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*Article*

# A Scale Development Study on Green Marketing Mix (4P) Practice Culture <sup>†</sup>

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**Abstract:** Research concerning green marketing has predominantly focused on consumer behavior. However, aspects such as the extent to which SMEs embrace green marketing values, their ability to implement the green marketing mix, and the integration of green marketing into their business culture are critically important. This study introduces a foundational measurement instrument to the 4P-focused green marketing literature, designed to identify and measure the implementation of the green marketing mix by SMEs. The study employs a descriptive design and also possesses an exploratory nature. Scale development involved two stages: First, analyses were conducted on a pre-test sample of 159 individuals, revealing the initial scale structure. Second, these analyses were repeated on a larger group of 387 participants. The scale was finalized by confirming the consistency of results across both analyses. SPSS and AMOS software were utilized for descriptive statistics and the scale development process. According to the measurement models, no items exhibited factor loadings below 0.50. The  $\Delta$ CFI value was found to be below 0.01 in both samples, indicating that the developed scale demonstrates measurement invariance. Within the scope of this study, an original scale comprising 12 items and three primary dimensions ("Environmental Publicity", "Green Packaging", "Green Distribution") was developed, and its statistical validity and reliability were confirmed. The scale is deemed applicable to larger populations.

**Keywords:** green marketing; SMEs; scale development; green culture

## 1. Introduction

In recent years, interest in green marketing and sustainability concepts has markedly increased within the business world. Green marketing appears to have emerged as a consequence of businesses' efforts to integrate environmental sustainability principles into their marketing strategies, largely driven by growing consumer environmental sensitivity. According to Papadas et al. [1], green marketing can be considered a reflection of contemporary business efforts to reduce environmental impacts while simultaneously fulfilling social responsibilities. It is a marketing approach that minimizes businesses' environmental impacts, activates consumer environmental consciousness, and contributes to a sustainable future [2].

Although numerous studies on green marketing exist in the literature, scale development efforts in this area have remained limited. Previous research has primarily examined consumer responses to various types of green appeals [3–6]. The adaptation of scales across different cultures is a critical step for enhancing the reliability of international comparative research in the green marketing field. For example, the green marketing scale developed by Vilkaite-Vaitone et al. [7] was adapted into Turkish by Budak and Filiz [8]. According to the authors, this adaptation facilitates the examination of global environmental issues within a local context, aiming for a better understanding of Turkish

consumers' attitudes and behaviors towards green marketing. Scales developed by Moravcikova et al. [9] assist businesses in enhancing the effectiveness of their green marketing strategies. Another study by Bailey et al. [10] involved the application of a "green" scale to determine US consumer responses to green marketing communication. The "Green" scale developed by Haws et al. [11] was designed to measure green consumption values. Chen and Yang [12] conducted a study applying a multi-criteria decision-making approach to the determination of green marketing audit criteria. Eyadat et al. [13] conducted research aiming to explore the relationship between green marketing practices, leadership commitment, and environmental performance in the Jordanian pharmaceutical sector. Their study investigates the impact of green marketing strategies on the competitive advantage of Jordan's leading green companies.

A review of the literature on green marketing identifies several tools developed to measure marketers' perceptions of green marketing initiatives. These scales include Chen and Yang's [12] green marketing audit scale and Fraj et al.'s [14] green marketing strategy scale. Chahal et al. [15] demonstrated that SMEs in developing countries, such as India, could achieve greater success by adopting green marketing practices, specifically within the electrical sector.

**Research Problem:** This research addresses the development of a scale to identify and measure the extent to which SMEs in Turkey adopt and implement the green marketing mix elements (4P). Within this framework, the research focuses solely on the concepts known as the 4Ps – "green product, green price, green distribution, and green promotion" – and the items in the pool used during the scale development process were generally constructed within this scope. The primary reasons for limiting the research scope to only the 4Ps are as follows:

- Although marketing mix elements have been expanded to 7Ps in the literature, particularly within the contexts of service marketing and experiential marketing, the initial 4Ps represent the first and most tangible steps firms take in transitioning to green marketing, as well as their core strategic orientations. These four elements typically form the backbone of a green marketing strategy.
- Due to the focused nature of scale development, a 'practice culture' scale encompassing all 7Ps could have increased conceptual complexity and scale administration (dimensions/items) challenges, potentially weakening its practicality and statistical power. Therefore, focusing initially on the fundamental 4Ps was preferred to maintain methodological robustness.
- A lack of a valid and reliable scale measuring the practice culture of the basic 4Ps of green marketing was identified in the literature, and this study primarily aims to fill this gap. The measurement of the extended 7Ps (people, physical evidence, process) involves different dynamics and likely requires a separate study, hence it was excluded from the current scope.
- The current 4P-focused scale provides a foundational measurement instrument for the green marketing literature. This study can serve as a basis and starting point for future research that will examine the extended mix elements (people, physical evidence, process) or expand the scale.
- The primary aim of this study is to develop a scale through which SMEs can measure and evaluate their Green Marketing Mix (4P) practices. This study presents an instrument for the identification and evaluation of the Green Marketing Mix Practice Culture (GMMPC) among SMEs operating in different industry sectors. Thus, it aims to contribute to filling such a gap identified in the literature. The developed scale may provide the following benefits:
- It can offer detailed information about the current status of SMEs regarding their GMMPC and assist in making assessments; it can also provide data for determining businesses' green marketing strategies.
- It can enable comparative analyses among firms of different sizes operating in various industry sectors across different regions.
- It can play a supportive role in evaluating the effectiveness of green marketing practices and providing a scientific basis for research.

In summary, this scale, developed to measure GMMPC in SMEs, can contribute to understanding the green transformation processes of SMEs by providing significant insights for research in this field.

## 2. Green Marketing Mix

Green marketing (also known as environmental, ecological, or sustainable marketing) involves the integration of environmental factors into marketing activities [16] and sustainability-oriented practices [17]. As a comprehensive approach, it aims to minimize long-term ecological impact while simultaneously achieving consumer satisfaction and organizational objectives [18], and promoting products/services with a lower environmental impact [19]. This approach encompasses activities aimed at creating a positive environmental image or mitigating the negative impacts of products/services [20], as well as the process of designing, implementing, and controlling marketing mix elements to minimize environmental harm, in alignment with customer and organizational goals [21]. Essentially, it represents a holistic approach that targets the achievement of customer satisfaction and organizational objectives while reducing the environmental impacts of business operations. As mentioned in the introduction section of this study, only the initial 4Ps, which form the backbone of the marketing mix, are addressed and briefly explained below.

**Green Product:** Forming the foundation of the green marketing mix [22], the green product holds critical importance for the overall strategy [23]. Inherently eco-friendly and sustainable [24], these products are designed, manufactured, and marketed to minimize environmental impact throughout their lifecycle [25,26]. Their aims include ensuring safety for use [27] and minimizing adverse effects on the ecosystem and human health [24,28]. Green product strategies encompass eco-friendly packaging, the use of recyclable materials, and extending product lifespan, while also adopting a circular economy approach to preserve resource value [29].

Green product development favors safe raw materials and processes [22,28,30]. During manufacturing, principles of reducing energy/input consumption, waste, and pollution [25], conserving resources, and non-cruelty to animals are adopted. This approach requires a holistic perspective covering the entire lifecycle from design to disposal [22,26,31] and often involves the adoption of the 5R principles (reuse, reconditioning, repair, remanufacture, recycling) [32,33]. Green products often exhibit characteristics such as recyclability, biodegradability, resource efficiency, reduced/eco-friendly packaging, non-toxicity, and natural/organic production [34]. Factors such as growing consumer awareness, activism, legal regulations, and the demand for sustainable options [28,35] drive businesses towards green product development and marketing [24]. This trend promotes environmental responsibility while also creating new market opportunities [36].

**Green Price:** Green price is a pricing strategy that reflects the environmental costs associated with a product/service [37] and balances the costs of sustainable production practices with consumer willingness to pay [38]. It holds the potential to incorporate the external environmental costs often disregarded by traditional prices [39], thereby potentially reducing overconsumption by fostering conscious consumption [40]. Rather than lowering prices for sales maximization, sustainable companies often invest in eco-friendly technologies that reduce long-term costs; their prices typically reflect production and marketing costs [41]. Eco-friendly pricing takes into account factors such as the product's environmental impacts, donations, green campaigns, lifecycle, carbon emissions, and competitive pricing [29,42].

Environmentally conscious consumers are often willing to pay a higher price [43]. Green product prices are often higher than those of conventional products due to their environmental/social benefits [3,31,44–46]. This price difference often stems from the additional costs businesses incur for greener processes, materials, waste management, or technology [31,47], and the price may also encompass non-monetary costs such as opportunity or energy costs [22]. Nevertheless, research indicates that a significant segment of consumers is willing to pay a premium price for products possessing positive environmental attributes [27,48–51]. This willingness may stem from heightened environmental concerns [52] or the perceived ethical value (leading to a willingness to incur an additional cost of 7-



20%) [53,54]. Consumers who understand that environmental knowledge influences their behavior are also more inclined to accept premium pricing [51].

Consequently, the green price serves as an indicator reflecting market behaviors [40] and is influenced by factors such as the product's degree of greenness, its advertising [55], market demand, and consumer awareness [56]. Furthermore, it can promote sustainability through mechanisms such as subsidies or tax incentives [57]. However, it should also be noted that some green products (e.g., fuel-efficient vehicles) may prove more economical in the long term when lifecycle costs are taken into account [58].

**Green Place/Distribution:** Green Place/Distribution involves the strategic positioning and distribution of products in a manner that reduces environmental impact and promotes sustainability [59,60]. This includes both physical distribution and the conceptual positioning of the brand as environmentally conscious (strengthening its image) [59], encompassing elements such as channels, transportation, location, and logistics [61]. A significant focus of the green place strategy is optimizing logistics and distribution channels [59] to reduce the carbon footprint [61]. This involves selecting routes with minimal environmental harm [36,62,63] and conducting a holistic assessment of the supply chain [64]. This approach can decrease emissions, energy usage [65], and transportation costs [61]. In terms of physical location, green place incorporates the responsible and sustainable design (e.g., recycled materials, energy efficiency, green technology [66] and operation (e.g., waste/resource reduction) of the space. Factors such as accessibility [67], proximity to local suppliers, and surrounding green infrastructure are considered in location selection. The inclusion of green products in retail supply chains and the availability of specialized points of sale are also associated with this concept [68,69].

