# CONSUMER PRESSURE FOR BETTER REVERSE LOGISTICS: CASE STUDY IN VIETNAM

## ÁP LỰC CỦA NGƯỜI TIÊU DÙNG ĐỂ HOÀN THIỆN LOGISTICS NGƯỢC: TRƯỜNG HỢP Ở VIỆT NAM

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***Huynh Nguyen Bui✉, Nam Phuong Phung***

**ABSTRACT**

Consumer behaviour of pressuring firms for better reverse logistics can be categorised as consumer activism that belongs to pro-environmental behaviour. The consumer behaviour of activism, along with purchase choice, product use and post-use, household management, and collective, refers to some extent of environment-related motivation. The first research question in this study sought to determine the intention of consumer pressure behaviour in the light of one of the most influential psychological theories, the TPB. Besides, this paper highlights the importance of the direct and indirect effects of moral norms, past behaviour, and self-identity on consumers' intention to engage in pressuring activities.

**Keywords**: Consumer pressure; Reverse logistics; Behaviour intention.

**TÓM TẮT**

Hành vi của người tiêu dùng gây áp lực cho các công ty để có dịch vụ logistics ngược tốt hơn có thể được xem là hành vi tích cực của người tiêu dùng liên quan đến hành vi ủng hộ môi trường. Hành vi tích cực của người tiêu dùng, cùng với lựa chọn mua hàng, sử dụng và sau sử dụng sản phẩm, quản lý hộ gia đình và tập thể, đề cập đến những động cơ liên quan đến môi trường. Vì vậy, câu hỏi nghiên cứu đầu tiên trong bài viết này nhằm xác định ý định của hành vi áp lực của người tiêu dùng với việc sử dụng một trong những lý thuyết tâm lý có ảnh hưởng nhất trong giới học thuật, TPB. Bên cạnh đó, bài viết này nhấn mạnh tầm quan trọng của những tác động trực tiếp và gián tiếp của các chuẩn mực đạo đức, hành vi trong quá khứ và bản sắc cá nhân đối với ý định tham gia vào các hoạt động gây áp lực của người tiêu dùng.

**Từ khóa**: Áp lực của người tiêu dùng; Logistics ngược; Ý định hành vi.

## 1. Introduction

In supply chain research and applications, reverse logistics is often overlooked compared to forward logistics (Grabot et al., 2014). The managers have traditionally focused on the inbound movement of products or materials to ensure it can be efficiently delivered (Abdullah and Yaakub, 2015). However, reverse logistics needs to be managed sustainably with more attention as it can bring substantial financial benefits to companies (Anderson, 2009; Jayaraman and Luo, 2007). Besides, the companies are also under pressure to master reverse logistics activities because they have emerged as powerful platforms for blueprinting companies' environmental strategies and generating economic benefits for society (Buysse and Verbeke, 2003; Eltayeb et al., 2011; González-Benito and González-Benito, 2006; Lin and Ho, 2011). The pressure comes from different stakeholders such as (1) government, (2) societies and communities, (3) markets and competitors, (4) media, (5) suppliers, (6) organisations (focal company and shareholders), (7) employees, and (8) customers (clients and consumers) (Govindan and Bouzon, 2018).

Huynh Nguyen Bui, Nam Phuong Phung, University of Economics - The University of Danang

✉Email: nguyenbh@due.edu.vn

Among these groups, customers can be regarded as one of the firms' most influential stakeholders regarding firms' environmentally proactive motivation (Christmann, 2004; Etzion, 2007; Rondinelli and Berry, 2000). They would love to see a company's activeness and readiness in pursuing environmental campaigns (De Pelsmacker et al., 2005; Yen, 2018). They search for those active firms (Manaktola and Jauhari, 2007), push those to implement green practices (Darnall, 2006) with their requirements and motivations (Lamming and Hampson, 1996; Lee, 2008; Preuss, 2002). Without customer pressure, companies are less likely to adopt green practices willingly (Jack et al., 2010). That is, the more pressure customers put on the firms, the more active they will be in adopting innovative environmental approaches (Abdullah and Yaakub, 2015). As a result, past studies have confirmed the positive relationships between customer pressure and companies' environmental activities (Caniels et al., 2013; Christmann, 2004; Etzion, 2007; Habib et al., 2020; Lee, 2008; Liu et al., 2012).

