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Antecedents of green purchase intention: a cross-cultural empirical evidence from Vietnam and Poland

Abstract

Research background: Even though antecedents of green consumption have already been considered in numerous scientific articles, their findings still remain inconsistent. Furthermore, far less attention has been paid to understanding the underlying mechanism of cultural values, including collectivism and long-term orientation, and perceived environmental knowledge influencing intention to purchase environmentally friendly products, as well as the meditating role of green purchase willingness in the linkages between antecedents and green purchase intention. In addition, some previous studies suggested that it might be meaningful and significant to explore these linkages in the cross-cultural context with different levels of economic development.

Purpose of the article: This study explored the effects of cultural dimension, perceived environmental and green purchase willingness with regard to intention to purchase environmentally friendly products of Vietnamese and Polish customers. Moreover, the mediating role of green purchase willingness was also investigated in this study.
Methods: To achieve the objectives of this research, customer surveys were conducted in two developing countries — Vietnam and Poland. Two convenience samples of 611 Vietnamese consumers and 301 Polish consumers have been recruited from 03 May to 03 October 2020. The structural equation modelling (SEM) was utilized to examine the conceptual framework and test the proposed hypotheses.
Findings & value added: The research revealed that green purchase willingness became the most influential factor to predict green purchase intention in both cultures. Also, perceived environmental knowledge was found to have substantial effects on willingness and intention to purchase environmentally friendly products in both countries, even though the influential degree in Poland was much higher than that in Vietnam. Remarkably, cultural dimensions were found to significantly affect green consumption in the collectivist culture of Vietnam, while these relationships were not significant in Poland. This study was expected to significantly contribute to the existing literature by boosting our understanding of the importance of cultural values and perceived knowledge environment in promoting green consumption in the cross-cultural context.

Introduction

Nowadays, global environmental issues, such as water, land and air pollution or climate change, are caused by a high level of unsustainable consumption, leading consumers to change and adjust their established buying tendencies with the aim of protecting the natural environment and ecosystems. Consequently, environmentally friendly consumption or pro-environmental purchasing were created as the new concepts in the marketing literature (Ha *et al*., 2020; Kim *et al*., 2012, pp. 199–214; Kumar *et al*., 2020; Lai & Chen, 2016, pp. 67–76; Le *et al*., 2020; Sreen *et al*., 2018, pp. 177–189). Regarding the pro-environmental consumption, numerous researches about green purchase intention and behaviours have been carried out in advanced economies (Nguyen *et al*., 2019; Nguyen, 2019, pp. 247–258; Prothero *et al*., 2011, pp. 31–38; Sreen *et al*., 2018, pp. 177–189; Yadav *et al*., 2016; pp. 731–739), while in emerging economies, such as Vietnam and Poland, few research projects have acknowledged environmentally-friendly consumption, still such literature on environmental problems and consumer study are relatively limited in the context of transitional economies (Kumar *et al*., 2017, pp. 1–9). In addition, it has been noticed that green purchase intention and behaviour can vary for different nations because of differences in culture and the developmental level (Bong-Ko & Jin, 2017, pp. 70–87). Nevertheless, almost all prior studies only considered green consumption behaviour within one specific country (Elsantil, 2021, pp. 133–149) while cross-cultural studies are scarce (Bong-Ko & Jin, 2017, pp. 70–87). The present research employed Vietnam as a representative

nation from Asia countries, where sustainable consumption is still considered as a new term (Nguyen, 2019, pp. 247–258) and Poland acts as a representative nation from European countries, where citizens' awareness of sustainable behaviours was much higher (Anita *et al*., 2018; Rahman & Koszewska, 2020, pp. 213–234). Thus, it is interesting and significant to discover customers' intention to buy green products in the context of Vietnam and Poland, two countries which are not only different in terms of their cultures, but whose economies are at different levels of development. Also, comparing a European country with an emerging economy in Asia can help in predicting the pattern changes in Asian countries, where less attention is still paid to environmental problems and sustainable development (Nguyen, 2019, pp. 247–258).

Regarding antecedents of green consumption, there were various factors which have been considered in previous research. Nevertheless, there were inconsistences between the findings of these studies pertaining to precursors shaping the intention to purchase environmentally friendly products (Ahmad & Zhang, 2020; Kumar *et al*., 2020; Lee, 2017, pp. 19–30; Munerah *et al*., 2021; Nguyen *et al*., 2017, pp. 89–106; Syed *et al.*, 2019, pp. 84–97). Among the precursors, cultural values have been found to significantly affect green purchase intention and behaviours (Sreen *et al*., 2018, pp. 177–189; Nguyen *et al*., 2017, pp. 89–106), and these linkages also vary across different cultures (Soyez, 2012, pp. 623–646). Yet, there have only been few studies which intended to explain how specific cultural dimensions, such as collectivism and long-term orientation, influence green consumption (Chi & Zheng, 2016, pp. 206–227; Nguyen *et al*., 2017, pp. 377–396; Sreen *et al*., 2018, pp. 177–189). Also, it is noticeable that the correlation between these cultural dimensions and green purchase intention is still unclear (Chekima *et al*., 2016, pp. 210–220; Sreen *et al*., 2018, pp. 177–189). Moreover, there is a dearth of literature exploring the effect of perceived environmental knowledge on predicting the intention to purchase environmentally friendly products (Jaiswal & Kant, 2018, pp. 60–69; Kumar *et al*., 2017, pp. 1–9), as well as the mediating role of green purchase willingness with regard to the linkages between antecedents and green purchase intention (Zhang *et al*., 2018, pp. 1498–1507).

Cultural values, including collectivism and long-term orientation, are determined as crucial constructs in marketing and the research topics related to these constructs have been extensively presented in the literature (e.g. Chekima *et al*., 2016, pp. 210–220; Klimas, 2019, pp. 117–127; Sreen *et al.*, 2018, pp. 177–189). Indeed, Hofstede (2001)' cultural dimensions have been expansively employed to explore customers' purchase intention across different cultures. Five elements, including power distance, individualism

versus collectivism, uncertainty avoidance, masculinity, and long-term orientation, are used to predict consumer purchase intention. Yet, only two of these five elements, which are collectivism and long-term orientation, are identified as the most acknowledged factors for explaining green purchase intention (Cho *et al*., 2013, pp. 1052–1059; Sreen *et al*., 2018, pp. 177–189). Although collectivism has often been associated with Eastern countries, such as China, Korea and Vietnam, previous studies had suggested that collectivism also exists in Western cultures (Higueras-Castillo *et al*., 2019, pp. 2143–2160). The linkages between collectivism, long-term orientation and green purchase intention have been investigated in various cultural contexts, employing different approaches, and the findings are also varied and debatable (Chekima *et al*., 2016, pp. 210–220; Chi & Zheng, 2016, pp. 206–227). In addition, perceived environmental knowledge can be correlated with green purchase intention (Amoako & Dzogbenuku, 2020, pp. 1609–1626; Cheung & To, 2019, pp. 145–153), whereas green purchase willingness can serve as the mediator in the interrelations between these antecedents and the intention to buy green products (Lai & Cheng, 2016, pp. 67–76), and even the actual purchase behaviour (Wei *et al*., 2018, pp. 230–238). Thus, it has been suggested that these direct and indirect links should be further explored (Amoako & Dzogbenuku, 2020, pp. 1609–1626; Lai & Cheng, 2016, pp. 67–76; Sreen *et al.*, 2018, pp. 177–189), especially, it can be meaningful to investigate these relationships in the different contexts of Vietnam and Poland, two emerging nations with different development degrees of economy, where the problems involved in green consumption and sustainability have indicated growing and substantial interests by both scholars and policymakers at various levels.

