Frugality, Spendthrift Behavior, and Preferences for Sustainable Courier Services in E-Commerce: A Psychographic Approach

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Abstract. This study aims to analyze the influence of frugality and spendthrift behavior on consumer preferences for sustainable consumption within the context of courier services. To examine the relationships between these variables, the study employs a quantitative research approach using Structural Equation Modeling based on Partial Least Squares (PLS-SEM), a method well suited for testing predictive models involving latent psychological constructs. The findings reveal that frugality does not have a significant effect on preferences for sustainable courier services, indicating that a frugal spending orientation does not necessarily translate into environmentally friendly consumption choices. In contrast, spendthrift behavior is found to have a positive and significant effect on sustainability preferences, suggesting that consumers with more consumptive tendencies are, in fact, more receptive to sustainable offerings—particularly those that provide symbolic, emotional, or lifestyle-related value rather than purely functional benefits. These results challenge conventional assumptions commonly held in sustainability marketing, which often presume that frugal or cost-conscious consumers are the primary adopters of sustainable options. The findings underscore the importance of incorporating consumer psychological perspectives into the development of more inclusive and contextually grounded communication strategies. Overall, this study contributes to the growing body of literature on consumer behavior and offers practical implications for market segmentation and targeting strategies in the sustainable services sector.

Keywords: Frugality, Spendthrift Orientation, sustainable courier services, Psychographic, E-commerce.

1 Introduction

The rapid growth of e-commerce and digital infrastructure has intensified demand for courier services that are fast, reliable, and environmentally sustainable [1]. As environmental awareness increases, consumers are beginning to consider the ecological impact of their consumption decisions, prompting logistics providers to introduce green delivery innovations [2–4]. However, existing studies predominantly emphasize value- and

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norm-based drivers of sustainable consumption, leaving the role of consumer psychographic characteristics underexplored [5–7].

Frugality and spendthrift behavior represent two contrasting consumption orientations that may explain such variation. Frugality is associated with efficiency, value maximization, and resource conservation principles that conceptually align with sustainability yet may be constrained by cost considerations in practice [8–12]. In contrast, spendthrift behavior, characterized by impulsivity, materialism, and immediate gratification, may encourage the adoption of sustainable services when they offer symbolic, emotional, or lifestyle value [13–15].

Despite these insights, the relationship between these orientations and preferences for sustainable courier services remains theoretically inconsistent. Frugality may both enable and hinder green consumption, while spendthrift behavior typically linked to overconsumption may paradoxically enhance sustainability preferences [16–19]. This tension reveals a critical research gap, particularly in logistics contexts where trade-offs among cost, speed, and sustainability are salient.

Therefore, this study examines how frugality and spendthrift behavior influence consumer preferences for sustainable courier services. It contributes by integrating psychographic segmentation into sustainability marketing, clarifying the paradoxical role of frugality, and revealing the positive link between spendthrift tendencies and sustainable consumption, thereby challenging the conventional view that sustainability is driven solely by restrained consumption behavior

2 Methods

2.1 Population and Sample

The population in this study consists of e-commerce consumers who use online marketplace services. A total of 109 respondents were selected using a simple random sampling technique, with inclusion criteria requiring consumers to have made at least three transactions in the past six months and to have experience in selecting courier service types. The use of experience-based criteria ensures that the data are highly relevant to courier service decision-making, thereby strengthening the accuracy of the analysis and interpretation.

This study employs a cross-sectional design, which is appropriate for identifying patterns of relationships among variables within a dynamic consumer behavior context. While it is not intended to capture long-term changes, this approach remains adequate for explaining preference tendencies under current conditions. Accordingly, the findings provide a solid empirical basis for future research using longitudinal designs and broader samples.

2.2 Data Collection Techniques and Research Instruments

Data collection was conducted through an online survey using Google Form. The questionnaire was developed by adapting the question items according to the relevant literature. All measurement items were adapted to the context of this study and rated using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). This

instrument has been used in previous studies and shown to have high reliability and validity in similar contexts.

