

Using AI in Marketing for Startups to Support Sustainable Development: A Case Study of “Too Good to Go”

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Abstract:

This paper illustrates the role of AI in enhancing startups' marketing strategies to achieve the sustainable development goals (SDGs) using the case of "Too Good To Go." The paper shows how AI can optimize supply and demand and personalize marketing content to the individual consumer and engage customers in developing a more circular economy, using predictive analytics and customer behavior models effectively. Companies such as Too Good To Go, through AI-driven marketing, can grow rapidly while contributing to environmental protection and long-term sustainability.

Keywords: startup, artificial intelligence, Algeria, marketing.

Jel Classification Codes: L26, C63, M31, O55.

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الملخص:

تتناول هذه الدراسة دور الذكاء الاصطناعي في تفعيل الاستراتيجيات التسويقية لضمان نمو مستدام حيث تم التطرق الى استعمالات الذكاء الاصطناعي في المجال التسويقي بداية من الاستراتيجية التسويقية هبوطا الى العمليات التسويقية، حيث تم عرض حالة شركة Too Good To GO كمثال يبين أحد استعمالات الذكاء الاصطناعي في الجانب التسويقي بالنسبة للشركات الناشئة و خاصة مع التحديات التي تواجهها هذا النوع من الشركات الرائدة في السوق ذات الحصة السوقية الاكبر، من خلال منهج دراسة حالة و هو احد المناهج الوصفية تبين أن الشركة و من خلال استعمالها الذكاء الاصطناعي استطاعت خلق حصة سوقية خاصة مثل السوق المتخصصة، بواسطة تفوقها التسويقي عن طريق ميزات عملية جديدة في تجنب رمي الطعام و كذا دراسة آنية للمستهلكين وعوامل السوق.

الكلمات المفتاحية: شركات ناشئة، الذكاء الاصطناعي، الجزائر، التسويق.

تصنيف JEL: O55, M31, C63, L26

1. INTRODUCTION

Recently, startups have become one of the primary drivers of innovation in sustainable development. One of the strongest tools we can leverage with these young firms to drive innovation is artificial intelligence (AI). AI enables startups to improve operational efficiency and adapt their marketing strategies to the values of sustainability-oriented consumers. The growing importance of environmental concerns has encouraged companies to integrate AI-driven marketing into sustainable business models.

Startups are ideally positioned to act as the testing ground for the AI technologies that facilitate sustainable practice, since they are nimble in identifying processes to try out new measures that hold innovation as a hallmark of their business model. With marketing being a critical vehicle articulating consumer demand for ethically produced and environmentally and socially responsible solutions to entrepreneurs in the workflow enabled through the tech of AI, it will be unique to observe their innovations of hyper personalization, predictive analytics, dynamic pricing, and predicting consumption behavior. Startups will become better able to price their sustainable endeavor based upon a place in the marketplace.

One relevant example is the Danish company Too Good to Go, an upstart company that promotes food waste reduction through an AI-powered platform. Too Good to Go uses AI algorithms to facilitate food producers predicting surplus food products through a mobile app. While logistics are a focus of their business model, their marketing campaigns emphasize environmental responsibility and encourage consumers to reduce food waste. which prompts consumers to use their app to reduce food waste. Too Good to Go is among the fastest-growing startups and has expanded in several countries and reduced millions of meals as a contribution to sustainable development due to their use of AI technology and great green

marketing stories.

While there is a growing amount of research on AI technology, it may not know much in the positive application of marketing efforts aligned with AI in respect of supporting the target goal of sustainable development to organizational authority. As stated, exemplary cases can help explain the factor of success and recognize the factors we need to be aware of to avoid or mitigate barriers.

The question of the study:

In what ways does the use of artificial intelligence in marketing strategies help startups achieve sustainable development objectives?

Secondary Questions:

What is the role of AI in improving customer targeting and segmentation in startup marketing?

What is the role of artificial intelligence in personalizing marketing content and customer interaction?

How does AI enable supply-and-demand optimization in startup marketing activities?

How the application of AI in marketing assists startups to achieve SDGs

Hypothesis:

AI has a positive impact on startup marketing performance by improving customer targeting and segmentation.