In the context of distribution channels, the green place strategy requires that the physical or virtual places and methods through which environmentally friendly products are sold also embody environmental responsibility [70,71]. While online channels offer convenience and cost advantages [71], the environmentally friendly activities of distributors are important [72]. Since accessibility and convenience influence the adoption of green products [67], strategic positioning and availability are critical [72]. Designing a supply chain that ensures the efficient flow of materials and information for sustainability and determining the optimal location for facilities/centers/points of sale to minimize logistics impact are crucial [3]. Distribution is considered one of the mix elements with the highest potential for reducing environmental impact. Environmental impact within the process can be reduced through methods such as collaborating with eco-friendly partners, waste reduction, promoting reuse, product recycling, and lifecycle assessment (cradle-to-cradle) [41]. This may necessitate redesigning the distribution network and developing secondary markets [43].

Green distribution is a fundamental mix element focused on minimizing harmful environmental impacts [73]. Sustainable companies should oversee the ethical/ecological practices of their suppliers/distributors, the locality of products, and price fairness [41]. Green packaging is also important; it describes packaging that is environmentally sustainable, often natural, reusable/recyclable, biodegradable, and designed to minimize harm throughout its lifecycle [74,75]. Green packaging can influence consumer awareness [76] and purchasing behavior [77,78], and is sometimes considered a marketing mix element itself [45].

In summary, green place/distribution strategies aim to reduce environmental impact across a broad spectrum, including logistics, physical spaces, distribution channels, and packaging. Successful implementation creates an environmentally conscious image [65], facilitates access to green products, contributes to sustainability, and attracts relevant consumers [59].

**Green Promotion:** Green promotion refers to the strategies businesses employ to communicate their environmental benefits and sustainability commitments to target audiences [79–81]. Grounded in sustainability theory [82], its primary aim is to inform, persuade, and remind stakeholders (particularly consumers) about environmental efforts [36,83], while also providing accurate product information in a manner that respects both ethical and materialistic values [22]. Green promotion activities aim to enhance consumer knowledge regarding environmental issues, alter their

perceptions of eco-friendly products/services, and educate them [31,54]. To this end, various communication techniques and channels, such as advertising and public relations, are utilized [83–85].

Effective green promotion activities can positively influence individuals' attitudes towards advertising and their intentions towards environmentally conscious actions [86]. Consequently, businesses are inclined to gain a better brand reputation [87], attract environmentally conscious stakeholders (consumers, investors, talent), and achieve a competitive advantage [79,80]. Indeed, green promotion has been shown to have a significant impact on purchasing decisions [65,88]. Its effectiveness can be evaluated based on indicators such as the accuracy of advertising media, message delivery, contribution to brand image, informativeness, and its impact on consumer interest and loyalty [32]. The effectiveness of green promotion relies heavily on the company's perceived credibility and the authenticity of its environmental claims [89,90]. Credibility, which is key to success, necessitates communication that is data-driven [51], non-exaggerated, and consistent [90]. Such credible and transparent communication facilitates consumers' internalization of environmental information [91] and encourages purchasing behavior [92]. Green advertising, in particular, aims to persuade consumers by highlighting the product's eco-friendly attributes [33,85] or a relevant environmental issue [22,86]. These advertisements serve functions such as establishing the product-environment connection, promoting a pro-environmental lifestyle, and showcasing the organization's green identity [4,30].

Green promotion plays a critical role in enabling businesses to communicate their environmental sustainability efforts, build a green brand image, and persuade consumers of the benefits of environmental protection [3]. Promotional strategies can communicate environmental sponsorships, product modifications, and tangible actions [18]. Digital channels (social media, blogs, websites) enhance communication by facilitating direct dialogue about green products/services and educating consumers [93], which may necessitate a shift in communication strategies towards online media [29].

Green promotion messages should be tailored according to the expectations of environmentally conscious customers [23] and must effectively convey the business's commitment to eco-friendliness [31]. As environmental attributes, which are often not immediately apparent, must be made visible [94], green labeling, certifications and green packaging serve as important communication tools in this context. Green packaging, utilizing eco-friendly technology [95], can influence consumer awareness and the decision-making process [96].

### 3. Method

While the research is descriptive in nature, it also possesses exploratory characteristics. It describes the current state of SMEs actively operating in the Ankara Ostim Organized Industrial Zone (OSB) concerning their existing green marketing practices. This study involved an extensive literature review; additionally, informal, conversational interviews were conducted with relevant stakeholders in the field to capture idioms that could provide insights for formulating the item pool. Coşkun et al. [97] state that the foundation of an exploratory study consists of a comprehensive literature review and interviews with field experts. These methods allow for the development of new perspectives on the research topic. According to Burns and Bush [98], the most common purpose of exploratory research is to understand existing information more deeply and develop new hypotheses. Methods such as secondary data analysis and experience surveys are often preferred to achieve this purpose. Specifically, secondary data analysis forms the basis of exploratory research.

**Population and Sample:** The research population consists of managers and/or officials of firms operating in Ankara Ostim OSB. There are over 6,500 businesses operating in 17 different sectors within Ostim OSB [99]. Yazıcıoğlu and Erdoğan [100] state that for a population of 5000 and above with a 0.05 margin of error, a sample size of 357 individuals is sufficient. Similarly, Sekeran [101] suggests 361 individuals for populations up to 6000, and Israel [102] indicates 375 individuals for populations of the same size. In this study, a total of 387 individuals (managers and/or officials) from 360 businesses constitute the sample size.

**Data Collection Instrument and Characteristics:** In this study, primary data were collected through questionnaires. The Likert-type statements included in the questionnaire form are those remaining in the item pool after expert review. Accordingly, the questionnaire form consists of three sections in total. The first section comprises 62 statements related to determining the Green Marketing Mix Practice Culture (GMMPC). These statements were rated using a 5-point Likert-type scale. The second section covers general business information and consists of 15 questions in total, including 'yes-no' and multiple-choice formats. The final section includes 6 multiple-choice questions to determine the participants' demographic characteristics. Nominal and ordinal scales were used to measure the questions in the last two sections, generally involving discrete variables. The relevant literature for the study was obtained from secondary sources such as books, articles, theses, and websites.

**Data Collection (Questionnaire Administration):** With permission obtained from the managers of Ankara Ostim OSB Directorate and Ostim İŞKUR Service Center, the questionnaire administration was conducted between February 22, 2024, and July 8, 2024. The Ankara Ostim OSB Directorate and its Green Transformation and Sustainability Office significantly contributed to the study's progress through their meetings and sensitivity in providing information on environmental issues, as well as their support in reaching out to firms. Of the 387 valid questionnaires included in the evaluation, 330 were administered face-to-face, 30 were obtained via Google Forms, and 27 were personally delivered to participants and retrieved the subsequent day. Participation in the questionnaire administration was notably higher during promotional events attended by middle and senior-level company officials, including the "İş Pozitif Women's Employment Promotion Fair", "OSTİMTECH Promotion Days", "Prosumer Renewable Energy e-Mobility Charging Fair", "Green Transformation in Industry Summit", and "Çevrefest, Solar Energy Solutions for Clean Production" programs. Firms visiting Ostim İŞKUR also showed high participation rates in the survey.

**Data Analysis:** The validity and reliability of the scale used in the research were initially assessed using the SPSS 24 statistical package program. Item analysis and the Cronbach's alpha coefficient were determined to assess the scale's internal consistency. The construct validity of the scale was examined using Exploratory Factor Analysis (EFA), and the resulting factor structure was confirmed using Confirmatory Factor Analysis (CFA) in the AMOS program.

#### **4. Scale Development Study on Green Marketing Mix Practice Culture (GMMPC)**

In the scale development phase, the 10 steps defined by Carpenter [103] were followed. This involved two studies. The first concerned the scale structure emerging from analyses conducted on the pre-test sample of 159 individuals. Secondly, these analyses were replicated on a larger group of 387 individuals. Consequently, the scale was finalized after confirming the consistency of the results across both analyses. Carpenter's [103] approach plays an important role in improving the quality and scientific value of scale development studies by providing a practical guide that is more structured, comprehensive, and reporting-oriented than other approaches. This approach is used by many authors in scale development studies [104–106].

##### *4.1. Study 1: Pre-Test Analysis*

###### **Stages 1 & 2: Creation of the item pool and submission for expert review**

The initial steps comprised several phases: Formulating appropriate conceptual statements from the literature (item pool generation), conducting qualitative research to establish dimensions and elements, submitting the generated pool for expert review, assessing the validity of the items within the pool, and determining the questionnaire structure and model. The responses given by 10 experts to the statements in the item pool are summarized in Appendix Table 1. Only the statements deemed 'necessary' by the experts were retained in the item pool. All experts were academic personnel

specializing in the field of marketing, comprising 6 males and 4 females. All experts possessed a minimum of 10 years of professional experience.

**Stage 3:** Calculation of Content Validity Ratios (CVR)

The statements in the item pool were evaluated by 10 experts. The CVR for each statement was calculated using the following formula [107]:

$$\text{CVR} = \frac{NE}{(N/2)} - 1$$

(1)

Where:

NE = Number of experts rating the item as "Necessary"

N = Total number of experts

According to Table 1, the minimum number of experts needing to rate an item as "Necessary" for it to be considered acceptable among the 10 experts is 9. The corresponding CVR value when 9 out of 10 experts agree is 0.80.

Table 1. CVR reference table.

Panel Size	Proportion Agreeing Essential	CVR Critical Exact Values	One-Sided pValue	Ncritical (Min. No. of Experts Required to Agree Item Essential)	Ncritically Calculated From CRITBINOM Function
5	1	1.00	.031	5	4
6	1	1.00	.016	6	5
7	1	1.00	.008	7	6
8	.875	.750	.035	7	6
9	.889	.778	.020	8	7
10	<b>.900</b>	<b>.800</b>	<b>.011</b>	<b>9</b>	<b>8</b>
15	.800	.600	.018	12	11
20	.750	.500	.021	15	14
25	.720	.440	.022	18	17
30	.667	.333	.049	20	19

Source: developed by the authors based on Ayre and Scally [108].