Although research indicates that customer pressure radically affects the practices of reverse logistics - one of the companies' environmental activities (Abdullah and Yaakub, 2015), few studies have examined customer pressure as one kind of behaviour towards green practices. Besides, relatively little research has been carried out on the determinants of customer pressure and even less on those of consumer pressure. To bridge this research gap, this research will employ the extended Theory of Planned Behaviour (TPB) to investigates the determinants of consumer pressure for better reverse logistics. Therefore, the research questions of this study were articulated as below:

*RQ1: Are there any relationships between the behavioural intention of consumer pressure and its determinants including attitude, subjective norms, and perceived behavioural control?*

*RQ2: Are there any relationships between the behavioural intention of consumer pressure and its other determinants such as moral norms, past behaviour, and self-identity?*

## 2. Theoretical Background

### *2.1. Consumer pressure for better reverse logistics*

Consumer pressure for better reverse logistics can be categorised as one kind of pro-environmental behaviour that includes buying, using and post-using, managing household, and involving in consumer activism (Peattie, 2010). The behaviour can be explored via two different angles: one is related to the pressure, and the other is related to the reverse logistics activities. While the former can be analysed through the lens of consumer activism or the purpose of the behaviour, the latter can be viewed as one chain of the whole pro-environmental behaviour - the post-use one. Firstly, this study reviews the extant literature on consumer activism. According to Fielding et al. (2008a), few studies on consumer activism and its closest and broader term - environmental activism-refer to behaviour or actions performed to increase environmental quality by raising environmental awareness (Seguin et al., 1998). The research literature has introduced several factors as the determinants of consumer activism such as risk perceptions, perceived responsibility (Seguin et al., 1998), environmental hazard, environmental knowledge, personal efficacy (Lubell, 2002), and attitude (McFarlane and Boxall, 2003; McFarlane and Hunt, 2006). Many of them are extensively used in the TPB, whose main strength in explaining the process of decision making is to facilitate

additional factors based on specific behavioural situations (Manstead and Parker, 1995), which in turn boost the predictive ability of the whole model (Biddle et al., 1987; Conner and Armitage, 1998; Cook et al., 2002; Terry et al., 1999).

Like consumer activism, post-use of consumer behaviour represents another under-researched aspect within the extant literature, although consumers play a vital role in ensuring the reverse logistics system work (Peattie, 2010). Currently, most studies have discussed consumers' attitudes, behaviours, and motivations (Bekin et al., 2007; Kilbourne and Beckmann, 1998) to support reverse logistics processes such as recycling (Boldero, 1995; Taylor and Todd, 1995), using energy (Harland et al., 1999), composting (Taylor and Todd, 1995), encouraging sustainable agriculture initiatives (Beedell and Rehman, 2000; Carr and Tait, 1991; Fielding et al., 2008b), conserving water (Harland et al., 1999; Kantola et al., 1982), and reclaiming post-use products for reuse, or responsible disposal (Seitz and Peattie, 2004). Unsurprisingly, the TPB has also been relied on considerably to examine these post-use activities.

Therefore, as the literature on consumer pressure for better reverse logistics, in particular, is still in the infant stage, this research will apply the TPB model based on predictors regarding consumer activism (the first angle) as well as post-use behaviour (the second angle). This decision is based on the fact that, for the past thirty years, environmentalists and others who are professionally concerned with environmental activities have heavily employed the TPB to describe and explain attitude - behaviour relationships as well as predict various kinds of pro-environmental consumer behaviour (Ajzen, 1991; Conner and Sparks, 1996; Garay et al., 2019; Godin and Kok, 1996; Han, 2020).

### *2.2. The original variables of TPB*

The TPB is a revised version of the theory of reasoned action (TRA) with the addition of perceived behavioural control (PBC) (Ajzen, 1991). Ajzen (1991) claimed that introducing this component is needed as the TRA seems limited in explaining and understanding behaviours that are not entirely controlled by people's volition. The link between the perceived behavioural control and intention is derived from two main assumptions. First, they are positively related and, second, the people's control will directly impact the actual behaviour if the perceived control matches the actual control (O'Connor and Armitage, 2003). Besides, like the TRA, the other critical components of behavioural intention in the TPB are attitude toward the behaviour and subjective norms (Ajzen, 1991). As mentioned above, the three determinants are also applicable to predict pro-environmental behaviour and environmental activism.

More specifically, first, attitude toward the behaviour can be considered a positive or negative feeling about obtaining an objective (Ajzen, 1991; Salgues, 2016). It refers to multiplicative products of belief strength and outcome evaluation (Manosuthi et al., 2020). If a person perceives a specific behaviour leads to a desirable outcome, he is more likely to have a positive attitude towards that behaviour (Manosuthi et al., 2020). Secondly, subjective norms are known as perceived social pressure of conducting a particular behaviour (Ajzen, 1991). It is regarded as multiplicative composites of normative belief - motivation interactions (Manosuthi et al., 2020). Normative beliefs suggest behavioural expectations from crucial reference groups (e.g., family and

friends), whilst motivation to comply depends on the criticalness of the reference group's expectations (Meng et al., 2020; Moon, 2021). Finally, the last predictor, PBC, is the total perceived control over carrying out a certain behaviour. That is to say, PBC shows people's perception about whether carrying out that behaviour is hard or easy and the likelihood of that behaviour is sufficient (Ajzen, 1991).

