Research Article

The Determinant Factors in the Adoption of Reverse Logistics Products in Thailand: The Application of the Theory of Planned Behavior

ปัจจัยที่ทำให้เกิดการเลือกใช้งานโลจิสติกส์แบบย้อนกลับของผลิตภัณฑ์ในประเทศไทย: การประยุกต์ใช้ทฤษฎีพฤติกรรมตามแผน

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Abstract

This study investigates the relationship between three main variables of the Theory of Planned Behavior, which are Attitude, Subjective Norms, and Perceived Behavioral Intention, and the willingness to pay more for the manufacturers of products in Thailand that employ a reverse logistics approach. In addition, satisfaction was added as the fourth factor as an extension to the conceptual framework. A total of 436 respondents consisting of faculty members and students completed online questionnaires that were distributed to universities all over Thailand, and multiple regression analysis revealed that attitude, subjective norms, and satisfaction with previous purchases significantly influenced the willingness to pay more for products that employ a reverse logistics approach, or green products, which eventually significantly influenced actual purchase behavior.

Keywords: *Reverse Logistics, Green Supply Chain, Theory of Planned Behavior, Green Logistics, Sustainable*

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บทคัดย่อ

งานวิจัยนี้เป็นการศึกษาความสัมพันธ์ระหว่างตัวแปรหลักสามตัวแปรจากทฤษฎีพฤติกรรมตามแผน ได้แก่ ทัศนคติ การคล้อยตามกลุ่มอ้างอิง และการรับรู้ความสามารถในการควบคุมพฤติกรรม และความต้องการจะจ่ายเงินมากขึ้นสำหรับซื้อผลิตภัณฑ์ในประเทศไทยที่เลือกใช้งานโลจิสติกส์แบบย้อนกลับ โดยในงานวิจัยนี้ได้เพิ่มเติมตัวแปรตัวที่สี่ คือ ความพึงพอใจในตัวผลิตภัณฑ์ ผู้บริโภคที่เข้าร่วมตอบแบบสอบถามแบบออนไลน์ได้แก่ กลุ่มอาจารย์และนักศึกษาในมหาวิทยาลัยในประเทศไทยจำนวน 436 คน และการวิเคราะห์การถดถอยเชิงพหุคูณพบว่า ทัศนคติ การคล้อยตามกลุ่มอ้างอิง และความพึงพอใจจากการซื้อครั้งที่ผ่านมา มีผลต่อความต้องการจะจ่ายเงินมากขึ้นสำหรับซื้อผลิตภัณฑ์ที่เลือกใช้งานโลจิสติกส์แบบย้อนกลับ และความต้องการจะจ่ายเงินมากขึ้นสำหรับซื้อผลิตภัณฑ์ที่เลือกใช้งานโลจิสติกส์แบบย้อนกลับมีผลต่อพฤติกรรมการซื้ออย่างแท้จริง

คำสำคัญ: *โลจิสติกส์แบบย้อนกลับ โซ่อุปทานสีเขียว ทฤษฎีพฤติกรรมตามแผน โลจิสติกส์สีเขียว ความยั่งยืน*

Introduction

The increasing threats to the environment have escalated public awareness. With strong evidence of climate change and global warming, the environment has become a serious concern for many people in many regions (Diekmann & Franzen, 2018). With the high level of global environmental concern, many countries have passed and enforced environmentally-friendly regulations. In this aspect, Thailand is formulating regulations that will increase public awareness about the environment and ban all single-use plastics (Wipatayothin, 2020).

In the area of supply chain management, this type of awareness is important, and the term 'green supply chain' is widely-used to denote environmentally-friendly activities in the supply chain (Hazen, Wu, Cegielski, Jones-Farmer, & Hall, 2012). Hence, this study focuses on the logistics part of the supply chain that directly involves product returns and recycling, which eventually facilitates a reduction in the overall quantity of resources used. This part of the green supply chain is called 'reverse logistics' (Stock, 1998).

