ปัจจัยที่มีอิทธิพลต่อพฤติกรรมผู้บริโภคฉลากสิ่งแวดล้อมบนผลิตภัณฑ์ FMCG
ในเขตกรุงเทพมหานคร ประเทศไทย
Factors Influencing on Consumer Behavior's Eco-Labels for FMCG Products
in Bangkok, Thailand

ริคุ ซานเทอรี นัมมิ[1], สุทธินันทน์ พรหมสุวรรณ[2]

บทคัดย่อ

ผลิตภัณฑ์และบริการที่เป็นมิตรกับสิ่งแวดล้อมมีความต้องการเพิ่มมากขึ้นโดยเฉพาะอย่างยิ่งในอุตสาหกรรมสินค้าอุปโภคบริโภคที่เคลื่อนไหวเร็ว (FMCG) และมีการนิยมใช้ฉลากที่เป็นมิตรต่อสิ่งแวดล้อมเพิ่มสูงขึ้นทั่วโลก เนื่องจากผู้บริโภคและผู้กำหนดนโยบายหันมาให้ความสนใจกับการตระหนักรู้ด้านสิ่งแวดล้อมและความยั่งยืน ผู้ผลิตและผู้กำหนดนโยบายจำเป็นอย่างยิ่งที่จะต้องเข้าใจว่าฉลากสิ่งแวดล้อมมีอิทธิพลต่อพฤติกรรมการซื้อของผู้บริโภคอย่างไร โดยเฉพาะสำหรับสินค้าอุปโภคบริโภคที่เคลื่อนไหวอย่างรวดเร็วนั้นยังไม่ทราบแน่ชัด งานวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาปัจจัยส่วนประสมทางการตลาด ทัศนคติและการรับรู้ต่อการเปลี่ยนแปลงสภาพภูมิอากาศ การรับรู้คุณค่าที่มีอิทธิพลต่อพฤติกรรมผู้บริโภคฉลากสิ่งแวดล้อมบนผลิตภัณฑ์ FMCG ในเขตกรุงเทพมหานคร โดยการใช้แบบสอบถาม สอบถามทาง Google Form กลุ่มตัวอย่างมีอายุ 18 ปี หรือมากกว่า จำนวน 400 คน อาศัยในเขตกรุงเทพมหานคร ใช้สถิติเชิงพรรณนา ประกอบด้วย ความถี่ ร้อยละ ค่าเฉลี่ย และส่วนเบี่ยงเบนมาตรฐานและสถิติเชิงอนุมานด้วยการวิเคราะห์การถดถอยเชิงพหุ ผลการศึกษาหลักของการศึกษาพบว่า ผลิตภัณฑ์ ราคา ทัศนคติและการรับรู้ของผู้บริโภคด้านสิ่งแวดล้อม และมูลค่าที่แท้จริง มีอิทธิพลต่อพฤติกรรมผู้บริโภคฉลากสิ่งแวดล้อมบนผลิตภัณฑ์ FMCG ในเขตกรุงเทพมหานคร ที่ระดับนัยสำคัญทางสถิติ .05 งานวิจัยนี้สามารถนำไปเป็นข้อเสนอแนะให้กับหน่วยงานภาครัฐและภาคเอกชนที่เกี่ยวข้องในการส่งเสริมพฤติกรรมการให้ความสำคัญฉลากสิ่งแวดล้อมบนผลิตภัณฑ์ FMCG

คำสำคัญ: ฉลากสิ่งแวดล้อม พฤติกรรมผู้บริโภค ส่วนประสมทางการตลาด ทัศนคติและการรับรู้ต่อการเปลี่ยนแปลงสภาพภูมิอากาศ การรับรู้คุณค่า อุตสาหกรรมสินค้าอุปโภคบริโภค

---

[1] นักศึกษาปริญญาโท หลักสูตรบริหารธุรกิจมหาบัณฑิต, มหาวิทยาลัยกรุงเทพ e-mail: Riku.numm@bumail.net

[2] รศ.ดร.อาจารย์ประจำบัณฑิตวิทยาลัย, มหาวิทยาลัยกรุงเทพ e-mail: suthinan.p@bu.ac.th

Factors Influencing on Consumer Behavior's Eco-Labels for FMCG Products in Bangkok, Thailand

Riku Santeri Nummi[1], Suthinan Pomsuwan[2]

Abstract

The increasingly growing demand for environmentally friendly products and services, especially in the fast-moving consumer goods (FMCG) industry, has led to an increased usage of eco-labels worldwide as consumers and policymakers are shifting more focus on eco-consciousness and sustainability. Understanding how eco-labels influence consumer purchasing behavior, especially for FMCG products, remains relatively unknown. The objective of this study was studying the marketing mix (4Ps), climate change perception and attitude, and perceived value factors have influence on consumer behavior's Eco-Labels for FMCG Products in Bangkok. By using a questionnaire via Google Form, a sample group of 400 people aged 18 years or older lived in Bangkok. The descriptive statistics in terms of frequency, percentage, mean, and standard deviation, and the inferential statistics with multiple regression analysis were used for analysis of the data. The major results of the study found that products, prices, attitudes, and perceptions of consumers regarding the environment, and intrinsic value influenced on consumer behavior's Eco-Labels for FMCG Products in Bangkok at the statistical significance level .05. This research can be used as a recommendation to government agencies and the private sector involved in promoting the behavior of gaining importance to environmental labels on FMCG products.

