



From Plastic Pollution to Sustainable Solutions: Exploring Reusable Bag Intentions in Jakarta, Indonesia



ABSTRACT

Despite public awareness of how dangerous plastic bags are, people still use them excessively in Indonesia. This research is conducted to determine customers' intention to use reusable bags and to find out whether there is a significant difference between genders in terms of intention to reuse bags. Data were collected through 150 self-administered questionnaires distributed randomly to people in modern supermarkets and minimarkets around Jakarta. Statistical analysis, such as hierarchical regression, independent sample t-test, and descriptive analysis were used to analyze the data. Attitudes, convenience, and environmental concern have a significant relationship with customers' intentions. There was no significant difference between genders in terms of their intention. This research sheds light on a nuanced aspect of sustainable behavior, specifically the role of gender in the intention to reuse bags. Its originality lies in the context of Indonesia and the analysis of gender dynamics. The implications of this study extend beyond academia, offering practical guidance to marketers, retailers, and policymakers seeking to promote environmentally conscious consumer behavior and reduce plastic bag consumption.

Keywords: *environmental concern, gender, intention, Jakarta, reusable bags*

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INTRODUCTION

Plastic pollution has gained increasing attention globally (*United Nations Environment Programme 2018*). Worldwide, it is estimated that 500 billion to one trillion plastic bags are consumed each year, or 1 to 2 million bags per minute (*Clean Up Australia 2015; Plastic Bag Facts 2010*). The amount of consumption is so high because of the various benefits that plastic bags provide. This number will keep increasing as the human population grows (*Martín 2015*). The main reason why plastic bags have become popular so fast is because of their convenience and affordability. In this case, convenience means plastic bags are easy to access (*Sobaya et al. 2018*) and also either cheap or free to use (*White and Lockyer 2020*). Plastic bags are flexible since they can carry more goods compared to paper bags. They are lightweight yet strong, as they can hold liquid and oil. Hence, many customers still use plastic bags every day. Not only do plastic bags make people's lives easier, but they also save retailers some money (*Evans 2018*).

According to *Jambeck et al. (2015)*, China and Indonesia are the top sources of plastic waste that clog up the global sea. In 2010, China generated 3.5 M T of plastic waste into the sea, followed by Indonesia with 3.2 M T. Plastic bags are also very accessible in Indonesia,

as they are either free or very cheap. Therefore, many people in the country still use plastic bags daily. The total plastic bag waste produced yearly in Indonesia is 10 billion pieces, or more than 85,000 T of plastic bags (*Puspita 2018*). According to Dinas Lingkungan Hidup DKI Jakarta and Gerakan Indonesia Diet Kantong Plastik (GIDKP), 240-300 million plastic bags are consumed in Jakarta annually (*Kompas 2018*).

Plastic bags also have negative effects on the living environment of humans (*Ban and Frid 2018*), wildlife (*Wilcox et al. 2015*), and marine life (*Gall and Thompson 2015*). Due to plastic pollution and its impacts on human well-being, it has become a global concern (*Ban and Frid 2018*). Plastic pollution affects human health in two ways: by ingesting plastic by animals that are later consumed by humans and through its presence in the environment (*Awuchi and Awuchi 2019*). For instance, plastic bags are made from materials that are hard to decompose, taking around 1,000 years or longer (*Braun and Traore 2015*). Many people throw plastic bags into the rivers or sea, which can threaten aquatic wildlife and block drains, damaging people's houses (*Adam et al. 2020; Braun and Traore 2015*). Furthermore, plastic bags are not fully biodegradable and difficult to break down into

smaller pieces. This will be dangerous when consumed by animals as suffocation and death may occur (*Clapp and Swanston 2009*). The estimated economic impact of plastics in oceans is around USD\$13 B annually (*United Nations Environment Programme 2014*). This negative behavior of throwing plastic bags in nature can be due to different reasons, such as the attitudes (*Kim et al. 2013; Senturk and Dumludag 2022*) beliefs, or lack of knowledge.

Due to the high amount of plastic bag consumption in Indonesia and the negative effects plastic bags bring to the environment, humans, and animals, plastic bags must be reduced. Reusable bags are one of the many alternatives to reduce plastic bag consumption (*Omondi and Asari 2021*). Reusable bags are those that can be used multiple times as are stronger than regular plastic bags. As people are more familiar with plastic bags, reusable bags are a better choice than other shopping bags. However, what underlies people's use of reusable bags still needs to be well covered (*Ekasari and Zaini, 2020; Ekasari et al. 2021*).

This research distinguishes itself from prior research by including measures of 'convenience' and 'environmental concern,' which were notably absent in previous studies on the same topic, thereby offering a more comprehensive and nuanced understanding of the factors influencing plastic bag usage and intention to use reusable bags in Indonesia. In the context of Indonesia, where the issue of plastic pollution is particularly acute, understanding the drivers of plastic consumption is essential. This is where the Theory of Planned Behavior (TPB) comes into play. By examining the psychological and social factors that underlie individuals' behaviors related to plastic use, TPB offers a structured approach to addressing the problem. It not only helps to grasp the complexities of why people continue to use plastic bags but also provides a pathway to designing targeted interventions for sustainable behavior change. The Theory of Planned Behavior evaluates the psychological factors of investigated behaviors (*Fishbein and Ajzen 1975*) and performs well in interpreting and predicting various pro-environmental behaviors (*Ahmad et al. 2020; Wang et al. 2016*). The theory proposes that intention has to be formed first before an actual behavior, which can be predicted by factors such as attitude toward the related behavior, subjective norms, and perceived behavioral control. The model has been extended to improve the explanation of the power of TPB by adding additional important variables, such as convenience and environmental concern.

