

Exploring Factors Affecting Behavioral Desire Towards Behavioral And Sharing Intention Of Youths In Energy Saving Campaign

Tippawan Lertattthakornkit¹, Parkpoom Niamsri², Kazi Ziaul Zafri³, Abdul Rahman bin S Senathirajah⁴, Lin Jing⁵, Supasak Boondee⁶

¹Faculty of Management, Shinawatra University, Thailand

²Independent Scholar, Thailand

³Faculty of Management, Shinawatra University, Thailand

⁴Faculty of Business and Management, INTI International University, Malaysia

⁵International Institute of Management and Business, Belarus

⁶International College Pathumthani University, Thailand

EMAIL: ¹tippawan.l@siu.ac.th, ²parkpoom.n@gmail.com, ³kazi.z@siu.ac.th,

⁴arahman.senathirajah@newinti.edu.my, ⁵jingling@imb.by

Abstract

Due to the rising impact of climate change, global environmental concerns have risen dramatically in recent years. Public opinion is now demanding that governments take meaningful action with deliberate social marketing emerging as a critical tool to support the United Nations Sustainable Development Goals, particularly responsible consumption and production and climate action as a result of the increased environmental consciousness among people. This study aims to segment and profile the young generation, which plays a more important role in taking part in global environmental protection action than older people. The investigation framework was designed on the theory of the Extended Model of Goal-Directed Behavior (EMGB), Elaboration Likelihood Model (ELM), and Norm Activation Model (NAM), which are used to determine psychographic and behavioral segmentation, specifically shedding the physical activity behavioral change. Purposive sampling was utilized in this quantitative study to gather data from a survey of 427 young Thai people who either participated in the Energy Saving Campaign or had particular expertise. As the results of structural equation modeling (SEM), frequency of past behavior, anticipated emotions, and goal desire have positive effects on behavioral desire towards behavioral intention. Conversely, the direct effect of personal norm positively influences behavioral intention and sharing intention. Furthermore, the direct effect of subjective norms, perceived behavioral control, and media credibility have a strong impact exclusively on sharing intention. The findings contribute to educational institutions, social marketers, and governments establish sustainable marketing strategies that are aligned with the SDGs. Campaigns that use appealing ideas, suitable media, and reputable influencers may effectively promote young people's values and sustain their participation in environmental action, resulting in a more sustainable future.

Keywords: Social Marketing, Energy Saving Program, Behavioral Change, Climate Action, Sustainable Marketing Strategy

1. INTRODUCTION

Achieving net zero carbon emissions for global society by 2050 and limiting global warming to 1.5°C are two of the most challenging goals set forth in the twenty-first century (Höhne et al., 2016; Huang & Zhai, 2021). Globally, carbon emission have been accelerating at an exponential pace since the 1970s (Schmalensee et al., 1998), and Thailand is not an exception. Thailand's economy has steadily shifted from agricultural to industrial prosperity. This industry-led boom has boosted energy demand, resulting in higher pollution levels in the country. Thailand's largest sources of carbon emissions originate from the energy sector, which includes power generation, transportation, industry, buildings (Praditsmanont & Chungpaibulpatana, 2008; Xu et al., 2024; Wongmajarapinya et al., 2024), and families, accounting for 69.96% of total carbon emissions (Thailand's Fourth Biennial Update Report, 2023). In addition, the nation is seeing the negative effects of climate change as carbon emissions rise. To address this issue, the Energy Conservation Development Plan of the Ministry of Energy of Thailand aims to reduce energy consumption by 20% in 2030, or about 30,000

ktoes (Ministry of Energy, 2011). Typically, public engagement campaigns are established by governments and environmental groups to educate citizens about the effects and threats of climate change and to enhance knowledge, support proactive attitudes, change in energy consumption habits and behavioral changes of environmental protection (Bertrand et al., 2011; Jiang et al., 2023; Teswanich, Anutariya, & Wuwongse, 2006). However, the effectiveness of these campaigns is determined by a variety of factors, including attributes of the target audience. Audience segmentation has been explored and found to be effective in a variety of fields, including social marketing (Kotler & Zaltman, 1971). The objectives of a communication campaign are taken into consideration when audience segmentation is used to identify groups of people within a wider population of interest that share similar characteristics (such as attitudes, beliefs, or actions) (Channuwong et al., 2025; Maibach et al., 2011). However, only a few research have used segmentation in the context of social marketing (Schuster et al., 2015; Wettstein & Suggs, 2016; French, 2016). Thus, designing and targeting public campaigns will contribute to existing literature from audience segmentation perspectives.

The idea of social marketing, which is the application of marketing and communication strategies by nonprofit organizations to change consumer behavior in order to accomplish socially desirable goals, serves as the foundation for this study (Lee & Kotler, 2019). The process of social marketing effectiveness should focus on four key points: a) identifying target audience segmentation, b) adapting message content, c) identifying source credibility, and d) adapting integrated social advertising campaigns (Noble & Camit, 2005). In general, most social marketing has lagged in using behavioral theories; just 33 of the 143 initiatives found in a recent analysis (23%) acknowledged employing theories or models (Truong & Dang, 2017). Most often used theory is the Theory of Planned Behavior (TPB) (Ajzen, 1991), which is used to predict behavioral changes in a social marketing context, but TPB used in the past is not enough to predict behavioral change as well as the Extended Model of Goal-Directed Behavior (EMGB) (Perugini & Bagozzi, 2001). However, the relationship between market segmentation and social marketing has only been the subject of a relatively small number of research (Dietrich, 2017; Walsh et al., 2010; Gray & Bean, 2011). Specifically, market segmentation in social marketing for use in environmental psychology and climate change communication has been the subject of very few empirical investigations (Hine et al., 2014; Sütterlin et al., 2011; Channuwong et al., 2025). For example, in order to understand how different groups would respond to potential incentives to promote home energy saving, Gray and Bean (2011) used psychographic, behavioral, and demographic criteria to classify the market. These studies show divergent responses to social marketing strategies. Additionally, Walsh et al. (2010) divided the smoker market into categories based on psychographic characteristics and discovered that the divisions reacted differently to social advertising that promoted quitting smoking.

Consequently, this study's integration of three theories is significant in the context of social marketing campaigns: EMGB (Perugini & Bagozzi, 2001), Elaboration Likelihood Model (ELM) (Petty & Cacioppo, 1986), and Norm Activation Model (NAM) (Schwartz, 1977) that may discover demographic, geographic, psychographic, and behavioral segmentation grounds in order to drive behavior modification in various areas of an energy-saving program. According to EMGB, the subjective norm is an essential factor of a person's behavior (i.e., what significant others believe about the actions), whereas personal norm (i.e., internal norm pertaining to a certain behavior) predicts personal behavior for NAM. Moreover, according to ELM, attitude plays a significant influence in persuasive communication. And EMGB's theoretical underpinnings, attitude is a powerful determinant of behavioral intention, which is seen as a crucial element in forecasting actual behavior. As a result, the three theoretical models are beneficial in this study. From previous findings, Schuster et al. (2015) identified demographic, geographic, behavioral, and psychographic segmentation by testing TPB to provide additional insight for changing children's walking behavior. Furthermore, this study additionally emphasizes information-sharing behavior, which is a very new and unexplored subject of inquiry, especially environmental communication. Although previous research by Pop, Săplăcan, and Alt (2020) found that the influence of social media information sharing on consumers' desire to buy green products has been examined, it has not been identified consumer group characteristics.