However, adding extra activities such as product returns for the purpose of remanufacture, recycling, and reuse in the supply chain does not come without cost. Unlike the developed countries, Thailand does not fully enforce e-waste management regulations, and taking extra steps in voluntarily recycling could therefore increase the costs of the company. If customers do not give value to the end of life management of products, it will not be financially viable for the business. As a result, the perception of consumers in Thailand, where the awareness of the environmental impacts of the end-of-life management of products or so-called "reverse logistics" has been low, makes Thailand an interesting place to conduct this study.

As stated above, brands that employs "reverse logistics" or end-of-life management activities in their products would increase the overall cost of the company, which eventually increase costs of the products. Therefore, this study would like to investigate the relationship between customer perceptions of products or brands that practice reverse logistics, and their willingness to pay more for products or brands that adopt reverse logistics practices, even when the price of the products is higher than competitors'. In addition, this study aims

to determine customer behavior on reverse logistics products from the perspective of the Theory of Planned Behavior and also extends findings on the impact on customer satisfaction on the intention to pay more for products for which reverse logistics practice is applied in order to study the behavior of consumers in Thailand.

Literature Review and Hypothesis Development

Reverse logistics

Logistics has been defined by the Council of Supply Chain Management Practice as the activities involved in the effective movement of products from the point of origin to the point of consumers (Council of Supply Chain Management Professionals: CSCMP, 2018). However, this concept of logistics only focuses on the one-way movement of goods but lacks the return activity to complete the loop of the product life cycle. To complete the loop of the product lifecycle at the end of the life of a product, the concept of reverse logistics has been established. Stock (1998) defined reverse logistics as the return of products, recycling, reuse, refurbishment, repair, and disposal of waste. However, the mentioned activities that can have a positive impact on the environment can also be called 'green logistics,' which is defined as the activities that attempt to reduce the environmental impact of logistics activities. Furthermore, the activities that are related to the product's end of life that yields an environmentally-friendly result are included in both green and reverse logistics (Rogers & Tibben-Lembke, 2001).

The terms 'green logistics' and 'reverse logistics' can be used interchangeably when explaining the reverse flow of goods from the point of consumption to the point of origin to address environmental concerns. One obvious example of a brand that has adopted reverse logistics in the brand's strategy is Apple Inc. Apple has initiated the program called Apple Trade In, which enables its customers to return their used products for recycling free of charge. In addition to the free recycling program, store credits are given if the returned products still have financial value (Apple, 2020).

Theoretical Framework

In order to answer the research question, this study employs the Theory of Planned Behavior (TPB) as a theoretical framework. TPB was developed as an extension of the Theory of Reasoned Action (TRA) (Ajzen, 1985). TRA states that for a person to perform any behavior, they must be driven by the intention to perform that particular behavior. Moreover, the intention to perform the behavior is being driven by two factors: their attitude towards that behavior and subjective norms (Fishbein & Ajzen, 1975). First, attitude can be explained as the perception that a person has on the behavior, ranging from favorable to unfavorable, and second, the subjective norm is the behavior that is expected by the society in which the person lives which gives rise to social pressure to perform or not perform that behavior (Ajzen, 1991).

After the introduction of TRA, Ajzen (1985) added 'perceived behavioral control' to the theory, and renamed it the Theory of Planned Behavior. Perceived behavioral control is defined as the perception of the person on how easy or difficult it is to perform that behavior. Furthermore, TPB has been widely employed as a theoretical background for predicting behavioral intention in several studies in the

fields of consumer behavior and logistics. (Arslan & Şar, 2018; Casaló, Flavián, & Guinalíu, 2010; Gonul Kochan, Pourreza, Tran, & Prybutok, 2016; Hansen, 2008; Zhao & Nor Othman, 2011).

In the field of green and reverse logistics, Arslan and Şar (2018) also used all three constructs in TPB as the predicting factors of intention in regard to the acceptance of green logistics by managers in the pharmaceutical industry. Moreover, a study on the return of e-waste in India also revealed that all three constructs of TPB significantly impacted the intention to return electronic waste for recycling, which eventually led to actual return behavior (Dixit & Badgaiyan, 2016). Therefore, this study employs TPB as a predicting tool for consumers' behavioral intention to pay more for the products of companies that adopt reverse logistics practices.

