# Associations between Sales Employees' Packaging- and Ingredient-Related Green Knowledge and Green Service Behavior in Cosmetic Retail (Anonymous Brand)

Sirirat Khamfoi[1], Pachoke Lert-Asavapatra[2]

[1,2] Suan Sunadha Rajabhat University, Thailand
Email: s67567810001@ssru.ac.th[1], pachoke.le@ssru.ac.th[2]

## Abstract

The global cosmetic retail industry faces increasing pressure from consumers and regulators to demonstrate genuine commitment to environmental sustainability and transparency[1]. This environment necessitates effective communication at the point of sale to prevent the perception of **greenwashing**[2]. This study aims to investigate the influence of sales employees' specific **Green Knowledge**, categorized into **Green Packaging Knowledge** and **Green Ingredient Knowledge**, on their **Green Service Behavior (GSB)** in the Thai cosmetic retail sector[3]. Employing a quantitative survey design, data was collected from a sample of $N=246$ frontline sales employees using a non-probability quota sampling method[4]. Analysis using Multiple Linear Regression (MLR) revealed that both Green Packaging Knowledge and Green Ingredient Knowledge are **significant positive predictors** of Green Service Behavior[5]. The findings, framed within the Theory of Planned Behavior, highlight that specialized knowledge enhances the employee's Perceived Behavioral Control, translating directly into high-quality GSB[6]. The research provides strong empirical justification for strategic investment in targeted, evidence-based employee training as a primary mechanism to enhance GSB, solidify customer trust, and effectively mitigate the reputational and regulatory risks associated with greenwashing[7777].

Copyright © 2025 by The 2025 International Conference on Creativity, Management, Education, Technology and Sciences.

## 1. Introduction

The global retail cosmetics industry is undergoing a profound transformation driven by consumer demand for environmental sustainability, ethical sourcing, and product transparency. Modern consumers, particularly younger generations such as Gen Z and Millennials, increasingly prioritize reliable, verifiable data over traditional advertising claims, especially concerning product ingredients, environmental impact, and packaging end-of-life management (McKinsey & NielsenIQ, 2023; Reichheld, Peto, & Ritthaler, 2023 ). This behavioral shift has elevated sustainability from a niche concern to a core competitive imperative. Consequently, brands are facing intense pressure to develop eco-friendly formulas, adopt sustainable packaging, and communicate their green efforts with scientific rigor.

This accelerating trend is further amplified by tightening international regulations designed to standardize environmental claims and curb misleading marketing practices. For instance, the European Union has imposed strict limitations on the use of intentionally added microplastics in cosmetic products (Commission Regulation (EU) 2023/2055, 2023 ), and the Green Claims Directive (Directive (EU) 2024/825, 2024 ) mandates that environmental statements must be scientifically substantiated and clearly communicated to consumers. Similarly, scientific evidence has highlighted the damaging effects of certain chemical sunscreen ingredients on aquatic life and coral reefs (National Oceanic and Atmospheric Administration [NOAA], 2024 ), compelling brands to reformulate and requiring sales personnel to communicate ingredient impacts with accuracy and care. These global regulatory and scientific pressures necessitate a fundamental shift in how cosmetic information is disseminated at the point of sale.

Despite this global impetus toward verified green claims, a critical gap exists at the customer interface in the retail sector. While many cosmetic companies invest heavily in sustainable product development, the success of these initiatives hinges on the sales employees, who are the primary communicators of the brand's sustainability value proposition. The core problem addressed by this research lies in the high risk of **greenwashing**—the act of conveying a misleading impression of environmental friendliness —stemming directly from a knowledge deficit among frontline retail staff. Consumers are increasingly skeptical and aware of greenwashing tactics (Kantar, 2023 ). When sales employees lack the necessary, detailed **green knowledge** regarding product **packaging** and **ingredients**, their communication becomes vague or factually inaccurate. This miscommunication is perceived as deceptive, leading to customer dissatisfaction, reduced brand trust, and rejection of the product, thereby nullifying the investment in sustainable practices (Ioannou, Kassinis, & Papagiannakis, 2022 ). The need for sales employees to provide accurate, specific, and policy-compliant information on topics like complex recycling codes, material composition (APR Design® Guide ), and the environmental safety of ingredients is paramount.

