



The Influence of Environmental CSR on Consumer Purchase Intentions: E-commerce Platforms in Thailand and Taiwan

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Abstract

This paper presents preliminary data from the study aimed at examining the impact of environmental CSR on consumers' purchase intentions within e-commerce platforms in both Thailand and Taiwan. The rise of e-commerce, particularly amid the COVID-19 pandemic, has brought significant environmental concerns to the forefront. Consequently, companies are increasingly incorporating Corporate Social Responsibility (CSR) into their strategies, focusing on environmentally friendly initiatives aligned with the Sustainable Development Goals (SDGs). However, existing CSR research in Southeast Asia often focuses on specific industries without adequately addressing the intermediary roles of e-commerce platforms in the purchasing process. Thailand and Taiwan were selected for this study due to their robust e-commerce sectors and the varying phases of integrating CSR and e-commerce practices in their respective national development phases. The research targets Generation Z university students, comprised of a total of 430 respondents surveyed online. Hypotheses were formulated to explore Generation Z's perceptions of CSR practices within e-commerce, providing insights for stakeholders in the burgeoning online marketplace. The findings revealed strong correlations between various factors in both countries, including product features, pricing strategies, promotional activities, and consumer attitudes, all of which influence purchase intentions regarding environmental CSR. Moreover, product-related factors related to being environmentally friendly emerged as crucial determinants. Additionally, younger students displayed heightened environmental concerns during online shopping. Thai students generally exhibited higher purchase intentions than Taiwanese students across most factors. In conclusion, this study contributes to the exploration of market-aligned environmental CSR strategies and understanding of sustainable purchasing and corporate practices within the evolving e-commerce industry.

Keywords: *Corporate Social Responsibility (CSR), E-Commerce, Environmental-friendly, Purchase Intention, Generation Z*

1. Introduction

With the rapid expansion of digital technologies in recent years, the global e-commerce industry has undergone a significant transformation in how people shop. This transformation has been further accelerated by the outbreak of the COVID-19 pandemic in 2020, prompting a rapid shift in consumer behavior towards online platforms. As online shopping continues to expand, the environmental impact of the e-commerce industry, such as carbon emissions and packaging waste, has become increasingly visible (Escursell et al., 2021). In response, many companies are adopting sustainable business practices, presenting both challenges and opportunities for the industry (Bruel Gronberg & Hulthen, 2022). In light of this trend, corporate social responsibility (CSR) has gained prominence as both a strategic imperative and a marketing tool for brick-and-mortar and online retailers alike. Companies are leveraging CSR practices to mitigate negative brand associations and enhance sales. It is evident that CSR is frequently employed by companies as a tool to manage their public relations (PR) and shape consumer perceptions.

Noteworthy, consumer's demand for convenience, including return services and fast delivery, exacerbates these environmental challenges. For instance, major online retailers such as Amazon, Walmart, and others have begun providing same-day delivery to satisfy consumers' demand for convenience (Munoz-

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Villiamizar et al., 2021). However, the inefficiency and high costs of last-mile delivery, which can account for 13% - 75% of the total supply chain cost, lead to severe environmental problems such as air noise pollution, urban congestion, as well as the incline of CO2 emissions (Silva et al., 2023). In the e-commerce sector, each stage of the process may contribute to adverse effects on our planet, such as carbon emissions and packaging waste, which are prevalent issues stemming from various points in the e-commerce supply chain (EcoCart, 2021). As public awareness grows and governments impose stricter environmental regulations, it becomes imperative to implement environmentally sustainable practices to align with both policies and consumer expectations. In the realm of CSR, the online retail sector is particularly exposed to CSR trends due to its direct interaction with end consumers, rendering them susceptible to the impact of CSR implementation. Both business-to-consumer (B2C) and consumer-to-consumer (C2C) online retailers must integrate CSR practices into their operations to satisfy the demands of consumers, who are increasingly seeking socially responsible business practices. Thus, to conduct a comprehensive study on the role of CSR in the e-commerce sector, it is appropriate to focus on the impact of CSR practices on major e-commerce platforms, specifically examining consumers' perceptions and purchase intentions related to CSR initiatives. By understanding these dynamics, the research contributes to the development of environmentally conscious CSR strategies in e-commerce.

1.1 E-commerce in Thailand

Asia boasts one of the world's largest e-commerce markets, characterized by sharply increasing internet penetration since the 2000s. Presently, Southeast Asia is experiencing the highest growth rate of internet access. With significantly enhanced internet accessibility and usage, the e-commerce industry in ASEAN is undeniably filled with potential. At the same time, driven by the competitive market and global trends focusing on sustainable development, the shift toward sustainability has been infiltrating every aspect (Haryanti & Subriadi, 2021). This evolution has prompted both ASEAN and its member states to introduce successive strategies aimed at advancing the practice of CSR in business.