The main objective of our research is to estimate the influences of cultural dimensions (collectivism and long-term orientation), perceived environmental knowledge, and green purchase willingness on intention to purchase green products among Vietnamese and Polish consumers. Moreover, the mediating role of green purchase willingness with regard to relationships between factors and green purchase intention of Vietnamese and Polish customers are explained in our research. The findings of our research are expected to dramatically contribute to the literature by enhancing our understanding of interesting linkages between suggested factors and the green purchase intention among Vietnamese and Polish consumers. In this article, the convenience sampling technique was employed to gather the dataset and questionnaires were directly distributed among consumers through their email addresses. Moreover, quantitative method was utilized in this study via SPSS 25.0 and AMOS 25.0 software. Cronbach's alpha, exploratory factor analysis (EFA), and confirmatory factor analysis (CFA)

were used to examine the internal constancy reliability, convergent and discriminant validity of each construct as well as the model fitness of the research model. Then, structural equation method (SEM) was utilized to estimate the association between latent variables.

In this study, after the introduction section, literature review, hypotheses and research model were presented. The next section showed the research method, followed by results. Then, discussion sections represented the findings and the implications of the research. Finally, the conclusion, and the limitations of this study, as well as the research prospects in the future were provided.

Literature review and hypotheses development

Sustainable consumption and the research context

Environmentally friendly consumption behaviours have been the subject of scholarly interest in advanced economies since the 1960s (Vu *et al.*, 2021, pp. 1–19). Even though marketing scholars had not paid attention to pro-environmental consumption for a long time (Nguyen, 2019, pp. 247–258), several constructs about environments have been considered as traditional topics in sociological psychology (Vu *et al.*, 2021, pp. 1–19). However, pro-environmental behaviours or green consumption have been increasingly becoming the subject of interest in marketing fields and they are more often referred to by leading scholars (Pan *et al*., 2021, pp. 133–153). Consequently, a body of studies has been carried out to increase our understanding of sustainable behaviours (e.g. Ayyub *et al*., 2021, pp. 1–12; Connolly & Prothero, 2008, pp. 117–145; Tan *et al*., 2016, pp. 288–299). Recently, scholars integrated environmental issues with green consumption (e.g. Vu *et al*., 2021, pp. 1–19). Therefore, there is a need to explain the impacts of the precursors on the green purchase intention, which can have significant contribution to marketing literature in general, and the pro-environmental behaviour theme in particular. In our research, environmentally-friendly consumption can be understood as behaviour of consumers related to environmental protection problems via their purchases (Gupta & Singh, 2019, pp. 16–35). Environmentally-friendly consumption refers to behaviour of engaging in buying green products and behaviours which benefit the ecosystem or at least such behaviours that are not harmful to the natural environment and community, such as recycled products (Connolly & Prothero, 2008, pp. 117–145). Environmentally-friendly consumption is often predicted throughout customers' intent to purchase green products

(Vu *et al*., 2021, pp. 1–19), then this intention can translate into an actual green purchase behaviour to minimize the environmentally negative impacts (Ayyub *et al*., 2021, pp. 1–12 2021, pp. 1–12).

Our study aims to evaluate the role of crucial and debatable antecedents of the intention to purchase environmentally friendly products, such as green products purchase willingness, cultural elements (collectivism and long-term orientation), and perceived environmental knowledge, using consumer dataset from two emerging countries with different levels of development, that is Vietnam and Poland. Poland is considered as an emerging market and green consumption in Poland has been becoming one of mainstream elements of the consumption culture (García-Machado *et al*., 2020, pp. 147–172). In Poland, sustainable development strategy is of concern to the Government, which developed numerous strategic documents, such as "Poland 2030 Development Challenges"; "Polish Sustainable Development Strategy 2025", was developed by the Ministry of Environment. Citizens seem to be rather highly aware of environmental protection (Doanh & Gadomska-Lila, 2020, pp. 43–61; Sudolska & Łapińska, 2020, pp. 1100–1105). Rahman and Koszewska (2020, pp. 213–234) circumstances, which show that Poland seems to be specifically interested in sustainability studies because it has been classified as one of three "new consumer countries" in Eastern Europe, along with Ukraine and Russia. These countries are said to show impressive economic growth, reaching approximately 5% annually. On 24 September 2018, Poland was reclassified from an "emerging market" to a "developed market", according to the global index provider FTSE Russell (Raszkowski & Bartniczak, 2019, pp. 1–20). Also, it has become the eighth biggest economy in the European Union and one of the largest economies among the Central and Eastern European countries. Sustainable development has made a significant progress in Poland, many programmes of the Polish Government, such as Energia Plus and Ciepłownictwo Powiatowe – pilotaż, are funded to support entrepreneurs and farmers in rural areas to decrease the influence of negative environmental consequences (Rahman & Koszewska, 2020, pp. 213–234). Thus, the research topic involved in green consumption in Poland also has attracted a growing research interest from researchers as a result of the rise of environmental awareness of both its Government and citizens (Anita *et al*., 2018; Rahman & Koszewska, 2020, pp. 213–234; Wróblewski & Dacko-Pikiewicz, 2018, pp. 38–56). A recent study by Bryła (2016) examines the antecedents of green consumptions, focusing on the effects of motives and barriers. This study emphasizes that some factors, such as high price, insufficient consumer awareness, low availability, low visibility and short expiry dates become the critical barriers while others, including healthiness, ecological

characters of product, safety, superior taste and quality assurance, are determined as important motives for the green consumption to the development of green consumption in Polish market. Rahman and Koszewska (2020, pp. 213–234) stated that many Polish consumers would not buy an environmentally friendly product if it did not offer aesthetic, functional and economic benefits which satisfy their demands and desires. Some research also concentrates on exploring the green consumption issues in the cross-culture context. Dermody *et al.* (2018, pp. 333–343), for example, appraises the significant effect of pro-environmental self-identify in Polish customers' sustainable purchasing and curtailment behaviours. Yet, according to our best knowledge, in Poland, it seems that none of the previous studies have considered the relationships between perceived environmental knowledge, cultural dimensions, green purchase willingness and intention.

