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The more concerned you are, the greener you are: The role of consumer personality towards adoption of biobased shopping bags



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Abstract

Plastic waste is known as the worst pollutant to our environment, with single-use plastic shopping bags perceived as the biggest cause of this issue. However, despite massive actions undertaken by environmentalists and government agencies to promote the adoption of biobased shopping bags, human behavior towards single-use plastic shopping bag consumption continues to persist and unfortunately, is soaring. To address this issue, we propose that consumer personality traits significantly influence this behavior. Therefore, we apply motive disposition theory (MDT) and institutional theory to examine consumers' motives, specifically focusing on the power motive and the institutions that influence them. By employing an online survey and moderated mediation analysis, a sample of 207 individuals was engaged to investigate the influence of consumers' power motives on green consumption towards biobased shopping bags. The results indicate that this relationship is contingent upon the mediating role of consumer environmental concern. Additionally, it has been observed that the level of adoption is even stronger when consumers perceive that knowledge supporting environmentally friendly behavior is accessible to them.

Keywords: Biobased shopping bags, single-use plastic bags, plastic waste, consumer personality, green consumption, consumer environmental concern, moderated mediation analysis

1. Introduction

People nowadays might not be able to imagine life without plastic. Yet, its large-scale production and usage only dates back to the mid-20th century (Geyer et al., 2017). As a versatile and strong material, plastic is easy and cheap to make; therefore, plastic is known as a top material choice to fulfill myriad applications. However, plastic waste is a planetary threat to the environment (Borrelle et al., 2020). It is found everywhere, from populated cities to deserts, from mountaintops to the deep ocean, in tropical landfills and even in Arctic snow (Luo et al., 2022; MacLeod et

al., 2021). Plastic waste is a poorly reversible pollutant because its natural removal can be on the scale of decades to centuries (Chamas et al., 2020). This is a huge concern because if the plastic pollution accumulation exceeds the effect threshold, it will be impossible to rapidly reduce pollution levels below the threshold (Arp et al., 2021; MacLeod et al., 2014). Plastic is also known as an anthropogenic problem that causes environmental harm and potentially threatens human health (Singh & Ordoñez, 2016; Wright & Kelly, 2017).

Global emissions of plastic waste into aquatic ecosystems were estimated to be from 19 to 23 million metric tons in 2016 and are predicted to reach up to 53 million metric tons per year by 2030 (Borrelle et al., 2020). Out of those numbers, the usage of single-use plastic bags is perceived as the dominant cause. In fact, plastic bag usage in the United States alone has tripled since the start of the COVID-19 pandemic, mostly for food delivery. Unsurprisingly,

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these numbers cause a huge environmental challenge, and there are no countries in the world that are not struggling managing current volumes of plastic waste (Kaza et al., 2018). Realizing this fact, at least 127 nations have implemented policies that have banned or taxed single-use plastic bags (Aragaw, 2020; Parker, 2019). Yet, although bag regulations have proliferated quickly, their effectiveness remains an unanswered question.

Although several governments have been promoting green consumption (GC) policies to lessen usage of single-use plastic shopping bags, consumers' awareness of these policies is still considered low. Such policies vary across the globe and include taxes, bans, and voluntary initiatives (Muposhi et al., 2022; Nielsen et al., 2019; Xanthos & Walker, 2017). Unlike European Union members, most nations in Asia and Africa have implemented a plastic bag ban rather than a plastic bag tax. Bangladesh, India, Taiwan, and China were the first to introduce bans in Asia (Gupta, 2011; He, 2012; Larsen & Venkova, 2014). Reacting to these policies, some people have consciously reduced their use of plastic and even advocate "less-plastic" behavior. Unfortunately, other people, with their different circumstances, still refuse to apply those policies. For example, in China, the imposition of charges for plastic shopping bags demonstrates the boomerang effect, wherein the implementation of a pricing policy has resulted in unintended consequences (Wang & Li, 2021). Although the program reduces the utilization of plastic carrier bags by 44%, the overall use of plastic bags is on the rise. This is primarily because of the extensive utilization of complimentary inner packaging bags as substitutes for plastic shopping bags (Wang & Li, 2021). Consumers are disproportionately impacted by the pricing strategy and exhibit distinct behaviors in their utilization of plastic bags. This is unfortunate, since the success of such policy implementation is urgently needed. Thus, research is needed on understanding why consumers are either keen on or choose to ignore this policy.

Despite its urgency and importance, research on this topic mostly relies on external factors, predominantly focusing on organization and institution aspects surrounding consumers. Although factors affecting individuals' adoption of GC behaviors (including using less plastic material) have been exam-

ined for several decades (e.g., Muposhi et al., 2021; Muralidharan & Sheehan, 2016), the application of the findings still leaves a lot of homework. For example, the success of implementing such behavior is said to rely not only on the surrounding environment but also on individual aspects (Moisander, 2007). Yet, GC studies focusing on individual aspects and external dynamics are still limited. Therefore, having individuals' perspectives on understanding their own behavior in terms of adopting or rejecting GC actions, such as using less single-use plastic bags, is needed.

Motive disposition theory (McClelland et al., 1989) and institutional theory (Kostova, 1997) can be used to address this issue. Motive disposition theory (MDT) highlights motives as the basic determinants underlying many cognitive and behavioral differences across individuals (Sheldon & Schuler, 2011). Thus, the theory can be utilized to understand why some individuals tend to either adopt or avoid adopting pro-environmental behaviors, such as GC of bio-based shopping bags, in order to pursue satisfaction or avoid dissatisfaction. In sum, according to MDT, in performing any behaviors, whether good or bad, individuals aim to pursue satisfaction or avoid dissatisfaction. This theory is important because a considerable part of an individual's competencies and behavioral orientations is rooted in that individual's personal motives (Schultheiss & Kollner, 2014), including environmentally friendly behavior (Ploum et al., 2018; Sung & Park, 2018). The power motive, specifically, can be used to probe whether an individual's power motive plays an essential role in their pro-environmental behaviors because, empirically, the power motive is the antecedent of pro-social and pro-environmental behaviors (Handrito et al., 2021; Hermans et al., 2017; Magee & Langner, 2008; McClelland, 1985). In this study, we posit that the tendency towards GC of biobased shopping bags is pro-social and pro-environmental behaviors.

