FACTORS INFLUENCING THE PURCHASE OF CIRCULAR ECONOMY PRODUCTS: A COMPARATIVE ANALYSIS OF MALAYSIA AND TURKEY

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ABSTRACT

Irresponsible production and consumption of products are the main reason for environmental decimation. To mitigate this alarming burden on the environment, a new approach has been proposed, called "The Circular Economy". The main objective of this system is to introduce new systems of production, consumption, and disposal, for growing global prosperity. This philosophy is also aligned with the United Nations goals of sustainability, commonly known as SDGs, particularly, the goal of responsible production and consumption (SDG No. 12). Circular economy from a marketing perspective has been hardly explored and/or investigated. This research, therefore, attempts to extract and empirically investigate those critical factors related to the circular economy that have an impact on consumer behaviour in general, and consumer purchase intention in particular. For this purpose, the theory of planned behaviour is adapted with the addition of two more factors related to the circular economy, which are convenience/ availability, and environmental impact, as extracted from the literature to examine their effect on consumer purchase intention. Data were collected from two countries; Malaysia and Turkey, to undertake the comparative analysis. A total of 377 consumers of circular products from Malaysia, and 351 consumers from Turkey, were used for data analyses. Complex statistical techniques like exploratory factor analysis and structural equation modelling with confirmatory factor analysis and hypotheses testing were used to analyse the data. Comparative analyses were undertaken, where each finding from Malaysia and Turkey were compared, including structural model comparison. Interesting findings emerged, which will certainly contribute to helping policy-makers devise strategies that are not only sustainable and aligned with the philosophy of the circular economy but will also ensure positive consumer behaviour.

Keywords: Circular economy, consumer purchase intention, sustainability, structural equation modelling, TPB, Malaysia, Turkey.

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1. INTRODUCTION

Over the last many decades, the world has seen numerous shifts in business processes. The shift of producer from producing a large quantity to meeting the needs and wants of the customers. A business philosophy that focuses on quantity without keeping in the mind the implications of production on the world we live in is called "the linear economic system", also commonly known as, "the linear economy". This economic system comes with a huge cost, in the form of degradation of the environment, even though it may have economic benefits. Soon, the communities have realised the devastating impact this system has and started searching for an alternative, more environmentally friendly system. This new system is given a name, "the circular economic system", also called "the circular economy". Under this system, businesses have to find ways to re-use, repair, refurbish, and recycle (MacArthur, 2013). The focus has now clearly shifted from producing large quantity to environmentally friendly quality products. Global entities, like the United Nations, have also introduced blueprints for companies to follow to mitigate the impact of business processes. The United Nations Sustainable Development Goals (SDGs) is a good example. Many of these goals, especially the twelfth goal focuses on responsible production and consumption. The present research revolves around the same goal, particularly, the consumption/consumer part of the goal.

Even though there is a lack of agreement on the definition of the circular economy, there is a common consensus that it is the right time to shift and redesign the linear business models (focusing on quantity, resulting in waste) and introduce circular business models (focusing on quality, resulting in reuse) (Chamberlin & Boks, 2018). Moreover, studies have mostly researched circular models from an organisational perspective with limited attention given to consumer perspective. The present study, therefore, investigates circular economy from a consumer perspective. A research conducted by Jan (2020, 2021) is the main motivation behind the present study. However, it should be kept in mind that Jan (2020, 2021) focused only on Malaysia, whereas, this research extended it to Turkey, and also compared the results with the Malaysian counterpart.

The following sections of the paper focus on a brief literature review to devise the hypotheses, along with the framework of the study which is inspired by the theory of planned behaviour. Next, the research methodology adopted is highlighted followed by the most crucial part of this study, which is comparative data analyses. Lastly, the conclusion and direction for future research are also provided.

2. LITERATURE REVIEW

Linear models where the focus is on production, obsolescence, and discard, are widely criticised due to their adverse impact on the environment (MacArthur, 2014). These models are no more competitive, as they are not compatible with the philosophies of sustainable social, economic, and environmental growth, as encouraged by circular models. The underlined philosophy of circular models states that outputs of one process should become the input of another process, resulting in reuse of material, thus eliminating the need for unnecessary input of new material. This idea is also supported by Calvo-Porral and Lévy-Mangin (2020), as to transform the linear consumption model into a closed-production model.

This philosophy of circular economy is represented with various names by scholars, e.g., Stahel (2010) used the name performance economy for it, and Graedel and Allenby (2010) called it industrial ecology or law of ecology by Commoner (2020). For the present study, the definition of the circular economy by Geissdoerfer et al. (2017) would be considered. In their words, "a regenerative system in which resource input and waste, emission, and energy leakage are minimised by slowing, closing, and narrowing material and energy loops. This can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling." (Geissdoerfer et al., 2017, pg. 579).