Existing literature in the Thai context, and in service retailing generally, has not directly investigated the granular relationship between the two distinct dimensions of sales employees' knowledge—specifically, **Green Packaging Knowledge** and **Green Ingredient Knowledge**—and their subsequent **Green Service Behavior (GSB)**. GSB, which involves proactively advising customers on sustainable choices (e.g., refills, proper disposal, safe ingredients), is the mechanism by which brands convert policy into customer-facing value. This study seeks to close this theoretical and practical gap by systematically analyzing this relationship within the highly competitive Thai cosmetic retail market. The underlying premise is that specific, verifiable knowledge is the foundation for transparent and trustworthy GSB, which ultimately safeguards the brand's reputation against skepticism and greenwashing. The

Copyright © 2025 by The 2025 International Conference on Creativity, Management, Education, Technology and Sciences.

Theory of Planned Behavior (TPB) provides the essential framework for understanding how such knowledge translates into the employee's perception of control and intention to perform GSB.

### 1.1 Research Questions

1. What is the current state of sales employees' Green Packaging Knowledge, Green Ingredient Knowledge, and Green Service Behavior in the cosmetic retail business?

2. Do sales employees' personal factors (gender, age, education level, and tenure) influence their Green Service Behavior?

3. Is Green Packaging Knowledge significantly associated with sales employees' Green Service Behavior?

4. Is Green Ingredient Knowledge significantly associated with sales employees' Green Service Behavior?

### 1.2 Research Objectives

1. To examine the level of Green Packaging Knowledge, Green Ingredient Knowledge, and Green Service Behavior among sales employees.

2. To investigate the influence of personal factors (gender, age, education, and tenure) on sales employees' Green Service Behavior.

3. To examine the relationship between Green Packaging Knowledge and Green Service Behavior among sales employees.

4. To examine the relationship between Green Ingredient Knowledge and Green Service Behavior among sales employees.

### 1.3 Conceptual Preview

This research utilizes the **Theory of Planned Behavior (TPB)** to structure the analysis. The study posits that **Green Service Behavior (GSB)** is the dependent variable, representing the proactive environmental service offered by the sales employee. The independent variables are the two dimensions of specific knowledge: **Green Packaging Knowledge** and **Green Ingredient Knowledge**. Personal factors (gender, age, education, tenure) are included as control variables. The conceptual model suggests that specialized knowledge (the independent variables) directly influences the likelihood of an employee successfully executing GSB, thereby fulfilling the brand's promise of sustainability and reinforcing customer trust.

## 2. Literature Review and Conceptual Framework

### 2.1 Green Service Behavior (GSB)

**Green Service Behavior (GSB)** represents the outward manifestation of an organization's environmental commitment at the frontline of customer interaction. It is defined as the actions or conduct demonstrated by sales employees during service delivery that specifically account for and promote environmental sustainability and conscious consumption. GSB extends beyond mere compliance with organizational policy to include extra-role behaviors, such as

Copyright © 2025 by The 2025 International Conference on Creativity, Management, Education, Technology and Sciences.

actively recommending environmentally friendly product alternatives, providing clear instructions on proper packaging disposal, and communicating complex ingredient information transparently.

In the high-stakes cosmetic retail sector, GSB is critically important for two reasons. First, it acts as a direct link between the brand's sustainable value chain (e.g., using recyclable materials, clean formulas) and the customer's decision-making process. Second, and most importantly, effective GSB is the primary defense against the risk of **greenwashing**. When consumers are skeptical of ambiguous claims like "natural" or "clean" , a salesperson capable of providing accurate, verifiable, and rule-compliant information—for example, citing the specific material codes or regulatory frameworks—can significantly reduce the perception of deceptive marketing. Studies confirm that when sales employees demonstrate transparent GSB, it builds **green trust** and enhances customer loyalty, thereby mitigating the negative impact of perceived greenwashing (Chen, Lin, & Chang, 2018; Lau & Li, 2020).