According to Table 2, items with a CVR of 0.80 or higher were interpreted as "Remained". Items with a CVR below 0.80 were interpreted as "Eliminated" and subsequently removed from the item pool. A total of 62 items, having CVRs of 0.80 or above, remained in the item pool and were included in the questionnaire form designated for field application. The average of the CVRs for these retained items constitutes the Content Validity Index (CVI). The content validity of the scale is considered statistically significant if the CVI meets or exceeds the minimum acceptable CVR value. Of the 62 retained items, 36 had a CVR of 0.80, while the remaining 26 had a CVR of 1.00. Consequently, the mean CVR for all retained items is 0.90. Therefore, since  $0.90 \geq 0.80$  (the minimum acceptable CVR for 10 experts), the content validity of the scale is statistically significant.

Table 2. GMMPC item pool-CVR and comments.

Item No	NE	CVR	Comment	Item No	NE	CVR	Comment
1	9	0,80	Remained	42	9	0,80	Remained
2	1	-0.80	Eliminated	43	9	0,80	Remained
3	9	0,80	Remained	44	10	1,00	Remained
4	10	1,00	Remained	45	6	0,20	Eliminated
5	10	1,00	Remained	46	10	1,00	Remained
6	9	0,80	Remained	47	9	0,80	Remained
7	10	1,00	Remained	48	10	1,00	Remained
8	2	-0,60	Eliminated	49	9	0,80	Remained
9	10	1,00	Remained	50	8	0,60	Eliminated
10	9	0,80	Remained	51	9	0,80	Remained
11	9	0,80	Remained	52	10	1,00	Remained



12	7	0,40	Eliminated	53	9	0,80	Remained
13	10	1,00	Remained	54	10	1,00	Remained
14	10	1,00	Remained	55	4	-0,20	Eliminated
15	9	0,80	Remained	56	9	0,80	Remained
16	9	0,80	Remained	57	10	1,00	Remained
17	8	0,60	Eliminated	58	10	1,00	Remained
18	9	0,80	Remained	59	9	0,80	Remained
19	9	0,80	Remained	60	9	0,80	Remained
20	9	0,80	Remained	61	10	1,00	Remained
21	9	0,80	Remained	62	10	1,00	Remained
22	9	0,80	Remained	63	7	0,40	Eliminated
23	5	0,00	Eliminated	64	9	0,80	Remained
24	9	0,80	Remained	65	8	0,60	Eliminated
25	9	0,80	Remained	66	10	1,00	Remained
26	9	0,80	Remained	67	4	-0,20	Eliminated
27	8	0,60	Eliminated	68	10	1,00	Remained
28	9	0,80	Remained	69	9	0,80	Remained
29	9	0,80	Remained	70	5	0,00	Eliminated
30	8	0,60	Eliminated	71	10	1,00	Remained
31	7	0,40	Eliminated	72	5	0,00	Eliminated
32	10	1,00	Remained	73	9	0,80	Remained
33	9	0,80	Remained	74	10	1,00	Remained
34	9	0,80	Remained	75	6	0,20	Eliminated
35	10	1,00	Remained	76	9	0,80	Remained
36	9	0,80	Remained	77	2	-0,60	Eliminated
37	10	1,00	Remained	78	9	0,80	Remained
38	10	1,00	Remained	79	10	1,00	Remained
39	4	-0,20	Eliminated	80	7	0,40	Eliminated
40	10	1,00	Remained	81	9	0,80	Remained
41	10	1,00	Remained	82	9	0,80	Remained

**Stage 4:**

Step 1: Creation of the scale: After the CVRs and CVIs of the statements in the item pool were calculated, the final version of the scale in question is below and item numbers were reassigned.

**Table 3.** Attitude Scale for GMMPC.

Nu.	Items
1	We design products to save energy with reduced materials
2	We design for remanufacturing so that waste can be recycled.
3	With the green packaging approach, our materials are less damaged (such as breakage, deterioration)
4	Green packaging approach reduces our packaging waste
5	Green packaging practices make our products even lighter.
6	Green packaging practices reduce costs.
7	We use recycled materials in our products.
8	We use recycled materials for packaging.
9	We consider the environment when designing the product.
10	We use ecological green materials in production.
11	Our suppliers' products are recyclable
12	We minimize our waste in production
13	We use renewable energy sources in production
14	Our company offers innovative green products to the market.
15	Green products provide our company with the opportunity to differentiate.

16 The raw materials we use are safe for the environment.  
 17 The production process in our enterprise is based on ISO 14001 certification.  
 18 Our company produces environmentally friendly products  
 19 Environment is a key criterion for supplier selection.  
 20 We support the green environmental components of the product.  
 21 A separate unit monitoring environmental costs has been established in our organization.  
 22 The use of recycled materials in our business reduces costs.  
 23 It is normal for green products to be priced slightly higher than other products.  
 24 Our customers are willing to pay high prices for green products.  
 25 We take environmental factors into account in our price policy.  
 26 We use local products to reduce transportation costs.  
 27 The use of Information Technologies in the enterprise reduces distribution costs  
 28 We cover the additional cost of a green product.  
 29 We consider environmental issues in distribution.  
 30 Our company tries to persuade its customers to be environmentally conscious during direct  
 sales.  
 31 We utilize green vehicles in the distribution channel.  
 32 We use electronic information systems in green transportation.  
 33 Thanks to green transport, we use less fuel.  
 34 Thanks to green transportation, we can reduce costs by saving time on the shipment route  
 35 We monitor emissions from the distribution of the product.  
 36 The environmental aspect of our products is at the forefront in marketing.  
 37 Our environmental practices are updated on our website.  
 38 Our company chooses packaging materials from degradable products.  
 39 Our business is trying to reduce the use of packaging.  
 40 Our business uses environmentally friendly green label.  
 41 The labels contain information on recycling.  
 42 We prevent the use of hazardous substances in packaging.  
 43 The amount of handling of goods is minimized to increase delivery flexibility.  
 44 The warehouse of our business is organized with environmentally friendly methods.  
 45 We use integrated transportation systems in distribution  
 46 We choose cleaner transportation systems  
 47 We use green arguments in marketing communication.  
 48 Our marketing communications reflect the company's commitment to the environment.  
 49 Environmental claims in advertising are often met with criticism from the environment  
 (competitors, consumer organizations, etc.).  
 50 The company cooperates with environmental groups to effectively promote "green image"  
 51 Environmental labeling is an effective promotional tool for our company.  
 52 We inform consumers about environmental management in the company  
 53 We participate in sponsorship activities on environmental issues.  
 54 We use specific environmental criteria for our suppliers.  
 55 When promoting our products, we prefer digital communication as it is more  
 environmentally friendly  
 56 We implement paperless policy in our procurement as much as possible.  
 57 We emphasize the image of "green business" in promotional activities  
 58 Our company uses factual statements in product advertisements.  
 59 Our image as an environmentally friendly company gives us a competitive advantage.  
 60 We emphasize in our advertisements that our products are green.  
 61 Green identical to the environment dominates the product packaging.  
 62 Our product promotions include environmental protection activities.

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The retained items (questions) from the scale were initially administered as a pre-test to a small group. It is emphasized in the literature that pre-tests should be conducted on a minimum of 100 participants [109–111]. In this study, a sample comprising 159 participants was obtained. This obtained sample size is deemed adequate [112,113]. Data regarding the demographic characteristics of the pre-test sample are presented in Table 4.

Table 4. Demographic variables (n=159).

Variable	Group	n	%	Variable	Group	n	%
Sex	Female	53	33.33	Experience	Less than 5 years	23	14.50
	Male	106	66.67		6-10 years	55	34.60
Age	30 and below	43	27.00		11-15 years	38	23.90
	31-40 years	37	23.30		16-20 years	22	13.80
	41-50 years	48	30.20		21 years and above	21	13.20
	51 and above	31	19.50	Position	Lower level manager	39	24.50
Marital Status	Married	92	57.90		Middle manager	61	38.40
Educational Level	Single	67	42.10		Senior executive	45	28.30
	High school and below	21	13.20		Boss (business owner)	14	9.80
	Associate degree	34	21.40				
	Undergraduate	71	44.60				
	Postgraduate	33	20.80				

According to Table 4, 66.67% (106 individuals) of the subjects were male, and 33.33% (53 individuals) were female. More than half of the subjects were 40 years of age or younger, and predominantly held undergraduate degrees. In addition to demographic characteristics, normality analysis was conducted to examine the distribution of other data.

For large datasets, numerous statistical tests requiring normally distributed data tend to be robust to violations of this assumption. Various methods exist to formally check for normality in a dataset, including the well-known Kolmogorov-Smirnov and Shapiro-Wilk tests.

According to Table 5, the Skewness and Kurtosis values fall within the range of +1.96 to -1.96. Therefore, the sample can be considered normally distributed [114].

Table 5. Normality analysis.

Scale	Kolmogorov-Smirnov			Central Tendency Measurements			
	Statistic	df	Sig.	Mean	Median	Skewness	Kurtosis
GMMPC	0,101	159	0,000	3,417	3,583	-0,727	0,539

Stage 4: Establishing the Factor Structure of the Scale

Within this stage, the correlation matrix was first examined. The correlation test determined that there were no items without significant correlations. Accordingly, Exploratory Factor Analysis (EFA) was performed. Based on the EFA, Bartlett's test of sphericity yielded a chi-square value indicating significance ( $p \leq .05$ ), the KMO measure was  $\geq 0.60$ , and factor loadings exceeded 0.50 [114]. EFA is important and widely used in scale development, refinement, and evaluation [115]. EFA is useful for data reduction and identifying latent relationships. Furthermore, EFA can provide significant flexibility to the model, offering insights to better explain the underlying structure and relationships, which can subsequently influence the inferences drawn from the analysis [116].

The values related to EFA and Parallel Analysis (PA) are presented in Table 6. According to the analysis, KMO = 0.895 (KMO > 0.60), Bartlett's test of sphericity = 0.000 (Bartlett's < 0.05), and Cronbach's Alpha = 0.913, which is above the 0.60 threshold [114–116]. Thus, the developed scale appears to meet the appropriate criteria. However, even if the analysis results meet the desired

criteria, it is necessary to check the random distribution of items across the scale's sub-dimensions using PA [103]. Horn [117] recommended PA as an alternative to the commonly used Kaiser-Guttman criterion (eigenvalue > 1) for determining the number of factors to retain.

