

Exploring the Relationship Between Environmental Knowledge and Behavioural Intentions for Sustainable Fashion Practices: Fashion Design Student Perspectives

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Abstract

With global climate change and resource constraints looming, sustainable design has become a focus of attention for all industries. Sustainability in the fashion industry requires changing the practices of all participants - designers, manufacturers, marketers and consumers. Advocating and practising sustainable fashion practices is necessary to achieve sustainable development in the fashion industry. As designers, this study should actively explore and apply sustainable design concepts to contribute to creating a better future. This study aimed to investigate undergraduate fashion design students' attitudes and behavioural intentions towards sustainable fashion practices. Undergraduate fashion design students ($n = 441$) from three universities in Guangdong Province, China, participated in this survey. By constructing different scales of environmental knowledge, attitude towards sustainable fashion practice and behavioural intention towards sustainable fashion practice, and by using structural equation modelling to analyse the relationship between environmental knowledge and sustainable fashion practice, the following conclusions were drawn: 1) environmental knowledge has a positive effect on attitude towards sustainable fashion practice ($p < 0.05$); 2) environmental knowledge have a positive impact on behavioural intention towards sustainable fashion practice ($p < 0.05$); 3) Subjective norms have a positive effect on behavioural intention towards sustainable fashion practice ($p < 0.05$). 4) Attitudes towards sustainable fashion practice mediate the relationship between environmental knowledge and intentions towards sustainable fashion practice behaviour ($p < 0.05$). The findings of this study have implications for environmental education for undergraduate fashion design students and sustainable production in companies.

Keywords

environmental knowledge, behavioural intentions, sustainable fashion practices

1. Introduction

We live in a time of constant change, and we must channel this change towards sustainability and demand a new type of fashion practice that is based more on transformable behaviours and less on consumptive behaviours (Reiley and DeLong, 2011). And recently, the fashion industry has warmly welcomed efforts to be more sustainable. Sustainable fashion is an important aspect of the future of fashion design to achieve sustainability (binti Shafie et al., 2021). One of the requirements to achieve sustainability is the use of sustainable concepts in the design of fashion and clothing. Designers are at the center of design creation and they can recover value from clothing waste based on sustainable principles of sustainable fashion design

(Govindan et al., 2015, Jalil and Shaharuddin, 2019). Designers not only need to be innovative and aesthetically pleasing but also need to consider the environmental, social, and economic impacts. Sustainability in the fashion industry requires a change in the practices of all participants designers, manufacturers, marketers, and consumers. Advocating and practicing sustainable fashion practice behaviours is a necessary way to achieve sustainable development in the fashion industry, and as designers, this study should actively explore and apply sustainable design concepts to contribute to the creation of a better future.

Against the backdrop of increasing resource constraints and environmental problems faced by mankind, the expansion of apparel consumption has triggered widespread concern about the environmental problems caused by apparel production and consumption (Long and Nasiry, 2022, Zhang et al., 2024). According to the statistics of the China Association of Comprehensive Utilisation of Resources, 26 million tonnes of waste textiles and garments are discarded every year in China, while the recovery and recycling rate is less than 1%, which causes a lot of waste of resources and environmental pollution problems (Spuijbroek, 2019). Therefore, it is imperative to promote sustainable fashion practices.

Knowledge is a necessary prerequisite for individual behaviour (Hu et al., 2010, Liu et al., 2020), and the theory of responsible environmental behaviour also incorporates environmental knowledge into the influencing factors of environmental behaviour (Liu et al., 2020, Hines et al., 1987, Saari et al., 2021, Wu et al., 2022). However, there are not many studies on the influence of environmental knowledge on the behavioural intention of sustainable fashion design practice in Guangdong Province, China. From the perspective of the environmental knowledge acquired by fashion design undergraduate students, this paper explores the influence of environmental knowledge and environmental impacts on sustainable fashion design practice behaviour, to deepen the understanding of sustainable fashion design practice behaviour, and to provide suggestions for achieving a change in the attitudes and behavioural intentions of Chinese fashion design students towards sustainable fashion design practice.

