Analysis of Consumer Behaviour in Purchasing Second-Hand Fashion Products: An Extended Theory of Planned Behaviour Model

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ABSTRACT

The fashion industry is a primary cause of several environmental problems due to the negative impacts of the clothing life cycle from manufacturing to consumer disposal. This led to the introduction of the circular economy to reduce the impact. An example is the reuse of second-hand fashion which is considered one of the optimal solutions to reduce the negative effects of clothing manufacturing. However, the participation of consumers is certainly needed in the implementation of the concept. Therefore, this study aimed to examine consumer behaviour to purchase second-hand fashion using an extension of the Theory of Planned Behaviour (TPB) model. The data obtained from 314 fashion consumers used as respondents were analyzed with the Partial Least Square Structural Equation Modeling (PLS-SEM) method. The result showed that beliefs about the environment and frugality positively and significantly affected attitude. Moreover, attitude, subjective norms, and perceived behaviour control positively and significantly influenced purchase intention. It was further observed that subjective norms positively and significantly affected attitude and perceived behaviour control. The purchase intention also positively and significantly influenced behaviour in purchasing second-hand fashion. Meanwhile, brand consciousness had a positive and insignificant effect on attitude. These results led to the preparation of strategy recommendations to motivate individual participation to purchase second-hand fashion while implementing a circular economy.

1. INTRODUCTION

The fashion industry is a primary source to several environmental problems due to the negative impacts of clothing life cycle, ranging from manufacturing to disposal by consumers. This has led to the conduct of several studies to determine alternative methods to consume fashion products. An example of the solutions identified is collaborative consumption which focuses on using underutilized products to benefit both individuals and the environment [1]. This was considered important because clothing production advanced by 100% since 2000, leading to the generation of around 92 million tons of waste each year before the COVID-19 pandemic. A previous investigation also showed that 500 thousand tons of microfiber were tossed into the sea due to the washing process [2]. Furthermore, the production of 1 pair of jeans requires 1 kilogram of cotton, and the water needed to produce this volume of cotton is estimated at 10,000 liters, equivalent to ten years of drinking water for a person [3]. The waste also contributes to roughly 10% of worldwide carbon emissions [4] with a projected increase to 60% by 2030, leading to high air pollution.

Excessive consumption of clothing is a serious problem to the environment because two-thirds of the volume is produced using synthetic textiles such as polymers, which require 200 years to decay [5]. Therefore, post-consumer fashion waste is a significant concern due to the existence of several clothes in landfills [6]. The trend was observed from the fact that the global textile production in 2018 was dominated by polymers contributing 51% or 54 million tons and anticipated to increase even more [7]. In Indonesia, approximately 31% of clothing waste was not collected by the city service and those collected were not managed appropriately [8]. This has led to the pollution of the Indonesian marine environment by the microplastics produced through the polypropylene originating from textiles [9]. The fashion industry in Indonesia also creates 2.3 million tons of textile waste and only 0.3 million tons are reclaimed while the rest ends up in landfills, making the industry a part of the biggest contributors to pollution [10].

In current years, clients have begun to realize the negative effects of fast fashion and have started to reduce single-use clothing, slowly shifting to second-hand clothes. The market has evolved progressively in recent years as more young consumers prefer eco-friendly retro fashions and clothes [11]. This rapid growth is due to the increased supply as well as demand because consumers are inspired by the reasonable prices of second-hand fashion and sellers generate profit by selling [12].

The environmental impact of fashion can be reduced through the application of a circular economy which focuses on using resources in multiple cycles [13]. The aim is to guarantee sustainable development and long-term prosperity

by reducing, recycling, reusing, as well as recovering materials in production and consumption processes [14]. Circular economy extends the usage of products to the transitioning of resources for the future. The trend has led to the establishment of businesses that are wholly based on circular flows. Moreover, reusing clothing has been recognized as part of the optimal solutions to reduce the negative impact [15]. Consumers can also minimize ecological issues by trading, renting, exchanging, and borrowing second-hand fashion. This shows the capability of consumers as essential suppliers in circular economy activities [16].

The understanding of consumer behaviour towards second-hand fashion is currently at an early stage. This is observed from the fact that limited studies have investigated the motivations driving sustainable fashion consumers [17]. Only a few have also examined actual purchase behaviour in sustainable consumption, showing limited information available on these practices. Therefore, a deeper comprehension of why and how consumers encounter certain behaviours is needed. This is necessary because limited attention is placed on the factors affecting consumer attitudes to purchase second-hand fashion [18].

