


“Sustainable initiatives in the food industry: Role of businesses and regulators”

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SUSTAINABLE INITIATIVES IN THE FOOD INDUSTRY: ROLE OF BUSINESSES AND REGULATORS

Abstract

In response to global calls for environmental awareness, the Malaysian government enforced restrictions on plastic usage in the Malaysian foodservice industry in 2020. Despite the efforts of public awareness campaigns championing the detrimental effects of traditional plastic usage, the impact of measures taken by food traders remains inadequate. The paper seeks to explore the relationship between subjective norms, perceived behavioral control, attitude, and the intention to use biodegradable straws among food traders. Purposive sampling method, the Structural Equation Model (SEM), and Partial Least Squares (PLS) tools were employed. The sample included 270 respondents. The result found a significant correlation between the four variables, i.e., subjective norms, perceived behavioral control, attitude, and intention to use. Hence, results obtained indicate that conscientious consumers have a significant influence on businesses in their quest to reduce their overall impact on the surrounding environment. Consequently, their socially responsible decisions, i.e., initiatives of using biodegradable products, have advocated mindful consumerism and encouraged positive purchasing behaviors. The results predict increasing demands as an outcome of this accumulated synergy, and this in turn provides more opportunities for food traders and their associated counterparts. The contributions of this study extend toward both theoretical and practical knowledge: (a) better understanding of consumer attitude and how it influences purchase intention, and (b) government regulation and enforcement towards environmental awareness and activities associated with global contributions.

Keywords

biodegradable straws, theory of planned behavior,
consumer attitude, food operators

JEL Classification

M31, M38

INTRODUCTION

The Ministry of Energy, Science, Technology, Environment, and Climate Change (MESTECC) developed Malaysia's Roadmap to Zero Single-Use Plastics for 2018–2030. The strategy adopts an evidence-based and holistic approach to tackle single-use plastics pollution in Malaysia by incorporating all stakeholders. The roadmap seeks to aid in deploying activities that will redirect the present route into a more balanced path for an unpolluted and better environment by 2030 (MESTECC, 2018). Since the 1950s, plastic has exceeded almost every other material in terms of adaptability and functionality, but this has led to garbage accumulation from single-use disposable plastics. Recycling has barely recovered 9% of the nine billion tonnes of plastic that have been produced thus far. Plastic packaging, carry bags, and single-use goods are all common uses for single-use plastics. As a result, understanding the level of acceptability of trades is essential in this study to restrict the number of plastic straws used in the future (MESTECC, 2018).

Additionally, Malaysia has grown to become a global leader in the plastics industry, and plastic waste pollution in the country has



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reached an all-time high. According to the MESTECC (2018) report, Malaysia yielded 0.94 million tonnes of poorly managed synthetic garbage, some part of which got into the oceans. Sixty countries enacted bans and fines to minimize single-use plastic, but the levies have had little effect. For instance, India intends to reduce the amount of disposable plastic by 2022, while the EU intends to do so by 2030 (Giacovelli et al., 2018). Malaysia has consistently advocated for sustainable development by combining economic expansion with nature protection by the UN Sustainable Development Goals.

The study aims to explore the conjuncture between two intersections of: (i) where plastic pollution and waste could be reduced due to global efforts and increased environmental awareness and environmental concern; and (ii) how micro-practices can have large-scale consequences, and the rate of waste generation and reuse may be indicators of a country's underlying knowledge and mindset. This study is underpinned by the theory of planned behavior (Ajzen, 1985, 1991), which includes the three significant variables that influence human activity: a favorable or unfavorable assessment behavior (state of mind towards behavior), perceived social expectation to either execute or not execute the behavior (subjective standard), and perceived capability to perform the behavior (perceived behavioral control) (Ajzen & Manstead, 2007).

1. LITERATURE REVIEW

1.1. Theory of planned behavior

The theory of planned behavior (TPB) (Ajzen, 1991) is used for predicting human behavior. The TPB offers a model with three components, namely, mental state, subjective norms, and perceived behavioral control. It has a well-established hypothetical and observational foundation (Armitage & Conner, 2001; Ajzen, 1991; Godin & Kok, 1996). According to this theory, a particular set of motivational variables, counting states of mind toward an activity, subjective standard (i.e., a person's recognition of injunctive and pictorial norms in a given population), and observed behavioral control leads to deliberate conduct (Ajzen, 1991). Individuals then decode this deliberate conduct into genuine actions within the correct occasion (Collins et al., 2011). TPB has been bolstered by experimental usage considerations and common psychology-related considerations (Ajzen, 1991; Taylor & Todd, 1997). The concept of planned behavior is widely applied in social psychology.