**Table 6.** EFA and PA.

Statements			Factor Load Value (SPSS)	Cron. Alfa (α)	PA Results		
					(Ncases: 159; Nvar: 12; Ndataset:100; Percent: 95; Brian Oc)		
					Raw Data	Means	Percently
Dimension 1							
	% of Variance: 46,564 ;Eigen-value: 6,147		α= 0,869	6,147	1,473	1,584	
GMMPC 52	We inform consumers about the environmental management within our company	0,730					
GMMPC 53	We participate in sponsorship activities related to environmental issues.	0,760					
GMMPC 54	We utilize specific environmental criteria for our suppliers	0,820					
GMMPC 57	We emphasize the 'eco-friendly business' image in our promotional activities.	0,645					
GMMPC 60	We highlight the green attributes of our products in our advertisements.	0,601					
Dimension 2							
	% Of Variance: 8,940 ;Eigen-Value: 1,419		α= 0,854	1,419	1,352	1,419	
GMMPC 3	Our materials sustain less damage (such as breakage, spoilage) due to our green packaging approach	-0,666					
GMMPC 4	The green packaging approach reduces our packaging waste.	-0,982					
GMMPC 5	Green packaging practices make our products even lighter.	-0,704					
Dimension 3							
	% Of Variance: 5,325 ;Eigen-Value: 1,347		α= 0,842	1,347	1,254	1,320	
GMMPC 31	We utilize green vehicles in our distribution channel.	0,764					
GMMPC 33	We use less fuel thanks to green transportation	0,815					
GMMPC 35	We monitor emissions resulting from product distribution	0,608					
GMMPC 46	We select cleaner transportation systems	0,510					
Extraction Method: Maximum Likelihood (ML)							
Rotation Method: Direct Oblimin							
KMO: 0,895;							
Bartlett's sphericity test; (χ2=1.033,152; df=66; p=,000)							

Horn recommends comparing the eigenvalues obtained from a factor analysis with those derived from a random data set of the same dimensions [118]. This comparison is considered a crucial step in determining whether the factor structure reflects a genuine underlying structure or is merely due to chance. No random distribution was observed through PA. However, the Kaiser-Guttman analysis was also deemed necessary to check the random distribution of items across the scale's sub-dimensions. Despite its critical aspects, an analysis based on the Kaiser-Guttman criterion was conducted regarding the distribution of items within the scale. This analysis is presented in Table 7.



**Table 7.** Unidimensionality Analysis (Kaiser-Guttman Criterion).

Factors	No. of items	1. Eigenvalue	2. Eigenvalue	3. Eigenvalue	4. Eigenvalue	Total Variance
GMMPC	12	6,147	1,419	1,347	0,621	60,728

**Steps 5-9**

In steps 5, 6, 7, 8, and 9, the EFA results and the required factor loading values are explained in significant detail [103]. Within this framework, analyses were conducted using the Maximum Likelihood method. The factor loading threshold was set at 0.50. "Direct Oblimin" was chosen as the rotation method. During the scale creation phase, DFA was repeated five times, and EFA and PA were performed. The values of the items deleted as a result of these analyses, along with the reasons for deletion, are provided in Table 8.

**Table 8.** Deleted items\*.

Nu	Items
GMMPC 1	We design products to save energy using reduced materials.
GMMPC 2	We design for remanufacturing to facilitate waste recycling.
GMMPC 6	Green packaging practices reduce our costs.
GMMPC 7	We use recycled materials in our products.
GMMPC 8	We use recycled materials for packaging.
GMMPC 9	We consider the environment when designing products.
GMMPC 10	We use ecological/green materials in production.
GMMPC 11	Our suppliers' products are suitable for recycling.
GMMPC 12	We minimize the amount of waste in our production processes.
GMMPC 13	We use renewable energy sources in production.
GMMPC 14	Our company offers innovative green products to the market.
GMMPC 15	Green products provide our company with differentiation opportunities.
GMMPC 16	The raw materials we use are safe for the environment.
GMMPC 17	Our production process is based on the ISO 14001 certification.
GMMPC 18	Our business produces environmentally friendly products.
GMMPC 19	The environment is a key criterion in our supplier selection.
GMMPC 20	We promote the green environmental components of the product.
GMMPC 21	A separate unit has been established in our business to monitor environmental costs.
GMMPC 22	Using recycled materials in our business reduces costs.
GMMPC 23	It is normal for green products to be priced slightly higher than other products.
GMMPC 24	Our customers accept paying higher prices for green products.
GMMPC 25	We consider environmental factors in our pricing policy.
GMMPC 26	We use local products to reduce transportation costs.
GMMPC 27	The use of Information Technology (IT) in our business reduces distribution costs.
GMMPC 28	We account for the additional cost of an environmentally friendly product.
GMMPC 29	We consider environmental issues in distribution.
GMMPC 30	Our company tries to persuade customers to be environmentally conscious during direct sales.
GMMPC 32	We use electronic information systems in green transportation.
GMMPC 34	Through green transportation, we can save time on shipment routes and reduce costs.
GMMPC 36	The environmentally friendly aspect of our products is prominent in our marketing.
GMMPC 37	Our environmentally friendly practices are updated on our website.
GMMPC 38	Our business selects packaging materials from biodegradable products.
GMMPC 39	Our business tries to reduce the use of packaging.
GMMPC 40	Our business uses environmentally friendly green labels.
GMMPC 41	Information regarding recycling is included on our labels.
GMMPC 42	We avoid the use of hazardous materials in packaging.

GMMPC 43	The quantity of goods handling is minimized to increase delivery flexibility.
GMMPC 44	Our business's warehouse is organized using environmentally friendly methods.
GMMPC 45	We use integrated transportation systems in distribution
GMMPC 47	We use green arguments in our marketing communications.
GMMPC 48	Our marketing communication reflects the company's commitment to the environment.
GMMPC 49	Environmental claims in advertisements are often met with criticism from external parties (e.g., competitors, consumer organizations).
GMMPC 50	The company collaborates with environmental groups to effectively promote its 'green image'.
GMMPC 51	Environmental labeling is an effective promotional tool for our company.
GMMPC 55	We prefer digital communication for promoting our products because it is more environmentally friendly.
GMMPC 56	We implement a paperless policy in our procurement activities whenever possible.
GMMPC 58	Our company uses truthful statements in its product advertisements.
GMMPC 59	Our environmentally friendly company image provides us with a competitive advantage.
GMMPC 61	The color green, synonymous with the environment, dominates our product packaging.
GMMPC 62	Our product promotions include environmental protection activities.

\*: These items were deleted because their factor loading values were below 0.50.

The correlation relationships within the structure formed after item deletion are presented in Table 9. The primary objective of conducting this analysis is to identify any potentially inconsistent scale items among the remaining variables. In this respect, items demonstrating a significant correlation of at least 0.50 with at least one other scale item are deemed appropriate.

Table 9. Correlation Table.

No		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	GMMPC 3	1														
2	GMMPC 4	,701**	1													
3	GMMPC 5	,579**	,702**	1												
4	GMMPC 31	,407**	,350**	,379**	1											
5	GMMPC 33	,326**	,420**	,340**	,637**	1										
6	GMMPC 35	,440**	,402**	,317**	,529**	,558**	1									
7	GMMPC 46	,466**	,440**	,362**	,518**	,560**	,623**	1								
8	GMMPC 52	,319**	,384**	,374**	,349**	,321**	,400**	,450**	1							
9	GMMPC 53	,445**	,330**	,344**	,438**	,403**	,487**	,530**	,560**	1						
10	GMMPC 54	,396**	,429**	,433**	,414**	,461**	,472**	,583**	,600**	,672**	1					
11	GMMPC 57	,399**	,438**	,494**	,361**	,416**	,459**	,460**	,519**	,490**	,608**	1				
12	GMMPC 60	,451**	,415**	,490**	,453**	,425**	,483**	,528**	,484**	,557**	,582**	,626**	1			
	GMMPC															
13	1st dimension	,872**	,909**	,858**	,431**	,411**	,441**	,482**	,407**	,426**	,476**	,503**	,514**	1		
	GMMPC															
14	2nd dimension	,499**	,489**	,424**	,812**	,830**	,827**	,824**	,463**	,566**	,587**	,516**	,575**	,537**	1	
	GMMPC															
15	3rd dimension	,495**	,492**	,525**	,497**	,499**	,567**	,629**	,787**	,812**	,856**	,798**	,795**	,573**	,667**	1
16	GMMPC	,694**	,700**	,675**	,680**	,682**	,722**	,763**	,674**	,731**	,775**	,729**	,753**	,784**	,865**	,904**

Step 10: Application of Confirmatory Factor Analysis (CFA)

CFA is essentially utilized for conducting psychometric evaluations and confirming the structure [of a scale]. Furthermore, CFA can also be employed to assess method effects and factor invariance [119]. EFA and CFA are distinct. EFA is a statistical method that simplifies data by reducing the relationships among observable variables to a smaller number of latent variables. EFA is used in examining the structure related to correlation or covariance matrices [120]. EFA is fundamentally data-driven. It is widely criticized on this point because its application does not require any pre-specified hypotheses regarding the scale's factor structure [119]. In contrast, CFA is a statistical method used to test the validity of a theoretical model. Therefore, it holds a clear advantage over EFA [121]. The CFA was performed on the newly identified model, and its visual representation is provided below (Figure 1).

