

# INTEGRATING SUSTAINABLE DEVELOPMENT INTO THEIR MARKETING STRATEGY: PRACTICES OF LEBANESE AGRI-FOOD INDUSTRIES

Vida DAVIDAVIČIENĖ <sup>1</sup>✉, Cendrella ABOU FAYAD<sup>2</sup>, Marc GERGES<sup>3, 4</sup>

<sup>1</sup>Department of Business Technologies and Entrepreneurship, Vilnius Gediminas Technical University, Saulėtekio al. 11, LT-10223 Vilnius, Lithuania

<sup>2</sup>Management Department, Faculty of Economic Sciences and Business, Lebanese University, Beirut, Lebanon

<sup>3</sup>Doctoral School of Law, Political, Administrative & Economic Sciences, Lebanese University, Beirut, Lebanon

<sup>4</sup>Department of Business Technologies and Entrepreneurship, Vilnius Gediminas Technical University, Saulėtekio al. 11, LT-10223 Vilnius, Lithuania

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**Abstract.** Amidst technological growth and its environmental implications, there's a global push for sustainable development using ethical methods that benefit both the planet and humanity. This underscores a rising corporate trend towards sustainability. Adopting this approach requires fresh methods and technologies to influence behavior changes. Consequently, marketing, when aligned with sustainability principles, becomes a pivotal tool for businesses transitioning to sustainable practices.

The food industry, like other sectors, is not exempt from these considerations. This article focuses on examining how food industries in Lebanon are incorporating sustainable development principles into their marketing strategies. By studying their approaches, we aim to identify the level of integration of sustainability within the marketing practices of these industries, identify gaps, and to bring the future scientific research directions in marketing management. Thus, this research is conducted following the post-positivist paradigm and following a hypothetical-deductive approach. Hence the qualitative research and expert evaluation used to collect data due to its applicability to the context of the study. The target respondents are managers of the agri-food industries in order to measure the good practices of sustainable development of these industries and their Marketing strategy based on the 4Ps.

Lebanon's distinct challenges, from environmental to economic, call for specialized solutions. Achieving sustainability involves grasping local nuances, engaging stakeholders, and connecting different sectors. Sustainable marketing emphasizes local products and community ties, offering potential for significant change. The study indicates agri-food businesses mainly focus on environmental and economic elements. Yet, the research faced hurdles, like the pandemic, highlighting the need for context-awareness.

**Keywords:** sustainability, sustainable development, marketing strategy, marketing-mix, agri-food industries, good practices, sustainable marketing, Lebanon.

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✉Corresponding author. E-mail: [vida.davidaviciene@vilniustech.lt](mailto:vida.davidaviciene@vilniustech.lt)

## 1. Introduction

René Dubos presented at the 1972 environment summit the concept as the "Act local, think global" (Dubos, 1972). This evolved to the 2030 Agenda for Sustainable Development presented in September 2015 by United Nations (UN) General Assembly. It is 17 Sustainable Development Goals (SDGs) and 169 specified targets for upcoming 15-year period. The agenda captures the magnitude and deep aspiration, urging both governments and private

enterprises to collaborate in accomplishing the designated Sustainable Development Goals (SDGs) (Van der Waal & Thijssens, 2020). The importance and implementation in B2B marketing review and analysis of scientific studies of various scientists presented by Voola et al. (2022), more specific studies in sustainable development role in firm reputation, communication efficiency and other topics are analysed in various studies (Fan et al., 2021; Ivanovic-Dukic et al., 2022; Le et al., 2022; Gong et al., 2023). Sustainable development can be defined as the

idea of achieving progress that fulfils the requirements of the current generation while safeguarding the capacity of future generations to fulfil their own needs (According to the definition laid down in 1987 by the World Commission on Environment and Development of the United Nations). This global agenda is a comprehensive strategy aimed at informing and coordinating public policies and private interventions in various areas, from climate change to smart cities, labour markets, and birth mortality. Over the past few decades, there has been a paradigm change as both firms and consumers have come to understand the value of including environmental and social issues in their marketing plans. The concept of sustainability was originally introduced to marketing in the late 1980s and early 1990s by a number of trailblazing scientists and scholars. In this context scholars, include Philip Kotler stressed the necessity of ecologically friendly marketing techniques (Kotler, 1980, 2011). This is reflected in marketing management theories as well, where Global marketing practices have seen a substantial transformation as a result of the marketing sustainability idea, which has also had a big impact on marketing management theories. Similar to this, John Elkington introduced the “Triple Bottom Line” idea in 1994, highlighting the integration of economic, environmental, and social concerns (Elkington, 1994). A variety of marketing strategies, including green marketing (Ottman, 1998), sustainable marketing, and socially responsible marketing (Kotler, 2021), have their roots in these early contributions. Since then, sustainability has evolved into a key component of marketing strategies for businesses all over the world, impacting customer behaviour, supply chain management, and product creation. Business operations have been revolutionized by the inclusion of sustainability concepts in marketing management, which has encouraged a greater emphasis on long-term societal and environmental well-being together with profitability.