To determine why people would reuse bags, it is

necessary to understand consumer behavior, such as attitudes, beliefs or subjective norms, educational level, and gender. An attitude is an individual's positive or negative appraisal of behavior (*Ajzen 1991; Sun et al. 2017*), and it has an important role in shaping intention (*Ari and Yilmaz 2016; Mahfud et al. 2020*). Furthermore, a customer's ethical belief is important in predicting behavior intention (*Arli and Tjiptono 2014*). Ethical belief refers to the "moral principles and standards that guide behavior" (*Sun et al. 2017*). Several studies have found that customers' ethical beliefs positively impact customers' intention to have environmentally friendly behavior (*Gkargkavouzi et al. 2019*). Subjective norms refer to an individual's perceptions of social pressures from significant others to perform or not perform a behavior (*Ajzen 1991; Sun et al. 2017*). Several studies have found that subjective norms have a significant relationship with customers' intentions (*La Barbera and Ajzen 2020; Roh et al. 2022*).

Gender can be defined as one of the factors that mostly influence customers' decision-making behavior (*Bakshi 2012*). Males and females have different needs and want different products. Furthermore, they will likely have different ways to like and obtain things (*Bakshi 2012; Lin et al. 2019*). Previous studies have found that significant differences exist between males and females, and it is important to know the differences to better understand them regarding consumer behavior, intention, the waste management system, the reduction of plastic usage, and environmental concerns (*Braun and Traore 2015; Lynn 2016; Tifferet and Herstein 2012*). Reducing plastic bag usage is important and several ways to reduce plastic bag usage have been applied. For instance, a plastic bag levy policy has been in effect in 23 regions in Indonesia since February 2016. Everyone who shops in a supermarket and wants to use a plastic bag must pay Rp 200 per plastic bag. Since the policy has been applied, according to Aprindo (Indonesian Retail Entrepreneurs Association), the usage of plastic bags in the community has been reduced by 30% from mid-February to the end of May 2016 (*Purba 2016*). However, this rate is still relatively low compared to the USA where the reduction in plastic bag usage was 85% with the implementation of a similar policy. (*Brittain and Rich 2015*).

Despite the government policy and public awareness, many Indonesians still use plastic bags daily. The problem is that the price of plastic bag in Indonesia is very cheap, and the prices of non-plastic shopping bags (e.g., paper bags or reusable bags) are expensive. The study about using plastic bags and its negative effects in Indonesia is still in the early stages. The research problem stems from

the observed disparity between awareness of plastic's detrimental impact and the persistent high consumption. There needs to be more information available about the reasons behind using plastic bags, which make people still use them excessively in Indonesia (Martin 2015; Sobaya et al. 2018), and the limited understanding of the factors influencing reusable bag adoption, particularly in the context of Indonesia. Furthermore, research regarding the usage of plastic bags in Indonesia still needs to be improved in number and location. Moreover, only a few people know about the movements created by the locals, as the government does not fully support them, and they need to be well broadcasted. Previous studies mentioned differences between men's and women's behavior. Therefore, this study intends to know if there are differences between genders in terms of using reusable bags. However, more research needs to be done regarding this issue (Lynn 2016; Amoah and Addoah 2021; Shiri and Jafari-Sadeghi 2023). Since environmental pollution is a current issue in Indonesia, it is important to know whether people have an intention to use reusable bags. Therefore, this study aims to determine customers' intention to use reusable bags while shopping.

The novelty of this research lies in its exploration of plastic pollution in Indonesia through the lens of the Theory of Planned Behavior (TPB). While plastic pollution is a well-documented global issue, this research adds a unique perspective by examining how TPB can be applied to understand and influence behavior in the specific context of Indonesia. This novel approach offers a fresh and systematic framework to address the pressing environmental challenges caused by plastic consumption in the region, contributing valuable insights to the field of environmental science and sustainability studies.

These findings will benefit the government in finding ways to reduce plastic bag usage, introduce reusable bags, and help make policies regarding this issue. The findings of this study will provide opportunities and benefits for different parties, such as marketers, stakeholders, and entrepreneurs, by understanding customers' behavior in Indonesia. The need for innovations to reduce the environmental impact to be carried out through entrepreneurship activities has become more pronounced (Agarwal 2011). Furthermore, it will put them in a better position to maintain and improve their services to reduce environmental pollution and save the environment for the next generation.

