Towards the Circular Economy:
The Role of Culture in Enhancing Sustainable Consumption in Asia

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Abstract: Sustainable consumer behaviour is considered a pillar in the transition to a circular economy. Although sustainable consumption is not a new concept, that in a circular economy has been documented to a humble extent, and the research results remain diversified. This is due to observations in prior research having different cultural and social backgrounds. Thus, investigating the role of culture is appropriate for gaining a better insight into sustainable consumer behaviour towards a circular economy. By applying the Theory of Planned Behaviour framework and the Partial Least Squares Structural Equation Modeling (PLS-SEM) model, this study verifies the role of cultural dimensions in shaping sustainable consumer behaviour towards a circular economy. In particular, collectivism is the most influential cultural dimension. This paper successfully enriches the literature on the role of culture in increasing the number of sustainable consumers, especially in Asian countries. Therefore, it offers important implications for marketers and policymakers.

1 INTRODUCTION

Natural resources are crucial to the survival of the human race; however, they are being exploited faster than their regeneration capacity (Kirchherr et al., 2017). Global governments soon realised this situation and perceived that the circular economy was the solution to harmonise human's desire of economic growth and natural resource protection (Kirchherr et al., 2017). This is because the circular economy aims to close the loops of material within industrial ecosystems by turning end-of-life products into input resources for others (Stahel, 2016).

In the circular economy, consumer buying behaviour plays a central role in ensuring the circularity of resources and encouraging firms to design circular production (Kirchherr et al., 2017). Different consumerism concepts have been given to describe consumer behaviour towards the circular economy. Among those, sustainable consumption is

the most widely approached since its goals strongly link to the principles of the circular economy as maintaining the value of products and materials for as long as possible (Kirchherr et al., 2017).

The notion of sustainable consumption has been widely introduced in the past, nonetheless, its practice remains humble since most consumers admit that they have not formed sustainable purchase intentions during their purchasing yet (Han et al., 2010). Without intention, consumers' motivation and their effort towards sustainable consumption are fragile (Ajzen, 1991). To improve the situation, investigating the drivers shaping consumers' intention is vital so that proper strategies can be given to raise consumers' sustainable consumption intention, thereby promoting the conversion into actual behaviour (Yadav & Pathak, 2017). Among the factors that have been investigated, culture is a complex but crucial one enabling a better view of the distinction of consumers' purchase behaviour (Lobo et al., 2017). Nevertheless,

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because of its complexity, examining the role of culture on sustainable consumption intention attracts modest attention (Sreen et al., 2018). Thus, this paper attempts to enrich the literature in this field and examines whether and to what extent culture can influence consumers' intention towards sustainable consumption.

Human culture varies across countries and areas within the country, but the primary classification is often shown between the East and the West. On the one hand, Asia people focus on the correlation between all factors of the universe, including the local culture, to make decisions; meanwhile, Western culture prefers analytic thinking and tends to separate factors independently when making the decision (Kitayama & Salvador, 2017). It seems quite clear that Asians with holistic thinking will be affected by the cultural factor more than Westerners with analytic thinking during the cognitive processes and behavioural decisions. For that reason, this study prioritised to observed citizens from Asia to examine the influence of culture on sustainable consumption.

The cultural background of humans in this study is measured through two fundamental dimensions, namely man-nature orientation (MNO) and long-term orientation (LTO). This can be explained because (i) the nature of sustainable consumption is aligned with MNO and LTO; and (ii) they are among the most accepted values to measure an individual's culture towards sustainability (Lobo et al., 2017; Sreen et al., 2018). Next, the Theory of Planned Behaviour (TPB) is applied to assess consumer's behavioural intention because it has substantial power to predict human behaviour and is frequently used to support consumption experiments on psychology (Al-Swidi et al., 2014; Yadav & Pathak, 2017).

After developing the cultural and behavioural framework, the study collects primary data by surveying 412 consumers and assessing data by the Partial Least Squares Structural Equation Modeling (PLS-SEM) method. The findings successfully affirmed the significant impacts of culture on the sustainable consumption intention of consumers. Thus, our paper contributes a broad context for practitioners and policymakers to understand the role of culture in motivating consumers' sustainable intentions, thereby providing them with different approaches to eliminate the obstacles on their path to promoting sustainable consumption. Moreover, we provide crucial evidence for marketers to formulate suitable strategies applicable to markets for sustainable products and services.

The remainder of this paper is organized as follows. Section 2 reviews the relevant literature and develops hypothesis, while Section 3 describes the model specifications, data, and sample selection. Section 4 discusses the main results and presents the robustness tests, Section 5 provides some additional analyses, and Section 6 concludes the paper.