Not only is the implementation of pro-environmental policies driven by internal (personal) aspects, such as environmental concern or a responsibility to take care of the environment (Sanny et al., 2022; Suhartanto et al, 2022), but also external aspects, such as surrounding regulation and political decisions (Bansal & Roth, 2000; Moisander, 2007). Therefore, in this study we also explore external aspects, such as legislation, customers, media, and stakeholder

pressure. Further, we borrow institutional aspects (regulative, normative, and cognitive) (Kostova, 1997) to be integrated with the individual aspects. Individuals may behave differently depending on the surrounding regulations, norms, and social values of where they live (Urbano et al., 2019). For example, individuals follow pro-environmental policies, not just to comply with governmental regulations, but also to gain social recognition and follow norms (Brockhaus et al., 2017). Therefore, utilizing two concepts in understanding individuals' behaviors may provide a better understanding of this field of research.

2. Study setting

In aiming to analyze consumer personality on understanding GC, we chose Indonesia as the research context because the country is home to 4 of the 20 most polluted 20 rivers in the world (Hotz, 2015; Whiting, 2019). Although the Government of Indonesia has made efforts towards addressing plastic pollution, such as having a paid plastic shopping bag policy since 2016 (WEF, 2016), Indonesia still produces plastic waste of up to 64 million tons per year, 5% of which is dumped into the sea. Moreover, 10 billion plastic shopping bags, equal to 85,000 tons, are released into the environment per year. These facts made Indonesia, an emerging dynamic middle-income economy, a natural fit as our study setting.

The context of Indonesia provides opportunities to understand how the public engages in pro-environmental issues – even in circumstances that desperately call for environmental attention. Vast research in social and personality psychology demonstrates the effects of personality constructs on many types of behaviors are moderated by context and other considerations (Goss, 2005; Laurin et al., 2011; McClelland, 1996). In addition, context allows us to test whether management theories developed in Western settings, such as MDT, are also applicable in less developed countries (Li & Peng, 2008; Meyer & Peng, 2016). This is also beneficial as, demographically, Asian-based green buying/consumption behavior studies are relatively scant.

Considering those rationales, this study uses theoretical, methodological, and empirical approaches to explore GC behaviors. The first approach, theoretical, includes introducing personality aspects on under-

standing GC behaviors. Involving this aspect in the environmental field of research can provide a more thorough approach for academia and policy makers to propose models for better policy effectiveness in solving environmental problems, especially plastic waste. Second, the methodological approach explores a moderated mediation relationship between individual aspects and institutional perspective. This analysis explains the complexity involved in relationships and provides suggestions of which factors should be treated in the process of formulating policy. Lastly, from an empirical perspective, by connecting Indonesia as the country context, this study provides better insight into why the environmental problems in Indonesia persist for decades. This multi-part approach is expected to support a tailor-made policy on solving environmental problems in less developed countries in general and Indonesia in particular.

3. Theoretical background and hypotheses development

3.1 Power Motive, Consumer Environmental Concern, and Green Consumption.

As a multifaceted concept, personality can be differentiated into several dimensions including values, traits, and motives (Hofer et al., 2008; Winter et al., 1998). We focus on motive and, therefore, borrow MDT (McClelland et al., 1989) because it drives persons to perform actions either to achieve satisfaction or to avoid dissatisfaction/disappointments (McClelland, 1985; McClelland et al., 1989). Relevant to green behavior, Moisaner (2007) proposes the inclusion of motivation in green consumerism studies. Moreover, motive is formed through individuals' early lives, based on affect-related experiences, and is relatively stable (Kollner & Schultheiss, 2014; Schultheiss et al., 2014). As a result, motive is deeply rooted in individuals' personalities and affects their behaviors, good or bad. Hence, MDT has been implemented in various research studies, such as in areas of sport (Wegner et al., 2014), workplace and career (Fodor & Riordan, 1995), environment (Handrito et al., 2021; Hermans et al., 2017), entrepreneurship (Handrito et al., 2020; Zhang et al., 2016), education (Pang & Schultheiss, 2005), leadership (McClelland & Burnham, 2008), and even in marketing (Coreynen et al., 2020; Slabbinck & Spruyt, 2022; Songa et al.,

2019). In addition, motive is capable of answering “why” a certain behavior is performed (Engel et al., 2002). Therefore, MDT can be used to explore why some consumers tend to engage in green behaviors while others do not.

Motive disposition theory also explains that individuals are driven by three basic motives or needs: achievement, affiliation, and power (McClelland, 1985; McClelland et al., 1989; Schultheiss & Brunstein, 2010). People motivated by achievement tend to improve their performance or their standards (Litwin, 1966; McClelland, 1965b, 1965a). This motive encourages individuals to engage in challenging tasks and delivers satisfaction when they successfully master the tasks (McClelland, 1961). The need for affiliation is a motive to seek satisfaction by maintaining closeness and love and avoiding conflicts with others (McClelland, 1985). It drives individuals towards social interaction and delivers satisfaction when social ties with others can be built, maintained, or restored (Wegner et al., 2014). The need for power or the power motive refers to satisfaction derived from one’s ability to influence, control, or impress others (Fodor, 2010; McClelland, 1975; McClelland & Watson, 1973). The need for power is also linked to bad or negative behaviors such as war (McClelland, 1985) and anger (Bender & Woike, 2010). Previous studies confirm that individuals who are driven by a strong power motive are more likely to engage in certain activities that provide an ego boost and can confirm or improve their social status (Kehr, 2004). It also relates to pro-social behavior (Hermans et al., 2017) as well as environmentally friendly behavior (Handrito et al., 2021).