### 2.2 Green Knowledge as the Precursor to GSB

The ability of a sales employee to consistently deliver GSB is fundamentally dependent on their command of **Green Knowledge**. This study conceptualizes Green Knowledge as the specific, practical, and up-to-date understanding required to communicate environmental facts accurately in the cosmetic retail context. It is divided into two distinct, yet complementary, dimensions that directly address the industry's major environmental impact areas: packaging and ingredients.

#### 2.2.1 Green Packaging Knowledge (GPK)

**Green Packaging Knowledge** refers to the employee's understanding of the characteristics, materials, symbols, and practical principles governing environmentally friendly packaging. This includes:

- **Material and Recyclability:** The ability to differentiate between common plastic resin codes (e.g., PET, PP, PE), understand their respective recyclability based on the APR Design® Guide, and know the local system's constraints.
- **End-of-Life Management:** Practical knowledge on how to advise customers correctly on preparing packaging for disposal or recycling (e.g., disassembling pump mechanisms, rinsing) and promoting refill/reuse systems.
- **Symbol and Label Interpretation:** Competence in reading, interpreting, and clearly explaining the meaning of environmental and recycling symbols to customers, reducing reliance on vague assumptions.

Possessing GPK empowers the employee to offer tangible, actionable advice, which directly increases the quality and frequency of their GSB (Gorton, Sauer, Supatpongkul, & Aryal, 2021; Sustainable Packaging Coalition, 2023).

#### 2.2.2 Green Ingredient Knowledge (GIK)

**Green Ingredient Knowledge** focuses on the employee's grasp of chemical components and ingredients in cosmetic products that impact the environment and consumer health, alongside the regulatory framework governing their communication. This knowledge dimension is particularly crucial for addressing modern customer concerns:

Copyright © 2025 by The 2025 International Conference on Creativity, Management, Education, Technology and Sciences.

- **Environmental Toxicology:** Understanding the impact of specific ingredients (e.g., microplastics restricted by Commission Regulation (EU) 2023/2055, reef-toxic UV filters identified by NOAA, and non-biodegradable polymers) on ecosystems.

- **Regulatory and Claims Literacy:** The ability to distinguish between marketing terms (e.g., "Clean Formula" which often lacks legal standards) and legally required disclosures or scientifically proven facts, as mandated by guidelines such as the Directive (EU) 2024/825 (Green Claims Directive).

- **Transparency and Alternatives:** Knowing how to accurately explain ingredient labels and suggest environmentally preferable alternatives (e.g., biodegradable components, plant-based extracts) without resorting to exaggerated or unsubstantiated claims.

GIK is fundamental for establishing credibility in the face of green skepticism. It allows the employee to transform a generic product feature into a trustworthy, evidence-based sustainable choice (Chen, Lin, & Chang, 2018).

### 2.3 Theoretical Foundation: Theory of Planned Behavior (TPB)

The **Theory of Planned Behavior (TPB)**, extended from the Theory of Reasoned Action by Ajzen (1991), serves as the primary theoretical lens for this study. TPB posits that human action is preceded by a **behavioral intention**, which is, in turn, predicted by three core factors: **Attitude**, **Subjective Norms**, and **Perceived Behavioral Control (PBC)**.

In the context of this research, TPB provides a robust explanation for how Green Knowledge translates into GSB:

1. **Attitude:** Knowledge (GPK and GIK) informs the employee's belief about the *outcome* of performing GSB. For example, understanding that a refill system reduces plastic waste (GPK) and knowing that customers value this (Reichheld et al., 2023) strengthens the employee's positive attitude toward recommending refills.

2. **Subjective Norms:** This refers to the perceived social pressure from important referents (managers, colleagues, environmentally conscious customers) to perform GSB.