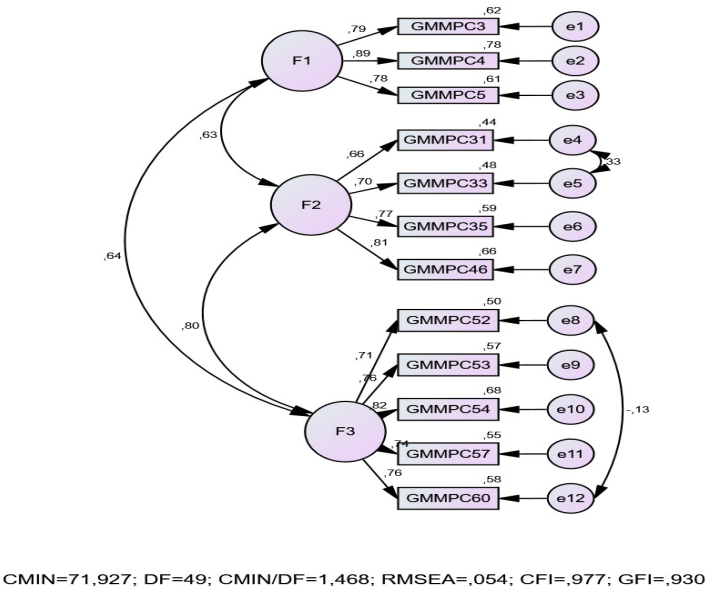


Figure 1. Study 1 CFA analysis path diagram.

To test the suitability of the scales, CFA was applied using the AMOS 24 program. According to the analysis results, the required criteria are:  $X^2/df < 5$ ,  $p < 0.05$ ,  $RMSEA < 0.08$ ,  $CFI > 0.90$ ,  $GFI > 0.85$ ,  $NFI > 0.90$ ,  $SRMR < 0.08$ ,  $AVE > 0.50$ , and  $CR > 0.70$  [114,122,123]. The goodness-of-fit indices for the analysis are provided in Table 10.

Table 10. Goodness-of-Fit Indices.

$X^2(df)$	p	RMSEA	CFI	GFI	SRMR	AVE	CR
1.468	0.000	0.054	0.977	0.930	0.028	0.589	0.967

The measurement model and factor loadings for the analysis are presented in Table 11.

Table 11. Measurement Model.

Items			$\beta_1$	$\beta_2$	Ss	t	p	CR	AVE
Measurement Model									
GMMPC 3	←	2 nd.dimension	0,786	1,000					
GMMPC 4	←	2nd.dimension	0,886	1,053	0,095	11,123	<0,001		
GMMPC 5	←	2 nd.dimension	0,779	0,906	0,090	10,072	<0,001	0,967	0,589
GMMPC 31	←	3 rd. dimension	0,662	1,000					
GMMPC 33	←	3 rd. dimension	0,696	1,014	0,111	9,119	<0,001		

GMMPC 35	←	3 rd. dimension	0,769	1,209	0,152	7,973	<0,001
GMMPC 46	←	3 rd. dimension	0,815	1,275	0,154	8,274	<0,001
GMMPC 52	←	1 st dimension	0,710	1,000			
GMMPC 53	←	1 st dimension	0,758	1,043	0,119	8,776	<0,001
GMMPC 54	←	1 st dimension	0,824	1,111	0,118	9,451	<0,001
GMMPC 57	←	1 st dimension	0,740	0,990	0,115	8,589	<0,001
GMMPC 60	←	1 st dimension	0,764	0,968	0,115	8,420	<0,001

β1: Standard Coefficients, β2: Non-Standard Coefficients.

According to the measurement model, there were no items with a factor loading value below 0.50. The Green Marketing Mix Practice Culture (GMMPC) scale was revealed to consist of three factors and 12 items. The analyses are limited by the participants' ability to understand and respond to the questions. Therefore, the developed scale requires further testing on a larger sample [124,125]. Within this context, the developed scale will be re-tested on a new sample group (387 individuals). The analyses conducted in this scope are presented under the heading "Study 2".

4.2. Study 2

The 3-factor, 12-item scale resulting from the pre-test regarding GMMPC was re-administered to a group of 387 individuals. The analyses were again conducted following the relevant steps outlined by Carpenter [103] in his 10-step process. The demographic characteristics of the sample are presented in Table 12. Accordingly, the majority of the subjects were male. More than half of the subjects were 40 years of age or younger, predominantly held undergraduate degrees, and possessed more than 10 years of work experience. The subjects' tenure within their respective firms was generally less than 5 years. The firms have generally been operational for more than 10 years and employ significantly more than 100 people. Among the firms, those operating in the food and packaging products sector, as well as machinery and parts manufacturing, were more numerous. The majority of the firms utilize digital marketing, and more than half understand the importance of digital marketing. More than half of the firms engage in exporting, but none utilize any carbon offsetting systems. It was observed that more than half of the firms possess moderate to advanced knowledge regarding the European Union's Carbon Border Adjustment Mechanism (CBAM); they also believe that the CBAM will affect their business moderately to significantly. It is understood that most firms lack reverse logistics systems, while more than half use environmental marks or labels on their products, with "eco-friendly" and "recycling" being the most commonly used marks. According to the same table, most firms anticipate an increase in the number of personnel to be employed for green jobs in the future and do not possess ISO 14001 certification.

Table 12. Demographic characteristics of participants (n=387) and information regarding SMEs.

Variable	Groups	F	%	Variable	Groups	F	%
Sex	Female	163	42,1	Use of Digital Marketing	Yes	295	76,2
	Male	224	57,9		No	92	23,8
	Total	387	100,0		Total	387	100,0
Age	30 and below	94	24,3	Importance of Digital Marketing	Low importance,	33	8,5
	31-40 years	166	42,9		Moderate importance	89	23,0
	41-50 years	92	23,8		High importance	129	33,3
	51 and above	35	9,0		Very high importance	136	35,1
	Total	387	100,0		Total	387	100,0
Marital Status	Married	251	64,9	Export	Yes	232	59,9
	Single	136	35,1		No	155	40,1
	Total	387	100,0		Total	387	100,0



Educational Level	High school and below	49	12,7	Existence of Carbon Offsetting System (e.g., tree planting)	Yes	149	38,5
	Associate Degree	48	12,4		No	238	61,5
	Undergraduate	203	52,5		Total	387	100,0
	Postgraduate	87	22,5		Nothing	62	16,0
	Total	387	100,0				
Position	Lower level manager	84	21,7	Level of Knowledge Regarding Carbon Border Adjustment Mechanism (CBAM)	Less	104	26,9
	Middle manager	191	49,4		Middle	142	36,7
	Senior executive	81	20,9		More	43	11,1
	Boss (business owner)	31	8,0		Too much	36	9,3
	Total	387	100,0		Total	387	100,0
Experience	Less than 5 years	90	23,3	Expected Level of Impact of CBAM on the Business	No impact	58	15,0
	6-10 years	93	24,0		Low impact	73	18,9
	11-15 years	94	24,3		Moderate impact	140	36,2
	16-20 years	48	12,4		High impact	78	20,2
	21 years and above	62	16,0		Very high impact	38	9,8
Length of Employment (at the company)	Total	387	100,0	Reverse Logistics System	Total	387	100,0
	Between 1-5 years	198	51,2		Yes	88	22,7
	Between 6-10 years	110	28,4		No	299	77,3
	Between 11-15 years	40	10,3		Total	387	100,0
	Between 16-20 years	13	3,4	Use of Environmental Marks or Labels on Products	Yes	215	55,6
Company's Years in Operation	Between 21 years or more	26	6,7		No	172	44,4
	Total	387	100,0		Total	387	100,0
	Between 1-10 years	144	37,2	Labels/Marks Used	CE	78	20,2
	Between 11-20 years	80	20,7		Recycling	119	30,7
	Between 21-30 years	77	19,9		Green Dot	23	5,9
Number of Employees	Between 31-40 years	27	7,0		Eco-friendly,	108	27,9
	Between 41 years	59	15,2		ÇEVKO,	13	3,4
	Total	387	100,0		Ozone-friendly	5	1,3
	Between 100 employees or less	217	56,1	Expectation of an Increase in Personnel to be Employed for Green Jobs in the Future:	Eco-label	15	3,9
	Between 101-200 employees	54	14,0		Total	387	100,0
Sector of Operation	Between 201-300 employees	35	9,0		Yes	283	73,1
	Between 301-400 employees	28	7,2		No	104	26,9
	401 employees or more	53	13,7		Total	387	100,0
	Total	387	100,0	ISO 14001 Certification	Yes	182	47,0
	IT/Technology Products	94	24,3		No	205	53,0
Sector of Operation	Food and Packaging Products	100	25,8		Total	387	100,0
	Construction Products	41	10,6				
	Machinery and Parts Manufacturing	117	30,2				
	Medical, Optical, and Eyewear Manufacturing	7	1,8				
	Defense Industry	2	,5				
	Textile, Leather, and Leather Products	10	2,6				
	Logistics	6	1,6				
	Publishing House	10	2,6				

Total	387	100,0
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Following the pre-test of the GMMPC scale, the items corresponding to the resulting sub-dimensions were re-administered via survey to a larger sample (387 individuals). According to Table 13, the following notable findings were obtained: Respondents indicated that the green packaging approach reduces packaging waste ( $\bar{X} = 3.76$ ) and results in less damage to materials (such as breakage, spoilage) ( $\bar{X} = 3.63$ ). They also stated that they select cleaner transportation systems ( $\bar{X} = 3.60$ ), utilize specific environmental criteria for their suppliers ( $\bar{X} = 3.58$ ), participate in sponsorship activities related to environmental issues ( $\bar{X} = 3.53$ ), and highlight that their products are green in their advertisements ( $\bar{X} = 3.49$ ).