With respect to intentions and behaviors, researchers categorized “pro-environment behaviors” as a subset of prosocial behavior (Hopper & Nielsen, 1991; McCarty & Shrum, 1994). The prosocial behavior itself is value-laden, meaning that the values that individuals hold will influence their behaviors that work for societal good. These behavior characteristics are intersected with social impact, social status, and ego boost, represented by power motive. This is also supported by prior studies, which state that the power motive is linked to prosocial intentions (Magee & Langner, 2008; McClelland, 1985). Therefore, we posit that power-motivated individuals might only act in pro-environmental ways if they are socially re-

warded and satisfied for performing such behaviors.

Following this logic, Griskevicius et al. (2010) show that power motivated people exhibit an increased desire for approaching green products when shopping in public, but not in private. Also, Handrito et al. (2021) find that small and medium-sized enterprises (SMEs) led by entrepreneurs that are motivated by the need for power tend to engage with environmental sustainability orientation when the surrounding environments provide acknowledgements or rewards towards this behavior. Further, the relationship between need for power to GC behaviors can be cascaded and traced back from the features embedded into GC.

Green consumption also refers to the process through which consumers decide whether to purchase or not purchase a green product based on environmental considerations (Peattie, 2010). Known for the reduction of excessive consumption, GC appeals to consumers who demonstrate environmentally friendly behavior, or at least, are aware of social and environmental sustainability (Lin & Niu, 2018). This means that the purchase decision to use more environmentally friendly products, such as biobased shopping bags, instead of single-use plastic shopping bags, is mostly determined by the individual’s awareness of sustainability and their responsibility to protect the environment (Adomako & Nguyen, 2020; Nguyen, et al., 2021). This awareness that can raise preference for environmentally friendly products is consumer environmental concern or CEC (Suki, 2013).

Lin and Niu (2018) stated that the consumer’s GC behavior could not be established unless social norms were internalized. A study of CEC and green purchase intention of environmentally friendly electrical products in Nigeria found that there is an attitude-behavior gap or a clear inconsistency between attitudes towards GC and the actual behavior (Ayodele et al., 2017). Since social norms and behavioral control moderate the relationship between individual intentions and behavior (De Pelsmacker & Janssens, 2007), it is possible that although consumers comply with accepted social norms, it is not reflected in their individual consumption behavior (Carrington et al., 2010). On the other hand, there may be specific factors that spur low environmental concern, such as social influence from a less green-oriented community, lack of recognition of green

products, and low enforcement of green regulation by the government (Ayodele et al., 2017).

Consumers construct social norms when they believe that certain acts are inevitable and decide whether they should execute those behaviors or not. The norms are found to force and pressurize individuals to behave more environmentally friendly (Rustam et al., 2020) and are usually affected by the perceptions of people around the consumers (Sabeen et al., 2022). For example, people purchase green products since they are convinced by their social connections such as family, friends, social influencers (e.g., celebrities), and inspirational leaders (Minton & Rose, 1997).

There is also the view that green consumption is actually a problematic concept, however, since the word “green” implies the conservation of environmental resources, while the word “consumption” generally involves their destruction (Peattie, 2010). Critics argue that GC behaviors only superficially tackle current environmental issues (Kilbourne et al., 2002). By reducing consumers’ guilt because they feel they are doing some pro-environmental action, GC behaviors may perpetuate the process of overconsumption (Bordwell, 2002).

The features embedded in CEC and GC fit into the main characteristics of power motive. In sum, CEC and GC are the behaviors that are socially exposed, socially rewarded, and encouraged by the authorities. For these reasons as well as the finding that a power-motivated individual seeks attention and tends to engage with social impact (Fodor, 2010; Hermans et al., 2017, Handrito et al., 2021), we argue that the higher level of individuals’ power motive will lead to a higher likelihood that they will be more aware of green products and apply GC behavior, which is, in our case, using biobased shopping bags.

In a lot of cases in less developed countries, price becomes a sensitive factor for making a purchase decision on a green product (Suki, 2013). With its nature of production (i.e., recycle/reusable, not polluting the environment, and containing natural ingredients), green products are mostly more expensive than their less environmentally friendly substitutes. For example, in modern retail in Indonesia, the price of a biobased shopping bags can be as much as 50 times more expensive than a single-use plastic bag. This price gap, usually called “premium price” only

can be understood by environmentally conscious consumers because they already have the awareness of the importance of green products. Although studies show that Indonesians are ready to adopt green products (e.g., Larasatie et al., 2023) and are even willing to pay premium price (e.g., Larasatie, 2018), the limited awareness of the benefits of using biobased shopping bags can contribute to the low rate of using this type of green product (Muralidharan & Sheehan, 2016).

A dialectical perspective of non-plastic bag consumption in Australia explained that carrying a green, reusable bag in public is a symbolic possession, used to communicate membership in an environmentally conscious local community (Cherrier, 2006). The availability of environmentally friendly shopping bags has been seen as a symbol of collective action and a sustainable way of life, suggesting that the individual carrying the bag is a thoughtful person concerning the environment. However, such individuals must first be aware that the environmentally friendly shopping bag option exists and then be motivated to bring the bags regularly on their shopping trips. The latter is expected to become their daily habit.