Sustainability is a multifaceted concept that extends beyond marketing and encompasses various sectors and management processes. Different regions, such as Lebanon, face unique challenges and possess local specifics that require in-depth analysis to develop relevant and effective sustainability solutions. The Lebanese situation had to face many threats, in addition to industrial disasters. According to the assessment report (Grünwald, 2020), Lebanon is facing past and present challenges: old wars and new incidents, a complex population and a significant presence of refugees, political, health, financial, banking, and environmental crises, collapse of the public services and finally the Beirut port warehouse explosion on August 4, 2020, that was the final stage of overall degradation in Lebanon. This situation requires the implementation of sustainable actions on many levels. For the primary investigation the agri-food sector was chosen in attempt to identify specificity of developing countries as Lebanon.

The marketing industry, through its emphasis on consumption-driven strategies, might have intentionally or unintentionally promoted these unsustainable patterns of production and consumption. Therefore, there is need for

a more responsible approach to selling sustainable products and services and building a sustainable society, rather than simply serving the needs of consumers and markets (Jagdish & Parvatiyar, 2021). The Sustainable Value Added is suggested as it might solve some emerging problems (Straková, 2015). So, there is a need and necessity to use Sustainable Marketing which we propose as is not only a state of mind but also a process. It integrates sustainable development into the company’s strategy and trains it at all stages of the marketing-mix process (from the analysis of the product’s life cycle to its design and pricing to its consumption and its distribution) while being mindful of the interests of all stakeholders (Remi, 2020; Alpaslan & Oğuz, 2021).

Thus, companies can use the marketing mix as a tool to enhance the performance of the activities that direct the flow of goods and services. Consequently, the combination of the firm’s tactical marketing tools (referred to as the 4 Ps: product, price, place, and promotion) works harmoniously to generate the desired reaction in the intended market (Kotler, 2021). These tools are considered as an analytical framework for establishing sustainable marketing policies. However, some authors have suggested replacing the 4Ps with the 6Ps, 7Ps, and also today by 10 Ps: product, price, place, promotion, physical evidence, process, packaging, positioning, people, and personalization (Hopper, 2022). However, the 4Ps respond intelligently to the theme of sustainable marketing.

The research will study the relationship between the Marketing Strategy of agri-food industries in Lebanon and Sustainable Development by answering the following research question: How do agri-food industries in Lebanon integrate sustainable development into their marketing strategies by using the mix marketing? As well it will reveal knowledge gaps and to allow to identify the future scientific research directions in marketing management.

This paper presents in Section 2 the theoretical background in order to provide a foundation for the subsequent discussion. Section 3 presents the research methodology employed in this research, followed by the results and findings that offers a discussion on the implications of these results, while Section 4 discusses the results limitations and further research perspectives, in Conclusions section the final thoughts, the limitations and the potential directions for future research are presented.

## 2. Theoretical background

In recent years, several managerial issues and challenges have emerged in the context of sustainability, shaping current trends and practices. These challenges include climate change, social responsibility, circular economy, supply chain etc. Where, the sustainability encompasses three interconnected dimensions: environmental, social, and economic sustainability. In line the field of marketing were extended by several specific strategies and concepts that have emerged to integrate sustainability principles. In

terms of research, scholars, and practitioners are actively exploring the intersection of sustainability and marketing (El Chalfoun & Davidavičienė, 2019). Topics of interest include consumer behavior towards sustainable products, the impact of sustainable marketing communications, the role of marketing in advancing the circular economy, and strategies for promoting sustainability in developing countries.

Developing countries like Lebanon face specific knowledge gaps and challenges in adopting sustainable marketing practices. Despite several attempts by Abose-dra et al. (2015), Belkhir and Elmeligi (2018), El Chalfoun and Davidavičienė (2019), Mangla et al. (2020), Mazurek-Łopacińska (2021) there still a need to process more studies. These include limited resources, weak infrastructure, political instability, and cultural factors that influence consumer behavior and attitudes toward sustainability. Research focusing on understanding the local context can contribute to closing these knowledge gaps and supporting sustainable development in these countries. Addressing these challenges requires a multidisciplinary approach, collaboration between academia, businesses, and policy-makers, and knowledge-sharing across regions. It is essential to promote capacity-building and provide resources and support to help developing countries like Lebanon overcome barriers and implement sustainable marketing practices effectively.

In the present era, marketing has emerged as a potent instrument crucial for the endurance and sustainable expansion of businesses and products (Ahmed et al., 2020). It is important to understand how and what measures can cause the success of businesses. In 2005, two agri-food associations in the Languedoc-Roussillon region, ARIA-LR (Regional Association of Agrofood Industries of Languedoc-Roussillon) and FRCA (Regional Federation for Agricultural Cooperation) conducted a survey to identify the business practices that can fall within the scope of sustainable development. The objective of this studies was not only to identify behaviors related to sustainable development but also to raise awareness among business representatives of the relationship between their practices and the concept of sustainable development (Temri & Fort, 2009; Retkutė & Davidavičienė, 2021). The main results of this study consist of a list of “good practices” for sustainable development. The practices discussed in this context can be categorized to the three pillars of sustainable development: Economic, Environmental, and Social. In recent years, the idea of

sustainability has captured the attention of scholars and professionals globally (Ranjbari et al., 2019). These dimensions entail attaining a balanced integration of the social, environmental, and economic facets of human existence within society, the environment, and the economy. This integration is aimed at benefiting both present and future generations (Geissdoerfer et al., 2017). In order to reach this balance good practices of sustainable development are presented in the “Guide to good practices in sustainable development” (Table 1) which objectives are to allow the acquisition of implicit and explicit knowledge to facilitate the implementation of practices. It represents the first step in the knowledge management process to collect and store knowledge from real business practice.