In general, high levels of attitude, subjective norms and perceived control increase ones' intentions to carry out a certain behaviour. Therefore, three following hypotheses are provided:

*H1. The attitude towards consumer pressure for better reverse logistics is positively related to the intention to carry out that pressuring behaviour.*

*H2. Subjective norms regarding consumer pressure for better reverse logistics are positively related to the intention to carry out that pressuring behaviour.*

*H3. The PBC of pressuring firms for better reverse logistics is positively related to the intention to carry out that pressuring behaviour.*

### *2.3. The additional variables of TPB*

Many authors, including its founder Ajzen, have stressed that TPB is a self-completed theory with the three compatible components (Elliott et al., 2003; Sheeran et al., 2001). However, they also confirmed that TPB is very flexible and happy to welcome new variables. In fact, 72% of articles employing TPB have at least one new variable to understand pro-environmental behaviour including recycling, travelling and commuting, energy-saving, and performing general green behaviour (Yuriev et al., 2020). These studies have identified several additional factors: moral norms, past behaviour, self-identity, habit, self-efficacy, environmental awareness, and so on. Therefore, moral norms, past behaviour and self-identity (the three highest chosen) are additional variables included in the model of this study to explain intentions of consumer pressure for better reverse logistics more adequately.

Firstly, moral norms refer to the reflection of a personal value system attached to a certain behaviour (Conner and Armitage, 1998; Liu et al., 2020; Lizin et al., 2017; Yuriev et al., 2020). Past research shows that, along with attitude, subjective norms, and PBC, moral norms are a crucial component in understanding pro-environmental behaviours like recycling (Botetzagias et al., 2015; Chan and Bishop, 2013; Chu and Chiu, 2003; Guagnano et al., 1995; Kumar, 2017; Lizin et al., 2017), using public transportation (Heath and Gifford, 2002), using car (Mancha and Yoder, 2015), and buying green products (Liu et al., 2020). Besides the direct effects, moral norms' indirect ones on intention via attitudes are examined in these studies (Botetzagias et al., 2015; Chan and Bishop, 2013; Liu et al., 2020). Besides, subjective norms can be viewed as a determinant of moral norms (Liu et al., 2020) because some argue that the belief of what is right stemmed from referents will eventually become an individual's moral norms (Bamberg and Möser, 2007). Hence, the following hypotheses are generated:

*H4. Moral norms are positively related to intentions regarding consumer pressuring for better reverse logistics behaviour.*

*H5. Moral norms are a significant mediator between subjective norms and attitude towards consumer pressuring for better reverse logistics.*

*H6. Attitude is a significant mediator between moral norms and intention towards consumer pressuring for better reverse logistics.*

Secondly, as ones' decisions regarding pro-environmental behaviours are said to closely related actions performed in the past, the past behaviour has increasingly been added to the TPB to explore its link to intention or behaviour (Boldero, 1995; Cheung et al., 1999; Liu et al., 2020; Lizin et al., 2017; Mannetti et al., 2004; Richetin et al., 2012; Terry et al., 1999; Tonglet et al., 2004; White and Hyde, 2012). However, despite being slightly in favour of positive relationship, the findings have been inconclusive so far. For example, Boldero (1995) found no significant connection between past behaviour and intention to recycle newspapers while some researchers claimed a positive association between past behaviour the and behavioural intention (Cheung et al., 1999; Lizin et al., 2017; Terry et al., 1999; Tonglet et al., 2004; White and Hyde, 2012). Another concern about past behaviour is whether it directly influences the actual behaviour in the future or whether it is mediated by intention (Liu et al., 2020). In this study, consumers' past behaviour concerning reverse logistics is hypothesised as a strong predictor of intention and future behaviour of the consumer pressure as well as the attitude, subjective norms, and PBC can be served as crucial mediators for the link between past and future behaviour via the intention (White and Hyde, 2012). Therefore, several hypotheses are formed as below:

*H7. Past behaviour is positively related to intentions regarding consumer pressuring for better reverse logistics behaviour.*

*H8. Attitude is a significant mediator between past behaviour and intention towards consumer pressuring for better reverse logistics.*

*H9. Subjective norm is a significant mediator between past behaviour and intention towards consumer pressuring for better reverse logistics.*

*H10. PBC is a significant mediator between past behaviour and intention towards consumer pressuring for better reverse logistics.*