Artificial intelligence has increased the efficiency of startups in

their marketing due to the personalization of content, offers, and customer communication.

AI helps startups improve demand prediction and supply optimization in their marketing activities.

The use of artificial intelligence in startup marketing has a positive role to play towards sustainable development by minimizing wastage and promoting responsible consumption.

Methodology:

This research adopts a descriptive analytic method represented in the case study. Using a descriptive approach as it is the most suitable method for preliminary and exploratory studies, in which the current study involving the use of AI as an automated tool in marketing process directly, it presents the theoretical and conceptual foundations partnering with artificial intelligence, startup marketing, and sustainable development. To analyze such a relationship between AI-based marketing practices and sustainable development outcomes, the analytical lens is used. Thus, this thesis adopts the case study method since it is the ideal one to investigate a tangible entrepreneurial experience such as Too Good to Go, which acts as a startup at the crossroads between digitalization and marketing sustainability. In this paper, we have addressed the required use of the method, which has to be connected to the research problem and hypotheses (goals), which is one of the requirements common in Algerian methodology guidance.

2. THEORETICAL FRAMEWORK

Before exploring the different aspects of the Algerian natural touristic resources, we have to lay the foundation on the multiple academic aspects included in this study:

1.2.Definitions Of Artificial Intelligence

Before we explore the applications and effects of artificial intelligence (AI) on startups and marketing strategies, we must first understand AI. The term "AI" can cover a lot of fields in its definition:

Def1: The concept of artificial intelligence (AI) has been defined in many different ways, and this has often led to some confusion. AI could be defined most broadly as algorithms, which isn't very useful at all given that algorithms have existed long before artificial intelligence and all sorts of fields employ algorithms. AI could be defined most narrowly as a computer's imitation of any aspect of human intelligence; however, in that sense AI would not exist yet given the simplicity of many real-world applications. A definition that is both very common and useful is "AI is technology that allows machines to imitate some complex human skill." Based on that, we can say the following:

That artificial intelligence is a technology that enables machines to imitate various complex human skills (Haroon , Corien , & Erik , January 2023, p. 15)

Def2: In a paper by the name "The AI Definition and a Program Which Satisfies this Definition," Artificial Intelligence (AI) is defined as a policy directing an agent to perform in a good way in many possible worlds; even when the agent is facing random or difficult situations, then it can be expected to perform well on average. The description of possible worlds is as simple as possible (as near as possible to the Occam's razor

description of the world). The definition does not depend on how long the agent lives or how the world is described in terms of language.

To sum up, AI is a policy capable of making an agent perform well in every possible world described with simple rules, regardless of the explanation of the world or the operating time of the agent (Dimiter , 2022, pp. 2-3)

Def3: From a philosophical perspective, many studies try to exactly define what can be considered AI since there are many methods and tools that are ambiguous in the aspect of belonging to the AI field.

Artificial Intelligence (AI) was first imagined in the Dartmouth Proposal of 1955, which proposed that all aspects of learning or any other feature of intelligence can be described with such precision that a machine can be made to simulate it. This vision of what AI is presumes that intelligence is something internal to an individual and primarily based on reasoning and problem-solving skills. It also reflects a philosophical tradition that is based on the idea of the rational, autonomous individual, which is reflected in the works of philosophers such as Locke, Kant, and Descartes. Although such an exchange has been critiqued for neglecting the social and collective nature of intelligence, this idea remains embedded in much of what is done (and sold) as AI today.

As such, artificial intelligence as an operating definition is the attempt to describe aspects of human intelligence so precisely that they could be simulated or duplicated by machines (Harry , March 2025, pp. 1-2)

In **summary**, several definitions of artificial intelligence (AI) have been taken: philosophical, functional, and technological, and while they differ in their approaches, they all stem from the same underlying assumption: that AI relates to machines that can mimic or replicate human intelligence. Whether AI is viewed as the ability to mimic

complex human behaviors or skill sets, or whether it is viewed as the best performance across possible worlds in any policy, or whether AI is ultimately simply the simulation of the cognitive process based on human rationality, AI is still part of an ongoing effort to separate the meaning of the machine from the capacity of human action. These various indicators of AI establish a broad framework to explore how AI can be deployed into startups and marketing efforts related to sustainable development.