In the contemporary landscape, the significance of sustainability is increasing due to the growing recognition of environmental concerns among businesses and consumers alike. Companies need to quickly grasp the sustainability mindset and start self-assessment. Because a company must be profitable to survive, but it must also be sustainable, and the concept of sustainable marketing originated as a direct consequence of this trend. The core focus lies in promoting the adoption of sustainable practices and meet the needs of future generations without harming them and pursues the green movement as a core business objective (Saraswati & Wirayudha, 2022). Different types of research were undertaken by scholars to understand better the motives and triggers for consumers and market players in the context of sustainable development. E.g., the influence of guerrilla marketing strategies on consumers’ buying choices and their relevance for small and medium enterprises (SMEs). Ahmed et al. (2020), aspects of the cultural and creative industries as a means to boost of economic and sustainable development (Wu & Lin, 2021); sustainable leadership, organizational trust, and satisfaction at work (Dalati et al., 2017), application of multichannel access and customer journey map (Retkutė & Davidavičienė, 2021), Optimizing customer repurchase intentions (Riaz et al., 2022), customers’ sustainable fashion perception (Davidavičienė et al., 2019) and many more. Sustainability entails the creation of products that fulfill customer needs and desires while safeguarding the environment and the well-being of future generations (World Commission on Environment and Development, 1987; Pomeroy, 2017). So, it’s important to speak of sustainable marketing today, because Sustainability marketing attempts to persuade consumers to take actions that lead to

**Table 1.** SD good practices according to ARIA and FRCA

Dimensions of sustainable development	Economic	Environmental	Social
Good practices	<ul style="list-style-type: none"> <li>■ Eco-design of products and packaging</li> <li>■ Reduction of consumption</li> <li>■ Construction HQE approach</li> </ul>	<ul style="list-style-type: none"> <li>■ Valorisation of by-products into energy</li> <li>■ Valorisation of by-products in compost</li> <li>■ Sorting and recycling of waste</li> <li>■ Development of solar energy</li> <li>■ Recycling of wastewater and effluents</li> <li>■ Realization of the carbon balance</li> </ul>	<ul style="list-style-type: none"> <li>■ Skills management</li> <li>■ Quality of life at work</li> <li>■ Staff safety and health</li> <li>■ Nutritional quality of products</li> <li>■ Food safety certification</li> </ul>

reduced environmental impact and resource consumption (White et al., 2019). Sustainability assumes a significant role in marketing by influencing the creation of value for consumers. Green marketing, also known as sustainability marketing, centers around the promotion of products and services by emphasizing their environmental benefits and value proposition (Kaur et al., 2022).

And therefore, the most crucial organizational functions are now significantly impacted by sustainability, which is also changing how value is produced, shared, and distributed. Through encouraging the growth of sustainable marketing in the food sector, this is increasingly having an impact on marketing methods (Mancuso et al., 2021). According to Kelleci and Yildiz (2021) the concept of sustainability marketing encompasses a range of values, including shared value, shared prosperity, and inclusive growth. As sustainability has grown to be a megatrend in recent decades, more businesses are reevaluating their conventional approaches to value creation in response to new perspectives on value creation (Varey, 2013). According to Kotler (2020), marketers are inherently value engineers, as their role involves creating and delivering value to customers and stakeholders, and marketing, as a discipline, is intrinsically focused on generating value. So, the term sustainable marketing refers to ethical marketing that balances the requirements of organizations and customers today with the ability of future generations to meet those needs. Meeting only the immediate needs of consumers is not always in the best future interest of customers or the business. Sustainable marketing concepts take into account both strategic planning and societal marketing. So, sustainable marketing is not only a coherent mentality that takes into account the current desires of consumers but also a process in which the company must integrate sustainable development into its strategy.

In this regard, the marketing mix's instruments – product, price, distribution, and promotion – play a specific role. The food industry's sustainable marketing mix consists of four elements that have an impact on consumers: sustainable product (Galati et al., 2019), sustainable price (Zou & Chau, 2015), sustainable distribution (Todorovic et al., 2018) and sustainable promotion mix (Chung, 2020), which refers to the satisfaction of customer needs, wants, and desires regarding the issue of environmental protection by eliminating offers with high environmental and social impacts and developing and promoting sustainable ones.