2.3 Data Analysis Technique

Data analysis was carried out verificationally using the Structural Equation Modeling (SEM) method based on Partial Least Squares (PLS) version 4.0. This method was chosen because it is able to accommodate models with high complexity, relatively small sample sizes, and non-normal data distribution [20] The analysis procedure includes evaluating the measurement model and structural model to ensure construct validity and reliability, as well as to test the hypotheses proposed in this study

Two main hypotheses were tested:

H1**:** *Frugality* has a significant effect on *Preference Sustainable*

H2**:** *Spendthrift Orientation* has a significant effect on *Preference Sustainable*.

This hypothesis testing aims to understand how two dimensions of consumer behavior-namely, *frugality* and *spendthrift* tendencies-can influence their preference for sustainable choices in a marketing context. Thus, the results of this study are expected to make an empirical contribution to the development of sustainable marketing strategies**,** particularly in understanding consumer segments based on their behavioral patterns.

3 Results and Discussion

The measurement model was analyzed to assess the extent to which the indicators represent the constructs of frugality, sustainable preference, and spendthrift behavior. The evaluation was conducted using loading factor values to identify the contribution of each indicator in forming the latent constructs. Table 1 presents the loading factor values of all indicators used in the research model.

Table 1. Loading Factor

Indicator	Frugality	Preference Sustainable	Spendthrift Orientation
F1	0.784		
F2	0.615		
F3	0.768		
F4	0.903		
F5	0.826		
F6	0.912		
F7	0.907		
F8	0.658		
PF1		0.766	
PF2		0.597	
PF3		0.731	
PF4		0.679	

Indicator	Frugality	Preference Sustainable	Spendthrift Orientation
PF5		0.833	
PF6		0.690	
PF7		0.797	
SB1			0.710
SB3			0.686
SB4			0.673
SB5			0.851
SB6			0.800
SB7			0.881
SB8			0.895

Source : Author's Work

Based on Table 1: Loading Factor**,** it can be interpreted that all indicators in the *Frugality (F)*, *Preference for Sustainability (PF)*, and *Spendthrift Behaviour (SB)* constructs show loading values that are mostly above the recommended minimum threshold, which is 0.60 [21]. This indicates that each indicator consistently and significantly reflects the construct it represents. For the Frugality (F) construct**,** all indicators F1 to F8 have loading values above 0.615, with the highest values in F6 (0.912) and F7 (0.907). This indicates that all of these items have a good contribution in measuring respondents' frugality.

The Preference for Sustainability (PF**)** construct also performs quite well, with loading values ranging from 0.597 (PF2) to 0.833 (PF5). Although PF2 has a lower loading than other indicators, the value is still within the tolerance threshold. PF5 and PF7 are the strongest indicators in measuring sustainability preferences in consumption.

Meanwhile, on the Spendthrift Behavior (SB**)** construct**,** eight indicators were tested. However, indicator SB2 was removed from the model because it did not meet the minimum loading value (possibly below 0.60), which could reduce the overall construct validity. After removing SB2 and improving the model, the results as shown in the table were obtained: indicators SB1, SB3 to SB8 showed good loading values, ranging from 0.673 (SB4) to 0.895 (SB8). This indicates that these indicators have adequately reflected the construct of wasteful behavior.

Table 2. Composite Realibility & Convergent Validity

Construct	Cronbach's alpha	rho_A	Composite reliability	(AVE)
Frugality	0.918	0.921	0.935	0.646
Sustainable Preference	0.854	0.871	0.889	0.535
Spendthrift	0.896	0.900	0.920	0.624

Source : Author's Work

Table 2 presents the results of testing the construct reliability and convergent validity of the measurement model. There are three main constructs tested, namely *Frugality*,

Sustainable Preference, and *Spendthrift*. The test was conducted using four indicators, namely Cronbach's Alpha**,** rho_A**,** Composite Reliability (CR)**,** and Average Variance Extracted (AVE)**.**

All constructs showed adequate results and met the reliability criteria. The Cronbach's Alpha values were all above 0.70, indicating good internal consistency. Similarly, the rho_A values ranged from 0.871 to 0.921, and the **v** was in the range of 0.889 to 0.935. All these values indicate that the indicators on each construct have **s**olid and reliable internal strength**.**

In terms of convergent validity**,** the three constructs also meet the AVE ≥ 0.50 threshold [22], which indicates that more than 50% of the indicator variance can be explained by their respective constructs. *The Frugality* construct has the highest AVE of 0.646, followed by *Spendthrift* (0.624), and *Sustainable Preference* (0.535). Thus, it can be concluded that the constructs in this model are not only reliable, but also convergently valid.