Circular economy and marketing have a strong bond that has been built over many decades. From the old concepts of marketing, namely production orientation (Kotler et al., 2015) to a more contemporary concept of quality-of-life marketing (Jan et al., 2011; Lee & Sirgy, 2004; Sirgy, 2001), marketers have always swiftly adopted to those concepts that positively impact the environment. It is evident by looking at the transition of marketers/ companies to sustainable concepts, like green marketing, where the focus is on undertaking activities with minimum impacts on the environment and ensuring sustainability (Groening et al., 2018; Dangelico & Vocalelli, 2017). Scholars (e.g., Tukker, 2015) also agreed that the integration of sustainability in the business models are aligned with the philosophy of the circular economy. Another similar concept in marketing is called 'societal marketing', where the companies are encouraged to keep in mind the social welfare (Peattie & Peattie, 2009; Kotler & Zaltman, 1971), in all the activities they undertake. The aforementioned contemporary concepts seem to comply with the circular economy, but research studies conducted in marketing, especially from a consumer perspective, with the focus on circular economy is negligible (Chamerlin & Boks, 2018). It includes, but are not limited to, activities performed by consumers that portray circular economy. For example, buying re-usable, recycle, and green products, or resisting obsolescence, or renting instead of buying, etc. The first step to understanding these behaviours of consumers requires us to understand the intention to buy the circular product. A promising attempt was undertaken by Jan (2020) to investigate this phenomenon using the well-known theory of planned behaviour (aka TBP), with the inclusion of two other variables, namely, convenience and environmental impact (Chamerlin & Boks, 2018; Jan, 2021; Yadav & Pathak, 2016). Camacho-Otero et al. (2018) recommends filling this gap by further investigating consumer acceptance of circular economy products.

Theory of planned behaviour (hereafter, TPB) is one of the most widely used theories in predicting human social behaviour (Ajzen, 2011), which was originally introduced by Ajzen (1991). TPB has three independent variables, which are attitude, subjective norms, and perceived behavioural control that impact intention, and intention subsequently impacts behaviour (Ajzen, 1991). As the present study replicated the model of Jan (2020, 2021), therefore, the influence of intention of behaviour will not be tested. This is also mainly because behaviour is a post-purchase phenomenon. According to Ajzen (1980), the intention is a person's perception of his/her conscious plan or decision in performing a certain behaviour or action. In TPB, intention, which is directly influenced by attitude, subjective norm, and perceived behavioural control, is the antecedent of behaviour (Ajzen, 2015). Purchase intention in the present case simply means the understanding of consumer's intention to buy circular products or products produced using the concept of the circular economy. Mostaghel and Chirumalla (2021) found that purchase intention is an important enabler of circular economy models. Customer purchase intention in the present study is treated as dependent variable.

According to Ajzen (1991), attitude is the degree of positive or negative feelings an individual has toward the behaviour of interest. It is considered one of the most influencing factors toward purchase intention (Abd Rahman et al., 2015). Many other studies (see e.g., Ngo et al., 2021; Tarkiainen & Sundqvist, 2005; Yazdanpanah & Forouzani, 2015), related to green products, found a positive significant impact of attitude on purchase intention. As attitude is one of the main variables of TPB, the present study included it in the model and is expected to impact purchase intention positively.

H1: Attitude will have a positive impact on purchase intention.

The next independent variable in TPB and selected for the model of the present study is subjective norms. It is a person's belief about what others will think in the event of performing a task (Ajzen, 1991). Similar to that of attitude, the subjective norm is also positively associated with a person's intention to do or not to do any act or behaviour. Commonly, people are influenced by their family members and friends, as well as, the society around them in general. Ajzen (1991) consider this approval from a person's social circle crucial to a person's intention. Othman and Rahman (2014) found subjective norm to be the strongest predictor of purchase intention. Similarly, Dean et al. (2008) and Haro (2016) also found a positive influence of subjective norm on consumer's purchase intention in a study on organic and environmentally friendly products. The current study has also included subjective norm as one of the independent variables in the model impacting purchase intention of circular products.

H2: Subjective norms will have a positive impact on purchase intention.

The last independent variable included in the present model from TPB is perceived behavioural control, which is considered a person's perception of the ease or difficulty of performing any task. According to Ajzen (1991), not only people's intention but also their behaviour is directly influenced by the inherited ease or difficulty in the performance of a task. In other words, consumer's purchase intention is influence by their evaluation of the ease and difficulty of buying a product. Many scholars (see e.g., Shin & Hancer, 2016) found a positive impact of perceived behaviour control of purchase intention. For example, Vermeir and Verbeke (2006, 2008) found a positive impact of perceived behavioural control in the sustainable product on purchase intention, and Rezai et al. (2012) found its positive influence on purchase intention in green and environmentally friendly products. This research has also used perceived behavioural control as one of the independent variables in the model and is expected to influence purchase intention of circular products positively.

H3: Perceived behavioural control will have a positive impact on purchase intention.