Thailand stands out as a regional leader in e-commerce and experienced the highest growth in ASEAN in 2018, primarily due to the remarkable increase in the shift in consumer behavior encouraged by technology innovation (Leesa - Nguansuk, 2019, Feb 5). At the national level, Thailand 4.0 development strategy introduced in 2018 strives for the digital economy through industrial transformation and economic empowerment aligned with social and environmental well-being (Abeam Consulting, n.d.). Bangkok Post revealed the online purchase preferences of Thai consumers in 2021. According to the statistics provided by Statista, 36.6 million people made online purchases, an 8.7% year-on-year increase. Digital payment usage saw significant growth, with 36.8 million people utilizing such services, marking a 35.5% year-on-year increase (Lessa-Nguansuk, 2022). McKinsey (Arora et al., 2022) finds that most e-commerce markets in ASEAN are on the cusp of entering their second phase, having already surpassed key inflection points driven by widespread digital accessibility. The trend of sustainability is expected to be embraced in the next phase of Thailand's e-commerce, also to differentiate companies from competitors, strengthen the brand's value, and enhance a loyal customer base through eco-friendliness (Leesa-Nguansuk, 2023, March 20). Thailand's e-commerce market is predominated by Shopee and Lazada, followed by Kaidee, AliExpress, and Amazon, all these platforms have advanced logistics and delivery infrastructure (International Trade Administration, US, 2022).

1.2 E-commerce in Taiwan

Taiwan's e-commerce sector has undergone significant development over the past two decades, encompassing various models like B2C, C2C, and third-party payment platforms. However, this growth has not been without challenges, such as navigating through fluctuations such as the Internet bubble in the early 2000s, shifts towards China's market, and the recent expansion into the Southeast Asian market and beyond. Despite these hurdles, Taiwan's e-commerce landscape has undergone significant development, positioning it as a relatively mature e-commerce market in Asia (Xu, 2015). During the period from 2010 to 2015,



Taiwanese e-commerce experienced rapid expansion, with both C2C and B2C e-commerce sectors growing at an annual rate exceeding 20% (National Development Council, Taiwan, 2022). Recognizing the significance of the e-commerce and digital markets, the government emphasized their pivotal role in Taiwan's national development strategy, aiming to enhance competitiveness and international connectivity. Among these, the Asia-Pacific region prevailed as the primary destination for Taiwan's B2C e-commerce exports, constituting 31% of the country's total B2C e-commerce trade (Tang, 2022). Additionally, under the New Southbound Policy, the Taiwanese government actively pursued collaboration with ASEAN countries across various sectors, including e-commerce, as part of its strategic initiatives.

In the realm of domestic e-commerce in Taiwan, recent data from Taiwan Market Intelligence and Consulting Institute (MIC) (2022) highlights a significant preference for e-commerce platforms among consumers, with 92% opting for online purchases over traditional brick-and-mortar stores, which lag at 35%. Among the top five e-commerce platforms favored by customers, Shopee takes the lead with a usage rate of 61%, despite its relatively recent entry into the B2C market. It is closely followed by MOMO (59%), PChome (43%), and Yahoo! (23%). Concurrently, some small-scale merchants are establishing their websites to cultivate brand uniqueness. These trends collectively suggest that Taiwan's e-commerce market is gradually nearing saturation (Lin et al., 2021), emphasizing the growing importance of Taiwanese e-commerce companies to seize opportunities for outward expansion. Given the competitive landscape and growing environmental concerns, the adoption of environmentally friendly shopping practices emerges as a strategic avenue to foster consumer loyalty and cultivate a positive brand image.

1.3 CSR Theories

CSR has become a major trend in the global business community in the 2000s, with a focus on the theoretical concept, turning attention to empirical perspectives, and also extending to many theories related to business interests (Carroll, 2009), which are often intertwined with considerations of corporate profits. In recent years, the burgeoning popularity of CSR has spurred active engagement from a multitude of stakeholders. At the same time, the UN's Sustainable Development Goals (SDGs) have emerged as a crucial framework for guiding global corporate initiatives, focusing on addressing climate change and various global social issues (ElAlfy et al., 2020). Undoubtedly, CSR will continue to be implemented to bridge profitability and sustainability within the dynamic landscape of global business competition.

Carroll's pyramid (1991) stands as one of the most seminal theoretical frameworks of CSR. It is based on a set of four responsibilities: economic, legal, ethical, and discretionary, arranged from bottom to top. As the lower needs are met, corporations can progress to satisfying the upper needs in the pyramid. According to Carroll (2016), many companies embrace philanthropic responsibilities as a practical means of demonstrating good citizenship, which can serve as a powerful marketing tool. Another notable theory in the field of CSR is Elkington's Triple Bottom Line Theory (TBL) (1999), renowned for its composition with three key components: Profit, People, and Planet. It further develops into three broad dimensions: economic (Profit), social (People), and environmental (Planet), focusing on organizations' long-term sustainability. The TBL theory gained significant popularity in the 1990s as sustainable development became a more prominent trend (Carroll, 2015). As a result, many corporations and non-profit organizations adopt the TBL model to uphold financial stability while participating in long-term environmental and social projects (Brin & Nehme, 2019). This approach acknowledges that environmental and social dimensions, along with considerations for customers, employees, and communities, are equally crucial to profitability (Streimikiene & Ahmed, 2021).