2. Startup

Startups have become increasingly important drivers of innovation and change in today's rapidly evolving global economy, which has evolved as a result of the many factors. Startups, which are often founded on great ideas and entrepreneurial spirit, are formed with the intent to change the operation of traditional business models. Startups will pursue and find new technology, new solutions, or new services and engage with customers in marketplaces and ways that traditional organizations do not, and arguably, cannot. Startups can pivot more flexibly away from customer needs, pull the development mindset into the world of customer need assessment, take risks sooner, and move quicker than their larger counterparts. Not that they are better, startups are critical to stimulating economies around the world, where they will cause not only technological space for new technologies to thrive, more jobs, and resuscitate and create industries but also alter the course of entire sectors.

To define startups, we must pinpoint the difference in their definitions between the theoretical context and the national Algerian definition that relies on the juridic context:

2.1.Startup in the theoretical context.

Def1: Startups are new businesses that are both innovative and growth-oriented, which are involved in the creation and development of new products, services, or business models. In sustainability transitions, startups are relevant actors with the potential to deliver radical innovation, disrupt markets, and provide substantial environmental and social gain. Some, of course, are better than others, but they vary in their interest in sustainable outcomes and their ability to be agents for change, making them an important part of the puzzle of strategies to achieve sustainable economic/societal changes (Yasmin & Klaus , 2022, p. 3084)

Def2: Startups are cutting-edge ventures, and they are new. Startups are created to innovate new solutions to respond to new market and society demands. Startups are characterized by the desire for growth as they intend to disrupt existing market structures and innovate new business models or technological solutions. Impact startups, when examining transitions towards sustainability, focus on developing solutions that can scale to realize positive economic, social,, and environmental impacts. If they are successful, they can displace unsustainable systems and practices (e.g., it is possible that by rotating citizens to healthier diets, there is less crop support for the agribusiness sector, thus reducing external costs or pollution). This process can change the market (meso level), and perhaps even change institutions (macro level). They are an essential piece in driving sustainable development, triggering system-wide transitions and actualizing and achieving global ambitions like the

Sustainable Development Goals (SDGs). Furthermore, while not all startups will obtain impact and not all startups will recognize sustainability impacts, their agility and ease in the startup phase make them a key actor for effecting sustainability transformation. (Jannic & Klaus , 2022, p. 2)

2.2.Startups from an Algerian legal point of view

Before exploring the contributions of startups to economic innovation and growth, it is necessary to understand how startups are legally defined and organized in the Algerian system. Algeria has developed a certain legal framework to support and regulate startups with a goal of allowing for innovation and entrepreneurship of young enterprises to take place. This framework provides not only a legal definition of a startup but also lays out the steps to build a startup and be legally recognized as a startup. The next sections will provide, first, the juridical definition of startups in the Algerian law regime and, second, the practical steps to create and be legally recognized as a startup in Algeria.

From the juridical point of view, there is only one definition stated in the national laws; based on that, in Algeria, a startup is a legal designation for a new company that is innovative in its products or services and operates in a defined legal framework that aims to support its growth. According to Decree No. 20-254 of 15 September 2020, to be legally recognized as a startup (for the official label), a company requires satisfying a few minimal criteria: be less than 8 years old; have at most 250 employees; be based on an innovative business model; have 50% of shares owned by natural persons (which includes individual investors, not corporations); and stay below a maximum level of annual turnover, as prescribed by the national committee. In Algeria, the startup regime under Law No. 19-14 (2019) and Law No. 21-170 (2021)

also gives startups huge financial benefits, such as a full exemption from tax liability for profits for 3 years and VAT on investment equipment. Moreover, the startup sector is a beneficiary of laws altering the commercial regulations (Law No. 22-09, 2022) and laws creating pathways for youth and public employees to undertake their own entrepreneurial initiatives (Law No. 22-16 and Law No. 22-22, 2022) (Necib , 2024, pp. 608-609)

2.3.Algeria: The Procedure of Establishing a Startup in Algeria and Obtaining the "Startup" Label