Many studies (see e.g., Afendi et al., 2014; Khalek & Ismail, 2015) attest that attitude, subjective norm, and perceived behavioural control have a positive impact on purchase intention. Similarly, studies (see e.g., Abd Aziz & Wahad, 2013; Haro, 2016; Hassan, 2014) also included other variables to test their impact on purchase intention, e.g., information, availability, and religious values. The present research, therefore, added convivence and environmental impact (Chamerlin & Boks, 2018) and hypothesised that these will have a positive impact on consumer purchase intention of circular products. According to Jan (2020, 2021), to make TPB applicable in the circular economy environment, other variables should be added and tested. Therefore, two

variables, namely convenience and environmental impact, related to circular products are added in the TPB model. Chamerlin and Boks (2018) state that convenience is the ease of getting access to a [circular] product. This variable should not be confused with perceived behavioural control, which is the ease or difficulty of acting. In marketing under the topic of product categorisation, convenience is a type of product which is purchased with minimum efforts and time spent (Yale & Venkatesh 1986). Studies (see e.g., Gunawan et al., 2018; Pham et al., 2018) have used convenience as a separate variable in TPB and found a strong positive influence on purchase intention. According to Berry et al. (2002), it is a non-monetary cost and includes time and efforts. They also concluded a positive impact of convenience on purchase intention. Similarly, Ruangkanjanases et al. (2020) also found convenience to have a significant positive influence on consumer purchase intention. The present study, therefore, also included convenience as an independent variable in the model and is expected to influence purchase intention of circular products.

H4: Convenience will have a positive impact on purchase intention

Another independent variable added in the TPB by Jan (2020, 2021) and used in the present study is the environmental impact. According to Groening et al. (2018) and Dangelico and Vocalelli (2017), it is the production and consumption of products with the minimum to no adverse impact on the environment. As evident from the definition, environmental impact has two aspects, the first one is the consumer and the second is the producer. The consumer aspect means that before the consumers intend to purchase any product, they are aware of the effect it has on the environment. Similarly, the producer aspect state that before the producer/ company produce and sell something, they follow the guidelines of environmental protection and sustainability by adopting green and environmentally friendly practices (Segev et al., 2015; Grimmer & Woolley, 2014). The present study, focuses on the consumer aspects, as aligned with the scope of the research. According to Jan (2020, 2021), if the consumers are aware of the positive and/or negative impact of the products, their purchase intention will influence accordingly. This is also supported by Ruangkanjanases et al. (2020) who found a significant positive influence of environmental related variables on consumers' intention. In this case, if the products are produced following the philosophies of the circular economy, consumer purchase intention may positively influence. The aforementioned is also supported by literature, as Hedlund (2011) found the environmental concerns have a favourable impact on consumer's purchase intention. Similarly, Chamerlin and Boks (2018) also support this stance that people are generally concerned about the environment. This study, therefore, expects the environmental impact will have a positive influence on consumer's purchase intention.

H5: Environmental impact will have a positive effect on purchase intention

3.   FRAMEWORK OF THE STUDY

The framework of the present study contains five (5) exogenous variables and one (1) endogenous variable. The independent variables are attitude, subjective norm, perceived behavioural control, intention, convenience, and environmental impact, and the dependent variable is purchase intention. The model is present in figure 1.

Figure 1: Proposed Model of the Study
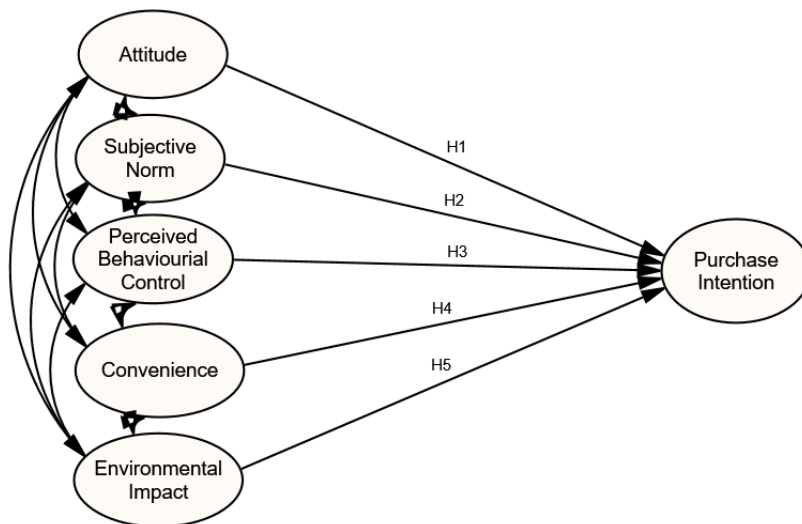
4.   METHODOLOGY