The goal of this research is to identify distinct market segments in Energy Saving campaigns, each identified by physiographic and behavioral characteristics based on applying three theories: EMGB (Perugini & Bagozzi,

2001), ELM (Petty & Cacioppo, 1986), and NAM (Schwartz, 1977). This research attempts to examine the differences among the consumer segments in terms of their attitude, behavior, and social media perception towards willingness to change and willingness to share information.

2. LITERATURE REVIEW

The current study attempts to use three integrated theories as the theoretical basis for segmenting target groups under psychological and behavioral segmentation and to what extent they influence their behavior changes. The primary distinction between behavioral and psychographic segmentation is that behavioral segmentation focuses on the customer's actions i.e., usage/frequency, customer loyalty, past experience, etc., whereas psychographic segmentation considers the customer's values, attitudes, and personality characteristics. Tkaczynsk, Rundle-Thiele, and Beaumont (2009) state that psychographic segmentation sought to get insights into people's attitudes, awareness and knowledge, emotion, religiosity, social norms, and enabling variables, whereas behavioral segmentation included personal hygiene behaviors (Tkaczynski et al., 2009). In terms of media and information sources, the findings of Rodgers, Chen, Duffy, and Fleming (2007) imply that there is predictive value in integrating media characteristics in the segmentation process. The predictive power of health habits, including the use of aspirin, vitamin consumption, diet, and exercise, has improved, according to this research.

Psychological Segmentation

2.1 EMGB Theory

Based on the EMGB, an attempt was made to broaden and deepen the understanding of the TPB's concept of decision-making. TPB has been widely utilized in the fields of environmental psychology and used to categorize markets in social marketing (Kubacki et al., 2015; De Angelis et al., 2021). The concept of EMGB added components of attitude, subjective norm, and perceived behavioral control in addition to the four primary areas of improvement over the TPB theory—past behavior, predicted emotion, goal desire, and behavioral desire (Perugini & Conner, 2000).

2.1.1 Environmental Attitude is an individual's overall appraisal of engaging in the relevant behavior to respond positively or negatively (Perugini & Bagozzi, 2001).

2.1.2 Subjective norm is defined as social pressure on an individual's beliefs regarding what activity should or should not be performed (Perugini & Bagozzi, 2001).

2.1.3 Perceived Behavioral Control is the extent to which an individual thinks their ability to do or engage in the behavior (Perugini & Bagozzi, 2001).

2.1.4 Anticipated Emotions relate to pleasant or negative emotions associated with achieving or failing a goal and changing behavior (Perugini & Bagozzi, 2001).

2.1.5 Goal Desire reflects the commitment to pursue a specific goal, which influences behavior (Perugini & Bagozzi, 2001).

2.2 NAM Theory

According to the NAM theory, the level of an individual's responsibility for such activity, which is represented in personal norm, determines his or her pro-environmental behavior. When moral requirements to act pro-socially and ecologically are reflected in people's standards, they demonstrate pro-environmental actions (Schwartz, 1977).

2.2.1 Personal Norm is referred to as moral norms, which are described as a person's judgment of whether a certain course of action is right or wrong (Schwartz, 1977). In other words, the degree to which a person's activity conforms to their personal norm will determine whether they feel proud or guilty. Previous studies, including De Angelis et al. (2021), determined that five distinct categories of commuters are attitudes, personal norm and restriction, travel pleasure, and other sociodemographic and psychological.

2.3 ELM Theory

The ELM theory describes how people are most likely to be influenced by the information they encounter. ELM confirms that attitude change can happen via one of two routes: assessment of relevant information (central path) to less effort (persuasion path), including source credibility, reputation, mood, etc. (peripheral route to persuasion) (Petty & Cacioppo, 1986). When individuals evaluate the informational quality or

perceived argument strength, they adopt a central route, whereas source credibility is a perception that uses a peripheral route. According to ELM, the three elements of source, media, and message credibility may be used to investigate information credibility. The credible content of the message is more likely to have come from credible sources. In the same direction, readers' perception of the reliability of the content depends on the credibility of the media. If people think the media is very credible, they will depend on it for information and be exposed to more media messages (Srinivasan & Barclay, 2017).

2.3.1 Message Credibility relates to the perceived credibility of the message being conveyed that are information quality, which is accurate, current, complete, understandable, and objective. In other words, readers' perception of the credibility of the message can be accessed by the content of the medium that they will rely on (Li & Suh, 2015). This study mainly focuses on how the quality of information presented influences the decision-making process.

2.3.2 Media Credibility refers to the perceived credibility levels of a particular media that people utilize. Researchers investigated the credibility of social media platforms using the criteria for assessing medium credibility for example, blogs, Facebook, Twitter, etc. Few empirical studies addressed the information credibility of social media from the standpoint of users, whereas earlier research focuses on design characteristics (Li & Suh, 2015; Dwivedi et al., 2021). This study focuses on media dependency that has capabilities to satisfy audience needs. Individuals who sense a high level of media reliance are more inclined to accept media content as reliable.

2.3.3 Source Credibility relates to the degree to which information sources are regarded as competent, trustworthy, and attractive (Eisend, 2006). For example, the usage and sharing of information by receivers are frequently influenced by the expertise or trustworthiness of the source relevant to the communication topic on social media. A reliable and trustworthy source will deliver reliable information (Srinivasan & Barclay, 2017).

Behavioral Segmentation

2.4 EMGB Theory

2.4.1 Past Behavior refers to the frequency of previous experience and becomes an automatic response to perform behavior (Perugini & Bagozzi, 2001).

2.4.2 Behavioral Desire is the primary motive behind an individual's purpose, whether it be pleasant or undesirable for them to carry out (Perugini & Bagozzi, 2001).

2.4.3 Behavioral Intention is a motivational factor which in turn is influenced by a person's attitude, subjective norm, perceived behavioral control, expected emotions, desired objective, previous conduct, and behavioral desire (Perugini & Bagozzi, 2001).

2.4.4 Intention to Sharing Knowledge determines an individual's behavioral intention in sharing information with others (Ajzen & Fishbein, 1975). According to the EMGB, factors such as attitude, perceived behavioral control, subjective norm, goal desire, anticipated emotions, and behavioral desire all influence the intention to share information.