Ajzen (1991) established a general framework to examine the correlation between the perceived behavioral control, subjective norm, attitude, and traits as independent factors and intention to use as the dependent factor. It also portrayed the link between actual usage and the intention

to use. The findings enable policymakers to better understand the mindsets of traders and operators by establishing the association between the factors of using biodegradable straws and the intention to use them.

The majority of studies conducted purposefully, as documented in the structural reviews, have indicated that the forecasting of deliberate conduct can be accomplished by attitudes toward the activity, subjective standard, and observed behavioral control (McEachan et al., 2011). Thus, behavioral intention has been identified as a critical leading indicator of behavior (Ajzen & Madden, 1986; Ajzen, 1991). According to Fishbein and Ajzen (2005), the intention to perform a behavior is the most important antecedent of the actual performance of the behavior. Otherwise, the person should commit to several thinking developments that will be subjective by multiple variables leading to the planned organization. While intention does not assure the execution of the behavior, previous findings corroborated it as a valid indication, as detailed in structural reviews (McEachan et al., 2011).

Consequently, the TPB is utilized as the underpinning theory. Attitude, subjective norm, and perceived behavior toward biodegradable straws are considered variables that would influence the use of biodegradable straws and the actual behavior of traders in Labuan, Malaysia.

1.2. Intention to use to actual behavior

According to McEachan et al. (2011), investigating the link between intention to perform the behavior and actual behavior is critical because past studies have demonstrated that intention does not always result in action. As a result, this study aims to investigate the connection between intention to use biodegradable straws and actual behavior. The intention to perform a particular behavior is the key component of the TPB (Ajzen, 1991): the more grounded the intention to perform a certain behavior, the more likely its practical implementation. According to the literature, intention accounts for around 30% of the variations in behavior (Armitage & Conner, 2001).

According to the planned behavior hypothesis, behavior execution is a collaborative effort of intentions and observed behavioral control. First, the measures of planned and observed behavioral control must be comparable to Fishbein and Ajzen (1977) or compatible with Ajzen (1991) expected behavior. In other words, intents and perceptions of control must be examined in the specific behavior of the individual, and the defined environment is required to be identical to the one in which one can perform a certain behavior. In addition, for precise behavioral prediction, it is necessary that eagerly and observed behavioral control remains steady over the interval between their evaluation and perception of the behavior (Ajzen, 1991). Mediating cases can cause changes in eagerness or perceptions of behavioral control, with a result that the first measures of these components do not allow for precise predictions of behavior. The third requirement for foreseen legitimacy is the accuracy of observed behavioral control (Ajzen, 1991). As previously stated, behavior expectations from observed behavioral control should evolve until perceptions of behavioral control reasonably represent actual control.

1.3. Attitude and intention to use

Several analysts have employed attitudes to consider human behavior (Kianpour et al., 2017; Zabelina et al., 2021; O'Reilly & Kumar, 2016). Numerous studies have shown that attitude positively affects behavior (Rausch & Kopplin, 2021;

Wang et al., 2016). Fishbein et al. (1980) describe attitude as a person's belief and judgment of behavior. An individual's attitude toward his or her behavior emerges as a result of judgment (Escadas et al., 2020; Schwarz et al., 2021; Vrbová & Müllerová, 2021).

Furthermore, the state of mind regarding something is formed by an outside stimulus that has an impact on forming specific behavior (Rueda et al., 2015; Skinner, 1987). A person's attitude toward genuine concern is a minor determinant in his or her behavior (Cook et al., 2002; Bamberg, 2003). Wiener and Sukhdial (1990) stated that a client with a high level of self-involvement in natural assurance may become locked into repeated exercises. This route also benefited from a high level of conservation-related products (Ebreo et al., 1999).

Rezai et al. (2013) claimed that such features as age, gender, geological area, wage, and education would improve customers' views of a green way of life and consumers' states of mind toward their environment, thus influencing their behavior. Häyrinen et al. (2015) found a similar finding in forest owners' values. Furthermore, they stated that the impact of the Malaysian green campaign on customers worried about nature protection is tied to buyer recognition and attitude toward green zones. People have a diverse set of environmental ideas, attitudes, and values. Individual convictions have the power to affect the underlying issue, causing them to adopt a position and respond to genuine concerns (Zuraidah et al., 2012).

