintain objectivity.

The questionnaire used in this study consisted of items developed based on the Theory of Planned Behavior (TPB) and the Value-Belief-Norm Theory (VBN). Each item in the questionnaire was scored using a 5-point Guttman scale that measures the extent to which respondents agree or disagree with the statement. This scale has a value range from 1 (Strongly Disagree) to 5 (Strongly Agree). Subjective norms were assessed by measuring the extent to which others influence an individual's decisions, and subjective norms were categorized as high or low based on the average score of the norm items in the questionnaire. If the average score is greater than or equal to 4, then subjective norms are considered high; if the average score is less than 4, then they are considered low. Emotional motivation was measured based on an individual's feelings about the impact of single-use plastics, and was categorized as high or low based on a predetermined average score threshold. Likewise, beliefs are calculated based on the average score for items measuring beliefs about the negative impacts of plastic and an individual's ability to reduce their impact. An average score of≥ 4 is classified as high, and an average score of < 4 is classified as low. The questionnaire underwent an internal content feasibility review process before distribution. The collected data were first checked for completeness and consistency. Next, descriptive statistical analysis was performed to describe the frequency distribution, and inferential statistics to test the relationship between variables. Inferential analysis was conducted using correlation tests and multiple and straightforward linear logistic regression to examine the effect of independent variables (sociodemographic and psychological factors) on the dependent variable, namely the intention to consume single-use plastics. All data analysis was performed using statistical software. Significance tests were performed with a p-value ≤ 0.05 as the threshold for statistical significance. A multivariate regression model was built to identify the contribution of each variable to the behavioral intention to consume single-use plastics.

D. Theoretical Framework

This study employed two primary theories to analyze students' intentions to reduce single-use plastic consumption: the Theory of Planned Behavior (TPB) and the Value-Belief-Norm (VBN) Theory. The Theory of Planned Behavior (TPB), developed by Icek Ajzen in 1991, explains that an individual's intention to perform a behavior is influenced by three main factors: attitude toward the behavior, subjective norms, and perceived behavioral control [20]. Attitude toward a behavior describes an individual's evaluation of a particular behavior, whether it is perceived as positive or negative. Subjective norms refer to the degree to which individuals are influenced by others in their decision-making, such

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as family, friends, or society. Perceived behavioral control refers to the extent to which individuals feel they have control over their behavior. In the context of this study, the TPB was used to understand how students' attitudes, social norms, and perceived behavioral control influence their intentions to reduce single-use plastic consumption [21]. Furthermore, this study also adopted the Value-Belief-Norm Theory (VBN) developed by Stern et al. in 1999. The VBN (Vegetarian, Social, and Cultural) underscores the importance of personal values in shaping beliefs about environmental issues, which then shape personal norms that encourage pro-environmental behavior [22], [23]. Personal values relate to an individual's beliefs about the importance of environmental preservation, which influences how they view issues such as single-use plastic consumption. These beliefs relate to an individual's understanding of the impacts of plastic consumption and the extent to which their actions can contribute to positive change. Personal norms refer to an individual's moral obligation to act in the best interest of the environment. In the context of this study, the VBN was used to explain how college students' personal values and beliefs about plastic issues influence their intention to reduce single-use plastic consumption [24].

By combining these two theories, this study aims to provide a more comprehensive understanding of the factors influencing college students' intentions to reduce single-use plastic consumption. The TPB helps explain how social factors and behavioral control influence intention, while the VBN provides insight into how personal values and moral beliefs drive pro-environmental actions. These two theories complement each other to give a deeper understanding of the sociodemographic and psychological factors that influence college students' behavior regarding single-use plastic use.