Several studies have investigated energy-saving behavior using psychological and behavioral segmentation. For instance, Yang et al. (2016) found that persons with a strong feeling of environmental responsibility and a curtailment mindset are much more likely to participate in both direct and indirect energy curtailment activities from a psychological viewpoint. In a similar vein, Yue et al. (2013) discovered that socio-demographic traits for example, gender, age, household structure, income level, and educational background all have a significant impact on energy-saving behavior. Through the use of behavioral segmentation, they were able to show how frequently users adopt usage-reduction behaviors, which call for higher levels of energy-saving awareness and a better ability to pay for energy-efficient items. Słupik et al. (2021) observed that, from a behavioral segmentation standpoint, attitudes toward energy conservation are influenced by age, gender, education level, home country, job status, number of occupants in a residence, average monthly income per person, and geography. However, behavioral and psychological segmentation applies in the research on energy-saving behavior, which demonstrates that behavioral desire towards behavioral and shared purpose is not well-defined (Ohnmacht et al., 2017; Karlin et al., 2014). Moreover, to the best of the author's knowledge, there is no such study employing EMGB theory, NAM theory, and ELM theory in the literature on energy

saving to examine crucial factors influencing behavior related to energy saving campaigns. In order to close this gap, this study investigated the components that influence behavioral desire and sharing intention among youths in energy-saving campaigns from both a behavioral and psychological perspective as shown in figure 1.

Conceptual Framework

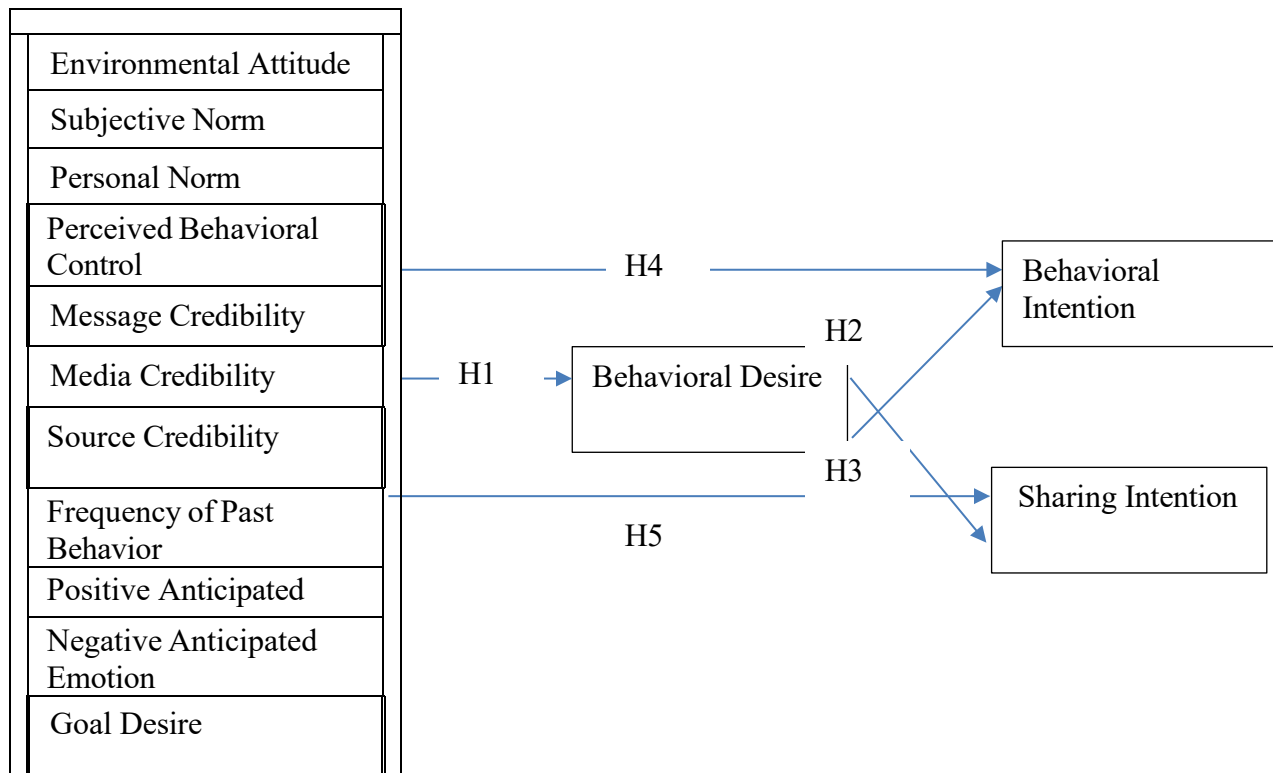


Figure 1: Conceptual Framework

3. RESEARCH METHODOLOGY

Sampling and Data Collection Procedure

The study used a quantitative method with questionnaires serving as the major data gathering tool. According to the National Statistical Office of Thailand in 2021, Thailand population was 66.17 million people. The target population of internet users in Thailand at large are youth respondents who aged 15-24 years and registered users of online information via smartphone and computer for amount 8.29 million people. This research agrees that 200 samples should be the minimum sample size required to compute SEM, as did Hair et al. (2010). The indicated numbers in this study correspond to what Hair et al. (2010) suggested that 100–400 samples are sufficient to test any hypothesized relationships.

As a result, this study's sample frame was distributed to 500 respondents. The target respondents are chosen using purposive sampling, which is based on the researcher's view on the sample's suitability in reflecting the target community (Cooper & Schindler, 2008). The selection of target respondents recruited youth respondents who have ever known online Energy Saving Campaign, for example of Earth Hour campaign, which is a light out event held worldwide toward the end of March that brings people together to take action on environmental concerns and save the environment throughout the year. Respondents were invited to engage in this study by clicking on a link to a Google Docs online questionnaire. They were asked to answer all of the survey questions. After removing non-target respondent replies and incomplete responses, 427 questionnaires were deemed appropriate for the study. The survey received an of 85.4% response rate.

Research Instrument/Questionnaire

The questionnaire items were developed using past research and validated measures to meet the setting of the current investigation. The questionnaire for this study is divided into four parts based on the study of Dibb et al. (2002) that are psychological segmentation, behavioral segmentation, and demographic data. The scale measurement of psychological segmentation, and behavioral segmentation used to assess the response is an interval scale. Participants must indicate their level of agreement or disagreement on each issue, which is operationalized by using five-point Likert response scale which ranges from “1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree to 5 = strongly agree”.

The first part included screening questions to select target responders. The second part asked about the psychological segmentation; “environmental attitude, subjective norm, perceived behavioral control, positive and negative anticipated emotions, and goal desire” were guided by Perugini and Bagozzi (2001); personal norm was guided by Schwartz (1977); message credibility and media credibility were guided by Li and Suh (2015); and source credibility was guided by Eisend (2006). The third part asked about the behavioral segmentation; “frequency of behavior, behavioral desire, and behavioral intention” were guided by Perugini and Bagozzi (2001); and sharing intention was guided by Fishbein and Ajzen (1975). And the fourth part was demographic data.