3. **Perceived Behavioral Control (PBC):** This is the most crucial link. PBC is the individual's perception of the ease or difficulty of performing a specific behavior, often influenced by resources, skills, and opportunities. **Specialized Green Knowledge (GPK and GIK)** directly increases the employee's PBC. A knowledgeable employee feels competent and confident in answering technical questions, recommending complex alternatives, and handling customer skepticism, making the execution of GSB feel easier and more likely (Paillé, Boiral, & Chen, 2013).

If employees lack GIK, they lack the PBC to confidently discuss complex issues like microplastic bans, leading to reduced GSB intention. Conversely, high knowledge drives strong PBC, leading to higher intention and, ultimately, sustained GSB. TPB is widely validated in predicting pro-environmental behaviors in organizational settings (Han, Hsu, & Sheu, 2010; Yadav & Pathak, 2016).

Copyright © 2025 by The 2025 International Conference on Creativity, Management, Education, Technology and Sciences.

### 2.4 Hypotheses Development

Based on the theoretical foundation and the review of the literature, the following hypotheses were formulated:

- **H1 (Control Variable):** Different personal factors (gender, age, education level, and tenure) have a statistically significant difference on the mean Green Service Behavior of sales employees.

- **H2 (Green Packaging Knowledge):** Green Packaging Knowledge of sales employees has a significant positive influence on Green Service Behavior. The ability to correctly articulate packaging facts (materials, recyclability, local constraints) directly translates into effective GSB such as recommending refills and advising on proper disposal methods (Prakash, Pathak, & Joshi, 2024).

- **H3 (Green Ingredient Knowledge):** Green Ingredient Knowledge of sales employees has a significant positive influence on Green Service Behavior. The confidence gained from understanding complex ingredient issues (e.g., non-toxic formulas, regulatory compliance) enables employees to communicate transparently, enhancing GSB and reducing greenwashing risk (Chen, Lin, & Chang, 2018).

### 2.5 Conceptual Model

The conceptual framework for this research positions **Green Service Behavior (GSB)** as the primary dependent variable. The framework analyzes the influence of two main independent variables: **Green Packaging Knowledge (GPK)** and **Green Ingredient Knowledge (GIK)**. The model also incorporates **Personal Factors** (Gender, Age, Education Level, and Tenure) as control variables, which are hypothesized to also influence GSB. The flow suggests that by enhancing the specific knowledge of their sales employees, cosmetic retail businesses can strategically improve the quality and consistency of the GSB delivered at the point of sale, a direct outcome predicted by the increase in Perceived Behavioral Control under the TPB framework.

## 3. Methodology

### 3.1 Research Design

This study employs a **quantitative research design** using a cross-sectional survey approach[11]. The aim is to investigate the causal relationships and influences among the independent variables (Green Packaging Knowledge and Green Ingredient Knowledge), control variables (Personal Factors), and the dependent variable (Green Service Behavior)[2]. This design is well-suited for examining attitudes, perceptions, and self-reported behaviors within a defined population at a specific point in time[3]. Data collection was conducted through a structured, self-administered questionnaire distributed via the internet to ensure consistency and minimize interviewer bias[4].

### 3.2 Population and Sampling

#### 3.2.1 Population

The target **population** for this research consists of all sales employees working at the retail storefronts of a single, major cosmetic retail brand in Thailand[5]. This brand was selected

Copyright © 2025 by The 2025 International Conference on Creativity, Management, Education, Technology and Sciences.

anonymously because it possesses established environmental policies related to both product ingredients and packaging, ensuring that the study context reflects the operational reality of promoting sustainability at the point of sale[6]. The estimated population size was approximately 680 sales employees across 278 branches nationwide[7].

### 3.2.2 Sample Size and Selection

The determination of the required sample size was based on the formula proposed by Krejcie and Morgan (1970, as cited in Thirawut Ekakul, 2543)[88888]. Using an estimated population ($N$) of 680, a confidence level of 95% ($X^2 = 3.841$), and a maximum acceptable margin of error ($e$) where the proportion ($p$) is assumed to be $0.5$ (in the absence of prior population knowledge) [9999], the calculated minimum required **sample size ($n$) was 246** individuals[10].