Hypothesis Development

Attitude

Based on the framework of TPB and TRA, the attitude towards any behavior can be used to predict the intention to perform that behavior. Hence, the more favorable the attitude a person has towards that behavior, the greater the possibility that the person intends to perform the behavior (Hansen, 2008). Moreover, a study in Denmark revealed that attitude significantly and positively influenced the intention to purchase groceries online (Hansen, Jensen, & Solgaard, 2004). In the study of more environmentally-friendly consumer behavior, a study by Tarkiainen and Sundqvist (2005) revealed a clear relationship between attitude and the intention to purchase organic food in Finland. This suggests that the more positive the attitude of the person is in regard to the remanufacture, reuse, and recycle practices of the company (return logistics), the more likely they are to pay more for the products of that company. Therefore, hypothesis 1 is as follows.

Hypothesis 1: Attitude on return logistics has a significant and positive impact on the willingness to pay more.

Subjective norm

The second factor in TPB is the subjective norm. TPB stated that the subjective norm in regard to the particular behavior is related to the society in which each individual is located and acts as a social pressure to perform or not perform the behavior (Ajzen, 1991). In regard to consumers' purchase intention, there are several studies that show that the decision of people on purchasing any products can be the result of pressure from their peers or society to which they belong (Tarkiainen & Sundqvist, 2005; Vafania & Lashkary, 2015).

Nowadays, with the availability of the internet, groups or society do not limit solely to physical society anymore. Online community has played an important role in creating the society of any people. With the research that has studied the virtual community in the middle east, it has shown that virtual community also acts as society, which means the virtual social pressure also acts as subjective norm. Eventually, the study has shown that subjective norm from virtual social significantly influenced its members' intention to purchase (Vafania & Lashkary, 2015).

In addition, a study in the United States shows that subjective norm significantly and indirectly influenced intention to buy local food products by using attitude as mediator (Shin & Hancer, 2016).

Furthermore, a new study in the environmental field in Hong Kong found an interesting interaction between attitude and subjective norm when the researcher used subjective norm as a moderator and found out that subjective norm plays an important role as an influence factor on the intention to recycle (Wan, Shen, & Choi, 2017). For the acceptance of a new idea or new product, a study in China has found out that subjective norm has been a significantly influencing factor for intention to use automated vehicles (Zhang, Tan, Li, Zhu, & Tao, 2019).

From the mentioned studies, it is likely that subjective norm will significantly impact the willingness to pay more for the products that employs reverse logistics practice. Hence, the following hypothesis was proposed.

Hypothesis 2: Subjective norm has a significant and positive impact on willingness to pay more.

Perceived behavioral control

The third construct in TPB is Perceived Behavioral Control (PBC). PBC has been identified as the perception that a person has on the event whether that event is easy to be performed or not. For the perception of the event, the easier to perform that behavior, the more likely that the person would intend to perform (Ajzen, 1991). For the study in the environmental field, Ru, Wang, and Yan (2018) found out that PBC is the strongest factor to influence people in East China to save energy. This study shows that PBC is a stronger influence factor than attitude and subjective norm in this field of study. In addition, a study that combined PBC with the framework from technology acceptance model also shows that PBC has a significant impact on intention to perform the action in the field of information technology (Hansen, Saridakis, & Benson, 2018). Furthermore, a study on consumers' behavior also found out that PBC is one of the strong predicting factors on behavioral intention of tourists in Korea (Lee & Lina Kim, 2018).

In this study, which is the study of the intention to pay more for the products that employ reverse logistics practice, one key part that would influence users to participate in and eventually pay more for these products is the easiness to perform the action. If the customers think that it is difficult to return the products for recycle or remanufacturing, it would be difficult to convince them to pay more for these products. Therefore, the following hypothesis was proposed.

Hypothesis 3: Perceived behavioral control has a significant and positive impact on willingness to pay more.