The relationship between one's attitude toward traditional shops and one's purpose to buy has already been extensively explored (Kim & Eastin, 2011). Web analysis revealed that millennials' attitudes increased the simplicity of e-transactions and the usage of e-commerce (Melović et al., 2021). Kumar (2020) and Zhou et al. (2007) researched the correlation between Internet shopping attitudes and purchase intention. Evans (1996) discovered that consumers' shopping attitudes significantly affected their shopping center support. People with favorable attitudes to Internet shopping were apt to make purchases online.

The study conducted by Hassan et al. (2020) among student attitudes toward the environment sug-

gests that the understudy has a good attitude towards the environment at a direct level. According to their findings, students preferred or purchased plastic drinking straws over reusable wooden or stainless-steel straws. The substantially explored section of the mind looks like a vital variable for empowering deliberate conduct toward enticing natural things.

1.4. Subjective norm and intention to use

Subjective norm has been used to refer to the social weight a person feels when deciding whether execute or not execute a behavior (Ajzen, 1991 cited in Khan et al., 2019). That weight is created by the impact of a person's family, friends, and others around them. As a result, a person is more likely to behave in a way preferred by people who are significant to them (Khan et al., 2019). Subjective norm was explored in several articles that investigate behavior in banking systems (Alqasa et al., 2014), recycling (Wan et al., 2017), and urban green spaces (Wan et al., 2018). The current study looks into traders and operators who intend to use biodegradable straws. Previous studies discovered the influence of subjective standards on mental states in behaviors that included a few types of moral choices (Mohd Azmi et al., 2020). Tarkiainen and Sundqvist (2005) also discovered that subjective norms influenced customers' purpose in a round-about way through the state of mind arrangement having a positive relationship between subjective standards and attitudes, and states of mind and purchasing intentions, in the context of buying natural nourishment. However, Kumar et al. (2017) discovered that subjective norms are not associated with purchasing purposeful green things, contradicting findings from Wan et al. (2018).

Observational data confirm the notion that the subjective norm is a crucial indicator of purchasing intention (Maichum et al., 2016; Zagata, 2012). Hassan et al. (2020) observed that subjective norm plays an essential impact in defining students' inclination to use biodegradable straws.

The influence of subjective norms on intentional molding behavior is significantly weaker in the past, considering the influence of attitude. Furthermore, Krueger Jr (2000) showed that sub-

jective norms are unrelated to people's intentions to establish claim businesses; hence, the designers advocated for additional analysis and encourage the advancement of the currently employed metrics. A plausible explanation for the anomalies in the importance of the subjective norms is that a piece of the information included in these norms is previously displayed inside the advantage of doing a given behavior variable (Cestac et al., 2011).

Several different questions must be defined to reach a shared degree of these subjective norms. Ajzen (2002) stated that the inquiries have an injunctive nature harmonious with the notion of the subjective norm. However, the answers frequently exhibit significant changeability, fueled by a self-evident reason. The importance of others is seen to advocate enticing practices and oppose undesirable behaviors. As a result, it was mentioned that subjective norms should integrate things stated to capture visual standards (also known as behavioral standards), to verify whether critical others themselves practice the same behavior. Ravis and Sheeran (2003) identified injunctive and expressive standards as distinct sources of inspiration. The subjective norms component of the hypothesis of planned behavior refers to injunctive human standards because it is associated with the conclusions of others, and graphic standards refer to understandings of significant others' attitudes and behaviors in the sphere.

1.5. Perceived behavior control (PBC) and intention to use

According to Ajzen (1991), PBC is the level of control an individual has over his or her activities. With regards to behavioral execution, it has two components including self-efficacy and seen control capacity. When completing a behavior, the ease and difficulty associated with the behavior influence the person's choice. Furthermore, an individual's level of control over how he or she performs a behavior influences his or her behavior. Behavioral control has been used as a factor of a person's purpose and behavior in several studies (Chu & Chiu, 2003; Park & Chertow, 2014).

Several studies found that behavioral control had an entirely favorable effect on the individual's deliberate behaviors (Botetzagias et al., 2015; Lizin et

al., 2017). However, behavioral control was not a critical factor of behavioral purposefulness (Chen & Tung, 2010; Ma et al., 2018). Based on the previous results, PBC is believed to be a crucial indicator of intention to use.

The depiction of PBC by Ajzen (1991) could compare the self-efficacy idea by Bandura (2006). The primary component extracted from Bandura's self-efficacy demonstration is the belief in own ability to properly lock in within the behavior. Two major areas are considered: discernments of having appropriate administration of assets that support effective execution of the activity, and a recognized degree of ease or difficulty connected with completing the action. Within the intention-behavior relationship, PBC considers both internal and external factors that influence conduct (Ajzen, 1991). Concerning the inner variables of seen controlled behavior control, when a person observes that behavior is too difficult to accomplish, there is a higher probability for his or her seen behavioral control to fall.