Last but not least, self-identity has been a crucial antecedent of intentions (Armitage and Conner, 1999; Biddle et al., 1987; Conner and Armitage, 1998; Cook et al., 2002; Fielding et al., 2008a; Mannetti et al., 2004; Pierro et al., 2003; Sparks et al., 1995; Sparks and Guthrie, 1998; Sparks and Shepherd, 1992; Terry et al., 1999). White and Hyde (2012, p. 787) have defined it as "the extent to which performing a particular role behavior is an important component of an individual's self-concept." Self-identity is crucial in predicting environmental activism (Conner and Armitage, 1998; Fielding et al., 2008a) as these kinds of behaviour require more collective, group-based solutions (Fielding et al., 2008a; Peattie, 2010). In other words, focusing only on the attitudes and behaviour of consumers is not enough to make behavioural changes needed for sustainability (Liedtke et al., 2013). Similar to past behaviour, self-identity could affect intentions directly (Fielding et al., 2008a; Mancha and Yoder, 2015; Sparks and Shepherd, 1992; White and Hyde, 2012) or indirectly via attitudes (Fielding et al., 2008a; Mancha and Yoder, 2015; Sparks and Shepherd, 1992), subjective norms (Mancha and Yoder, 2015), and PBC (Mancha and Yoder, 2015) in the case of consumer pressure for better reverse logistics. It is also a mediator between past behaviour and behavioural intention (White and Hyde,

2012). This study, as a result, proposes several hypotheses related to self-identify as follow:

*H11. Self-identity is positively related to intentions regarding consumer pressuring for better reverse logistics behaviour.*

*H12. Attitude is a significant mediator between self-identity and intention towards consumer pressuring for better reverse logistics.*

*H13. Subjective norm is a significant mediator between self-identity and intention towards consumer pressuring for better reverse logistics.*

*H14. PBC is a significant mediator between self-identity and intention towards consumer pressuring for better reverse logistics.*

*H15. Self-identity is a significant mediator between past behaviour and intention towards consumer pressuring for better reverse logistics.*

**3. Research method**

This study employed the quantitative method to understand determinants of consumer pressure for better reverse logistics. Consumers experiencing any types of reverse logistics in Vietnam is the target population of this research. They may re-use of packaging, or buy refurbishment of goods, or receive repairs and maintenance as per guarantee agreements, or enroll on programmes of exchange or give-away end-of-life goods for recycling and disposal purpose. These activities are getting more and more frequent and popular in Vietnam with the increasing support from consumers.

A self-administered on-site survey was carried out to collect data via convenience sampling from the above consumers. Online-based platforms such as Facebook and Twitter were used to distribute the e-questionnaire, developed by using the Google Form, to the consumers. Data were collected during two months in May and June 2021. A total of 651 responses was collected. After the data screening process, 134 questionnaires were eliminated due to missing data and unengaged responses. Therefore, a final sample of 517 was qualified for data analysis.

This article relied on extant research to develop questions that were faithful to the meaning and context of the constructs measured. In the final questionnaire, intention to participate in study abroad initiatives was measured by three items adapted from Ajzen (1991), Fielding et al. (2008a), and Lizin et al. (2017); attitudes toward studying abroad, subjective norms and perceived behaviour control were assessed by six, three, and four items, respectively, and adapted from Ajzen (1991), Fielding et al. (2008a), and Lizin et al. (2017). Additionally, moral norms and past behaviour were measured by three and four items, respectively, and adapted from Fielding et al. (2008a). Moreover, self-identity was measured by three items and adapted from Lizin et al. (2017).

Table 1 presents all 26 items used in this study and standardized factor loadings of the items within each construct. Respondents were asked to evaluate the level of agreement on each measurement item using a seven-point Likert scale. A structured questionnaire was then designed with two main parts: socio-demographic information of respondents and the evaluation of respondents on 26 items.

The data were analysed using the R package SEMinR. First, a structural equation modelling (SEM) using the PLS-SEM approach was carried out to test and map the causal relationships between constructs.

Second, the bootstrapping method was employed to examine mediating effects of moral norms (from subjective norms to attitude), of self-identity (from past behaviour to intention) and of attitude, subjective norms, and perceived behavioural control, respectively (from past behaviour and self-identity, respectively, to intention).