2. Objectives

The objectives of the study include,

- 1) Determine factors that influence Gen Z consumers' satisfaction/ opinion/ towards environmentally friendly products and initiatives on e-commerce platforms in Thailand and Taiwan.
- 2) Identify appropriate approaches for e-commerce platforms in Thailand and Taiwan to promote consumers' purchase intentions based on environmental CSR.



3. Materials and Methods

For this study, the researcher seeks to delve into how e-commerce retail platforms in Thailand and Taiwan can elevate consumer purchase intention by integrating environmental CSR into their marketing strategies. Employing a quantitative approach, the research utilizes surveys to gauge the relationship between CSR and purchase intention in the e-commerce sector. To grasp the impact of environmental CSR on consumers' purchase intention, the survey is structured around the 4Ps marketing mix framework, aiming to capture the influence of each CSR-related factor. Additionally, the Theory of Reasoned Action (TRA) is employed to evaluate consumer engagement with CSR while also exploring theories of marginal utility and willingness to pay (WTP) to understand consumer preferences.

3.1 Materials

Amidst the escalating global concerns surrounding sustainable development, CSR is emerging as a focal point of interest within the global e-commerce sector. In fact, these environmentally friendly initiatives not only demonstrate their commitment to social responsibility but also cater to the evolving preferences of consumers (Alizila, 2022). CSR is closely related to companies' sustainability and reputation, studies show that companies that fully integrate CSR into their operations can anticipate positive returns in financial performance and brand image (Galant& Cadez, 2017). Numerous guidelines and regulations mandating CSR disclosure have been rolled out, extending from EU to the global scale, imposing obligations on companies. CSR is regarded as a marketing tactic and a compulsory corporate activity to some degree, leveraging the bare minimum of purchase decisions for many consumers (Ecocart, 2021). To investigate the impact of environmental CSR on purchase intention within the e-commerce sector, this study integrates the 4Ps Marketing Mix, Theory of Reasoned Action (TRA), marginal utility, and Willingness to Pay (WTP). By combining these frameworks to elucidate the effects of environmental CSR and offer insights into its effective implementation for relevant stakeholders.

The 4Ps marketing mix, which revolves around Product, Price, Promotion, and Place (McCarthy, 1960, as cited by Lahtine et al., 2019), plays a significant role in branding strategies geared toward consumer purchases in today's fiercely competitive market. As each element of the 4Ps encompasses various variables that function autonomously, the systematic evaluation enables product and service providers to devise precise strategies tailored to meet evolving customer needs, deviating from conventional approaches (Isoraite, 2016).

The Theory of Reasoned Action (TRA) is a social psychological model proposed by Fishbein and Ajzen (1975). It posits that an individual's behavior is influenced by their volitional control, with intention being a function of attitude towards the behavior and subjective norms, which in turn reflect corporate trust and company-consumer identification, thereby positively influencing CSR on purchase behavior. This aspect has been repeatedly utilized to analyze predictors of specific behaviors within the pro-environment movement.

Marginal utility reflects the satisfaction derived from consuming an additional unit of goods or services. Studies on willingness to pay (WTP) for green products by OECD observe that consumers exhibit higher marginal utility when buying green products, moreover, consuming green products can be interpreted as ecological behavior, which reveals the consumer's environmental preferences and kind of ethical consumption (Agarwal, 2014). It reflects consumers' preferences, with those who have a strong social inclination and a low marginal utility of income tending to demonstrate a higher WTP for CSR products (Etile & Teyssier, 2013). Namely, the behavior of purchasing CSR products primarily relies on consumers' WTP. In the context of ethical consumption, consumers voluntarily choose to purchase products from companies that align with positive societal values (Jones, 2017), representing consumers' self-identity (Zaman et al., 2023).



3.2 Hypotheses

The survey is structured around four hypotheses aimed at examining the influence of each element of the 4Ps marketing mix on willingness to pay (WTP) from the perspective of CSR in the e-commerce sector. These hypotheses are derived from concepts outlined in the literature review and established theories, as summarized in Figure 1.