The high level of fast fashion consumption in Indonesia requires immediate attention because the waste is causing environmental pollution and a solution considered feasible is reusing second-hand fashion. Therefore, this study aimed to examine the variables affecting consumer behaviour to purchase second-hand fashion and analyze the most influential variables motivating the participation in ensuring circular economy in the fashion industry with a focus on reuse activities. The intention was to determine the most influential factors motivating participation in the purchase and provide an overview of the relationship between the factors. This was achieved by reviewing previous studies and adjusting the factors identified to the conditions in the fashion industry. The data used for inferences were gathered through a questionnaire survey of fashion consumers and processed using the PLS-SEM method.

The TPB model is frequently employed to investigate consumer behaviour in general. Initially, The TPB was introduced by Icek Ajzen in 1985 to predict intentions [19], This was achieved by determining how attitude, subjective norms, as well as perceived behaviour control influence intentions. Previous studies showed that intention was the best predictor of human behaviour and identified as the core variable of the TPB model [20]. When shopping for second-hand fashion, environmental awareness is a significant predictor of purchase [21]. This is because frugal consumers prefer to purchase second-hand products in order to obtain high quality at much lower prices than new ones [22]. Economical consumers are also cautious in purchasing products to avoid waste [23]. Meanwhile, brand consciousness tend to attribute more significance to renowned brand names [24] and this has a significant influence on purchasing decisions [25]. Such consumers perceive second-hand fashion as a channel to gain access to the items wanted [26] due to the opportunity provided in purchasing popular brands at lower prices. The literature review showed the need to close certain gaps by developing the TPB model further in order to explore other predictor factors influencing behaviour. This was achieved by including variables such as beliefs of the environment, frugality, and brand consciousness as predictors of attitude. Moreover, the TPB model was expanded further by examining the subjective norms' effect on attitudes and

perceived behaviour control of consumers. This was considered important due to the observation of a previous study that subjective norms influenced consumer attitudes toward certain consumer behaviour [27-29]. Moreover, subjective norms can be a precursor of the level of control over behaviour because sharing knowledge, information, as well as experience with peer groups has the capacity to facilitate specific consumer behaviour [29, 30]. The model developed is expected to enhance the relevance of the TPB to purchase intention.

2. RESEARCH METHODS

2.1 Conceptual model and hypotheses

The extended TPB model was used to analyze the driving behaviour influencing consumers towards implementing a circular economy, especially to purchase second-hand fashion. The variables were obtained through a literature study with the predictor of purchasing behaviour observed to be purchase intention, which was identified to be influenced by subjective norms, attitude, as well as perceived behaviour control. Moreover, beliefs about the environment, frugality, and brand consciousness were the predictor variables of attitude. It was also observed that subjective norms predicted other variables such as attitude and perceived behaviour control in addition to purchase intention.

Figure 1 indicated the structure of the proposed framework using the TPB as the basic and the expansion of the attitude predictor variables. A total of 9 hypotheses were developed from the variables with a focus on the beliefs about the environment, frugality, brand consciousness, subjective norms, perceived behaviour control, attitude, purchase intention, as well as purchasing behaviour.
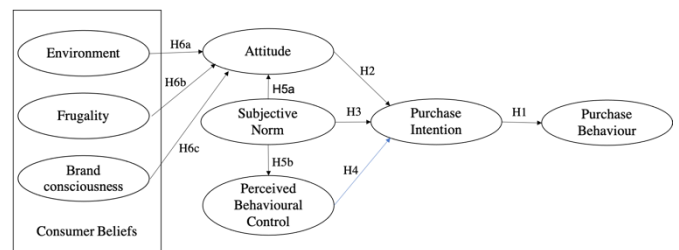

Figure 1. Conceptual model and hypotheses

The factors influencing behaviour to purchase second-hand fashion is detailed in the following sub-sections.

2.1.1 Purchase intention (PI) and Purchase behaviour (PB)

Purchasing behaviour is the process of obtaining information related to the formation of purchase intentions and decisions [31]. This is necessary because purchase intention is an essential factor in determining the final purchase decision. The variable is also the best predictor of human behaviour [20] and motivates individuals to exhibit some interesting behaviour [32]. It is very important to study purchasing behaviour because individuals often fail to fulfill intentions [33, 34]. A previous study reported a relationship between the purchase intention of eco-friendly products and the subsequent purchase decision [35]. Moreover, purchasing behaviour of eco-fashion clothing made of cotton showed a significant positive relationship with purchase intention [36]. Another

study also reported the influence of intention on the actual purchase of sustainable clothing [37]. This study provided the relationship between the variables but there is a need for confirmation in relation to second-hand fashion. Therefore, the subsequent hypothesis was formulated.