Popularity of Using Plastic Bags

The popularity of plastic bag use has increased

rapidly due to the benefits it gives to its users (Evans 2018). For instance, retailers prefer plastic bags compared to paper or cloth bags. The reason is because plastic bags are cost-effective. They have a minimal cost, while paper bags can be costly and even more for cloth bags per piece. Therefore, buying plastic bags can save retailers some money. Next, plastic bags can save time and space as they are quick to open and pack. This can save cashiers so much time and keep the line moving efficiently. Also, plastic bags take up less space in cashiers' stations and storage than paper and cloth bags (Caldwell 2018). Moreover, not just for retailers, plastic bags also benefit customers. Plastic bags are more durable than paper bags. They are less likely to tear, easier to carry, and more useful in the rain, as they can protect the goods inside from getting wet, unlike paper bags that will break the second water drop on the bags. Furthermore, plastic bags are reusable. They can be used for trash can liners and storage bags. Also, plastic bags last longer than paper bags (Coupal 2013). Moreover, customers can get plastic bags at a relatively cheap price or for free (White and Lockyer 2020), as still many retail stores give their customers free plastic bags. Lastly, plastic bags are more flexible, as they can carry more goods compared to paper bags. However, plastic bags also have some disadvantages. They cause environmental harm (Evans 2018). Most plastic bags are thrown away in the river, sea, or street after a single use. Huge amounts of plastic bags can block local drainage systems, especially in a developing country.

Plastic bags have gained popularity because of their light weight, sturdiness, ease of access, and low price (Synthia and Kabir 2015). Customers worldwide use them regularly and wastefully as they get them for free from shops (White and Lockyer 2020). Approximately 10 million plastic bags are consumed per minute worldwide (Choudhary 2018). These bags are mostly discarded after a single use, and less than 1% are recycled (The World Counts 2019). In the USA, over 380 billion plastic bags are consumed yearly, and it takes 12 million barrels of oil to make them. On average, a family only recycles 15 plastic bags a year, and the rest are thrown in nature (Center of Biological Diversity 2019). Furthermore, approximately 100 billion plastic bags are consumed in Europe every year, as more or less an average of 200 plastic bags are consumed by each European per year (Atzori 2017). Several researchers have found that if the consumption number keeps on increasing and does not get reduced, the Earth will have 12 billion tons of plastic waste in landfills, the sea, and other natural environment areas by 2050 (Choudhary 2018).

Plastic Bag Consumption in Indonesia

The negative issue of using bags can be seen in most developing countries. Indonesia is one of the developing countries facing this issue for several years, and it causes many environmental pollution problems, affecting human, flora, and fauna life (*Lingkungan Hidup 2016*). Plastic bags in Indonesia are very accessible. They can be found practically anywhere at a relatively cheap price or sometimes for free, which makes Indonesians still use them regularly. According to Indonesia's Ministry of the Environment and Forestry, 9.8 billion plastic bags are consumed yearly in Indonesia (*Azzura 2016*), which requires 8% of the world's oil, or equivalent to 12 million barrels of oil and 14 million trees. An estimated 1 million plastic bags are consumed per minute in Indonesia (*GIDKP 2016*).

In Jakarta, the capital city of Indonesia, approximately 200-300 million plastic bags are consumed annually (*Kompas 2018*). Furthermore, 32,000 retail store members of Indonesia's retail business association (APRINDO) produce 9.6 to 11.68 million plastic bags daily (*Azzura 2016*). Thus, this shows how high the consumption of plastic bags is in Indonesia. Statistical data shows that 15.27% of Indonesia's waste is dumped into the rivers and streets, while 40.09% goes to landfills and open dumping. Then, open burning accounts for 35.49% of buried waste, which amounts to 7.54%, and recycling accounts for only 1.61% (*Indonesian Ministry of the Environment 2005; Martin 2015*). Several factors affect individuals' behavior to use plastic bags, such as attitudes, ethical beliefs, subjective norms, convenience, environmental concern (*Sun et al. 2017*), and gender (*Ye et al. 2017*). Previous studies have proven that these factors significantly impact customers' intention to use plastic bags (*Chang and Chou 2018; Khan et al. 2020; Van et al. 2021; Zambrano-Monserrate and Ruano 2020*).

Attitude

According to *Robichaud (2017)*, an "attitude" refers to how individuals behave due to how they think or see something. According to the theory of planned behavior, even though an attitude does not establish behavior directly, it is indirectly shaped through behavioral intention (*Ohtomo and Ohnuma 2014*). Individuals' attitudes toward a certain behavior affect their intention, which affects the actual behavior (*Arslan et al. 2012; Pena-Garcia et al. 2020*). Several studies have determined that an attitude is correlated with behavioral intention (*Abebe et al. 2021; Ajzen 1991*). According to *Arbutnott (2008)*, the more personal and specific our intentions are,

the more likely they influence our behavior. For instance, individuals are more likely to act consistently with attitudes regarding their own needs compared to attitudes regarding the needs of others or the environment (*Arbutnott 2008; Martin 2015*). Therefore, when individuals have a positive attitude towards using reusable bags and think they will benefit them, they intend to use them. Since behavioral intention is influenced by attitude, knowing about an individual's attitude (*Ari and Yilmaz 2016; Bashir 2019*) is important. Also, an individual's attitude is crucial for sustaining a habitable and healthy life (*Ari and Yilmaz 2016*). It is supported that an attitude significantly and positively affects a customer's intention to use reusable bags (*Li and Wang 2021; Timyan and Sadachar 2020; Vina and Mayangsari 2020*). Thus, individuals with a strong attitude toward reusable bags will likely use them regularly. Hence, it is hypothesized that:

H1: An attitude has a positive and significant impact towards customers' intention to use reusable bags.