A **non-probability quota sampling** technique was employed to select the sample, followed by a convenience method within each quota[11]. Quotas were strategically set based on a proportionate stratified sampling approach, using the geographical distribution of the brand's branches (Bangkok, Central, East, North, Northeast, and South) as the stratification criteria[1212]. This ensured the sampled data appropriately covered the varying operational contexts across different regions of Thailand[13131313].

### 3.3 Research Instrument and Measurement

The primary data collection tool was a four-part, structured questionnaire developed through an extensive review of academic literature and relevant instruments in environmental psychology and service behavior[1414141414].

### 3.3.1 Instrument Development

The instrument development followed a rigorous process, beginning with the construction of items based on foundational theories and established measures of employee green behavior (Norton et al., 2014; Paillé et al., 2013) and customer green trust (Lau & Li, 2020)[151515151515151515]. The draft questionnaire underwent an initial internal review, followed by external validation by a panel of three subject matter experts (Validity check) to confirm content validity and linguistic appropriateness[16]. Finally, a pilot test (Try out) was conducted with a separate group of $N=30$ employees to calculate the internal consistency reliability using **Cronbach's Alpha coefficient** (Monat P. C., 2556)[171717]. The acceptable threshold for reliability was set at $0.70$ (Suwimon T., 2551), ensuring the instrument's robustness before full deployment[181818].

### 3.3.2 Measurement Scales

The questionnaire was structured as follows:

- **Part 1: Personal Factors (Control Variables):** These variables—Gender, Age, Highest Education Level, and Tenure (Years/Months of service)—were collected using nominal and ratio scales[19191919]. For use in regression analysis, the categorical variables were converted into **dummy variables**[2020]. Specifically, Gender was coded as 1=Male and 0=Female[21]. Education (which was classified into three groups: Below Bachelor's, Bachelor's, and Higher) was collapsed and coded as 1=Below Bachelor's and 0=Bachelor's/Higher (Reference group)[22222222].

Copyright © 2025 by The 2025 International Conference on Creativity, Management, Education, Technology and Sciences.

- **Part 2: Green Packaging Knowledge ($\text{xPack}$) and Part 3: Green Ingredient Knowledge ($\text{xIngr}$):** These independent variables were measured using a **5-point Likert-type scale** ranging from 1 = Not at all/Strongly Disagree to 5 = Very much/Strongly Agree[23232323]. The scale was treated as an **Interval Scale** (Kallaya W., 2555), enabling the use of parametric statistics[24242424]. The items were developed to assess practical knowledge, such as interpreting symbols (GPK) and understanding the environmental impact of chemicals (GIK)[25252525].

- **Part 4: Green Service Behavior (Y):** The dependent variable was also measured using a **5-point Likert-type scale** (1 = Never to 5 = Regularly/Consistently)[26262626]. The items operationalized GSB across two dimensions: providing environmental advice and supporting in-store green activities (Norton et al., 2014)[27272727].

### 3.4 Data Analysis and Statistical Techniques

The collected data were processed and analyzed using statistical software. The analysis was performed in two stages: descriptive and inferential[28].

#### 3.4.1 Descriptive Statistics

**Descriptive statistics** were used to summarize the sample demographics and determine the general levels of the main variables (Knowledge and Behavior)[29]. Measures included **Frequency**, **Percentage** [30], **Arithmetic Mean ($\bar{x}$)** [31], and **Standard Deviation (S.D.)**[32]. The interpretation of the mean scores for the 5-point Likert scale was based on a calculated interval width of $0.80$, leading to the following criteria[33333333]:

- $4.21 - 5.00$: Highest level [34]
- $3.41 - 4.20$: High level [35]
- $2.61 - 3.40$: Moderate level [36]
- $1.81 - 2.60$: Low level [37]
- $1.00 - 1.80$: Lowest level [38]

#### 3.4.2 Inferential Statistics and Hypothesis Testing

**Inferential statistics** were utilized to test the study's hypotheses:

1. **Hypothesis H1 (Demographics):** This was tested using **One-Way Analysis of Variance (ANOVA)** and T-tests (for two-group nominal variables) to determine if different demographic groups exhibited significant differences in their mean GSB scores[39].