Keywords: Eco-labels, Consumer Behavior, Marketing Mix, Climate Change Perception and Attitude, Perceived Value, FMCG Industry

---

[1] MBA Student, Graduate School, Bangkok University. e-mail: Riku.numm@bumail.net
[2] Assoc. Prof. Dr. Lecturer of Graduate School, Bangkok University. e-mail: suthinan.p@bu.ac.th

Introduction

In recent years, there has been a noticeable and growing global demand for eco-friendly products and services, driven by increasing awareness of environmental issues and sustainability concerns (Abdal & Suman, 2022). Moreover, Gig, Barr, and Ford (2005) stated that the eco-friendly products and services generate environmental impacts throughout its life cycle, from the raw materials and energy used to manufacture or supply it, to the way it is recycled or managed at the end of its life.

This demand is particularly evident in the fast-moving consumer goods (FMCG) industry, where consumers are actively seeking eco-friendly alternatives for their everyday needs, therefore the concerns regarding environmental sustainability and the need for eco-friendly practices have also been acknowledged by governments and regulators who are implementing policies that promote eco-friendly practices in industries such as FMCG (Moisander, 2007; Saltaji, 2013).

According to Jain and Kaur (2004) mentioned the implementing of sustainability in the Fast-Moving Consumer Goods (FMCG) industry is crucial for reducing the environmental and social impact of products and operations. Sustainability initiatives can lead to cost savings, increased brand value, and improved relationships with consumers and stakeholders. In order to strengthen the policy to the practical solution, Junaedi (2007) stated that the steps to implement sustainability in the FMCG sector is important in terms of set clear sustainability goals, conduct a sustainability assessment, sustainable packaging, responsible sourcing, energy efficiency, waste reduction and recycling, water conservation, sustainable transport and distribution, certifications and standards, consumer education and engagement, circular economy, track and report progress, employee engagement, and continuous improvement. The marketing mix, a fundamental concept in business, encompasses four essential components: product, price, place, and promotion (Kotler & Keller, 2012). According to Delmas and Grant (2014) mentioned the price, determined by factors like production costs, market demand, and customer perceived value, plays a significant role in shaping consumer behavior. In addition, Mahmoud (2018) stated that effectively reach the target market, promotional strategies like advertising, public relations, and direct marketing are employed. Moreover, Gani (2021) and Hwang, Park, and Kim (2016) stated that among the factors influencing customer perceptions, attitudes towards climate change hold particular importance. Individuals' beliefs and understanding of climate change's impact on the planet can impact their choices as environmentally conscious consumers. Educating the public, media coverage, and scientific evidence all shape these perceptions, driving efforts towards sustainability and environmental conservation. Ultimately, businesses strive to create products and services that deliver high perceived value, going beyond monetary cost to encompass customer benefits and satisfaction. Factors such as product features, brand reputation, and customer service influence perceived value, fostering customer loyalty and willingness to pay for superior offerings. Besides the information above, the climate change perception and attitude concept towards consumer behavior are told in the relevant research articles such as Hutcheon, Maharaj, Kalagna, & Plattner (2021), studied the consumers expect brands to address climate change; and Thøgersen, (2021) studied the consumer behavior and climate change: Consumers need considerable assistance. Another aspect of variable, which mention in this study is perceived value concept towards consumer behavior. The relevant research articles explain this concept will be Gonzalez, (2020), studied the intrinsic and extrinsic factors that influence consumers' intention and purchase behavior: The case of eco-labeled dairy products; and Usrey, Palihawadana, Saridakis, and Theotokis (2020), studied how downplaying product greenness affects performance evaluations: Examining the effects of implicit and explicit green signals in advertising. Therefore, this study aims to study the factors influencing on consumer

behavior's Eco-Labels for FMCG products in Bangkok, Thailand.

A. Objective of Study

1. To study the Marketing Mix (4P) factor has an influence on Consumer Behavior's Eco-Labels for FMCG Products in Bangkok.

2. To study the Climate Change Perception and Attitude factor has an influence on Consumer Behavior's Eco-Labels for FMCG Products in Bangkok.

3. To study the Perceived Value factor has an influence on Consumer Behavior's Eco-Labels for FMCG Products in Bangkok.

B. Benefits of Research

The primary aim of this research is to contribute information and scientific data to the existing body of knowledge regarding consumer purchasing behaviors on eco-friendly FMCG products. Additionally, this research will provide valuable insights into the factors that influence consumers decision making when purchasing eco-friendly FMCG products. This study will be valuable to businesses and policymakers when developing strategies to promote or market eco-friendly products. Furthermore, this research will also be a contribution to the academic literature on consumer behavior in the FMCG industry.

C. Definition of Terms

Several terms are used and defined to ensure a common understanding of the key concepts discussed. Eco-labels, a type of environmental labeling indicating a product or service's environmental impact, play a crucial role in promoting sustainability and guiding consumer choices. FMCG, or Fast-Moving Consumer Goods, encompasses products sold quickly and affordably. Sustainability, the ability to meet present needs without compromising future generations, drives the demand for eco-friendly products that minimize harm to natural resources. The Marketing-Mix (4P) framework, incorporating Product, Price, Promotion, and Place, aids in developing effective marketing strategies. Perceived Seriousness of Climate Change reflects consumers' concerns about its environmental, societal, and economic consequences. Attitude Towards Climate Change encompasses beliefs, feelings, and intentions regarding climate issues. Perceived Environmental Responsibility influences consumer eco-friendly actions. Extrinsic Attributes, like packaging and branding, impact purchasing decisions, while Intrinsic Attributes, such as durability and functionality, relate to product core benefits. Perceived Quality reflects customers' personal assessments based on experiences and expectations.