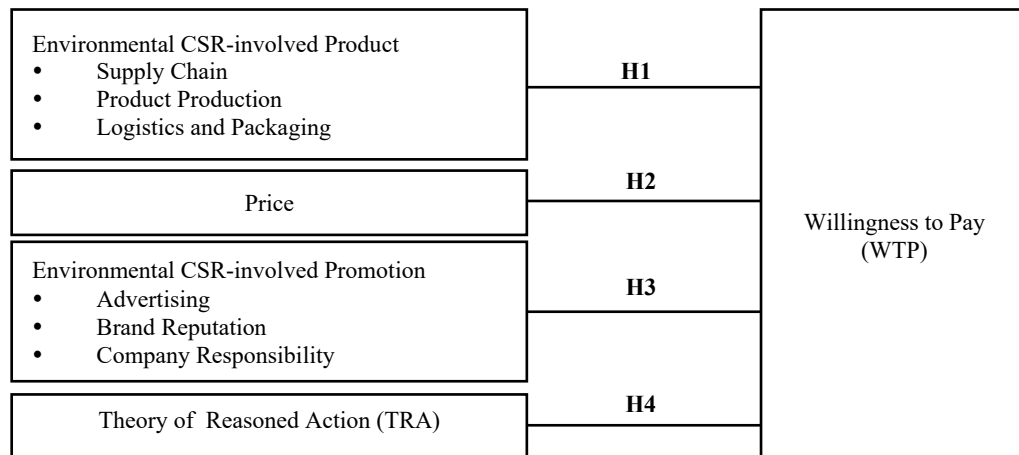


Figure 1: Framework of Hypotheses

The following research hypotheses are proposed:

H1: If the company practices environmental CSR through its product, the willingness to pay will positively increase. (Product- WTP)

H2: If the company practices environmental CSR that has impacts on price, the willingness to pay will be influenced. (Price- WTP)

H3: If the company practices environmental CSR through promotion, the willingness to pay will positively increase. (Promotion- WTP)

H4: Consumers' behavior, attitude and subjective norms toward the company's environmental CSR positively relate to their willingness to pay. (TRA- WTP)

3.3 Methods

The study targets Gen Z consumers in Taiwan and Thailand, aged 18 to 28, born between 1995 and 2005, as defined by McKinsey (2023). This generation, raised in a digital-centric environment, has been significantly influenced by climate concerns, economic shifts, and the COVID-19 pandemic, leading them to proactively address social issues like equality and environmental sustainability. In addition, Southeast Asia, an emerging economy, boasts over 460 million young and tech-savvy individuals (Chiang, 2023), predominantly from Gen Z, who have become the primary users of e-commerce platforms, influencing business strategies across sectors (Ayuni, 2019). Hence, the study focuses exclusively on university students, aligning with the typical age range and digital engagement of the Gen Z cohort.

Purposive sampling is used. The survey for this study primarily targets six selected universities in the Bangkok metropolitan area and the Taipei metropolitan area to mitigate location disparities. These universities comprise Mahidol University, Chulalongkorn University, and Thammasat University in Thailand, as well as National Taiwan University, National Taiwan Normal University, and National Chengchi University in Taiwan. Additionally, the selection is based on their world ranking, and they are public and nationally-funded universities, to reduce the disparity may cause by educational factors. However, the



collected data extends beyond the initially selected scope due to the simultaneous utilization of online distribution channels.

3.4 Procedures

This study has received approval from the IRB at Mahidol University. The quantitative research is conducted through the online survey, which was developed using Google Forms, to accommodate time and cost constraints. The survey consists of three sections: qualifying, demographic background, and core sections, respectively. The questions in the core sections are mainly introduced on a 5-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree), with a few multiple-choice questions. In the core section, there are a total of 41 questions divided into 4 parts, covering aspects of the marketing mix (Product, Price, and Promotion) and the TRA. It's important to note that the "Place" component of the 4Ps Marketing Mix, typically refers to physical location and the place for product selling, thus, the "Place" is not examined in this study because it pertains to online e-commerce platforms based on the study design.

Delving into the survey distribution process, the survey was originally created in English and Chinese and was translated into Thai by the Center for Translation and Languages, a division of the Research Institute for Languages and Cultures of Asia at Mahidol University. Specifically, the survey was distributed on campus at Mahidol University, Chulalongkorn University, and Thammasat University in Thailand, as well as at National Taiwan University, National Taiwan Normal University, and National Chengchi University in Taiwan. Prior to distribution, all selected universities were duly informed and provided consent for the survey's dissemination.

3.5 Data Analysis

This study employed quantitative research methods for analysis, primarily utilizing SPSS software to conduct various analyses, including descriptive statistical analysis, reliability and validity analysis, and correlation analysis. The data for analysis were gathered through the questionnaire survey. As of now, data collection in Thailand is ongoing, which accounts for the current discrepancy in sample sizes between the two countries. Nonetheless, this empirical study can act as a preliminary examination to identify initial relationships and results, which will be invaluable for the subsequent, more comprehensive data analysis.