H1. Intention to purchase second-hand fashion is significantly related to purchase behaviour.

2.1.2 Attitude (AT)

Attitude was defined as the overall evaluation of an object to determine whether it is favorable or unfavorable [19]. The variable has an important impact on consumer buying decisions. This was confirmed by the empirical evidence showing the positive and significant effect on the intention to purchase products such as organic food [38] or luxury items [39]. Meanwhile, the negative attitude was related to the reluctance to purchase the product. For example, some individuals considered second-hand fashion previously owned by strangers unhealthy and low-quality, leading to the rejection of the product [21]. Therefore, consumers' attitude toward purchasing second-hand fashion goods is thought to influence their intention. This trend led to the formulation of the subsequent hypothesis.

H2. Attitude has a significant relationship with the intention of consumers to purchase second-hand fashion.

2.1.3 Subjective norm (SN)

Subjective norms are the perception of individuals related to social pressure from influential references, such as family and friends [32, 40, 41]. Consumers often consider the thoughts of peer groups when making decisions. A previous study showed that consumers exhibited higher purchase intentions when peer group had a positive opinion about organic cotton clothes in relation to sustainable consumption [27]. This showed the importance of peer groups to the intention of consumers to purchase second-hand fashion. Therefore, the subsequent hypothesis was formulated.

H3: Subjective norm has a significant relationship with the intention of consumers to purchase second-hand fashion.

2.1.4 Perceived behaviour control (PC)

Perceived behaviour control is the perception of consumers concerning the ease or hardship to purchase second-hand fashion. The variable was included to the TPB model developed from the theory of deductive action to improve the prediction of consumer behaviour in the context of self-efficacy. Moreover, the concept of self-efficacy is explained as the belief of individuals in their ability to control the functions of the environment. The addition of sensed behaviour control increases the accuracy of behaviour prediction. This is based on the belief that a higher perceived behaviour control is associated with a higher probability of executing a given behaviour [32]. As a result, the subsequent hypothesis was formulated.

H4. Perceived behaviour control has a significant connection with the intention of consumers to purchase second-hand fashion.

The expansion of the TPB model led to the further examination of the subjective norms' effect on the attitude and perceived behaviour control of consumers. This was intended to enhance the relevance of the model developed in relation to the purchase of second-hand fashion. Several studies have shown that subjective norms influence consumer attitude toward certain behaviour [27-29]. This was observed from the

fact that the consumers belonging to peer groups with a positive opinion about second-hand fashion had more positive attitude towards purchase. Moreover, subjective norms can be used as an antecedent level of control over purchase. This is because the information, knowledge, and experiences shared within peer groups can facilitate certain consumer behaviours [29, 30]. The trend shows that the existence of a positive disposition toward second-hand fashion within peer groups can reduce the discomfort in producing a purchase decision compared to a situation of disapproval. Therefore, the subsequent hypotheses were formulated.

H5a. Subjective norms have a significant effect on the attitude of customers to purchase second-hand fashion.

H5b. Subjective norms have a significant effect on perceived behaviour control to purchase second-hand fashion.

2.1.5 Beliefs about environment (BE)

Environmental beliefs are explained as worries about issues such as global warming, pollution, as well as chemical damage [42]. The variable has been recognized as a motivation for clothing recycling, donation, and consumption of second-hand fashion. It is believed to be the reason some consumers reuse or resell fashion products instead of disposal in landfills. The trend shows the importance of the variable as a significant predictor to purchase second-hand fashion [21]. It is observed that consumer beliefs about the environment can lead to a positive mindset toward purchase. Therefore, the subsequent hypothesis was formulated.

H6a. Environmental beliefs of consumers have an important relationship with the attitude to purchase second-hand fashion.

2.1.6 Beliefs about frugality (BF)

Price and value are important to frugal consumers due to their interest in second-hand fashion considered to be of high quality at a much lower price than new ones [22]. Moreover, consumers are often very careful when purchasing products to avoid wastage [23]. This shows a positive attitude towards the purchase of second-hand fashion due to the economic benefits provided. As a result, the subsequent hypothesis was proposed.

H6b. Consumer beliefs about frugality are significantly related to their attitude to purchase second-hand fashion.

