Applied Psychology Research 2023; 2(1): 476.
Original Research Article

Factors driving consumers intention to buy products: An empirical investigation

Li-Fan Wu[1,*], Cheng Yang[1], Yang-Hsin Fu[2], Yu-Jia Li[1]

[1] *School of Economics, Wuzhou University, Wuzhou 543003, China*

[2] *National University of Kaohsiung, Kaohsiung 81148, Taiwan*

*** Corresponding author:** Li-Fan Wu, wdaniel881@gmail.com

ARTICLE INFO

Received: 7 August 2023
Accepted: 8 September 2023
Available online: 20 September 2023

doi: 10.59400/apr.v2i1.476

ABSTRACT: This article examines consumers' intention to purchase green products, such as electric scooters, based on the theory of planned behavior. Specifically, the study incorporates several essential variables that are likely to influence consumer intentions: (a) product knowledge; (b) subjective norm; and (c) psychological and functional perceived risk. The research model was tested using data from the survey of 568 participants. Results indicate that Purchase intention is influenced by Product Knowledge and Subjective Norm while consumer's Perceived Risk has a moderating effect. More specifically, psychologically perceived risk strengthens the relationship between product knowledge and purchase intention, and functionally perceived risk dampens the relationship between them. By examining three major external factors that influence green product consumers' purchasing intentions, this study contributes to the theory of planned behavior and generates practical recommendations. The authors recommended that marketing managers need to pay attention to both consumers' psychological and functional perceived risk and utilize such marketing activities as engaging with "opinion leaders" in order to boost consumers' purchasing intentions and organize educational events about green products.

KEYWORDS: purchase intention; product knowledge; subjective norm; brand image; perceived risk

1. Introduction

Consumers' behavior and intentions will change along with the transformations in the external environment[1]. Various environmental settings lead to different consumers' considerations and outcomes, which makes research into consumers' purchase intentions an intriguing and important topic for business practitioners, scholars, and even governments. There has been an increase in awareness about environmental issues in recent years among organizations, governments, and individuals. This environmental awareness trend also impacts consumer behavior and purchase intention[2].

Previous studies about consumers' purchase intentions can be divided into two categories. The first category addresses the relationship between product & consumer-level factors and purchase intention. Those factors include brand name, store name, product price, and service quality[3–7]. The second category discusses the factors that influence consumer purchase intention via some potential factors, such as social pressure or subjective norms[8,9]. There is an array of studies discussing separately product-level, consumer-level, or potential factors influencing consumers' purchase intention; however,

it is surprising that little empirical research has been conducted from the perspective of the integrated influence of these factors, especially in relation to green and pro-environmental products.

The goal of this research is to fill in this gap by examining the effect of the three extraneous variables, such as consumer-level: Product Knowledge; potential-level: Subjective Norms; and product-level: Brand Image on the product purchase intention. Specifically, this study narrows down and focuses on an environmentally friendly product with green energy, an electric scooter, as our research target. Furthermore, this research uses the core theory of consumer purchasing intention research, which is mainly from the perspective of individuals' decision-making processes[10], such as the theory of Reasoned Action (TRA) and its extension, the theory of planned behaviour (TPB)[11]. TPB explains the willingness of consumers to buy based on the information they have obtained and their systematic and rational thinking[11,12]. According to TPB, consumers make their purchasing decisions through the sequential steps of problem recognition, information search, evaluation of alternatives, product choice, and outcomes[13] and familiarity with the product increases purchase intention.

Specifically, in this study, the authors examine the effect of the three extraneous variables influencing consumers' purchase intentions. Firstly, there is a perspective that the increased awareness and interest in sustainable consumption is expected to influence consumer purchase intention in the long term; in other words, starting from the consumer-level factor, when consumers have more product familiarity and knowledge, they are more likely to purchase the product[14]. Thus, product knowledge is often conceptualized as a direct antecedent of Purchase Intention[15]. Secondly, while most of the studies explore consumers' purchase intentions from the "Consumers own views", there are few studies that note the importance of considering "the views of others" before making the decision[5]. Thus, we argue that consumers are affected by the perception of some significant referents, such as family or friends[9] and consider subjective norms as one of the factors that influence consumers' purchase intentions. Thirdly, previous studies have suggested that consumers' purchase intention depends on various product-level external factors[5,16], such as positive corporate reputation, image, identity, and corporate social responsibility[17,18]. These studies also provided robust evidence of the relationship between brand familiarity, corporate identity[19]; brand image[20] and purchase intention. Based on the above, we consider that the product-level factor, Brand Image[21] links to consumers' Purchase Intention.

In addition to examining the three levels of factors related to consumers' purchase intention, authors pay attention to consumers' perceived risk as a crucial consumer-level factor, whose moderating influence on consumer purchase intention is usually ignored by researchers[22,23]. In fact, prior studies stated that some factors, such as product novelty, higher financial expenditure, or the existence of alternatives, would increase the effect of consumer perceived risk[24,25]. Therefore, the present study proposes consumers' perceived risk as a moderating factor in fitting the contextual setting.

This paper aims to make three contributions to literature and practice. First, in light of the above discussion, we present an integrated consumer Purchase Intention research model that considers all three level (consumer, potential, and product) factors, such as Product Knowledge (PK), Subjective Norms (SN), and Brand Image (BI) that influence Purchase Intention (see **Figure 1**). Secondly, we argue that the moderating effect of Perceived Risk will affect the relationship between variables[24,26]. Thirdly, to test the present study research model, the authors used survey data among 568 potential electric scooter consumers collected in Taiwan, a place with a higher scooter per capita density and the major producer of diesel and electric scooters around the world. Taiwan had more than 110,000 electric scooters in 2019, which is almost 10 times higher than three years ago in 2016[27] which provides access to a representative sample for data collection and advances our understanding of what factors influence

consumption of environmentally friendly transportation, such as electric scooters. Results indicate that Purchase intention is influenced by Product Knowledge and Subjective Norm while the consumer's Perceived Risk has a moderating effect. By examining three major external factors that influence green product consumers' purchasing intentions, this study contributes to the theory of planned behavior and generates practical recommendations.

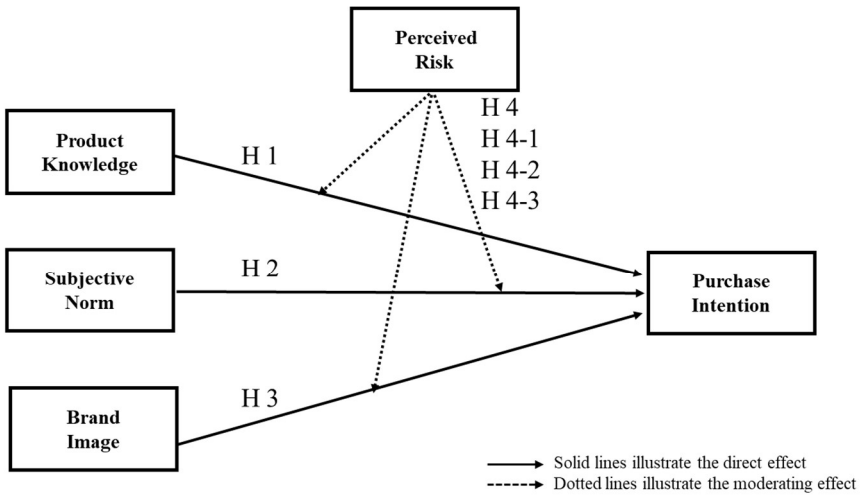

Figure 1. Proposed theoretical perspective.