According to Zuraidah et al. (2012), respondents with genuine concern pursue a green way of life, such as purchasing things that are environmentally and humanely safe, because they recognize that the purchase can contribute towards making a difference towards saving the environment. Rezai et al. (2013) discovered that Malaysians' desire to go green is determined by behavior control, which has a significant function for the creation of mindfulness and concerns about going green. Still, following Mainieri et al. (1997), pro-environment purchasers may not constantly behave on the values they believe to be correct, causing it tough to predict the adoption of green commodities. This clarifies that traders and operators need to recognize and value the government's efforts to encourage and introduce biodegradable straws.

1.6. Biodegradable straws

Biodegradability is linked to the environment. The typical biodegradation time required for bioplastics to be composted is between one to six months (Vikman et al., 2002 cited in Mohee & Unmar, 2007). Polymer requires a moderately increased temperature is required to actuate the disintegration process (Mohee & Unmar, 2007). The disin-

tegration process is determined by the category of plastic, but also the overall coalescence such as climate in the inoculation process (Nakasaka et al., 1997 cited in Mohee & Unmar, 2007). The process of composting framework could be a crucial highlight in the extreme transmission for the biodegradation of polymer (Mohee & Unmar, 2007). A few countries in Europe have included compostable polymers and notepaper into the biodegradable waste category (Venelampi et al., 2003 cited in Mohee & Unmar, 2007).

2. AIM AND HYPOTHESES OF THE STUDY

The TPB is used as a basic framework by the paper. The study aims to better understand the relationship between attitude, subjective norm, perceived behavioral control, and traders' desire to use biodegradable straws (Figure 1). It also looks into the relationship between the food trader's intention to use biodegradable straws and their actual usage. The currently used constructs were derived from earlier studies.

Following TPB (Ajzen, 1991), a good attitude positively influences intention. Hassan et al. (2020) studied students' attitudes toward the environment, and the results suggested that the under-studies had highly favorable attitudes toward the environment.

However, the honours are still at the direct level. The portion of the mind that has been extensively researched appears to be a critical determinant for empowering deliberate action towards naturally appealing things. In previous studies, subjective standards' influence on states of mind was discovered in activities that included a few types of moral choices (Hassan et al., 2020). For example, people who strongly considered purchasing green things have an impact on the attitudes of others. Tarkiainen and Sundqvist (2005) discovered that subjective norms influenced customer intention in a roundabout way through the state of mind arrangement having a positive relationship between subjective norms, attitudes, and purchasing intentions in organic food. They concluded that students preferred or purchased plastic drinking straws over reusable wooden or stainless-steel straws.

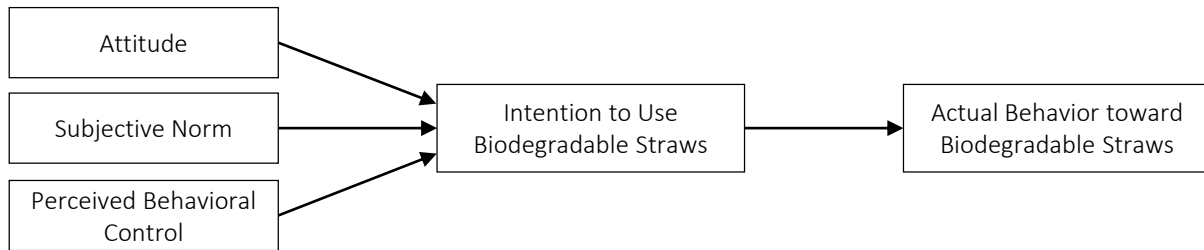


Figure 1. Research framework

Several studies discovered that witnessed behavioral control has entirely favorable effects on an individual's behavioral deliberate actions (Botetzagias et al., 2015; Lizin et al., 2017). On the other hand, it was found that perceived behavioral control is not a critical factor of behavioral purposefulness (Chen & Tung, 2010; Ma et al., 2018). Therefore, it may be assumed that the perceived observed behavioral control is a critical indicator of return intentional. According to McEachan et al. (2011), investigating the link between intention and conduct is critical because past studies have demonstrated that intention does not always result in action. According to Ajzen (1991), the hypothetical system that seen controlled behavior over the execution of a behavior paired with the discernment of capacity might justify noteworthy persuasion and variation in a deliberate action to complete the activity. It also exhibited a tendency towards self-efficacy and control over the performance of the behavior (Smith, 2015).