2.1.7 Brand consciousness (BC)

Brand consciousness is the orientation of an individual toward purchasing renowed branded products [43]. The focus of the variable is on the tendency of consumers to place more priority on renowned brand names [24] with subsequent significant influence on purchase decisions [25]. This is related to the ability of brands to convey special attributes, including trustworthiness, higher durability, and better fabric quality [44]. Brand conscious consumers perceive second-hand fashion as a channel to access desired goods [26] from popular brands at low cost. Therefore, brand consciousness is an important factor influencing consumer attitudes toward to purchase second-hand fashion. This trend led to the formulation of the subsequent hypothesis.

H6c. Brands have a significant effect on the attitude of consumers to purchase second-hand fashion.

2.2 Data collection

Data were collected through the questionnaires distributed to fashion industry consumers in Indonesia. The questionnaire was developed to have two parts and the first contained

questions connected to the demographics and understanding of the respondents about second-hand fashion. The second focused on the variables and indicators to determine the factors influencing consumers to purchase second-hand fashion. The response was provided using a Likert scale to measure how strongly the respondents agreed or disagreed with a statement [45]. A seven-point Likert scale consisting of the numbers 1 = strongly disagree, 2 = entirely disagree, 3 = disagree, 4 = neutral, 5 = entirely agree, 6 = agree, and 7 = strongly agree was adopted to minimize measurement errors and ensure more precision. Moreover, the survey instrument was validated through a pilot study before the distribution to all respondents. The intention was to ensure the question items were effectively understood and related to the feelings of the respondents [46].

The population was Indonesian fashion consumers that understood fashion use and the sample was determined using a non-random purposive sampling method [47]. The criteria for the selection include being at a minimum of 17 years of age and having purchased second-hand fashion. The minimum sampling size required by PLS-SEM was that the number be equal to or ten times greater than the most significant total of formative indicators used to calculate one construct or ten times the largest total of structural paths directed at certain latent constructs in a structural model [48]. A questionnaire was subsequently distributed online via Google Forms in July 2023 and the number of valid responses was 314 people. This showed that the sample size satisfied the minimum requirements for processing using the PLS-SEM method. The results obtained in relation to the characteristics of the respondents are indicated in the following Table 1.

Table 1. Recapitulation of respondent characteristics

Characteristics	Category	Frequency	Percentage
Gender	Man	33	10.5%
	Woman	281	89.5%
Age	17-25 years	301	95.9%
	26-35 years	13	4.1%
	36-45 years	0	0%
	46-55 years	0	0%
	56-65 years	0	0%
	More than 65 years	0	0%
Education	Elementary School	0	0%
	Junior High School	1	0.3%
	High School	219	69.7%
	Diploma	17	5.4%
	Bachelor Degree	75	23.9%
	Master [S2]	2	0.6%
	Doctoral [S3]	0	0%
Monthly Income (IDR)	1,500,000 and less	227	72.3%
	1,500,001–3,500,000	64	20.4%
	3,500,001–5,000,000	15	4.8%
	5,000,001–7,500,000	6	1.9%
	More than 7,500,000	2	0.6%

2.3 Data processing

Data were processed by using the PLS-SEM method which is often used to assess the relationship between factors. The method is preferred because Covariance Based-Structural Equation Modeling [CB-SEM] has strong distribution assumptions. It also requires multivariate normal distribution and independent observations which are often too stringent for model estimation. Moreover, the PLS focuses on minimizing the sum of squared errors during estimation to ensure the production of moderate results even when the data deviates from the normal distribution [49]. It was also applied because the model size was less than 500 and the data were not generally distributed [16]. Furthermore, the PLS can be used to confirm and test theories as well as explain the relationship between latent variables.

The model developed has 8 latent variables, including 4 exogenous which are BE and BF with 5 indicators each as well as BC and SN with 6 each. The 4 endogenous are AT with 6 indicators, PB and SN with 5 each as well as PI with 4. This led to the design of a path diagram as a graphical representation of the inner or structural model using hypothesis theory to connect exogenous as well as endogenous variables. The model design was followed by the measurement through the latent variables [48].

2.3.1 Evaluation of the measurement model (Outer Model)
The reliability and validity of the indicators of the latent variables in the measurement model were assessed using Confirmatory Factor Analysis. The test focused on convergent and discriminant validity as well as composite reliability. Convergent validity was employed to measure the correlation of item variants with constructs [50] through the outer and AVE values. Meanwhile, discriminant validity was applied to determine the degree to which a construct was empirically different from others in measuring the items required [48]. It was conducted using the Fornell and Larcker values to that a construct shared more variance with its indicators than with other constructs. The criterion was that the AVE of each latent construct should be higher than the most elevated squared correlation of the other constructs [48].