**Table 13.** Post-test GMMPC scale (n=387).

Sequence no.	Statements		1-Strongly disagree	2-Disagree	3-Neither disagree nor agree	4-Agree	5-Strongly agree	Mean	S.D.
1	GMMPC 3- Our materials sustain less damage (such as breakage, spoilage) due to our green packaging approach.	f	26	43	80	136	102		
		%	6,7	11,1	20,7	35,1	26,4	3,63	1,17
2	GMMPC 4- The green packaging approach reduces our packaging waste.	f	20	38	66	154	109		
		%	5,2	9,8	17,1	39,8	28,2	3,76	1,12
3	GMMPC 5- Green packaging practices make our products even lighter.	f	18	60	107	133	69		
		%	4,7	15,5	27,6	34,4	17,8	3,45	1,09
4	GMMPC 31- We utilize green vehicles in our distribution channel.	f	29	77	122	88	71		
		%	7,5	19,9	31,5	22,7	18,3	3,25	1,18
5	GMMPC 33- We use less fuel thanks to green transportation.	f	24	68	111	121	63		
		%	6,2	17,6	28,7	31,3	16,3	3,34	1,13
6	GMMPC 35- We monitor emissions resulting from product distribution.	f	32	101	83	107	64		
		%	8,3	26,1	21,4	27,6	16,5	3,18	1,22
7	GMMPC 46- We select cleaner transportation systems.	f	15	60	79	144	89		
		%	3,9	15,5	20,4	37,2	23,0	3,60	1,11
8	GMMPC 52- We inform consumers about the environmental management within our company.	f	33	85	63	135	71		
		%	8,5	22,0	16,3	34,9	18,3	3,33	2,24
9	GMMPC 53- We participate in sponsorship activities related to environmental issues.	f	21	69	69	138	90		
		%	5,4	17,8	17,8	35,7	23,3	3,53	1,18
10	GMMPC 54- We utilize specific environmental criteria for our suppliers.	f	26	54	60	162	85		
		%	6,7	14,0	15,5	41,9	22,0	3,58	1,17
11	GMMPC 57- We emphasize the 'eco-friendly business' image in our promotional activities.	f	31	74	70	134	78		
		%	8,0	19,1	18,1	34,6	20,2	3,40	1,22
12	GMMPC 60- We highlight that our products are green in our advertisements.	f	19	69	74	155	70		
		%	4,9	17,8	19,1	40,1	18,1	3,49	1,12

Normality analysis was conducted to examine the distribution of data beyond demographic variables.

According to Table 14, the Skewness and Kurtosis values fall within the range of +1.96 to -1.96. Therefore, the sample can be considered normally distributed [114]. Based on the item means for the sample and the normality results, EFA was re-applied to the resulting scale. According to the EFA, the item distribution within the scale is consistent with the previous analysis. PA was conducted on the sample to test for randomness. The results are presented in Table 15.

**Table 14.** Normality analysis.

Scale and Sub-dimensions	Kolmogorov-Smirnov			Central Tendency Measurements			
	Statistic	df	Sig.	Mean	Median	Skewness	Kurtosis
GMMPC	0,083	387	0,000	3,461	3,583	-0,512	0,026

**Table 15.** EFA ve PA.

Items		Factor Load value (SPSS)	Cron. Alfa ( $\alpha$ )	PA Results		
				(Ncases: 387; Nvar: 12; Ndataset:100; Percent: 95; Brian Oc)		
				Raw Data	Means	Percently
<b>1 st dimension</b>			$\alpha = 0,855$	6,132	1,297	1,346
% of Variance: 47,755 ;Eigen-value: 6,132						
GMMPC 52	We inform consumers about the environmental management within our company.	0,819				
GMMPC 53	We participate in sponsorship activities related to environmental issues.	0,726				
GMMPC 54	We utilize specific environmental criteria for our suppliers.	0,847				
GMMPC 57	We emphasize the 'eco-friendly business' image in our promotional activities.	0,648				
GMMPC 60	We highlight that our products are green in our advertisements.	0,491				
<b>2 nd dimension</b>			$\alpha = 0,858$	1,334	1,217	1,265
% Of Variance: 8,450 ;Eigen-Value: 1,334						
GMMPC 3	Our materials sustain less damage (such as breakage, spoilage) due to our green packaging approach.	-0,793				
GMMPC 4	The green packaging approach reduces our packaging waste.	-0,946				
GMMPC 5	Green packaging practices make our products even lighter.	-0,690				
<b>3 rd dimension</b>			$\alpha = 0,876$	1,208	1,158	1,200
% Of Variance: 6,437 ;Eigen-Value: 1,208						
GMMPC 31	We utilize green vehicles in our distribution channel.	0,863				
GMMPC 33	We use less fuel thanks to green transportation.	0,847				
GMMPC 35	We monitor emissions resulting from product distribution.	0,611				
GMMPC 46	We select cleaner transportation systems.	0,543				
<b>Extraction Method: Maximum Likelihood (ML)</b>						
<b>Rotation Method: Direct Oblimin</b>						
<b>KMO: 0,905;</b>						
<b>Bartlett's sphericity test; (<math>\chi^2=2.620,395</math>; df=66; p=,000)</b>						

According to Table 16, KMO = 0.905 (KMO > 0.60), Bartlett's test of sphericity = 0.000 (Bartlett's < 0.05), Cronbach's Alpha = 0.912,  $\chi^2/df < 5$ ,  $p < 0.05$ , Average Variance Extracted (AVE) measuring convergent validity > 0.50, and Composite Reliability (CR) > 0.70 [114–116]. Thus, the developed scale was again found to meet the appropriate criteria. The goodness-of-fit indices for this analysis are provided in Table 16.

**Table 16.** Goodness-of-Fit Indices.

X <sup>2</sup> (df)	p	RMSEA	CFI	GFI	SRMR	AVE	CR
2.563	0.000	0.064	0.970	0.949	0.037	0.605	0.970

Although some values were observed to decrease and others to increase with the larger sample size, all obtained results remained within the acceptable threshold limits. The required criteria for the analysis results are: RMSEA < 0.08, CFI > 0.90, GFI > 0.85, NFI > 0.90, SRMR < 0.08, AVE > 0.50, and CR > 0.70 [122,123]. Even though the analysis results met the expected values, the Kaiser-Guttman analysis was conducted again to re-test the random distribution of items across the scale's sub-dimensions. According to this analysis, the scale items were found to be distributed across the correct sub-dimensions, and the values are presented in Table 17.

**Table 17.** Unidimensionality analysis (Kaiser-Guttman Criterion).

Factors	No. of items	1. Eigenvalue	2. Eigenvalue	3. Eigenvalue	4. Eigenvalue	Total Variance
GMMPC	12	6,132	1,334	1,208	0,561	62,603

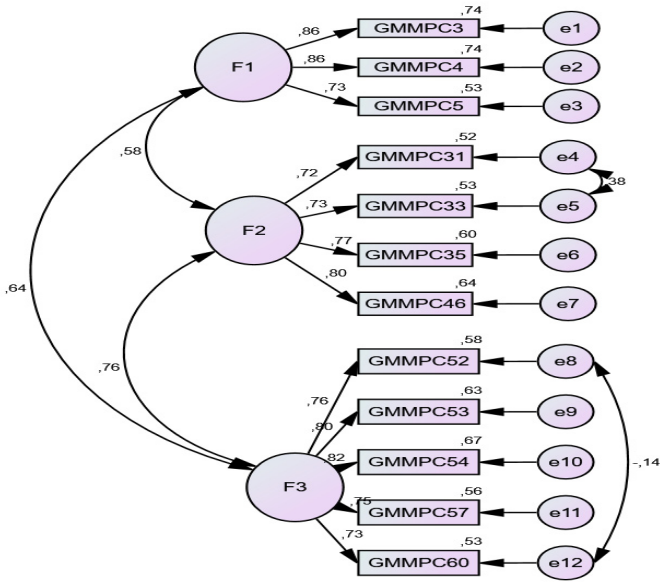
The correlation relationships within the resulting structure are presented in Table 18. The primary objective of conducting this analysis is to identify any potentially inconsistent scale items among the variables. In this regard, items demonstrating a significant correlation of at least 0.50 with at least one other scale item are deemed appropriate.

**Table 18.** Correlation table.

Items	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
GMMPC 3	1														
GMMPC 4	,743**	1													
GMMPC 5	,603**	,641**	1												
GMMPC 31	,390**	,324**	,346**	1											
GMMPC 33	,352**	,367**	,297**	,704**	1										
GMMPC 35	,419**	,358**	,291**	,589**	,573**	1									
GMMPC 46	,426**	,372**	,327**	,562**	,586**	,601**	1								
GMMPC 52	,369**	,384**	,343**	,326**	,339**	,406**	,463**	1							
GMMPC 53	,468**	,375**	,339**	,455**	,442**	,503**	,547**	,599**	1						
GMMPC 54	,464**	,436**	,427**	,394**	,395**	,431**	,509**	,641**	,682**	1					
GMMPC 57	,430**	,420**	,434**	,408**	,412**	,432**	,413**	,599**	,530**	,635**	1				
GMMPC 60	,463**	,378**	,431**	,468**	,433**	,494**	,529**	,493**	,585**	,540**	,551**	1			
GMMPC 1st dimension	,894**	,903**	,844**	,402**	,385**	,406**	,427**	,415**	,449**	,503**	,486**	,482**	1		
GMMPC 2nd dimension	,474**	,424**	,376**	,853**	,851**	,831**	,815**	,457**	,581**	,515**	,497**	,574**	,483**	1	
GMMPC 3 rd. dimension	,535**	,487**	,482**	,500**	,493**	,553**	,600**	,820**	,829**	,855**	,815**	,768**	,570**	,640**	1
GMMPC	,713**	,672**	,634**	,696**	,687**	,715**	,738**	,702**	,764**	,767**	,736**	,742**	,765**	,846**	,907**

According to the EFA results, the values were found to meet the expected criteria. However, due to the advantages of CFA compared to EFA, it was necessary to apply CFA to the scale [121]. The visual representation of this analysis is provided below.





CMIN=125,574; DF=49; CMIN/DF=2,563; RMSEA=.064; CFI=.970; GFI=.949

Figure 2. Study 2 CFA analysis path diagram.

According to the measurement model in Table 19, no items were found with a factor loading value below 0.50. The scale, comprising three factors and 12 items, was re-tested. The quality of measurement is often difficult to ascertain in numerous published studies. Typically, little information beyond reliability is reported. According to Shevlin et al. [126], the reliability of a measurement instrument is not, by itself, a sufficient condition for its validity. Indeed, in some cases, reliability coefficients may appear artificially inflated due to measurement errors. This situation can lead to misleading conclusions regarding the validity of the measurement instrument. Such issues are unlikely to be detected through EFA. Although EFA can be reported, CFA provides a statistically stronger foundation for validating a theoretical model [115,116,118,120].

Table 19. Measurement model.