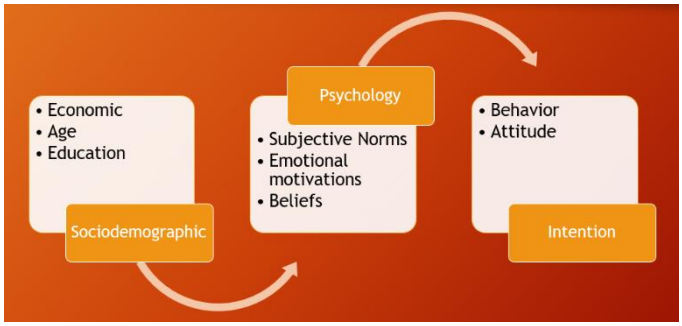

Fig 1. Research Design Framework

As illustrated in Fig. 1, the research design framework integrates sociodemographic variables (age, education, and economic status) and psychological factors (subjective norms, emotional motivations, and beliefs) to explain behavioral intention toward single-use plastic consumption, based on the integration of TPB and VBN constructs.

III. RESULTS

Based on the data of 125 respondents, the 19–22 age group was the largest, at 23.2%, and the 43–46 age group was the smallest, at 1.6%. This data indicates that the majority were in the young productive age group and early adulthood, according to the WHO's definition of age range. Table B then shows that of the 125 respondents in this study, the majority held undergraduate degrees (S1), at 66.4%. The fewest held diplomas (D3), at 1.6%. This data indicates that respondents have a fairly good understanding of environmental issues such as single-use plastic consumption. This diversity of educational levels also provides insight into academic backgrounds, which can influence respondents' knowledge and attitudes toward environmental issues. Furthermore, Table C above shows that the majority of respondents had a high economic status, namely 70.32%. Meanwhile, respondents with a low economic status were 29.68%. This data indicates that the majority of respondents came from relatively good economic backgrounds.

Table 1. Sociodemographic Interpretation Data

No	Variable	Category	Frequency (n)	Percentage (%)
A	**Age Group (Years)**			
1		19–22	29	23,2
2		23–26	25	20,0
3		27–30	5	4,0
4		31–34	20	16,0
5		35–38	27	21,6
6		39–42	17	13,6
7		43–46	2	1,6
	Total		**125**	**100,0**
B	Education Level			
1		Diploma (D3)	2	1,6
2		Bachelor(S1)	83	66,4
3		Master(S2)	40	32,0
	Total		**125**	**100,0**
C	Economic Status			
1		Low	37	29,68
2		High	88	70,32
	Total		**125**	**100,0**

Table 1 shows that psychological factors such as subjective norms, emotional motivation, and beliefs also shape students' perspectives on environmental issues, as shown in the following table:

Table 2. Psychological Interpretation Data

Variable	Category	N	Percentage (%)
Subjective Norm	High	72	57,6
	Low	53	42,4
Emotional Motivation	High	74	59,2
	Low	51	40,8

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Variable	Category	N	Percentage (%)
Belief	High	79	63,2
	Low	46	36,8
Total		**125**	**100,0**

Table 2 shows that, in terms of Subjective Norm, the majority of respondents (57.6%) reported a high level of subjective norm. This indicates that they have strong encouragement or social influence from those closest to them (such as partners, friends, or coworkers) to reduce their consumption of single-use plastic. Meanwhile, 42.4% of respondents showed a low subjective norm, explaining that groups less influence them in their plastic consumption behavior. Furthermore, emotional motivation, with 59.2% of respondents reporting high emotional motivation, suggests that emotions such as guilt, pride, anger, or anxiety about the environmental impact of plastic influence respondents' attitudes and behavior. Meanwhile, 40.8% of respondents had low emotional motivation, which could reflect low emotional awareness of environmental issues or a lack of concern in daily practice. Then, the belief variable showed that the majority of respondents (63.2%) held a high belief that the use of disposable plastics has a negative impact on the environment and that individual actions can contribute to environmental preservation. As many as 36.8% had a low level of belief, indicating doubt or uncertainty about the effectiveness of individual actions and the real impact of single-use plastic consumption on quality of life.