2.3.2 Evaluation of the structural model (Inner Model)
The feasibility of the structural model was assessed through goodness of fit criteria. The focus is to determine the extent to which the variance-covariance of the data sample fits the structural equation model. This was achieved using the coefficient of determination (R^2), path coefficient, predictive relevance (Q^2), effect size (f^2), and model fit [48].

2.3.3 Hypothesis testing
Bootstrapping was employed to evaluate the importance of path coefficients. The analysis permits statistical testing of the hypothesis where the coefficient is equal to zero or null compared to the alternative with values not equal to zero through a two-tailed test [48]. Moreover, the hypotheses were tested by comparing the t-test table value with the t-test statistics. This was based on the criterion that the path coefficient was significant when the t-test value was greater than 1.65 at 10% significance of t-critical value in two-tailed, 1.96 at 5%, and 2.58 at 1% [48].

3. RESULT

3.1 Evaluation of the measurement model (Outer Model)

The latent variable with an outer loading value greater than 0.5 was confirmed to have good validity [50]. Meanwhile, any

indicator with values lesser than 0.5 was eliminated. The acceptable Cronbach's Alpha [α] value was > 0.7 [51] and a good (AVE) average variance extracted parameter was set at > 0.5 [48]. The Composite Reliability [CR] value was also acceptable when CR ≥ 0.7 and very satisfactory when CR value ≥ 0.8 [52].

For the convergent validity test, the initial calculation results showed that the outer loading value for BE5, BF3, PC1, and SN6 was less than 0.5. This led to the removal of the indicators before proceeding to the next stage. Moreover, the outer loading value of the BF1 and BF2 indicators was found to be less than 0.5 in stage 1, leading to the removal and usage in the next stage. It was observed from stage 2 that all indicators were significant because none had an outer loading value of less than 0.5. The AVE parameter was later calculated to define the convergent validity. The results showed that the variables had values > 0.5, leading to the confirmation of the possibility of using all the indicators in the discriminant validity test. The CR value of the variables was more than 0.7, showing that all indicators were reliable and accurate for measuring the latent variables. The convergent validity and CR results are explained in Table 2 while the discriminant validity conducted using Fornell Larcker (Table 3). It was observed that each latent variable had a greater AVE value compared to the other variables, indicating the construct was better than other blocks in predicting block size.

3.2 Structural model evaluation

In PLS-SEM, the structural or inner model explains the relationships between latent constructs. Moreover, path relationships only allow recursive correlation in one direction without causal loops [48]. This shows that only one possible orientation exists for the structural paths between latent variables. The structural model was evaluated to examine the relationships previously stated using the coefficient of determination (R^2). This method focuses on the percentage of the combined influence of exogenous on endogenous variables in order to predict the precision or accuracy of the model [48]. The results showed that the R^2 value of PI was 0.571 which was in the moderate category [52].

The model fit concept in PLS-SEM is different from the CB-SEM, which relies heavily on suitability. For example, the application of chi-square-based concepts and their extensions in CB-SEM do not apply to this method. Therefore, the assessment of the model fit on a bootstrap-based basis, such as SRMR, should be considered [50]. In this case, an SRMR value less than 0.08 is good, meaning the model is suitable or acceptable (good fit) [53]. The size of the comparison between the proposed and the null models is shown by the NFI value. A good fit has an NFI value > 0.9 while a marginal model has between 0.5 and 0.8 [54]. The fit model obtained for this study is presented in Table 4.