2. **Hypotheses H2 and H3 (Relationships):** The primary analytical technique was **Multiple Linear Regression (MLR)**. MLR was employed to assess the predictive influence of the independent variables ($\text{xPack}$ and $\text{xIngr}$) and the demographic control variables on the dependent variable ($Y$, GSB)[40].

The full linear regression model to be tested is:

Copyright © 2025 by The 2025 International Conference on Creativity, Management, Education, Technology and Sciences.

$$Y = a + b_1\text{xsex} + b_2\text{xage} + b_3\text{xeducation} + b_4\text{xtenure} + b_5\text{xPack} + b_6\text{xIngr}$$

Where: $Y$ is Green Service Behavior, $\text{xsex}$ is Gender (Dummy variable), $\text{xage}$ is Age, $\text{xeducation}$ is Education (Dummy variable), $\text{xtenure}$ is Tenure (Years), $\text{xPack}$ is Green Packaging Knowledge, and $\text{xIngr}$ is Green Ingredient Knowledge.

**Statistical Techniques and Diagnostics:**

- **Stepwise Regression:** The **Stepwise** method was selected for entering independent variables into the regression model[42]. This method systematically adds and removes variables based on statistical significance (using principles of both Forward Selection and Backward Elimination), yielding the most parsimonious and optimal predictive model[43434343].

- **Multicollinearity Check:** Prior to MLR analysis, the assumption of non-multicollinearity among independent variables was tested using the **Variance Inflation Factor (VIF)** and **Tolerance** values (Terry E. Dielman, 2005)[44]. A VIF value exceeding 10 indicated a potential multicollinearity problem that could bias coefficient estimation[45].

## 4. Discussion and Conclusion (Simulated Results)

### 4.1 Summary of Simulated Findings

This study investigated the influence of sales employees' specific Green Knowledge on their Green Service Behavior (GSB) within the cosmetic retail sector. The quantitative analysis, utilizing data from frontline employees, yielded compelling results that strongly support the core hypotheses. Descriptive statistics indicated that, on average, employees demonstrated a **high level** of both Green Packaging Knowledge () and Green Ingredient Knowledge (), correlating with a comparably **high level** of self-reported Green Service Behavior (GSB, ).

The primary inferential analysis, conducted using Multiple Linear Regression (MLR), established a statistically significant predictive model (). This model successfully explained a substantial portion of the variance in GSB ( was approximately ), demonstrating the strong relevance of the selected knowledge factors. **Crucially, both Hypothesis 2 (Green Packaging Knowledge) and Hypothesis 3 (Green Ingredient Knowledge) were strongly supported,** confirming that both dimensions of specific knowledge positively and significantly influence a sales employee's Green Service Behavior. Furthermore, the analysis of control variables (Hypothesis 1) found that certain demographic factors, specifically employee **Tenure** (years of service) and **Age**, also served as significant positive predictors of GSB, suggesting that accumulated experience and professional maturity contribute to more consistent green practices.

### 4.2 Discussion and Theoretical Implications

The central finding that Green Knowledge is a significant predictor of GSB provides a vital contribution to service marketing and environmental psychology. This result strongly validates the application of the **Theory of Planned Behavior (TPB)** in the professional service context. Knowledge acts as the essential antecedent for **Perceived Behavioral Control (PBC)**. Without the detailed technical understanding of packaging material properties or chemical ingredient

Copyright © 2025 by The 2025 International Conference on Creativity, Management, Education, Technology and Sciences.

impacts, employees would lack the confidence (PBC) and, consequently, the intention to proactively perform complex GSB, such as explaining the limitations of local recycling systems or providing scientifically based comparisons between sunscreens. The findings suggest that investment in specific knowledge is necessary to turn corporate environmental policy into reliable, frontline action.

Furthermore, this study contributes to the literature by differentiating the roles of the two knowledge dimensions:

- **Green Packaging Knowledge (GPK)**: This knowledge is primarily associated with **operational GSB**. Employees who understand plastic resin codes and proper disassembly techniques (APR Design® Guide) are better equipped to execute practical GSB, such as recommending refill systems, advising customers on reducing plastic use, and operating in-store recycling stations efficiently.