Satisfaction

In this study, another factor has been added into the conceptual model in addition to the three constructs of traditional TPB framework. This added factor is the satisfaction of the products or brand that adopted the reverse logistics. This factor is quite unique since it is not originally included in the regular TPB related studies, which means not many researches have studied this relationship. In this aspect, satisfaction should be included to predict the willingness to pay more because it reflects the customers' perception of the products based on past purchases. Moreover, a study by Homburg, Koschate, and Hoyer (2005) shows that customers who are satisfied with their purchases are willing to pay more for the products. In addition, in the field of reverse logistics, a study has shown an indirect but significant impact that satisfaction has on the willingness to pay more for the product that adopted the reverse green logistics practice (Hazen et al., 2012). Therefore, the following hypothesis was proposed.

Hypothesis 4: Satisfaction on products that practice the return logistics has a significant and positive impact on willingness to pay more.

Willingness to pay more

As mentioned above, this study aims to find out the reason behind customers' intention to buy the products that employ the reverse logistics practice even the prices are higher than those of other products. First, willingness to pay can be explained as a customer's willingness to choose or buy a specific product in comparison to others at the price range that is assigned to that specific product (Frash, DiPietro, & Smith, 2014). So, willingness to pay more can be categorized as a form of behavioral intention, which can eventually lead to future possible action in a given situation (Ajzen, 1991). Moreover, intention can also be defined as the degree of readiness and level of works to achieve the expected result (Webb & Sheeran, 2006). Moreover, both TRA and TPB have clearly indicated that the action to perform any behavior was being driven by intention to perform that behavior (Ajzen, 1991; Fishbein & Ajzen, 1975).

In a longitudinal study that has been performed with a 1-year interval has shown a significant relationship between intention and actual behavior (Bamberg, Ajzen, & Schmidt, 2003). Furthermore, a past study in consumer behavior which has been conducted in Malaysia has also shown that intention significantly leads to the actual behavior (Zhao & Nor Othman, 2011). In addition, a study in social media usage in the United States has shown that intention significantly and positively impacts actual behavior (Rauniar, Rawski, Yang, & Johnson, 2014). In the field of reverse logistics study, Dixit and Badgaiyan (2016) shows that intention to return has significantly led to return behavior. In this study, willingness to pay more represents intention, which should be leading to the actual buying behavior of the products that adopted the reverse logistics practice. Therefore, hypothesis 5 was proposed as follows.

Hypothesis 5: Willingness to pay more has a significant and positive impact on actual buying behavior.

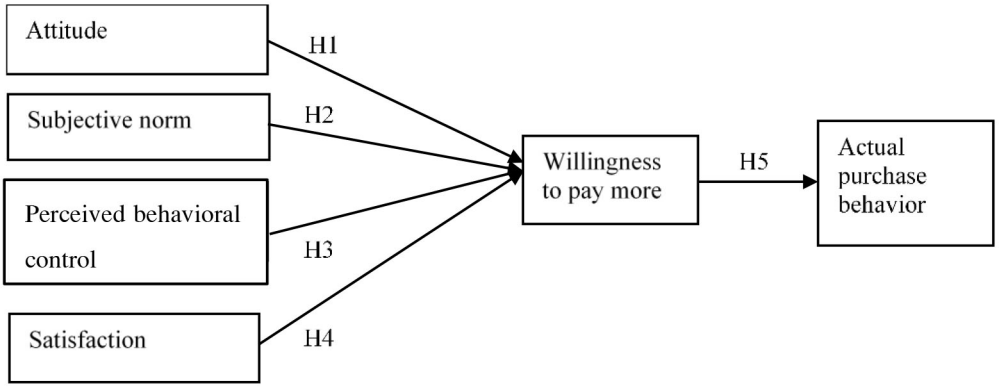

Figure 1 Conceptual model

Methods and Materials

This study aims to answer the research hypotheses that have been presented above. A quantitative method based on a deductive approach was employed since this method is usually employed when using a data set to test the hypotheses based on selected theories (Saunders, Lewis, & Thornhill, 2016).