Analogously to Poland, Vietnam has carried out the transformation from a planned economy into market-oriented one since 1986. After more than 30 years, Vietnam became a dynamic economy, big consumption market with nearly 100 million potential customers. Similarly to other emerging economies, although the term of "green consumption" is rather novel in Vietnam (Nguyen *et al.*, 2019; Yagi & Kukobo *et al.*, 2020), an increasing interest can be observed among scholars, marketers, and policymakers (Vu *et al.*, 2021, pp. 1–19). Also, urbanization has been quickened for three decades, the urbanization rate was estimated to reach 3.4% — the highest level among Southeast Asia economies — during the period of 2000s (Nguyen *et al.*, 2018, pp. 118–129). Nevertheless, with the large population, the process of speedy urbanization has led to various socioeconomically challenges, such as polluted environment (Vu *et al.*, 2021, pp. 1–19). Environmental problems are more visible in the big cities of Vietnam, although the Vietnamese government endeavoured to participate in global sustainable conventions and is proposing many regulations and laws to protect the natural environment, environmental performances have not been on a par with the sustainable potentials of Vietnam (Nguyen *et al.*, 2018, pp. 118–129). Some commercial reports confirmed that the sales of environmentally friendly products have been dramatically increased, and "green" or "clean" products attached greater concerns by Vietnamese consumers. Recently, the reports of Nielsen showed that 80% Vietnamese consumers are willing to pay more to buy green products (Nguyen *et al.*, 2018, pp. 118–129). Vu *et al.* (2021, pp. 1–19), and also reported that Vietnamese consumers paid more attention to their health as well as had the more favourable attitude towards protecting the environment in their purchase activities. Recognizing the important role of fostering environmentally-friendly consumption, many big cities had environmentally friendly con-

sumption campaigns to enhance the consumers' awareness of green products (Yagi & Kukobo *et al.*, 2020). In addition, many "green" projects such as "green transformation" (the incorporation between the Vietnam Textile and Apparel Association and World Wildlife Fund, 2018–2020) or "providing green products and enhancing consumers' awareness of sustainable consumption" programs organized by the Massan Group corporation have been carried out in Vietnam (Vu *et al.*, 2021, pp. 1–19; Yagi & Kukobo *et al.*, 2020).

Green products purchase willingness and intention

According to Bagozzi *et al.* (1990, pp. 45–59), products purchase willingness reflects customers' consciousness to exert a particular degree of effort needed to carry out the purchasing behaviour. For capturing the mind of customers, it is much more effective than behavioural measures (Lai & Chen, 2016, pp. 67–76). Indeed, willingness to purchase environmentally-friendly products is correlated with green purchasing intention, though the intention to engage in real actions are inconsistent (Zhang *et al.*, 2018, pp. 1498–1507). Also, Bhatia and Jain (2013, pp. 1–15) emphasize that although receiving great attention in green marketing by scholars and practitioners, the real demand to consume green products is essentially not as high as expected. Scholars have argued that there might be a dramatic gap between willingness to purchase environmentally friendly products and green purchase intention (Ruangkanjanases *et al.*, 2020, pp. 14–33; Yadav & Pathak, 2017, pp. 114–122; Zhang *et al.*, 2018, pp. 1498–1507).

However, Chaudhary (2018, pp. 179–192) states that customers' green products purchase willingness plays an important role in forming the intention to buy green products. Mohammed *et al.* (2020, pp. 51–73) also find a significant linkage between willingness to purchase environmentally-friendly products and green purchase intention. However, this relationship was rarely compared and examined in the cross-cultural context (Joshi & Rahman, 2015, pp. 128–143). As a result, a hypothesis is proposed to estimate the correlation between green products purchase willingness and intention among Vietnamese and Polish customers.

H1: *Green products purchase willingness positively influenced green purchase intention.*

The roles of cultural dimensions

Culture is determined as a key dimension to investigate consumer behaviour generally, and has been employed in prior research projects to explore consumer purchase behaviour for environmentally friendly products, which have mostly been conducted in the developed countries (Sarigöllü, 2009, pp. 177–189; Sreen *et al.*, 2018, pp. 177–189). Hofstede (1991, p. 5) has defined "culture" as the collective programme of thoughts which differentiate the members of one grouping of individuals from others. To the best our understanding, no previous literature in Vietnamese or Polish context has examined a path from cultural dimensions to predict green products purchase willingness and intention to purchase environmentally friendly products. Thus, our study aims to close this gap by establishing the route from cultural values to explore green products purchase and intention in the Vietnamese and Polish context.

To broaden our horizons about the differences in the engagement of customers in terms of culture one might assume that customers' reaction and perceptions can be derived from differences in social relationships (Bolton *et al.*, 2010, pp. 564–576). Thus, it is necessary for scholars and marketers to understand consumers' norms and cultural values. As previously mentioned, only two of five cultural values, including collectivism and long-term orientation, are considered the most appropriate dimensions to explain environmentally friendly consumption (Sreen *et al.*, 2018, pp. 177–189).

Collectivism is defined as "the degree to which people in a society are integrated into groups" (Hofstede, 2011, p. 11). In a collectivist society, people from birth onwards belong to strong, cohesive in-groups and often live in extended families that protect each of its members in exchange for unquestioning loyalty (Hofstede, 2011). Individuals in collectivist societies are more willing to share resources with other individuals of the same culture (Sinha & Verma, 1987, pp. 123–129), and willing to help their society and community to prosper (Sreen *et al.*, 2018, pp. 177–189). Some studies suggested that collectivism in a society does not have direct effect on green purchase intention or behaviour (e.g. Varshneya *et al.*, 2017, pp. 478–492; Lee, 2017, pp. 19–30), while other studies showed that collectivist societies in emerging markets have a high willingness to purchase environmentally-friendly products (e.g. Nguyen *et al.*, 2017, pp. 377–396). Therefore, it would be interesting to examine this relationship in the cross-cultural context. In addition, according to our best knowledge, although no previous studies had considered the direct linkage between collectivism and green products purchase willingness, collectivism was found to have positive associations with purchase willingness in several prior studies (e.g. Max-

well, 2015; Mai & Yang, 2019, pp. 677–688). Thus, collectivism can also be correlated with willingness to purchase environmentally friendly products. Therefore, the following hypotheses are proposed to test the correlation between collectivism and green products purchase willingness among Vietnamese and Polish customers.

H2: *Collectivism positively influenced green purchase intention.*

H3: *Collectivism positively influenced green products purchase willingness.*

Long-term orientation was first determined in a survey across 23 countries around the world, utilizing the questionnaire developed by Chinese scholars. This study revealed that individuals in all countries with history of Confucianism, like Vietnam, were hard-working and they believed that most important events in their lives would occur in the future (Hofstede, 2011). Generally, long-term oriented people adhere to traditional values of society, preserve family values, and perceive responsiveness, reliability, empathy to be really important (Furrer *et al*., 2000). Thus, people can develop their attitudes towards environmentally friendly issues to protect their families and themselves to flourish in the future (Leonidou *et al*., 2015, pp. 635–650). Prior studies have shown that long-term orientation is directly correlated with willingness to purchase environmentally friendly products (Malik & Singhal, 2017, 152–161) and green purchase intention (Chekima *et al*., 2016, pp. 210–220; Nguyen *et al*., 2017, pp. 377–39). Moreover, people in collectivist societies have higher level of willingness to display a behaviour that positively contributes to the society at large, even though that behaviour can result in some disadvantages for those individuals (Sreen *et al*., 2018, pp. 177–189). Therefore, collectivism can be positively correlated with long-term orientation. Hypotheses are formulated as following.