To explore the relationship between environmental knowledge and environmental impacts on attitudes and behavioural intentions toward sustainable fashion design practices, a conceptual model was required. This study used attitudes and subjective norms related to fashion design students' behaviour to predict behavioural intentions. The study applied the theory of reasoned action (TRA) (Fishbein and Ajzen, 1977), which has been successfully applied to the prediction of behaviour in social research (Rahman et al., 2023). Firstly, important predictors were identified through personal opinions and then these predictors were analysed. Therefore, a quantitative research method was used in this study. To identify and understand fashion design students' attitudes and behavioural intentions towards sustainable fashion design practices, data collection was carried out using a questionnaire. In conclusion, sustainable design practice is the key to achieving sustainable development of human society. By incorporating sustainable concepts into design, more environmentally friendly, economically and socially viable solutions can be brought to the world of the future.

2. Literature review

2.1 Environmental Knowledge

Environmental knowledge is an awareness of the multiple relationships between human interactions, environmental problems, and ecosystems (Liu et al., 2020, Liobikienė and Poškus, 2019, Lidskog et al., 2022). Environmental knowledge in the traditional sense is factual knowledge about ecosystem structure, function and formation processes (Schahn and Holzer, 1990). It has also been suggested that environmental knowledge exists in the knowledge of life (Monroe et al., 2014), and specifically in the area of consumption, where it is important for consumers to understand the environmental and social impacts of a product or service, as well as which products are produced in an environmentally friendly way (D'souza et al., 2006, Nekmahmud et al., 2022). Environmental knowledge also includes an individual's awareness of environmental issues, identified environmental problems, and solutions to environmental problems (Zhang et al., 2024). Levy and Marans (Levy and Marans, 2012) state that awareness of problems and mitigation procedures affect pro-environmental behaviours. Gam and Banning (Jin Gam et al., 2009) report that a lack of environmental knowledge creates psychological barriers to designers' acceptance of sustainable fashion design attitudes creating psychological barriers. Despite efforts to promote environmental sustainability, there are still limitations in knowledge and

awareness of environmental issues (Liu et al., 2020, Liobikienė and Poškus, 2019, Lidskog et al., 2022, Burchett, 2025).

2.2 Environmental knowledge and Attitudes

According to Ajzen's (Ajzen, 1991, Ajzen, 2011) theory of planned behaviour, human behaviour is influenced by their behavioural attitudes, perceived behavioural control and subjective norms. Behavioural attitudes refer to the psychological emotions that arise when a person engages in certain behaviours and can be differentiated into affective and instrumental attitudes (Bagozzi et al., 2001, Phipps et al., 2021), with affective attitudes referring to the emotions and motivation that consumers feel prior to carrying out a behaviour, and instrumental attitudes being cognitive considerations of the extent to which the behaviour is beneficial. Designers' attitudes towards sustainable fashion design, on the other hand, are behavioural assessments based on affective and instrumental attitudes, and designers with positive attitudes are more likely to engage in appropriate behaviours (Jalil and Shaharuddin, 2019, Bagozzi et al., 2001). Attitude is a psychological and emotional disposition that is often used to define an individual's evaluation of an object or behaviour, and Liu et al. (Liu et al., 2020) found that environmental knowledge and attitude were highly correlated, especially in the search for solutions to environmental problems.

Ohtomo and Hirose (Ohtomo and Hirose, 2007) observed that if designers lack knowledge about environmental issues, there is a gap between their attitudes and behaviours, which may have a great impact on their sustainable design intentions. ERWINSYAH (Erwinsyah, 2022) found that having environmental knowledge supports attitudes of wanting to protect the environment. When people are environmentally aware, their attitudes towards eco-fashion products can reduce clothing waste in the environment (Jalil and Shaharuddin, 2019, Jalil and Shaharuddin, 2020, Akintunde, 2017). Jalil and Shaharuddin (Jalil and Shaharuddin, 2020) found that there is a direct positive correlation between environmental knowledge and designers' attitudes towards eco-fashion design. Therefore, the authors propose the following hypotheses below:

H1: Environmental knowledge has a positive effect attitude towards sustainable fashion practices.