2. Literature and hypotheses

Various research frameworks have been used to study consumer purchasing intention and explain the relationship among the variables[4,20,28]. Theory of Reasoned Action (TRA)/Theory of Planned Behaviour (TPB) have been extensively used in consumer behaviour literature[29,30]. These theoretical models come from the field of social psychology. Ajzen (1991) claimed that attitude, subjective norms, and perceived behavioral control jointly influence a person's behavioral intention[31]. The main basic assumption of the TPB model is that most behaviour people engage in is under their own control and is rational. Moreover, the decision factor in a person's actual behaviour is the tendency to behave, that is, behavioral intention.

Based on the theory (i.e., TRA/TPB), consumer behaviour is stimulated by external influences, which are arousing the buyers' consciousness, changing their attitude, Purchase Intention and impelling consumers' decision-making processes[31,32]. In this vein, Purchase Intention is one of the processes from personal attitudes to the behaviour (i.e., purchase behaviours)[12,33] and the core concept is applied in this study.

2.1. Purchase intention (PI)

Purchase Intention represents the possibility that consumers will intend to purchase a product or service in the coming future; an increase in Purchase Intention means an increase in the possibility of a purchase[4,34]. Purchase Intention is an important indicator for estimating consumer behaviour[35]. When consumers have a positive Purchase Intention, it means that they will take action to purchase a product[4]. In the business world, consumers Purchase Intention directly relates to the performance of the enterprise (e.g., financial, marketing, and logistics performance)[4,5,35]. In extant literature, Purchase Intention is initially defined as a single criterion or two-dimensional assumption[36]. Regardless of the single criterion or two-dimensional assumption definition of Purchase Intention, both are valuable

Purchase Intention concepts for estimating the performance of an organization or analyzing consumer behaviour[5]. Therefore, taking purchase intention as the dependent variable really shows its importance in representing consumers' behavior and future market trends for research consideration.

2.2 Product knowledge (PK)

Consumer Product Knowledge has been recognized as a determinant that influences all steps in the decision process[37]. Before consumers choose a product, they usually apply the previous purchasing experience, information, and memories associated with the product. Thus, the consumer's Product Knowledge may affect his/her information processing heuristics, trust, commitment and decision-making behaviour[38,39].

Product Knowledge definition is based on two elements: the first one is functional knowledge-knowing whether the product has completed its task or not; and the second is the extent of familiarity with the product[37,38,40,41]. Product Knowledge also contains experience using a product, understanding relevant products, and accumulated purchasing experience. In other words, familiarity is defined as the product-related experiences that are accumulated by the consumer, and functional-knowing (i.e., expertise) is generally related to the level of involvement a consumer has with a specific product category[38]. Therefore, consumers will develop different knowledge structures and content under different degrees of familiarity and expertise with the products.

Consumers utilize different information to distinguish products. When a consumer lacks understanding of the product, he/she will assess its quality depending on extrinsic cues[42]. For example, consumers who are given restricted functional product knowledge and have no previous experience with a new product will make the final purchasing decision based on their previous purchasing experiences and the assessment of information received via all kinds of media channels. In other words, the accumulated individual's purchasing experience and new information via media channels transfer into consumer Product Knowledge. Based on the above, it follows that consumer Product Knowledge consists of three different categories[37,40]: individual Product Knowledge, purchasing experience, and obtained external information, which are subjective knowledge, objective knowledge, and experience-based knowledge.

However, it is difficult to distinguish the differences between measures of subjective knowledge (i.e., what individuals perceive that they know?) and measures of objective knowledge (i.e., what is actually stored in a person's memory?) which occur when people do not accurately perceive how much or how little they actually know. Besides, subjective knowledge is a superior indicator to objective knowledge for product evaluation purposes[41]. Adopting the same ideas as this, we considered a conceptualisation of subjective knowledge as product knowledge in the current study. And then the following hypothesis is proposed.

Hypothesis 1: Product Knowledge significantly relates to consumers' Purchase Intention.

2.3. Subjective norm (SN)

Subjective Norm is an external factor, defined as "an individual perception of social pressure, coming from influential people or groups, such as family, friends, or leaders, whose opinion and value formed certain norms or normative beliefs, about the behaviour"[9,11]. The concept of Subjective Norm comes from the TRA which explains Purchase Intention based on personal attitudes towards the behaviour[11,12]. Previous scholars noted a significant relationship between Subjective Norm and attitudes toward behaviour[12]. In other words, Subjective Norm influences the formation of an

individual's attitudes[8], intentions, and behaviours. In consumer behaviour research, Subjective Norm reflects how the consumer is affected by the perception of some significant referents (e.g., family, friends, and colleagues, among others) in his/her behaviour and is an accepted concept to measure the influence of Subjective Norm on Purchase Intention[9,43]. Previous studies have shown a strong positive influence of Subjective Norm on the use of green services in Asian context[44,45]. Following the above, we argue that Subjective Norm will affect electric scooter consumer Purchase Intention. Thus, the following hypothesis is proposed.

Hypothesis 2: Consumer Subjective Norm significantly relates to consumers' Purchase Intention.

2.4. Brand image (BI)

Brand Image is related to product information and presents consumers' overall judgment on a product, which is an important topic in consumer Purchase Intention research[20,46,47]. Brand Image represents the current and immediate reflection that consumers have towards an organization[19,48]. Brand Image consists of various physical and behavioral attributes of the organization, such as business name, architecture, variety of products and services and their quality, tradition, ideology[19,49]. In practice, Brand Image is developed and created by certain organizations as an important marketing activity and communication tool[20]. For example, corporations create the identity through strategic choices and corporate expression, which include the conceptualization and communication of the visual identity, the brand promise, and the brand personality, to develop a strong corporate brand and Brand Image[19]. More specifically, Brand Image is a marketing activity and business tool for building a bridge with consumers[20]. It is a perceptual concept that stands for the set of brand associations in a consumer's memories[50]. Based on the theory (i.e., TRA/TPB), consumer behaviour is stimulated by external influences, which are arousing the buyers' consciousness, changing their attitude, influencing their Purchase Intention, and impelling consumers' decision-making processes[32]. Thus, consumers use certain cues as signals for making decisions to buy (i.e., behaviours).

As classified by scholars, three components—store name, brand name, and price discounts—are the most important keys to store patronage relationship decisions[34]. Previous empirical evidence also noted that Brand Image helps to control and stabilize consumers' perceptions of product quality and increases Purchase Intention[4,20]. Brand Image related to the functional and/or emotional characteristics of a product, increases brand identity, shapes the positive Brand Image and is an important factor in understanding the demands of consumers[19]. Consumers shape their preferences among the product brands and their Purchase Intention to buy the most preferred brand[51]. Previous studies show that Brand Image has an influence on the consumer's mind, which has a significant effect on consumers' perceptions of product quality[34] and Purchase Intention[52]. In short, Brand Image is an important external factor that influences consumer Purchase Intention for products, such as an electric scooter. Therefore, we propose the following hypothesis.

Hypothesis 3: Brand Image significantly relates to consumers' Purchase Intention.