Nevertheless, although the increase in awareness can result positively in more GC, social norms may not have a meaningful effect in using environmentally friendly shopping bags (Brien & Thondhlana, 2019; Cherrier, 2006; Zambrano-monserrate & Alejandra, 2020). This circumstance can happen when consumers already have high environmental awareness, so the social pressure of people who are considered important around consumers would not have any meaningful influence toward using environmentally friendly shopping bags.

3.2 Moderation of institutional aspects on the relationship between consumer environmental concern and green consumption.

Individuals’ behaviors may also be shaped by their surrounding environment. The institution is seen as a shared value that governs social and economic behavior and exchange in a certain country (Chiles et al., 2016; Gupta et al., 2014). Institutionalists believe that the institution sets norms and standards of behavior, reinforcing certain behaviors, and shaping the way of thinking of society in general (Busenitz et al., 2000; Valdez & Richardson, 2013), including

consumption behavior. For example, countries with good institutional policy towards environmental protection tend to have a higher level of CEC and fewer environmental problems.

The institutional factors refer to the regulatory mechanism which directs and controls GC behavior and firm eco-sustainability (Moisander et al., 2010). According to Junsheng et al., (2020), institutional pressure enables firms to promote sustainability and meet stakeholders' demands. The nexus of environmentally friendly behavior and green buying can be affected by multiple economic factors, such as inflation (Joshi & Rahman, 2015). The factors can restrict GC and increase attitude-behavior conflict in green buying. In contrast, environmental awareness bridges the communication gap between firms and their stakeholders/consumers (Ting et al., 2019).

Yet, important to note is that the term "institution" is a multidimensional construct comprising three dimensions: regulative, normative, and cognitive dimensions (Ahlstrom & Bruton, 2010; Busenitz et al., 2000), which are all related to consumer behavior. This study builds upon these findings and investigates the role of institutions surrounding consumers towards their GC behaviors.

The regulative dimension refers to the formal set of laws, economic policies, formal regulations, and the role that the government applies to stimulate certain behaviors in each country (Busenitz et al., 2000; Manolova et al., 2008). The regulative framework is formed to ensure that the policy is obeyed, so it is equipped with monitoring, rewarding, and sanctioning protocols (Veciana & Urbano, 2008). Thus, they impact an individual's future actions (Valdez & Richardson, 2013). A good regulative framework facilitates the establishment of a long-term business strategy (Veciana & Urbano, 2008) because it secures the legitimacy for the future survival of the business (Bruton et al., 2010; Gao et al., 2017).

However, in general, if society perceives that the surrounding regulation does not support certain behaviors, then their willingness to act according to specific policy will be low. In the context of our research, we refer to regulation and policy of limiting the usage of single-use plastic bags and GC. Hence, society's perception that surrounding regulations promote GC is important within a country. In other words, when consumers perceive that regulation of

single-use plastic bags provides clear rules, rewards, and sanctions related to environmentally friendly behaviors (Zang et al., 2023), they will be likely to engage and perform GC behaviors in their daily lives: i.e., using fewer single-use plastic bags and converting to the usage of biobased shopping bags. Across the globe, the regulations related to single-use plastic bags are varied, depending on the culture, economy, and social environment. In our context, Indonesia has implemented a regulation to reduce the usage of single-use plastic bags by charging some amount of money for purchasing single-use plastic bags during shopping. However, there is not yet a total ban on this product in Indonesia.

The normative dimension becomes a guidance within a society because it comprises social values, norms, beliefs, and assumptions perceived by society (Bruton et al., 2010; Kostova, 1997). An example of this dimension is religion (Assouad & Parboteeah, 2017; Parboteeah et al., 2008). Although the normative dimension is less formal (compared to the regulative dimension), it is more well-accepted as legitimate rules (Doh et al., 2009) in emerging countries (García-Cabrera et al., 2016) because it is rooted in cultures, wisely inherited, and transformed into social obligation (Valdez & Richardson, 2013). Therefore, the normative dimension tends to be more consistent (Hitt, 2016) and is difficult to change (Bruton et al., 2010). In sum, if consumers perceive that they are surrounded by a society that supports environmentally friendly behaviors and that performing GC is socially rewarded, they will be more likely to engage in GC.

Busenitz et al. (2000) defines the cognitive dimension as the knowledge and skills possessed by people in a society to establish and operate a new business. It also refers to social knowledge shared by people (Veciana & Urbano, 2008). The cognitive dimension is everything that is possessed by individuals through social and formal interaction within society (Manolova et al., 2008). For example, individual cognition is formed through education and training, which eventually turns into a belief and standard of behavior (in this case: GC behavior). These examples strongly hint towards the idea that environmentally friendly knowledge thrives in the adoption of biobased shopping bags (Luo et al., 2022).

Based on those arguments, we posit that institutional dimensions may provide an environmentally

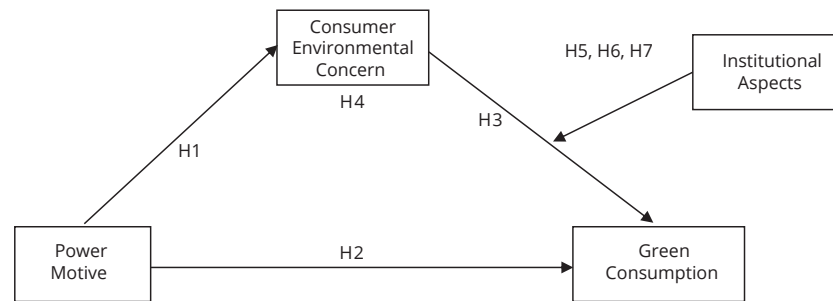


Figure 1. Theoretical model.

friendly atmosphere in society. This is attractive for individuals with power motive who have CEC towards plastic waste issues. Individuals who pay more attention to the environmental threat of using single-use plastic shopping bags will be likely to purchase or consume biobased shopping bags if the surrounding institution supports this behavior.