Table 2. Convergent validity and composite reliability result

Variable	Indicators	Outer Loading	Cronbach's Alpha	AVE	CR
Attitude (AT)	AT1	0.856			
	AT2	0.900			
	AT3	0.872	0.901	0.647	0.925
	AT4	0.726			
	AT5	0.798			
	AT6	0.758			
Brand Consciousness (BC)	BC1	0.848			
	BC2	0.841			
	BC3	0.844	0.915	0.701	0.933
	BC4	0.862			
	BC5	0.857			
	BC6	0.767			
Beliefs about Environment (BE)	BE1	0.892			
	BE2	0.920	0.932	0.830	0.951
	BE3	0.913			
	BE4	0.919			
Beliefs about Frugality (BF)	BF4	0.919	0.744	0.794	0.885
	BF5	0.861			
Purchase Behaviour (PB)	PB1	0.741			
	PB2	0.676			
	PB3	0.636	0.796	0.547	0.857
	PB4	0.825			
	PB5	0.803			
Perceived Behavioural Control (PB)	PC2	0.830			
	PC3	0.813	0.834	0.666	0.888
	PC4	0.759			
	PC5	0.860			
Purchase Intention (PI)	PI1	0.853			
	PI2	0.778	0.842	0.677	0.893
	PI3	0.824			
	PI4	0.835			
Subjective Norms (SN)	SN1	0.694			
	SN2	0.779			
	SN3	0.829	0.837	0.588	0.876
	SN4	0.870			
	SN5	0.638			

Table 3. Fornell and Larcker value

Variable	AT	BC	BE	BF	PB	PC	PI	SN
AT	0.82							
BC	0.15	0.84						
BE	0.55	0.14	0.91					
BF	0.52	0.07	0.34	0.89				
PB	0.57	0.14	0.36	0.62	0.74			
PC	0.54	0.28	0.42	0.38	0.50	0.82		
PI	0.74	0.21	0.45	0.57	0.67	0.52	0.82	
SN	0.47	0.11	0.36	0.33	0.34	0.28	0.43	0.77

Table 4. Model fit

Parameters	Value	Result
SRMR	0.071	Good fit
NFI	0.749	Marginal fit

The results generally showed that the measurement and structural models were valid, reliable, and a good fit based on several tests conducted. Therefore, the subsequent step was to test the hypotheses based on the bootstrap results.

3.3 Hypothesis test

PLS-SEM test was utilized to evaluate the conceptual model hypothesized in this study using SmartPLS software. The path coefficient explained the direction of the relationship constructed in the hypothesized structural model [48]. The coefficient ranged from -1 to +1 with a value close to +1 indicating a strong positive relationship while proximity to -1 represented a strong negative correlation [48]. This was followed by the determination the path coefficient significance [54]. The hypotheses were subsequently tested using the bootstrapping method. The recommended number of sample bootstrapping options was 500 which was consistent with the requirement of a value higher than the actual sample used [54]. The significance level [∝] used was 0.05 and this showed that the possibility or risk of errors occurring in the test was 5%. Moreover, the hypothesis was validated when the t-stat > t-table value of 1.96 as presented in Table 5.

Table 5. Hypothesis test results

Hyp.	Path	Original Sample	T-Stat	P-Values	Result
H1	PI->PB	0.671	21,203	0.000	Supported
H2	AT->PI	0.596	13,122	0.000	Supported
H3	SN>PI	0.098	2,237	0.026	Supported
H4	PC->PI	0.173	3,404	0.001	Supported
H5a	SN->AT	0.231	5,167	0.000	Supported
H5b	SN->PC	0.280	5,896	0.000	Supported
H6a	BE->AT	0.350	7,699	0.000	Supported
H6b	BF->AT	0.325	6,801	0.000	Supported
H6c	BC->AT	0.050	1,175	0.241	Rejected

Based on Table 4, 8 of the 9 hypotheses were supported while 1 was rejected. The effects of purchase intentions on purchasing behaviour for second-hand fashion (H1) had a T-stat of 21.203. This indicated that there was a significant positive effect and H1 was supported. According to H2, H3, and H4, personal attitudes, subjective norms, as well as perceived behaviour control had a significant positive effect on purchase intention with a T-stat of 13.122, 2.237, and 3.404, respectively, indicating H2, H3, and H5 were supported. Moreover, subjective norms had a significant positive effect on attitude and perceived behaviour control with a T-stat of 5.167

and 5.896 respectively, showing that H5a and H5b were supported. Beliefs about the environment and frugality also had a significant positive effect on attitude as observed from the T-stat of 7.699 and 6.801, respectively, indicating H6a and H6b were supported. Meanwhile, brand consciousness did not have a significant effect on attitude as observed from the T-stat of 1.175 and this showed that H6c was rejected.