The classic concept of marketing mix does not consider the idea of sustainable development. This study aims to examine the impact of specific marketing mix elements on the sustainable development of the Lebanese food industry. In addition, responsible marketing practices are essential in addressing emerging challenges associated with the operations of food industry companies. While marketing primarily focuses on driving sales and stimulating customer demand for a wide range of products and services. In this research, we will summarize and concentrate the works mainly on the classic 4Ps of the marketing mix, to analyze the sustainable marketing of the agri-food in-

dustries in Lebanon. Responsible marketing refers to marketing practices aimed at promoting consumption that is more respectful of the environment, equitable, or more responsible. Concretely, it can be a marketing activity aimed at promoting products that are more ecological, respectful of the planet, and considered good from a socio-economic point of view. It can also be a marketing campaign encouraging customers to consume better. Responsible marketing also means choosing more environmentally friendly and responsible distribution and sales channels. This 4Ps approach is directly inspired by the four well-known variables that make up the marketing mix. Marketing must first collect current and future information from the business sector before setting up an R&D department with the data needed to create future products. Sustainable marketing goes beyond traditional marketing approaches by prioritizing the delivery of products and services that offer sustainable value. It involves incorporating sustainability principles into the marketing mix, which includes product, price, place, and promotion (Gordon et al., 2011). Companies that adopt sustainable marketing practices gain a competitive edge, as they can provide unique value to specific market segments (Hunt, 2011). By integrating sustainability efforts into core marketing processes and business practices, sustainable marketing aims to foster the development and promotion of more environmentally and socially responsible products and services.

Consequently, the following hypotheses are proposed to respond to how the good practices of agri-food companies influence the latter to integrate sustainable development into their marketing strategy by using the "4Ps":

- H1: The more equitable the practices of agri-food companies; the more these companies promote the socio-economic pillar of sustainable development to integrate it into their marketing strategy by using the "4Ps"
- H2: The more viable the practices of agri-food companies; the more these companies promote the eco-economic pillar of sustainable development to integrate it into their marketing strategy by using the "4Ps"
- H3: The more the practices of agri-food companies are liveable; the more these companies promote the socio-environmental pillar of sustainable development to integrate it into their marketing strategy by using the "4Ps".

These hypotheses are proposed answers to the problem. These are assumptions that we will try to defend throughout this research. In this regard, considering them as right or wrong will depend on the relevance of the elements provided to answer the its expert evaluation.

### 3. Research methodology

This study examines sustainable development principles in Lebanon's food business marketing amidst current national challenges. It seeks to identify marketing gaps, assess sustainability integration, and suggest future research directions in marketing management. The research, rooted

in the post-positivist paradigm and using a hypothetical-deductive method, relies on qualitative expert evaluations. Key respondents include managers from leading Lebanese agri-food industries, providing insights on sustainability practices and 4Ps-based marketing strategies. The bilingual data collection tool comprises varied question types and employs a 5-point Likert scale. With 14 experts engaged between February and June 2022, the study meets reliability standards set by Libby et al. (1987). For data analysis, non-parametric tests were chosen, as suggested by Hopkins and Dettori (2018), given the sample size and data distribution.

Reviewing parallel studies, other authors investigating similar issues have incorporated diverse research methodologies. Some researchers have favored quantitative methods, utilizing surveys and statistical analyses to gauge broader industry trends. Others have employed mixed-methods approaches, combining both qualitative and quantitative techniques, to obtain a richer and more comprehensive understanding. Case studies, involving in-depth examinations of specific companies or campaigns, have also been popular in the realm of sustainable development in food marketing. These variances in research methods across different studies highlight the multifaceted nature of the subject and the diversity of investigative approaches in the academic community. Kilelo et al. (2023) undertook research to identify key programs and stakeholders affecting food security. Their study examined farmers' participation in programs, the connection between agricultural and nutrition targets, program success factors, and policy impacts on food security. Using a descriptive cross-sectional approach, they combined qualitative and quantitative methods. Thirty stakeholders were selected for focus groups and interviews, with qualitative results analyzed manually, supplemented by direct quotes for clarity. In addition, Suardi et al. (2023) investigated the sustainability of agricultural resources in Denpasar City, aiming to devise strategies for sustainable agricultural policies. They employed the Rap-Ur-Agri ordinance method (Rapid Appraisal for Urban Agriculture), Multi-Dimensional Scaling (MDS), and prospective analysis for evaluation. Findings revealed that while the ecological and economic aspects were less sustainable, the social, institutional, and technological facets displayed moderate sustainability.

So, a concerted effort is underway to promote sustainable development by moral behaviors and deeds that lessen adverse effects on the environment and human well-being in the face of global evolution, technological developments, and their attendant environmental effects. This increased focus on social responsibility suggests that businesses are more motivated than ever to implement sustainable practices. The use of innovative approaches and technology that encourage behavioral changes is required to make the transition from conventional economic development to sustainable development. In this situation, it is possible to create marketing strategies and

policies that are in line with the fundamentals of sustainable development, turning marketing into a real tool for promoting sustainable behaviors. As a result, businesses can use marketing as the starting point for their journey toward sustainable development. Like other industries, the food sector is not immune from these factors. This article focuses on analyzing how Lebanon's food businesses are applying sustainable development principles to their promotional plans. By examining their methods, in light of the all crises that Lebanon is going through that will affect the occurrence of gaps in the marketing practices of these sectors, gauge the degree of sustainable integration, and provide future scientific research directions in marketing management.