Literature Review

A. Theory and Related Relevant Research Articles of Consumer Behavior

According to consumer behavior theory, the researcher used Schiffman and Kanuk (2006) to lead the concepts with relevance research articles. In the customer behavior in fast-moving consumer goods (FMCG) aspect, the business must understand consumer behavior to develop effective marketing plans and meet customers' needs. Consumer behavior theories and academic insights can help explain the factors influencing purchasing decisions for goods and services (Gani, Dr, 2021). The 4Ps of the marketing mix (product, price, location, and promotion) play a vital role in influencing consumers, particularly in the context of environmentally friendly products. Research shows that eco-labels significantly impact customer perceptions and trust in eco-friendly goods (Alamsyah, Othman, Setiadi, Mazia, & Hanafiah, 2021). Intrinsic and extrinsic attributes of products also play a crucial role in consumer behavior. It is essential for businesses to consider these factors when developing eco-friendly FMCG products to attract environmentally conscious customers successfully. Eco-labels can greatly influence customer behavior, making it easier for consumers to identify eco-friendly products (Thøgersen, 2021). Additionally, customers' perceptions of societal and personal benefits from purchasing eco-labeled products can influence their

choices (Hwang, Park, & Kim, 2016). By addressing consumers' concerns, barriers, and preferences, businesses in the FMCG industry can foster ecologically friendly consumption habits and enhance the appeal of eco-friendly products.

B. Theory and Related Relevant Research Articles of Marketing Mix (4P)

According to marketing mix (4P) theory, the researcher used Kotler and Keller (2012) to lead the concepts with relevance research articles in terms of marketing mix (product, price, place, and promotion). In the customer behavior in fast-moving consumer goods (FMCG) aspect, businesses looking to encourage consumers to purchase environmentally friendly products must understand how the marketing mix (4P) variables affect customer behavior in fast-moving consumer goods (FMCG) items that are environmentally friendly. The four elements of the marketing mix; product, price, place, and promotion, together form an all-inclusive marketing strategy for a business.

Product: Consumer decision-making is heavily influenced by the features and benefits of eco-friendly FMCG products. Consumers were influenced by extrinsic features such as eco-labels (Hwang, Park, & Kim, 2016), packaging materials (Cammarelle, Bimbo, Lombardi, & Viscecchia, 2021), and environmental certifications to select the eco-friendly products. To successfully market to environmentally friendly consumers, businesses should highlight the environmental advantages of their products while preserving product quality and its base attributes (Gani, Dr, 2021).

Price: Especially in the FMCG industry, price plays a significant factor in determining customers' purchasing behavior (Wangari, 2018). Businesses need to find a balance between offering affordable prices for their eco-friendly products and preserving the perceived value of their goods. However, businesses must consider consumers' willingness to pay for sustainable products and their sensitivity to price changes (Schils, 2022). Research suggests that eco-labeled products could dictate a price premium (Delmas & Grant, 2014). Businesses may appeal to diverse consumer segments and promote more wide adoption of eco-friendly consumption practices by providing a wider variety of eco-friendly items at different pricing ranges to suit most consumers' needs.

Place: Consumer behavior may have been affected by the accessibility and availability of eco-friendly FMCG items. Companies need to make sure that both physical and online retail settings can be readily accessed, and consumers can see their environmentally friendly items (Wangari, 2018). Also, businesses may work with distributors and retailers to promote environmental activities and increase product availability across different locations (Cheema, Durrani, Khokhar, & Pasha, 2015).

Promotion: Marketing is crucial in influencing customer views and preferences for FMCG items that are environmentally friendly. Businesses could promote their products' environmental advantages and their dedication to sustainability through different marketing techniques including advertising, public relations, and social media (Mahmoud, 2018). According to research, consumers' trust and purchase intentions can improve when eco-labels and certifications are effectively marketed (Hwang, Park, & Kim, 2016).

Businesses wanting to promote eco-friendly FMCG products must understand how the marketing mix (4Ps) and customer behavior interact. Businesses may promote more sustainable consumption habits and help create a greener future by improving their product offers, pricing plans, distribution methods, and marketing initiatives.

C. Theory and Related Relevant Research Articles of Climate Change Perception and Attitude

According to climate change perception and attitude theory, the researcher used Ajzen (1991) to lead the concepts with relevance research articles in terms of theory of planned behavior (TPB), which consists of perceived seriousness of climate change, perceived environmental responsibility, and attitude towards climate change. In the customer behavior

in fast-moving consumer goods (FMCG) aspect, according to relevant research findings, consumers' expectations of businesses change as they become more conscious of climate change and demand more environmentally friendly products and services. Also, consumers may play a very important role in fighting the climate change issue by making wise and environmentally friendly purchases (Hutcheon, Maharaj, Kalagna, & Plattner, 2021; Thøgersen, 2021).

The Theory of Planned Behavior (TPB) provides a useful framework for analyzing consumer attitudes in regard to climate change and their decisions to purchase eco-friendly products. In addition, it can help in explaining the relationship between consumers' perceptions of the effects of their consumption choices on the environment and their propensity to buy eco-labeled goods in the context of climate change and eco-friendly FMCG products (Ajzen, 1991; Malmqvist, 2022).