2.3 Environmental Knowledge and Behavioural Intentions

Scholars have constructed various theoretical models of environmental behaviour, such as rational behaviour, planned behaviour and responsible environmental behaviour, to study the influencing factors of environmental behaviour. Rational behaviour theory discusses the theoretical framework that 'behavioural attitudes' and "subjective norms" influence "behavioural intentions" and "behavioural intentions" influence "individual behaviour" (Ajzen, 1991). The theory of responsible environmental behaviour (TREB) further discusses the influence of action skills, action strategies, knowledge of environmental issues, attitudes, perceptions of control and personal responsibility on behavioural intentions, and the relationship between behavioural intentions and the role of situational factors on environmental behaviour (Akintunde, 2017). The role of situational factors on environmental behaviour (Hines et al., 1987). The tendency to perform a specific action is known as behavioural intention, which can be measured by a person's enthusiasm to strive to achieve a certain goal (Tu and Hu, 2018). Intention indicates the amount of effort a person is willing to put in or invest in order to produce behaviours that are appropriate for a sustainable environment (Jalil and Shaharuddin, 2020).

In general, knowledge is experience for future actions. Research on sustainable fashion practice behaviours has found that designers with environmental knowledge consider not only the environmental impacts of their design actions, but also the overall environmental impacts of the product throughout the entire process, from manufacturing, transportation to distribution (binti Shafie et al., 2021). It can be seen that general factual type of environmental knowledge such as ecosystems, environmental impacts of manufacturing and clothing labelling information will facilitate the occurrence of sustainable fashion practice behaviours. Therefore, the following hypothesis is formulated:

H2: Environmental knowledge has a positive effect behavioral intention towards sustainable fashion practices.

2.4 Subjective Norms and Behavioural Intentions for sustainable design practices

Subjective norms are the perceptions and attitudes of society and others towards an individual's behaviour as he or she engages in certain behaviours (Ajzen, 1991). The Theory of Planned Behaviour suggests that individuals refer to the advice of their relatives, friends or colleagues in order to perform a certain behaviour (Ajzen, 1991), and previous research has confirmed that designers' subjective norms have a positive influence on their behavioural choices, i.e. the advice of those around them positively influences designers' behaviour (Jalil and Shaharuddin, 2020). In addition, researchers from various research institutes have found that subjective norms can induce environmentally responsible behaviour (Biel and Thøgersen, 2007). Jalil and Shaharuddin (Jalil and Shaharuddin, 2020) found that designers' attitudes towards eco-fashion design and subjective norms have a strong influence on changes in behavioural intentions towards eco-fashion design. Therefore, the authors propose the following hypothesis below:

H3: Subjective norm has a relationship with behavioral intention toward sustainable fashion practice.

2.5 Attitudes and Behavioural Intentions for Sustainable Design Practice

Attitude is considered a key variable in predicting behaviour and plays a central role in a variety of theories that aim to understand human behaviour. Jin Gam et al. (Jin Gam et al., 2009) showed that there is a positive correlation between design attitudes and behavioural intention. Chang and Watchravesringkan (Chang and Watchravesringkan, 2018) showed that attitude contributes to pro-environmental behaviour. Jin Gam et al. (Jin Gam et al., 2009) showed that there is a positive correlation between design attitudes and behavioural intention. Jalil and Shaharuddin (Jalil and Shaharuddin, 2020) found that positive perceptions of sustainable fashion design by designers can motivate designers' design intentions and motivate designers to design with sustainable fashion materials. Mostafa (Mostafa, 2007) found that in most cultures, positive attitudes can generate a willingness to perform specific behaviours. Therefore, the authors propose the following hypothesis:

H4: Attitude towards sustainable fashion practices has a positive relationship with behavioural intention.