To conduct the data analysis, a total of 41 questions are organized into five dimensions, including eight questions on Product, eight questions on Price, seven questions on Promotion, seven questions on TRA, and 7 questions on WTP. Noteworthy, four multiple-choice questions toward the Price dimension (Questions 16, 18, 20, and 22) were excluded from the above scope.

4. Results and Discussion

After the distribution process, we collected a total of 430 valid responses from participants, with 142 originating from Thailand and 288 from Taiwan. This represents the effective sample size for our analysis. Initially, we assessed the validity and reliability of the questionnaire to ensure its effectiveness. Subsequent steps included a detailed analysis of the sample profile and variable tests to gain insights into the respondents' backgrounds and identify significant trends within the data. Advancing to the correlation and regression tests elucidated the relationships among variables and tested the hypotheses. These analyses are pivotal for comprehending the underlying dynamics and are instrumental in paving the way for comprehensive data analysis in the subsequent stages.

4.1 Validity and Reliability Analyses

Cronbach's coefficient alpha, introduced in 1951, is a commonly used method for measuring reliability (Nunnally, 1978) and is widely adopted for Likert scales (Peterson, 1994). The Cronbach's alpha of five dimensions--Product, Price, Promotion, TRA, and WTP presents respectively--0.797, 0.859, 0.792,



0.891, and 0.924, indicating these five dimensions have great internal consistency. Generally, the rule of thumb is that a Cronbach's alpha of .70 and above refers to good value.

Factor loading analysis is used to verify the validity of the scale in this study, yielded KMO value for five dimensions--Product, Price, Promotion, TRA, and WTP presents respectively 0.811, 0.899, 0.862, 0.892. and 0.848, demonstrating the high adequacy (close to 1.0) for each variable in the model.

4.2 Sample Profile

Based on the preliminary demographic profile, shown in Table 1, the total sample size consisted of 430 respondents, with 142 respondents from Thailand and 288 from Taiwan. In terms of gender distribution, Thai respondents comprised 40.1% male and 59.9% female, while Taiwanese respondents consisted of 37.2% male and 62.2% female, with 2 respondents not providing gender information. In terms of educational attainment, undergraduate students constituted the majority in both Thailand (78.2%) and Taiwan (55.6%), while graduate students represented 17.6% and 42%, respectively. The average age of respondents in Thailand was 22.9, and in Taiwan, it was 23.7.

On average, respondents in Thailand reported allocating USD 53.71 per month for online shopping expenditures, while in Taiwan, the average monthly expenditure was USD 64.7. Additionally, a significant proportion of respondents (74% in Thailand, and 60% in Taiwan) reported engaging in online purchases more than five times monthly, on average. In terms of e-commerce platform usage, Shopee and Lazada emerged as the two most frequently used platforms in Thailand, while Shopee, Momo, and PChome are the most used platforms in Taiwan, with over 88% of respondents using Shopee when shopping online significantly.

Table 1: Sample Profile

		Thailand (N=142)	Taiwan (N=288)
Gender	Male	40.1%	37.2%
	Female	59.9%	62.2%
Educational level	Undergraduate	78.2%	55.6%
	Graduate	17.6%	42.0%
	Ph.D	2.8%	0.7%
Age		22.9 (S.D=2.94)	23.7 (S.D= 2.84)
Average spend/ per month (USD)		53.71	64.7

4.3 T-test analysis

The employment of a t-test probe of the distinctions in consumer preferences between Thai and Taiwanese individuals has elucidated statistically significant discrepancies within the realms of Product ($t=2.05$, $p=0.041$), Promotion ($t=4.175$, $p<0.01$), and TRA ($t=0.918$, $p=0.01$) dimensions. In these three domains, Thai consumers show a stronger preference for purchasing environmentally conscious products. The analysis further indicates an association with demographic variables, notably age, educational attainment; a stronger inclination towards environmentally sustainable purchasing behaviors is notably prevalent among the younger undergraduate demographic. The comparatively younger age profile and higher concentration of undergraduate students within the Thai sample may contribute to the observed differences in the Product, Promotion, and TRA aspects. The statistical result of the t-test is shown in Table 2.

Table 2: T-test analysis

	Thailand (N=142)		Taiwan(N=288)		t-value	p-value
	Means	S.D	Means	S.D		
Product	3.784	.692	3.643	.655	2.050	.041
Price	3.676	.743	3.601	.775	0.591	.342
Promotion	3.822	.724	3.522	.689	4.175	.000

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TRA	3.527	.839	3.209	.876	0.918	.001
WTP	3.871	.908	3.789	.878	3.497	.359