The research is conducted following the post-positivist paradigm and following a hypothetical-deductive approach. Hence the qualitative research and expert evaluation used to collect data due to its applicability to the context of the study. The target respondents are managers of the agri-food industries in order to measure the good practices of sustainable development of these industries and their Marketing strategy based on the 4Ps. The evaluation is prepared in French and English and is built from multiple-choice questions, closed questions, and semi-open questions. In addition, the attitude scale used in this evaluation is the Likert scale with five levels ranging from 1 to 5 to reflect the degree of agreement or disagreement. Decision reliability dependence on the number of experts defined by (Libby et al., 1987) states that beginning from the 9 experts it considered as reliable and not much changing with additional respondents. The time frame was between February 16 and June 6, 2022 (14 experts). These responses were from the most important and largest agri-food companies in Lebanon. Non-parametric test to analyze assumptions were chosen because of the data collected. Parametric tests (which utilize mean as a measurement of central tendency) should be employed for analysis of normal distribution and in classic cases of samples of sufficiently large size, and Nonparametric tests (which utilize median as a measurement of central tendency) should be employed for analysis of data not normally distributed and represent the best way to take into account small samples below 30 observations (Hopkins & Dettori, 2018); these responses are detailed in the following Table 2.

**Table 2.** Industry response rates

The data collection method used	Responses	Percentage (%)
<i>Face to face</i>	4	28.57%
<i>Internet (mail address)</i>	10	71.43%
Total de responses	14	100%

Through the distribution of the sample of agro-food industries in Lebanon collected by this research, it can be seen that there is a predominance of men in the leadership and management of these industries, where the

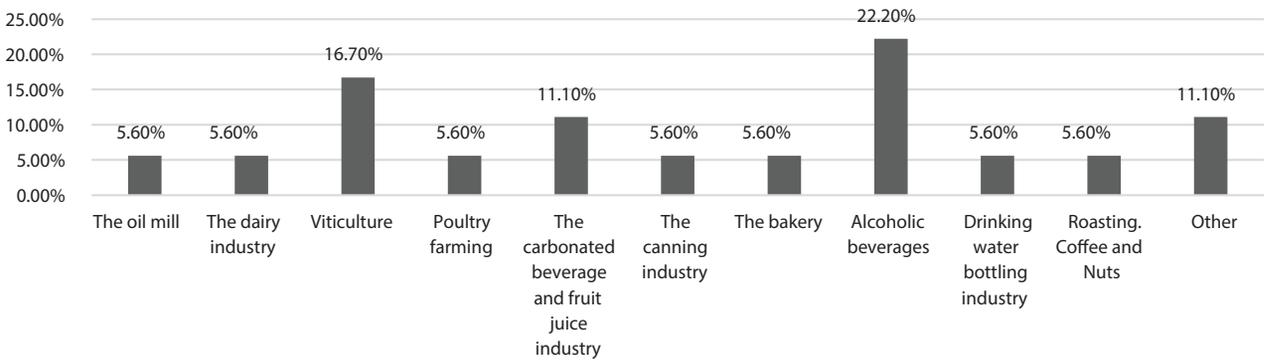


Figure 1. Field of activity of industries

proportion of male leaders is 57.14% against 42.86% for women; and these men and women leaders are mostly adults since their ages range from 41 to 60 (64.29%), and most of them have a master’s degree (57.14%).

In addition, these industries collected are found with a high rate in Mount Lebanon (57.14%), i.e., almost half of the sample is close to the capital Beirut, and the other industries are distributed in Bekaa and North Lebanon; and the majority of these industries, almost all of them, are 25+ years old. Regarding the number of employees in these agri-food industries, we note that there is parity on the one hand between those who have 6–50 employees and 101–500 employees (35.71%) and on the other hand between those who have 51–100 employees and 500 employees and more (14.29%).

The graph below (Figure 1) shows the field of activity of agri-food industries (22% of participants in the sample answered alcoholic beverages, and 17% said viticulture).

After validating the data and studying the reliability of the questions (Cronbach’s alpha is excellent (= 0.91 greater than 0.9)), we analyzed each variable separately.

Table 3. Univariate analysis of dependent variables

	Price	Product	Place	Promotion
Mean	3.8095	3.7571	3.6032	3.5714
Median	4	3.85	3.5556	3.3
Mode	4	3.5	3.56	3
Std. Deviation	0.58418	0.67450	0.54033	0.90420

1. Concerning agri-food industries according to their marketing strategy:

- The majority of companies agree with the variables indicated; have an average almost equal to 4.
- The value that divides the series into two equal series for most variables is 4; therefore, most companies agree with the indicated variables.
- The greatest number of companies are in agreement with the indicated variables; hence the mode is almost equal to 4; i.e., it is the most repeated and represented value.
- The interval [2.5;4.5] = [mean – standard deviation; mean + standard deviation] contains more than 60% of the observations, for most variables.

Table 4. Univariate analysis of independent variables

	Economic Pillar	Environmental Pillar	Social Pillar
Mean	3.6429	2.7857	3.9571
Median	3.9	3	4
Mode	4.2	3	4.8
Std. Deviation	0.98349	0.82542	0.75316
	Pillar Equitable	Pillar Viable	Pillar Livable
Mean	3.8	3.2143	3.3714
Median	3.8	3.3167	3.3
Mode	3.3	1.3	2.58
Std. Deviation	0.57513	0.79689	0.54961

2. And according to the pillars of Sustainable Development in these industries:

- The majority of companies are almost in agreement with the economic and social pillar with an average almost equal to 4; while these companies are almost neutral with the environmental pillar with an average almost equal to 3.
- The value that divides the series into two equal series for the economic and social pillars is 4 (most companies are in agreement with the variables indicated); while for the environmental pillar, it is 3 (most companies are neutral with the variables indicated).
- For the economic and social pillar, the greatest number of companies are in strong agreement with the variables indicated, hence the mode is almost equal to 5; i.e., it is the most repeated and represented value; while for the environmental pillar, the mode is equal to 3 (companies are neutral with the variables indicated).
- The interval [2.5; 5] = [mean – standard deviation; mean + standard deviation] contains more than 60% of the observations, for most economic and social pillar variables; while the interval [2; 3.5] = [mean – standard deviation; mean + standard deviation] contains more than 60% of the observations, for most environmental pillar variables.