D. Theory and Related Relevant Research Articles of Perceived Value

According to perceived value theory, the researcher used Zeithaml (1988) to lead the concepts with relevance research articles in terms of perceived quality, extrinsic attributes, and intrinsic attributes. In the customer behavior in fast-moving consumer goods (FMCG) aspect, when consumers make decisions, perceived value refers to how they evaluate the utility of a product or service based on what they receive compared to what they give. For eco-friendly FMCG products, both intrinsic and extrinsic factors contribute to customers' perceived value. "Green perceived value" involves consumers' positive perception of a product's environmental advantages and sustainability features, influencing their attitudes and purchase intentions towards eco-friendly products (Braimah, Amoako, Abubakari, Ampong, & Ofori, 2023; Alamsyah, Othman, Setiadi, Mazia, & Hanafiah, 2021). Eco-labels and certifications enhance green perceived value by assuring consumers of a product's eco-friendliness (Hwang, Park, & Kim, 2016; Gonzalez, 2020). Additionally, customers may perceive social and private value from purchasing eco-labeled products, demonstrating commitment to the environment and gaining personal satisfaction (Hwang, Park, & Kim, 2016; Gonzalez, 2020).

Perceived value can be influenced by trade-offs between product qualities, where some consumers perceive eco-friendly products as having poorer quality or higher prices (Usrey, Palihawadana, Saridakis, & Theotokis, 2020). This negative perception can deter both consumers and businesses from eco-friendly choices. To address this, FMCG businesses should balance marketing environmental benefits with meeting consumer expectations in quality, price, and overall value. Tailoring marketing strategies based on the product category can help overcome these issues. For less familiar eco-friendly categories, highlighting product effectiveness first and eco-friendliness second can be more effective (Usrey, Palihawadana, Saridakis, & Theotokis, 2020).

E. Hypotheses

The following hypotheses are developed for this study:

H1:   Marketing Mix (4P) factor has an influence on Consumer Behavior's Eco-Labels for FMCG Products in Bangkok.

H2:   Climate Change Perception and Attitude factor has an influence on Consumer Behavior's Eco-Labels for FMCG Products in Bangkok.

H3:   Perceived Value factor has an influence on Consumer Behavior's Eco-Labels for FMCG Products in Bangkok.
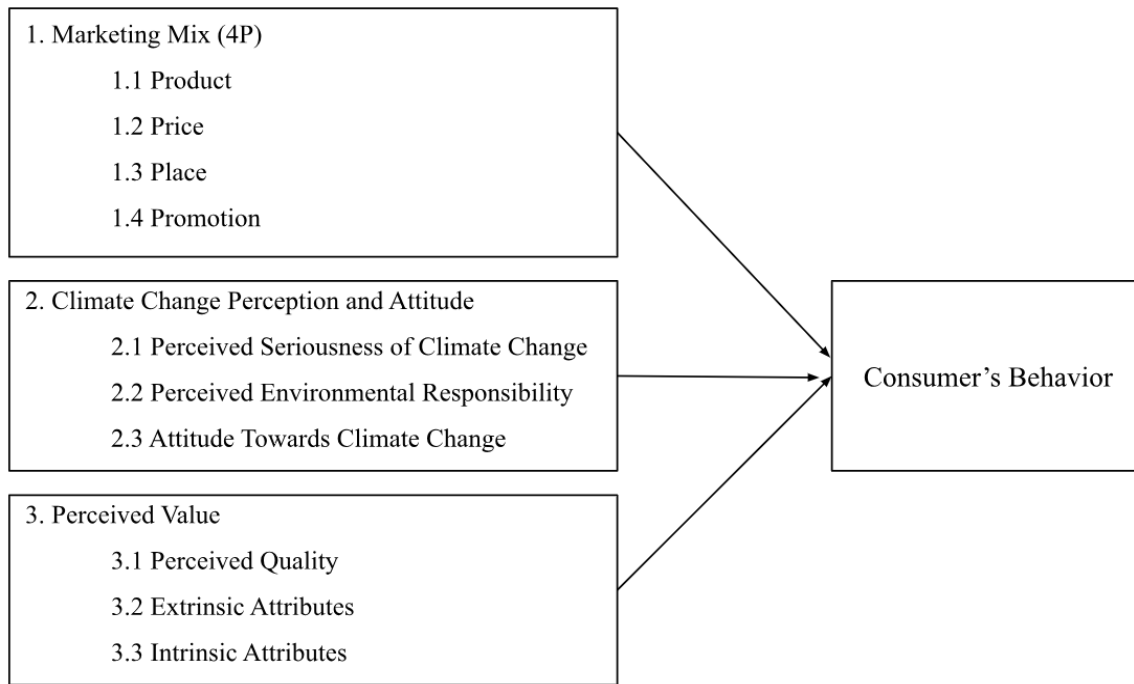
F. Conceptual Framework

```
┌─────────────────────────────────────┐
│  1. Marketing Mix (4P)              │
│        1.1 Product                   │
│        1.2 Price                     │
│        1.3 Place                     │
│        1.4 Promotion                 │
└─────────────────────────────────────┘

┌─────────────────────────────────────┐
│  2. Climate Change Perception and Attitude          │
│        2.1 Perceived Seriousness of Climate Change  │      ┌──────────────────┐
│        2.2 Perceived Environmental Responsibility   │ ───> │ Consumer's        │
│        2.3 Attitude Towards Climate Change          │      │ Behavior          │
└─────────────────────────────────────┘                     └──────────────────┘

┌─────────────────────────────────────┐
│  3. Perceived Value                 │
│        3.1 Perceived Quality         │
│        3.2 Extrinsic Attributes      │
│        3.3 Intrinsic Attributes      │
└─────────────────────────────────────┘
```