Specifically, if surrounding regulations provide clear rules, rewards, or even punishment related to environmentally friendly behavior, individuals with CEC will turn their attitude into behavior by consuming biobased shopping bags. Also, if society provides support and social reward for individuals who perform environmentally friendly behaviors, consumers are more likely to adopt biobased shopping bags. Lastly, if consumers who are aware of green products can easily access (or are widely exposed by) knowledge of environmentally friendly policy and behavior, the more likely it is that they will consume biobased shopping bags.

Based on these logics, we propose seven hypotheses (see also Figure 1) as follows:

H1: Consumers with a high level of power motive tend to have more environmental concern.

H2: Consumers with a high level of power motive have a higher tendency to adopt green consumption of using biobased shopping bags.

H3: Consumers with a high level of consumer environmental concern have a tendency to adopt green consumption of biobased shopping bags.

H4: The relationship between consumers' power motive and consumer green consumption is mediated by consumer environmental concern.

H5: Consumers with a high level of consumer environmental concern will be more engaged

in green consumption if they perceive that surrounding regulation supports environmentally friendly behavior.

H6: Consumers with a high level of consumer environmental concern will be more engaged in green consumption if they perceive that they are surrounded by environmentally friendly society.

H7: Consumers with a high level of consumer environmental concern will be more engaged in green consumption if they perceive that knowledge of environmentally friendly behavior is easily accessible.

4. Method

4.1 Sample and procedures

This study is a part of a sustainable consumption behavior project with an overall goal to assess consumers' green behavior towards biobased shopping bags and legal wood (Larasatie et al., 2023). This study was conducted in Semarang and Salatiga, two cities in Central Java Province, Indonesia. Semarang is the capital and largest city of Central Java Province, while Salatiga, as one of the closest cities to Semarang, has been long associated with its economic development. However, although they are in one agglomeration area, both cities have different prominent environmental regulation applications, including the usage of shopping bags in modern retail. Thus, having these two cities as study areas gives the advantage of having various contexts for understanding GC behavior in general and at a greater level.

We recruited respondents by posting open invitations through WhatsApp groups and social media platforms such as Facebook and Instagram. This ensures the reachability of our survey to various

type of consumers. To be eligible, potential respondents were asked whether they had the experience of shopping in modern retail outlets. This question was employed to minimize sample selection bias (Heckman, 1979). Involving two cities that are implementing different policies on single-use plastic vs. biobased shopping bags also gave us a chance to avoid sample selection bias. Moreover, we only included respondents who were over 17 years old to ensure their independence and awareness towards the survey topic.

The survey was administered online through Qualtrics. During the data gathering process, we minimized the risk of common method bias (Podsakoff et al., 2012) by applying two procedures. First, a consent form was provided at the beginning of the questionnaire mentioning the obligation, consequence, anonymity, and reward for completing the survey, as well as the right to withdraw their responses upon the completion of the survey. Second, we instructed the respondents that there are no "right" or "wrong" answers.

We limited the data collection process to only two weeks in August 2022 because we considered that our study involved a dynamic perception; therefore a relatively short-term survey was important in order to capture the phenomena, rather than a longer time frame. The average time to complete the questionnaire was 10 minutes. For every completed questionnaire, we provided a chance to win e-money vouchers by lucky draws. In total, we obtained 207 eligible responses.

We are confident that this sample is fair and represents the population. To assure that the content validity of each statement is relevant to Indonesians, the questionnaire was translated by a sworn translator. During the multiple steps of translation and adaptation, divergences of language clarity (e.g., potential ambiguous items) were discussed and corrected by consensus.

4.2 Measures

We measured **power motive** using 10 items of the Unified Motive Scales (UMS) developed by Schönbrodt and Gerstenberg (2012). The sample items of the scale are: "The opportunity to exercise control over an organization or group" and "I have little interest in leading others" as a reverse question. This measure

is best known to assess one's motive in empirical research setting because it has shorter items and requires fewer procedural approaches compared to other power motive measurements. **Consumer environmental concern** was measured by instruments adapted from Suki (2013). The measurement consists of three items; "Environmental issues are an emergency issue", "Environmental issues are consumers' responsibility", and "I am worried about how all of my activities affect the environment". **Institutional aspects (regulative, normative, and cognitive)** were assessed using institutional measurement adapted from Busenitz et al. (2000). An example item is "The government helps environmentally friendly organizations". **Green consumption** was assessed using the adaptation of GREEN scales, developed by Haws et al. (2014). Example items include: "It is important to me to use biobased shopping bags" and "I am willing to be inconvenienced in order to use biobased shopping bags".

We adjusted our measurement of GC, CEC, and institutional aspects that fit into our study context on biobased shopping bags usage. All measurements were rated on a 5-point scale (1 = strongly disagree to 5 = strongly agree). To avoid any potential confounding effects on the dependent variables, this study used demographic variables such as gender, education, income, and age as **control variables**. Prior studies characterized environmentally sensitive consumers as mostly consisting of women, those with better educational background, having higher incomes, and being relatively younger (Zeynalova & Namazova, 2022). For instance, women are believed to have attitudes more consistent with the green movement since they more carefully consider the impact of their actions on other people due to gender differences in social behavior (Straughan & Roberts, 1999).

To ensure that common method variance was minimum, we performed Harmann single factor: a single factor test shows that the extraction of total variance explained by one factor is 26.3%, which is below the minimum level (50%) (Podsakoff & Organ, 1986).

5. Results

Our sample was relatively balanced with respect to gender (men vs. women) and income (high vs. mid-low) variables, but was dominated by Millennials and

Generation X (Table 1). The respondents' background also leaned towards mid-low education level.