2.5. Perceived risk (PR)

The concept of Perceived Risk defines risk in terms of the consumer's feeling of discomfort, uncertainty, and adverse consequences of buying a product or service[23]. Different dimensions of Perceived Risk were defined and verified by previous scholars[23,53,54]. In literature, scholars addressed and tested six Perceived Risk dimensions (i.e., financial, social, time, performance, psychological, and physical) to explain overall Perceived Risk[53]. Furthermore, scholars agreed that one or more of

Perceived Risk dimensions may drive consumers' overall perceptions of risk[24,55]. Any product purchase is a commercial exchange and leads to Perceived Risk (e.g., performance, social, psychological). Customers make a purchase decision based on occurrence probability (i.e., service/product performance) and outcome desirability (i.e., perceived benefits associated with the service/product) in an unknown or risky purchase situation. Therefore, in a typical consumer's purchase encounter or estimation, consumers are willing to buy a product with their expectations at low risk, and vice versa[56]. From this point of view, Perceived Risk plays a moderating role in the consumer purchase intention process and has a moderating effect on the consumer purchase intention and its antecedents[24]. It was found that several dimensions of PR (i.e., financial, social, psychological, and performance) moderate the link between the relationship of antecedents (i.e., loyalty and satisfaction) and the relationship outcome (i.e., willingness to pay)[56]. In this study, we explore two core dimensions of Perceived Risk: the functional (performance) and psychological (social) for consumers' evaluations of the product[23,24]. The functional (performance) risk refers to the perceived likelihood that the product will not perform as desired, and the psychological (social) risk refers to the psychological and social loss (e.g., more negative self-image or social embarrassment)[56,57]. In our conceptual framework, we posit that the link between relationship antecedent (i.e., Product Knowledge, Subjective Norm, Brand Image) and relationship outcome (i.e., Purchase Intention) is moderated by Perceived Risk (functional perceived risk, PRf; psychological perceived risk, PRp). Based on the discussion above and by linking Hypothesis 1–3, we extend and propose the following additional hypothesis:

Hypothesis 4: Perceived Risk moderates the relationship between antecedents and outcomes.

Hypothesis 4-1: The relationship between Product Knowledge and consumer Purchase Intention is moderated by (a) Functional perceived risk, PR_f and (b) Psychological perceived risk, PR_p.

Hypothesis 4-2: The relationship between Subjective Norm and consumer Purchase Intention is moderated by (a) Functional perceived risk, PR_f and (b) Psychological perceived risk, PR_p.

Hypothesis 4-3: The relationship between Brand Image and consumer Purchase Intention is moderated by (a) Functional perceived risk, PR_f and (b) Psychological perceived risk, PR_p.

2.6. Control variable

In this study, we control for a range of variables that could influence the outcome variable. The first is gender, which might play a key role in impacting a consumer's evaluative judgments in purchasing products and influencing their purchase intention[58]. The second important determinant attribute related to the purchase intention is the product itself, which is related to the price[59]. Hence, the income level of the consumer also plays a key factor in impacting their purchasing intention, which is controlled here. Furthermore, other variables such as consumer age and education level may influence purchase intentions, which are all controlled by a statistical procedure.

3. Methodology

3.1. Sampling and questionnaire design

The questionnaire has consisted of questions to measure the constructs of Product Knowledge, Subjective Norm, Brand Image, Perceived Risk (functional and psychological) and Purchase Intention, as well as the demographics (age, gender, and education). Items were assessed using a five-point Likert-type scale[60] from 1 (disagree) to 5 (agree). To validate the measures, a pre-test with 25 participants, including colleagues, students, and human resource professionals, was conducted. Cronbach's alpha

scores indicated adequate internal reliability (PK = 0.831; SN = 0.864; BI = 0.928; PRf. = 0.838; PRp. = 0.828; PI = 0.878)[61]. Factor analysis demonstrated that the items loaded on their intended construct, which indicated adequate convergent and divergent validity. No changes were made to the instrument after the pre-test.

We distributed 660 questionnaires to the participants in the five districts of Kinmen, Taiwan. Respondents were given a list of major domestic electric scooter brands to help them recognize them. In order to collect the data effectively, we set up chairs and tables on the streets of the town's center and invited passengers or citizens to participate in the survey with a small gift for return (the price of gifts is about $2). In the face-to-face paper questionnaire with respondents, we first explained the research that is aimed at understanding the consumers' willingness to buy an electric scooter, and their consideration is only used to this research by an anonymous answer. 568 (86.1%) returned fully completed questionnaires and were used in the analysis.

The demographic profile of respondents is shown in **Table 1**. The measurement items for constructs are shown in **Table 2**.

Table 1. Demographic profile of respondents.

Demographics	**Frequency**	**Percentage**	**Aggregated Percentage**
Gender			
Male	292	51.4%	51.4%
Female	276	48.6%	100.0%
Marital Status			
Married	377	66.4%	66.4%
Single	186	32.7%	99.1%
N/A	5	0.9%	100.0%
Age			
Under 20	6	1.1%	1.1%
20–29	146	25.7%	26.8%
30–39	147	25.9%	52.6%
40–49	142	25.0%	77.6%
50–59	105	18.5%	96.1%
60 and above	22	3.9%	100.0%
Education level			
Unfinished High School	58	10.2%	10.2%
High school	191	33.6%	43.8%
Certificate/diploma	121	21.3%	65.1%
Bachelor's degree	180	31.7%	96.8%
Master's or Ph.D. degree	18	3.2%	100.0%
Income (NTD/Monthly)			
Under 20,000 (Under $ 667)	164	28.9%	28.9%
20,001–35,000 ($667–$1167)	163	28.7%	57.6%
35,001–50,000 ($1167– $1667)	119	21.0%	78.5%
50,001–65,000 ($1667–$2167)	60	10.6%	89.1%

Table 1. (*Continued*).

Demographics	Frequency	Percentage	Aggregated Percentage
65,001–80,000 ($2167–$2667)	36	6.3%	95.4%
80,001–95,000 ($2667–$3167)	21	3.7%	99.1%
About 95.001 (About $3167)	5	0.9%	100.0%
Rresidential area			
District A (Jincheng Township)	204	35.9%	35.9%
District B (Jinhu Township)	83	14.6%	50.5%
District C (Jinsha Township)	60	10.6%	61.1%
District D (Jinning Township)	137	24.1%	85.2%
District E (Lieyu Township)	84	14.8%	100.0%

Notes:
1. n = 568;
2. US Dollar (USD) to Taiwan Dollar (TWD) exchange rate is calculated by 1:30.

Table 2. Summary of measurement items and scales of constructs.

Construct	Measurement items	Mean (S.D.)	Loadings
Product Knowledge (PK)			
	About the electric scooter, you believe that you have got a lot of information on it.	2.94 (1.062)	0.77
	You have some experience to buy an electric scooter.	2.52 (1.363)	0.57
	You familiar with all types of electric scooter.	2.39 (1.075)	0.77
	You have some experience to drive an electric scooter.	2.77 (1.049)	0.92
Subjective Norm (SN)			
	My family and friends believe to use electric scooter can reduce fossil energy consumption.	4.19 (0.730)	0.85
	My family, friends and I believe to use electric scooter can reduce pollution.	4.18 (0.759)	0.81
	My family, friend and I believe to use electric scooter can save money.	4.10 (0.822)	0.81
	My family believe to use electric scooter can enhance our life quality.	3.85 (0.874)	0.72
Brand Image (BI)			
	When purchase product (e.g. electric scooter), you consider the product quality.	4.17 (0.836)	0.92
	When purchase product (e.g. electric scooter), you consider the brand service.	4.16 (0.807)	0.94
	When purchase product (e.g. electric scooter), you consider the product price.	4.10 (0.815)	0.90
	When purchase product (e.g. electric scooter), you consider the brand image.	3.92 (0.864)	0.75
Perceived Risk-functional/performance (PRf)			
	I am afraid that the quality and performance of a new product (e.g. electric scooter) would cause indirect economic loss.	3.39 (1.094)	0.81
	I am afraid that the after-sale service and quality warranty are not as good as the diesel motorcycle, and my time would be wasted when dealing with repair, product exchange, or refund.	3.73 (0.977)	0.83
	I am afraid that the quality and performance of a new product (e.g. electric scooter) would not provide the expected performance.	3.8 (0.924)	0.82
	I am afraid that an electric scooter is inferior to diesel motorcycle and there are potential safety risks.	3.7 (1.076)	0.64

Table 2. (*Continued*).