Subjective Norms

A subjective norm refers to an individual's social pressure to perform a certain behavior (*Teng and Wang 2015; Wan et al. 2012*). Subjective norms or social pressure are "a function of the expectations of significant others" such as family, friends, neighbors, and spouses (*Ari and Yalmaz 2016; Fischbein and Ajzen 1975*). It is important to know about subjective norms because behavioral intention is influenced by subjective norms (*Ari and Yilmaz 2016; Dean et al. 2012; Ha and Janda 2012; Jain 2020; Tsarenko et al. 2013*). Furthermore, subjective norms are important in individuals' perceptions concerning behavior (*Ohtomo and Ohnuma 2014*). It is supported that a subjective norm has a positive relationship with behavioral intention (*Han et al. 2010; Li et al. 2020; Zhuang et al. 2021*). Thus, if individuals think that what others view of their doing is important, they will be more likely to perform that behavior (*Ari and Yalmaz 2016; Fischbein and Ajzen 1975*). Therefore, when individuals think their family, friends, and significant others support the use of reusable bags, most likely they will use reusable bags. Meanwhile, if individuals' significant others think that using reusable bags is unacceptable, they will most likely not use them. Others' expectations can influence individuals to do specific behaviors. Hence, it is postulated that:

H2: Subjective norms have a significant and positive impact towards customers' intention to use reusable bags.

Ethical Beliefs

According to *Bycel (2013)*, an ethical belief refers to a series of beliefs and principles a person or group holds about determining which human interactions they believe are right or wrong. Ethical beliefs have a positive relationship with environmentally friendly behavior (*Sun et al. 2017*), meaning that individuals with high ethical beliefs are most likely to have environmentally friendly behavior. Thus, when individuals believe plastic bags are unethical, they will be more likely to use other types of bags, like reusable or environmentally friendly bags. Individuals with high ethical beliefs will likely adopt environmentally friendly behavior (*Chang and Chou 2018*). Previous studies supported the positive and significant relationship between ethical beliefs and intentions of customers (*Carfora et al. 2021; Saleki et al. 2019; Saricam and Okur 2019*). Hence, it is put forth that:

H3: Ethical beliefs have a positive and significant impact towards customers' intention to use reusable bags.

Convenience

Convenience refers to an individual's perceptions of the manageability and difficulty of taking a specific action (*Chib et al. 2009*). Convenience has been well-attached to marketing/consumer behavior studies (*Liu et al. 2021*). Reusable bags are convenient to their users; therefore, plastic bags are widely used worldwide. Reusable bags are flexible since they can carry more goods than paper bags. They are also lightweight, waterproof, oilproof, and easy to access. From the viewpoint of *Liang (2010)*, two factors influence the convenience of using reusable bags: time orientation and familiarity. Thus, when individuals choose to use reusable bags, there are two things under consideration: time and money. Compared to using other types of bags, it takes a short amount of time and little money to pay to use reusable bags. Hence, many people prefer to use reusable bags. Furthermore, most people are more familiar with reusable bags and prefer to use them (*Greenwood et al. 2021*). The positive relationship between convenience and intention behavior has been supported in previous studies (*Pham et al. 2018; Raman 2019*). Hence, it is conjectured that:

H4: Convenience has a significant and positive impact towards customers' intention to use reusable bags.

Environmental Concern

It is very well known that plastic bags give benefits such as being convenient, flexible, and cheap for the

users. However, it should be remembered that plastic bags create an environmental hazard, as they are not biodegradable (*Resetar-Deac et al. 2015; Zen et al. 2013*). Plastic bags can harm wild animals and human health (*Evans 2018*). Therefore, the environmental concern regarding the usage of plastic bags should increase. Environmental concern is important for predicting consumers' pro-environmental behavior (*Suki 2016; Yadav and Pathak 2016*). Customers' interest in ethical consumption reflects increased social concern regarding the environment (*Kushwah et al. 2019; Stringer et al. 2020; Zollo 2021*). It is also supported that individuals with a higher concern for environmental issues will behave environmentally friendly (*Hartmann and Apaolaza-Ibanez 2012*). Therefore, when individuals are more concerned about environmental issues and believe that using plastic bags can damage the environment, they will reduce the use plastic bags and instead will use reusable bags or any other types of shopping bags. Reducing the use of plastic bags is important, both for preserving natural resources and for preserving the environment and creating a green environment (*Ari and Yilmaz 2016*). Previous studies have proven that reducing the use of plastic bags is an effective environmental activity (*Zen et al. 2013*). It is backed by previous literature that environmental concern has a positive relationship with the intention to use reusable bags (*Prakash and Pathak 2017; Shah and Pillai 2012*). Hence, it is conjectured that:

H5: Environmental concern positively and significantly impacts customers' intention to use reusable bags.