Table 2 shows descriptive statistics and correlation among variables. As shown, not all demographic variables were significantly correlated. Therefore, non-significant variables will be excluded in the next analysis. The predictor variables were significantly correlated with all core variables: thus, this prompts further investigation. The result shows that power motive was significantly correlated to CEC ($r = 0.248$,

$p < 0.01$) and GC ($r = 0.264$, $p < 0.01$). Likewise, an institutional variable consisting of regulative ($r = 0.499$, $p < 0.01$), normative ($r = 0.355$, $p < 0.01$), and cognitive dimensions ($r = 0.396$, $p < 0.01$) was significantly correlated to GC. Similarly, CEC was correlated to GC ($r = 0.372$, $p < 0.01$).

We also performed confirmatory factor analysis including all indicators used in this study with factor loadings, reliability, and AVE shown in Table 3. Based on Hair et al. (2010), emphasizing 0.5 or higher as a rule of thumb for the minimum loading of an item with no cross-loadings, the results in Table 3 show that the measurement used in this study was valid.

Table 4 presents the results of the main effect, mediation effect, and moderation-mediation effect ($R^2 = 0.304$, $MSE = 0.194$, $F = 22.013$, $df_1 = 4.000$, $df_2 = 201.000$, $p = 0.000$). To examine the main effect, we performed a linear regression. Hypothesis 1 proposes that consumers with a high level of power motive tend to have more environmental concern. The analysis showed that the power motive on CEC was significantly associated. Therefore hypothesis 1 is supported.

Hypothesis 2 predicts that consumers with a high level of power motive have a higher tendency to adopt GC. As shown in Table 4, the power motive on GC was positively significant. Therefore, hypothesis 2 is also supported.

Further, hypothesis 3 proposes that consumers with a high level of CEC have a tendency to adopt GC. The results showed that CEC on GC was positively

Table 1. Respondents' demographics.

Variables	Respondents (n = 207)	
	Number in each category	% of total
Gender		
Men	100	48
Women	107	52
Education		
High	63	30
Mid-Low	144	70
Income		
High	113	54
Mid-Low	114	55
Age (years)		
<20	21	10
21-30	31	16
31-40	67	32
41-50	67	32
>50	21	10

Table 2. Descriptive statistics and correlation among main and control variables.

Correlations	Mean	SD	1	2	3	4	5	6	7	8	9	10
Gender	1.48	0.50	1									
Education	1.80	0.40	-0.050	1								
Income	1.36	0.48	-0.191*	0.379**	1							
Age	39.00	10.44	-0.170*	0.432**	0.329**	1						
Power motive	3.69	0.45	-0.217**	0.178*	0.235**	0.062	1					
Regulative	4.17	0.73	-0.012	0.024	-0.015	0.052	0.023	1				
Normative	3.66	0.76	-0.008	-0.115	-0.166*	0.000	0.144*	0.494**	1			
Cognitive	3.88	0.66	-0.067	-0.076	-0.092	-0.029	0.058	0.481**	0.611**	1		
GC	4.39	0.52	0.030	0.127	0.099	-0.005	0.264**	0.499**	0.355**	0.396**	1	
CEC	3.80	0.68	-0.007	0.136	0.043	-0.199**	0.248**	0.187**	0.196**	0.175*	0.372**	1

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

CEC: Consumer environmental concern, GC: Green consumption

Table 3. Measurement validation.

	Component					Composite Reliability	Cronbach Alpha	AVE
	1	2	3	4	5			
Reg1	0.223	0.859	0.242	0.107	-0.003	0.9	0.78	0.7
Reg2	0.253	0.863	0.230	0.169	0.023			
Reg3	0.279	0.845	0.193	0.193	0.016			
Reg4	0.198	0.794	0.131	0.216	0.135			
Cog1	0.046	0.226	0.297	0.694	0.113	0.8	0.88	0.506
Cog2	0.233	0.206	0.176	0.778	-0.009			
Cog3	-0.014	0.156	0.433	0.591	0.026			
Cog4	0.313	0.088	0.179	0.768	0.033			
Norm1	0.119	0.216	0.798	0.276	-0.011	0.83	0.8	0.6
Norm2	0.063	0.299	0.755	0.187	0.104			
Norm3	0.161	0.165	0.816	0.192	0.156			
Norm4	0.204	0.088	0.761	0.218	-0.075			
GC1	0.841	0.192	0.064	0.021	0.057	0.9	0.833	0.61
GC2	0.762	0.190	0.166	0.051	0.205			
GC3	0.805	0.188	0.082	0.219	0.144			
GC4	0.720	0.192	0.060	0.148	0.113			
GC5	0.802	0.118	0.069	0.201	0.034			
GC6	0.781	0.131	0.203	0.056	0.140			
CEC1	0.313	0.185	-0.113	0.014	0.550	0.71	0.6	0.455
CEC2	0.006	-0.008	0.277	-0.006	0.685			
CEC3	0.223	-0.017	-0.048	0.100	0.772			

Reg: Regulative, Cog: Cognitive, Norm: Normative, GC: Green consumption, CEC: Consumer environmental concern

Table 4. Moderated mediation result.

	Coeff	SE	t	p	LLCI	ULCI
Power motive to CEC	0.367	0.102	3.57	0.000	0.164	0.570
CEC to GC	0.518	0.236	2.19	0.029	0.051	0.985
Regulative to GC	0.609	0.202	3.014	0.003	0.21	1.008
Normative to GC	0.157	0.225	0.699	0.485	-0.286	0.6
Cognitive to GC	0.868	0.248	3.497	0.000	0.378	1.358
Moderation regulative	-0.077	0.054	-1.433	0.153	-0.184	0.029
Moderation normative	0.01	0.057	0.174	0.861	-0.103	0.123
Moderation cognitive	-0.153	0.062	-2.451	0.015	-0.277	-0.03
Power motive to GC	0.212	0.07	3.009	0.003	0.0731	0.3512

CEC: Consumer environmental concern, GC: Green consumption

associated. Therefore hypothesis 3 is also supported.