Figure 1: Conceptual Framework

Methodology

The population of this research study will be individuals who are over 18 years old, living in Bangkok and willing to participate in the study. It is important to clearly define the population for the study, as it determines the group of individuals that the research will be conducted on, and the results will be applicable to. This research used the calculation formula of Taro Yamane was employed to determine the sample size of this research, and the result indicated that the sample number should be 400 participants out of the target population over 100,000 people of 18 years and over in Bangkok. Then, they were put into Google Form and the survey questionnaire were distributed to be answered for one month. This study uses the quantitative method systematically and statistically to describe a large collection of samples towards the Consumer Behavior study. It is also used to generate the reproduced reference theories in this research with the precise percentage of the sample. The quantitative method uses random sampling to analyze statistically under the computerized system and application to perform the relations between three independent variables and a dependent variable. The questionnaire is composed of six parts, with Part 1 consisting of six questions that gather demographic data from the participants. Part 2 contains eight general questions about consumer behavior, while the Likert 5-point scale will be used for parts 3-6 of the questionnaire. Parts 3-6 assess the variables and their sub-variables. Further, descriptive statistics, such as frequency, percentage, mean, and standard deviation, and inferential statistics, including the Multiple Regression Analysis Test, are used for data analysis. The statistical mean range for the interpretation of the mean is calculated using de Winter and Dodou's (2010) formula. Ultimately, the online questionnaire underwent content validity and received approval from the advisor and the reliability test of 40 samples using Cronbach's Alpha test with the total value of 0.883 was accepted for this research.

Table 1: The Total Reliability Test Results

Variables	Cronbach's Alpha	N (number) of Items
Consumer Behavior	**.904**	**7**
Marketing Mix (4Ps)	**.859**	**9**
1. Product	.876	2
2. Price	.854	2
3. Place	.819	2
4. Promotion	.813	3
Climate Change Perception and Attitude	**.921**	**9**
1. Perceived Seriousness of Climate Change	.893	3
2. Perceived Environmental Responsibility	.912	3
3. Attitude towards Climate Change	.923	3
Perceived value	**.958**	**9**
1. Perceived Quality	.926	3
2. Extrinsic Attributes	.876	3
3. Intrinsic Attributes	.943	3
Total	**.883**	**34**

Two types of statistics used:

1. Descriptive statistics, which are composed of frequency, percentage, mean, and standard deviation.

2. Inferential statistics, which is composed of the Multiple Regression Analysis Test.

Analysis and Finding

The summary of the demographic data of 400 participants, including their gender, age, education, occupation, monthly income, and marital status. The data is analyzed using frequency and percentage measures.

From the data, it is observed that the majority of the respondents were female (57.3%) and the most common age group was 31-40 years (51.2%). About three-quarters of the respondents (72.8%) had a bachelor's degree, and most of them were employed (89.3%). In terms of monthly income, most of the respondents (46.3%) earned between 45,001-60,000 THB per month. Finally, most of the respondents were single (86.8%). These demographic data provide a snapshot of the characteristics of the sample population and can be useful in interpreting the results of the study.

Each aspect of variable was revealed by Mean and Standard Deviation as follows: Consumer Behavior (Mean= 3.98, SD = .671), Product (Mean= 4.03, SD =. 743), Price (Mean= 3.86, SD = .762) Place (Mean= 3.84, SD =.698), Promotion (Mean= 4.43, SD =.672), Perceived Seriousness of Climate Change(Mean=3.93,SD=.618, Perceived Environmental Responsibility (Mean= 4.05, SD = .721), Attitude towards Climate Change (Mean= 3.91, SD = .743), Perceived Quality (Mean=3.65, SD = .761), Extrinsic Attributes (Mean= 3.81, SD = .745) and Intrinsic Attributes (Mean=4.02, SD = .642)

From the general question's data, the results show that most respondents (56.5%) believe that eco-labels on FMCG products are trustworthy, while 40% of respondents always choose eco-labeled products as they consider environmental sustainability very important in their purchasing decisions. Price was the most important factor when making purchasing decisions for FMCG products for 40.8% of respondents, followed by quality (36.3%) and brand name (15.5%). Recyclable material and organic or natural labels were found to be the most effective types of eco-labels in influencing purchasing decisions (39% each), while

energy-saving labels were found to be the least effective (14%). Most respondents (65.8%) stated that they use eco-labeled products to improve their personal health, while 26% use them to reduce environmental impact. The packaging of products was the most relied-on source of information (41%) for respondents, followed by online product descriptions (36.5%). 63.3% of respondents were willing to pay a premium for eco-labeled FMCG products compared to non-eco-labeled products.