Gender

It is believed that men and women have different needs and wants (*Bakshi 2012; Czymara et al. 2021*). For the last few decades, gender has been regarded as one of the most important personal characteristics influencing one's various environmentally responsible decisions and actions (*Jucan and Jucan 2013; Vicente-Molina et al. 2018*). Some researchers in environmental behavior took gender into account when examining an individual's intention formation towards the environment and identified the gender difference in the pro-environmental decision-making process (*Delhomme et al. 2013; Jucan and Jucan 2013; Xiao and McCright 2015*). For example, *Delhomme et al. (2013)* indicated that gender differences in pro-environmental behaviors exist. Their finding specified that senior women were particularly active in such pro-environmental behaviors. *Braun and Traore's (2015)* study found that there are significant differences regarding gender for consumption intention, and it is important to know the differences to find out

which gender intends to use reusable bags.

Intention Behavior

Intention is social psychology's most important part of behavior (Ari and Yilmaz 2016). The theory of planned behavior (TPB) found that intention drives individuals' behavior (Wan et al. 2012). Thus, it is predicted that when individuals use plastic bags regularly, they strongly intend to use them. Most customers know that plastic bags can endanger the environment; however, many customers still choose to use plastic bags instead of paper bags or cloth bags (Ari and Yilmaz 2017; Wang and Li 2021). Therefore, it is important to know customers' intentions to understand what affects their intention to use reusable bags. To test the relationship between variables, the conceptual framework of this study was designed based on the theory of planned behavior. It included two more variables to get a more in-depth understanding of customers' behavior.

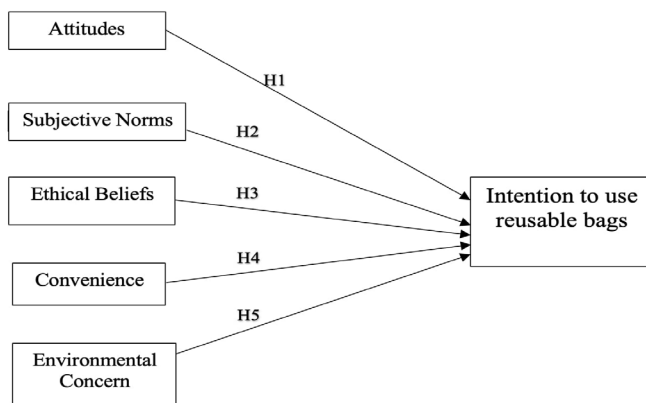


Figure 1. The conceptual framework of the study.

MATERIALS AND METHODS

This study used a quantitative approach to examine the residents' intention to use reusable bags in Indonesia. Using convenience sampling method, questionnaires were distributed to collect the data, questionnaires were distributed to 150 respondents in modern supermarkets and minimarkets around Jakarta in December 2021 when coronavirus restrictions were lifted hence, easier for people to make their purchases in offline shops. The questionnaire was designed based on a review of prior research and was modified by the researchers using a literature review and adjusted for content validity. The bilingual questionnaires (Bahasa Indonesia and English) comprised seven segments (attitudes, subjective norms, ethical beliefs, convenience, environmental concern, intention, and socio-demographic). The measurement scale in this study was a 5-point Likert scale (1=

strongly disagree to 5 = strongly agree). The first part of the questionnaire contained five questions and assessed several aspects of an attitude. The questions in this section were established in prior studies (Giorgi 2014; Sun et al. 2017). The second part of the questionnaire contained seven questions that assessed different aspects of subjective norms (Ari and Yilmaz 2016; Phillipsen 2015; Sun et al. 2017). The third segment contained five questions and measured the ethical beliefs of the respondents (Giorgi 2014; Sun et al. 2017). The fourth segment comprised five questions and assessed several aspects of convenience (Essaw and Sasu 2015; Laner 2018; Sun et al. 2017). The fifth part of the survey referred to environmental concerns with seven questions (Ari and Yilmaz 2016; Laner 2018). The sixth part had three questions and measured intention (1. I intend to use reusable bags shortly, 2. I'd prefer to use reusable bags instead of regular plastic bags, 3. I will recommend to others that are important to me to use less plastic bags) (Sun et al. 2017). Then, the last part of the questionnaire asked about the socio-demographic characteristics of the participants. To assure the reliability of the questionnaire, a pilot test was conducted among 25 respondents. The reliability test results for Cronbach's alpha, conducted for the items (Attitude=0.809; Subjective norm=0.737; Ethical belief=0.746; Environmental concern=0.674; Intention=0.747), followed Nunally's (1967) criteria, which mentioned the minimum reliability acceptance level of 0.6. The validity range of the KMO test supported the validity of items (Attitude=0.885; Subjective norm=0.819; Ethical belief=0.768; Environmental concern=0.810; Intention=0.728) that should be more than 0.50 (SPSS guide, 2019). The data were processed using SPSS version 23.0 (SPSS, Inc., Chicago, IL) and were analyzed by frequency, hierarchical regressions, and an independent t-test.