4.4 Analysis of variance

A one-way between-subjects ANOVA was conducted to compare the education levels of undergraduate, graduate, and Ph.D. students across various dimensions. In the "Product" dimension, a significant effect of education level was observed at the $p < .05$ level across the three conditions ($F(2, 137) = 5.024, p = 0.008$). Specifically, the mean score for undergraduate students ($M = 3.86, SD = 0.64$) significantly differed from that of graduate students ($M = 3.95, SD = 0.82$). However, Ph.D. students ($M = 3.71, SD = 0.61$) did not significantly differ from either undergraduate or graduate students. These findings suggest that undergraduate students exhibit a higher awareness of CSR products when making purchasing decisions. This pattern is consistent with the findings in Taiwanese consumers, where a significant effect of education level was observed in the "product" dimension ($F(2, 280) = 4.011, P = 0.019$), indicating that undergraduate students have a stronger preference for environmentally friendly products than graduate students. Therefore, it can be inferred that younger consumers demonstrate a heightened awareness of environmentally friendly practices in products when shopping online.

4.5 Correlation analysis

The Pearson correlation coefficient (PCC) is a statistical method utilized to assess the strength and direction of the linear relationship between two continuous variables. In the context of testing hypotheses concerning environmental CSR and purchase intention, the PCC serves to ascertain whether a significant correlation exists between the degree of environmental CSR engagement and purchase intention. Based on the obtained results, in both Thailand and Taiwan, all four hypotheses examined in this study demonstrate significant support, with each pair of factors showing a positive relationship.

Notably, the correlation between environmental CSR involvement in products and willingness to pay emerges as the strongest among the examined factors in both Thailand ($r = 0.786, p < 0.1$) and Taiwan ($r = 0.777, p < 0.01$), suggesting that consumers place significant value on environmentally friendly products and are willing to pay more for them. It also implies that integrating environmental CSR practices into the product dimension can be an effective strategy for increasing consumer purchase intention. However, while all the correlations are supportive, there is a larger disparity among the factors in Thailand. Specifically, the Promotion and TRA dimensions exhibit lower correlations, indicating that advertising, brand image, and consumer attitudes toward environmentally friendly purchases may be less effective when shopping online in Thailand. By contrast, the correlation coefficient in Taiwan shows an equal score across each dimension. Tables 3 and 4 present the descriptive statistics for each dimension of the questionnaire and the Pearson Correlation Coefficient (PCC) in Thailand and Taiwan, respectively.

Table 3: Descriptive statistics and PCC in Thailand and Taiwan

Thailand	Product	Price	Promotion	TRA	WTP
Product	(.822)				
Price	.611**	(.846)			
Promotion	.490**	.515**	(.816)		
TRA	.516**	.574**	.614**	(.892)	
WTP	.786**	.667**	.694**	.591**	(.904)

Notes: $n = 142$; Statistically significant relationships ($* = p < .05$; $** = p < .01$) are indicated by bold lines between constructs; Cronbach's (1951) internal consistency reliability coefficients appear in parentheses on the diagonal.

Taiwan	Product	Price	Promotion	TRA	WTP
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Product	(.797)				
Price	.652**	(.865)			
Promotion	.643**	.678**	(.777)		
TRA	.642**	.642**	.734**	(.890)	
WTP	.777**	.765**	.734**	.702**	(.934)

Notes: n=288; Statistically significant relationships (*= $p < .05$; **= $p < .01$) are indicated by bold lines between constructs; Cronbach's (1951) internal consistency reliability coefficients appear in parentheses on the diagonal.

4.6 Regressions Test

Multiple linear regression tests are used to preliminarily investigate the relationships between various factors and Willingness to Pay (WTP) in two different cohorts. In the Thailand cohort (Model 1), the independent variables include Product, Price, Promotion, and TRA dimensions. The regression coefficients (β) for Product, Price, and Promotion are 0.502, 0.169, and 0.349, respectively, each with a p-value of less than 0.001, indicating a highly significant impact on WTP. These results support hypotheses 1 (regarding the product's influence on WTP), 2 (regarding the price's influence on WTP), and 3 (regarding promotion's influence on WTP). The variable TRA has a β of 0.021, which is not statistically significant, indicating that hypothesis 4 is not supported. The F-value for the model is 109.190, which is highly significant ($p \leq 0.001$), and the model explains a substantial proportion of the variance in WTP, with an R^2 of 0.761 and an adjusted R^2 of 0.754. The observation about the influence of Price being lower than that of Product and Promotion is specific to the Thailand cohort.

In the Taiwan cohort (Model 2), the same set of independent variables was used. The coefficients for Product, Price, and Promotion are 0.371, 0.326, and 0.220, respectively, all significant at $p \leq 0.001$, which supports hypotheses 1, 2, and 3. The TRA variable in this model has a β of 0.074, which, like in the Thailand cohort, does not provide enough evidence to support hypothesis 4. The F-value for this model is even higher at 213.561 ($p \leq 0.001$), and the model's R^2 is 0.751 with an adjusted R^2 of 0.748, indicating strong explanatory power. The results of the regression analysis of the WTP of responses from Thailand and Taiwan are presented in Table 4.