Table 2: Model Summary

Model		Unstandardized B	Coefficients Std. Error	Standardized Coefficients β	t.	Sig.
1	(Constant)	1.619	.229		7.062	.000
	Product	.336	.063	.326	5.354	.000*
	Price	.136	.063	.133	2.156	.032*
	Place	-.045	.058	-.045	-.782	.435
	Promotion	.087	.057	.088	1.517	.130
2	(Constant)	2.382	.155		15.327	.000
	Perceived Seriousness	.040	.056	.049	.718	.473
	Perceived Environmental	.364	.064	.409	5.5652	.000*
	Attitude	-.012	.046	-.014	-.257	.797
3	(Constant)	2.754	.121		22.848	.000
	Perceived Quality	.044	.061	.060	.719	.472
	Extrinsic Attributes	-.114	.067	-.159	-1.703	.089
	Intrinsic Attributes	.376	.069	.503	5.493	.000*

a. Dependent Variable: Consumer Behavior
b. Predictors: (Constant), Promotion, Price, Place, Product
c. Predictors: (Constant), Attitude, Perceived Seriousness, Perceived Environment
d. Predictors: (Constant), Intrinsic Attributes, Perceived Quality, Extrinsic Attributes

Therefore, the table presents the coefficients for the three regression models. Let's interpret the coefficients for each model:

Model 1, The R^2 is 0.56 and the constant term has a coefficient of 1.619 and a standard error of 0.229. This represents the estimated mean value of the dependent variable when all predictors (Promotion, Price, Place, and Product) are zero. The coefficient for the Product predictor is 0.336, indicating that a one-unit increase in Product is associated with a 0.336 unit increase in the dependent variable, holding other predictors constant.

The coefficient for the Price predictor is 0.136, suggesting that a one-unit increase in Price is associated with a 0.136 unit increase in the dependent variable, controlling for other predictors. The coefficient for the Place predictor is -0.045, implying that a one-unit increase in Place is associated with a -0.045 unit decrease in the dependent variable, while other predictors are held constant. The coefficient for the Promotion predictor is 0.087, indicating that a one-unit increase in Promotion is associated with a 0.087 unit increase in the dependent variable, controlling for other predictors.

Model 2, The R^2 is 0.67 and the constant term has a coefficient of 2.382 and a standard error of 0.155, representing the estimated mean value of the dependent variable when all predictors (Attitude, Perceived Seriousness, Perceived Environment) are zero. The coefficient for the Perceived Seriousness predictor is 0.040, suggesting that a one-unit increase in

Perceived Seriousness is associated with a 0.040 unit increase in the dependent variable, while other predictors are held constant. The coefficient for the Perceived Environmental predictor is 0.364, indicating that a one-unit increase in Perceived Environmental is associated with a 0.364 unit increase in the dependent variable, controlling for other predictors. The coefficient for the Attitude predictor is -0.012, implying that a one-unit increase in Attitude is associated with a -0.012 unit decrease in the dependent variable, holding other predictors constant.

Model 3, The R^2 is 0.51 and the constant term has a coefficient of 2.754 and a standard error of 0.121, representing the estimated mean value of the dependent variable when all predictors (Intrinsic Attributes, Perceived Quality, Extrinsic Attributes) are zero. The coefficient for the Perceived Quality predictor is 0.044, indicating that a one-unit increase in Perceived Quality is associated with a 0.044 unit increase in the dependent variable, controlling for other predictors. The coefficient for the Extrinsic Attributes predictor is -0.114, suggesting that a one-unit increase in Extrinsic Attributes is associated with a -0.114 unit decrease in the dependent variable, while other predictors are held constant. The coefficient for the Intrinsic Attributes predictor is 0.376, implying that a one-unit increase in Intrinsic Attributes is associated with a 0.376 unit increase in the dependent variable, holding other predictors constant.

Summary, Conclusions and Discussion
G. Summary and conclusion
Consumers' perception and attitude towards climate change are crucial determinants of their behavior and preference for eco-friendly products. The seriousness of climate change, attitude towards climate change, and perceived behavioral control influence consumers' intention to adopt eco-friendly products. Additionally, consumers' environmental concern, values, and personal beliefs about sustainability and environmental responsibility shape their attitude and behavior towards eco-friendly FMCG products.

Moreover, to effectively target environmentally conscious consumers, businesses must understand these factors and develop marketing strategies that highlight the intrinsic and extrinsic attributes of eco-friendly FMCG products. Emphasizing the environmental advantages, affordability, availability, and perceived value of eco-friendly products can positively influence consumer behavior and drive demand for sustainable options.

H. Discussion
Marketing Mix (4Ps)
Accepted Sub-Variables:
- Product plays a significant role in influencing consumer decision-making when it comes to eco-friendly FMCG products (Product). Consumers are influenced by extrinsic features such as eco-labels, packaging materials, and environmental certifications when selecting eco-friendly products (Hwang, Park, & Kim, 2016; Cammarelle, Bimbo, Lombardi, & Viscecchia, 2021). Moreover, to effectively target environmentally conscious consumers, businesses should emphasize the environmental advantages of their products while ensuring product quality and core attributes are maintained (Gani, Dr, 2021).
- Price, particularly in the FMCG industry, significantly impacts customers' purchasing behavior (Price). Besides, businesses need to strike a balance between offering affordable prices for their eco-friendly products and maintaining the perceived value of their goods (Wangari, 2018). However, businesses should consider consumers' willingness to pay for sustainable products and their sensitivity to price changes (Schils, 2022).