Construct	Measurement items	Mean (S.D.)	Loadings
Perceived Risk-psychological/social (PRp)			
	If I bought an electric scooter, I think I would be held in higher esteem while face my friends and relatives.	2.72 (1.026)	0.74
	If I buy an electric scooter, I am worrying that my relatives and friends considered that is a stupid decision.	2.48 (1.011)	0.86
	The thought of purchasing a new product (e.g. electric scooter) makes me feel unwanted anxiety while meeting friends and relatives.	2.58 (1.060)	0.86
Purchase Intention (PI)			
	The likelihood of purchasing this product (e.g. electric scooter) is: (very high to very low).	2.41 (1.018)	0.91
	I would purchase an electric scooter within six months.	2.43 (1.016)	0.96
	I would purchase an electric scooter in the coming year.	2.60 (1.077)	0.86
	I would purchase an electric scooter in three years.	3.15 (1.052)	0.47

3.2. Measurement of variables

3.2.1. Purchase intention (PI)

Consumer Purchase Intention for electric scooters was measured using 4 items referring to previously developed scales[34,58]. Purchase Intention is the extent to which a consumer considers buying a product in the future. An example item is "The likelihood of purchasing this product (e.g., an electric scooter) is very high to very low".

3.2.2. Product knowledge (PK)

Participants rated the extent to which they had experiences and familiarity with the product. The conceptual construct of product knowledge proposed by Guo and Meng (2008) was applied in the current study[41]. A 4-item scale was used to measure Product Knowledge. An example item is "About the electric-scooter, you believe that you have a lot of information on it".

3.2.3. Subjective Norm (SN)

Subjective Norm was measured using 4 items from previously developed scales[43]. An example item is "My family and friends believe using an electric scooter can reduce fossil energy consumption". The composite reliability of the construct is 0.870, which presents the measurement scale's validity.

3.2.4. Brand image (BI)

Brand Image was measured using 4 items from previously developed scales[20], including three dimensions of Brand Image which is functional, symbolic, and empirical. An example item is "When purchasing a product (e.g., an electric scooter), you consider the product quality".

3.2.5. Perceived risk (PR)

Perceived Risk was measured using previously developed scales[57,58], we have made an appropriate adjustment to measure the Perceived Risk construct (functional/performance and psychological/social) in line with this study. To do so, we have used the Exploratory Factor Analysis and yielded a two-factor solution. The eigenvalues were 2.88 and 2.10 (eigenvalue > 1), respectively. Following the recommendations of the literature concerning cross-loaded items[61] some items were omitted.

The first factor labelled functional/performance of Perceived Risk (PRf.) consisted of four items and explained 41.19% of the variance. An example item is "I am afraid that the quality and

performance of a new product (e.g., an electric scooter) would cause indirect economic loss". The second factor labelled psychological/social of Perceived Risk (PRp.), consisted of three items and explained an additional 29.96% of the variance (the explained variance of the total scale was 71.15%). An example item is "If I bought an electric scooter, I think I would be held in higher esteem while facing my friends and relatives".

3.3. Analysis and results

To test and verify the conceptual model, we conduct several stages of statistical analysis. First, we screen the raw data and deal with the missing value issue before proceeding with the exploratory factor analysis. There are less than 5% of missing values on all indicators that were effectively replaced by using the Expectation-Maximization algorithm. Secondly, as for Structural Equation Modeling analysis[62,63], we conducted the Confirmatory Factor Analysis and the model fit evaluation. Structural Equation Modeling involves the consideration of the observed scores for items and their measurement errors, in which the estimated parameters deviate non-significantly from true values and the average deviation is less than 0.5%. Compared to simple linear regression methods, the complicated specifications of regression models reduce the likelihood of common method variance[64]. In statistical procedure, it gives us a more accurate explanation of potential variables needed for the final model by identifying the strengths and directions of the relationships[65]. Therefore, it is expected to provide a better explanation of the relationship among variables. To do so, three steps were taken to test this model. At first, we conducted a Confirmatory Factor Analysis to verify each dimension's internal reliability and validity of the construct. Secondly, we test the model fit of measurement and structural factors that must demonstrate a satisfactory level before estimating the relationship among variables[66]. Third, we check the relationship between variables and proceed with the moderating test among variables. Description and illustration are in the following sections.

3.4. Internal reliability

Internal reliability of measurement was tested by testing convergent validity, and discriminant validity in line with the suggestions from the previous research[35,67]. Confirmatory Factor Analysis was carried out to test the convergent and discriminant validity of the constructs. Composite Reliability and Average Variance Extracted were calculated by standardized regression weights (loadings) of items to estimate their validity[68,69]. In this study, all the constructs' Composite Reliability values exceed 0.7, all Average Variance Extracted are higher than 0.5, and the square root of Average Variance Extracted are greater than the inter-construct correlations (the results shown in **Table 3**). It is shown that convergent and discriminant validity have been established, considering this model as a suitable measurement model.

Table 3. Correlation, reliability and convergent and discriminant validity.

	CR	AVE	MSV	MaxR(H)	1	2	3	4	5
PK	0.849	0.591	0.228	0.899	**0.769**				
SN	0.876	0.639	0.141	0.883	−0.099*	**0.799**			
BI	0.932	0.774	0.141	0.949	−0.186***	0.376***	**0.880**		
PRf	0.858	0.604	0.096	0.872	−0.207***	0.090†	0.310***	**0.777**	

Table 3. (*Continued*).

	CR	AVE	MSV	MaxR(H)	1	2	3	4		5
PRp	0.863	0.677	0.228	0.874	0.478***	−0.075	−0.154***	0.160***	**0.823**	
PI	0.886	0.673	0.223	0.949	0.473***	0.054	−0.066	−0.144**	0.415***	**0.820**

Notes:

1. PK: Product Knowledge; SN: Subjective Norm; BI: Brand Image; PRf: functional Perceived Risk; PRp: psychological Perceived Risk; PI: Purchase Intention.
2. Construct validity was considered valid in this study due to fulfill the criteria below:
a. Composite Reliability (CRs) greater than 0.7;
b. Average Variance Extracted (AVEs) greater than 0.5;
c. All square root of AVEs are greater than inter-construct correlations (See Correlation matrix and Square root of the AVE on the diagonal) to indicate that discriminant validity is established.
3. Significance of correlations:
† $p < 0.100$
* $p < 0.050$
** $p < 0.010$
*** $p < 0.001$.

3.5. Structure model analysis

Secondly, Variance-Based Structural Equation Modeling was used to analyze the model. The results show that overall structure model fit is acceptable, where $\chi 2/df$ is 3.268 ($\chi 2 = 676.392$, d.f. = 207, $p < 0.000$), CFI = 0.944, SRMR = 0.070, GFI = 0.906, AGFI = 0.875, and RMSEA = 0.063[63,70]. Those indices are summarized in **Table 4**.

Table 4. Overall model fit indices for the structure model.