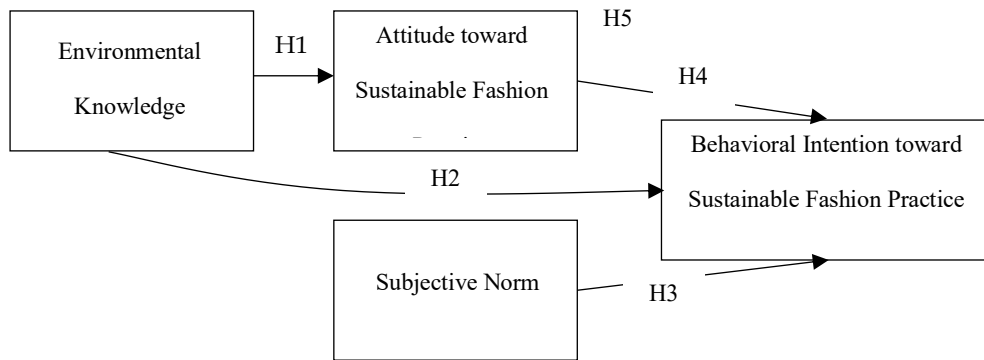
Domínguez-Valerio et al. (Domínguez-Valerio et al., 2019) found that sustainability attitudes are a mediating variable between sustainability knowledge and sustainability behaviours, generating a full mediating effect. Casaló et al. (Casaló and Escario, 2019) argued that environmental knowledge fosters attitudes, and attitudes promote pro-sustainable behaviours. Therefore, the authors proposed the following hypothesis:

H5: Attitude mediates the relationship between environmental knowledge and behavioural intention towards sustainable fashion practices.

3. Methods

As a widely used and authoritative theory for predicting a wide variety of social behaviours, the theory of reasoned action (TRA) has been expanded by a large number of scholars. TRA is derived from social psychology and is considered to be one of the most fundamental and influential theories in the study of cognitive behaviour (Staats, 2004). This theory adequately accounts for the influence of motivation and information on behaviour, arguing that individuals tend to behave in ways that lead to favourable outcomes for themselves and that also meet the expectations of others. In order to extend this theory to include behaviours that are not under volitional control or are more complex, Ajzen (Ajzen, 1985) built on the TRA by adding a new predictor variable, perceived behavioural control, to establish the theory of planned behaviour (TPB). Summarising the literature review, this paper identifies the variables and combines them with the TRA and TPB model to construct a theoretical model as shown in Figure 1:

Figure 1. Research model



3.1 Quantitative research design

This study used quantitative research methods to obtain data. In order to predict the results, hypothesis statements were created based on previous literature reviews and theoretical studies to highlight the gaps between the variables and a questionnaire was administered. Environmental knowledge scales first appeared in quantitative research in the field of environmental social sciences. Many of the scales currently used to measure environmental knowledge are derived from the System Knowledge Scale originally proposed by Arbuthnot and Lingg (Arbuthnot and Lingg, 1975). In the textile and apparel field, Kim and Damhorst (Kim and Damhorst, 1998) developed the environmental knowledge scale for sustainable fashion practices (EKSF), which includes knowledge related to fibre treatment and reuse, textile waste disposal, product cleaners and regulatory policies. In this study, based on a synthesis of well-established scales from scholars, the final questionnaire was designed and closed-ended questions were answered on a Likert scale (using a five-point Likert scale). The questionnaire consisted of 26 written questions, which were composed of two parts: the first part was about the respondents' basic personal information (5 basic information questions), and the second part was about the relationship between environmental knowledge and attitudes towards sustainable fashion practices and behavioural intentions (21 scale questions). The initially designed questionnaire was then sent to six fashion industry related experts for review to ensure its reasonable validity. The final questionnaire was finally distributed on a small scale for pre-testing, and the final questionnaire was formed after reliability and validity tests (as shown in Table1).