Measurement

The quantitative method based on a deductive approach was used in this study. The measurement method is self-administered questionnaires. The questionnaires were distributed using an online platform. Each construct in the conceptual model was measured using multiple item scale questions based on a 6-point Likert scale, ranging from 1= strongly disagree to 6 = strongly agree. Moreover, all questions used in the questionnaires were adopted from previous studies as follows.

First, to measure the willingness to pay more, the questions were adopted from previous research in the environmental field (Amendah & Park, 2008). For buying behavior, the questions were adopted from previous research that studied recycling behavior (Bezzina & Dimech, 2011). For all three factors in the TPB, the measurement questions were adopted from the environmental research conducted in Hong Kong (Wan et al., 2017). To measure satisfaction, the questions were adopted from the study of Fang, Chiu, and Wang (2011)'s.

Besides the measurement of constructs presented in the conceptual model, the respondents' personal information and demographics were also obtained and subsequently used as control variables for the analysis, including age group, residential area, nationality, gender, personal income, and education level.

Reliability and validity test

In order to ensure the internal consistency of the multiple item scale questions, reliability analysis was performed. None of the items had a Cronbach's Alpha lower than 0.7, which means no variable was eliminated from the analysis. In addition, to investigate the validity of the constructs in the questionnaires, factor

analysis was performed with the intention to remove items that had a factor loading value lower than 0.4 and items with cross loading. The result showed that neither cross loading nor factor loading values lower than 0.4 were detected.

Table 1 Reliability and validity test results

Variables	No. of items	Cronbach's alpha	Factor loading
Attitude towards green logistics	5	0.95	0.90 - 0.77
Subjective norm	4	0.95	0.93 - 0.79
Perceived behavioral control	5	0.94	0.93 - 0.77
Satisfaction	4	0.96	0.86 - 0.83
Willingness to pay more	5	0.97	0.98 - 0.71
Actual buying behavior	3	0.91	0.96 – 0.79

Sampling

As mentioned above, this study aims to study the behavioral intention of consumers in Thailand. With the uniqueness of Thailand as a country that has just began the regulations in environmental friendly by enforcing the ban of single use plastic in 2020, it makes Thailand an interesting place to conduct this study. Unlike other developed countries where consumers are aware of the benefits of end-of-life management or e-waste management of electronics products.

The population of this study consisted of consumers who are a working age group in Thailand. According to the data obtained from the Thailand's National Statistical Office, in 2020, Thailand had 42.65 million people who were currently considered as a working age by the government agency, with the range between 15-59 years of age (National Statistical Office: NSO, 2021). As a result, the population number of consumers in Thailand was assumed to be of the same number.

To determine the sample size, this study employed the formula proposed by Yamane (1973) with 95% confidence level. From the calculation based on the mentioned formula, sample size was 400 samples. Furthermore, this study employed a convenience sampling method by sending out electronic online forms to instructors and members from universities in Thailand via social media. With the help from the colleagues from the Prince of Songkhla University, Ubon Ratchathani University, Chulalongkorn University, Assumption University, and Silpakorn University, there were 436 respondents who completed the questionnaires to be used in further analysis.

Pilot test

To ensure the reliability of the questions used in the questionnaires, a pilot test was employed. The questionnaires were initially distributed to 40 respondents. The reliability result showed that all items in the questionnaires had Cronbach's alpha value higher than 0.7, which is acceptable. Therefore, no question

has been eliminated from any construct in the questionnaires during the actual data collection process.

Results

From the online survey, the researcher obtained 436 completed questionnaires from the respondents all over the country. Approximately 73% of them were female while 83% were from the age group of 18-24. In addition, 97% were Thai and 68% of them held a bachelor's degree. Furthermore, 68% of the respondents had monthly income lower than 15,000 baht. These demographic data were subsequently used as control variables in the multiple regression analysis. In addition, the demographic data of the respondents has been shown below in Table 2.