Model fit indices	Threshold	Estimate	Interpretation
CMIN	-	676.392	
Degree of freedom (DF)	-	207	
CMIN/DF	Between 1 and 3	3.268	Acceptable
Comparative fit index (CFI)	>0.95	0.944	Acceptable
Standardized Root Mean Square Residual (SRMR)	<0.08	0.070	Excellent
Goodness of fit index (GFI)	>0.9	0.906	Excellent
Adjusted goodness of fit index (AGFI)	>0.8	0.875	Excellent
Root mean square error of approximation (RMSEA)	<0.082	0.063	Excellent

3.6. Structural equation modeling causal model analysis

After conducting Structural Equation Modeling analysis to estimate the relationships among variables, we found several clear and interesting results to verify the present study assumptions. Results show that there are two regression coefficient relationships showing significant effects. First, the positive effect is found from Product Knowledge to Purchase Intention and the standardized regression weight is $\beta = 0.244$, $p < 0.001$. The result implies that consumers' product knowledge had a statistically significant, positive relationship with their purchase intention regarding an electric scooter, and Hypothesis 1 is supported. Second, Hypothesis 2 also received support: Subjective Norm had a statistically significant, positive relationship with their purchase intention regarding an electric scooter, and the standardized regression weights from SN to PI are $\beta = 0.099$, $p < 0.01$. Unexpectedly, Brand

Image does not have a statistically significant influence on purchase intentions. Hypothesis 3 is not supported in this study. The relationships between variables are summarized and illustrated in **Figure 2**.

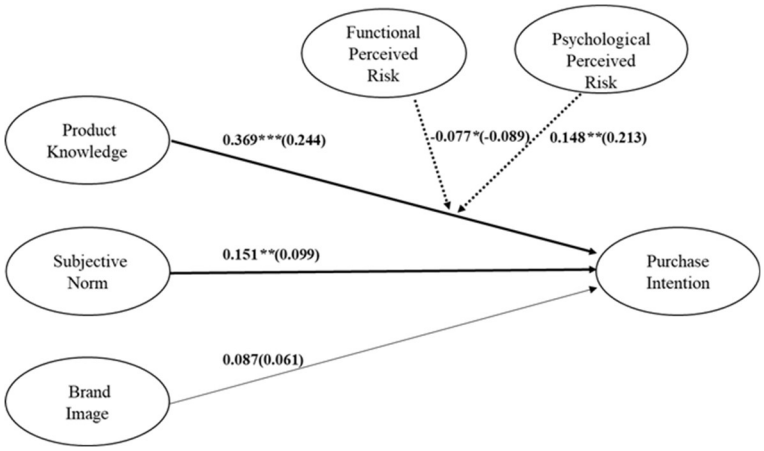

Figure 2. Examination of relationship of variables and the moderation with latent results.

Note:
1. Solid lines illustrate the direct effect; Dotted lines illustrate the moderating effect.
2. Standardized coefficients are provided in parentheses. For the sake of parsimony, we did not present the effects of control variables (i.e., Age, Gender, Education level and Income) here.
3.† $p < 0.1$, *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

3.7. The moderating analysis

The moderating effect of Perceived Risk were tested by computing the new variables and transferring the construct matrices into the new Z-scale variables, then producing the six moderating effect variables through the multiplied by the moderator (PR_f and PR_p) and independent variables (i.e., Product Knowledge, Subjective Norm, Brand Image) which are six moderating effects (including $PK*PR_f$; $PK*PR_p$; $SN*PR_f$; $SN*PR_p$; $BI*PR_f$ and $BI*PR_p$). Results show two significant moderating effects. One is the $PK*PR_f$ (being $\beta = -0.089$, $p < 0.05$) which is functional Perceived Risk dampens the relationship between Product Knowledge and Purchase Intention. The other moderating effect is found at $PK*PR_p$ (being $\beta = 0.213$, $p < 0.01$) which is psychological Perceived Risk strengthens the relationship between Product Knowledge and Purchase Intention. These results support hypothesis 4-1 (a) and (b) and do not support hypotheses 4-2 (a) and (b) neither 4-3 (a) and (b), The moderating effects are illustrated in **Figures 3** and **4**.

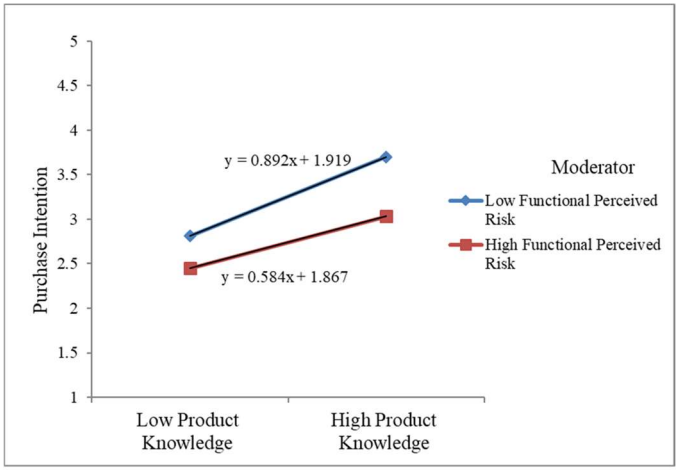

Figure 3. Functional perceived risk dampens the positive relations between product knowledge and purchase intention.

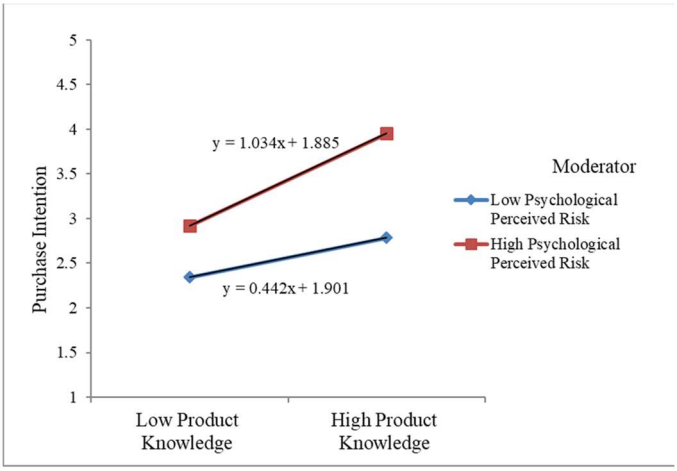

Figure 4. Psychological perceived risk strengthens the positive relationship between product knowledge and purchase intention.

4. Discussion

Our study is the first to explore the integrated effect of three levels of antecedents on consumers' purchase intention in the green, pro-environmental product context by highlighting perceived risk as a new avenue for moderating purchase intention among consumers. In particular, the current study has contributed to advance previous research by investigating the effects of product knowledge, subjective norms, and brand image on purchase intention under the framework of the theory of planned behavior. More precisely, we build an integrated model and extend it to fit the specific environmental setting. Second, this study has contributed to examining if perceived risk is a significant moderator in differentiating the effect of those external factors on consumers' purchase intentions.

In line with expectations, the present study revealed that when three aspects of factors (i.e., product knowledge, subjective norm, and brand image) were assessed, product knowledge had the greatest effect on consumers' purchase intention. The finding suggests that product knowledge is likely to be more influential in consumers' purchase intentions in a green, pro-environmental product context, followed by the subjective norm. This can be true since knowledge is a powerful tool to measure value, especially for a novel product. The result supports previous studies that stated that product knowledge and experiences are important influential factors in increasing consumer Purchase Intention[56].

The results further revealed that subjective norms had the second greatest effect on consumers' purchase intentions. In the context of three levels of factors, our results indicated that subjective norm is second and has a significant influence on purchase intention that is very different from some studies[8]. For example, the prior studies argued that subjective norms haven't influenced consumers' purchase intentions in the pro-environmental setting in India[71] and in Finland[8]. However, our findings propose a new perspective and believe that the relationship between consumers' behavior and "the views of others" is related. This finding is in line with Paul et al.'s studies, which linked the close person (i.e., friends/family members/peer group) to consumers' behavior[71,72]. Our study also confirms the findings of Sin et al.'s research, which found subjective norms as an important source of influence on Asian consumers' purchase intention[73]. This might be attributed to the fact that subjective norms are more valued by consumers' perceptions in Taiwan, which is considered a collective cultural context.