This study focuses on exploring the relationships between traders' attitudes, perceived subjective norm, behavioral control, and their intention to use biodegradable straws. The study creates the following hypotheses:

- H1: There is a significant association between traders' attitudes and intentions to use biodegradable straws.*
- H2: There is a significant association between perceived subjective norm and traders' intention to utilize biodegradable straws.*
- H3: Among traders, there is a substantial association between perceived behavioral control and intention to utilize biodegradable straws.*
- H4: The intention to use biodegradable straws and actual behavior among the traders has a significant relationship.*

3. METHODS

3.1. Data

The target group for this study consisted of business owners from 1,022 trader communities registered with Labuan Corporation. Individual representatives were the unit of study because they were subjected to non-probability inspections, particularly comfort testing. According to Sekaran and Bougie (2016), data collection from members of the public is beneficial for comfort inspection. It was determined what information is required and then it was identified who can and are ready to provide data under expertise or experience. Purposive sampling is also more comfortable for generalizing the sample than random sampling because not all participants have the traits appropriate for the study. The required sample size is defined by the variables being studied and the statistical approach being utilized (i.e., factor analysis). A G-Power sample size tool was applied to estimate the minimum number of respondents. This tool is used for a wide range of statistical tests used in the social, behavioral, and biomedical spheres (Faul et al., 2007). Thus, the minimum sample size is 108 respondents.

3.2. Instruments

Survey questionnaires are widely used by analysts to acquire vital information, especially when the respondents are well-educated since the results are more viable and have a high response rate (Hair Jr et al., 2003). The study survey comprises four sections. Section A involves questions about the respondent's profile, while Section B investigates respondents' attitudes, subjective norms, and perceived control behavior. Section C deals with the variable of use intention, while Section D focuses on actual conduct. Items in the questionnaire were adopted from Ajzen (1991). The surveys were

accompanied by cover letters that clarified the rationale for this inquiry, illuminated the subjects, assured respondents of the privacy of their responses, and provided clarifications for respondents to fill out the form.

4. RESULTS

Reliability analysis was carried out to measure the instrument. This study also conducted factor analysis. Cronbach's alpha is a convenient test used to estimate the reliability, or internal consistency, of a composite score. The closer this value is to 1, the higher the internal reliability is. Table 1 presents the results of the reliability test. The data indicate that the values are strong regarding their internal reliability listed by the composite reliability. The measurements of all variable constructs were checked and found to vary from 0.812 to 0.917. This surpasses the advised threshold value of 0.70 (Nunnally, 1978). Besides, according to Fornell and Larcker (1981), the Average Variance Extracted (AVE) values for each item surpassed 0.5.

Table 1. Measurement model

Construct	Item	Cronbach's alpha	AVE
Actual Behavior	ACT3	0.917	0.858
	ACT4		
	ACT5		
Attitude	AT1	0.812	0.578
	AT2		
	AT3		
	AT4		
	AT5		
Intention	INT1	0.884	0.812
	INT4		
	INT5		
Perceived Behavioral Control	PBC1	0.904	0.724
	PBC2		
	PBC3		
	PBC4		
	PBC5		
Subjective Norm	SN1	0.88	0.735
	SN2		
	SN3		
	SN4		

Convergent validity is used to characterize the degree to which different objects are measured inside the same idea in an understanding. Hair et al. (2010) proposed that data from factor loading, composite reliability, and AVE must run this con-

vergent validity. The convergent validity of this investigation is shown in Table 2, which includes the loading factor, composite reliability, and AVE. According to Hair et al. (2010), all of the elements must have a loading value higher than 0.5, and the composite reliability value (Cronbach's alpha) should be higher than 0.7 to be regarded as satisfactory. To specify the scale, the AVE value must be greater than 0.5 to estimate the variance achieved by the indicators relative to measurement error. The AVE varied from 0.578 to 0.858. The satisfactory range of composite dependability is between 0.868 and 0.948.