H4: *Long-term orientation positively influenced green purchase intention.*

H5: *Long-term orientation positively influenced green products purchase willingness.*

H6: *Long-term orientation positively influenced collectivism.*

The role of perceived environmental knowledge

Perceived environmental knowledge might be identified as individual's cognition capacity to be aware of major issues involved in environment and sustainability, which consists of air, water, energy usage, land pollution, waste production, recycling and their negative consequences on society, the community and ecosystem (Jaiswal & Kant, 2018, pp. 60–69; Yadav *et al.*, 2016; pp. 731–739), whereas environmental knowledge is defined as individual's capacity to determine or identify a body of environmentally-involved symbols, concepts and behaviours (Laroche *et al.*, 2001, pp. 503–520). Perceived environmental knowledge can be classified into two types of knowledge measures to examine ecological activities: general knowledge and specific knowledge. Also, two different mechanisms of knowledge, including subjective and objective measures, can be employed to assess the environmental knowledge (Tan, 2011, pp. 14–27). The subjective measure of knowledge focuses on individuals' perception and their self-assessment of what a person is aware of in terms of green issues or how much they know about them, known as general understanding. On the other hand, the objective measure of knowledge focuses on factual knowledge or specific behavioural knowledge (Tan, 2011, pp. 14–27). Particularly, it reflects a general knowledge of circumstance, terms and correlation focusing on the nature, the environment as well as its main ecological systems (Fryxell & Lo, 2003, pp. 45–69). Nevertheless, subjective phenomenon of general knowledge was superior to explain green consumption and confirmed to be much more effective than another measure of environmental knowledge to examine green purchase intention (Jaiswal & Kant, 2018, pp. 60–69). Thus, the measure of perceived environmental knowledge, based on the personal perception about environmental phenomenon, is approached in this study.

Previous research shows that willingness to purchase environmentally friendly products was significantly affected by perceived environmental knowledge (Li *et al.*, 2019). Amyx *et al.* (1994) investigation showed that consumers were willing to purchase products at premium prices when they have high knowledge about environmental issues. However, research on the relationship between perceived environmental knowledge and green purchase intention was inconsistent and debatable. While some studies revealed that higher degree of perceived environmental knowledge would result in higher green purchase intention (e.g. Choi & Johnson, 2019, pp. 145–155; Jaiswal & Kant, 2018, pp. 60–69; Kumar *et al.*, 2017, pp. 1–9; Kumar *et al.*, 2020; Wang *et al.*, 2014, pp. 152–165; Yadav *et al.*, 2016; pp. 731–739), others argued that there was no relationship with perceived envi-

ronmental knowledge (e.g. Maichum *et al*., 2016, pp. 1–20; Tong *et al*., 2020). Moreover, perceived environmental knowledge might be correlated with long-term orientation because when people are highly knowledgeable about environmental issues, they can be highly oriented to preserve traditional values of society, as well as adhere to family values (Malik & Singhal, 2017, pp. 152–161). Thus, the following hypotheses are formulated.

H7: *Perceived environmental knowledge positively influenced green purchase intention.*

H8: *Perceived environmental knowledge positively influenced green products purchase willingness.*

H9: *Perceived environmental knowledge positively influenced long-term orientation.*

Research method

The conceptual framework of the research

Based on literature review and development of hypotheses, the following conceptualized framework of our study has been constructed. All the above hypotheses in the proposed research model are represented in Figure 1.

Sample and data collection

To examine the conceptual models and developed hypotheses, two datasets were gathered from Vietnam and Poland. The convenience sampling technique was utilized to collect data in both countries. Particularly, the dataset in Vietnam was collected in several big cities in the North, such as Hanoi, Bac Ninh, Thai Nguyen and Hai Duong, whereas the Polish dataset was collected based on the information from customers who live in Szczecin, Łódź, Krakow and Warsaw. It has been suggested that selecting these cities to collect the dataset can be appropriate and might guarantee the essential prerequisite for the occurrence of consuming behaviours of environmentally friendly products. Indeed, there are very high figures of consumers with greater degree of knowledge about environment and ecosystem, greater living standards in these cities, and the environmentally friendly products are also available in these markets (Nguyen, 2019, pp. 247–

258). The survey was taken from 03 May to 03 October 2020. All custom-ers participated in the questionnaire survey voluntarily, they could with-draw their participants at any time if they wanted to, and it was also con-firmed that all their information was confidential and would only serve for the research purpose. Eventually, the final sample sizes contain 611 Viet-namese consumers (N1=611) and 301 Polish consumers (N2=301). Holmes (1983, pp. 76–80) reported that it is a need of at least 115 valid responses for a sample size to employ the statistical analyses effectively. Therefore, two samples from Vietnam and Poland are satisfactory for the performed analyses. Table 1 demonstrated the demographic profiles of Vietnamese and Polish customers.

Data analysis

The structural equation modelling (SEM) was employed in our research to estimate the influences of cultural values, perceived environmental knowledge on willingness to purchase environmentally friendly products and green purchase intention among Vietnamese and Polish customers. Simultaneously, the bootstrapping method was utilized to test the meditat-ing role of willingness to purchase environmentally friendly products in the linkage between antecedents and green purchase intention. To specify, Cronbach's alpha and explorative factor analysis (EFA) were firstly utilized to test the internal consistency reliability of each latent variable in the re-search model (Hair *et al*, 2010; Nunnally & Bernstein, 1994, pp. 248–292). Secondly, confirmatory factor analysis (CFA) was employed to test the validity of scales (Byrne, 2010). Finally, structure equation method (SEM) was utilized to test the relations between variables in the conceptual framework (Anderson & Gerbing, 1988, pp. 411–423). The mediating role of willingness to purchase environmentally friendly products with regard to the links between cultural dimensions, perceived environmental knowledge and green purchase intention is tested using the bootstrapping method with 5000 replications (e.g. Shrout & Bolger, 2002, pp. 422–445; Preacher & Hayes, 2008, pp. 879–891). AMOS 25.0 and SPSS 25.0 software have been used in our study to conduct the quantitative analyses.

Scales and questionnaire development

The purpose was to evaluate the effects of cultural values, perceived en-vironmental knowledge and green purchase willingness with regard to green purchase intention. The questionnaire survey was used in our study to collect the dataset. All the variables used in our study were adopted from

prior research. Particularly, the three-item scale measuring "green purchase intention" was adopted from Chan (2001, pp. 389–413); the scale of "green purchase willingness", including five items, is modified from Lai and Cheng (2016, pp. 67–76); cultural values, which include six-item scale measuring "collectivism" and five-item scale measuring "long-term orientation", were modified from Sreen *et al.* (2018, pp. 177–189); perceived environmental knowledge, with five-item scale, is adopted from Jaiswal and Kant (2018, pp. 60–69).