4.1.   *Sampling*

An interesting and unique attempt was undertaken in the present research, where data were collected from two different countries, namely Malaysia and Turkey, for comparative analysis purpose. Convenience sampling technique was used in both countries. In Malaysia, respondents were approached by the researcher and appointed assistants in the shopping malls and universities to explain the motive behind this research and then requested them to fill up the questionnaire. In Turkey, the respondents were sent the questionnaire using online methods like emails, and social media platforms. They were requested to think of some circular products like re-usable straws, edible straws, reusable water bottles, paper bags, reusable cotton bags, rechargeable batteries, etc. before answering the questions about their purchase intention. In both countries, the researcher adopted a green and sustainable method to collect the data in the form of soft copies only. A total of five hundred (500) questionnaires were distributed in Malaysia and Turkey each. Three hundred and seventy-seven (377) were finally selected for data analyses in Malaysia, and three hundred and fifty-one (351) were selected for data analyses in Turkey.

4.2.   *Research Instrument*

A self-administered questionnaire was used in the present research. The questionnaire was divided into two main sections. Part 1 of the questionnaire was designed to acquire information on the respondent's profile, and part 2 was designed to collect data on all the variables of the framework. All the items included in the questionnaire were adapted from previous studies and adjusted slightly to suit the context of the present research. Throughout the instrument, a five-point Likert scale

(with "1" strongly agree and "5" strongly disagree) was used to measure the level of agreement with variables. A total of 377 and 351 usable responses were gathered from Malaysia and Turkey, respectively. For data analyses, SPSS and AMOS version 22 were used.

5.   DATA ANALYSIS AND RESULTS

5.1.   Respondents' Profile

Data related to respondents' profile was collected using the first section of the questionnaire that included questions on gender, age, income level, education, and marital status.

Based on the results, both in Malaysian and Turkish responses the majority of the respondents were males with 63% and 68% contribution to this research, respectively. The remaining 37% in Malaysia, and 32% in Turkey, were female respondents. About age, the highest group in Malaysia was aged 27 and above with 45.4% (or 171) contribution, whereas, in Turkey, the highest age group in terms of responses was 25 – 27 years old with 43% (or 151) contribution. In both Malaysian and Turkish responses, the majority (44.6% or 168) and (45.3% or 159) respectively, hold a post-graduate degree. Malaysian data shows that most (66.6% or 251) respondents are married. This is also the case in Turkish counterpart with 67.2% (or 236) respondents reporting to be married. Lastly, this research is mainly influenced by an income group of RM 1001 to RM 3999 (in Malaysia), and TL 1001 to TL 3999 (in Turkey). Table 1 presents detailed respondents' profile.

Table 1: Respondents' Profile Malaysia and Turkey

Variable	MALAYSIA		TURKEY	
	Frequency	Percentage	Frequency	Percentage
Gender				
Male	238	63	239	68
Female	139	37	112	32
Age				
18-21	51	13.5	62	17.7
22-24	70	18.6	91	25.9
25-27	85	22.5	151	43.0
27 and above	171	45.4	47	13.4
Education				
Undergraduate	87	23.1	153	43.6
Postgraduate	168	44.6	159	45.3
Doctorate	34	9.0	34	9.7
Others	88	23.3	5	1.4
Marital Status				
Single	119	31.6	115	32.8
Married	251	66.6	236	67.2
Divorced	7	1.9	0	0
Income				
1000 or below	87	23.1	79	22.5
1001—3999	157	41.6	170	48.4
6000 – 10,000	71	18.8	66	18.8
6000 – 10,000	39	10.3	36	10.3
Above 10,000	23	6.1	0	0

5.2. Reliability Test

It is important to conduct a reliability test, as part of the data analyses, to check the consistency and stability of the questionnaire. For this purpose, reliability tests using Cronbach's alpha was performed. It is recommended to achieve the alpha value of 0.70 or above (Nunnally, 1975). Data acquired from Malaysian respondent resulted in a value of 0.959, whereas, Turkish data resulted in a value of 0.955, confirming the stability of the instrument (see Table 2a and 2b).

Table 2a: Reliability Statistics of the Questionnaire – MALAYSIA

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
0.958	0.959	27

Table 2b: Reliability Statistics of the Questionnaire – TURKEY

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
0.955	0.955	29

5.3. Exploratory Factor Analysis (EFA)

Next step in data analysis was to do exploratory factor analysis (hereafter, EFA). It is an important step to find out the factors underlying the collected data. Before proceeding with EFA, Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity was checked for both Malaysia and Turkey. Based on the recommendation of Hair et al. (2013), item loading of 0.4 and below were deleted, and a cross-loading of below 0.35 were also removed to get clean factors. The Malaysian results of KMO indicated an acceptable value of 0.943, and the Turkish data resulted in the KMO value of 0.932. Similarly, Bartlett's Test of Sphericity was significant at $p < 0.001$ in both countries, indicating the acceptable correlation between variables. The result of the EFA is presented in Table 3a and Table 3b.