Not Accepted Sub-variables:

- The results indicate that product and price have a significant impact on consumer behavior, supporting the idea that these variables play a crucial role in shaping consumer decisions, as mentioned by (Wangari, 2018; Cheema, Durrani, Khokhar, & Pasha, 2015). However, the influence of place and promotion on consumer behavior is not significant in this recent research, as Mahmoud (Mahmoud, 2018) claimed that green place focuses on managing logistics to reduce transportation emissions and the carbon footprint, aiming to ensure environmentally friendly distribution. It involves choosing suitable locations for product placement, both physical and virtual, that are free from contamination. The choice of where and when to make green products available significantly influences customer behavior, as most customers will not go out of their way to purchase them unless the ecological nature of the products is guaranteed. Therefore, the place is playing a crucial role as it has to be convenient for consumers to achieve and also has to concern the local environment and logistics for any transportation. For the promotion factor, Mahmoud (Mahmoud, 2018) also claimed that green promotion involves conveying genuine information about products in a manner that safeguards consumers' materialistic and moral interests. It entails configuring promotional tools, such as advertising, marketing materials, public relations, and sales promotions, with a focus on people, planet, and profits. The objective is to influence consumer behavior by highlighting the positive outcomes of environmentally responsible purchases. Furthermore, it is crucial to monitor and ensure the accuracy of companies' claims in this regard. However, in Bangkok, there are only a few organizations that raise green topics to promote in marketing communication, public relations, advertising, or sales promotion, the promotion factor in this recent research is not accepted significantly.

Climate Change Perception and Attitude
Accepted Sub-variable:
- Perceived Environmental Responsibility is a significant factor that businesses in the FMCG sector must consider when marketing environmentally friendly products (Hutcheon, Maharaj, Kalagna, & Plattner, 2021). As consumers become more conscious of climate change, their expectations of businesses change, leading to a higher demand for eco-friendly products and services. This highlights the importance of businesses informing and assisting their clients in making environmentally conscious decisions (Thøgersen, 2021). The Theory of Planned Behavior (TPB) provides a useful framework for analyzing consumer attitudes and their decisions to purchase eco-friendly products in the context of climate change (Ajzen, 1991). According to TPB, people's attitudes, subjective norms, and perceived behavioral control influence their intentions and subsequent behavior. In the context of climate change and eco-friendly FMCG products, TPB can explain the relationship between consumers' perceptions of the environmental impact of their consumption choices and their propensity to buy eco-labeled goods (Gani, Dr, 2021). Furthermore, there is an alignment with the increasing concern of customers regarding climate change (Malmqvist, 2022), who also highlighted consumers' expectations for firms and governments to take action.

Not Accepted Sub-variable:
- Because of the recent research results conducted in Bangkok for Bangkok residents, assessing carbon footprints is challenging for consumers, calling for

better education and simplified tools like carbon labeling are arduous in Thailand recently in the era; in the result that the perceived seriousness of climate change, and attitude towards climate change are not significant in this research.

Perceived Value

Accepted Sub-variable:

- Perceived value plays a significant role in consumers' decision-making process, especially when considering eco-friendly FMCG products. The evaluation of the utility of a product or service is based on the consumer's perception of what they receive in comparison to what they provide. The usage of eco-labels and certifications on products can enhance green perceived value by providing consumers with assurance of the product's eco-friendliness and sustainability (Hwang, Park, & Kim, 2016; Gonzalez, 2020). Additionally, consumers may perceive social value in purchasing eco-labeled products as it reflects their commitment to environmental friendliness and positive contribution to society (Hwang, Park, & Kim, 2016). The personal satisfaction and improved health associated with eco-friendly products can also influence consumers' perceived value (Gonzalez, 2020).

Not Accepted Sub-variable:

- For extrinsic attributes factor that is not also accepted significantly, regarding that Hwang et al (Hwang, Park, & Kim, 2016) claimed that despite consumers expressing a willingness to pay more for eco-labeled products, eco-labels alone do not effectively encourage purchases. The study finds that consumers' perceived private value, such as cost-saving benefits, has a stronger influence on their purchasing decisions compared to perceived social value. To increase the market for eco-labeled products, strategies should be developed to address both private and social value. What is more, the study emphasizes that perceived quality can directly mediate the increase in customer's green trust, supported by the eco-label attribute, yet not accepted significantly for Bangkok residents.

Recommendations

A. Recommendations for Implications

Enhancing consumer education and awareness by providing information about the environmental impact and value of eco-friendly features can shape attitudes and drive sustainable consumption. Businesses can also emphasize intrinsic attributes and product quality in the value proposition while utilizing effective pricing strategies to make eco-friendly products more accessible and competitive compared to conventional alternatives. Leveraging eco-labels and certifications and actively seeking them while communicating these labels effectively on their products can further enhance consumer confidence. Additionally, investing in product design and innovation to meet consumers' needs and preferences, developing sustainable packaging, improving energy efficiency, and incorporating eco-friendly materials can enhance the perceived value and desirability of eco-friendly products. Furthermore, businesses can collaborate with stakeholders, including government bodies, NGOs, and industry associations, to collectively promote sustainable consumption. Sharing best practices, conducting joint awareness campaigns, and advocating for supportive policies can amplify the impact of individual efforts in achieving a more environmentally conscious market.

B. Recommendations for Future Research

Based on the findings of this study, there are several recommendations for future research in the field of consumer behavior and decision-making.