Items		$\beta 1$	$\beta 2$	Ss	t	p	CR	AVE
Measurement model								
GMMPC 3	← 2 nd.dimension	0,860	1,000					
GMMPC 4	← 2nd.dimension	0,860	0,951	0,051	18,742	<0,001		
GMMPC 5	← 2 nd.dimension	0,728	0,785	0,050	15,642	<0,001		
GMMPC 31	← 3 rd. dimension	0,723	1,000					
GMMPC 33	← 3 rd. dimension	0,725	0,957	0,057	16,705	<0,001		
GMMPC 35	← 3 rd. dimension	0,774	1,108	0,082	13,590	<0,001		
GMMPC 46	← 3 rd. dimension	0,798	1,041	0,075	13,904	<0,001	0,970	0,605
GMMPC 52	← 1 st dimension	0,759	1,000					
GMMPC 53	← 1 st dimension	0,796	0,999	0,064	15,662	<0,001		
GMMPC 54	← 1 st dimension	0,819	1,016	0,063	16,139	<0,001		
GMMPC 57	← 1 st dimension	0,746	0,973	0,067	14,622	<0,001		
GMMPC 60	← 1 st dimension	0,730	0,872	0,065	13,484	<0,001		

$\beta 1$ : Standard Coefficients,  $\beta 2$ : Non-Standard Coefficients.

Fundamentally, a scale development study should entail a thorough examination of the research methods employed and potential sources of error. The validity and reliability of a scale depend on a

well-structured conceptual framework and a stable factor structure. In this context, scale items should demonstrate consistency with pre-defined conceptual definitions and yield similar results across different samples and applications [127]. Within this framework, measurement invariance analysis covering both samples were conducted.

According to Table 20, the  $\Delta CFI$  value was found to be below 0.01 in both samples [128]. The developed scale demonstrates invariance and can therefore be considered applicable to larger populations.

Table 20. Invariance analysis.

Model	$\chi^2$	df	$\chi^2/df$	SRMR	CFI	RMSEA	$\Delta\chi^2$	$\Delta df$	$\Delta CFI$	p-value for $\Delta\chi^2$
Grup1	71,927	49	1,468	0,028	0,977	0,054	-	-	-	
Grup2	125,574	49	2,563	0,037	0,970	0,064	-	-	-	
Model 1: Configural	197,501	98	2,015	0,037	0,972	0,043	-	-	-	
Model 2: Weak (Metric)	202,34	107	1,891	0,036	0,973	0,04	4,839	9	0,001	0,024
Model 3: Scalar	204,106	113	1,806	0,036	0,975	0,038	1,766	6	0,002	0,009
Model 4: Strong	214,827	127	1,692	0,037	0,976	0,036	10,721	14	0,001	0,050
Model 5: Partial (GMMPC 3-a1)	198,481	99	2,005	0,037	0,972	0,043	16,346	28	0,004	0,082

$\Delta\chi^2$ :  $\chi^2$  change ( $|\chi^2_{2n} - \chi^2_{2n-1}|$ );  $\Delta df$ : df change ( $|df_n - df_{n-1}|$ );  $\Delta\chi^2/df$ :  $\chi^2/df$  change ( $|\chi^2_{2n}/df_n - \chi^2_{2n-1}/df_{n-1}|$ );  $\Delta CFI$ : CFI change ( $|CFI_n - CFI_{n-1}|$ );  $\Delta CFI < 0,01^{**}$ ; p-value for  $\Delta\chi^2$ :  $\chi^2$  significance value of change ( $p < 0,05^*$ )

As a result of the conducted analyses, the GMMPC scale was finalized, comprising a total of 12 items under three dimensions (factors). The naming of the factors was influenced by the items exhibiting the highest factor loadings and containing common thematic words. Finally, the items pertaining to the GMMPC scale are provided in Table 21.

Table 21. GMMPC scale-factors, items and factor loadings.

Factors (Sub-dimensions)	GMMPC Scale items	Factor loading
1 st.dimension: Environmental publicity	We inform consumers about the environmental management within our company	0.819
	We participate in sponsorship activities related to environmental issues.	0.726
	We utilize specific environmental criteria for our suppliers	0.847
	We emphasize the 'eco-friendly business' image in our promotional activities	0.648
	We highlight that our products are green in our advertisements	0.491
2 nd.dimension: Green Packaging	Our materials sustain less damage (such as breakage, spoilage) due to our green packaging approach.	0.793
	The green packaging approach reduces our packaging waste	0.946
	Green packaging practices make our products even lighter	0.690
3 rd.dimension: Green Distribution	We utilize green vehicles in our distribution channel	0.863
	We use less fuel thanks to green transportation	0.847
	We monitor emissions resulting from product distribution	0.611
	We select cleaner transportation systems	0.543

In this scale, there are no items that require reverse coding, and items can be evaluated based on means. There is no need to evaluate on the total score.

5. Discussion and Conclusion

The primary aim of this study was to understand the current green marketing practices of SMEs and to develop a valid and reliable instrument capable of measuring the level of establishment of these practices within the organization, i.e., the practice culture. Due to the typically different focuses of existing measurement tools in the literature (such as general surveys, Environmental Management

Systems assessment tools, etc.), an original scale comprising 12 items and three primary dimensions ("Environmental Promotion", "Green Packaging", "Green Distribution") was developed within the scope of this study specifically to measure the Green Marketing Mix Practice Culture (GMMPC) of SMEs, and its statistical validity and reliability were confirmed. Upon reviewing existing green marketing scales in the literature, significant differences are noticeable in terms of the number of factors, focal points, and naming conventions. For instance, Vilkaite-Vaitone et al. [7] present a broader four-factor structure (Strategy, Internal Marketing, Product, Marketing Communication), whereas Budak and Filiz [8] adapted a two-factor scale (strategic dimension, product dimension) measuring consumer perception. Papadas et al. [1] also proposed a three-dimensional structure (strategic, tactical, internal), but the dimensions differ from those in this study. Chahal et al. [15] concentrated on a larger number of distinct operational/strategic dimensions including "process greening," "green Supply Chain Management," "strategic policy," "energy saving," and "green innovation."

Vilkaite-Vaitone et al. [7] developed the four-dimensional (green strategy, green internal marketing, green product, green marketing communication) 14-item Green Marketing Scale (GMaS) to measure green marketing. While this scale offers a broad organizational perspective by including strategic and internal dimensions, it differs from the Green Marketing Mix Practice Culture (GMMPC) scale developed in the present study, as it does not treat tactical marketing mix elements like price and distribution as separate dimensions. The GMMPC scale provides greater depth at the tactical level compared to GMaS by focusing specifically on the practice cultures of Green Packaging and Green Distribution, which are particularly relevant for SMEs. The Green Marketing Orientation (GMO) scale developed by Papadas et al. [1] provides a comprehensive, multidimensional framework by integrating strategic, tactical, and internal dimensions to assess green marketing as a holistic organizational orientation. In contrast, the Green Marketing Mix Practice Culture (GMMPC) scale developed in the present study offers a more specific and tactically focused approach. While the Papadas et al. [1] scale captures the broader organizational perspective, including strategic decision-making and internal cultural aspects absent in the GMMPC, the latter delves deeper into the practical application culture of key tactical elements – specifically environmental promotion, green packaging, and green distribution – particularly within the context of SMEs.

The dimensions of the scale developed in this study (Environmental Publicity, Green Packaging, Green Distribution) are more specific and focus on the tactical application areas of the marketing mix compared to other scales in the literature. While the "Environmental Promotion" dimension shows partial similarity to the "Green Marketing Communication" dimension of Vilkaite-Vaitone et al. [7] or the "Green Packaging" and "Green Distribution" dimensions, treated as separate factors in this study, focus on areas that may be examined under broader headings like "Green Product" [7,8] or "Supply Chain Management" [15] in some literature or are not specifically emphasized. Furthermore, it differs from the process/market-oriented distinction of Fraj et al. [14], the approach of Qureshi and Mehraj [2] focusing entirely on internal green marketing, and the study by Chen and Yang [12] which primarily presents an audit framework. Consequently, the developed GMMPC scale, unlike other scales in the literature, offers a more concise and tactical-level measurement tool focusing specifically on the green marketing practice culture within firms concerning promotion, packaging, and distribution.

In their research, Huang et al. [129] utilized a two-factor green marketing measurement structure based on Zhang et al. [130], encompassing only 'Product' and 'Promotion' dimensions, rather than developing an original scale. This approach offers a limited tactical perspective by omitting critical marketing mix elements such as price and distribution. In contrast, the Green Marketing Mix Practice Culture (GMMPC) scale developed in the present study is more comprehensive, incorporating 'Green Packaging' and 'Green Distribution' dimensions absent in the approach used by Huang et al. [129]. While the GMMPC's 'Environmental Promotion' dimension parallels Huang et al.'s [129] 'Promotion', its 'Green Packaging' dimension provides a specific focus compared to the broader 'Product' dimension employed by Huang et al. [129]. Akude et al. [131] examined green marketing by treating

different practice areas—such as green strategy, green internal marketing, green product, and green marketing communication—as distinct constructs, thereby allowing for the analysis of the independent impact of each on sustainability performance. However, this approach does not yield a single score representing the extent to which green marketing is embraced as a holistic practice culture. In contrast, the Green Marketing Mix Practice Culture (GMMPC) scale developed in the present study focuses on measuring the cultural embeddedness of specific marketing mix practices (Promotion, Packaging, Distribution) under a single construct. While the GMMPC's 'Environmental Promotion' dimension parallels Akude et al.'s 'Green Marketing Communication', its 'Green Packaging' and 'Green Distribution' dimensions offer a specific focus on areas that are either treated separately or subsumed under broader headings like 'Green Product' in Akude et al.'s model. Furthermore, the strategic and internal marketing dimensions included by Akude et al. fall outside the scope of the GMMPC; thus, the GMMPC concentrates on the culture of tactical applications, whereas Akude et al. focus on the performance impact of different practice areas. In a study within the golf club context, Jeong and Song [132] conceptualized green marketing as a single-dimensional, three-item construct measuring customers' direct experiences, utilizing it as a moderator variable. This approach fundamentally differs from the multidimensional GMMPC scale developed in the present study, which focuses on the practice culture of SMEs regarding promotion, packaging, and distribution, rather than customer perception of firms' specific marketing mix practices.