Unexpected, Brand Image has a non-significant effect on purchase intention that is very different from previous works[20,21]. The possible reasons may come from various other factors, which are the

differentiation of culture, norms, beliefs, and geological characteristics[35,74] all will affect Purchase Intention at different levels. This finding, a non-significant relationship, may imply brand image is in the developing process or the new product manufacturer is minor, which has only a small impact on the consumer decision-making process. This consideration seems to provide a reasonable explanation for a "new" and "green" product's debut in the market. However, this argument needs more research to support it.

Finally, our results of moderation analysis show that the effect of product knowledge on consumers' purchase intentions is salient when the level of perceived risk is high. This finding is in line with a prior study that reveals that consumers' perceived risk will be linked to consumer intention and behavior[56]. Taken together, our results revealed that the effect of product knowledge on consumers' purchase intention is differentiated by different perceived risks, including functional or psychological.

5. Theoretical and managerial implications

Our study presents the implications for both researchers and business practitioners. Although considerable research has been devoted to examining the influence of other factors like brand identity, trust, and image on consumers' brand-related behavior, less attention has been paid to extending this concept to explain customers' behavior by the multi-factors. Therefore, the present study went one step ahead to test Product Knowledge, Subjective Norm and Brand Image as the antecedents while moderating consumers' perceived risk in a specific product context.

Specifically, our research has made the following theoretical contributions: First, the present study provides supplementary information by drawing from the theoretical implications of the Theory of Planned Behavior (TPB). Our results confirm that the TPB model is a research framework useful for explaining consumer Purchase Intention and the strong predictive validity of TPB research models in a green, pro-environmental product context. The present study illuminated the importance of product knowledge and subjective norms and how they matter in improving purchase intention in a specific product context. Hence, we suggest that business practitioners should focus on promoting product-related knowledge to increase consumer Purchase Intention in the initial market. For example, cooperating with NGOs, universities, social opinion leaders, and large employers to organize informative and knowledgeable events is more effective than a traditional marketing strategy. That is, actively providing product-related knowledge to consumers or building consumer product experiences could be a good marketing step.

Second, we also suggest that word-of-mouth marketing may be an effective method to amplify the marketing messages and increase consumer purchase intention[75,76] in this context. Due to the significant influence of Subjective Norm, business practitioners should pay special attention to promoting green product purchase intention via raising awareness and developing campaigns. For example, developing "opinion leaders," famous people in society (TV celebrities, influencers in social media)[76,77] to influence and motivate consumers' purchase intentions in the target market, especially in the Asian context. However, more research is encouraged to generalize this concept.

Third, in order to better understand the antecedents' influence on consumers' purchase intentions, the moderating effect of perceived risk was examined. While there has been much research on perceived risk[56,78], no single study has explored the moderation effect of two-type perceived risks. Our study went one step ahead to distinguish the differences between functionally perceived risk and psychologically perceived risk in green product settings. This model not only provides a response to

previous research regarding the relationship between antecedents and consumer Purchase Intention[20,39] but also examines two types of perceived risk. One is functional Perceived Risk which diminishes consumers' Purchase Intention and reduces the relationship between Product Knowledge and Purchase Intention. A good example is when a consumer perceives some functional/performance problem with a product, even if he/she has a good experience with or impression of the product/service still weakens his/her willingness to buy. The other is the psychologically perceived risk, which represents consumers' concerns about their negative self-image or social embarrassment. To avoid this condition, a consumer may increase his/her willingness to buy products/services[79]. Specifically, our study illuminated the importance of perceived risk and how it matters in strengthening and dampening consumers' purchase intentions. Hence, we contribute to extending the managerial literature by providing a more comprehensive view of the effect of perceived risk on consumers' purchase intentions in this context. Taken together, we believe that functional and psychological Perceived Risk have different patterns of impact on consumers' Purchase Intention. It can be a negative or positive influence. This perspective provides a guideline for the business practitioner to build potential marketing and manage consumers' Purchase Intention.

6. Limitations and suggestions for future research

Though the findings of our study provide certain implications, they have some limitations that can be the source of several directions for further research. First, this study was conducted in the electric scooter sector of Taiwan. Thus, the findings of this study cannot be generalized to all green product categories, such as green facial care products, organic foods, green clothing, and so on. Thus, it is suggested to expand the survey area and the types of green products.

Second, the current studying considers three major pillars as the antecedents of consumers' purchase intention that excludes the other specific factors like trust[80], service quality[4], or economic incentives[81]. Marketing research on consumer behavior suggests that these factors can play important roles, and government incentives are the most crucial factors among other factors to influence consumers' purchase intention[81]. In line with these rationales, one of the interesting topics would be to explore the effect of trust, service quality, and government economic incentives on consumers' purchase intentions.

Third, this study adopts a two-dimension construct of perceived risk. Although it is an appropriate consideration in the initial step to explore the moderations of perceived risk, it may have different findings in a multi-dimensions construct[53] and is encouraged to be conducted in the future.

Finally, the present study employed perceived risk as a moderating mechanism to link three antecedents and consumers' purchase intention in a green product context. Extending and exploring the other moderating effects, like gender, group, or income level, on consumers' purchase intentions might prove a fruitful future research endeavor[77].

Author contributions

Conceptualization, LFW and YHF; methodology, LFW and YHF; software, LFW; validation, CY, YHF, YJL; formal analysis, LFW and CY; investigation, YHF and YJL; data curation, LFW; writing—original draft preparation, LFW; writing—review and editing, LFW and YJL. All authors have read and agreed to the published version of the manuscript.

Conflict of interest

The authors declare no conflict of interest.