To avoid common method bias, a back-translation were approached. All original observed variables were first translated into Vietnamese and Polish by independent experts, then, a discussion was organized for the experts to achieve a consensus. After that, other translators changed these Vietnamese and Polish versions into the English language. Then, the versions were collated and any differences were resolved before developing the final questionnaire survey. To guarantee that all respondents understood the constructs in the questionnaire in the same way, a short explanation of key constructs was used (Liu *et al.*, 2020, pp. 1823–1841; Ratajczak-Mrozek, 2017, pp. 237–267).

Results

Measure reliability and validity

Cronbach's alpha and the EFA were employed to evaluate the reliability and validity of constructs. Table 2 reveals the outcomes of Cronbach's alpha of each construct. All scales have Cronbach's alpha at acceptable value, with the smallest degree of 0.774 ($\alpha_{Poland}^{LTO} = 0.774$). Thus, the internally consistent reliability of all constructs was fitting (Hair *et al.*, 2020, pp. 101–110).

All satisfactory items were then used for the EFA analysis. The results of exploratory factor analysis are illustrated in Table 3. For the Vietnamese dataset, four items with low factor loadings were eliminated, including LTO2 (0.429), COL2 (0.389), COL4 (0.456), GPW4 (0.440). In total, five factors were loaded with a total extracted variance of 71.686% and KMO value of 0.880. For the Polish dataset, PEK5 (0.314) with low factor loading was extracted. Five factors were depicted with a total extracted variance of 62.596 and KMO value of 0.861.

In order to evaluate the validity of all constructs of the two conceptual models, the CFA was performed. Initially, two items, measuring "perceived environmental knowledge" ($\lambda_{PEK2} = 0.390$) and "green purchase willing-

ness" (λ_{GPW3} = 0.454) in the Vietnamese sample and one item measuring "long-term orientation" in the Polish sample (λ_{LTO3} =0.493) were dropped because of some unsatisfactory values of standardized regression weights (Hair *et al.*, 2014). As indicated in Figure 2, the CFA results revealed a great degree of model fitness for both the Vietnamese and Polish samples. All t-tests of items were significant at the degree of 0.001 level. Specifically, for the Vietnamese sample, $\chi^2(125)$ = 525.278; CMIN/DF = 4.202 < 5; p< 0.01; GFI = 0.909 > 0.9; CFI = 0.935 > 0.9; TLI = 0.921 > 0.9; and RMSEA = 0.072 < 0.8, and for the Polish sample, $\chi^2(172)$ = 291.608; CMIN/DF = 1.695 < 5; p < 0.01; GFI = 0.917 > 0.9; CFI = 0.959 > 0.9; TLI = 0.906 > 0.9; and RMSEA = 0.048 < 0.8 (Anderson & Gerbing, 1988, pp. 411–423; Hair *et al*., 2020, pp. 101–110). AVE (average variance extracted) and CR (composite reliability) were used to show the discriminant validity of scales (Hu & Bentler, 1999, pp. 1–55). Table 4 presented the AVE and CR values of all scales. CR values for all scales at both samples were noted to be higher than 0.6. Also, almost all AVE values of variables were within the expected degree when all values were bigger than 0.5, although the AVE value of LTO (Vietnam), COL (Poland), and LTO (Poland) only achieved 0.474, 0.425, and 0.486, respectively. Yet, Ertz *et al.* (2016, pp. 3971–3980) suggested that these values could be accepted.

Structural path analysis

The outcome of structural equation modelling reported that two models reached great levels of fitness for the Vietnamese and Polish samples. Specifically, for the Vietnamese sample: $\chi^2(126)$ =528.634; CMIN/DF = 4.196 < 5; p < 0.01; GFI = 0.908 > 0.9; CFI = 0.921 > 0.9; TLI = 0.916 > 0.9; and RMSEA = 0.072 < 0.8, and for Polish sample: $\chi^2(173)$ = 309.503; CMIN/DF = 1.789 < 5; p < 0.01; GFI = 0.912 > 0.9; CFI = 0.953 > 0.9; TLI =0.943 > 0.9; and RMSEA = 0.051 < 0.8 (Hu & Bentler, 1999, pp. 1–55). Figure 4 reported the results of the CFA analysis. The R^2 (squared multiple correlation) for GPI is 0.483 and 0.448, for GPW is 0.278 and 0.145, COL is 0.299 and 0.284, and for LTO is 0.245 and 0.175 for the Vietnamese and Polish samples, respectively. These outcomes illustrated that the models reflected considerable views of precursors of green purchase intention, both direct and indirect links through the two datasets collected from two different countries. Therefore, in the present research, nine proposed hypotheses were finally assessed for each separated sample. The testing results of the hypotheses are summarized in Table 5.

For the Vietnamese sample, the results of the structural path analysis indicated support for seven of the nine proposed hypotheses. Particularly, the

results illustrated that H1 proposed a positive effect of willingness to purchase environmentally friendly products with regard to green purchase intention and it received support from the dataset (β = 0.591; p-value < 0.001); collectivism was found to have positive impact on both willingness to purchase environmentally friendly products (β = 0.085; p-value < 0.001) and green purchase intention (β = 0.103; p-value < 0.001); thus, H2 and H3 were supported by the data. However, while long-term orientation was not positively related to green purchase intention or collectivism (p-value > 0.05), it affected green purchase willingness positively (β = 0.593; p-value < 0.001), therefore, H4 and H6 were not supported, whereas H5 was supported. In addition, the findings also revealed support for H7, H8 and H9, confirming that perceived environmental knowledge was positively related to green purchase intention (β = 0.188; p-value = 0.002 < 0.01), green purchase willingness (β = 0.186; p-value = 0.003 < 0.01) and long-term orientation (β = 0.593; p-value < 0.001).

Nine hypotheses were assessed for the Polish sample, and only five of them were supported by the dataset, whereas four were not. Specifically, willingness to buy green products positively influenced green purchase intention (β = 0.577; p-value < 0.001), lending support to H1. However, collectivism was not found to have positive effects on both green purchase willingness and intention to purchase green products (p-value > 0.05); thus, H2 and H3 were not supported. Although long-term orientation was not found to have effects on green purchase willingness, and intention to purchase green products was not significant (p-value > 0.05), it positively affected collectivism (β = 0.511; p-value < 0.001); thus, H4, H5 were not supported while H6 was supported by the data. In addition, all the hypothesized paths pertaining to the effects of perceived environmental knowledge on green purchase intention, willingness to purchase green products, and long-term orientation proved positively significant (β = 0.269; p-value < 0.00, and β = 0.310; p-value < 0.001, and β = 0.356; p-value < 0.001, respectively). Therefore, H7, H8 and H9 were supported by the data.