Table 1. Measurement scale

Items	Measurement Questions
Behavioural Intention (BI)	
BI1	I would consider the environmental impact of shopping
BI2	I will always reduce, reusing and recycling (3R).
BI3	If I were a fashion designer, I would ensure that I prioritize sustainability in my designs and use sustainable materials for my apparel.
BI4	I am passionate about becoming a sustainable fashion designer.
BI5	If I become a sustainable fashion designer, I am willing to accept a higher price for the greater process of sustainable fashion design.
Attitude (ATT)	
ATT1	The materials used in the clothing I design must come from environmentally sustainable sources.
ATT2	I feel I have an ethical obligation to purchase eco-friendly apparel.
ATT3	It is important that the fashion industry practices business in a sustainable manner.
ATT4	It is important for consumers to have the attitude to make sustainable apparel choices.
ATT5	If given the opportunity, I would like to work in sustainable fashion design.
ATT6	I would like to participate in sustainable fashion research.
Subjective Norms (SN)	
SN1	Before I started using sustainable fashion design, I was very concerned about what people thought.
SN2	When I decided to pursue sustainable fashion design, I was worried about what my close friends around me would think.

SN3	I need to fundamentally recognise that the value of sustainable fashion design is higher than the value of ordinary fashion in order for sustainable practices to develop better.
SN4	If I start my own clothing brand in the future, I am willing to recycle my products.
Environmental Knowledge (EK)	
EK1	I gained my knowledge of environmental sustainability from school.
EK2	My major has given me a deeper understanding of the concept of sustainability.
EK3	As a fashion student/designer, having knowledge of environmental protection is crucial to practicing environmentally friendly production methods.
EK4	In my opinion, environmental knowledge is also important for consumers.
EK5	Understanding how products are manufactured under safe and healthy working conditions (e.g. no child labor or sweatshops) is crucial for designers striving to create sustainable apparel.
EK6	I will explore/read more about environmental issues before deciding to practice sustainably fashion.

3.2 Data collection

Data were collected by distributing an online questionnaire (Wenjuanxing), and fashion design undergraduates from three universities in Guangdong Province, China, were selected as the target respondents. A total of 456 questionnaires were collected, and a small number of unqualified questionnaires were excluded, leaving 441 valid questionnaires, with a validity rate of 96.7%.

4. Findings and Discussion

Confidence and validity analyses and structural equation analyses were conducted using SPSS 26. 0 and Smart PLS 4.0 statistical analysis software for valid sample data.

4.1 Descriptive analysis

The respondents were from three universities in Guangdong, the proportion of male and female was 55.1% (n=243) and 44.9% (n=198) respectively; the proportion of 20-24 year old respondents was the highest, accounting for 85% (n=375); the data on the grade level of undergraduate study during the respondents' survey period is also close to the stratified sample of the target, Undergraduate Year 1 (n = 57, 12.9%), Undergraduate Year 2 (n = 89, 20.2%), Undergraduate Year 3 (n = 126, 28.6%), Undergraduate Year 4 (n = 169, 38.3%). Finally, all respondents (100%) were from fashion design related disciplines, which met the sample requirements (as show in Table 2).

Table 2. Demographic Profile of Respondents

Statistical items	Variables	Frequency	Percent (%)
Age	15-19 years old	60	13.6
	20-24 years old	375	85.0
	25-29 years old	3	0.7
	Above 30 years old	3	0.7
	Total	441	100.0
Gender	Male	243	55.1
	Female	198	44.9
	Total	441	100.0
University	University A	130	29.5
	University B	80	18.1
	University C	231	52.4
	Total	441	100.0
Undergraduate	Undergraduate Year 1	57	12.9
	Undergraduate Year 2	89	20.2
	Undergraduate Year 3	126	28.6
	Undergraduate Year 4	169	38.3
	Total	441	100.0
Major	Fashion and Costume Design	258	58.5
	Fashion Design and Engineering	183	41.5
	Total	441	100.0

4.2 Reliability and validity analyses

The purpose of the reliability and validity analysis is to determine whether the proposed model meets the reliability and validity requirements through confirmatory factor analysis. Reliability was tested through Composite reliability (CR) and Cronbach's alpha, both of which should be higher than 0.7 according to Hair et al. (Hair et al., 2016) and Garson (Garson, 2016) recommendations. The validity of the scale items was assessed by Loadings and average variance extracted (AVE), as suggested by Hair et al. (Hair Jr et al., 2017) Loadings and AVE need more than 0.5. Table 3 shows the values of CR, Cronbach's Alpha, Loadings and AVE for each construct in this study. It shows that the CR are ranged from 0.902 to 0.922, the Cronbach's Alpha are ranged from 0.856 to 0.898, the Loading are ranged from 0.772 to 0.851, and the AVE values are acceptable as it is ranged from 0.649 to 0.697, it shows that the reliability and Validity of this measurement model is very good.