And based on the legal point of view in Algeria, the procedures to establish a startup in Algeria and obtain the "startup" label are as follows:

The procedures for creating a startup and obtaining the “Startup” label in Algeria are well specified. Entrepreneurs must submit a request via the National Electronic Portal for Startups, providing several documents required: a copy of the commercial register, tax identification number, statistical number, and company articles of association; proof of registration with the National Social Insurance Fund for salaried workers (CNAS) and non-salaried workers (CASNOS); current company financial statements (for the current year); a comprehensive business plan; and evidence of scientific and technical qualifications and experience of the staff. Where applicable: intellectual property certificates, documentary evidence of awards, recognitions, etc. The National Committee must respond within 30 days of submission. If the request is incomplete, the applicant is given 15 days to complete it. If they do not submit it within that time, they cannot file a new request again. The “Startup” label is given for a period of four years and can only be renewed once under the same conditions. If the request is refused,

the committee must provide electronically justifications for their refusal, which they have a right to request a review of, to be processed in 30 days. Approved startups are published on the National Portal. This framework is part of Algeria's broader policy to promote innovation, youth entrepreneurship, and modernizing the economy through, for example, its financial support programs, the National Startup Financing Fund, and major events such as the Algeria Disrupt Conferences since 2020 (بوصوفة ، 2023 ، الصفحات 131-133)

2.4. Marketing Strategies for Startups:

Marketing is a huge factor that will determine who succeeds and who falls behind in most growing start-ups because, as we know, start-ups mean limited resources and high competition against each other. Developing effective marketing strategies helps startups.

businesses to get in front of their ideal audience, create a buzz for their brand, and support achievable growth. First, it doesn't have a history on which to base marketing decisions, as startups do. And that, of course, cuts right across the lot of a startup, for which creative, cheap, and adaptive ways to market themselves into the market are usually a challenge. In this second part, we are going to look at the main startup marketing strategies that startups use to ensure expedient growth and development.

According to a thesis. Bachelor's degree. By the name "How to Run Marketing in Startups Efficiently," the strategies that were mentioned in this study were as follows:

Table 1. Marketing strategies for startups according to “Artem Kislukhin”

Strategy	Details
Digital-First Approach	Startups should prioritize digital tools—like social media marketing (Instagram, LinkedIn, and TikTok), SEO optimization, and email campaigns—because they are cheaper, faster to scale, and more adaptable than traditional methods.
Growth Hacking	Growth hacking focuses on smart, creative experiments to boost user acquisition quickly and affordably (like viral loops, referral bonuses, or viral content strategies). It’s crucial for fast startup growth without huge budgets.
Marketing Automation	Automating repetitive tasks like posting on social media, email marketing flows, and customer follow-ups saves startups time and resources, allowing them to focus more on growth and innovation. Tools like CRM systems are recommended.
Data-Driven Decision Making	Startups should track metrics like Customer Acquisition Cost (CAC), Customer Lifetime Value (LTV), website traffic, and engagement rates. These metrics help in continuously adjusting strategies based on what is actually working.
Real-Time Adaptation	It is essential to modify marketing strategies immediately based on customer feedback, market changes, or analytics results, rather than sticking rigidly to an initial plan.

Resource Allocation Efficiency	Given their limited resources, startups must carefully prioritize their efforts, focusing first on customer acquisition channels and strategies that deliver immediate results before investing heavily in branding or long-term awareness.
Creative Campaigns with Low Budget	Startups are encouraged to create bold, imaginative campaigns that attract attention without spending much — such as partnering with influencers, creating viral challenges, or crafting emotional storytelling ads.
Use of AI Tools	Using artificial intelligence tools (like ChatGPT for content creation, customer segmentation AI, and automated chatbots) improves efficiency and personalization without increasing marketing team sizes.
Integrated Tool Framework	Connecting all digital tools (social media managers, CRM, email marketing, and analytics dashboards) creates a seamless, automated system that helps startups manage campaigns effectively with minimal human intervention.