Mediation analysis was employed to evaluate the impact that the mediating role exerts on the relations between precursors and intention to buy green products. Cheung and Lau (2008, pp. 296–325) suggested that bootstrapping confidence interval estimation should be utilized to test the mediating role. Thus, 5,000 bootstrapping samples with the confidence level of 90% were adopted in this study. The bootstrapping results were summarized in Table 6. For the Vietnamese sample, long-term orientation partially mediated the linkage between perceived environmental knowledge and green purchase willingness ($\beta_{\text{indirect effect}}$ = 0.231; p-value < 0.001). However, the relationship between perceived environmental knowledge and green

purchase intention was not mediated by long-term orientation. Also, collectivism was not found to have mediating roles in links between long-term orientation, green purchase willingness and intention to purchase green products (p-value > 0.05). Interestingly, green purchase willingness played the partial mediating roles in the relationship between collectivism ($\beta_{\text{indirect effect}}$ = 0.041; p-value < 0.001), perceived environmental knowledge ($\beta_{\text{indirect effect}}$ = 0.262; p-value < 0.001), and green purchase intention, yet green purchase willingness fully mediated the link between long-term orientation and green purchase intention ($\beta_{\text{indirect effect}}$ = 0.329; p-value < 0.001). Similarly to the Vietnamese sample, the Polish one showed that the effects of long-term orientation on green purchase willingness and intention were not mediated by collectivism (p-value > 0.05). Also, long-term orientation was not found to mediate the effect of perceived environmental knowledge on green purchase willingness and intention. In addition, although green products purchase willingness did not mediate the influences of collectivism and long-term orientation on green purchase intention, it partially mediated the link between perceived environmental knowledge and green purchase intention ($\beta_{\text{indirect effect}}$ = 0.177; p-value < 0.001)

Discussion

The present study examined cultural values and perceived environmental knowledge as means of expressing willingness to purchase green products and green purchase intention with a case study focusing on Vietnam and Poland. In addition to the direct effects of antecedents on green purchase intention, this study also focuses on exploring the mediating role of green products purchase willingness with regard to the relationship between antecedents and green purchase intention. Specially, the findings confirmed the significant and positive effect of willingness to buy green products on green purchase intention in both Vietnam and Poland. This was consistent with findings of many prior research projects in the pro-environmental consumption literature (e.g. Chaudhary, 2018, pp. 179–192; Ruangkanjanases *et al*., 2020, pp. 14–33; Zhang *et al*., 2018, pp. 1498–1507). The results of this research revealed that perceived environmental knowledge played significant and positive role in shaping willingness to purchase green products and green purchase intention in the two countries. This finding was also consistent with previous studies (e.g. Cheung & To, 2019; pp. 145–153; Choi & Johnson, 2019, pp. 145–155; Kumar *et al*., 2020). However, the influential degree of impact of perceived environmental knowledge on green purchase willingness and intention in Vietnam was much lower than

in Poland. Perhaps, with an emerging economy at a lower developmental level, consumers' knowledge and understanding in regard to green products and green consumption is still considered to be at an early stage (Nguyen, 2019; pp. 247–258; Nguyen *et al*., 2017, pp. 377–396). The role of perceived environmental knowledge on predicting green purchase intention is inferior.

Notably, while cultural values, including collectivism and long-term orientation, played very crucial roles in enhancing green purchase willingness and intention in Vietnam, these values were not found to have impact on Polish customers' willingness and their intention to purchase green products. Thus, the collectivist societies with history of Confucianism, such as Vietnam and some other Asian countries (Chi & Zheng, 2016, pp. 206–227; Sreen *et al*., 2018, pp. 177–189), where individuals adhere to traditional society and family values, can promote green consumption (Nguyen *et al*., 2017, pp. 377–396). Particularly, although long-term orientation was not directly related to green purchase intention, it had strongly affected willingness to purchase green products, then significantly transformed into green purchase intention among Vietnamese customers. Moreover, in the context of Poland, the link between long-term orientation and collectivism was significant while this relationship in Vietnam was not. This finding was not consistent with some prior studies conducted in Western countries, such as Germany or Spain (Higueras-Castillo *et al*., 2019, pp. 2143–2160). As a result, the findings provide another piece of evidence that cultural values and perceived environmental knowledge can be associated with green purchase willingness and intention.

In terms of theoretical perspectives, the present research explains an important issue related to the predictors of willingness to purchase environmentally friendly products and green purchase intention in the cross-cultural context of Vietnam and Poland. The findings in our research theoretically contributed to strengthening our understanding of pro-environmental consumption behaviour as well as its precursors in the cross-cultural context, especially enhancing our understanding of the questionable associations between cultural dimensions, perceived environmental knowledge and pro-environmental purchase intention.

From the practical point of view, the present research helps provide some administrative practices. First, our study helps administrators and marketers obtain better comprehending about consumer behaviour and helps them to build more effective strategies to approach potential customers and satisfying existing customers, who have intention or behaviour engage in green consumption. Based on the results of our study, firms should build effective communication and marketing campaigns to increase the

environmental knowledge, enhance consumers' awareness of environmentally friendly consumption, as well as improve their understanding of advantages of pro-environmental behaviour. It is essential in the context of collectivist society such as Vietnam. Also, this recommends for Poland that in order to enhance green consumption, collectivistic culture should be promoted, and the traditional and family values also should be more adhered to. Second, firms should be more concerned with environmental problems as well as bear effective corporate social responsibility to improve the "green" reputation and image and catch the attention from consumers. Last, governments and policymakers also should build the sustainable strategy to foster "green" behaviour of both firms and consumers.

Conclusions

The current research has examined the impact that cultural values (collectivism and long-term orientation), perceived environmental knowledge, willingness to purchase environmentally friendly products exert on green purchase intention in the cross-cultural context of Vietnam and Poland. Furthermore, our study focused on the mediating role of green purchase willingness with regard to the relationship between antecedents and green purchase intention. Cronbach' alpha, the EFA and the CFA were used to examine the reliabilities and validities of each scale and the fitness of the model. Subsequently, SEM and bootstrapping (90% interval confidence) were employed to estimate correlation paths in the conceptual framework and test hypotheses.

The findings revealed that the role of perceived environmental knowledge with regard to willingness and intention to purchase green products was significant in both countries, although the Polish samples represented a dramatically higher influential degree. The cultural dimensions, such as collectivism and long-term orientation, did play significant roles in boosting green consumption in the Vietnamese culture, however, their value in the context of Poland was insignificant. Interestingly, the link between green products purchase willingness and intention to purchase environmentally friendly products was strong in the cross-cultural context of Vietnam and Poland, and green purchase willingness became the most influential antecedent in shaping green purchase intention among both Vietnamese and Polish customers. The findings of this research also provide several practical implications for policymakers and managers to foster green consumption as well as enable consumers to make smarter and more responsible choices in terms of environmentally friendly products.

Our research offers serviceable implications as well as enhances our knowledge about the pro-environmental behaviour. However, there were several existing restrictions in our study, which can provide opportunities for further work. First, this research only concentrates on explaining the intention to buy green products. Specifically, the present study focuses on investigating the factors which help create the green purchase intention as well as the mediation impacts of green products purchase willingness. Other scholars can explain the conceptual framework via testing the link between the green purchase intention and the actual behaviour. Second, our datasets are recruited from Vietnam and Poland, further studies can recruit and employ data from other economies to enhance our understanding of pro-environmental behaviour and contribute more to marketing literature in general. Third, due to budget restrictions, our study adopted the convenience sampling technique to collect data in both countries, thus, the generality of the discussion might be decreased, other scholars can employ other sampling approach, such as randomly sampling, to rise the generality of the conclusions. Last, the dramatically different sample sizes between Vietnam and Poland could affect the results of study, thus further studies should secure similar sample sizes.