Table 3a: Exploratory Factor Analysis – MALAYSIA

Rotated Component Matrix						
	Components					
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Items (Variables)	Subjective Norm	Purchase Intention	Perceived Behavioural Control	Environmental Impact	Attitude	Convenience
SN2	.821					
SN5	.802					
SN4	.787					
SN6	.779					
SN3	.739					
SN1	.722					
PI12		.879				
PI13		.873				
PI14		.868				
PI11		.837				
PI15		.835				

PBC4		.851			
PBC1		.826			
PBC2		.671			
PBC3		.627			
ENV2			.801		
ENV3			.697		
ENV1			.617		
ENV4			.599		
ATT2				.805	
ATT1				.794	
ATT4				.507	
CON3					.806
CON4					.794
CON1					.733
CON2					.710
Initial Eigenvalues	13.599	2.232	1.943	1.469	1.238	1.001
% of Variance	19.645	18.040	11.824	10.100	10.033	9.918
Cumulative %	19.645	37.686	49.510	59.610	69.643	**79.561**

Table 3b: Exploratory Factor Analysis – TURKEY

			Rotated Component Matrix			
			Components			
Items (Variables)	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
	Subjective Norm	Purchase Intention	Attitude	Environmental Impact	Perceived Behavioural Control	Convenience
SN2	.831					
SN3	.785					
SN1	.785					
SN5	.775					
SN6	.774					
SN4	.773					
PI2		.869				
PI5		.860				
PI4		.858				
PI1		.834				
PI3		.815				
ATT2			.808			
ATT3			.804			
ATT4			.799			
ATT1			.783			
ATT5			.686			
ENV3				.853		
ENV1				.805		
ENV4				.785		
ENV2				.780		
ENV5				.622		
PBC4					.854	
PBC1					.799	

PBC3				.703	
PBC2				.703	
CON3					.812
CON4					.789
CON1					.737
CON2					.720
Initial Eigenvalues	13.445	2.627	2.189	1.876	1.375	1.356
% of Variance	16.925	15.977	13.490	12.667	10.709	9.082
Cumulative %	16.925	32.901	46.391	59.058	69.767	**78.849**

In both the countries, the result of EFA emerged with clean six-factors, however, with different structure and loadings. The criteria of the eigenvalue of above 1.0 were maintained. In Malaysia, the total variance of the extracted six factors was 79.56%, whereas, in Turkey, the total extracted variance was 78.849%. In both instances, all the items loaded on their respective factors than on any other factor, attesting the discriminant validity of the measurement.

5.4. *Confirmatory Factor Analysis (CFA)*

After successful EFA, the extracted factors were confirmed by deploying confirmatory factor analysis (hereafter, CFA). It is also a compulsory step if one wishes to adopt the two-stage approach of structural equation modelling (hereafter, SEM), as is the case in the present study. To do CFA, AMOS software was used with Maximum Likelihood Estimation (MLE). CFA is important because the proposed model is tested for its fitness in this stage before testing it in full-fledge and before testing the hypotheses. Fitness of the measurement model was evaluated based on the goodness-of-fit indices recommended by various scholars (Byrne, 2010; Hair et al., 2013; Kline, 2015). The fit indices considered to assess the present measurement model were chi-square (χ^2), normed chi-square (χ^2/df), the comparative fit index (CFI), and the room mean square error of approximation (RMSEA). The result of the final measurement model for both Malaysia and Turkey are presented in figure 2a and figure 2b, respectively.