Table 2. Convergent validity

Construct	Item	Loading	Cronbach's alpha	CR	AVE
Actual Behavior	ACT3	0.908	0.917	0.948	0.858
	ACT4	0.94			
	ACT5	0.93			
Attitude	AT1	0.639	0.812	0.868	0.578
	AT2	0.514			
	AT3	0.904			
	AT4	0.881			
	AT5	0.789			
Intention	INT1	0.859	0.884	0.928	0.812
	INT4	0.913			
	INT5	0.93			
Perceived Behavioral Control	PBC1	0.887	0.904	0.929	0.724
	PBC2	0.872			
	PBC3	0.835			
	PBC4	0.822			
	PBC5	0.835			
Subjective Norm	SN1	0.819	0.88	0.917	0.735
	SN2	0.894			
	SN3	0.856			
	SN4	0.858			

The discriminant validity was evaluated to assess the degree of connection within items among different constructs. In discriminant validity, items in the same group will correlate more strongly than those from separate constructs, which are supposedly not meant to correlate (Adela et al., 2011). It is possible to accomplish this by studying the correlations between measurements inside the potentially overlapping concepts. Furthermore, the objects should rely more on their own sets of constructs than on the other sets in the model. The numbers in Table 3 demonstrate that discriminant validity is well established for actual behavior, attitude, intention to employ perceived behavioral control, and subjective norm.

Table 3. Discriminant validity

Construct	Actual Behavior	Attitude	Intention	Perceived Behavioral Control	Subjective Norm
Actual Behavior	0.926				
Attitude	0.583	0.76			
Intention	0.831	0.649	0.901		
Perceived Behavioral Control	0.755	0.669	0.802	0.851	
Subjective Norm	0.595	0.468	0.576	0.606	0.857

Table 4. Cross-loadings

Variable	Actual Behavior	Attitude	Intention	Perceived Behavioral Control	Subjective Norm
ACT3	0.909	0.53	0.808	0.675	0.519
ACT4	0.94	0.543	0.744	0.714	0.553
ACT5	0.929	0.554	0.781	0.707	0.584
AT1	0.202	0.628	0.299	0.331	0.096
AT2	0.257	0.502	0.248	0.319	0.077
AT3	0.564	0.906	0.613	0.63	0.407
AT4	0.516	0.887	0.59	0.625	0.457
AT5	0.54	0.794	0.53	0.533	0.545
INT1	0.693	0.646	0.853	0.714	0.452
INT3	0.728	0.492	0.872	0.671	0.478
INT4	0.767	0.533	0.906	0.717	0.524
INT5	0.784	0.584	0.904	0.736	0.577
PBC1	0.629	0.584	0.739	0.887	0.542
PBC2	0.681	0.597	0.69	0.872	0.543
PBC3	0.626	0.632	0.665	0.836	0.525
PBC4	0.665	0.522	0.655	0.819	0.493
PBC5	0.61	0.518	0.663	0.836	0.475
SN1	0.409	0.465	0.431	0.44	0.817
SN2	0.541	0.394	0.512	0.536	0.893
SN3	0.593	0.324	0.569	0.543	0.858
SN4	0.471	0.465	0.44	0.553	0.858

An inspection was also performed to look for any signs of cross-loading, such as an item with coefficients larger than 0.5 on more than one factor. When an object loads at .32 or greater on two or more variables, this is referred to as cross-loading (Costello & Osborne, 2005). The loading of the variables in bold items is between 0.502 and 0.929 (Table 4). Overall, the measuring model showed sound convergent and discriminant validity.

4.1. Structural model

The coefficient of determination was examined in the study by evaluating the quality of the structur-

al model (R2). The coefficient (R2) represents the external and endogenous latent variables. These R2 quantifies the value of variance in the endogenous latent variable defined by the exogenous latent variables to determine how well the model matches the hypothesized relationships (Hair Jr et al., 2014). The link between attitude, perceived behavior, and subjective norms regarding the intention to use biodegradable straws was examined in Table 5. The results show that the dependent variables explained 67.2% of the variation in the model. At the same time, the dependent variable of actual action reached 70.8% of the variance in intention to use.

Table 5. Coefficient of determination (R2)

Relationship	R2	f2	0.05	0.95	VIF
Attitude → Intention	0.672	0.045	0.018	0.323	1.842
Intention → Actual Behavior	0.708	2.422	0.763	0.895	1
Perceived Behavioral Control → Intention		0.514	0.455	0.773	2.263
Subjective Norm → Intention		0.029	0.034	0.217	1.601