RESULTS AND DISCUSSION

Most of the respondents were female (60%, n=90), and the majority were in the age range of 18 to 30 years old (74.7%, n=112). Most of the respondents had a bachelor's degree (57.3%, n=86), and the majority of them were single (76.7%, n=115). Most of the respondents were students (42.7%, n=64), and the income of most of the respondents was less than 3.5 million rupiah (44%, n=66). Many use reusable bags once a week (44%, n=66) and for usage, most of them use plastic bags when buying groceries (80.7%, n=121) (Table 1).

It is important to note that correlation does not imply a cause-and-effect relationship. Assuming causation from correlation can lead to an incorrect interpretation of

Table 1. Socio-demographic characteristics of respondents in Jakarta, Indonesia.

Categories		Frequency n (%)
Gender	Male	58 (40%)
	Female	90 (60%)
Age	18-30	112 (74.7%)
	31-40	22 (14.7%)
	41-50	12 (8.0%)
	More than 51	4 (2.7%)
Education	High school diploma	35 (23.3%)
	Diploma	23 (15.3%)
	Bachelor's degree	86 (57.3%)
	Master's/ doctorate degree	6 (4.0%)
Marital Status	Single	115 (76.7%)
	Married	34 (22.6%)
	Widowed /divorced	1 (0.7%)
Employment Status	Student	64 (42.7%)
	Unemployed	5 (3.3%)
	Government-employed	24 (16.0%)
Income *	Self-employed	57 (38.0%)
	Less than 3.5 million rupiah	66 (44.0%)
	3.5-7 million rupiah	45 (30.0%)
	7-9.5 million rupiah	21 (14.0%)
Frequency of using reusable bags	More than 9.5 million rupiah	18 (12%)
	Every day	30 (20%)
	Once a week	66 (44%)
	Once every two weeks	20 (13.3%)
Products	Once a month	34 (22.7%)
	Groceries	121 (80.7%)
	Daily food	64 (42.7%)
	Clothes	28 (18.7%)
	Home appliances	23 (15.3%)
	Other	5 (3.3%)

* USD = 14 540 Indonesian Rupiah

the correlation coefficient. The correlation coefficient quantifies the degree of a linear correlation between two variables and reveals a mild to moderate positive correlation among the key elements of the study (Table 2). None of the correlation coefficient scores exceeded 0.9, indicating the absence of multicollinearity issues among the constructs (Hair et al. 1995).

The hierarchical regression analysis was used to

estimate the coefficients of the linear equation involving the five variables predicting the intention to use reusable bags. The TPB variables (attitude, subjective norms, and ethical beliefs) were considered independent variables, and intention was used as the dependent variable in the first step. The second and third steps added the same dependent variable, convenience and environmental concerns. This study investigated how variables from the extended Theory of Planned Behavior explained more of the intention variations compared to the TPB variables. In the first stage, attitude ($\beta=0.532$, $\rho=0.000$) has the maximum impact on behavioral intention, while ethical beliefs ($\beta=0.197$, $\rho=0.007$) have the lowest impact (Table 3). In the second stage, attitudes remain the maximum influence ($\beta=0.428$, $\rho=0.000$), followed by convenience ($\beta=0.278$, $\rho=0.000$) and subjective norms ($\beta=0.160$, $\rho=0.032$). In this stage, R^2 improved by 0.050, indicating that extra construct (convenience) explains the additional 5% variation in the behavioral intention of reusable bags. In the third stage, environmental concern ($\beta=0.450$, $\rho=0.000$) had the maximum impact, followed by attitude ($\beta=0.296$, $\rho=0.000$) and convenience ($\beta=0.142$, $\rho=0.036$). In this stage, R^2 improved by .101, which indicates that the extra variable (environmental concern) explains the additional 10.1% variation in behavioral intention. Overall, the extended theory of planned behavior has a higher predictive power than the standard TPB.

The findings indicated that "attitude" ($\beta=0.296$, $\beta=0.000$) has a significant and positive relation with intention in all three stages. This was supported by previous studies that mentioned attitude's significant role (Ari and Yilmaz 2016; Chang and Chou 2018; Sun et al. 2017). This shows that most respondents have a significant and positive attitude towards using reusable bags. Using reusable bags is a good choice and will benefit them. Thus, as the respondents have a positive attitude toward reusable bags, they intend to use them instead of regular plastic bags. It was supported by previous studies that an individual's attitude toward a certain behavior affects one's intention (Ari and Yilmaz 2016; Arslan et al. 2012; Chang and Chou 2018; Sun et al. 2017).

Table 2. Pearson correlation analysis among attitudes, subjective norms, ethical beliefs, convenience, and environmental concerns.

Construct	Mean	SD	Attitudes	Subjective norms	Ethical beliefs	Convenience	Environmental concerns
Attitudes	4.34	0.785	1.000				
Subjective norms	3.59	0.790	0.341	1.000			
Ethical beliefs	3.41	0.809	0.003	0.525	1.000		
convenience	4.01	0.696	0.465	0.453	0.395	1.000	
Environmental concerns	4.14	0.614	0.602	0.501	0.459	0.592	1.000

Table 3. Comparison of the hierarchical regression analysis results: examining the impact of attitudes, subjective norms, ethical beliefs, convenience and environmental concern on intention to reuse bags.