4. RESULTS

The demographic profiles of 427 respondents were described as the following: most of the respondents are female (67%), age 18-24 years (80.09%), bachelor degree held (73.1%), student (80.8%), and income is less than 10,000 Baht/month (57.4%). Social networking (64.4%) is the most social media that respondent used to search for information.

Measurement Model Assessment

This section discusses the reliability and validity of the measurement items.

For the reliability analysis, the Cronbach alpha value is a measure of internal consistency, or how well a multi-item test correlates with the total number of items that try to assess the same construct inside the same test. Table 1 displays the range of Cronbach's Alpha values for 14 constructs and 55 measuring items, which were 0.87 to 0.92. According to Hair et al. (2010), these criteria values are appropriate since the range of Cronbach's Alpha values met the required level of 0.70 or above.

The construct validity of whether the targeted indicators' methodology aligns with the theoretical concept is used for the validity test in this study. Campbell and Fiske's (1959) Multitrait-Multimethod (MTMM) approach is the most widely acknowledged method in an analysis used to examine the construct validity of a group of measures in a research. The MTMM method highlights the relevance of convergent and discriminant validity approaches in determining the degree of construct validity of links between theoretical constructs and observable measures (Campbell & Fiske, 1959).

The convergent validity of the measurement model will be determined by the Average Variance Extracted (AVE) and Composite Reliability (CR), according to this criterion. The CR is defined as an “indication of a latent construct derived from the shared variance across observable data” (Fornell & Larcker, 1981). The AVE indicates that “the sum of squares of fully standardized factor loadings divided by the sum plus total of the error variances for indicators yields the construct for each” (Fornell & Larcker, 1981). Referring to convergent validity as shown in Table 1, the CR range from 0.87 to 0.92, in which all constructs are greater than 0.70 that indicating these values of construct are acceptable (Hair et al., 2010). The AVE values range from 0.62 to 0.77, in which all constructs from the standardized factor loading are greater than 0.50 that indicating these values of construct are acceptable (Fornell & Larcker, 1981).

The results for discriminant validity reveal that the square root of AVE values on the main diagonal are bigger than the pair of correlation coefficients between constructs on the off-diagonal. Fornell and Larcker (1981) stated that in order to guarantee adequate discriminant validity, the square root of each AVE value for a construct in the diagonal should be greater than the correlation coefficient (off-diagonal) involving the constructs in the pertinent rows and columns.

Table 1. Construct Correlation Matrix, Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE)

	EA	SN	PN	PBC	MSC	MDC	SC	PB	PAM	NAM	GD	BD	BI	SI
EA	0.79													
SN	0.46	0.82												
PN	0.65	0.37	0.80											
PBC	0.56	0.46	0.55	0.81										
MSC	0.45	0.37	0.49	0.47	0.82									
MDC	0.55	0.40	0.48	0.55	0.54	0.79								
SC	0.43	0.29	0.48	0.37	0.59	0.57	0.82							
PB	0.19	0.17	0.11	0.27	0.10	0.14	0.03	0.88						
PAM	0.52	0.40	0.50	0.63	0.42	0.49	0.47	0.17	0.87					
NAM	0.28	0.23	0.32	0.36	0.13	0.21	0.08	0.46	0.28	0.87				
GD	0.31	0.34	0.22	0.50	0.12	0.22	0.09	0.54	0.36	0.65	0.85			
BD	0.43	0.37	0.41	0.56	0.30	0.34	0.27	0.35	0.53	0.40	0.52	0.87		
BI	0.45	0.41	0.38	0.57	0.29	0.34	0.20	0.50	0.50	0.48	0.70	0.70	0.84	
SI	0.51	0.48	0.52	0.52	0.47	0.53	0.44	0.31	0.54	0.28	0.37	0.50	0.60	0.81
AVE	0.62	0.67	0.64	0.66	0.68	0.62	0.67	0.77	0.76	0.75	0.72	0.75	0.70	0.66
CR	0.87	0.89	0.87	0.89	0.91	0.89	0.91	0.91	0.91	0.90	0.88	0.92	0.90	0.89
α	0.87	0.89	0.87	0.88	0.91	0.88	0.91	0.91	0.91	0.89	0.89	0.92	0.90	0.89

The confirmatory factor analysis (CFA) is a technique for determining the level of model fit, the sufficiency of the factor loading, the explained variances, and the standardized residuals for the measurement variables (Ho, 2006). After testing 14 constructs in a CFA, the findings indicated a satisfactory model fit: CFI = 0.85, NFI = 0.81, TLI = 0.84, and RMSEA = 0.07. Hu and Bentler (1998) state that a CFI of 0.80, along with an NFI of 0.80, a TLI of 0.80, and an RMSEA of 0.08, may be used to infer a satisfactory model fit.

Structural Model

In this study, structural equation modeling (SEM) was used to explore factors affecting behavioral desire towards behavioral and sharing intention of youths in energy saving campaign. The findings of this study are summarized in Table 2, which presents the results of hypothesis testing. Based on this study criteria, hypotheses are supported as C.R. values are more than 1.96. For the hypothesis H1, the study results show that some hypotheses are accepted—frequency of past behavior (C.R. = 2.905, p-value < 0.01), positive anticipated emotion (C.R. = 3.716, p-value < 0.001), and goal desire (C.R. = 2.466, p-value < 0.05) have positive relationships with behavioral desire in energy saving campaign. Contrary to predictions, the study's findings show that some hypotheses are not accepted—environmental attitude (C.R. = 0.065, p-value > 0.05), subjective norm (C.R. = 0.701, p-value > 0.05), personal norm (C.R. = 1.559, p-value > 0.05), perceived behavioral control (C.R. = 1.427, p-value > 0.05), message credibility (C.R. = 0.066, p-value > 0.05), media credibility (C.R. = -1.004, p-value > 0.05), source credibility (C.R. = 0.996, p-value > 0.05), and negative anticipated emotion (C.R. = -0.108, p-value > 0.05) have no relationships with behavioral desire in energy saving campaign. H2 hypothesis is accepted, behavioral desire plays a significant role in behavioral intention in energy saving campaign (C.R. = 6.032, p-value < 0.001). H3 hypothesis is not accepted, behavioral desire is not significant relationship with sharing intention in energy saving campaign (C.R. = 1.821, p-value > 0.05). For the hypothesis H4, the study results show that some hypotheses are accepted—personal norm (C.R. = 2.248, p-value < 0.05), frequency of past behavior (C.R. = 3.452, p-value < 0.001), positive anticipated emotion (C.R. = 2.075, p-value < 0.05), negative anticipated emotion (C.R. = -2.709, p-value < 0.05), and goal desire (C.R. = 5.13, p-value < 0.001) have positive relationships with behavioral intention in energy saving campaign.