To test the mediation effect as well as the mediation-moderation effect, protocols PROCESS Macro (Darlington & Hayes, 2017; Hayes, 2018) were utilized. Hypothesis 4 proposes that the relationship between consumers' power motive and consumer GC is mediated by CEC. Because the relationship between power motive and GC was significantly positive, as well as the relationship between CEC and GC, the mediation of CEC on the relationship between power motive and GC is interpreted as partial mediation. Hypotheses 5, 6, and 7 propose moderation models in which the institutional aspect, consisting of regulative, normative, and cognitive perception, moderates the relationship between CEC and GC. In Table 4, the moderation effect was only significant for cognitive dimension, while regulative and normative were not. Therefore, only hypotheses 7 is supported. Further, to test the moderation effect of cognitive dimension, we tested conditional effects at three levels: one standard deviation above the mean, the mean, and one standard deviation below the mean. As shown in Table 5, the indicator of the mediation, moderated for cognitive aspect, was significant, supporting the presence of a moderation effect. However, from a

Table 5. Simple slope analysis of cognitive aspect.

Cognitive Level	Effect	SE	LLCI	ULCI
Low (-1 SD)	0.33	0.068	0.194	0.465
Med (SD)	0.228	0.047	0.134	0.323
High (+1 SD)	0.127	0.057	0.0139	0.24

moderated mediation test (Hayes, 2018), we failed to see a significant effect [Index -0.056, BootSE 0.040, Boot LLCI -0.147, BootULCI 0.006]. This is likely because of the partial mediation effect between power motive and GC. The results of simple slope analysis of moderation of cognitive are presented in Figure 2.

6. Discussion and conclusion

The results support our hypothesis that consumers with a high level of power motive tend to have more environmental concern. This type of consumer may have a higher tendency to adopt GC towards using biobased shopping bags as well. However, we also found that there is also a significantly positive direct relationship between power motive and GC. These findings show that the occurrence of consumers' GC behavior can be also formed without a precedent of

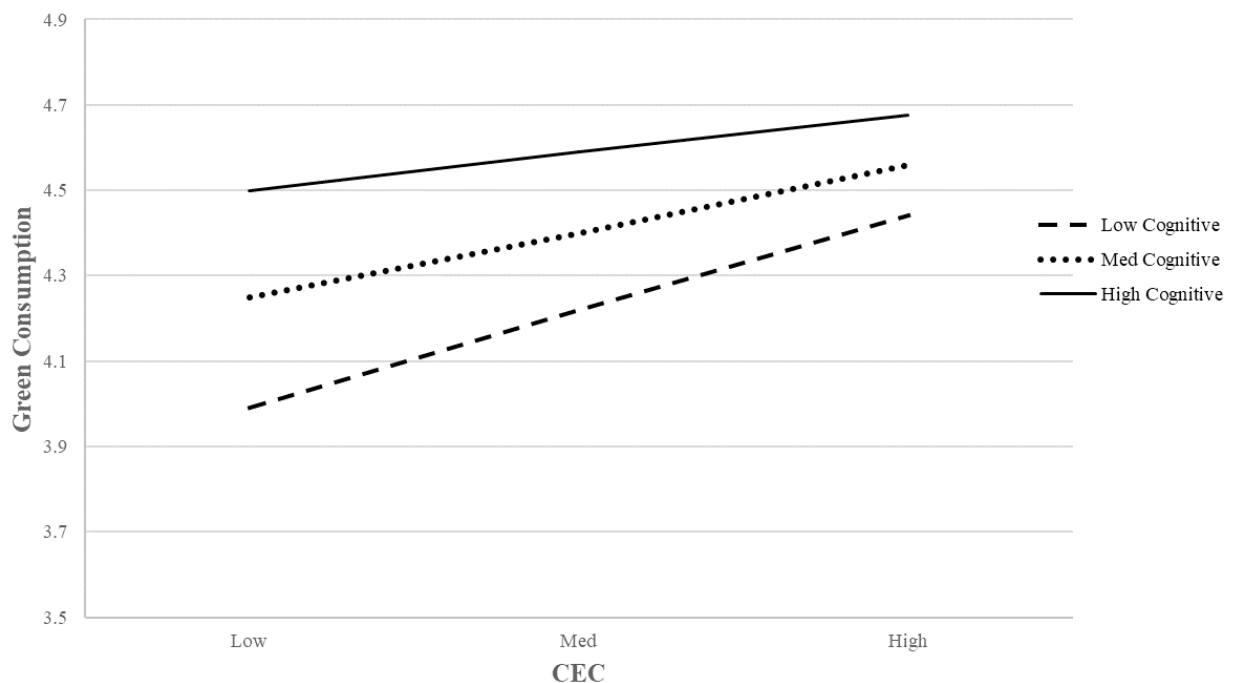


Figure 2. Moderation of cognitive aspect.

CEC. Theoretically, we argue that this is because the characteristics of power motive (e.g., having impact on the society) are fit to the characteristics of GC (e.g., having impact on the environment). Our study is also in line with Moisander's (2007) proposition on the dynamics between motive and behavior in the green behavior context. Although motive is still at the cognitive phase (Fodor, 2010; Winter, 1973), our results show that it can predict GC that is already at a behavioral level. This is because we use an explicit motive measurement, instead of implicit motive; therefore, the surrounding and external factors may already play a role in this relationship.