The results showed that H1 was supported as observed from the positive direction in the original sample, indicating an increase in the value of the purchase intention by 1 standard deviation led to an increment in purchasing behaviour by 0.671 when all other variables were considered constant. This showed that purchase intention significantly and positively affected purchasing behaviour, and the correlation value was found to be the highest compared to other relationships assessed. The inference was that Indonesian consumers of second-hand fashion with high purchase intentions tended to make the decision to purchase. This is consistent with the observations of several prior investigations [35-37]. The decision to purchase was associated with the intention of the consumers to purchase environmentally friendly products [35]. A previous study on purchasing behaviour related to eco-fashion clothing made from cotton showed a significant positive relationship between purchase intention and purchasing behaviour [36]. Another study also reported the influence of purchase intention on the actual purchase of sustainable clothing [37]. Furthermore, the result agreed with the report [55] that purchase intention had a significant effect on purchasing behaviour.

The demographic analysis showed that most respondents were women and the young generation (17-25 years) with an income range of IDR 1,500,000 or less. The profile could be the reason for the purchase intention leading to the decision to purchase second-hand fashion. This is possible because purchasing behaviour is defined as the process of obtaining information to form the intentions needed to solve purchasing decision-making problems. Therefore, a higher purchase intention could motivate more purchasing behaviour.

The acceptance of H2 indicated that attitude significantly influenced the intention of consumers to purchase second-hand fashion. The result was consistent with the observation of previous studies on purchase intention [56], save electricity [57], visit green hotels [58], and not waste food [59]. The correlation value was found to be the second highest after the relationship between purchase intention and purchasing behaviour. The trend showed that attitude was part of the primary and dominant factors influencing the intention of consumers to purchase second-hand fashion towards achieving a circular economy. The observation is considered useful in the fashion industry to improve promotional strategies and increase positive perceptions. It is important to state that attitude is described as the degree to which a person holds a favorable or unfavorable opinion or judgment about purchasing. Therefore, consumers with better attitude towards second-hand fashion is predicted to have a higher intention to purchase the products.

Another observation was the acceptance of H3 and this showed that subjective norms significantly affected purchase intention. This was different from the report of a previous study [56], but consistent with previous studies [27, 57] in relation to the intention to purchase organic cotton clothing and save electricity respectively. Subjective norms were defined in this study as the pressure experienced from peer groups such as family and friends that further influenced the

decision to purchase second-hand fashion. The results indicated that the positive opinion of the consumer peer groups about the products could encourage higher intention to purchase.

The results indicated that H4 was supported, indicating the significant effect of perceived behaviour control on purchase intention. This was different from the report [56] that showed there was no significant relationship between the variables. However, the result was consistent with other studies on intention to purchase luxury fashion products [60] and reduce food waste [59]. Perceived behaviour control was explained as the perceptions of consumers about the ease or difficulty to purchase second-hand fashion. Purchase intention was also defined as an assessment made by consumers during the transaction process. Therefore, higher perceived behaviour control to the products encouraged better intentions to purchase.

H5a was observed to be supported and this showed that subjective norms significantly affected attitude. The result was consistent with the observation of a previous study [56] and several others conducted on some specific attitudes [27-29]. Subjective norms were defined in this study as the pressure experienced from peer groups such as family and friends that further influenced the decision to purchase second-hand fashion. The results indicated that the positive opinion of the consumer peer group could motivate a higher positive attitude towards the products.

Another observation from the study was that H5b was supported, indicating the significant effect of subjective norms on perceived behaviour control. The result was consistent with the report of a prior investigation that subjective norms had a significant effect on perceived behaviour control [56]. Subjective norms were identified in this study as the pressure experienced from peer groups such as family and friends that further influenced the decision to purchase second-hand fashion. Meanwhile, perceived behaviour control was explained as the perceptions of consumers about the ease or difficulty to purchase. This showed that consumer peer groups with a positive opinion about second-hand fashion could lead to a higher perceived behaviour control.

The results further showed that H6a was supported, indicating the significant effect of the beliefs about the environment on attitude. This was consistent with the report of a previous study [56] that the beliefs of consumers about the environment had a substantial effect on the attitude towards second-hand fashion. Specifically, individuals that showed care for the environment had more positive attitude toward purchasing these products. The beliefs about the environment were related to problems such as pollution, global warming, and chemical damage. Therefore, a show of appropriate concern for the environment could positively influence attitude towards second-hand fashion with subsequent effect on purchase intention.

The acceptance of H6b showed that the beliefs about frugality significantly affected attitude. This was different from the report of a previous study [56] but consistent with the observations of previous studies [22, 61]. Beliefs about frugality were explained as the consumer lifestyle marked by the extent to which consumers were limited in obtaining and using goods and services to achieve long-term objectives. Therefore, higher consumer beliefs about saving could encourage a positive attitude toward purchasing second-hand fashion.