Table 3. Confirmatory factor analysis

Variable	Items	Loadings	AVE	CR	Cronbach's Alpha
Behavioural Intention (BI)	BI1	0.806	0.673	0.911	0.879
	BI2	0.824			
	BI3	0.851			
	BI4	0.815			
	BI5	0.807			
Attitude (ATT)	ATT1	0.803	0.662	0.922	0.898
	ATT2	0.823			
	ATT3	0.810			
	ATT4	0.823			
	ATT5	0.814			
	ATT6	0.808			
Subjective Norms (SN)	SN1	0.839	0.697	0.902	0.856
	SN2	0.817			
	SN3	0.836			
	SN4	0.847			
Environmental Knowledge (EK)	EK1	0.772	0.649	0.917	0.892
	EK2	0.786			
	EK3	0.827			
	EK4	0.825			
	EK5	0.790			
	EK6	0.830			

And, according to the criteria based on Fornell and Larcker (Fornell and Larcker, 1981), the square root of the AVE value of each latent variable as shown in Table 4 is greater than the correlation coefficient of that latent variable with the other latent variables, which indicates that the scale has good discriminant validity. Hair et al. (Hair et al., 2019) and Henseler et al. (Henseler et al., 2015) suggested HTMT less than 0.9 as an evaluation criterion. As shown in Table 4, all HTMT values used as criteria were below 0.9, so discriminant validity was confirmed.

Table 4. Discriminant validity

Fornell-Larcker					Heterotrait-monotrait ratio (HTMT)				
	ATT	BI	EK	SN		ATT	BI	EK	SN
ATT	0.814				ATT				
BI	0.388	0.820			BI	0.434			
EK	0.427	0.430	0.805		EK	0.475	0.485		
SN	0.378	0.398	0.445	0.835	SN	0.429	0.453	0.508	

4.3 Analysis of the overall fitness of structural equation models (SEM)

When using structural equations to validate a theoretical model, good model fit is a necessary condition. standardized root mean square residual (SRMR) is used to assess the average size of the difference between the observed and expected correlation matrices, and belongs to the Absolute Goodness-of-Fit Indices, according to Hu and Bentler (Hu and Bentler, 1998), SRMR < 0.1 is acceptable, while a more stringent criterion is SRMR < 0.08. Normed Fit Index (NFI), proposed by Bentler and Bonett (Bentler and Bonett, 1980),

takes a value between 0 and 1 values, the closer to 1 means the better the model fit, and generally will be greater than 0.9 as a judgement criterion. Table 4 shows the values of the fitness index of the model. From Table 5, it can be seen that the fitness index SRMR is less than 0.08 ($SRMR=0.060 < 0.08$), and $NFI > 0.9$ ($NFI=0.916 > 0.9$) indicates that the overall fitness of the model is good. Furthermore, Chin (Chin et al., 2003, Chin, 1998a, Chin, 1998b), suggested R^2 value of at least 0.10 to ensure a satisfactory model fit. Hair et al. (2019) suggested the Q^2 values should be greater than 0 for a specific endogenous variable to present predictive accuracy of the structural model. As shown in Table 5, both R^2 and Q^2 for ATT and BI are greater than 0, indicating that demonstrates satisfactory predictive power of structural models.

Table 5. Coefficient of determination (R^2) and (Q^2) & Model fit

Endogenous Latent Factors	R^2	Q^2	Model fit	
Attitude (ATT)	0.182	0.117	SRMR	NFI
Behavioural Intention (BI)	0.270	0.176	0.060	0.916

4.4 Results of testing research hypotheses

The hypotheses developed for this study were tested using a bootstrap procedure of 5000 examples as suggested by Hair et al. (2017) and shown in Figure 2. The results obtained are shown in Table 6.