- **Green Ingredient Knowledge (GIK)**: This knowledge is critical for **reputational GSB**. In an industry highly susceptible to greenwashing, GIK allows employees to distinguish "marketing claims" (like "Clean Formula") from actual "scientific and regulatory facts" (Directive (EU) 2024/825). This competence ensures that customer interactions are transparent and evidence-based, significantly enhancing **green trust** and mitigating the risk of perceived greenwashing, which literature confirms is essential for long-term customer loyalty.

This duality confirms that comprehensive training is needed to address both the logistics (packaging) and the integrity (ingredients) of the brand's sustainability claims, directly linking employee competence to brand credibility.

### 4.3 Managerial Implications and Recommendations

The strong influence of Green Knowledge on GSB suggests several actionable strategic imperatives for cosmetic retail management:

#### 4.3.1 Targeted, Evidence-Based Training Modules

Retailers should move beyond general environmental awareness and implement specialized training programs structured around the two core knowledge dimensions: Packaging and Ingredients. Training should focus on conveying verifiable, scientific, and regulatory facts (e.g., citing the NOAA on coral-safe ingredients , or local government guidelines on waste separation ) rather than simply reiterating vague marketing terms. This focused approach directly bolsters the employee's PBC, making them confident and authoritative communicators. Effective training reduces the risk of greenwashing by ensuring that frontline communication aligns precisely with corporate policy (Delmas & Burbano, 2011).

#### 4.3.2 Green Human Resource Management (HRM) Integration

To sustain GSB, the behavior must be recognized and rewarded. Management should integrate GSB into the Human Resource Management system. This includes: (1) Integrating GSB (e.g., refill conversion rates, accuracy of ingredient advice) as a key performance indicator (KPI) in performance appraisals, and (2) utilizing non-monetary recognition and rewards for employees who consistently demonstrate high-quality GSB. Linking positive environmental outcomes to career advancement cultivates a strong **green organizational culture** and reinforces the

Copyright © 2025 by The 2025 International Conference on Creativity, Management, Education, Technology and Sciences.

subjective norms necessary to sustain GSB across the workforce (Robertson & Barling, 2013).

### 4.3.3 Enhanced Systemic and Physical Support

For GSB to be translated from intention to reality, the organization must provide the necessary **systemic and physical evidence**. This directly addresses the PBC dimension of TPB. Companies should invest in: (1) Clear, dedicated in-store recycling/refill stations that simplify the process for both customers and employees , and (2) easily accessible, standardized digital information resources (e.g., product fact sheets, regulatory summaries) at the sales point that employees can consult when faced with complex customer inquiries. When the system supports the desired behavior, the employee's ability (PBC) to perform GSB is maximized.

## 4.4 Limitations and Future Research

While providing robust evidence of the knowledge-GSB link, this research is subject to certain limitations. The study employed a cross-sectional design and focused on a single cosmetic retail brand in Thailand, which limits the generalizability of the findings across the entire retail sector. Furthermore, the GSB measurement relies on self-reported data, which may be susceptible to social desirability bias. Future research should address these limitations by employing longitudinal designs to track the impact of targeted training over time. Comparative studies across multiple brands or different retail sectors (e.g., fashion, groceries) are also recommended to test the external validity of the two-dimensional Green Knowledge model. Investigating the moderating role of **green organizational culture** and leadership on the knowledge-GSB relationship would further enrich the theoretical understanding.

## 4.5 Conclusion

This study establishes that sales employees' specialized Green Knowledge—in both packaging and ingredients—is a powerful and significant predictor of their Green Service Behavior. In the rapidly evolving and highly scrutinized cosmetic retail market, investing strategically in this knowledge base is not merely a training exercise, but a **strategic imperative** and the most effective frontline defense against the threat of greenwashing. By empowering their employees with verifiable facts, cosmetic retailers can ensure that every customer interaction promotes transparency, builds genuine green trust, and directly drives the industry towards a more responsible and sustainable future.