References

1. Hamilton RW, Mittal C, Shah A, et al. How Financial Constraints Influence Consumer Behavior: An Integrative Framework. Journal of Consumer Psychology. 2018; 29(2): 285-305. doi: 10.1002/jcpy.1074
2. Hult GTM. Market-focused sustainability: market orientation plus! Journal of the Academy of Marketing Science. 2010; 39(1): 1-6. doi: 10.1007/s11747-010-0223-4
3. Grewal D, Krishnan R, Baker J, Borin N. The effect of store name, brand name and price discounts on consumers' evaluations and purchase intentions. Journal of Retailing, 1998. 74(3): 331-352. doi: 10.1016/S0022-4359(99)80099-2
4. Wu PCS, Yeh GYY, Hsiao CR. The Effect of Store Image and Service Quality on Brand Image and Purchase Intention for Private Label Brands. Australasian Marketing Journal. 2011; 19(1): 30-39. doi: 10.1016/j.ausmj.2010.11.001
5. Kim J, Lennon SJ. Effects of reputation and website quality on online consumers' emotion, perceived risk and purchase intention. Journal of Research in Interactive Marketing. 2013; 7(1): 33-56. doi: 10.1108/17505931311316734
6. Khatoon S, Zhengliang X, Hussain H. The Mediating Effect of Customer Satisfaction on the Relationship Between Electronic Banking Service Quality and Customer Purchase Intention: Evidence From the Qatar Banking Sector. SAGE Open. 2020; 10(2): 215824402093588. doi: 10.1177/2158244020935887
7. Wu JH, Wu CW, Lee CT, et al. Green purchase intentions: An exploratory study of the Taiwanese electric motorcycle market. Journal of Business Research. 2015; 68(4): 829-833. doi: 10.1016/j.jbusres.2014.11.036
8. Tarkiainen A, Sundqvist S. Subjective norms, attitudes and intentions of Finnish consumers in buying organic food. British Food Journal. 2005; 107(11): 808-822. doi: 10.1108/00070700510629760
9. Kim H bumm, Kim T (Terry), Shin SW. Modeling roles of subjective norms and eTrust in customers' acceptance of airline B2C eCommerce websites. Tourism Management. 2009; 30(2): 266-277. doi: 10.1016/j.tourman.2008.07.001
10. Cherrier H, Black IR, Lee M. Intentional non‐consumption for sustainability. European Journal of Marketing. 2011; 45(11/12): 1757-1767. doi: 10.1108/03090561111167397
11. Ajzen I. The theory of planned behaviour: Reactions and reflections. Psychology & Health. 2011; 26(9): 1113-1127. doi: 10.1080/08870446.2011.613995
12. Mahon D, Cowan C, McCarthy M. The role of attitudes, subjective norm, perceived control and habit in the consumption of ready meals and takeaways in Great Britain. Food Quality and Preference. 2006; 17(6): 474-481. doi: 10.1016/j.foodqual.2005.06.001
13. Schütte H, Ciarlante D. Consumer behaviour in Asia. London: Palgrave Macmillan; 2016.
14. Chiao HM, Chen YL, Huang WH. Examining the usability of an online virtual tour-guiding platform for cultural tourism education. Journal of Hospitality, Leisure, Sport & Tourism Education. 2018; 23: 29-38. doi: 10.1016/j.jhlste.2018.05.002
15. Wang H, Ma B, Bai R. How Does Green Product Knowledge Effectively Promote Green Purchase Intention? Sustainability. 2019; 11(4): 1193. doi: 10.3390/su11041193
16. Singh N, Gupta K. Environmental attitude and ecological behaviour of Indian consumers. Social Responsibility Journal. 2013; 9(1): 4-18. doi: 10.1108/17471111311307787
17. He H. Corporate identity/strategy interface: implications for corporate level marketing. European Journal of Marketing. 2008; 42(1/2): 10-15. doi: 10.1108/03090560810840871
18. Wu SI, Lin SR. The effect of green marketing strategy on business performance: a study of organic farms in Taiwan. Total Quality Management & Business Excellence. 2014; 27(1-2): 141-156. doi: 10.1080/14783363.2014.959256
19. Abratt R, Kleyn N. Corporate identity, corporate branding and corporate reputations. Abimbola T, ed. European Journal of Marketing. 2012; 46(7/8): 1048-1063. doi: 10.1108/03090561211230197
20. Bian X, Moutinho L. The role of brand image, product involvement, and knowledge in explaining consumer purchase behaviour of counterfeits. European Journal of Marketing. 2011; 45(1/2): 191-216. doi: 10.1108/03090561111095658
21. Nimse P, Vijayan A, Kumar A, et al. A review of green product databases. Environmental Progress. 2007; 26(2): 131-137. doi: 10.1002/ep.10210
22. Dowling GR, Staelin R. A Model of Perceived Risk and Intended Risk-Handling Activity. Journal of Consumer Research. 1994; 21(1): 119. doi: 10.1086/209386

23. Sweeney JC, Soutar GN, Johnson LW. The role of perceived risk in the quality-value relationship: A study in a retail environment. Journal of Retailing, 1999. 75(1): 77-105. doi: 10.1016/S0022-4359(99)80005-0
24. Campbell MC, Goodstein RC. The Moderating Effect of Perceived Risk on Consumers' Evaluations of Product Incongruity: Preference for the Norm: Table 1. Journal of Consumer Research. 2001; 28(3): 439-449. doi: 10.1086/323731
25. Follows SB, Jobber D. Environmentally responsible purchase behaviour: a test of a consumer model. European Journal of Marketing. 2000; 34(5/6): 723-746. doi: 10.1108/03090560010322009
26. Erdem T. An Empirical Analysis of Umbrella Branding. Journal of Marketing Research. 1998; 35(3): 339-351. doi: 10.1177/002224379803500305
27. Pham TT, Kuo TC, Tseng ML, et al. Industry 4.0 to Accelerate the Circular Economy: A Case Study of Electric Scooter Sharing. Sustainability. 2019; 11(23): 6661. doi: 10.3390/su11236661
28. Mohd Suki N. Green product purchase intention: impact of green brands, attitude, and knowledge. British Food Journal. 2016; 118(12): 2893-2910. doi: 10.1108/bfj-06-2016-0295
29. Albayrak T, Aksoy Ş, Caber M. The effect of environmental concern and scepticism on green purchase behaviour. Marketing Intelligence & Planning. 2013; 31(1): 27-39. doi: 10.1108/02634501311292902
30. Singhal D, Tripathy S, Jena SK. Acceptance of remanufactured products in the circular economy: an empirical study in India. Management Decision. 2019; 57(4): 953-970. doi: 10.1108/md-06-2018-0686
31. Ajzen I. The theory of planned behavior. Organizational behavior and human decision processes. 1991; 50(2): 179-211. doi: 10.1016/0749-5978(91)90020-T
32. Ting CT, Hsieh CM, Chang HP, et al. Environmental Consciousness and Green Customer Behavior: The Moderating Roles of Incentive Mechanisms. Sustainability. 2019; 11(3): 819. doi: 10.3390/su11030819
33. Pavlou PA, Fygenson M. Understanding and Predicting Electronic Commerce Adoption: An Extension of the Theory of Planned Behavior. MIS Quarterly. 2006; 30(1): 115. doi: 10.2307/25148720
34. Dodds WB, Monroe KB, Grewal D. Effects of Price, Brand, and Store Information on Buyers' Product Evaluations. Journal of Marketing Research. 1991; 28(3): 307-319. doi: 10.1177/002224379102800305
35. Ramayah T, Lee JWC, Mohamad O. Green product purchase intention: Some insights from a developing country. Resources, Conservation and Recycling. 2010; 54(12): 1419-1427. doi: 10.1016/j.resconrec.2010.06.007
36. Landon, Jr. EL. Self Concept, Ideal Self Concept, and Consumer Purchase Intentions. Journal of Consumer Research. 1974; 1(2): 44. doi: 10.1086/208590
37. Alba JW, Hutchinson JW. Dimensions of Consumer Expertise. Journal of Consumer Research. 1987; 13(4): 411. doi: 10.1086/209080
38. Bruwer J, Chrysochou P, Lesschaeve I. Consumer involvement and knowledge influence on wine choice cue utilisation. British Food Journal. 2017; 119(4): 830-844. doi: 10.1108/bfj-08-2016-0360
39. Luo SH, Lee GG. Exploring the key factors to successful knowledge transfer. Total Quality Management & Business Excellence. 2014; 26(3-4): 445-464. doi: 10.1080/14783363.2013.856548
40. Lin L, Chen C. The influence of the country - of - origin image, product knowledge and product involvement on consumer purchase decisions: an empirical study of insurance and catering services in Taiwan. Journal of Consumer Marketing. 2006; 23(5): 248-265. doi: 10.1108/07363760610681655
41. Guo L, Meng X. Consumer knowledge and its consequences: an international comparison. International Journal of Consumer Studies. 2008; 32(3): 260-268. doi: 10.1111/j.1470-6431.2008.00677.x
42. Park CW, Lessig VP. Familiarity and Its Impact on Consumer Decision Biases and Heuristics. Journal of Consumer Research. 1981; 8(2): 223. doi: 10.1086/208859
43. Taylor S, Todd P. Decomposition and crossover effects in the theory of planned behavior: A study of consumer adoption intentions. International Journal of Research in Marketing. 1995; 12(2): 137-155. doi: 10.1016/0167-8116(94)00019-K
44. Chen MF, Tung PJ. Developing an extended Theory of Planned Behavior model to predict consumers' intention to visit green hotels. International Journal of Hospitality Management. 2014; 36: 221-230. doi: 10.1016/j.ijhm.2013.09.006
45. Han H, Hsu LT (Jane), Sheu C. Application of the Theory of Planned Behavior to green hotel choice: Testing the effect of environmental friendly activities. Tourism Management. 2010; 31(3): 325-334. doi: 10.1016/j.tourman.2009.03.013
46. Dobni D, Zinkhan GM. In search of brand image: A foundation analysis. ACR North American Advances, 1990. 17: 110-119.
47. Ali A, Xiaoling G, Sherwani M, et al. Antecedents of consumers' Halal brand purchase intention: an integrated approach. Management Decision. 2018; 56(4): 715-735. doi: 10.1108/md-11-2016-0785
48. Bick G, Jacobson MC, Abratt R. The Corporate Identity Management Process Revisited. Journal of Marketing Management. 2003; 19(7-8): 835-855. doi: 10.1080/0267257x.2003.9728239