Source: (Haroon , Corien , & Erik , January 2023, pp. 12-34)

But since the subject that we are discussing now is talking about marketing and AI and not the conventional or the traditional marketing we are required to illustrate the marketing strategies for this new type of startup that relies on AI and digital services. In a study by the name of “The Role of Data-Driven Marketing Analysis in Startup Growth: A Systematic Review” They focused more on how to analyze the data collected for marketing purposes. And which tool is more pertinent for every step along the way to guarantee sustainable

growth? Of startups.

Table 2. Data-Driven Marketing Strategies for Startups and Their Applications

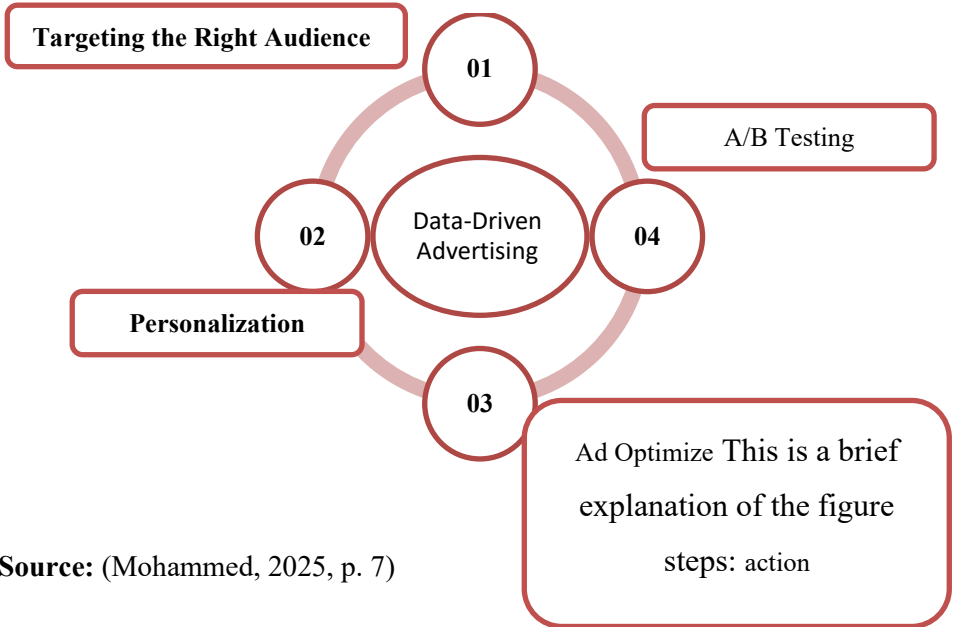
Strategy	Details
Data-Driven Marketing Analytics	Startups must shift from intuition-based strategies to data-driven decisions, using real-time analytics to continuously optimize marketing performance.
Predictive and Prescriptive Analytics with Python	Python is used for customer behavior prediction and recommending marketing actions, improving personalization and campaign precision.
Real-Time Performance Tracking with Power BI and Tableau	Real-time visualization of key metrics (conversion rates, customer acquisition costs) allows startups to adapt quickly and reallocate budgets.
Automating Marketing Workflows with Alteryx	Alteryx automates data integration, customer segmentation, and A/B testing, enabling startups to react faster to customer behaviors and improve efficiency.
Customer Segmentation and Personalization	Startups use advanced tools (Python, Tableau, Power BI) for behavioral and psychographic segmentation to create hyper-personalized campaigns.
Data-Driven Market Entry Strategies	Startups use predictive analytics to choose optimal market entry points and refine pricing, positioning, and customer targeting strategies.

Continuous Real-Time Optimization	Instead of periodic marketing reviews, startups continuously adjust their campaigns in real time based on data analysis, improving retention and engagement.
Integration of AI and Machine Learning	Emerging AI technologies (like NLP and chatbots) are highlighted as future drivers of personalized customer experiences at scale.

Source: (Mohammed, 2025, pp. 2-16)

As we move into today's fast-paced digital atmosphere, marketing practices are increasingly relying on data for better efficiency and effectiveness. Data-driven marketing enables businesses to correctly target consumers, personalize content, enhance marketing investment, and execute marketing strategies with maximum effectiveness, while grounding those decisions with experimentation that is seriously tested. Companies today have the ability to access their marketing efforts through a complete landscape analysis on actual real-time data that is derived from a website/app from customers' behaviors, thereby constantly re-evaluating and improving the strategy to achieve enhanced consumer engagement, conversion rate, and dollars delivered back in return on investment (ROI). The four principal pillars of data-driven marketing are illustrated in the next figure.