Figure 2. Structural Model

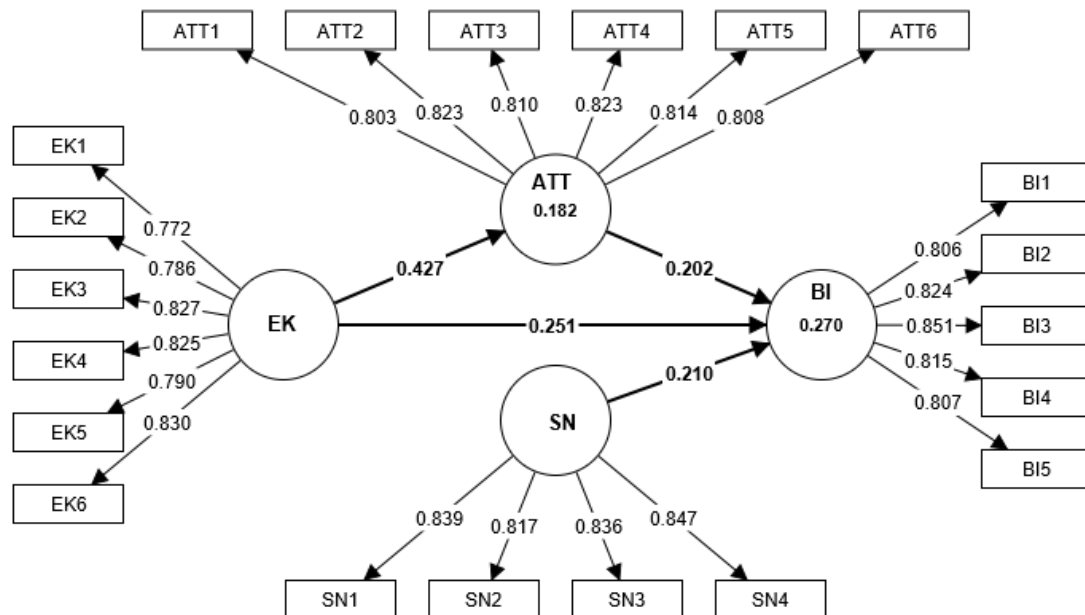


Table 6 shows the estimates of Standard Beta (β), Standard deviation (STDEV), T Statistics, P values and results of hypothesis testing between environmental knowledge, attitudes towards sustainable fashion practices and behavioural intentions towards sustainable fashion practices. The test results show that β of all hypotheses are greater than 0, all the paths tested in the structural model are significant with all the T-values greater than critical value of 1.96, and the P-value of the significance test of all the hypotheses is less than 0.05, that is to say, all the five hypotheses have passed the significance test (the absolute value of the t-value > 1.96 , the P-value < 0.05 , and the hypothesis that β is 0 is rejected), which proves that the hypotheses put forward during the construction of the theoretical model have been effectively supported by the data of the 441 research samples.

This study revealed that EK ($\beta = 0.427$, t -value = 11.134, $P = 0.000 < 0.05$) has positive effect on ATT, and thus, H1 is supported. This coincides with Jalil and Shahrudin's (Jalil and Shahrudin, 2020) finding that there is a direct positive relationship between environmental knowledge and attitude towards setting up sustainable fashion practices. The study also revealed that EK ($\beta = 0.251$, t -value = 5.214, $P = 0.000 < 0.05$) have a positive effect on BI, and hence H2 is supported. This is similar to the finding of binti Shafie et al. (binti Shafie et al., 2021) that environmental knowledge has a direct positive relationship with setting behavioural