Variables	Standard coefficient	t	Sig.	95% CI	Changes in R ²
Stage 1:					
Attitudes	.532	8.180	.000	[.355, .581]	.481
Subjective norms	.205	2.688	.008	[.047, .311]	
Ethical beliefs	.197	2.738	.007	[.047, .289]	
Stage 2:					
Attitudes	.428	6.350	.000	[.259, .494]	.050
Subjective norms	.160	2.163	.032	[.012, .267]	
Ethical beliefs	.111	1.541	.125	[-.027, .216]	
convenience	.278	3.925	.000	[.137, .415]	
Stage 3:					
Attitudes	.296	4.660	.000	[.150, .371]	.101
Subjective norms	.106	1.609	.110	[-.021, .207]	
Ethical beliefs	-.013	-.199	.843	[-.124, .101]	
Convenience	.142	2.122	.036	[.010, .271]	
Environmental concerns	.450	6.282	.000	[.347, .665]	

Convenience also had a significant relationship with intention ($\beta=0.142$, $\rho=0.036$). The reason is due to the convenience that reusable bags give to the users. Reusable bags are stronger and can carry more goods than regular plastic and paper bags. They are also water and oil-proof, perfect for carrying liquid goods. Therefore, due to its convenience, most respondents think that reusable bags are handier. Like *Liang (2010)* said, time orientation and familiarity are the two factors influencing the convenience of reusable bags. Hence, when customers intend to use reusable bags, time and money are the two things under their consideration. This finding is supported by previous studies that mentioned convenience affects the intentional behavior of customers (*Ari and Yilmaz 2016; Chang and Chou 2018; Sun et al. 2017*).

Environmental concern also had a significant and positive relationship with intention ($\beta=0.450$, $\rho=0.000$). Most of the respondents are young adults and well-educated, as most of them had a higher level of education. Young adults tend to be more aware and open-minded about their surroundings. Furthermore, well-educated people tend to have more positive behavior toward the environment. They tend to use things that are safe for them and the environment. Using reusable bags helps to save the environment as it helps to decrease the consumption of regular plastic bags. The findings are supported by previous literature that mentioned individuals with a more serious concern of environmental issues will perform environmentally friendly behavior (*Hartmann and Apaolaza-Ibanez 2012; Pagiasslis and Krontalis 2014; Qomariah and Prabawani 2020; Sang and Bekhet 2015; Wang et al. 2014*). Thus, as most respondents are highly concerned about the environment, it can lead to an intention to use reusable bags.

On the other hand, subjective norms $\beta=0.106$, $\rho=0.110$) and ethical beliefs ($\beta=-0.013$, $\rho=0.843$) are insignificant predictors of intention. The findings contradict previous studies, which mentioned that subjective norms significantly affect intention (*Ari and Yilmaz 2016; Chang and Chou 2018; Ohtomo and Ohnuma 2014; Sun et al. 2017*). Several studies found that social pressure or pro-environmental intervention is major in affecting eco-friendly behavior, such as purchasing returnable bottles, using fewer plastic bags (*Sun et al. 2017*), and bringing cloth bags while shopping (*Ari and Yilmaz 2016*).

This happens because consumers need to discretionally participate in using reusable bags despite the awareness. The people around the respondents, like their families, friends, and significant others, still need to know how dangerous plastic bags are to the environment and the living things on Earth. Many families still use plastic bags wastefully. They tend to take every plastic bag the cashier gives them instead of reusable bags every time they go shopping. The previous generation was used to using plastic bags in their daily lives. They are not aware of the dangers of plastic bags and the environmental issues surrounding them. The next generation follows this habit as the previous generation should have taught them about the dangers of plastic bags and to use fewer plastic bags, which leads to more plastic waste in the seas, rivers, and streets. Furthermore, there needs to be more public awareness that encourages people to use less plastic and use more reusable bags.

Ethical beliefs also did not significantly affect intention in this research. The respondents do not strongly believe that reusable bags can help save the environment. They might be aware of the environmental issues

Table 4. Independent sample analysis between genders and their intention to use reusable plastic bags in Jakarta, Indonesia.

Gender	n	Mean	Std. Deviation	Std. Error Mean		
Male	58	4.1264	0.66908	0.08785		
Female	90	4.3444	0.69679	0.07345		
		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Equal variances assumed		0.001	0.975	-1.887	146	0.061
Equal variances not assumed				-1.904	125.316	0.059

surrounding them, but as they have low ethical beliefs, they do not behave environmentally friendly. Furthermore, most respondents have a positive attitude toward using reusable bags. However, they need to improve the belief to use reusable bags. They believe that the shopping bags they use should not necessarily be labeled as environmentally friendly or be made from recyclable material as long as they can be used for shopping.

To know whether there is a significant difference between genders, an independent sample t-test was applied. There was no significant difference between gender and their intention ($t(148) = -1.904, \rho = 0.975$), and both have a high intention to use reusable bags (Male: $M = 4.12$; Female: $M = 4.34$). Both genders adopt environmentally friendly lifestyles and behavior equally. This finding contrasts with previous studies, which found a significant difference between genders in terms of behavior, including their intention (Lynn 2016; Molinillo et al. 2021). There is no significant difference between genders in terms of intention to use reusable bags because most respondents were at the young age group (18-30 years old). Most of them had a university degree, which means they are well-educated and environmentally conscious.