A. Bivariate Analysis

To see the relationship between sociodemographic characteristics and respondents' intentions to consume single-use plastics, a bivariate analysis was conducted as presented in the following Table 3. It's shows that the age variable, namely young respondents (19–30 years old), have a proportion of low intentions to reduce plastic consumption of 54.2%, while high intentions are 45.8%. Conversely, in the adult age group (31–46 years old), the proportion of individuals with high intentions is significantly larger, at 77.3%, while only 22.7% have low intentions. With a p value of 0.028, it can be concluded that age significantly influences the intention to consume single-use plastics. More mature age groups tend to have a higher intention to reduce their consumption of single-use plastics. Furthermore, regarding education level, 66.7% of respondents with moderate to high intentions reported low intentions, while only 33.3% reported high intentions. Conversely, 89.2% of respondents with good intentions reported high intentions, while only 10.8% reported low intentions. With a p-value of 0.000, a significant relationship is found between education level and plastic consumption intention, with respondents having higher education levels tend to have greater awareness of reducing single-use plastics. Likewise, the economic status variable shows that respondents with low economic status are more likely to have low intentions, at 70.3%, while those with high intentions account for only 29.7%. Meanwhile, respondents with high economic status show the opposite tendency, namely, 76.1% have high intentions to reduce plastic consumption. With a p-value = 0.001, it can be concluded that economic status has a significant effect on plastic consumption intentions, where respondents with better economic conditions tend to have a higher commitment to environmentally friendly behavior. Apart from economic factors, psychological aspects also play a significant role in shaping intentions towards environmentally friendly behavior, particularly in reducing the consumption of single-use plastics. This can be seen in the following Table 4. It's shows that 76.4% of respondents with high subjective norms had a strong intention to reduce their consumption of single-use plastics. Conversely, only 43.4% of respondents with low subjective norms had a strong intention to reduce their consumption of single-use plastics. This indicates that social support from those around them has a significant influence in encouraging environmentally friendly behavior. Furthermore, regarding the emotional motivation variable, 81.1% of respondents with high emotional motivation indicated a strong intention to

Table 3. Sociodemographic factors influencing the intention to consume single-use plastic

Variable	Category	Low Intention	(%)	High Intention	(%)	Total	p-value
Age	Young (19–30)	32	54.2	27	45.8	59	0,028*
	Adult(31–46)	15	22.7	51	77.3	66	
Education Level	Bachelor's degree (Moderate)	40	66.7	20	33.3	60	0,000*
	Master's degree (Good)	7	10.8	58	89.2	65	
Economic Status	Low	26	70.3	11	29.7	37	0,001*
	High	21	23.9	67	76.1	88	

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reduce single-use plastic. Conversely, only 35.3% of those with low emotional motivation indicated a high intention.

This suggests that emotions such as guilt, pride, or anger about the impact of plastic can drive pro-environmental behavioral intentions. Similarly, regarding the belief variable, 83.5% of respondents with high levels of belief indicated a strong intention to reduce single-use plastics. Conversely, only 26.1% of those with low levels of belief indicated a strong intention. This data suggests that beliefs about the environmental impact of single-use plastic consumption and the effectiveness of personal actions significantly influence behavior change. To support this analysis, it is also important to understand how each psychological variable is measured in this study. Details of the constructs and measurement items for each variable are presented in the following Table 5.