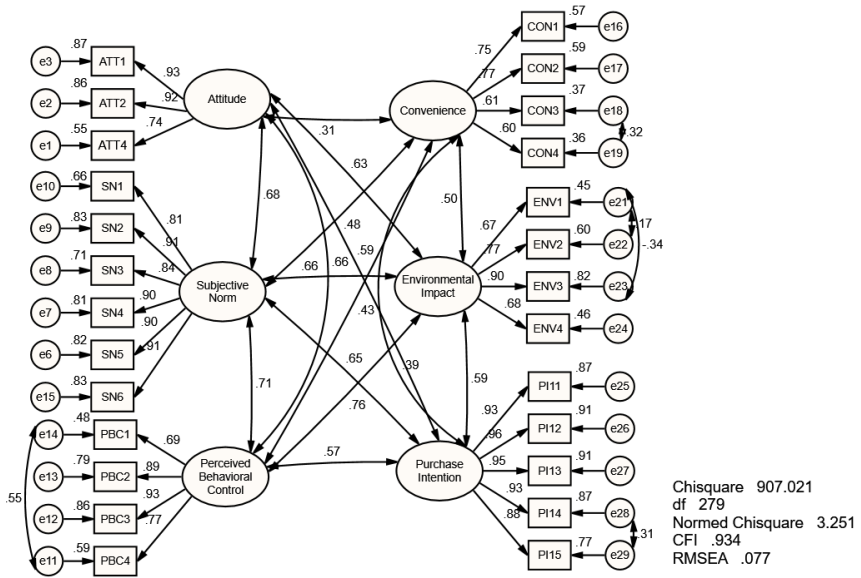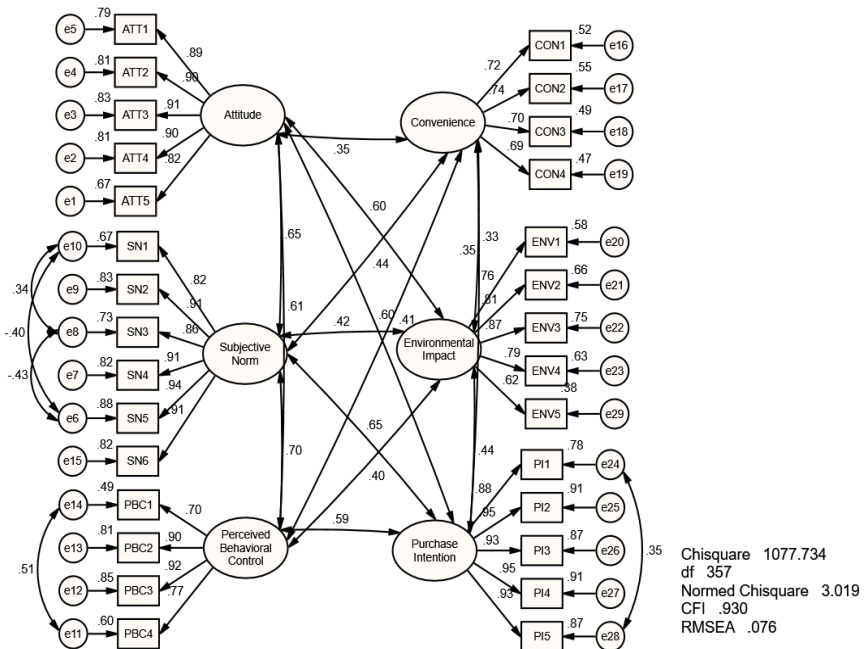**Figure 2a:** Measurement Model – MALAYSIA

Figure 2b: Measurement Model – TURKEY

Based on the result of the measurement model of the present research, all the fit indices were above the acceptable threshold for the data collected from both the countries. In the case of Malaysia, the normed chi-square (χ^2/df) value is 3.251, which is below 5.0. Similarly, CFI is 0.934, which is above the recommended value of 0.90. Lastly, RMSEA emerged with a value of 0.077, which is also below the acceptable value of < 0.08. The observation of the similar indices for Turkey shows that the normed chi-square (χ^2/df) value is 3.019, which is below 5.0. Similarly, CFI is 0.930, which is above the recommended value of 0.90. Lastly, RMSEA emerged with a value of 0.076, which is also below the acceptable value of < 0.08. Comparing the results of CFA of the models from both the countries show that the Turkish model resulted in a slighted better fit compared to that of the Malaysian counterpart. These acceptable values also indicate that the measurement model fits well and is ready to be tested in full-fledged.

5.5.   Hypotheses Testing

As highlighted above that the two-stage SEM approach was adopted in the present research. The second stage, in this case, is the fitness of the full-fledged structural model and also the testing of hypotheses. For structural model fitness, normed chi-square (χ^2/df), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA) was considered for both the Malaysia and Turkey. The final structural models are presented in Figure 3a and Figure 3b followed by the result of hypotheses testing, which is presented in Table 4a and Table 4b.