Contrary to predictions, the study's findings show that some hypotheses are not accepted—environmental attitude (C.R. = 0.092, p-value > 0.05), subjective norm (C.R. = 0.293, p-value > 0.05), perceived behavioral control (C.R. = -1.371, p-value > 0.05), message credibility (C.R. = 1.911, p-value > 0.05), media credibility (C.R. = 0.489, p-value > 0.05), and source credibility (C.R. = -1.912, p-value > 0.05) have no relationships with behavioral intention in energy saving campaign. For the hypothesis H5, the study results show that some hypotheses are accepted—subjective norm (C.R. = 2.748, p-value < 0.01), personal norm (C.R. = 3.836, p-value < 0.001), perceived behavioral control (C.R. = -2.412, p-value < 0.05), media credibility (C.R. = 2.711, p-value < 0.01), frequency of past behavior (C.R. = 4.401, p-value < 0.001), positive anticipated emotion (C.R. = 2.439, p-value < 0.05), negative anticipated emotion (C.R. = -3.424, p-value < 0.001) and goal desire (C.R. = 2.544, p-value < 0.05) have positive relationships with sharing intention in energy saving campaign. Contrary to predictions, the study's findings show that some hypotheses are not accepted—environmental attitude (C.R. = -1.161, p-value > 0.05), message credibility (C.R. = 1.526, p-value > 0.05), source credibility (C.R. = 0.067, p-value > 0.05) have no relationships with sharing intention in energy saving campaign.

Table 2. Structural Relationships between the Factors Affecting Behavioral Desire towards Behavioral and Sharing Intention of Youths in Energy Saving Campaign

Hypothesis No.	Structural Path	Standardized Regression Weight (β)	Critical Ratio (C.R.)	Results
H1a	Environmental Attitude → Behavioral Desire	0.005	0.065	Not Accepted
H1b	Subjective Norm → Behavioral Desire	0.039	0.701	Not Accepted
H1c	Personal Norm → Behavioral Desire	0.14	1.559	Not Accepted
H1d	Perceived Behavioral Control → Behavioral Desire	0.143	1.427	Not Accepted
H1e	Message Credibility → Behavioral Desire	0.005	0.066	Not Accepted
H1f	Media Credibility → Behavioral Desire	-0.074	-1.004	Not Accepted
H1g	Source Credibility → Behavioral Desire	0.075	0.996	Not Accepted
H1h	Frequency of Past Behavior → Behavioral Desire	0.166	2.905**	Accepted
H1i	Positive Anticipated Emotion → Behavioral Desire	0.262	3.716***	Accepted
H1j	Negative Anticipated Emotion → Behavioral Desire	-0.009	-0.108	Not Accepted

H1k	Goal Desire → Behavioral Desire	0.267	2.466*	Accepted
H2	Behavioral Desire → Behavioral Intention	0.341	6.032***	Accepted
H3	Behavioral Desire → Sharing Intention	0.117	1.821	Not Accepted
H4a	Environmental Attitude → Behavioral Intention	0.006	0.092	Not Accepted
H4b	Subjective Norm → Behavioral Intention	0.014	0.293	Not Accepted
H4c	Personal Norm → Behavioral Intention	0.176	2.248*	Accepted
H4d	Perceived Behavioral Control → Behavioral Intention	-0.119	-1.371	Not Accepted
H4e	Message Credibility → Behavioral Intention	0.117	1.911	Not Accepted
H4f	Media Credibility → Behavioral Intention	0.032	0.489	Not Accepted
H4g	Source Credibility → Behavioral Intention	-0.126	-1.912	Not Accepted
H4h	Frequency of Past Behavior → Behavioral Intention	0.176	3.452***	Accepted
H4i	Positive Anticipated Emotion → Behavioral Intention	0.131	2.075*	Accepted
H4j	Negative Anticipated Emotion → Behavioral Intention	-0.195	-2.709*	Accepted
H4k	Goal Desire → Behavioral Intention	0.516	5.13***	Accepted
H5a	Environmental Attitude → Sharing Intention	-0.097	-1.161	Not Accepted
H5b	Subjective Norm → Sharing Intention	0.154	2.748**	Accepted
H5c	Personal Norm → Sharing Intention	0.358	3.836***	Accepted

H5d	Perceived Behavioral Control → Sharing Intention	-0.246	-2.412*	Accepted
H5e	Message Credibility → Sharing Intention	0.107	1.526	Not Accepted
H5f	Media Credibility → Sharing Intention	0.207	2.711**	Accepted
H5g	Source Credibility → Sharing Intention	0.067	0.887	Not Accepted
H5h	Frequency of Past Behavior → Sharing Intention	0.263	4.401***	Accepted
H5i	Positive Anticipated Emotion → Sharing Intention	0.179	2.439*	Accepted
H5j	Negative Anticipated Emotion → Sharing Intention	-0.284	-3.424***	Accepted
H5k	Goal Desire → Sharing Intention	0.28	2.544*	Accepted

Remark: “*** = $p < 0.001$, ** = $p < 0.01$, * = $p < 0.05$, Not Accepted = insignificant”

5. CONCLUSIONS AND DISCUSSION

As the findings of this research, it suggests that environmental attitude, subjective norm, personal norm, perceived behavioral control, message credibility, media credibility, source credibility, and negative anticipated emotion indicate no impact on behavioral desire towards behavioral intention and sharing intention in energy saving campaign. This finding is consistent with previous research conducted by De Groot, Abrahamse, and Jones (2013), which found that many pro-environmental actions, despite being perceived as morally correct or in accordance with personal norm, and even when people have a positive attitude toward them, are not commonly practiced by the majority of people. A considerable proportion of the participants in this survey did not show the desired behavior, or they noticed that the majority of others were not actively participating in energy saving campaign. In addition, Vining and Ebreo (2002) indicate that there is no significant relationship between self-efficacy and environmental desire because environmental campaigns are less related to controllability than other campaigns (Katangchol et al., 2023; Lertatthakornkit & Intravisit, 2021), such as health risk behavior and use of public transportation. They also argue that some online activities, such as joining groups, traveling abroad, playing games, and buying for items online, may not have goals or decisions that are readily attained or require little effort (Channuwong & Kantatian, 2012; Bagozzi & Dholakia, 2006). Despite the fact that there is a strong association between positive anticipated emotion and behavioral desire, there is no significant relationship between negative anticipated emotion and behavioral desire. According to Song et al. (2012), in the context of a natural festival setting, positive anticipated emotion is significantly more important to behavioral desire than negative anticipated emotion. Positive anticipated emotions like contentment, happiness, gladness, and pride serve as the participants' motivation for engaging in their environmental activities.