Fig. 1. Key Components of Data-Driven Marketing Strategies



Source: (Mohammed, 2025, p. 7)

This is a brief explanation of the figure steps:

- **Targeting the Right Audience:** **Targeting** in data-driven marketing is about identifying and connecting with the individual people who are most likely to want a product or service. Customer information (like demographics, interests, and behaviors) will enable companies to be more targeted with their marketing—meaning they can have a bigger impact with the money they spend and won't be throwing impressions away on an uninterested audience.
- **Personalization:** Personalization extends all the way to creating custom marketing messages (or offers) tailored to what we know about each particular customer, such as their

preferences, behaviors, and past. Instead of sending the same impersonal marketing message to everyone, companies now capture the information they need to target what they send to each customer and, more specifically, the content that's most relevant and personal to each customer, resulting in increased engagement and loyalty and higher sales.

- **Ad Optimization:** Ad optimization is the continuous process of evaluating performance on marketing campaigns and optimizing ads to become better-performing. Optimization may require you to change the messaging, the design, the timing, and potentially the platform that ads are appearing on based on simultaneous data on performance against your target audience.
- **A/B Testing:** A/B testing is a comparative examination of two or more variations of a marketing message, design, or campaign and, in the end, shows which one performs better. This data-driven experiment gives marketers the ability to use data for their decisions, increase their conversion rates, and optimize their targeted marketing based on audience preference.

The diagram shows four essential pieces of data-driven marketing. First of all, "Targeting the Right Audience" claims that all marketing aims are limited to the individuals most intent on being interested in the marketed product or service. Second, "personalization" consists of a marketing message directed at the individual's particular likes and dislikes and behavioral tendencies, making it more personally relevant and associated with the consumer. Third, "ad optimization" is the continual adjustment to marketing content and placements based on outcome metrics. Fourth, "A/B testing" is a systematic approach to each marketing version tested against the other(s) to indicate which version showed better performance. Each of these elements constitutes an integrated marketing approach that allows organizations to market smarter based on evidence.

2.5 Ethical Considerations and Limits of AI Use in Startup Marketing

The companies must pay attention also to the privacy of consumers, as the ai acquired by companies grows up the concerns about the customer privacy also does. There is two main privacy problems when it comes to the purchasing problem online, or through apps, the company stores the habits and the behavior of its customers, their preferences their purchasing power, location, interaction history, therefore those kind of sensitive data must be stored carefully and in securely, and using AI without full understanding and owning its whole process may cause privacy issues, and the other main problem is the algorithm bias, as the AI engine are initially Models developed using training data, and in the training process the bias usually happens due to the data selected, for example if too much data are about European customers it will learn to make decisions based on that specific demographic categories while it may not be suitable for other categories in real world, which can also exclude other customers from new offers or certain marketing decisions.

this is why AI should not replace human judgment; it should only help in the decision-making process through automation and personalization leading to the final decision.

3. Case Study of "Too Good to Go"

In this section, we will explore the case study of the company or the startup, GoGo, which is a tarnished startup. We will illustrate the notions of AI marketing. Using this case, but first we need to explore a brief definition of this company.

3.1.Introduction to the Startup:

The company uses artificial intelligence in many operations, but we will summarize the principal operations in the processes, not the marketing in the following table:

Table 3. ARTIFICIAL INTELLIGENCE USE IN “TOO GOOD TO GO”

AI Application	Detailed Explanation
Supply and Demand Optimization	AI predicts surplus food availability by analyzing historical sales and behavioral data. This allows the platform to match food surplus with user demand, minimizing waste and improving operational efficiency.
Logistics Management	AI optimizes food collection schedules and delivery routes to ensure fresh surplus food is redistributed efficiently. This automation allows Too Good to Go to operate at scale while maintaining food quality.
Customer Behavior Source: Prediction	AI analyzes customer behavior, preferences, and purchase history to personalize offers and app notifications, improving user engagement, retention, and the frequency of app usage.
Marketing Personalization	AI segments customers and tailors marketing campaigns by predicting the best timing and format for communication, maximizing the effectiveness of promotional activities while minimizing marketing costs.
Support for Circular Economy	By helping to rescue food before it becomes waste, AI supports Too Good to Go’s broader mission of promoting sustainable consumption and contributing to the circular economy, aligned with Sustainable Development Goals.