CONCLUSIONS AND RECOMMENDATIONS

This research was conducted to determine customers' intention to use reusable bags while shopping in Jakarta, Indonesia. Environmental concern, attitudes, and convenience significantly affected intention. There was no significant difference between genders in terms of using reusable bags. The study also demonstrated that one variable, environmental concern, had the highest impact on intention. Thus, most respondents were aware of the environmental issues or situations in their surroundings, which made them intend to use reusable bags. From these findings, most of the respondents have a positive attitude toward the intention of using reusable bags. Respondents also thought that reusable bags are convenient as they are easy to fold and store. These are strong and

waterproof. Furthermore, most respondents were aware of and concerned with the environmental issues in their surroundings, which made them intend to use reusable bags.

As for subjective norms, the study did not depict a significant relationship with intention because the people around the respondents were not environmentally aware enough to encourage the respondents to practice more environmentally friendly behavior. Subjective norms are considered a personal factor, but since a personal factor does not affect intention, a physical environmental factor such as advertising should be used to target people's intentions. As for ethical beliefs, the study did not show a significant relationship with intention due to the respondents' low ethical beliefs, which made them behave not environmentally friendly. The respondents might be aware of the environmental issues in their surroundings, but they still lack the belief to perform environmentally friendly behavior. Thus, there should be more public awareness or a campaign regarding reusable bags to change customers' beliefs so that they are willing to adopt environmentally friendly behavior.

Lastly, there was a similarity in gender regarding the intention to use reusable bags. There is no significant difference between genders because most of the respondents were young adults and well-educated and had knowledge and attitudes regarding conserving the environment. Educated people tend to perform positive and environmentally friendly behavior regardless of their gender. Furthermore, both males and females demonstrate an awareness of the environmental hazards posed by plastic bags and the benefits of adopting reusable bags, reflecting a positive shift in environmental behavior.

Practical Implications

In terms of practical implications, marketers and stakeholders can use the insights from this research to design marketing campaigns that emphasize the factors identified as significant determinants of customers'

intention to use reusable bags, such as attitudes, convenience, and environmental concerns. Businesses can directly address these factors, encouraging sustainable practices and reducing plastic bag consumption. As environmental concern is the variable that has the most impact on intention, marketers can support retailers to teach and encourage people to be more aware and concerned with their surrounding environment.

The findings that there is no significant difference between genders regarding intention to use reusable bags suggests that environmental initiatives should be inclusive and not gender biased. Marketers and policymakers should focus on universal messaging that appeals to both men and women, rather than gender-specific strategies, in their efforts to promote reusable bag usage. Policymakers can use this research's insights to develop educational programs aimed at raising public awareness about the environmental impact of plastic bag use. These programs should emphasize the identified determinants of intention and provide practical information on the benefits of using reusable bags, making it easier for individuals to make eco-conscious choices. Policymakers and retailers can work together to improve the infrastructure and convenience of using reusable bags. This might include providing incentives for customers who bring their bags, ensuring accessibility to reusable bags in stores, and offering rewards or discounts for using them. Such initiatives can make it more convenient for individuals to choose sustainable options. Moreover, the findings of this research can advocate the formulation of policies and regulations aimed at reducing plastic bag consumption. For instance, policymakers may consider implementing plastic bag bans or levies on single-use bags while promoting reusable bags through targeted campaigns.

Theoretical Implications

This study contributes to the theoretical landscape of sustainable behavior in several ways. At first, by identifying attitudes, convenience, and environmental concern as significant determinants of customers' intention to use reusable bags in Indonesia, this research reinforces the applicability of established theory such as Theory of Planned Behavior in the Indonesian context, enriching understanding of how these factors operate in the unique cultural setting. Also, the study's investigation into gender differences in the intention to use reusable bags offers a nuanced perspective. This study's results, specific to Indonesia, contribute to the broader discussion of gender dynamics in sustainable consumer behavior, emphasizing the importance of considering cultural and social contexts when analyzing the impact of gender on

environmental decision-making. Moreover, Indonesia's status as an emerging economy makes it an intriguing case study for understanding consumer behavior related to sustainable practices. The findings of this research contribute to the development of theories and models that better account for the unique challenges and opportunities emerging economies present in promoting environmentally conscious behavior.

Limitations and Future Suggestions

In this study, the sampling location was limited to Jakarta's residents only. The sampling frame was also limited to customers who shop in minimarkets or grocery stores where the researchers distributed the questionnaires. Moreover, this research was done through a quantitative method. Thus, in-depth information from the respondents needed to be included in this research. Future researchers can also conduct studies with a qualitative method so that they can gain more in-depth information from the respondents. Furthermore, since studies regarding this issue still need to be improved in Indonesia, more research should be done in other cities and rural areas in Indonesia to generalize the findings. Lastly, only some variables were tested in this research. Future researchers can also consider other variables to know more about consumer behavior in this topic.

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