Table 4. Psychological factors influencing the intention to consume single-use plastic

Variable	Category	Low Intention	%	High Intention	%	Total	p-value
Subjective Norm	Low	30	56.6	23	43.4%	53	0,017*
	High	17	23.6	55	76.4%	72	
Emotional Motivation	Low	33	64.7	18	35.3%	51	0,002*
	High	14	18.9	60	81.1%	74	
Belief (Keyakinan)	Low	34	73.9	12	26.1%	46	0,000*
	High	13	16.5	66	83.5%	79	

B. Multivariate Results

After conducting the bivariate analysis, the next step was to examine the joint influence of sociodemographic and psychological factors on the intention to consume single-use plastics. The results of the multivariate analysis are presented in the following Table 6. It's shows that the age variable, with Exp(B) = 3.996 and p = 0.002. This means that respondents aged 31–46 years are approximately 4 times more likely to have the intention to reduce single-use plastic consumption compared to respondents aged 19–30 years, and this difference is statistically significant. Furthermore, the education level variable, with Exp(B) = 9.309, p = 0.000, indicates that postgraduate respondents have more than 9 times the chance of having a high intention to reduce single-use plastic consumption compared to respondents in stratum 1, with a very significant difference. Likewise, economic status, namely, Exp(B) = 6.573, p = 0.000, respondents with high economic status are 6.5 times more likely to have a high intention to reduce single-use plastic consumption compared to respondents with low economic status. This effect is significant.

In the subjective norm variable, namely Exp(B) = 4.243, p = 0.001, respondents with high subjective norms are 4.2 times more likely to have a high intention to reduce single-use plastic, compared to those with low norms, and this result is significant. The emotional motivation variable, namely Exp(B) = 7.616, p = 0.000, indicates that respondents with high emotional motivation (guilt, pride, anger, and anxiety related to plastic use) are more than 7 times more likely to have a high intention to reduce plastic consumption. This effect is very significant. Likewise, belief, namely, Exp(B) = 10.234, p = 0.000, respondents who have strong beliefs about the negative impacts of plastic and the importance of individual contributions show a more than 10-fold likelihood of having a high intention to reduce single-use plastic consumption. The Belief variable is the strongest and most significant factor in the model.

IV. DISCUSSION

The age variable shows that respondents with young ages (19-30 years) have a proportion of low intentions to reduce plastic consumption of 54.2%, while those with high intentions are 45.8%. Conversely, in the adult age group (31-46 years), the proportion of individuals with high intentions is significantly higher, at 77.3%. This is in line with the fact that a person at a certain age has a significant impact on purchasing behavior. Receiving large sums of money at a young age (20-35 years) and in old age (50-65 years), when responsibilities are relatively fewer, makes a person more likely to prioritize health and the environment. This research is also supported by Borah (2024), which indicates that age has a positive influence but is not statistically significant ($p > 0.05$). Meanwhile, Mehraz's (2023) research found that age does not significantly influence environmentally friendly consumer behavior among young Indian consumers. [25]. However, the study did not group by age because all samples came from the millennial generation. Education level, namely, respondents with sufficient, respondents with sufficiently low intentions of 66.7% and respondents with high intentions of only 33.3%. In contrast, good respondents showed a very dominant high intention of 89.2%, and only 10.8% had low intentions. With a p-value = 0.000> in line with research by Liang (2024), education significantly increases environmental awareness in adolescents, showing

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Table 5. Construction of Variable and Measurement indicators for intention to consume single-use plastic based on TPB and VBN

No	Variable	Item Code	Indicator Description	Source
1	Subjective Norm	SN1	My family or partner suggests reducing the use of single-use plastics.	Ajzen (1991), TPB
2		SN2	My friends or colleagues support environmentally friendly behavior, such as bringing a reusable bottle.	Ajzen (1991), TPB
3		SN3	I believe it is essential to consider the opinions of those around me regarding the use of single-use plastics.	Ajzen (1991), TPB
4		SN4	I would feel uncomfortable if close people saw me using single-use plastics.	Ajzen (1991), TPB
5	Emotional Motivation	EM1	I feel guilty when using single-use plastics due to their environmental impact.	Stern et al. (1999), VBN
6		EM2	I feel proud when using reusable items instead of single-use plastics.	Stern et al. (1999), VBN
7		EM3	I feel angry when I see people littering with plastic.	Stern et al. (1999), VBN
8		EM4	I am concerned about the long-term health implications of single-use plastics.	Stern et al. (1999), VBN
9	Belief	B1	I believe that the use of single-use plastics worsens environmental pollution.	Stern et al. (1999), VBN
10		B2	I believe that my individual actions can contribute to environmental preservation.	Stern et al. (1999), VBN
11		B3	I am confident that reducing single-use plastics can improve the quality of life in society.	Stern et al. (1999), VBN
12		B4	I believe that collective awareness can significantly change plastic consumption habits.	Stern et al. (1999), VBN