This developed GMMPC scale distinguishes itself from other existing academic scales, particularly through its focus on the tangible application areas of the marketing mix (promotion, packaging, and distribution) and the level of cultural embeddedness of these practices within SMEs. It is believed that this original scale will provide a theoretical contribution both by enriching green marketing theories in the academic field and by enabling clearer measurement of concepts like GMMPC and facilitating comparative research in different contexts (sector, region, firm size, etc.). It also serves as an important practical tool for SME managers and industry representatives. SMEs can use this scale to objectively evaluate their own green marketing performance, identify areas needing improvement, and shape their marketing strategies more consciously in this direction. Thus, the scale can serve to disseminate green marketing practices and increase the level of awareness in this area.

In conclusion, this study and the developed GMMPC scale offer both a theoretical framework and a practical evaluation mechanism for understanding and supporting the green marketing journey of SMEs. As SMEs increasingly need to respond to environmental expectations and achieve sustainability goals, the accurate measurement, understanding, and strategic development of green marketing practice culture will undoubtedly be a critical success factor. This scale is considered a significant step towards enhancing the body of knowledge in the field of green marketing, both in academia and industry, and contributing to a more sustainable future.

## 6. Theoretical Contribution

Despite previous studies aiming to measure green marketing from diverse perspectives, the need for the scale emerging from this study is apparent. This scale can offer academics a new instrument to deepen theoretical frameworks in the field of green marketing, while also assisting SME managers with practical applications, thereby contributing to green transformation efforts within the sector. By strengthening the theoretical framework in the field of green marketing, this scale can contribute to laying the groundwork for the development of new hypotheses and theories. Offering a robust methodological foundation supported by comprehensive validity and reliability studies, the GMMPC scale can enrich the theoretical framework in the field of green marketing. Consequently, this can facilitate an increase in both the quantity and quality of research conducted on green marketing in Turkey. For instance, it can enable a clearer definition and measurement of concepts such as 'GMMPC'. In other words, this scale can facilitate the conduct of quantitative research in the green marketing field. Researchers can use these scales to conduct comparative studies across different sectors, countries, or companies and measure the effectiveness of green marketing practices. It is anticipated that the scale developed in this study will aid in better understanding the



relationships among concepts such as green packaging, green distribution, consumer environmental consciousness, and green product cost. For instance, answers can be sought to questions such as the impact of 'environmental promotion' on consumer environmental consciousness or the effect of 'green packaging' on green product cost. Such scales can lead to the emergence of new research questions in the green marketing field. For example, answers to questions such as 'how does GMMPC differ across various cultures?' can be explored using these scales.

## 7. Managerial/Practical Implications

The most significant contribution of this study is that the developed scale serves as a tool for evaluating the green marketing practices of SMEs. As also stated by Moravcikova et al. [9], such scales enable firms to evaluate their own green marketing practices and identify their shortcomings. According to Moravcikova et al. [9], such scales are expected to offer businesses an important instrument for evaluating and improving the performance of their green marketing strategies. For instance, a company identifying shortcomings in 'green packaging' can implement improvements in this area. Based on the results of these scales, firms can determine the environmental sensitivity level of their target audience and shape their marketing messages and products accordingly. By improving green marketing practices, companies can gain a competitive advantage. As the number of environmentally conscious consumers increases, the demand for green products and services will also rise. Through these scales, companies can reduce their environmental impacts and potentially increase their long-term profitability.

## 8. Future Studies

This research may not encompass all relevant studies or the latest developments in sustainable marketing. The research findings are based solely on SMEs operating in the Ankara Ostim OSB. The success of sustainable marketing strategies may be influenced by regional differences in environmental awareness and customer preferences, which could affect the applicability of the research findings. Consequently, the findings may not be representative of local businesses and their environment across all of Turkey. The quantitative methodology employed is insufficient for making statistical generalizations.

Further application and testing of the developed scale in a broader context are necessary. Therefore, future studies could apply the scale among other SME managers across Turkey using a more systematic sampling approach to enhance its validity. Utilizing the GMMPC scale, future research could better elucidate various aspects of green marketing essential for successfully managing sustainability issues in corporate settings, thereby strengthening environmentally and ethically acceptable manifestations of green marketing. This scale can help reveal more clearly the extent to which organizations have embraced green marketing cultures. Specifically, by conducting comparative studies on the green marketing practices of SMEs, opportunities for this segment to achieve sustainability goals can be better understood. Furthermore, comparing green marketing practices across different sectors can contribute to identifying cross-sector best practices and accelerating green transformation. Through this, enhancing the body of knowledge in the field of green marketing can encourage efforts towards a more sustainable future in both academia and the business world. Scales developed in future studies could focus on measuring different dimensions of green marketing separately (e.g., product design, production processes, marketing strategies). This would enable the identification of areas where SMEs exhibit strengths or weaknesses.

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Appendix A

Table A1. Expert assessment of the GMMPC item pool.

No	Statements	Expert opinions		
		Number of experts who said "Not Necessary"	Number of experts who said "should be corrected"	Number of experts who said " Necessary"
1	We design products to save energy with reduced materials	0	1	9
2	Choosing packaging materials from biodegradable products is effective in increasing the sales of the enterprise.	0	1	9
3	With the green packaging approach, our materials are less damaged (such as breakage, deterioration)	0	1	9
4	Green packaging approach reduces our packaging waste	0	0	10
5	Green packaging practices make our products even lighter.	0	0	10
6	Green packaging practices reduce costs.	0	1	9
7	We use recycled materials in our products.	0	0	10
8	We consider environmental issues in distribution.	4	4	2
9	We consider the environment when designing the product.	0	0	10
10	We use ecological green materials in production.	0	1	9
11	Our suppliers' products are recyclable	0	1	9
12	We advertise our green products.	3	0	7
13	We use renewable energy sources in production	0	0	10
14	Our company offers innovative green products to the market.	0	0	10
15	Green products provide our company with the opportunity to differentiate.	0	1	9
16	The raw materials we use are safe for the environment.	0	1	9
17	We try to use less material in packaging	0	2	8
18	Our company produces environmentally friendly products	0	1	9
19	Environment is the main criterion for supplier selection.	0	1	9
20	We support the green environmental components of the product.	0	1	9
21	A separate unit that monitors environmental costs has been established in our organization.	0	1	9
22	The use of recycled materials in the enterprise reduces costs.	0	1	9
23	Customers are willing to pay higher prices for green products.	2	3	5
24	Our customers are willing to pay high prices for green products.	0	1	9
25	We take environmental factors into account in price policy.	0	1	9
26	We use local products to reduce transport costs.	0	1	9
27	Green packaging practices make our products lighter	0	2	8

28	We cover the additional cost of an environmentally friendly product.	0	1	9
29	We consider environmental issues in distribution.	0	1	9
30	We encourage the use of e-commerce as it is more environmentally friendly.	0	2	8
31	The environmental damage of our distribution channel is minimized.	0	3	7
32	We use electronic information systems in green transport.	0	0	10
33	Thanks to green transport, we use less fuel.	0	1	9
34	Thanks to green transport, we can reduce costs by saving time on the delivery route	0	1	9
35	We monitor emissions from the distribution of the product.	0	0	10
36	The environmental aspect of our products is at the forefront in marketing.	0	1	9
37	Our environmentally friendly practices are updated on our website.	0	0	10
38	Our company chooses packaging materials from degradable products.	0	0	10
39	The profit margin has increased because of material reduction in the provision of services.	6	0	4
40	Our business uses the environmentally friendly green label.	0	0	10
41	The labels contain information on recycling.	0	0	10
42	We prevent the use of dangerous substances in packaging.	0	1	9
43	The amount of goods is minimized to increase delivery flexibility.	0	1	9
44	The warehouse of our company is organized environmentally friendly methods.	0	0	10
45	The use of environmentally friendly green labels is effective in increasing business sales.	2	2	6
46	We choose cleaner transport systems	0	0	10
47	We use green arguments in marketing communication.	0	1	9
48	Our marketing communication reflects the company's commitment to the environment.	0	0	10
49	Environmental claims in advertising are often met with criticism from the environment (competitors, consumer organizations, etc.).	0	1	9
50	We support the green environmental components of the product.	0	2	8
51	Environmental labelling is an effective promotional tool for our company.	0	1	9
52	We inform consumers about environmental management in the company	0	0	10
53	We participate in sponsorship activities on environmental issues.	1	0	9
54	We use specific environmental criteria for our suppliers.	0	0	10
55	We prevent the use of hazardous substances in the packaging of the product	4	2	4
56	We implement a paperless policy in our procurement as much as possible.	1	0	9
57	We emphasize the image of "environmentally friendly business" in promotional activities	0	0	10
58	Our company uses statements reflecting the reality of the product advertisements.	0	0	10
59	Our image as an environmentally friendly company gives us a competitive advantage.	0	1	9
60	We emphasize in our advertisements that our products are green.	0	1	9
61	The product packaging is colored green, which is identical to the environment.	0	0	10
62	Our product promotions include environmental protection activities.	0	0	10
63	We aim to minimize negative impacts on the environment throughout the product life cycle.	1	2	7
64	The use of Information Technologies in the enterprise reduces distribution costs	0	1	9
65	We make sure that recycled materials are used in production.	0	2	8
66	The production process in our enterprise is based on ISO 14001 certification.	0	0	10
67	Customers want the company to produce green products.	5	1	4
68	When promoting products, we prefer digital communication as it is more environmentally friendly	0	0	10
69	It is normal for green products to be priced slightly higher than other products.	0	1	9
70	We use environmentally friendly technologies in the production process	0	5	5
71	We use recycled materials for packaging.	0	0	10
72	Our company tries to convince its customers to be environmentally conscious during direct sales.	2	3	5
73	Our company tries to convince its customers to be environmentally sensitive during direct sales.	0	1	9
74	We utilize green vehicles in the distribution channel.	0	0	10
75	We can reduce our costs with green transport	2	3	6
76	We design for remanufacturing so that waste can be recycled.	0	1	9
77	The enterprise uses minimal packaging materials.	5	4	2
78	We use integrated transport systems in distribution	0	1	9
79	Our business is trying to reduce the use of packaging.	0	0	10
80	Producing green products increases costs	0	3	7
81	The company co-operates with environmental groups to effectively promote a "green image"	0	1	9
82	We minimize our waste in production	0	1	9

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