While some constructs might not affect behavioral desire at all, it's vital to remember that some constructs directly affect behavioral intention in energy saving campaign such as personal norm and negative anticipated

emotion. These findings hold true even when the components of the integrative theory of TPB and NAM are explained different predictors for behavioral intentions. TPB describes self-interest reasons that foster human activity, while NAM explains pro-social motives (Schwartz, 1977). Fredrickson and Branigan (2005) discovered that PAEs, or pleasant emotions expected to result from engaging in the conduct, and NAEs, or negative emotions expected when not engaging in the behavior, have roughly equal direct influence on behavioral intentions. This shows that both sorts of predicted emotions are important in understanding people's intentions to help battle climate change. Using the NAM concept was utilized by Kim, Che, and Jeong (2022) to anticipate consumers' pro-environmental behavior in decreasing food waste. However, message, media, and source credibility have no significant relationship with behavioral desire towards behavioral intention and sharing intention, and also no direct effect on behavioral intention in energy saving campaign. According to Vidyanata, Sunaryo, and Hadiwidjojo (2018), source trustworthiness has little bearing on the likelihood of making a purchase. The reason for this is because when consumers want to buy a product, they will think about the product's characteristics, such product quality and cost, as opposed to relying on information from influencers. Influencers that advertise comparable products from other brands will also reduce consumers' buying intentions. Furthermore, Ning et al. (2022) found that media credibility cannot directly influence influenza vaccination intentions among respondents who were confused or uncertain due to media information. While social media has shown to have unparalleled benefits in the dissemination of information based on new media technologies, it has also brought to light several shortcomings in social media, including a lack of professionalism, authenticity, and scientific credibility in communication. According to studies, social media raises issues such disseminating inaccurate information, transgressing boundaries between personal and professional life, and damaging the communication industry's reputation.

Although most constructs directly influence the sharing intention, it's important to note that certain constructs, such as environmental attitude, message credibility, and source credibility, do not affect the sharing intention. Ecological awareness is formed from ecological education and understanding of the issues to be handled. The foundation of environmentally conscious everyday behavior is people's awareness of the environment, and changing ecological attitudes are closely related to knowledge and information (Rahmat et al., 2023; Praditsmanont & Chungpaibulpatana, 2008). According to the findings of Tirana and Tjakraatmadja (2019), attitude has a favorable but statistically negligible impact on the intention to engage in information sharing. This implies that having a positive attitude does not ensure an increase in the desire of professionals to share their expertise. If there is an effect, it means that attitude can either increase or decrease experts' willingness to participate in information sharing activities. A person's attitude is not a significant component or a factor that will unquestionably motivate them to share their knowledge. If an expert has a bad attitude toward information sharing, it does not necessarily mean that they do not intend to share knowledge. In conclusion, the knowledge gathered from these customers highlights the crucial importance of source expertise and trustworthiness as basic requirements for creating source credibility. Consumers give importance to both dimensions of relevance once these requirements have been met, with message relevance more likely to be enhanced when recipients' assessments of persona resemblance and usage similarity are also very positive. In other words, any need that is not met is a crucial flaw that helps to undermine the credibility of the source and/or the relevance of the evaluation as the findings of O'Reilly et al. (2016). It would be advantageous to specifically provide indicators that highlight the similarity between the source and the reader and motivate reviewers to highlight their product usage or intended usage would be valuable.

Implications

This study's empirical findings have theoretical and practical implications that are the following:

For theoretical implication, this study presents the new knowledge by integrating three behavioral change theories in social market segmentation—EMGB (Perugini & Bagozzi, 2001), ELM (Petty & Cacioppo, 1986), and NAM (Schwartz, 1977) are used to determine psychographic and behavioral segmentation, specifically shedding the physical activity behavioral change of young generation. In particular, psychographic segmentation is concerned with the customer's attitude, subjective norm, perceived behavioral control,

personal norm, anticipated emotions, goal desire, message credibility, media credibility, and source credibility, whereas behavioral segmentation is concerned with the customer's behaviors frequency of past behavior, behavioral desire, and behavioral intention. The variables developed by the three theories demonstrate both direct and indirect impacts on behavioral change. The strong effect of the frequency of past behavior, as defined by behavioral segmentation, on behavioral desire, behavioral intention, and sharing intention is notable. In terms of psychographic segmentation, both goal desire and anticipated emotions have positive effects on behavioral desire, behavioral intention, and sharing intention. Additionally, personal norm positively influences behavioral intention and sharing intention. Conversely, subjective norms, perceived behavioral control, and media credibility have a strong impact exclusively on sharing intention. In summary, individuals who have a positive behavioral desire demonstrate a tendency toward high behavioral intention; however, there is no matching trend toward high sharing intention.

For practical implications, the most successful strategy to include all young people must be established immediately, even if it is difficult to make a direct relationship between value systems based on their attitude, experience, lifestyle, and culture. While families and educational institutions undoubtedly have a significant influence on environmental education, other stakeholders, such volunteer organizations, can also have an impact (Zelenski & Desrochers, 2021; Wider, 2023). Furthermore, social marketers or campaigners should have a deep understanding of their values, particularly the frequency of behavior, anticipated emotions, personal norm, and goal desires, when developing environmental campaigns. By fostering collaboration and knowledge exchange among policymakers to elevate environmental preservation to a top political priority influencing pro-environmental behavior and activities (Stern, 2000). As a result, it's critical to pique young people's attention with persuasive messaging, appropriate media, and credible influencers to maintain their engagement or inspire them to review their accomplishments.

Limitations and Further Studies

There are a few drawbacks to this study. According to Ajzen (1991), the major restriction is related to the dependent variable, which focuses on behavioral intention and sharing intention, and thus may not reflect actual behavior. Until recently, the majority of behavior change interventions were used in developing-country contexts to boost the success of sustainable development programs. Although our findings may be encouraging to some extent, the sample of this study is limited to represent precisely young people from Thailand. A direct generalization of their perspectives and perceptions is, therefore, not possible. However, this is also open to the scope to conduct more research on other geographical and socio-economic contexts to better understand the actual behavioral and sharing intention under the lens of psychological and behavioral mechanisms. In order for policymakers and practitioners to create focused interventions that address the particular barriers and facilitators pertinent to various populations and circumstances, more study is required to better understand how to support behavior change, whereas taking into account the various influences on pro-environmental behavior (Stern, 2000). Given the variety of factors impacting pro-environmental behaviors, formative research may be conducted to identify the most relevant barriers and facilitators, as well as the best mix of intervention options (McKenzie-Mohr, 2011).