that educational programs that focus on environmental issues encourage a greater sense of responsibility and a proactive attitude towards environmental protection. Likewise, research by Testa et al. (2023) shows that the green cosmetics consumer segment includes respondents who have a higher level of education.

The economic status variable shows that respondents with low economic status are more likely to have low intentions, at 70.3%, while those with high economic status have high intentions, at 29.7%. Meanwhile, respondents with high economic status show the opposite tendency, namely, 76.1% have high intentions to reduce plastic consumption with a p value = 0.001. Likewise, in the study of Chwialkowska et al. (2024), it was stated that consumers choose products that represent the social status and economic status of respondents; usually, they are driven by emotional motivations such as the desire to be accepted, appreciated, and gain identity recognition. Another study showing similar results is Zhao et al.'s (2025) study, which concluded that perceived financial risk and financial incentives significantly influenced purchase intentions. This finding is particularly relevant in the context of consumers' purchase intentions for environmentally friendly products, including those made from recycled plastic.

Subjective norm variables showed that 76.4% of respondents with high subjective norms had a high intention to reduce single-use plastic consumption.

Table 6. Multivariate Analysis of sociodemographic and psychological factors for intention to consume single-use plastic

Variable	B	SE	Sig.	Exp(B)	95% CI for Exp(B)	
					Lower	Upper
Age	1,385	0,458	0,002	3,996	1,680	9,490
Education Level	2,231	0,530	0,000	9,309	3,429	25,281
Economic Status	1,883	0,486	0,000	6,573	2,532	17,060
Subjective Norm	1,445	0,437	0,001	4,243	1,755	10,250
Emotional Motivation	2,030	0,474	0,000	7,616	3,004	19,312
Belief	2,326	0,510	0,000	10,234	3,832	27,349
Constant	-3,684	0,821	0,000	0,025		

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Conversely, only 43.4% of respondents with low subjective norms had a high intention. This indicates that social support from those around them has a significant influence on encouraging environmentally friendly behavior. This finding aligns with research by Phu et al. (2025), which suggests that subjective norms have a significant impact on the intention to reduce single-use plastic. Furthermore, another study by Hendijani (2023) showed that subjective norms have a positive influence on the intention to use single-use plastics. Therefore, the greater the social pressure or encouragement from social environments such as family, friends, or the community to use environmentally friendly products, the greater the individual's tendency to use single-use plastics [26]. Regarding the emotional motivation variable, 81.1% of respondents with high emotional motivation showed a strong intention to reduce plastic use. Conversely, only 35.3% of those with low emotional motivation showed a high intention. This means that emotions such as guilt, pride, or anger towards the impact of plastic can drive pro-environmental behavioral intentions. This is supported by Islam et al. (2025), who stated in their research that emotional motivation, such as guilt and responsibility, plays an important role in shaping pro-environmental goals among young people in the context of managing plastic consumption [27]The results of other studies also state that emotional approaches, such as a sense of responsibility and concern for environmental impacts, are significant drivers in forming sustainable behavioral intentions.