H6c was rejected and this showed that brand consciousness did not significantly affect attitude. This was not in line with the study of Kim and Zhang [62] which focused on luxury goods products and reported the influence of brand consciousness on attitude with due consideration for important factors such as price. Brand consciousness was defined as the preference of well-known brands by consumers. The results showed that the trust of consumers in popular brands did not have any substantial effect on the attitude toward second-hand fashion. The trend could be associated with the income and final education levels of the respondents. This was confirmed from the demographic profile that the majority had a high school educational background. The level placed the respondents in a social environment that was not too high because the income level of most was in the range of IDR 1,500,000 or less. The income was sufficient to purchase second-hand fashion at lower prices than new clothing.

3.4 Research implication

The TPB model can be utilized to clarify the willingness of consumers to purchase second-hand fashion in order to develop appropriate strategies towards implementing a circular economy. This is aligns with the description of the concept as the regenerative system developed to minimize the flow of resources as well as waste by circulating materials and energy. A method to operationalize the circular economy is through prolonging the lifespan of products through reuse, in this case, second-hand fashion.

The results of the PLS-SEM analysis conducted showed that attitude was very important compared to subjective norms and perceived behaviour control. Therefore, stakeholders in the fashion industry are required to study consumer attitude due to its influence on the purchase of second-hand fashion. This study adopted and expanded the TPB to analyze the effect of three beliefs, including the environment, frugality, and brand consciousness on the attitude of consumers. Moreover, the factors influencing purchasing behaviour were also assessed. It was observed that the correlation between purchase intention and purchasing behaviour had the highest significance value in assessing the willingness of consumers to purchase second-hand fashion.

The study showed that the attitude of consumers was significantly influenced by beliefs about the environment. This was directly related to the green industry policy implemented as part of the directions of the Ministry of Industry to balance industrial expansion with the preservation of environmental roles. The intention was to ensure efficient, effective, and sustainable use of resources through the green industry in order to provide some benefits to society. Moreover, the beliefs about frugality also had a significant effect on the attitude of consumers. This was confirmed by the fact that thrifty consumers preferred to purchase second-hand products because of the high quality and more affordable price compared to new clothing [22].

The main challenge observed was the negative perception of second-hand fashion by consumers. This could lead to difficult purchase decisions due to the fear of potential risks, especially for those considered used or dirty [63]. Moreover, consumer pressure was important to the effectiveness of the circular economy. This showed the need for businesses to change strategies and for governments to implement supportive policies. First, stakeholders in the fashion industry are required to present a positive image to consumers by showing that second-hand fashion is environmentally friendly

and profitable. Second, the benefits of the products, especially the sustainability in terms of reuse, should be promoted. Third, setting up a special place, such as drop-off and pick-up services, to collect clothes in usable condition can encourage individuals to sell unused ones and enhance the transaction process. These efforts can be achieved through successful cooperation between the government, the fashion industry, and society [55]. Therefore, the government needs to support programs related to sustainable practices for second-hand fashion in order to prevent waste pollution, improve the economy of the country, and increase public knowledge about the products. The beliefs of individuals about the environment significantly influenced the attitude to purchase second-hand fashion. This shows the need for the government to strengthen public attitude through frequent awareness of environmental issues and threats.

4. CONCLUSION

In conclusion, the TPB model was employed to describe the willingness of individuals to purchase second-hand fashion. The model was adopted with a focus on subjective norms, attitude, and perceived behaviour control. It was further expanded to examine the effect of subjective norms on the attitude and perceived behaviour control to purchase second-hand fashion. Moreover, the effect of beliefs about the environment, frugality, and brand consciousness on the attitude toward these products was studied further.

The data processed using the PLS-SEM in SmartPLS 4.0 software showed that the beliefs about the environment and frugality positively and significantly affected the attitude to purchase second-hand fashion. Moreover, attitude, subjective norms, and perceived behaviour control had a positive and significant influence on purchase intention. The same trend was observed for subjective norms which was positively and substantially connected to attitude and perceived behaviour control. It was also identified for the relationship between purchase intention and behaviour. Meanwhile, brand consciousness had a positive and insignificant effect on attitude. The correlation between purchase intention and purchasing behaviour was identified to have the highest significant value in assessing the willingness of consumers to purchase second-hand fashion.

The recommendation for future studies is to include several influential factors because the focus of this study is only on the TPB model previously proposed. Therefore, there is a need to further understand these factors and also analyze online business models due to the rapidly growing trend of transactions related to the products on different digital platforms.

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