2 LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Theory of Planned Behavior

Since this study applied the Theory of Planned Behaviour (TPB) from Ajzen (1991), there are three constructs that are able to explain purchasing intention, namely attitudes, social norms, and perceived behavioral control (PBC). The following part will utilize these primary factors of TPB to examine consumers' intentions towards sustainable consumption.

Attitude Towards Sustainable Consumption
Attitude can be defined as an individual's degree of positive or negative evaluation of the performance of a particular behaviour (Ajzen, 1991). It is often formed by an individual's beliefs about the consequences of engaging in a behaviour as well as the consequences of that behaviour (Lobo et al., 2017). A positive attitude can lead to a positive intention of sustainable consumption, such as purchasing eco-friendly products or green services (Arli et al., 2018; Han et al., 2010). If customers intend to engage in activity towards sustainable consumption, they must have obtained a positive attitude toward that activity (Arli et al., 2018)

Social Norms
Social norms are the societal pressures people believe they are under to behave differently (Ajzen, 1991). The perceived opinions of significant people who have an impact on their decision-making, such as family or friends, are referred to as social norms. When an individual's sense of community is higher, social norms are thought to have a more decisive impact since the opinions of others will be more important (Sreen et al., 2018). They may seek encouragement from others, especially if they are unsure about the repercussions of a specific behaviour (Lobo et al., 2017). In numerous settings in consumers' intention toward sustainable behaviour, the importance of social norms as a predictor of behavioural intention has been widely established (Al-Swidi et al., 2014, Han et al., 2010)

Perceived Behavioral Control

PBC is one's self-evident about the resources (such as time, expertise, and skillset) and opportunities available, which is, to some extent, dictate the likelihood of behavioural achievement (Ajzen, 1991). In common parlance, PBC is often assessed by the ease or difficulty of the behavior (Wallston, 2015). Existing studies indicate that individuals who can better manage resources when undertaking certain behaviours are more likely to engage in those behaviours (Han et al., 2010; Sreen et al., 2018). The same applies to sustainable consumption if people believe sustainable consumption is convenient or reasonably priced, they are more likely to develop their intention, leading to their inquiry into the product.

2.2 Culture Measurement

Man-Nature Orientation

The concept of MNO was coined by Rokeach (1973) and was further developed by Kluckhohn and Strodtbeck (1961). It is defined as the ability of an individual to live in harmony with nature because they love nature and desire to protect nature (Kluckhohn and Strodtbeck, 1961). This cultural dimension is reflected more in Asian people, contrary to Western people, who are more characterized by Anthropocene [1] (Steffen et al., 2011). Consumers possessing a high degree of man-nature believe they should have a positive attitude towards eco-friendly products (Chekima et al., 2016). The significant relationship between individuals' man-nature and purchase intention has been confirmed through both direct and indirect effects through attitude (Sreen et al., 2018). Based on the review literature, the hypothesis is proposed as follows.

Hypothesis 1: MNO has a positive direct effect on consumers' sustainable consumption intention and indirect effects on that via consumer's attitude.

Long-Term Orientation

LTO individuals tend to foster virtues oriented towards future rewards, in particular, perseverance and thrift (Hofstede, 2001). This is a prominent facet of measuring people's culture, especially ones rooted from Asian countries (Chekima et al., 2016). That explains the reason why several studies researching the role of culture on human behaviour in Asia considered LTO in their studies (Lobo et al., 2017).

Previous research has shown that long-term oriented consumers often have positive attitudes

towards consumption behaviour, especially sustainable consumption (Lobo et al., 2017; Sreen et al., 2018). Sharma (2010) additionally noted that if people are unsure about the future benefits, long-term-oriented people will seek the advice of others before making any buying decision. Accordingly, social norms perform as a key characteristic in determining sustainable consumption intention. Recent articles have also revealed that LTO has a significant relationship with their PBC (Lumpkin et al., 2010). As a result, the hypothesis is formatted as follows.

Hypothesis 2: LTO is indirectly and significantly positive to sustainable consumption intention through attitude, social norms, and PBC.

Based on the discussion about the influence of cultural values on consumers, the following hypothesis is formulated as figure 1.
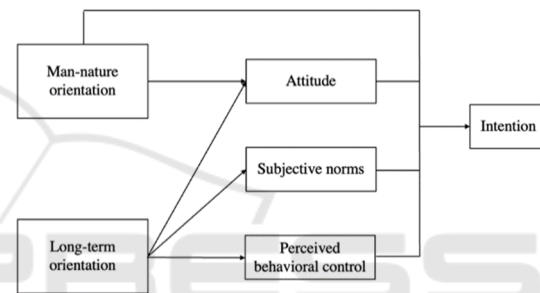
Figure 1: Conceptual framework.