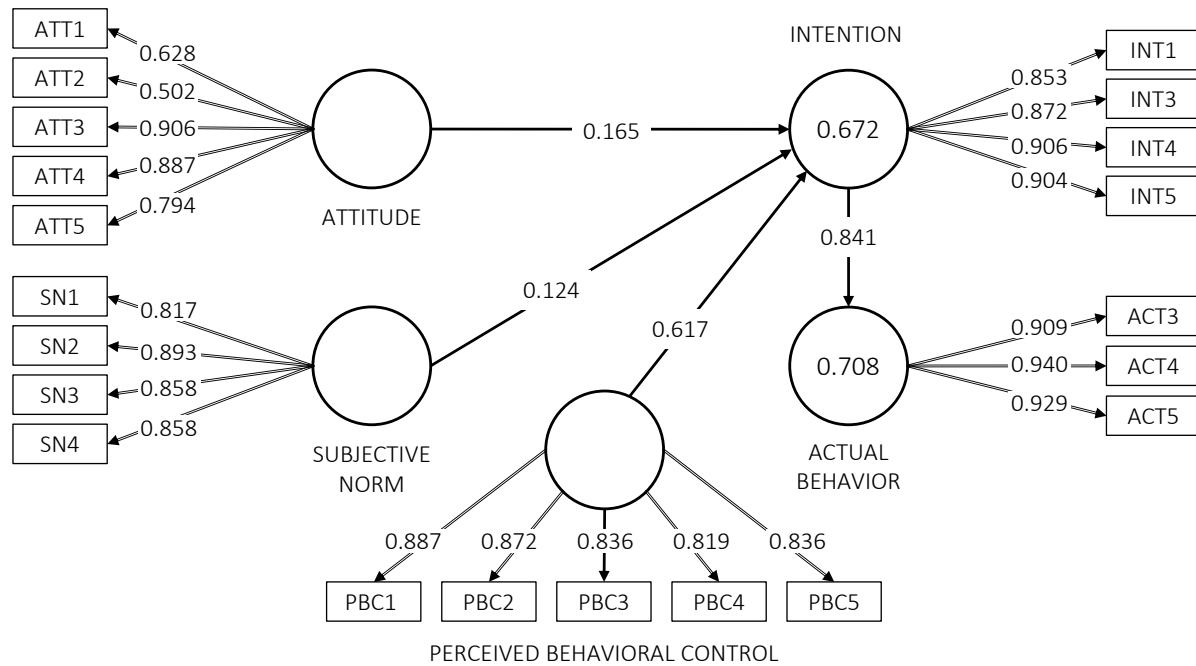


Figure 2. Path coefficients

4.2. Path coefficients

The four direct correlations are as follows: (H1) attitude and intention to use, (H2) subjective norms and intention to use, (H3) perceived behavioral control and intention to use, and (H4) intention to use and actual behavioral. Figure 2 depicts the path coefficient in this study, which includes the relationship and correlation test results.

4.3. Hypotheses testing

In this study, four hypotheses were investigated. As shown in Table 6, all hypotheses (H1, H2, H3, and H4) are supported. H1 showed a significant relationship between attitude and intention to use biodegradable straws with $\beta = 0.165$ and $t = 1.753$ at $p < 0.05$, demonstrating that attitude has a direct impact on intention to use biodegradable straws in Labuan. As a result, the H1 was sup-

ported. The link between subjective norms and intention to use was significant for H2 with $\beta = 0.124$ and $t = 2.23$ at $p < 0.01$, indicating that subjective norms directly affected intention to use biodegradable straws in Labuan. As a result, H2 was approved. The correlation between perceived behavioral control and intention to use was significant for H3 with $\beta = 0.617$ and $t = 0.098$ at $p < 0.01$, indicating that perceived behavioral control directly influenced intention to use biodegradable straws in Labuan. As a result, H3 was supported. For H4, actual behavior and the intention to use relationship was significant with $\beta = 0.841$ and $t = 21.287$ at $p < 0.01$, indicating that intention to use biodegradable straws directly influenced actual behavior in Labuan. As a result, H4 was accepted.

Table 6 also shows the summary of the hypotheses checks. The results showed that all hypotheses (H1, H2, H3, and H4) were supported.

Table 6. Hypothesis testing

Hypothesis	Relationship	Std. Beta	Std. Error	t-values	p-values	Decision
H1	Attitude → Intention	0.165	0.094	1.753	0.04	Supported
H2	Intention → Actual Behavior	0.841	0.04	21.287	0	Supported
H3	Perceived Behavioral Control → Intention	0.617	0.098	6.317	0	Supported
H4	Subjective Norm → Intention	0.124	0.055	2.23	0.013	Supported

5. DISCUSSION

Firstly, the findings support Smith (2015), who discovered that positive attitudes among nurturing instructors in adopting education evidence-based strategies have resulted in its high utilization. Furthermore, Aditami (2016) discovered that attitude has a notable influence on the consumption and purchase intention for halal bakery products. This study sheds light on attitude from an environmental perspective, specifically on the usage of biodegradable straws. The result indicates that $\beta = 0.165$ is consistent with the findings of Martin (2006) in that a good attitude towards recycling does not guarantee reusing behaviors. The findings were also congruent with those of Strydom (2018), who discovered similar positive attitudes towards intention to recycle items. As a result, the traders' attitudes in Labuan have a substantial influence on the intention to use biodegradable straws. Thus, *H1* is supported.