Table 2 Demographic data of the respondents

Measurement	Item	Frequency	Percent
Gender	Male	116	26.6
	Female	320	73.4
Age	Below 18	0	0
	18-24	360	82.6
	25-34	40	9.2
	35-44	22	5.0
	45-60	14	3.2
Nationality	Thai	422	96.8
	Other	14	3.2
Education	Lower than high school	0	0
	High school	96	22.0
	Bachelor's degree	296	67.9
	Master	14	3.2
	Doctoral	30	6.9
Monthly income	Lower than 15,000	295	67.7
	15,001 - 30,000	81	18.6
	30,001 - 50,000	28	6.4
	More than 50,000	32	7.3
Residential area	Urban	94	21.6
	City	342	78.4

Multiple regression result

In order to test the proposed hypotheses, multiple linear regression was performed. First, the multiple linear regression was performed with Willingness to pay more as the dependent variable and Attitude, Subjective Norm, Perceived Behavioral Control, and Satisfaction as the independent variables with Gender, Age, Nationality, Education Level, Income and Residential area as control variables. Result of the first multiple linear regression has been shown in Table 3. Then, the second multiple linear regression was performed with Actual purchase behavior as the dependent variable and Willingness to pay more as the independent variable with Gender, Age, Nationality, Education Level, Income and Residential area as control variables. Result of the second multiple linear regression has been shown in Table 4.

Table 3 Multiple linear regression result with willingness to pay more as dependent variable

	Unstandardized coefficients		Standardized coefficients			Collinearity statistics	
	B	Std. error	Beta	t	p-value	Tolerance	VIF
(Constant)	0.634	0.198		3.196	0.001		
Attitude	0.380	0.063	0.342	5.990	0.000	0.224	4.468
Subjective norm	0.242	0.047	0.232	5.196	0.000	0.365	2.737
Perceived behavioral control	0.086	0.055	0.077	1.570	0.117	0.307	3.257
Satisfaction	0.992	0.057	0.899	17.290	0.000	0.270	3.705
Gender	-0.188	0.085	0.064	-2.203	0.028	0.856	1.168
Nationality	0.224	0.211	0.031	1.062	0.289	0.869	1.150
Residential area	-0.132	0.102	-0.042	-1.291	0.197	0.678	1.474
Age	-0.082	0.134	-0.024	-0.616	0.538	0.478	2.094
Educational level	-0.261	0.096	-0.084	-2.729	0.007	0.769	1.300
Monthly income	-0.042	0.102	-0.015	-0.408	0.683	0.522	1.917
R			0.831	Std. error of estimate			0.724
R square			0.691	F			94.66
Adjusted R square			0.684	p-value			0.000

Table 4 Multiple linear regression result with actual buying behavior as dependent variable

	Unstandardized coefficients		Standardized coefficients			Collinearity statistics	
	B	Std. error	Beta	t	p-value	Tolerance	VIF
(Constant)	0.572	0.163		3.509	0.000		
Willingness to pay more	0.773	0.025	0.822	30.390	0.000	0.978	1.022
Gender	0.170	0.076	0.062	2.220	0.027	0.930	1.076
Nationality	-0.534	0.196	-0.078	-2.724	0.007	0.876	1.142
Residential area	0.322	0.094	0.110	3.441	0.001	0.704	1.420
Age	0.349	0.124	0.108	2.807	0.005	0.480	2.084
Educational level	-0.153	0.085	-0.052	-1.802	0.072	0.848	1.179
Monthly income	-0.076	0.095	-0.030	-0.804	0.422	0.529	1.889
R			0.834	Std. error of estimate			0.675
R square			0.695	F			138.743
Adjusted R square			0.690	p-value			0.000

In order to test whether the model has any multicollinearity problem or not, Variance Inflation Factor (VIF) analysis was conducted. The results show that all of the variables in the conceptual model had a VIF value less than 10, which means there were no multicollinearity problems detected. Furthermore, the results from multiple regression, with the inclusion of the respondents' demographics as control variables, show that four out of five hypotheses were supported. First, attitude on return logistics has a positive impact on the willingness to pay more (β = 0.342, $p < 0.001$). Next, subjective norm also has a positive impact on the willingness to pay more (β = 0.232, $p < 0.001$). However, the third variable in the TPB, PBC, did not have a significant impact on the willingness to pay more (β = 0.077, $p = 0.117$). For previous buying experience, satisfaction was found to have a positive and significant impact on the willingness to pay more (β = 0.899, $p < 0.001$). In addition, for the significant impact of the willingness to pay more on actual buying behavior, hypothesis 5 was supported (β = 0.822, $p < 0.001$).