**Table 5.** Hypothesis testing

Hypothesis H1		N	Mean Rank	Sig	Decision
Equitable – 4 Ps	Negative Ranks	6 <sup>a</sup>	7.50	0.638	0.638 > 0.05, there is no relationship between the variables
	Positive Ranks	8 <sup>b</sup>	7.50		
	Ties	0 <sup>c</sup>			
	Total	14			
Hypothesis H2		N	Mean Rank	Sig	Decision
Viable – 4 Ps	Negative Ranks	9 <sup>a</sup>	9.33	0.048	0.048 < 0.05, there is a relationship between the variables
	Positive Ranks	5 <sup>b</sup>	4.20		
	Ties	0 <sup>c</sup>			
	Total	14			
Hypothesis H3		N	Mean Rank	Sig	Decision
Livable – 4 Ps	Negative Ranks	10 <sup>a</sup>	7.80	0.109	0.109 > 0.05, there is no relationship between the variables
	Positive Ranks	4 <sup>b</sup>	6.75		
	Ties	0 <sup>c</sup>			
	Total	14			

And on the side of the fair, viable, and liveable pillars of Sustainable Development in these companies (Tables 3–5), we conclude that:

- The majority of companies are almost in agreement with the fair-trade pillar with an average almost equal to 4; while these companies are almost neutral with the viable and liveable pillar with an average almost equal to 3.
- The value that divides the series into two equal series for the fair-trade pillar is almost equal to 4 (most companies are in agreement with the variables indicated); while for the viable and liveable pillar, it is 3 (most companies are neutral with the variables shown).
- For the fair and liveable pillar, the largest number of companies are neutral with the variables indicated, hence the mode is almost equal to 3; i.e., it is the most repeated and represented value; while for the viable pillar, the mode equals 1 (firms strongly disagree with the variables shown).
- The interval [3; 4.5] = [mean – standard deviation; mean + standard deviation] contains more than 60% of the observations, for fairest Pillar variables; while the interval [2.5; 4] = [mean – standard deviation; mean + standard deviation] contains more than 60% of the observations, for most of the viable and liveable pillar variables.

Thus, to test the hypothesis, we used Wilcoxon since there are two quantitative variables, and we used a non-parametric test since the sample is not normal ( $n = 14$ ).

We tested with a 95% confidence interval and an alpha risk of 5% (0.05) to make a decision.

So, the results are summarized as follows:

- Reject hypothesis **H1** because there is no relationship between the equitable (socio-economic) pillar and the marketing strategy using the 4Ps.
- Accept hypothesis **H2** i.e., the more viable the practices of agri-food industries; the more these industries promote the eco-economic pillar of sustainable development to integrate it into their marketing strategy by using the “4Ps”.
- Reject the **H3** hypothesis because there is no relationship between the livable pillar (socio-environmental) and the marketing strategy using the 4Ps.
- And consequently, the good practices of agri-food companies influence them to integrate sustainable development into their marketing strategy by using the “4Ps” by favoring only the viable pillar (environmental and economic).

In the end, by answering this study’s problem and synthesizing the results, we conclude that these agri-food industries integrate sustainable development into their marketing strategies by using the 4Ps by acting only on the viable pillar (environmental and economic) that was also studied by Kim et al. (2023) who concluded that SME’s environmental performance can be translated positively into economic performance.

But these results also call for several comments. Indeed, some results confirm and extend the existing contributions in the literature. This is particularly the case of the integration of the environmental pillar of sustainable development in the marketing strategy of agri-food industries, which presents according to the following table by showing the relationship between the environmental pillar and the 4 Ps of the marketing strategy of these industries (Table 6).

**Table 6.** Environmental Pillar Vs 4 Ps

		N	Mean Rank	Sig	Decision
Environmental Pillar Vs 4 Ps	Negative Ranks	12	8.33	0.003	0.003 < 0.05, there is a relationship between the variables
	Positive Ranks	2	2.50		
	Ties	0			
	Total	14			

This shows and verifies the relationship analyzed and accepted before, in the previous part, between the viable pillar (environmental and economic) and the 4Ps i.e., confirmation and acceptance of hypothesis H2.

On the other hand, results are refused and invalidated, on the one hand, this is the case of the non-validation of the relationship between the economic pillar of sustainable development and the marketing strategy of the agri-food industries, which presents according to the following

table by showing that there is no relationship between the economic pillar and the 4 Ps of the marketing strategy of these industries (Table 7).

**Table 7.** Economic Pillar Vs 4 Ps

		N	Mean Rank	Sig	Decision
Economic Pillar Vs 4 Ps	Negative Ranks	8	6.88	0.875	0.875 > 0.05, there is no relationship between the variables
	Positive Ranks	6	8.33		
	Ties	0			
	Total	14			

And on the other hand, and similarly, is the case of the non-validation of the relationship between the social pillar of sustainable development and the marketing strategy of agri-food industries, presents according to the following table shows that it is not there is no relationship between the social pillar and the 4 Ps of the marketing strategy of these industries (Table 8).