Regarding the belief variable, 83.5% of respondents with high levels of belief indicated a strong intention to reduce plastic consumption. Conversely, only 26.1% of those with low levels of belief indicated a high intention. Therefore, beliefs about the environmental impact of plastic and the effectiveness of personal actions significantly influence intentions to change behavior. This is supported by research by Basnet et al. (2025), which shows that consumer confidence in the environment is positively and significantly influenced by factors such as ecolabels, environmentally friendly packaging and brands, green products, premium prices, and concern for and belief in environmental issues. However, research by Panjaitan et al. (2025) states that beliefs about environmental issues are not merely knowledge but also a crucial foundation for shaping one's perspective and attitude toward environmentally friendly behavior [28]. However, positive beliefs and attitudes alone are not strong enough to motivate someone to truly change their behavior, including reducing the use of single-use plastics. However, moral and social responsibility have been shown to drive changes in intentions to behave in an environmentally friendly manner. A different study by Nazmi and Kurniawati (2024) revealed that green purchasing behavior is strongly influenced by internal factors, particularly consumer beliefs about environmental issues and their ability to take impactful actions [29]. Environmental knowledge and control beliefs have been shown to play a significant role in shaping intention, which then drives actual behavior in choosing green products. Liu, dkk (2025) also found that environmental sustainability beliefs significantly mediate the relationship between green values and sustainable behavior, indicating that environmental beliefs can strengthen intentions to become real actions, including avoiding the consumption of single-use plastics [30].

There are five aspects that give limitations in this research, namely the first aspect of research design, because it still uses a cross-sectional design, so that it only describes the relationship at one time. Both aspects of purposive sampling techniques have been applied to only 125 people, so that the results of this research cannot be generalized to the entire population. The three aspects of measurement instruments are only based on self-report, so respondents cannot answer in fact because they do not reflect real behavior in the field. The four aspects of the variables studied only focus on socio-demography and psychology, so that other factors do not represent a broad research. The five regional location aspects studied were only around the Aufaroyhan campus in the city of Padangsidimpuan, North Sumatra, so that this region does not yet reflect all campus populations throughout Indonesia.

This research has significant implications for the development of environmental education policies and green campus interventions. Based on the findings that beliefs and emotional motivations play a significant role in the intention to reduce plastic consumption, it is crucial for environmental education policies to incorporate educational aspects that foster personal beliefs about the negative impacts of plastic and the importance of individual contributions to environmental conservation. Programs that utilize emotional campaigns that evoke feelings of guilt, pride, and anxiety about the impact of plastic can be more effective in driving behavior change.

At the campus level, interventions that engage social norms can be highly effective—for example, promoting plastic reduction policies on campus by engaging students, families, and friends in creating social norms that support environmentally friendly behavior. Providing affordable and accessible eco-friendly alternatives, such as reusable single-use water bottles or eco-friendly shopping bags, can strengthen students' intentions to behave more responsibly towards the environment.

V. CONCLUSION

Based on the aim to analyze the influence of sociodemographic and psychological factors on the intention to consume single-use plastic among students, the study found that the intention to consume single-use plastic among college students was significantly influenced by sociodemographic characteristics (age, education level, and economic status) and psychological factors (subjective norm, emotional motivation, and belief). Based on multivariate analysis, belief variables had the strongest influence on the intention to consume single-use plastic, followed by emotional motivation and education level. Most students who had a high level of belief in the negative impacts of plastic and the effectiveness of individual actions showed a high

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intention to reduce plastic consumption. In addition, students with high emotional motivation (such as guilt, pride, anger, and anxiety) also tended to have a higher intention. Subjective norms, such as social support from family and friends, also encouraged environmentally friendly behavior. In terms of sociodemographic aspects, respondents with older age, higher education level, and better economic status were more likely to have the intention to reduce the use of single-use plastic.

These findings suggest the importance of interventions targeting psychological and demographic factors, such as increasing awareness through environmental education, strengthening social norms through community campaigns, and providing affordable, environmentally friendly alternatives. Integrated policy and education strategies can strengthen the intention and behavior of college students toward sustainable consumption. It is also expected that in the future, further research will be conducted. Future research could employ a longitudinal design, incorporate external variables such as social media influence, and expand the sample to include various universities in Indonesia.

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