49. Nguyen N, Leblanc G. Corporate image and corporate reputation in customers' retention decisions in services. Journal of Retailing and Consumer Services, 2001. 8(4): 227-236. doi: 10.1016/S0969-6989(00)00029-1
50. Aaker DA. Measuring Brand Equity Across Products and Markets. California Management Review. 1996; 38(3): 102-120. doi: 10.2307/41165845
51. Kotler P. Marketing management: Analysis, planning, and control. New Jersey Prentice-Hall; 8th edition; 1994.
52. Raghubir P, Corfman K. When Do Price Promotions Affect Pretrial Brand Evaluations? Journal of Marketing Research. 1999; 36(2): 211-222. doi: 10.1177/002224379903600206
53. Stone RN, Grønhaug K. Perceived Risk: Further Considerations for the Marketing Discipline. European Journal of Marketing. 1993; 27(3): 39-50. doi: 10.1108/03090569310026637
54. Garvin DA. Product quality: An important strategic weapon. Business horizons, 1984. 27(3): 40-43. doi: 10.1016/0007-6813(84)90024-7
55. Kamalul Ariffin S, Mohan T, Goh YN. Influence of consumers' perceived risk on consumers' online purchase intention. Journal of Research in Interactive Marketing. 2018; 12(3): 309-327. doi: 10.1108/jrim-11-2017-0100
56. Casidy R, Wymer W. A risk worth taking: Perceived risk as moderator of satisfaction, loyalty, and willingness-to-pay premium price. Journal of Retailing and Consumer Services. 2016; 32: 189-197. doi: 10.1016/j.jretconser.2016.06.014
57. Sun J. How risky are services? An empirical investigation on the antecedents and consequences of perceived risk for hotel service. International Journal of Hospitality Management. 2014; 37: 171-179. doi: 10.1016/j.ijhm.2013.11.008
58. Wang Y, Hazen BT. Consumer product knowledge and intention to purchase remanufactured products. International Journal of Production Economics. 2016; 181: 460-469. doi: 10.1016/j.ijpe.2015.08.031
59. Daneshvary R, Schwer RK. The association endorsement and consumers' intention to purchase. Journal of Consumer Marketing. 2000; 17(3): 203-213. doi: 10.1108/07363760010328987
60. Fisher MJ, King J. The self-directed learning readiness scale for nursing education revisited: A confirmatory factor analysis. Nurse Education Today. 2010; 30(1): 44-48. doi: 10.1016/j.nedt.2009.05.020
61. Lifshitz R, Nimrod G, Bachner YG. Measuring risk perception in later life: The perceived risk scale. Journal of the American Psychiatric Nurses Association. 2016; 22(6): 469-474. doi: 10.1177/1078390316659910
62. Fuller CM, Simmering MJ, Atinc G, et al. Common methods variance detection in business research. Journal of Business Research. 2016; 69(8): 3192-3198. doi: 10.1016/j.jbusres.2015.12.008
63. Hooper D, Coughlan J, Mullen MR. Structural Equation Modelling: Guidelines for Determining Model Fit. Electronic Journal of Business Research Methods. 2008; 6(1): 53-60.
64. Chang SJ, van Witteloostuijn A, Eden L. From the Editors: Common method variance in international business research. Journal of International Business Studies. 2010. 41(2): p. 178-184. https://doi.org/10.1057/jibs.2009.88
65. Hayes AF. Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. 2017, New York: Guilford Publications.
66. Fornell C, Larcker DF. Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. Journal of Marketing Research, 1981; 18(1): 39-50. doi: 10.1177/002224378101800104
67. Chiu CM, Wang ETG. Understanding Web-based learning continuance intention: The role of subjective task value. Information & Management. 2008; 45(3): 194-201. doi: 10.1016/j.im.2008.02.003
68. Hair JF. Multivariate data analysis (Vol. 6). 2006, Upper Saddle River, NJ: Pearson Prentice Hall.
69. Henseler J, Ringle CM, Sarstedt M. A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the Academy of Marketing Science. 2014; 43(1): 115-135. doi: 10.1007/s11747-014-0403-8
70. Gaskin J, Lim J. Model fit measures. Gaskination's StatWiki; 2016.
71. Paul J, Modi A, Patel J. Predicting green product consumption using theory of planned behavior and reasoned action. Journal of Retailing and Consumer Services, 2016. 29: 123-134. doi: 10.1016/j.jretconser.2015.11.006
72. Fransson N, Gärling T. Environmental concern: Conceptual definitions, measurement methods, and research findings. Journal of environmental psychology, 1999. 19(4): 369-382. doi: 10.1006/jevp.1999.0141
73. Sin SS, Nor KM, Al-Agaga AM. Factors Affecting Malaysian young consumers' online purchase intention in social media websites. Procedia - Social and Behavioral Sciences. 2012; 40: 326-333. doi: 10.1016/j.sbspro.2012.03.195
74. Pickett-Baker J, Ozaki R. Pro-environmental products: marketing influence on consumer purchase decision. Journal of consumer marketing. 2008; 25(5): 281-293. doi: 10.1108/07363760810890516

75. Kozinets RV, De Valck K, Wojnicki AC, et al. Networked Narratives: Understanding Word-of-Mouth Marketing in Online Communities. Journal of Marketing. 2010; 74(2): 71-89. doi: 10.1509/jm.74.2.71
76. Wang X, Li Y. Users' Satisfaction with Social Network Sites: A Self-Determination Perspective. Journal of Computer Information Systems. 2015; 56(1): 48-54. doi: 10.1080/08874417.2015.11645800
77. Gilal FG, Paul J, Gilal NG, Gilal RG. Celebrity endorsement and brand passion among air travelers: Theory and evidence. International Journal of Hospitality Management. 2019; 85: 102347. doi: 10.1016/j.ijhm.2019.102347
78. Girard T, Dion P. Validating the search, experience, and credence product classification framework. Journal of Business Research. 2010; 63(9-10): 1079-1087. doi: 10.1016/j.jbusres.2008.12.011
79. Nichols BS, Raska D, Flint DJ. Effects of consumer embarrassment on shopping basket size and value: A study of the millennial consumer. Journal of Consumer Behaviour. 2014; 14(1): 41-56. doi: 10.1002/cb.1500
80. Lu B, Fan W, Zhou M. Social presence, trust, and social commerce purchase intention: An empirical research. Computers in Human Behavior. 2016; 56: 225-237. doi: 10.1016/j.chb.2015.11.057
81. Lim YJ, Perumal S, Ahmad N. The Antecedents of Green Car Purchase Intention among Malaysian Consumers. European Journal of Business and Management Research. 2019; 4(2). doi: 10.24018/ejbmr.2019.4.2.27