However, the strength relationship is even higher in the mediation relationship involving CEC. Theoretically, an actual behavior (in this case: GC) is mostly preceded by the awareness of the issue (in this case: CEC), especially for consumers with high power motive. Therefore, the process of translating personal driver or intention towards behavior needs to be bridged by one step, which in this research is represented by CEC.

Individuals' intentions to engage in pro-environment behaviors are strongly influenced by perceived social pressures (Mancha & Yoder, 2015). If consumers are aware that people in their proximity expect them to behave in ecologically conscious ways, this will likely result in significant change in intentions towards pro-environmental behavior. Here, various strategies aimed at increasing awareness of green social norms can be employed to facilitate improved environmental intentions and shape behavior in more environmentally responsible ways. Valued peers and community leaders can be encouraged to provide examples of appropriate behavior. A study of post-consumption plastic packaging in Indonesia finds that social norms play a crucial role in shaping the waste management habits within one's immediate social circle, such as school buddies, work friends, workplace acquaintances, and neighbors (Widayat et al., 2021).

Social media platforms can also be used to promote environmental sustainability behavior. This strategy is beneficial to attract specific demographics such as women and younger generations (Larasatie et al., 2020). A study in the Philippines finds that the potential impact of social media on consumer behavior regarding plastic usage might be significant

when supported by empirical evidence, which can be readily translated into actionable outcomes and directly affect individuals' health (Rapada et al., 2021). Based on these findings, policymakers in Indonesia can create specific content to enhance the effectiveness of sustainability policies.

Our results also show that the moderation effect of institutional aspects between CEC and GC is positive and significant, although the strengthening result is only found in the simple slope analysis for cognitive aspect. This indicates that the accessibility of knowledge towards green and environmentally friendly effects on society may boost the adoption of GC of biobased shopping bags. Further, this indicates that an effort to increase the public's awareness of preserving the environment will be able to achieve its objectives if supported by knowledge surrounding the individual. This finding answers the gap between environmental behavior and its antecedent (Kollmuss & Agyeman, 2002). We argue that the significant moderation of the cognitive dimension in our study, aside from the theoretical framework, is caused by pro-environmental campaigns that have been proclaimed and provided by several institutions and stakeholders in Indonesia. Therefore, consumers, especially in our study, are well exposed to and have plenty of information supporting GC behavior.

Meanwhile, the insignificant role of regulative and normative aspects in our study context is likely because regulation on GC has not yet been perceived as supporting GC behavior. In our study context, Indonesia, the regulation on reducing the usage of single-use plastic bags is less effective because the amount of money charged for purchasing single-use plastic bags is non-significant compared to the total value of shopping. The consumers, in fact, do not mind paying a small amount of money to earn instant practicality in return. Therefore, these results can also provide confirmation for evaluation by stakeholders seeking to formulate and promote a better policy on environmentally friendly regulation.

Hence, our study brings at least two contributions: theoretical and managerial implications. From a theoretical perspective, this study adds evidence that power motive has a positive relationship to pro-environmental behavior (Aydinli et al., 2015; Fodor & Greenier, 1995; Handrito et al., 2021). Our research specifically adds this relationship in the

context of consumer research. Second, by including institutional aspects (Busenitz et al., 2000) for understanding consumers' behavior, our study finds that consumers' behavior indeed does not occur in a vacuum. The surrounding institution plays an important role in consumer behavior, although in this case, only the cognitive aspect is proven to be a significant determinant. This also gives a broader perspective about institutional theory, which is mostly used in entrepreneurial studies (Manolova et al., 2008; Urbano et al., 2019), but is also applicable to consumer research.

Our findings also bring several managerial suggestions for stakeholders to improve policy for stimulating pro-environmental behavior, specifically reducing single-use plastic shopping bags. The result shows that the personality of consumers plays an essential role driving their behavior. The surrounding institution also enhances this relation. Therefore, policies that may shape or increase power motive within society need to be strengthened and more accessible. Since motive is formed from early childhood, such policy may also be taught and informed in school or even before school age. Also, because the cognitive aspect has an important role in later stages, educators and relevant institutions related to knowledge sharing must be involved in the effort of promoting green behavior and GC.

However, although regulative and normative aspects failed to show significant results, we argue that this may be important for Indonesia stakeholders' reflection. A cross national study in sustainable consumption behaviors states that in countries characterized by lower economic resources, external interventions pertaining to the environment can be implemented in a more authoritative manner (Wang, 2017). The stakeholders need to strengthen the quality and application of such regulations so that society will perceive that the surrounding regulations support GC. Eventually, the social norm is expected to be formed.

Our results are also applicable for business practitioners who are responsible for producing and promoting biobased shopping bags. This is not exclusively for companies who already have an awareness of environmentally friendly policy, but also for companies who are still struggling to accommodate this issue. We believe that if the regulation is heavily

reliant on government roles, then the norm towards GC can be tackled by companies who closely work with consumers. There are many examples of how company policies can shape the norm for consumers. In Indonesia, an example is the refill station initiative by PT Unilever Indonesia to reduce the plastic waste of cosmetic packages.

7. Study limitations and future research directions

The authors acknowledge several limitations of this study. First, this is a cross-sectional study in which we are limited to claim causal relationships between variables. Caution must be maintained when considering the generalizability of our findings to less developed countries with similar features to Indonesia. Larger sample studies, at least at the Indonesia national level, and cross-cultural or between nations could be followed up for future research. Second, we identified a cross loading between several items in institutional aspects. This can be caused by the relatively small sample size, but although the validity test showed as satisfactory, common method bias should be considered for future research. Third, the model is indeed significant, with adequate fit. However, with $Adj R^2 = 0.304$, the model indicates that there are still many factors left to better understand how GC towards biobased shopping plastic bags is formed. It could be that another personality type at an individual level and/or strategic policy at an organizational level need to be included in future studies.

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