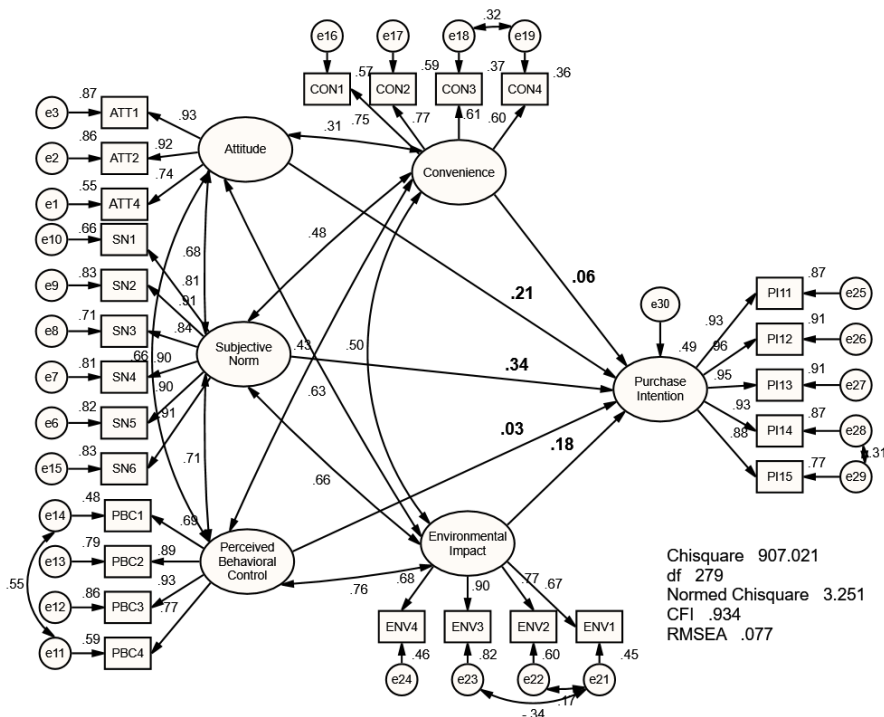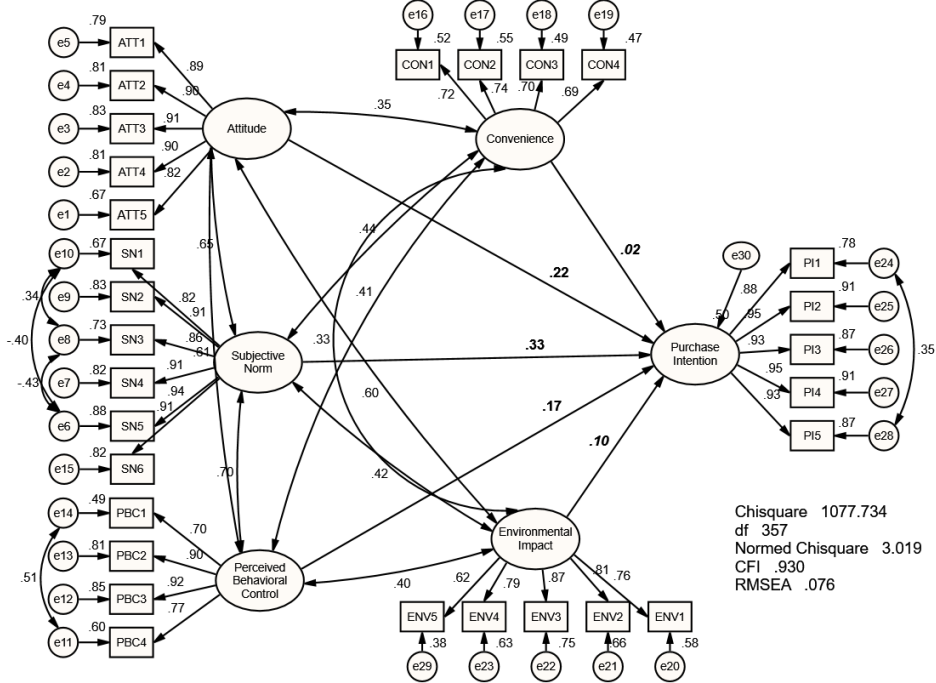**Figure 3a:** Full Structural Model – MALAYSIA

Figure 3b: Full Structural Model – TURKEY

The result of the hypothesised model revealed that it fits the data very well in the case of both countries (see Figure 3a and Figure 3b). In this case, the goodness-of-fit indices were at the acceptable level with normed chi-square (χ^2/df) = 3.251, the comparative fit index (CFI) = 0.934, and the root mean square error of approximation (RMSEA) = 0.077 for Malaysia, and normed chi-square (χ^2/df) = 3.091, the comparative fit index (CFI) = 0.930, and the root mean square error of approximation (RMSEA) = 0.076 for Turkey. Further, three (3) out of the total five (5) structural paths were statistically significant in the Malaysian model, whereas, three (3) out of the total five (5) structural paths were statistically significant in the Turkish model. It is of high import to note here that the three (3) hypotheses supported in Malaysian model are different than the three (3) hypotheses supported in Turkish model, which will be explained in the latter part of the paper. The results of hypotheses testing are provided in Table 3a and Table 3b.

Table 4a: Estimates of the Hypothesised Model – MALAYSIA

Structural path	Hypothesised Relationship	Std. Reg. Weight	S. E.	C. R.	P
Attitude → Purchase Intention	H1[s]	0.208	0.088	3.291	0.001
Subjective Norm → Purchase Intention	H2[s]	0.342	0.073	4.984	***
Perceived Behavioural Control → Purchase Intention	H3[ns]	0.032	0.101	0.412	0.68
Convenience → Purchase Intention	H4[ns]	0.064	0.071	1.157	0.247
Environmental Impact → Purchase Intention	H5[s]	0.175	0.137	2.245	0.025

Statistic	Suggested	Obtained
Chi-square significance	≥ 0.05	0.000
Normed chi-square (CMIN/*df*)	≤ 5.00	3.251
Comparative fit index (CFI)	≥ 0.90	0.934
Root mean error square of approximation (RMSEA)	≤ 0.08	0.077

Notes: s = Supported at $p < 0.05$, ns = Not supported, *** = Significant at $p < 0.0001$.