This future research could be aiming to conduct a cross-cultural analysis to investigate variations in consumer behavior towards eco-friendly products across different countries and regions. The study will explore how cultural values, norms, and beliefs influence consumer attitudes and purchasing decisions. Additionally, the research will delve into the influence of social networks and interpersonal communication on consumer behavior towards eco-friendly products, examining the impact of social interactions, peer influence, and online platforms on consumers' attitudes, knowledge, and purchasing decisions. Moreover, the study will assess the effectiveness of different marketing strategies in promoting eco-friendly products, comparing the impact of various techniques such as social media campaigns, celebrity endorsements, cause-related marketing, and green advertising on consumer behavior and purchase intentions. This comprehensive investigation will provide valuable insights for businesses seeking to enhance their marketing approaches for eco-friendly products in diverse cultural contexts and through various communication channels.

References

Abdal, A., & Suman, F. (2022). Industry 4.0 and green sustainable manufacturing: A smarter and effective process management. *Journal of Mountain Research, 17*(1), 67-72.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211.

Alamsyah, D. P., Othman, N. A., Setiadi, A., Mazia, L., & Hanafiah, R. M. (2021). The effects of customer perceived value and perceived innovation on green products. *Management Science Letters,* 1407–1414.

Braimah, M. S., Amoako, G. K., Abubakari, A., Ampong, G. O. A., & Ofori, K. S. (2023). *Green perceived value and consumer attitudes in the light of the SDGs: A replication study from a developing economy.* Retrieved from https://www.emerald.com/insight/content/doi/10.1108/SBR-03-2022-0088/full/html

Cammarelle, A., Bimbo, F., Lombardi, M., & Viscecchia, R. (2021). Health and eco-innovations in food packaging. *Sustainable Packaging,* 31–70.

Cheema, S., Durrani, A. B., Khokhar, M. F., & Pasha, A. T. (2015). Influence of green marketing mix and customer fulfillment: An empirical study. *International Journal of Sciences: Basic and Applied Research (IJSBAR), 24*(6), 168-177.

De Winter, J.C.F. and Dodou, D. (2010) The Driver Behavior Questionnaire as a Predictor of Accidents: A Meta-Analysis. *Journal of Safety Research*, 41, 463-470.

Delmas, M., & Grant, L. (2014). Eco-labeling strategies and price-premium: The wine industry puzzle. *Business and Society. 53*(1), 6-44.

Gani, Dr, S. H. (2021). Purchase intentions and consumers attitude towards environment: A study of eco-friendly products in FMCG sector. *Arab Journals Platform.* Retrieved from https://digitalcommons.aaru.edu.jo/aja/vol37/iss3/10

Gilg, A. W., Barr, S., & Ford, N. (2005). *Green consumption or sustainable lifestyles? Identifying the sustainable consumer.* Futures *37*(6),481–504.

Gonzalez, D. A. H. (2020). Intrinsic and extrinsic factors that influence consumers' intention and purchase behavior: The case of eco-labeled dairy products. *Pontificia*

Universidad Católica del Perú. Retrieved from
http://hdl.handle.net/20.500.12404/16740

Hutcheon, M., Maharaj, S., Kalagna, K., & Plattner, M. (2021, June 23). *Consumers expect brands to address climate change.* WSJ. Retrieved from https://deloitte.wsj.com/cmo/2021/04/20/consumers-expect-brands-to-address-climate-change/

Hwang, J., Park, Y., & Kim, Y. (2016). Why do consumers respond to eco-labels? *The case of Korea. Springer Plus, 5*(1). Retrieved from https://doi.org/10.1186/s40064-016-3550-1

Jain, S. K., & Kaur, G. (2004). Green marketing: An attitudinal and behavioural analysis of Indian consumers. *Global Business Review, 5*(2), 187-205.

Junaedi, M. F. S. (2007). The role of consumer's knowledge and emotion in ecological issues: An empirical study on green consumer behaviour. *Gadjah Mada International Journal of Business, 9*(1), 81–99.

Kotler, P., & Keller, K. L. (2012). Marketing management (14th ed.). *Pearson Education.*

Mahmoud, T. O. (2018). Impact of green marketing mix on purchase intention. *International Journal of Advanced and Applied Sciences, 5*(2), 127–135.

Malmqvist, T. (2022) *More consumers are serious about climate change. Are business and government listening?* Retrieved from https://www.greenbiz.com/article/more-consumers-are-serious-About-climate-change-are-business-and-government-listening

Moisander, J. (2007). Motivational complexity of green consumerism. *International Journal of Consumer Studies, 31*, 404-409.

Saltaji, I. M. F. (2013). Corporate governance relations with corporate sustainability. *Internal Auditing & Risk Management, 2*(30), 1-12.

Schiffman, L. G., & Kanuk, L. L. (2006). Consumer behavior. *London: Prentice Hall.*

Schils, L. (2022). *How shoppers cope with inflation and FMCG master behavior change.* GfK. Retrieved from https://www.gfk.com/insights/article-how-shoppers-cope-with-inflation-and-fmcg-master-behavior-change

Thøgersen, J. (2021, December). Consumer behavior and climate change: consumers need considerable assistance. *Current Opinion in Behavioral Sciences, 42,* 9–14.

Usrey, B., Palihawadana, D., Saridakis, C., & Theotokis, A. (2020). How downplaying product greenness affects performance evaluations: Examining the effects of implicit and explicit green signals in advertising. *Journal of Advertising, 49*(2), 125–140.

Wangari, N. M. (2018). Consumer *Behavior and Marketing Mix Factors in the Purchase of Fast Moving Goods in Large Supermarkets in Nairobi County.* University of Nairobi.

Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. *Journal of Marketing, 52,* 2-22.