**Table 8.** Social Pillar Vs 4 Ps

		N	Mean Rank	Sig	Decision
Social Pillar Vs 4 Ps	Negative Ranks	5	7.40	0.331	0.331 > 0.05, there is no relationship between the variables
	Positive Ranks	9	7.56		
	Ties	0			
	Total	14			

This shows and verifies the non-relation analyzed and not accepted before, in the previous part, between the equitable pillar (social and economic) and the 4Ps, and between the livable pillar (social and environmental) and the 4Ps i.e., and rejection of hypothesis H1 and hypothesis H3. Consequently, according to these results concerning the hypothesis, we deduce that the integration of sustainable development in the marketing strategy of agri-food industries in Lebanon takes place according to the environmental pillar only, hence several obstacles confront industries to fully integrate into sustainable development in Lebanon. Lebanon is facing a series of socio-economic, political, environmental, and health crises, mainly linked to problems of poor governance. Fighting against this is part of a sustainable development perspective. Local government based on a citizen-centered approach is proving to be an essential condition for the success of the long-awaited administrative reform, allowing actors (citizens, civil society, and the public and private sector), not only to control and influence the action of the public authorities but also in the implementation of public policies and the provision of services of general interest.

Thus, Lebanon's prospects for sustainable development remain bleak given its poor governance and the gap be-

tween decision-makers and citizens. If no realistic way out of the crisis is envisaged, the slightest agreement will be difficult to find. Moreover, it seems that the central components of sustainable development and its governance remain to be integrated. The latter can be a means of responding to crises, but it comes up against many obstacles at the national, local, and individual levels. But if this crisis is the result of bad governance, can't it be a source of hope for Lebanon? This paradox is easily explained by the public mobilizations organized to deal with the problem of waste in 2015, the economic crisis which began in 2019, and the explosion of the port of Beirut in August 2020. He left himself and his powers to face various events that have shaken the economic and social life of the country.

Indeed, these crises have revealed Lebanon's strengths and certain potentials that can represent real opportunities for the establishment of good governance and sustainable development. Do the Lebanese, who face daily difficulties, not realize that they have to reaffirm their citizenship far from their communities? This is evidenced by the organized involvement of citizens which has been essential throughout these various crises. Socially active young people replace the bulk of absenteeism. Civil society has demonstrated its entrepreneurial spirit and social solidarity. This approach places citizens at the center of all development policies. It can provide solutions to lasting problems of bad governance. The way out of the crisis must be shaped locally, with actors (citizens i.e., consumers, companies, and organizations) directly involved in awareness raising, regulation, and policy implementation. Although an individual perspective can be a real basis for sustainable development, there is still a long way to go. Because the analysis of governance is part of the debate on the boundaries between individual societies and collective societies, it involves both the public and private sectors. Thus, individual initiatives and the commitment of a large number of Lebanese NGOs to social and environmental action are assets that allow us to hope for progress toward good metacentric governance committed to sustainable development.

Consequently, and because of all these socio-economic, political, environmental, and health crises that Lebanon has gone through and is still going through until now, the movement and the approach to sustainable development have been hampered, because these crises have affected the sustainable business and industrial activity on the one hand, and responsible consumer behavior and attitudes on the other. This is shown by the results of this study which contradicted some of the theories put forward previously in the theoretical part on the one hand, and which confirmed and agreed with certain other theories.

#### 4. Limitations and future research perspectives

The limitations of this research are the constraints of the design, methods or even the limitations of the research-

ers in affecting and influencing the interpretation of the final results of this research. These are limitations to the generalization and use of the findings that arise from the research design and/or method employed to ensure internal and external validity.

The first problem that this type of study faces (when it comes to ethical research) and which is likely to arise and skew the results is that of social desirability. Social desirability is defined as a tendency in some individuals to present themselves favorably about social norms and standards. It happens to be a stable personality trait reflecting a need for approval and it manifests itself in two ways: 1 – it can materialize as an unconscious tendency in the individual to see himself in a positive way, 2 – or as a deliberate habit of distorting his answers in order to create a positive image in others. The second is that the results obtained are sometimes the consequences of a misunderstanding of the question asked. Indeed, the use of an agreement scale like the Likert scale (strongly agree vs. strongly disagree) can produce some form of confusion in participants if they do not have to read carefully the indications and the instructions of the questionnaire. The third is the practical difficulties limit the time available to explore a research question and monitor changes as they occur, such time restrictions adversely influence research, with the need for future investigation. In addition, another obstacle is the poor economic situation in Lebanon since 2019, the economic crisis, and the high prices, especially of fuels, in addition to the difficulty of their availability, which has made it difficult to travel and access a larger number of businesses and consumers too. And, there is another obstacle which is the spread of the Corona epidemic and the preventive measures taken to combat this epidemic, which has led to the prevention of direct communication between people and the closure of businesses and institutions and home quarantine, etc.