Table 4b: Estimates of the Hypothesised Model – TURKEY

Structural path	Hypothesised Relationship	Std. Reg. Weight	S. E.	C. R.	P
Attitude → Purchase Intention	H1[s]	0.22	0.077	3.331	***
Subjective Norm → Purchase Intention	H2[s]	0.335	0.066	5.026	***
Perceived Behavioural Control → Purchase Intention	H3[s]	0.169	0.083	2.606	0.009
Convenience → Purchase Intention	H4[ns]	0.023	0.068	0.441	0.659
Environmental Impact → Purchase Intention	H5[ns]	0.095	0.082	1.734	0.083

Statistic	Suggested	Obtained
Chi-square significance	≥ 0.05	0.000
Normed chi-square (CMIN/*df*)	≤ 5.00	3.019
Comparative fit index (CFI)	≥ 0.90	0.930
Root mean error square of approximation (RMSEA)	≤ 0.08	0.076

Notes: s = Supported at $p < 0.05$, ns = Not supported, *** = Significant at $p < 0.0001$.

Based on the results of hypotheses testing presented in Table 3a, it is clear that in Malaysia only three (3) out of the total five (5) hypotheses are supported. The supported ones are H1 (attitude has a positive impact on consumer purchase intention), H2 (subjective norm has a positive impact on consumer purchase intention), and H5 (environmental impact has a positive effect on consumer purchase intention). There was not enough evidence to support H3 (perceived behavioural control has a positive impact on consumer purchase intention) and H4 (convenience has a positive impact on consumer purchase intention). It is of high import to note that the causal link between "subjective norm" and "purchase intention" was the strongest with the regression weight of 0.342. It was followed by a structural link between "attitude" and "purchase intention" with the regression weight of 0.208, and "environmental impact" and "purchase intention" with the resulted regression weight of 0.175.

Similarly, the results of hypotheses testing presented in Table 3b are for Turkey. It also emerged with three (3) out of the total five (5) hypotheses to be supported, however, the causal linkages are different. In this case, the supported ones are H1 (attitude has a positive impact on consumer purchase intention), H2 (Subjective norm has a positive impact on consumer purchase intention), and H3 (Perceived behavioural control has a positive impact on consumer purchase intention). There was not enough evidence to support H4 (Convenience has a positive impact on consumer purchase intention), and H5 (environmental impact has a positive effect on consumer purchase intention). It is also important to highlight that in the Turkish results, the strongest causal link was between "subjective norm" and "purchase intention" with the regression weight of 0.335. It was followed by a structural link between "attitude" and "purchase intention" with the regression weight of 0.22.

Comparing the results of Malaysia with that of Turkey show that attitude, subjective norm, and convenience have a positive significant impact on purchase intention of circular products in Malaysia. Whereas, attitude, subjective norm, and perceived behavioural control have a positive significant impact on purchase intention of circular products in Turkey.

6.   CONCLUSION AND DIRECTION FOR FUTURE RESEARCH

The novelty of the present research lies not only in choosing a promising and appealing concept of the circular economy but also testing it empirically using complex statistical techniques by collecting data from two different countries and comparing the results. Further, to the best of the knowledge of the researcher, no attempt has been made previously to do such a unique thing and that is not only to add variables related to the circular economy to the theory of planned behaviour but also testing it in two different countries using the same methods. It makes this research promising, strong, unique, and contemporary with academic and practical implications.

Interestingly, in both countries, subjective norm resulted in a significant influence on consumer's purchase intention to buy circular products. It means that the influence of family, friends, and peers play a vital role in the purchase intention of people from Malaysia and Turkey when planning to buy circular products or products produced with the philosophy of circular economy. This particular finding is also understandable keeping in mind that somehow there are cultural and religious similarities between Malaysia and Turkey. Further, in both countries attitude of consumers toward their intention to buy circular products occurred to be inevitable.

The point of difference between Malaysia and Turkey appeared to be in two variables. Malaysian findings suggest that environmental impact plays a significant role in consumer's intention to buy circular products, whereas, Turkish findings point toward perceived behaviour control as an important variable of concern when intending to purchase circular products. This particular finding is of extreme import for policy-makers, practitioners, and global organisations who wish to attract consumers to buy circular products. For Malaysian consumers, their focus should be on environmental impact, but in Turkey, they should concentrate more on perceived behavioural control.

For future researchers who wish to take the model of the present study may consider collecting data from other countries, especially from those countries with cultural and religious differences. A promising attempt would be to further extend the present model by adding and testing more variables, like financial concerns, brand image, customer relationship, etc. Moreover, future researchers may consider adding consumer purchase behaviour in the present model, as is in the TPB, and collect post-purchase data from customers to see if their intention to purchase the circular product will have any impact on their actual behaviour of buying circular products. Lastly, in-depth qualitative studies can also be conducted to understand the reason for the difference between or among the countries, when it comes to the purchase intention of circular products.

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