3 METHODOLOGY

3.1 Data Collection

The data was collected in Vietnam, an emerging Asian country with high MNO and LTO values (Hofstede, 2021). Since Vietnam is vigorously promoting sustainable consumption, Vietnamese consumers are familiar with the concept, which can facilitate the survey process (Lobo et al., 2017).

A questionnaire was developed to assess the target variables and additional background variables. The survey was distributed in various locations to increase the number of respondents. The measure for constructs used in the study was based on the five-point Likert scale, which is validated by previous literature available in the field of pro-environmental behaviours, such as the work of Sharma (2010) and Sreen et al. (2018).

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[1] In the Anthropocene concept, humans assume that they dominate the planetary system (Steffen et al., 2011)

We have collected 412 questionnaires from Vietnamese consumers. Hair (2019) suggests that a ratio as low as ten samples per variable would be sufficient for normally distributed data when latent variables have multiple indicators. Our study consists of 33 items, so our sample of 412 meets the priori condition. The demographic composition of the respondents is mentioned in Table 1.

Table 1: Respondent profile.

Variable	Categories	Frequency	Percentage of respondent (%)
Gender	Male	131	31.8
	Female	281	68.2
Government propaganda	Strongly disagree	19	4.61
	Disagree	9	2.18
	Normal	118	28.64
	Agree	178	43.2
	Strongly agree	88	21.36
Education	Under high school	19	4.6
	High school	90	21.8
	Undergraduate	241	58.6
	Postgraduate	62	15
Area	Urban area	383	92.96
	Rural area	29	7.08

3.2 Measurement Model

Since our paper assesses latent variables with many constructs, indicator variables, and structural paths to test theoretical extensions from assumptions, the partial least squares structural equation modelling (PLS-SEM) is the most suitable method to measure the relationship between dependent variables and independent variables (Hair, 2019). The suitability of PLS-SEM for this study is also consolidated via its capability of working efficiently with small sample sizes. The data were analyzed using STATA16.

4 RESULTS

4.1 Data Analysis

Following the guidelines of Hair (2019), a multi-stage process that involves the models' specifications has been implemented. The first step is external model evaluation, also known as the measurement models, which are used to evaluate the relationships between the indicator variables and their corresponding construct.

The values of Cronbach's alpha which indicates the reliability measure of items of each construct with the acceptable value in the range of 0.72 to 0.90. All of our Cronbach's alpha measures are qualified for the range. Next, a preliminary test is done to remove measures of each construct that cannot explain enough variance in the construct. Two different tests are conducted named the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity. KMO is a test conducted to examine the strength of the partial correlation between the variables with the values of at least 0.5 for factor analysis to commence (Kaiser, 1975). Meanwhile, Bartlett's test of Sphericity is used to test the null hypothesis that the correlation matrix is an identity matrix. A significant statistical test should be less than 0.05, which shows that the correlation matrix is not an identity matrix. All of our results are qualified, as shown in Table 2.

Table 2: Bartlett test of sphericity and KMO measure of sampling adequacy

Chi-square	=	8369.409
Degrees of freedom	=	561
p-value	=	0.000
H0: variables are not intercorrelated		
KMO	=	0.939

To provide acceptable item reliability, factor loading scores are calculated for each measure of each construct. Measures with factor scores of less than 0.5 are removed from the model because they cannot indicate more than 50 per cent of the indicator's variance (Hair, 2019). Each variable is removed a few measures, the kept measures are represented in Table 3.

Then, to ensure a representative set of all possible items within a construct's conceptual domain, the average variance extracted (AVE) test is implemented to assess the validity of indicators (Fornell, 1981). The AVE value is higher than 0.5 and smaller than 0.95 are considered acceptable in exploratory research (Hair, 2019). In our research, the AVE of all measures is from 0.5 to 0.9, which is qualified for the tests. Next, a Kaiser-Meyer-Olkin (KMO) test is used to determine the sampling adequacy of suitable data to run the factor analysis. The KMO statistic is a measure of 0 to 1, which the closer to 1, the better. Our KMO is qualified with a value of 0.939.

Once the outer model is established, several steps need to be taken to evaluate the hypothesized relationships within the inner model. Regarding inner models, several indicators, including coefficient of determination (R^2), path coefficients, and collinearity test, are taken to evaluate the relationships between the indicator variables and their corresponding construct. While the p-value range should be from 0 (no chance) to 1 (absolute certainty), the acceptable R^2 must be within 0,25 and 0.75. Our R^2 value is

0.36, which describes substantial levels of predictive accuracy. Finally, we measure the collinearity of the formative indicators by the variance inflation factor (VIF). Our VIF values vary from 1.3 to 1.4, satisfying the ideal range of VIF above 1 and lower to 3 (Hair, 2019).