Table 1*: Measurement scales for constructs in the model*

| Construct | Source | Questionnaire Item | Variable |
|---|---|---|---|
| **Attitude** | Ajzen (1991), Fielding et al. (2008), and Lizin et al. (2017) | Pressuring firms for better reverse logistics is useful. | ATT1 |
| | | Pressuring firms for better reverse logistics is safe. | ATT2 |
| | | Pressuring firms for better reverse logistics is responsible. | ATT3 |
| | | Pressuring firms for better reverse logistics is sensible. | ATT4 |
| | | Pressuring firms for better reverse logistics is rewarding. | ATT5 |
| | | Pressuring firms for better reverse logistics is good. | ATT6 |
| **Subjective norms** | Ajzen (1991), Fielding et al. (2008), and Lizin et al. (2017) | If I engaged in consumer pressure activities regarding reverse logistics people who are important to me would approve it. | SUB1 |
| | | Most people who are important to me think that engaging in consumer pressure activities regarding reverse logistics is desirable. | SUB2 |
| | | Most people who are important to me think that I should engage in consumer pressure activities regarding reverse logistics. | SUB3 |
| **Perceived behavioural control** | Ajzen (1991), Fielding et al. (2008), and Lizin et al. (2017) | I have a lot of control over engaging in consumer pressure activities regarding reverse logistics. | PBC1 |
| | | Very few events out of my control could prevent me from pressuring firms for better reverse logistics. | PBC2 |
| | | If I want to, I can easily engaging in | PBC3 |

| | | | |
|---|---|---|---|
| | | consumer pressure activities regarding reverse logistics. | |
| | | It is very easy to pressure firms for better reverse logistics. | PBC4 |
| **Moral norms** | Lizin et al. (2017) | It would be wrong of me not to engage in consumer pressure activities regarding reverse logistics. | MOR1 |
| | | I would feel guilty if I did not pressure firms for better reverse logistics. | MOR2 |
| | | It goes against my principles not to engage in consumer pressure activities regarding reverse logistics. | MOR3 |
| **Past behaviour** | Lizin et al. (2017) | I always pressure firms to make product's packaging safe for re-using. | PAS1 |
| | | I always pressure firms to sell refurbishment of goods. | PAS2 |
| | | I always pressure firms to provide repairs and maintenance as per guarantee agreements. | PAS3 |
| | | I always pressure firms to hold programmes of exchange or give away end-of-life goods for recycling and disposal purpose. | PAS4 |
| **Self-identity** | Fielding et al. (2008) | I think of myself as an environmental activist regarding reverse logistics. | SEL1 |
| | | To engage in environmental activism regarding reverse logistics is an important part of who I am. | SEL2 |
| | | I am not the type of person who would be involved in environmental activism regarding reverse logistics. | SEL3 |
| **Intention** | Ajzen (1991), Fielding et al. (2008), and Lizin et al. (2017) | I plan to engage in consumer pressure activities regarding reverse logistics during the next six months. | INT1 |
| | | I intend to pressure firms for better reverse logistics in the next six months. | INT2 |
| | | I want to engage in consumer pressure activities regarding reverse logistics over the next six months. | INT3 |

## 4. Results

### *4.1. Demographic information*

A demographic profile of survey participants is summarised in Table 2. Among 517 participants, 292 are females and 225 are males, whereas 18-24 and 25-34 are the two highest groups of age. Regarding the education levels, 58.4% of the participants are studying undergraduate programmes during the period of observation. 58% of the respondents have a full-time job while 10-15 million VND is the most common monthly average income.

Table 2*: Demographic information*

| | **N (%)** |
|---|---|
| **Age** | |
| < 18 | 2 (0%) |
| 18-24 | 158 (31%) |
| 25-34 | 143 (28%) |
| 35-44 | 78 (15%) |
| 45-54 | 82 (16%) |
| 55-64 | 52 (10%) |
| > 64 | 2 (0%) |
| **Gender** | |
| Male | 225 (44%) |
| Female | 292 (56%) |
| **Employment** | |
| Unemployed | 47 (9%) |
| Part-time | 170 (33%) |
| Full-time | 300 (58%) |
| **Education** | |
| High school | 112 (22%) |
| Undergraduate | 302 (58%) |
| Graduate | 103 (20%) |
| **Income** | |
| <5 million VND | 47 (9%) |
| 5-10 million VND | 143 (28%) |
| 10-15 million VND | 156 (30%) |
| 15-20 million VND | 106 (21%) |
| 20-25 million VND | 59 (11%) |
| 25-30 million VND | 3 (1%) |
| > 30 million VND | 3 (1%) |

### *4.2. Measurement model*

By applying the PLS-SEM approach, the results in Table 3 shown that the Cronbach's alpha, ranging between 0.699 and 0.957, and composite reliability values of all constructs were above the cut-off value of 0.7, showing the internal consistency of the construct indicators(Henseler et al., 2009). Two criteria are employed to test convergent validity: the outer loadings and the average variance extracted (Hair et al., 2014). All items' outer loadings are above the minimum required value of 0.7 (Hulland, 1999). In addition, the AVE values of all constructs were higher than 0.5, ranging from 0.564 to 0.92 (Fornell and Larcker, 1981). This confirmed the latent variables' explanatory power of the measured variables and a high level of convergent validity of the measurement model.