Table 5 Hypothesis test results

Hypothesis	Standardized coefficient (β)	t-value	p-value	Result
H1: Attitude → Willingness to pay more	0.342	5.99	<0.001	Supported
H2: Subjective norm → Willingness to pay more	0.232	5.19	<0.001	Supported
H3: Perceived behavioral control → Willingness to pay more	0.077	1.57	0.117	Not supported
H4: Satisfaction → Willingness to pay more	0.899	17.29	<0.001	Supported
H5: Willingness to pay more → Actual buying behavior	0.822	30.39	<0.001	Supported

***p < 0.001, **p < 0.01, *p < 0.05

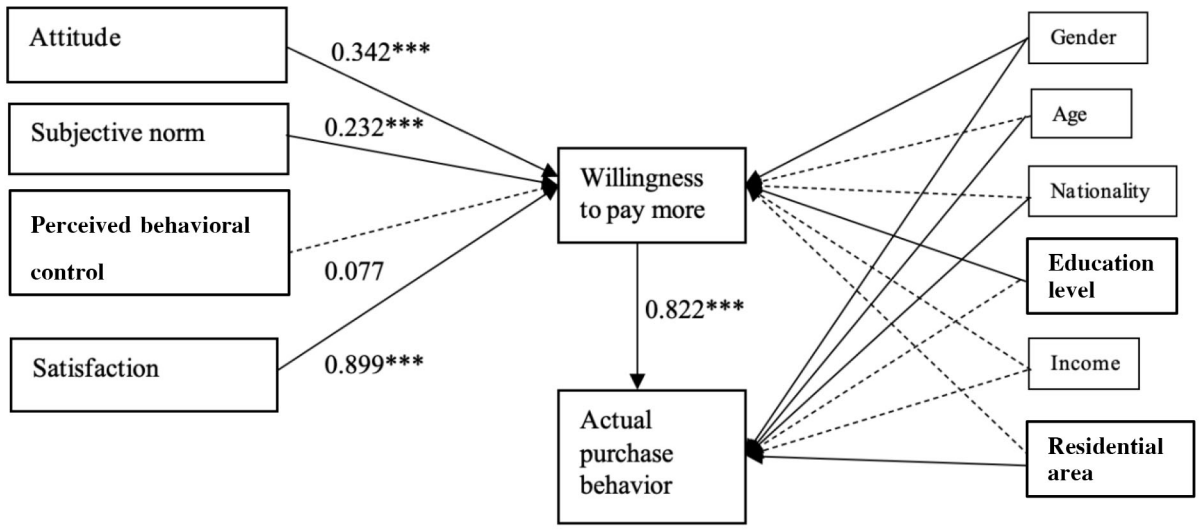

Figure 2 Multiple regression results for the conceptual model

Discussion

As discussed earlier, the purpose of this study was to determine the antecedents of the consumer's willingness to buy products from companies that adopted the reverse logistics practices, which eventually leads to actual purchase behavior. The results from the data analysis are discussed as follows. First, the attitude towards the products from companies that adopted the reverse logistics practices significantly and positively impacted the willingness to pay more for the products. This means the positive or favorable feelings towards the products or brands from companies that adopted green initiatives or promoted the good end of life management would resulted in customers having a greater willingness to pay more money for those products than for traditional non-green products.

Moreover, the relationship between attitude and willingness to pay more also supports the findings of previous studies. Next, subjective norm, which represents the peer pressure from the society in which the customers live was also found to have a positive influence on their willingness to pay more for the products. Hence, it means people listen to family or friends in the society to which they belong when they make decisions as to whether they want to pay more for products made by companies that adopt the reverse logistics practices. However, the third construct of TPB, PBC, did not show the expected result as an antecedent of the willingness to pay more for such products. Ease of buying was not found to be an antecedent in decision making as to whether they are willing to pay more or not.