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Annex

Table 1. Sample characteristics

Items		Vietnam		Poland	
		Frequency	%	Frequency	%
Gender	Male	210	34.4	62	20.6
	Female	401	65.6	239	79.4
Age	< 20	56	9.2	18	6.0
	20-29	187	30.6	179	59.5
	30-39	213	34.4	64	21.3
	40-49	137	22.4	28	9.3
	50-59	15	2.5	6	2.0
	>60	3	0.5	6	2.0
Education	High school	19	3.1	76	25.2
	Bachelor's degree	537	87.9	103	34.2
	Postgraduate degree	55	9.0	122	40.5
Occupation	Student	112	18.3	124	41.2
	Blue-collar worker	67	11.0	18	6.0
	Office worker	188	30.8	50	16.6
	Managerial employee	74	12.1	16	5.3
	Civil servant	56	9.2	15	5.0
	Other	114	18.7	78	25.9
Marital status	Single	153	25.0	156	51.8
	Married	421	68.9	83	27.6
	Divorced	27	4.4	8	2.7
	Living with parents	10	1.6	54	17.9

Note: $N_1 = 611$, $N_2 = 301$.

Table 2. Cronbach's alpha of each construct

Code	Items	Cronbach's Alpha (α)	
		Vietnam	Poland
GPI	**Green purchase intention**	**0.854**	**0.920**
GPI1	I would consider buying products because they are less polluting	0.782	0.870
GPI2	I would consider switching to other brands for ecological reasons	0.797	0.859
GPI3	I intend to switch to a green version of a product	0.808	0.925
GPW	**Green purchase willingness**	**0.841**	**0.844**
GPW1	I am willing to buy products that use recycle/recyclable packaging	0.823	0.825
GPW2	I am willing to buy products that contain no or fewer chemical ingredients	0.803	0.832

Table 2. Continued

Code	Items	Cronbach's Alpha (α)	
		Vietnam	Poland
GPW3	I am willing to buy products that support fair community trades	0.825	0.803
GPW4	I am willing to buy products that are against animal-testing	0.806	0.787
GPW5	I am willing to buy products that are labeled as environmentally safe	0.789	0.811
COL	**Collectivism**	**0.812**	**0.805**
COL1	I work hard for the goals of a group, even if it does not result in personal recognition	0.699	0.782
COL2	I am cooperative participant in group activities	0.829	0.765
COL3	Group members should stick together, even if they do not agree	0.692	0.786
COL4	The wellbeing of my group member if important to me	0.857	0.748
COL5	I enjoy sharing items and spending time with my group member	0.708	0.755
LTO	**Long-term orientation**	**0.830**	**0.774**
LTO1	Careful management of money is important to me	0.809	0.781
LTO2	I do not give up easily even if I do not succeed in my first attempt	0.812	0.726
LTO3	I believe in planning for the long-term	0.789	0.755
LTO4	I value personal steadiness and stability	0.802	0.710
LTO5	I work hard for success in the future	0.789	0.712
LTO6	I do not mind giving up today's fun for success in the future	0.814	0.750
PEK	**Perceived environmental knowledge**	**0.834**	**0.828**
PEK1	I am very knowledgeable about environmental issues	0.783	0.792
PEK2	I know more about recycling than the average person	0.864	0.775
PEK3	I know how to select products and packages that reduce the amount of landfill	0.780	0.799
PEK4	I understand the environmental phrases and symbols on product package	0.789	0.768
PEK5	I know that I buy products and packages that are environmentally safe	0.794	0.830

Note: $N_1 = 611$, $N_2 = 301$.

Table 3. Exploratory factor analysis (EFA)

	Vietnam				
	Factor				
	1	2	3	4	5
GPW1					0.541
GPW2					0.525
GPW3					0.941
GPW5					0.744
GPI1				0.792	
GPI2				0.773	
GPI3				0.807	
COL1			0.877		
COL3			0.943		
COL5			0.881		
LTO1	0.742				
LTO3	0.748				
LTO4	0.675				
LTO5	0.763				
LTO6	0.515				
PEK1		0.706			
PEK2		0.641			
PEK3		0.749			
PEK4		0.713			
PEK5		0.663			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO)	0.880				
Sig. Of Bartlett's Test of Sphericity	0.000				
Cumulative (%)	71.686				
Eigenvalues	1.121				
$N_1 = 611$					

	Poland				
	Factor				
	1	2	3	4	5
GPW1	0.692				
GPW2	0.683				
GPW3	0.726				
GPW4	0.841				
GPW5	0.597				
GPI1				0.914	
GPI2				0.934	
GPI3				0.748	
COL1		0.513			
COL2		0.585			
COL3		0.584			
COL4		0.812			
COL5		0.825			
LTO1					
LTO2			0.654		
LTO3			0.454		
LTO4			0.836		
LTO5			0.776		
LTO6			0.514		
PEK1					0.777
PEK2					0.829
PEK3					0.585
PEK4					0.734
Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO)	0.861				
Sig. Of Bartlett's Test of Sphericity	0.000				
Cumulative (%)	62.596				
Eigenvalues	1.268				
$N_2 = 301$					

Table 4. Construct reliability, convergent validity, and discriminant validity

				Vietnam			
	CR	**AVE**	**GPW**	**PEK**	**LTO**	**COL**	**GPI**
GPW	0.801	0.575	**0.758**				
PEK	0.866	0.619	0.484	**0.786**			
LTO	0.817	0.474	0.620	0.639	**0.688**		
COL	0.931	0.819	0.219	-0.054	0.025	**0.905**	
GPI	0.854	0.662	0.728	0.466	0.532	0.357	**0.813**

				Poland			
	CR	**AVE**	**GPI**	**GPW**	**COL**	**PEK**	**LTO**
GPI	0.923	0.800	**0.894**				
GPW	0.843	0.522	0.643	**0.722**			
COL	0.787	0.425	0.230	0.296	**0.652**		
PEK	0.827	0.544	0.402	0.350	0.469	**0.738**	
LTO	0.788	0.486	0.186	0.267	0.506	0.386	**0.697**

Table 5. Hypotheses testing

Hypotheses/paths		Vietnam					Poland			
		Estimate	S.E.	C.R.	P-value	Decision	Estimate	S.E.	C.R.	P-value	Decision
H1	GPW→GPI	0.591	0.065	9.050	***	Supported	0.577	0.068	8.529	***	Supported
H2	COL→GPI	0.103	0.015	6.679	***	Supported	-0.001	0.105	-0.011	0.991	Rejected
H3	COL→GPW	0.085	0.015	5.539	***	Supported	0.209	0.131	1.595	0.111	Rejected
H4	LTO→GPI	0.112	0.077	1.448	0.148	Rejected	-0.081	0.107	-0.754	0.451	Rejected
H5	LTO→GPW	0.593	0.078	7.585	***	Supported	0.137	0.134	1.027	0.304	Rejected
H6	LTO→COL	0.042	0.138	0.302	0.763	Rejected	0.511	0.084	6.090	***	Supported
H7	PEK→GPI	0.188	0.060	3.150	0.002	Supported	0.269	0.078	3.453	***	Supported
H8	PEK→GPW	0.186	0.063	2.965	0.003	Supported	0.310	0.093	3.317	***	Supported
H9	PEK→LTO	0.593	0.050	11.933	***	Supported	0.356	0.065	5.469	***	Supported