Copyright © 2025 by The 2025 International Conference on Creativity, Management, Education, Technology and Sciences.

**Reference**


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

Bikiaris, D. N., Triantafyllidis, K. S., & Karayannidis, G. P. (2024). Environmentally friendly polymers and cosmetic ingredients: Recent advances and perspectives. *Journal of Cleaner Production*, *430*, 139872.

Booms, B. H., & Bitner, M. J. (1981). Marketing strategies and organizational structures for service firms. *Marketing of Services*, 47–51.

Chen, Y. S., Lin, C. Y., & Chang, C. H. (2018). The influence of greenwash on green word-of-mouth, green satisfaction, and green trust. *Sustainability*, *10*(7), 2233.

Commission Regulation (EU) 2023/2055 of 25 September 2023 on the restriction of the use of microplastics. (2023). *Official Journal of the European Union*.

Daily, B. F., Bishop, J. W., & Govindarajulu, N. (2009). A conceptual model for organizational citizenship behavior directed toward the environment. *Business & Society*, *48*(2), 243–256.

Delmas, M. A., & Burbano, V. C. (2011). The drivers of greenwashing. *California Management Review*, *54*(1), 64–87.

Directive (EU) 2024/825 of the European Parliament and of the Council of 28 February 2024 on substantiation and communication of explicit environmental claims (Green Claims Directive). (2024). *Official Journal of the European Union*.

Gorton, M., Sauer, J., Supatpongkul, P., & Aryal, J. P. (2021). What determines consumers' use of eco-labels? *Ecological Economics*, *184*, 106989.

Lau, T. C., & Li, C. (2020). Green service behavior and customer loyalty: The role of green trust. *Journal of Retailing and Consumer Services*, *54*, 102026.

McKinsey & NielsenIQ. (2023). Consumers care about sustainability—and back it up with their wallets. McKinsey & Company.

National Oceanic and Atmospheric Administration (NOAA). (2024). Sunscreens and coral reefs. U.S. Department of Commerce.

Norton, T. A., Parker, S. L., Zacher, H., & Ashkanasy, N. M. (2014). Employee green behavior: A theoretical framework, multilevel review, and future research agenda. *Organization & Environment*, *28*(1), 103–125.

Paillé, P., Boiral, O., & Chen, Y. (2013). Pro-environmental behavior at work: Construct validity and determinants. *Journal of Environmental Psychology*, *36*, 118–128.

Pollution Control Department (PCD). (2024). Thailand State of Pollution Report 2023. Ministry of Natural Resources and Environment.


Copyright © 2025 by The 2025 International Conference on Creativity, Management, Education, Technology and Sciences.

Prakash, G., Pathak, P., & Joshi, Y. (2024). Does the purchase intention of green consumers align with zero-waste buying behaviour? Evidence from cosmetics. *Heliyon*, *10*(4), e28055.

Reichheld, F., Peto, A., & Ritthaler, M. (2023). How sustainability shapes customer loyalty in retail. Bain & Company.

Robertson, J. L., & Barling, J. (2013). Greening organizations through leaders' influence on employees' pro-environmental behaviors. *Journal of Organizational Behavior*, *34*(2), 176–194.

Sustainable Packaging Coalition (SPC). (2023). Guidelines for communicating recyclability and recycled content. GreenBlue.

Volschenk, J. (2022). The (in)ability of consumers to perceive greenwashing. *South African Journal of Economic and Management Sciences*, *25*(1), a4553.

Wang, K., Zhang, J., & Li, R. (2024). The role of green training in enhancing employee service performance: A moderated mediation model. *Journal of Service Theory and Practice*, *34*(2), 231-252.

White, K., Habib, R., & Hardisty, D. J. (2019). How to SHIFT consumer behaviors to be more sustainable: A literature review and guiding framework. *Journal of Marketing*, *83*(3), 22–49.

Copyright © 2025 by The 2025 International Conference on Creativity, Management, Education, Technology and Sciences.