Table 3: Measurement model - Standardized Loadings.

Variables	Code	Reflective of Attitude	Reflective of Subject norms	Reflective of PBC	Reflective of Intention	Reflective of MNO	Reflective of LTO
Attitude	at3	0.944					
	at4	0.931					
Subject norms	sn1		0.782				
	sn2		0.853				
	sn3		0.898				
	sn4		0.868				
	sn5		0.858				
PBC	pbc3			0.846			
	pbc4			0.865			
	pbc5			0.826			
Intention	intent1				0.770		
	intent2				0.878		
	intent4				0.880		
	intent5				0.898		
MNO	man1					0.961	
	man2					0.960	
LTO	lto1						0.734
	lto2						0.813
	lto3						0.784
	lto4						0.817
	lto5						0.802

4.2 Hypotheses Testing

When all measurement model assessment is satisfactory, we evaluate the structural results to test the hypothesis. We focus on the coefficient of determinants and the statistical significance. Table 4 outlines the hypothesis testing. All of our hypotheses were found to have a significant impact on their outcome. The regression path of attitude, social norms, and PBC to sustainable consumption intention and the path from MNO and LTO to TPB's construct is significant, indicating that the two cultural dimensions have statically and indirectly significant on consumers' intention toward sustainable consumption. Thus, the hypotheses H1 and H2 were supported.

Table 4: Structural model - Standardized path coefficients.

Variable	Attitude	Norm	Control	Intention
Attitude				0.250***
Norm				0.151***
Control				0.267***
MNO	0.386***			0.291***
LTO	0.240***	0.427***	0.490***	

5 DISCUSSION

The study has successfully verified the influence of individual culture (MNO, LTO) on the sustainable consumption intention towards the circular economy. This result is in line with the work of Samarasinghe (2012), Lobo et al. (2017) and Sreen et al. (2018) when investigating consumers' cultural value in Asian countries, e.g. China, Vietnam, Sri Lanka or India. It seems that not only in Vietnam but also in the context of other Asian nations, consumers who set a higher MNO and LTO will demonstrate a greater intention for sustainable consumption.

Specifically, regarding MNO, this value significantly influences consumers' green purchase intention through both direct and indirect paths of attitude. This result is in line with the works of Sreen et al. (2018) and Chekima et al. (2016). It reminds the educators, parents, and consumers themselves of the importance of building individuals' values towards nature from an early time. In Asian countries, where MNO emerges as a shared feature among people in the society, the authorities should keep the preservation of traditional values along with the process of modernization so that their people can have a better standard of living but not at the expense of nature.

LTO also shows the indirect effects through all TPB constructs with the highest effect on consumers' attitudes. As a result, marketers should approach consumers with advertisements emphasizing the long-term benefits of green products for better reactions from clients. Proper communication of firms' sustainable values can partly increase the perceived value of sustainable consumption and enhance the trust among consumers (Segev et al., 2022). Governments are advised to guarantee the release of reliable advertisements, and punish manufacturers who provide wrong information about their products and services.

Our results also underpin the notable roles of the TPB framework in measuring consumers' sustainable

behaviour intentions. All the elements (attitude, social norms, and PBC) within the TPB framework significantly influenced consumers' intention towards sustainable consumption.

6 CONCLUSIONS

Existing literature has called for research on the influence of cultural values on green purchase intention in diversified settings. This is because consumers' willingness to purchase green products might vary based on cultural differences. This study has documented the role of cultural values in influencing consumers' green purchase intention. A total of 412 Vietnamese consumers participated in the completion of questionnaires regarding their green purchase behavior following TPB's constructs and cultural values with two dimensions, including LTO and MNO.

The results reveal three essential findings. First, cultural values significantly impact consumers' green purchase intention. Second, TPB is an effective framework for illustrating cultural values' direct and indirect influence on consumers' green purchase intention. Finally, the proposed cultural framework shows the power of quantifying culture to explore its influence on consumer psychology and behavior.

We acknowledge that the consumers' intention may exist a particular gap with their actual behavior. Therefore, future research may consider actual behavior instead of behavioral intention and compare consumer intention across countries.

Despite such limitations, this study contributes to the fosterage of a more thorough understanding of cultural dimensions that shape consumers' sustainable consumption in particular Vietnam and Asian countries in general. It will serve as a benchmark for companies planning to target the Asian market and strategically establish marketing methods and sales policies to encourage consumer purchases to use eco-friendly products and services intentionally. This research can also act as a reference for future research to replicate the model with additional elements or share specific findings with countries in the region with comparable cultural, geographical, and economic characteristics.

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