Note: $N_1 = 611$, $N_2 = 301$, *** $p < 0.001$

Table 6. Bootstrapping results

Vietnam

Paths	Direct effects		Indirect effects (LTO mediator)		Indirect effects (COL mediator)		Indirect effects (GPW mediator)		Total effects	
	Estimate	P-value	Estimate	P-value	Estimate	P-value	Estimate	P-value	Estimate	P-value
GPW→GPI	0.591	***							0.591	***
COL→GPI	0.103	***					0.041	***	0.144	***
COL→GP	0.085	***							0.085	***
LTO→GPI	0.112	0.148			0.006	0.752	0.329	***	0.329	***
LTO→GPW	0.593	***			0.003	0.752			0.593	***
LTO→COL	0.042	0.763							0.042	0.763
PEK→GPI	0.188	0.002	0.195	0.072			0.262	***	0.450	***
PEK→GPW	0.186	0.003	0.231	***					0.339	***
PEK→LTO	0.593	***							0.593	***

Poland

Paths	Direct effects		Indirect effects (LTO mediator)		Indirect effects (COL mediator)		Indirect effects (GPW mediator)		Total effects	
	Estimate	P-value	Estimate	P-value	Estimate	P-value	Estimate	P-value	Estimate	P-value
GPW→GPI	0.577	***							0.577	***
COL→GPI	-0.001	0.991					0.187	0.096	0.186	0.096
COL→GP	0.209	0.111							0.209	0.111
LTO→GPI	-0.081	0.451			0.080	0.075	0.178	0.075	0.177	0.092
LTO→GPW	0.137	0.304			0.081	0.097			0.218	0.097
LTO→COL	0.511	***							0.511	***
PEK→GPI	0.269	***	0.022	0.330			0.177	***	0.446	***
PEK→GPW	0.310	***	0.051	0.119					0.310	***
PEK→LTO	0.356	***							0.356	***

Figure 1. Proposed research model
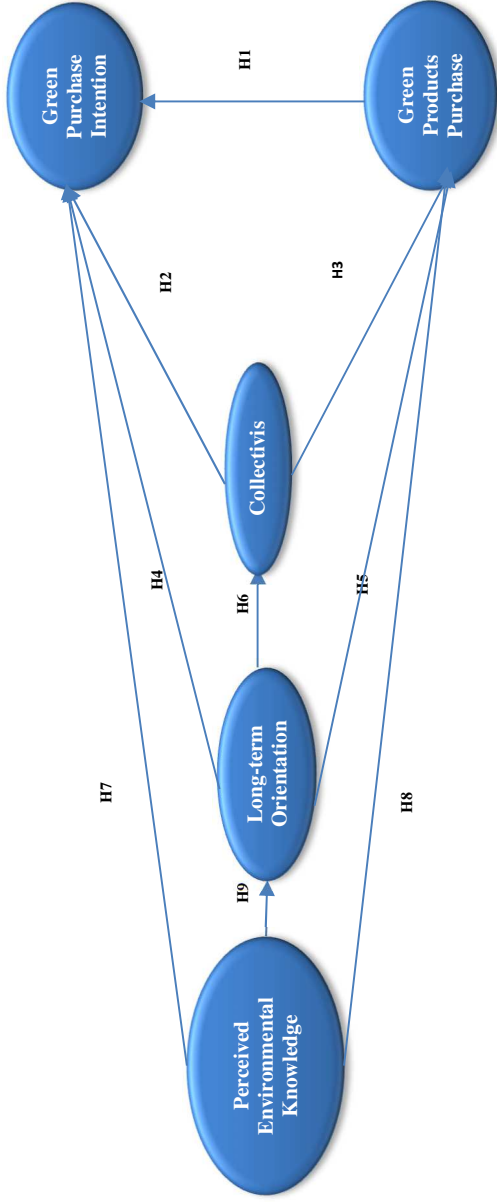
Figure 2. Confirmatory factor analysis

Vietnam

Chi-Square=525.278; df=125; P=.000
;Chi-Square/df=4.202
;GFI=.909; AGFI=.876
;CFI=.935; TLI=.921; NFI=.917
;RMSEA=.072
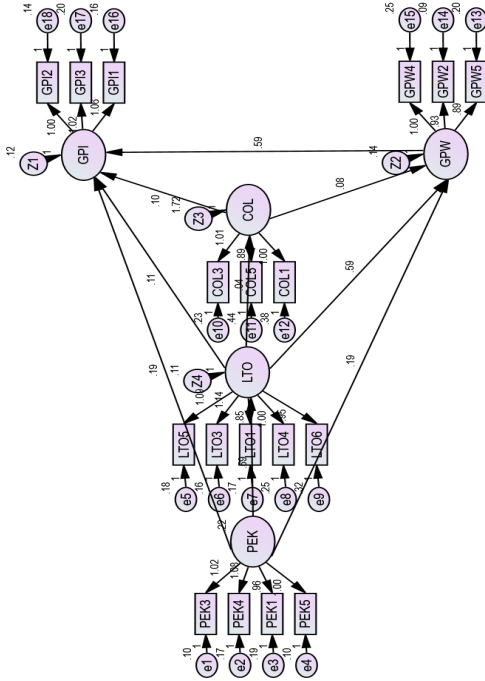
Poland

Chi-Square=291.608; df=172; P=.000
;Chi-Square/df=1.695
;GFI=.917; AGFI=.888
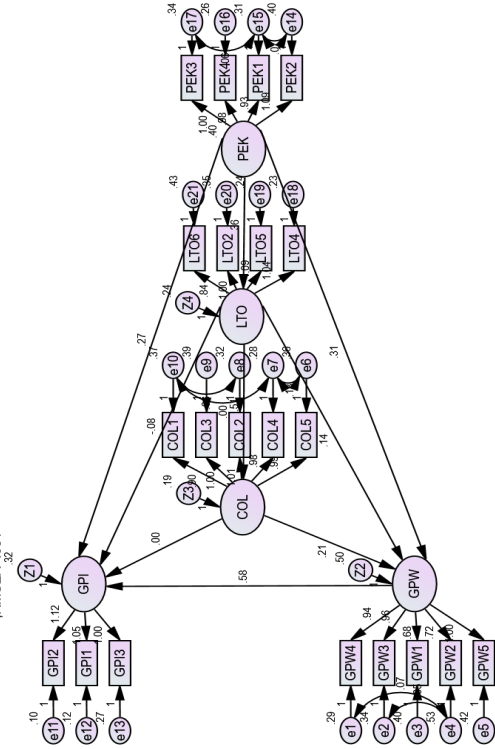;CFI=.959; TLI=.950; NFI=.906
;RMSEA=.048

Figure 3. Structural equation model

Figure 4. A comparative analysis of structural paths