Finally, another limitation is the selection of a single field of activity and a single geographical area to test our research model. We thus targeted the industry of consumer products operating on the Lebanese territory (the agro-food industry). Studies on a single industry present a lower degree of generalization than those carried out on several industries. Thus, one of the research perspectives is to extend the research models to different sectors of activity and geographical areas. Staying in the FMCG industry (i.e., products whose lifespan is short and purchase occasions are frequent), one could consider industries manufacturing products such as bazaars, small equipment and electronic batteries, stationery, and school supplies. Similarly, concerning the geographical area, we could compare the results of the model tested on Lebanese territory with a test of the model in other countries deemed to be *avant-garde* on sustainable development issues, or with a member country of the UN and at the heart of the 2030 Agenda by setting 17 Sustainable Development Goals (SDGs) which cover all sustainable development issues such as climate, biodiversity, water, energy, agriculture, education, responsible consumption, and many more.

And another perspective and empirically, we could highlight the role of stakeholder orientation, environmental management skills, human resource management, design of more environmentally friendly products, reduced packaging at source, simplified, reusable, recoverable, made from recycled material, which constitute fundamental antecedents of the internal and external dimension of proactivity and responsible production, with the aim of better integrating sustainable development into business strategies not just marketing strategies. Therefore, the roles and functions of these variables deserve further investigation in further studies.

The future research perspectives suggested, particularly relating to expanding the research model to different sectors, geographical areas, and integration of sustainable development into business strategies, suggest several pathways to overcome the identified limitations and address theoretical gaps further: like expanding to Multiple Industries and Geographical Areas: By implementing the study in various sectors and regions, future research can contribute to a more generalized and comprehensive understanding of the subject matter, addressing the limitation and theoretical gap related to the specificity of the field and geographical area; Comparative Analysis with Advanced Countries in Sustainable Development to help in understanding the variations and similarities in responses and perceptions, potentially offering a more nuanced understanding of how different contexts impact the outcomes; & In-depth Examination of Internal and External Proactivity and Responsible Production Antecedents to exploring the roles of stakeholder orientation, environmental management skills, human resource management, and product design could fill theoretical gaps related to the integration of sustainable development in business strategies, going beyond just marketing strategies.

In addition, it is critical to elucidate how the outlined limitations interact with our theoretical gaps that exist and which are solved in this paper. Thus, several theoretical gaps are addressed in this paper related to understanding of Social Desirability by Given that social desirability is a major concern, through this research seems to delve into how it affects research outcomes, particularly in ethical research contexts; and this research implicitly addresses the theoretical gap related to the application and reliability of agreement scales like the Likert scale in research, exploring how different interpretations and potential misunderstandings can impact the results. Indeed, by examining this research in the specific context of Lebanon during economic turmoil and the COVID-19 pandemic, our study illuminates how these practical limitations impact the generalizability and applicability of research findings.

While our research did address several theoretical gaps, the limitations posed by the study design, the context, and methodological constraints also opened new avenues for exploration. By acknowledging these limitations and identifying future research perspectives, our study has laid the foundation for the subsequent inquiries to build upon and delve deeper into the intricate web of theoretical ques-

tions surrounding social desirability, agreement scales, and the integration of sustainable development into varying business sectors and geographical locations.

## 5. Conclusions

The idea of sustainability has several facets and goes beyond marketing to include numerous industries and management procedures. To produce pertinent and useful sustainability solutions, various locations, like Lebanon, must conduct in-depth analyses of the particular conditions and difficulties they confront.

In Lebanon, there are specific environmental, social, and economic challenges that demand attention. Environmental issues include water scarcity, pollution, waste management, and deforestation. Social challenges encompass political instability, inequality, and access to basic services like healthcare and education. Economic challenges involve high unemployment rates, economic disparity, and dependence on certain industries.

To address these challenges and promote sustainability in Lebanon, a comprehensive approach is necessary. This involves understanding the local context, engaging stakeholders, and considering the interconnections between environmental, social, and economic aspects. Sustainable marketing practices can play a crucial role in driving positive change by promoting responsible consumption, raising awareness, and influencing consumer behavior.

For instance, sustainable marketing strategies can focus on promoting locally sourced and environmentally friendly products, supporting fair trade practices, and fostering community engagement. Marketing campaigns can educate consumers about the importance of sustainable practices and encourage them to make informed choices that align with environmental and social goals.

The theoretical and conceptual framework of this research is part of the approach of the theory of good practices of Sustainable Development according to the ARIA and the FRCA concerning the independent variables. At the end of the tests carried out, the validation or invalidation of the research hypotheses, allows, beyond the empirical aspects discussed previously, to provide elements of theoretical validation. For this, the analysis and discussion will be based immediately on the hypotheses of this scientific research by expressing the influence (whether direct or indirect) of the variables of the conceptual framework on the subject and the problem of this research. The validation or invalidation of the hypotheses allows us to analyze the contribution of the theoretical axes mobilized for the present research: the modification of the hypothesis resulted from the validation of H2 and the invalidation of H1 and H3, whereas “The good practices of agri-food companies influence them to integrate sustainable development into their marketing strategy using the 4Ps favoring only the viable pillar (environmental and economic)”; although we faced may obstacles and limitations have been clearly identified and mentioned above, such as the constraints of design and methodology, social desirability, misunder-

standing of questions, practical difficulties, economic and pandemic-related obstacles, and the specificity of the field and geographical area selected.

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