Table 3: *Evaluation of measurement model*

| **Variables** | **Factor loading** | **CR** | **AVE** |
|---|---|---|---|
| **Attitude** ($\alpha$ = 0.904) | | | |
| Pressuring firms for better reverse logistics is useful. | | | |
| Pressuring firms for better reverse logistics is safe. | | | |
| Pressuring firms for better reverse logistics is responsible. | | | |
| Pressuring firms for better reverse logistics is sensible. | | | |
| Pressuring firms for better reverse logistics is rewarding. | | | |
| Pressuring firms for better reverse logistics is good. | | | |

| | |
|---|---|
| **Subjective norms** ($\alpha$ = 0.794) | |
| If I engaged in consumer pressure activities regarding reverse logistics people who are important to me would approve it. | |
| Most people who are important to me think that engaging in consumer pressure activities regarding reverse logistics is desirable. | |
| Most people who are important to me think that I should engage in consumer pressure activities regarding reverse logistics. | |
| **Perceived behavioural control** ($\alpha$ = 0.838) | |
| I have a lot of control over engaging in consumer pressure activities regarding reverse logistics. | |
| Very few events out of my control could prevent me from pressuring firms for better reverse logistics. | |
| If I want to, I can easily engaging in consumer pressure activities regarding reverse logistics. | |
| It is very easy to pressure firms for better reverse logistics. | |
| **Moral norms** ($\alpha$ = 0.764) | |
| It would be wrong of me not to engage in consumer pressure activities regarding reverse logistics. | |
| I would feel guilty if I did not pressure firms for better reverse logistics. | |
| It goes against my principles not to engage in consumer pressure activities regarding reverse logistics. | |
| **Past behaviour** ($\alpha$ = 0.745) | |
| I always pressure firms to make product's packaging safe for re-using. | |
| I always pressure firms to sell refurbishment of goods. | |
| I always pressure firms to provide repairs and maintenance as per guarantee agreements. | |
| I always pressure firms to hold programmes of exchange or give away end-of-life goods for recycling and disposal purpose. | |
| **Self-identity** ($\alpha$ = 0.699) | |
| I think of myself as an environmental activist regarding reverse logistics. | |
| To engage in environmental activism regarding reverse logistics is an important part of who I am. | |
| I am not the type of person who would be involved in environmental activism regarding reverse logistics. | |
| **Intention** ($\alpha$ = 0.957) | |
| I plan to engage in consumer pressure activities regarding reverse logistics during the next six months. | |
| I intend to pressure firms for better reverse logistics in the next six months. | |
| I want to engage in consumer pressure activities regarding reverse logistics over the next six months. | |

*Note.* $\alpha$ = Cronbach alpha, CR = Composite reliability, AVE = Average variance extracted.

Finally, the square root of AVE for each construct compared to its correlation values with other constructs was used to test the discriminant validity (Fornell and Larcker, 1981). These indices confirmed that the theoretical model of this research could be used to analyse the observed data (Table 4) in detail.

Table 4*: Intercorrelations of study measures*

| | AVE | ATT | SUB | PBC | MOR | PAS | SEL | INT |
|---|---|---|---|---|---|---|---|---|
| Attention | 0.822 | 1 | | | | | | |
| Subjective Norms | 0.841 | 0.483 | 1 | | | | | |
| Perceived Behaivioural Control | 0.820 | 0.392 | 0.368 | 1 | | | | |
| Moral Norms | 0.825 | 0.507 | 0.451 | 0.196 | 1 | | | |
| Past Behaviour | 0.751 | 0.504 | 0.407 | 0.482 | 0.184 | 1 | | |
| Self-identity | 0.790 | 0.463 | 0.482 | 0.436 | 0.256 | 0.301 | 1 | |
| Intention | 0.959 | 0.75 | 0.642 | 0.572 | 0.537 | 0.568 | 0.554 | 1 |

*Note*.(1) The bold diagonal elements are the square root of the AVEs and non-diagonal elements are latent variable correlations, AVE = Average variance extracted. (2) ATT = Attention, SUB = Subjective Norm, PBC = Perceived Behavioural Control, MOR = Moral Norms, PAS = Past Behaviour, SEL = Self-identity, INT = Intention.

### *4.3. Structural model*

*4.3.1. Evaluation of direct effects*

Further analysis was carried out by using PLS-SEM (Figure 1). The direct effects were examined based on the significance of path coefficient ($\beta$) values, which was acquired using the Bootstrap procedure with 517 cases and 5000 resamples.