REFERENCES

- [1] Ajzen, I., & Fishbein, M. (1975). A Bayesian analysis of attribution processes. *Psychological Bulletin*, 82(2), 261–277.
- [2] Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- [3] Bagozzi, R. P., & Dholakia, U. M. (2006). Antecedents and purchase consequences of customer participation in small group brand communities. *International Journal of Research in Marketing*, 23, 45-61.
- [4] Bertrand, J. T., Goldman, P., Zhivan, N. A., Agyeman, Y. B., & Barber, E. (2011). Evaluation of the “Lose Your Excuse” public service advertising campaign for tweens to save energy. *Evaluation Review*, 35(5), 455–489.
- [5] Campbell, D. T. & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological bulletin*, 56-81.
- [6] Channuwong, S., Tongvijit, M., Wisedchai, A., Dejnaron, A., & Sergey, L. (2025). Total quality management influencing sustainable organization development of Thai universities. *TPM-Testing, Psychometrics, Methodology in Applied Psychology*, 32(R2), 615-613.
- [7] Channuwong, S., & Kantatian, W. (2012). The causes of stress and strategies for managing stress: A case study of Thai University staff and lecturers. *European*

- Journal of Scientific Research*, 79(4), 592-606.
- [8] Cooper, D. R., & Schindler, P. S. (2008). *Business Research Methods (10th ed.)*. Boston: Mcgraw.Hill International Edition.
 - [9] De Angelis, M.; Mantecchini, L.; Pietrantonio, L. A. (2021). Cluster Analysis of University Commuters: Attitudes, Personal Norms and Constraints, and Travel Satisfaction. *Int. J. Environ. Res. Public Health*, 18, 4592.
 - [10] De Groot, J. I. M., Abrahamse, W., & Jones, K. (2013). Persuasive normative messages: The influence of injunctive and personal norms on using free plastic bags. *Sustainability*, 5(5), 1829-1844.
 - [11] Dietrich, T. (2017). Segmentation in Social Marketing: Five steps to success. In *Springer eBooks*, 77–92.
 - [12] Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filieri, R., Jacobson, J., Jain, V., Karjaluoto, H., Kéfi, H., Krishen, A. S., Kumar, V., Rahman, M. M., Raman, R., Rauschnabel, P. A., Rowley, J., Salo, J., Tran, G. A., & Wang, Y. (2021). Setting the future of digital and social media marketing research: Perspectives and research propositions. *International Journal of Information Management*, 59, 102168.
 - [13] Eisend, M. (2006). Source credibility dimensions in marketing communication – a generalized solution. *Journal of Empirical Generalisations in Marketing Science*, 10(2), 1-33.
 - [14] Fredrickson, B. L., & Branigan, C. (2005). Positive emotions broaden the scope of attention and thought-action repertoires. *Cognition & Emotion*, 19(3), 313-332.
 - [15] Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research* (18:1), 39-50.
 - [16] French, J. (2016). *The importance of segmentation in social marketing strategy*. In *Springer eBooks*, 25–40.
 - [17] Gray, D. M. and Bean, B. (2011). Can social marketing segmentation initiatives be used to increase household electricity conservation? *Journal of Nonprofit & Public Sector Marketing*, 23(2), 269-305.
 - [18] Hair, J., Black, W., & Babin, B. (2010). *Multivariate data analysis: A global perspective*. New Jersey, Pearson Prentice Hall.
 - [19] Höhne, N., Kuramochi, T., Warnecke, C., Röser, F., Fekete, H., Hagemann, M., Day, T., Tewari, R., Kurdziel, M., Sterl, S., & Gonzales, S. (2016). The Paris Agreement: resolving the inconsistency between global goals and national contributions. *Climate Policy*, 17(1), 16–32.
 - [20] Huang, M., & Zhai, P. (2021). Achieving Paris Agreement temperature goals requires carbon neutrality by middle century with far-reaching transitions in the whole society. *Advances in Climate Change Research*, 12(2), 281–286.
 - [21] Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: sensitivity to underparameterized model misspecification. *Psychological Methods*, 3, 424-453.
 - [22] Jiang Y, Abdullah SINW, Lim BJH, Wang R and Phuah KT (2023) The role of marketing stimuli and attitude in determining post-COVID buying decisions toward organic food products: evidence from retail consumers in Beijing, China. *Front. Sustain. Food Syst.* 7:1051696. doi: 10.3389/fsufs.2023.1051696
 - [23] Katangchol, S., Channuwong, S., & Sngongtaweepon, T. (2023). The model of human resource management for organizational sustainability in the new normal age. *International Journal of Advanced Research*, 11(3), 156–166.
 - [24] Karlin, B., Davis, N., Sanguinetti, A., Gamble, K., Kirkby, D., & Stokols, D. (2014). Dimensions of conservation. *Environment and Behavior*, 46(4), 423–452.
 - [25] Kim, W., Che, C., & Jeong, C. (2022). Food Waste Reduction from Customers' Plates: Applying the Norm Activation Model in South Korean Context. *Land*, 11, 109.
 - [26] Kotler P., Zaltman G. (1971), Social marketing: An approach to planned social change. *Journal of Marketing*, 35, 3–12.
 - [27] Kubacki, K., Rundle-Thiele, S., Schuster, L., Wessels, C., & Gruneklee, N. (2015). Digital Innovation in Social Marketing: A Systematic literature of interventions using digital channels for engagement. In *Applying quality of life research*, 49–66.
 - [28] Hine, D. W., Reser, J. P., Morrison, M., Phillips, W. J., Nunn, P., & Cooksey, R. (2014). Audience segmentation and climate change communication: Conceptual and methodological considerations. *Wiley Interdisciplinary Reviews: Climate Change*, 5(4), 441–459.
 - [29] Li, R. & Suh, A. (2015). Factors Influencing Information credibility on Social Media Platforms: Evidence from Facebook Pages. *Procedia Computer Science*, 72, 314-328.
 - [30] Lee, N. R., & Kotler, P. (2019). *Social marketing: Behavior Change for Social Good*. SAGE Publications.
 - [31] Lertathakornkit, T., & Intravisit, A. (2021). Influence of Persuasive Messages and Behavioural Factors through Behavioural Desire towards Behavioural Intention in Energy Saving Campaign. *Journal of Business Administration The Association of Private Higher Education Institutions of Thailand*, 10(1), 11–29.
 - [32] Maibach, E., Leiserowitz, A., Roser-Renouf, C., & Mertz, C. K. (2011). Identifying Like-Minded Audiences for Global Warming Public Engagement Campaigns: An audience segmentation analysis and tool development. *PLOS ONE*, 6(3), e17571.
 - [33] McKenzie-Mohr, D. (2011). *Fostering sustainable behavior: An introduction to community-based social marketing*. New Society Publishers.
 - [34] Ning, C., Guo, D., Wu, J., & Gao, H. (2022). Media Exposure and Media Credibility Influencing Public Intentions for Influenza Vaccination. *Vaccines*, 10(4), 526.
 - [35] Noble, G., & Camit, M. (2005). Social marketing communication is a multicultural environment: practical issues and theoretical contributions form cross-cultural marketing. *web journal PRism*, 3(2).
 - [36] Rahmat, A., Ibrahim, I., Senathirajah, A. R. B. S., & Zainudin, A. D. (2023). The determinant factors of green office layout towards employee workplace productivity. *International Journal of Professional Business Review*, 8(4), e0932.