Table 4: Regression Analysis of WTP in Thailand and Taiwan Responses

Main dimensions	MODEL 1	MODEL 2
	WTP (Thailand N=142)	WTP (Taiwan N=288)
Product	.502***	.371***
Price	.169**	.326***
Promotion	.349***	.220***
TRA	.021	.074
F-value	109.190***	213.561***
R²	.761	.751
Adj-R²	.754	.748

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

5. Conclusion

In summary, this research highlights the significant influence of environmental CSR on consumer purchase intentions within the e-commerce sector in Thailand and Taiwan. The results indicate that different facets of environmental CSR, encompassing product-related initiatives like product attributes and supply chain practices, pricing approaches centered on environmental actions, promotional strategies emphasizing eco-friendly values and corporate branding, as well as consumers' inclinations toward green purchasing and environmental CSR endeavors, collectively play vital roles in shaping consumer purchase intentions.

For e-commerce platforms, these findings highlight the critical role of embedding environmental CSR within core operations and communication strategies. Such integration is essential to align with consumer and societal expectations, fostering a sustainable marketplace. The study further identifies key

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product-related factors, such as diverse product offerings, efficient supply chain management, and environmentally friendly delivery methods, as crucial for drawing consumers to e-commerce platforms. Extending environmental-friendly efforts to include consumer-engagement elements can solidify commitment to sustainable practices and strengthen customer involvement in sustainability initiatives. Additionally, promotion-related activities significantly influence consumer purchasing intentions. Thus, e-commerce companies must craft a positive brand image, emphasizing responsible production practices to bolster consumer preference and loyalty.

In the demographic analysis, valuable findings suggest that younger students are more actively engaged in environmentally friendly purchases, particularly concerning product-related factors, than older students. However, the Theory of Reasoned Action (TRA) factors appear to have less influence on their purchase intention. This observation aligns with the literature reviewed, which suggests that younger individuals tend to exhibit greater concerns about environmental issues, likely influenced by societal factors and cultural norms, rather than solely for the purpose of expressing their individuality.

As environmental concerns continue to gain prominence globally, people have been noticing the environmental issues caused by e-commerce, there has been a surge in regulations aimed at mitigating environmental harms at both national and international levels. In response, the integration of CSR into business strategies has become not only an ethical imperative but also a competitive advantage that can enhance long-term management practices.

This paper serves as a preliminary study for ongoing research on the in-depth examination of Thailand and Taiwan's Gen Z consumers' online purchase intentions regarding environmental CSR. It definitely provides a clearer direction for researchers to further explore the relationship and implementation in this field.

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7. References

- Abeam Consulting. (n.d.) What Thailand 4.0 enables in the digital space? *Abeam Consulting*. Retrieved July 27, 2023, from https://www.abeam.com/th/en/service_line/2124
- Agarwal, G. (2014). The Impact of Corporate Social Responsibility on Consumer Behaviour.
- Alizila. (2023). With 11.11 Shopping Done, Alibaba's "Green" Logistic Begin. *Alizila*. Retrieved August 18, 2023, from <https://www.alizila.com/with-11-11-shopping-done-alibabas-green-logistics-begin/>
- Arora S., Chu F., Melnikov S., & Zhang L. (2022). E-commerce is entering a new phase in Southeast Asia. Are logistic players prepared? *McKinsey & Company*. Retrieved July 15, 2023, from <https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/e-commerce-is-entering-a-new-phase-in-southeast-asia-are-logistics-players-prepared#/>