intentions for sustainable fashion practices. SN ($\beta = 0.210$, t -value = 4.758, $P = 0.000 < 0.05$) was also found to have a positive relationship on BI, and thus, H3 is supported. This corroborates other researches suggesting that subjective norms have a positive relationship on behavioural intentions for sustainable fashion practices (Jalil and Shaharuddin, 2020, Biel and Thøgersen, 2007)]. And, ATT ($\beta = 0.202$, t -value = 4.284, $P = 0.000 < 0.05$) was also found to have a positive relationship on BI, and thus, H4 is supported. Similar findings were also reported by other studies (Jin Gam et al., 2009, Jalil and Shaharuddin, 2020, Chang and Watchravesringkan, 2018, Mostafa, 2007). Finally, the hypotheses testing showed that the mediation effect of ATT on the relationship between EK and BI was significant ($\beta = 0.086$, t -value = 3.905, $P = 0.000 < 0.05$). Consequently, hypotheses H5 was supported respectively. Similar findings were also made by previous studies (Chan and Bishop, 2013, Pakpour et al., 2014, White, 2009). The results thus indicate that the more willing Melaka households are to recycle their household waste, the higher their engagement in recycling activities. It is therefore essential for the local authorities to focus on mechanisms to turn their willingness into actual recycling behaviour. Previous studies have produced similar results (Jin Gam et al., 2009, Domínguez-Valerio et al., 2019, Casaló and Escario, 2019, Pakpour et al., 2014, White, 2009). Therefore, the findings suggest that the more fashion design students' environmental knowledge is known, the more positive their attitudes towards sustainable fashion practices and thus the higher the likelihood that they will pay for behaviours towards sustainable fashion practices. Therefore, there is a need to increase environmental literacy education and focus on education that translates fashion design students' willingness to practice sustainable fashion into actual sustainable fashion practice behaviours.

Table 6. Result of the hypothesis test

H	Relationship	Std Beta (β)	Standard deviation (STDEV)	T Statistics	P values	Decision
H1	Environmental Knowledge → Attitude (EK → ATT)	0.427	0.038	11.134	0.000	Supported
H2	Environmental Knowledge → Behavioural Intention (EK → BI)	0.251	0.048	5.214	0.000	Supported
H3	Subjective Norms → Behavioural Intention (SN → BI)	0.210	0.044	4.758	0.000	Supported
H4	Attitude → Behavioural Intention (ATT → BI)	0.202	0.047	4.284	0.000	Supported
H5	Environmental Knowledge → Attitude → Behavioural Intention (EK → ATT → BI)	0.086	0.022	3.905	0.000	Supported

Note: $P < 0.05$ means the effect is significant and supports the hypothesis; $P > 0.05$ means the effect is not significant and does not support the hypothesis.

5. Conclusion

In recent years, both academics and the fashion industry have been increasingly concerned with reducing the negative environmental impacts of their production and business activities. However, more research still needs to be done to understand the attitudes and behavioural intentions of fashion students (designers) towards sustainable fashion practices. Although previous studies have shown that the higher the level of environmental knowledge of designers, the more likely they are to engage in sustainable practice behaviours, most of these studies have focused on developed countries. In China, especially in the fashion industry sector, research on environmental knowledge and sustainable practice behaviours must be more comprehensive. This study used structural equation modelling (SEM) assessment to investigate the relationship between environmental knowledge and fashion designers' attitudes and behavioural intentions towards sustainable fashion practices. The following findings were obtained: (1) environmental knowledge possessed by fashion design students positively affects attitudes and behavioural intentions towards sustainable fashion practice; (2) environmental knowledge influences fashion design students' attitudes, which in turn directly affects actual behaviours; (3) subjective norms have a positive and direct influence on fashion design students' behavioural intentions towards sustainable fashion practice.

Based on this, this paper suggests that universities can increase sustainability education to improve the overall environmental knowledge of fashion design students, promote positive attitudes and behavioural intentions towards sustainable fashion practices, and make efforts to achieve the goal of global sustainable development.

Finally, this paper is a solid addition to the research on sustainable fashion practice behaviour by incorporating environmental knowledge into the sustainable fashion practice behaviour research framework. Further research will also consider including other influencing variables to discuss the relationship between different types of environmental knowledge and sustainable fashion practice behaviours in a more refined theoretical model.

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Conceptualization, W.O. and S.M.; methodology, W.O.; software, W.O.; validation, S.M. and R.T.; formal analysis, W.O.; investigation, W.O.; resources, W.O.; data curation, W.O.; writing—original draft preparation, W.O.; writing—review and editing, W.O. and S.M.; visualization, S.M. and R.T.; supervision, R.T.; All authors have read and agreed to the published version of the manuscript.”

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The authors declare no conflict of interest.

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