Table 3. Structural Model Estimation Results

Criteria	Frugality → Sustainable Preference	Spendthrift Behavior → Sustainable Preference
(β) Original Sample	-0.135	1.096
T Statistics	1.132	9.424
P Value	0.258	0.000
Conclusion	Not Significant	Significant

The structural model results presented in Table 3 indicate that frugality does not have a significant effect on sustainable preference (β = -0.135, T = 1.132, p = 0.258). This finding challenges the conventional assumption that frugal behavior inherently promotes sustainable consumption. Although frugality emphasizes efficiency and resource conservation, such orientation does not automatically translate into a preference for sustainable services.

From a theoretical perspective, frugality driven primarily by economic rationality lacks consistent predictive power for sustainability preferences. Green purchasing behavior is more strongly shaped by social and conditional values than by cost-saving motives [23], while ecological identity and green self-accountability represent stronger determinants of sustainable behavior than financial considerations [24]. Without an internalized ecological identity, frugal behavior remains instrumental and is unlikely to evolve into meaningful sustainability commitment.

In the logistics context, this limitation becomes more evident. Participation in green logistics services is primarily driven by perceived value and psychological empowerment rather than environmental motivation alone [25]. Cost-oriented consumers are less likely to internalize sustainable logistics preferences unless such services also offer functional and economic advantages. Thus, frugality contributes to sustainability only when it is aligned with broader ecological values and perceived benefits.

In contrast, spendthrift behavior demonstrates a positive and significant effect on sustainable preference (β = 1.096, T = 9.424, p < 0.001), indicating that more consumptive consumers are more receptive to sustainable services. Sustainability preferences in such contexts are often driven by symbolic value, identity expression, and social sig-

naling [26]. Emotional drivers, particularly pride and guilt, further reinforce green consumption behavior [27]. Similarly, less price-sensitive consumers exhibit higher willingness to pay for environmentally friendly delivery options [28], reinforcing the link between spendthrift orientation and sustainability preference.

Overall, these findings suggest that sustainable preferences are not solely driven by restrained consumption, but by the interplay of psychological identity, symbolic value, and emotional engagement. This study highlights the conditional role of frugality and the positive relevance of spendthrift behavior, suggesting that sustainability strategies should move beyond efficiency-based appeals toward approaches emphasizing emotional value and identity expression.

4 Conclusion

This study demonstrates that consumer psychographic orientations play a differentiated role in shaping preferences for sustainable courier services. The findings reveal that frugality does not significantly influence sustainable preference, indicating that cost-oriented restraint alone is insufficient to drive sustainability adoption. In contrast, spendthrift behavior shows a strong positive effect, suggesting that consumers with higher consumption tendencies are more responsive to sustainable services, particularly when such offerings carry symbolic, emotional, and lifestyle value. These results challenge the dominant assumption that sustainability is primarily driven by restrained consumption and instead highlight the importance of psychological and symbolic drivers in shaping sustainable preferences.

Theoretically, this study contributes by integrating psychographic segmentation into sustainability marketing, clarifying the conditional and paradoxical role of frugality, and uncovering the positive relevance of spendthrift tendencies in sustainability contexts. Practically, the findings suggest that sustainability strategies should move beyond efficiency-based appeals and incorporate emotional engagement, identity expression, and value signaling to effectively target different consumer segments, particularly those with higher consumption orientations.

Despite these contributions, several limitations should be acknowledged. First, the relatively limited sample size may constrain the generalizability of the findings to broader populations. Second, the cross-sectional design captures consumer preferences at a single point in time, limiting the ability to observe temporal dynamics and infer causality. Future research is therefore encouraged to employ longitudinal designs with larger and more diverse samples to better capture changes in consumer behavior and strengthen causal explanations. Additionally, further studies may incorporate additional psychological constructs, such as environmental identity or moral norms, to provide a more comprehensive understanding of sustainable consumption behavior.

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