For the construct that did not initially appear in the TPB but has been included in this study, satisfaction shows the highest degree of impact by having the highest β-value (β = 0.992). This result was not surprising since it has been shown in several previous studies that satisfaction leads to a greater willingness to buy (Oyedele, Saldivar, Hernandez, & Goenner, 2018; Roy Dholakia & Zhao, 2010; Shankar, Smith, & Rangaswamy, 2003). However, unlike previous studies that the dependent variable is the willingness to buy, the dependent variable in this study was changed to be the willingness to pay more. As for the control variables, data analysis results show that male respondents and those with a higher level of education would be more willing to pay for the products from companies that adopted a reverse logistics approach.

For the effect of willingness to pay more on actual buying behavior, the results show a strong relationship with high β-value (β = 0.773). In this relationship, four control variables had a significant impact on actual buying behavior: older age group, Thai nationals, females, and those with residency in the Bangkok area.

Business Implications

The results of this study revealed several interesting outcomes that should be applied in business practice. First, the data analysis results revealed that attitude and subjective norm had significant impacts on the willingness to pay more for the products of companies that adopted a reverse logistics approach. As brand owners, to promote their products that employed the reverse logistics practice, or so-called green products, it is essential to know where to focus their efforts.

The first factor is attitude. Therefore, the marketing department needs to work hard to

create "positive" feelings towards their products to make more money out of their customers. In order to create a positive attitude, several marketing tools can be used. For example, the use of social media as a marketing tool should be considered since data have shown that Thai people are heavy users of social media (Electronic Transactions Development Agency: ETDA, 2018). Moreover, previous studies revealed that social media can influence buying behavior (Erkan & Evans, 2016; Muralidharan & Men, 2015; Thanasarnaksorn & Suntrayuth, 2019).

As a result, social media can also be used to create a feeling of belonging in the society to which a person belongs, which is connected to the idea of subjective norms. Thus, a marketing campaign offering incentives to consumers to share or review the products would lead to other users being pressured to buy that product. Moreover, several control variables contributed to the significance of the willingness to pay more in the regression analysis. Social media offerings can be customized to target specific groups, such as gender and age groups, who are willing to pay more for the specific product.

Another result from the data analysis is that satisfaction leads to a greater willingness to pay more. This is also an interesting point because adopting the reverse logistics does not come without cost, but the results showed that customers who are satisfied with a previous purchase are willing to pay more for that product. Therefore, product owners can position their products or brand at the premium level and they can compete in a high price point market. Therefore, they do not have to get into a price war with competing companies. In addition, the data analysis results show that the willingness to pay more leads to actual purchase behavior. This relationship is not only important in terms of the confirmation of the theory, but also in regard to the business implications of this conceptual model. It presents a clear picture to businesses that are considering a reverse logistics approach that customers are willing to pay more for their products if the company adopts environmentally-friendly processes such as the reverse logistics.

Conclusion

This study was conducted with the aim to determine whether Thai consumers are willing to pay more for products from companies that employ green logistics practices. Moreover, the factors that influence this intention and eventually lead to actual purchase behavior have also been explored. For the research method, self-administered questionnaires were distributed all over the country between January and April 2020 and data analysis based on a quantitative approach was employed. The Theory of Planned Behavior was used as the main theory in the conceptual framework. The multiple regression analysis results show that attitude, subjective norm, and satisfaction significantly impacted the willingness to pay more for products from companies that employed the reverse logistics practices, which eventually leads to actual purchase behavior.

Limitations

Since this study was conducted in only one country, Thailand, the results from the data analysis and the business implications may not be generalizable to other markets. Further studies should be conducted in other regions for comparative purposes. Moreover, the methodology of this study is purely a

quantitative approach, which can be used to test the hypotheses, but may not be able to obtain details about the reasons behind the quantitative findings. Further research should employ a qualitative approach to enable future researchers to determine those underlying reasons.

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