- Brin, P. V., & Nehme, M. N. (2019). Corporate social responsibility: analysis of theories and models.
- Brüel Grönberg, S., & Hulthén, K. (2022). E-commerce packaging as an embedded resource in three network settings. *The International Review of Retail, Distribution and Consumer Research*, 32(4), 450-467.
- Carroll, A. B. (1991). The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders. *Business horizons*, 34(4), 39-48.
- Carroll, A. B. (2009) A History of Corporate Social Responsibility: Concepts and Practices'. *The Oxford Handbook of Corporate Social Responsibility*.
- Carroll, A. B. (2015). Corporate social responsibility. *Organizational dynamics*, 44(2), 87-96.
- Carroll, A. B. (2016). Carroll's pyramid of CSR: taking another look. *International journal of corporate social responsibility*, 1(1), 1-8.
- Ecocart. (2021). The Role of Corporate Social Responsibility in E-commerce. *Ecocart*. Retrieved May 9, 2023 from <https://ecocart.io/benefits-of-corporate-social-responsibility/>
- ElAlfy, A., Palaschuk, N., El-Bassiouny, D., Wilson, J., & Weber, O. (2020). Scoping the evolution of corporate social responsibility (CSR) research in the sustainable development goals (SDGs) era. *Sustainability*, 12(14), 5544.
- Elkington, J., & Rowlands, I. H. (1999). Cannibals with forks: The triple bottom line of 21st century business. *Alternatives Journal*, 25(4), 42.
- Escursell, S., Llorach-Massana, P., & Roncero, M. B. (2021). Sustainability in e-commerce packaging: A review. *Journal of cleaner production*, 280, 124314.
- Etilé, F., & Teyssier, S. (2013). Corporate social responsibility and the economics of consumer social responsibility. *Review of Agricultural and Environmental Studies-Revue d'Etudes en Agriculture et Environnement (RAEStud)*, 94(2), 221-259.
- Fishbein, M. and Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior*. New York: Wiley.
- Galant, A., & Cadez, S. (2017). Corporate social responsibility and financial performance relationship: A review of measurement approaches. *Economic research-Ekonomska istraživanja*, 30(1), 676-693.
- Haryanti, T., & Subriadi, A. P. (2022). E-commerce acceptance in the dimension of sustainability. *Journal of Modelling in Management*, 17(2), 715-745.
- Išoraitė, M. (2016). Marketing mix theoretical aspects. *International Journal of Research-Granthaalayah*, 4(6), 25-37.
- Lahtinen, V., Dietrich, T. and Rundle-Thiele, S. (2020), "Long live the marketing mix. Testing the effectiveness of the commercial marketing mix in a social marketing context", *Journal of Social Marketing*, Vol. 10 No. 3, pp. 357-375.
- Leesa- Nguansuk, S. (2019, February 5). E-commerce grows 14%, highest in ASEAN. *Bangkok Post*. Retrieved July 25, 2023, from <https://www.bangkokpost.com/business/1623714/e-commerce-grows-14-highest-in-asean>
- Leesa- Nguansuk, S. (2023, March 20). E-commerce sector enter the next phase. *Bangkok Post*. Retrieved September 13, 2023, from <https://www.bangkokpost.com/business/general/2531990>
- Lin, T. H., Lee, T. R., Isoherranen, V., & Sinnarong, N. (2021). The Key Factors of Successful Cross-Border E-Commerce Advancement in Southeast Asia: Grey Relational Analysis of Sustainability. In *2021 Proceedings of International Agriculture Innovation Conference: September 3th-4th Webinar, Tokyo, Japan*. International Association for Agricultural Sustainability.
- McCarthy, E.J. (1960) *Basic Marketing: A Managerial Approach*. McGraw-Hill Inc., US.
- Muñoz-Villamizar, A., Velázquez-Martínez, J. C., Haro, P., Ferrer, A., & Mariño, R. (2021). The environmental impact of fast shipping ecommerce in inbound logistics operations: A case study in Mexico. *Journal of Cleaner Production*, 283, 125400.
- National Development Council, Taiwan. (2022). 2050 Net-Zero Emissions. Retrieved January 6, 2023, from https://www.ndc.gov.tw/en/Content_List.aspx?n=B927D0EDB57A7A3A.



- Silva, V., Amaral, A., & Fontes, T. (2023). Sustainable urban last-mile logistics: A systematic literature review. *Sustainability*, 15(3), 2285
- Štreimikienė, D., & Ahmed, R. R. (2021). Corporate social responsibility and brand management: evidence from Carroll's pyramid and triple bottom line approaches. *Technological and Economic Development of Economy*, 27(4), 852-875.
- Taiwan Market Intelligence and Consulting Institute (MIC). (2022, May 12).零售電商消費者調查系列一-6成網友愛用蝦皮24h、momo，行動App購物冠軍為蝦皮，10大網購數位科技 消費者最重視電子支付、跨平台比價。[Retail e-commerce consumer survey series 1 - 60% of netizens love to use Shopee 24h and momo. The mobile app shopping champion is Shopee, one of the top 10 online shopping digital technologies. Consumers attach the most importance to electronic payment and cross-platform price comparison.] Retrieved May 9, 2023, from <https://mic.iii.org.tw/news.aspx?id=621>
- Tang, K. X. (2022) 電商市場規模2025年預估將超過6千億！亞馬遜在台發布跨境電商調查報告 [The e-commerce market size is estimated to exceed 600 billion in 2025! Amazon releases cross-border e-commerce survey report in Taiwan.] Taiwan: The Storm Media [in Taiwan]
- Xu, W. Z. (2015). 2015回顧-- 四大市場關注焦點，台灣電商逆勢成長。[Review 2015—Four major markets focus on Taiwan's e-commerce market, growing in contrast.] Taiwan: Business Next. Retrieved February 29, 2024, from <https://www.bnext.com.tw/article/38267/BN-2015-12-20-181851-143>
- Zaman, K., Iftikhar, U., Rehmani, M., & Irshad, H. (2023). Embracing biodegradable bags: Effects of ethical self-identity on consumer buying behavior. *Social Responsibility Journal*, 19(3), 474-485.