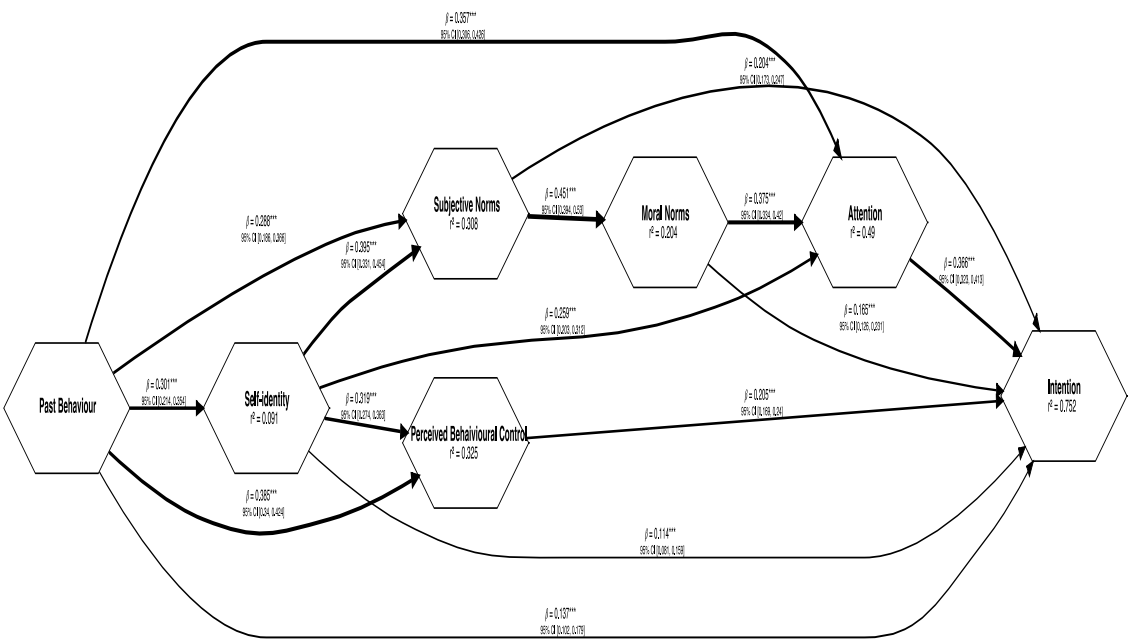


*Figure 1:* PLS-SEM Model

Hypothesis 1 predicts that consumers' attitude would be positively influenced by their attitude towards pressuring firms for better reverse logistics. Results shown that H1 ($\beta$ = 0.364, p < 0.05) were supported. Hypothesis 2 mentions the significant positive influence of subjective norms on consumers' intention. As shown in Figure 1,

H2 ($\beta$ = 0.343, p < 0.05) were supported. Similarly, consumers' perceived behavioural control ($\beta$ = 0.204, p < 0.05) shows a significantly positive effect on behavioural intention, supporting H3.

Besides, moral norms exhibits a positive effect on behavioural intention ($\beta$ = 0.308, p < 0.05), supporting H4. Likewise, past behaviour ($\beta$ = 0.565, p < 0.05) and self-identity ($\beta$ = 0.413, p < 0.05) do have a positive influence on behavioural intention towards engaging in consumer pressure for better reverse logistics, hence H7 and H11 are supported.

*Evaluation of indirect effects*

Table 5: *Bootstrapping effects for the mediational model*

| | **Estimate** | **Mean** | **SD** | **t-value** | **2.5% CI** | **97.5% CI** |
|---|---|---|---|---|---|---|
| Attention -> Intention | 0.366 | 0.364 | 0.038 | 9.692 | 0.323 | 0.413 |
| Subjective Norms -> Attention | 0.169 | 0.166 | 0.029 | 5.916 | 0.141 | 0.222 |
| Subjective Norms -> Moral Norms | 0.451 | 0.444 | 0.048 | 9.341 | 0.394 | 0.530 |
| Subjective Norms -> Intention | 0.341 | 0.343 | 0.033 | 10.299 | 0.308 | 0.404 |
| Perceived Behaivioural Control -> Intention | 0.205 | 0.204 | 0.025 | 8.261 | 0.169 | 0.240 |
| Moral Norms -> Attention | 0.375 | 0.371 | 0.027 | 14.067 | 0.334 | 0.420 |
| Moral Norms -> Intention | 0.302 | 0.308 | 0.025 | 11.870 | 0.281 | 0.357 |
| Past Behaviour -> Attention | 0.504 | 0.507 | 0.037 | 13.604 | 0.442 | 0.559 |
| Past Behaviour -> Subjective Norms | 0.407 | 0.397 | 0.048 | 8.457 | 0.325 | 0.462 |
| Past Behaviour -> Perceived Behaivioural Control | 0.482 | 0.482 | 0.036 | 13.528 | 0.416 | 0.515 |
| Past Behaviour -> Moral Norms | 0.184 | 0.178 | 0.039 | 4.718 | 0.133 | 0.245 |
| Past Behaviour -> Self-identity | 0.301 | 0.292 | 0.049 | 6.168 | 0.214 | 0.354 |
| Past Behaviour -> Intention | 0.568 | 0.565 | 0.033 | 17.252 | 0.513 | 0.607 |
| Self-identity -> Attention | 0.326 | 0.322 | 0.036 | 9.143 | 0.276 | 0.373 |
| Self-identity -> Subjective Norms | 0.395 | 0.376 | 0.045 | 8.748 | 0.331 | 0.454 |
| Self-identity -> Perceived Behaivioural Control | 0.319 | 0.318 | 0.033 | 9.780 | 0.274 | 0.363 |
| Self-identity -> Moral Norms | 0.178 | 0.166 | 0.023 | 7.767 | 0.138 | 0.206 |
| Self-identity -> Intention | 0.409 | 0.413 | 0.026 | 15.592 | 0.370 | 0.450 |