- [37] Rodgers, S., Chen, Q., Duffy, M., & Fleming, K. (2007). Media Usage as Health Segmentation Variables, *Journal of Health Communication: International Perspectives*, 12(2), 105-119.
- [38] Ohnmacht, T., Schaffner, D., Weibel, C., & Schad, H. (2017). Rethinking social psychology and intervention design: A model of energy savings and human behavior. *Energy Research & Social Science*, 26, 40–53.
- [39] O'Reilly, K., MacMillan, A., Mumuni, A. G., & Lancendorfer, K. M. (2016). Extending Our Understanding of eWOM Impact: The Role of Source Credibility and Message Relevance. *Journal of Internet Commerce*, 15(2), 77-96.
- [40] Perugini, M., & Bagozzi, R. P. (2001). The role of desires and anticipated emotions in goal-directed behaviours: Broadening and deepening the theory of planned behaviour. *British Journal of Social Psychology*, 40, 79–98.
- [41] Petty, R. E., & Cacioppo, J. T. (1986). Methodological factors in the ELM. In *Springer eBooks*, 25–59.
- [42] Pop, R.A., Săplăcan, Z., & Alt, M.A. (2020). Social media goes green—The impact of social media on green cosmetics purchase motivation and intention. *Information*, 11, 447.
- [43] Praditsmanont, A., & Chungpaibulpatana, S. (2008). Performance analysis of the building envelope: A case study of the Main Hall, Shinawatra University. *Energy and Buildings*, 40(9), 1737–1746. <https://doi.org/10.1016/j.enbuild.2008.03.003>
- [44] Srinivasan, M., & Barclay, F.P. (2017). Media credibility: A triangulation test. *Journal of Content, Community & Communication*, 6(3).
- [45] Schwartz, S. H. (1977). Normative influences on altruism. In *Advances in Experimental Social Psychology*, 10, 221–27.
- [46] Schmalensee, R., Stoker, T. M., & Judson, R. (1998). World Carbon dioxide emissions: 1950–2050. *The Review of Economics and Statistics*, 80(1), 15–27.
- [47] Song, H. J., Lee, C. K., Norman, W. C., & Han, H. (2012). The role of responsible gambling strategy in forming behavioral intention: An application of a model of goal-directed behavior. *Journal of Travel Research*, 51(4), 512–523.
- [48] Stern, P. C. (2000). Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues*, 56(3), 407-
- [49] Schuster, L., Kubacki, K., & Rundle-Thiele, S. (2015). A theoretical approach to segmenting children's walking behaviour. *Young consumers*, 16(2), 159-171.
- [50] Stupik, S., Kos-Łabędowicz, J., & Trzęsiok, J. (2021). Are you a typical energy consumer? Socioeconomic characteristics of behavioural segmentation Representatives of 8 European countries. *Energies*, 14(19), 6109.
- [51] Sütterlin, B., Brunner, T. A., & Siegrist, M. (2011). Who puts the most energy into energy conservation? A segmentation of energy consumers based on energy-related behavioral characteristics. *Energy Policy*, 39(12), 8137–8152.
- [52] Teswanich, W., Anutariya, C., & Wuwongse, V. (2006). A Knowledge Management system framework for governmental regulating processes. *Electronic Government, an International Journal*, 3(1), 56. <https://doi.org/10.1504/eg.2006.008492>
- [53] Tkaczynski, A., Rundle-Thiele, S. R., & Beaumont, N. (2009). Segmentation: A tourism stakeholder view. *Tourism Management*, 30, 169–175.
- [54] Tirana, R. A., & Tjakraatmadja, J. H. (2019). Factors Affecting Knowledge Sharing Intention of Expert in Group of Faculty Member Telkom Corporate University. *The Asian Journal of Technology Management*, 12(1), 70-85.
- [55] Truong, V. D., & Dang, N. V. (2017). Reviewing research evidence for social marketing: Systematic literature reviews. *Formative research in social marketing: Innovative methods to gain consumer insights*, 183-250.
- [56] Thailand's Fourth Biennial Update Report. (2023). https://climate.onep.go.th/wp-content/uploads/2023/01/Thailand_BUR4_A4_final_revised_24022023-compressed.pdf
- [57] Vidyantata, D., Sunaryo, & Hadiwidjojo, D. (2018). The role of brand attitude and brand credibility as a mediator of the celebrity endorsement strategy to generate purchase intention. *Journal of Applied Management*, 6(13), 402-411.
- [58] Vining, J., & Ebrero, A. (2002). *Emerging theoretical and methodological perspective on conservation behavior*. In R. B. Bechtel, & A. Churchman (Eds.), *Handbook of environmental psychology*. Hoboken, NJ, US: John Wiley & Sons Inc, 541-558.
- [59] Walsh, G., Hassan, L. M., Shiu, E., Andrews, J. C. and Hastings, G. (2010), “Segmentation in social marketing: Insights from the European Union’s multi-country, anti-smoking campaign”, *European Journal of Marketing*, Vol. 4 No. 7/8, pp. 1140-1164.
- [60] Wettstein, D., & Suggs, L. S. (2016). Is it social marketing? The benchmarks meet the social marketing indicator. *Journal of Social Marketing*, 6(1), 2–17.
- [61] Wider, W. (2023). Effects Of Metacognitive Skills on Physics Problem -Solving Skills Among Form Four Secondary School Students. *Journal of Baltic Science Education*, 22(2), 357-369.
- [62] Wongmajarapinya, K., Channuwong, S., & Pratoomsawat, T. (2023). The model of modern management influencing sustainable organization development of Thai Smile Bus Company Limited. *Migration Letters*, 21(S2), 385-399.
- [63] Xu, J., Liu, Q., Wider, W., Zhang, S., Fauzi, M. A., Jiang, L., Udang, L. N., & An, Z. (2024). Research landscape of energy transition and green finance: A bibliometric analysis. *Heliyon*, 10(3), e24783. <https://doi.org/10.1016/j.heliyon.2024.e24783>
- [64] Yang, S., Zhang, Y., & Zhao, D. (2016). Who exhibits more energy-saving behavior in direct and indirect ways in China? The role of psychological factors and socio-demographics. *Energy Policy*, 93, 196–205.
- [65] Yue, T., Long, R., & Chen, H. (2013). Factors influencing energy-saving behavior of urban households in Jiangsu Province. *Energy Policy*, 62, 665–675.
- [66] Zelenski, J. M., & Desrochers, J. E. (2021). Can positive and self-transcendent emotions promote pro-environmental behavior? *Curr Opin Psychol*, 42, 31–35