Secondly, the association between subjective norms and intention to use where $\beta = 0.124$ and $t = 2.23$ at $p < 0.01$ indicates that subjective norms directly affect Labuan traders' desire to use biodegradable straws. Kang (2008) explored attitude, subjective norm, need for uniqueness, and their influence on purchase intention of personalized goods on a mass-customized apparel website. Subjective norm was discovered to be the most crucial determinant in forecasting consumers' intention to purchase customized products on the website. From a service industry, the finding supports the work of Aditami (2016) and Hassan et al. (2020), which found similar positive associations of subjective norms on halal bakery products and inclination of biodegradable usage, respectively. As a result, *H2* is supported because the subjective norms of the trader's community in Labuan strongly impacted the intention to utilize biodegradable straws.

Thirdly, the relationship between PBC and the intention to use biodegradable straws among traders in Labuan can be explained through subjective norms having a substantial connection with intention to use. The outcome $\beta = 0.617$ and $t = 0.098$ at $p < 0.01$, indicate that PBC directly affect Labuan's intention to use a biodegradable straw. This supports the findings of Aditami (2016) of halal bakery product consumption. According to Ajzen (1991), PBC is self-evident where resources and opportunities open to an individual need, to some extent, manage the possibility of behavioral success. In any event, the perception of behavioral control and its effects on eagerness as well as actions are more astonishing than genuine control. As a result, *H3* is supported because the PBC of the trader's community in Labuan strongly influences the intention to use a biodegradable straw.

Lastly, the study evaluated the correlation between Labuan traders' intention to use biodegradable straws and their actual behavior with biodegradable straws. Subjective norms have a substantial association with intention to use where $\beta = 0.841$ and $t = 21.287$ at $p < 0.01$, indicating that the desire to use directly affects actual behavior to use biodegradable straws in Labuan. According to Ajzen (1991), the considerable direct association of actual and intention of usage shown in the model justifies the hypothetical premise that the intention to use is the most noteworthy predictor of behavior. Furthermore, Smith (2015) found that the intention to employ teaching tactics had an immediate influence on actual usage, which is logically justified. As a result, the desire to use biodegradable straws among the traders in Labuan has a substantial influence on actual behavior toward biodegradable straws, and *H4* is supported.

CONCLUSION

This study explored the relationship between attitudes, subjective norms, perceived behavioral control, and consumers' actual behavior concerning the usage of biodegradable straws. The study found two significant findings, which are recapped hereafter. First, there is a positive association between attitude, subjective norms and perceived behavioral control, and the intention to use biodegradable straws. Second, there is a clear relationship between the intention to use and the actual behavior of using biodegradable straws. In conclusion, the study provides a preliminary understanding and purpose for

researchers to evaluate the efficacy and effectiveness of using biodegradable straws. Finally, the study expects the local government to initiate and promote the use of biodegradable straws in the community, as well as to encourage local organizations to begin using biodegradable straws.

Implications and future research

The paper contributes to TPB by providing new insight into the significant impact of attitude, subjective norms, and perceived behavioral control on the intention to use and actual behavior. The study focused on the perspective of consumer behaviors specifically related to environmental awareness, which is an important milestone in studies related to consumer consumption in the food and service industry.

The outcome of this study seeks to assist the government and policymakers specifically towards improved implementation of sustainable initiatives in the food and beverage industry. Organizations, specifically food and beverage providers should have a clearer understanding of their social responsibility stance towards the environment and henceforth formulate as well as execute better marketing strategies tailored towards achieving their environmental obligations. The collaborations between policymakers and practitioners are envisioned to increase environmental concern (i.e., attitude, subjective norms, behavioral control, and intentions) towards better consumption, among which could begin with the usage of biodegradable products such as straws.

The study proposes a few suggestions for researchers who wish to pursue similar studies or further explore this field. These suggestions are meant to improve the value of future research:

1. To use the theory of reasoned action (TRA), which is related to the concept of planned behavior in Malaysia's trader community, with a focus on biodegradable straws;
2. To include other types of industries, such as the food and beverage industry or government offices. This outcome may differ from the expected one, particularly in the case of investigating a large population;
3. To investigate the impact and/or role of mediating or moderating factors such as gender, age, and income; and
4. To explore this study using a qualitative model, which may be more in-depth and reliable, and investigate the different nuances of this field.

AUTHOR CONTRIBUTIONS

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