*Note*. The bootstrapped effects are significant with a t-value greater than 1.96 at the significant level of 5%.

After the model was established, this study used bootstrapping to evaluate the mediating role of subject norms, financial support and perceived behavioural control. According to Zhao et al. (2010), if the bootstrapped indirect effects are significant with a t-value greater than 1.96 at the significant level of 5%, and the confidence interval does not include the value of zero, mediation effect will be supported.

Results shown in Table 5 indicates that the direct paths from subjective norms to consumers' attitude towards pressuring firms for better reverse logistics is significantly mediated by moral norms, with the empirical t-value (9.341) greater than 1.96 (p-values < 0.05); supporting H5. However, attitude is not a significant mediator between moral norms and the intention to engage in consumer pressure towards better reverse logistics (t-value = 14.067, p-values > 0.05), rejecting H6.

Table 5 also suggests that among the associations in attitude, subjective norms, and perceived behavioural control, past behaviour and consumers' intention to pressuring firms, no zero existed between the lower and upper bounds of the total effect, direct effect, and an indirect effect. Additionally, estimates of the indirect effect are not zero. Therefore, attitude, subjective norms, and perceived behavioural control mediates the relationship between consumers' past behaviour and their intention towards engaging in pressuring activities (t-values range from 8.457 to 13.604. As a result, H8, H9, and H10 are supported.

Similarly, as shown in Table 5, attitude (t-value = 9.143, p-values < 0.05), subjective norms (t-value = 8.748, p-values < 0.05), and perceived behavioural control (t-value = 9.78, p-values < 0.05) mediates the relationship between consumers' self-identity and their intention to pressuring firms for better reverse logistics. Hence, H12, H13, H14 are supported. Last but not least, consumers' self-identity mediate the relationship between their past behaviour and intention towards engaging pressuring activities for better reverse logistics (t-value = 6.168, p-values < 0.05). Therefore, H15 is supported.

## 5. Discussion and conclusion

This research reviewed past studies that explore the determinants affecting consumer activism and post-use of consumer behaviour regarding reverse logistics. Moreover, this study also proposed a conceptual model to fill the existing research gaps. Specifically, consumer intention to pressuring activities for better reverse logistics are hypothesised to be affected by a number of determinants such as attitude, subjective norms, and perceived behavioural control. Besides, additional factors such as moral norms, past behaviour, or self-identity are also discussed as potential causes of the intention. These new addition also mediate and are mediated the proposed associations between the intention of consumer pressure and its determinants according to the TPB. These hypotheses are fascinating because Vietnamese consumers start to take reverse logistics activities such as recycling into consideration and they also want to receive support from companies. For example, consumers was very pleased with the programme of PS Unilever asking them to exchange their old toothbrushes for recycling. The company also collaborated with a famous singer to promote the programme with a catchy song "Dieu nho be than ky." This can build up consumer' attitude towards the behaviour of recycling and they will be eager to ask other companies

to have similar reverse logistics campaign. Besides, COVID-19 has happened and damaged the economy but it also makes people think over sustainability development. It can be only successful with the collaboration between companies and consumers to protect the environment. And there is no doubt that consumer's aggressiveness with reverse logistics activities could be a great start to develop that collaboration.

Overall, this research helps build up a novel perspective for the literature on consumer pressure in regards of reverse logistics. Second, the study has implications for both practical management and relevant authorities in the sense that both government and societies are key enablers as well as moderators of companies' reverse logistics activities. However, despite its contributions, this study is not without limitations. For instance, this research were designed based on Vietnamese population only, and the research model should be validated in various contexts. In addition, the needs and expectations of consumers for reverse logistics should be addressed with additional research. Thirdly, the socio-demographic information (i.e., gender, marital status, education) should be tested in the model as moderating variables in further empirical research.

## 6. Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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