Source: (Madalena Eça , Beatriz , Beatriz , & Francisca , 2024, pp. 1-15)

3.2.The Use of Artificial Intelligence (AI) In "Too Good to Go"

Too Good to Go is a social impact startup addressing the social issue of food waste in society, using an app as its tool. Too Good to Go's marketing strategy consisted of leveraging artificial intelligence (AI) to improve engagement with customers and personalization of offers and had the potential of predicting surplus food availability in a neighboring city or community, moreover encouraging more sustainable ideas of consumption.

- **AI for Supply and Demand Optimization:** One of the ways Too Good to Go employs AI in its marketing operations is in the capacity of matching supply with demand. AI algorithms use historical sales and behavioral patterns to predict surplus food availability at partner organizations. This capability facilitates the temporal alignment of marketing notifications, promotions, and product offerings so food can be rescued prior to being wasted. Therefore, marketing messages contained in this system are contextually relevant and timely. Prompt more engagement and increased conversions.
- **AI-Driven Customer Behavior Analysis:** Too Good to Go employs artificial intelligence to analyze user behavior, segment customers into similar profiles, and provide more personalized marketing communications to users. The app collects data on customer food preferences, purchasing patterns, and app purchasing routes through AI to allow the company to prepare offers and notifications specific to each user. This will increase the chance that customers will purchase food items and, over time, will lead to long-term users. Wonderful models enable the company to identify the

best time to send messages to users, along with the kinds of food offers most likely to get user responses.

- **Personalization of Marketing Content:** Besides segmenting customers, AI allows Too Good to Go to personalize the entire content of marketing campaigns. The app provides recommendations of "Magic Bags" based on previous purchases and user interests. Marketing emails and in-app notifications are dynamically personalized for users, increasing satisfaction and overall experience. This level of personalization is arguably a major driver to Too Good to Go's marketing success, making their communications feel more relevant and leading to better retention rates.
- **Support for Circular Economy Promotion:** Too Good to Go is using AI for marketing efficiency and not just that, but also to make better choices in serving its stated mission of sustainability and circular economy. AI is improving the efficiency with which surplus food that would go to waste connects to users, and it's pointing users' specific new ideas to stop waste, learn about local offerings, etc., through planned marketing campaigns. Marketing campaigns are often looking to show users the impact on the environment by showcasing personalized statistics to the user and reminding them of their impact, deepening their emotional connection to their contributions.
- **Predictive Analytics for Market Expansion:** Exploration into market expansion strategies also benefited from AI. The predictive analytics models

helped Too Good to Go pinpoint geographies with the strongest likelihood of successful food rescue operations based on such factors as the density of consumers, the nearness to available food supply channels, and current interest in sustainability. The structured and data-driven approach to market expansion diminishes the uncertainty of launching a new campaign in those areas best suited for sustainable options for food consumption. (Madalena Eça , Beatriz , Beatriz , & Francisca , 2024, pp. 1-6)

Using AI improves both a focused, successful marketing strategy that aligns with its sustainability agenda. Too Good to Go is using predictive analysis, customer behavior modeling, personalized marketing, and dynamic marketing agility to show that AI can support rapid scaling for startups and social responsibility.

4. CONCLUSION

Using artificial intelligence to create a marketing plan, startups will create an opportunity for growth without compromising sustainable development. As our study case shows, Too Good to Go shows that AI can enhance startups' effectiveness in targeting customers and communicate with them, optimize real-time activities, and execute predictive analytics, which helps grow the startups' competitiveness and social responsibility. AI enables startups to translate innovation, market requirements, and their environmental footprint into an important type of sustainable entrepreneurship.

5. RECOMMENDATIONS

- New startups should include AI-based personalization and predictive analytics within marketing strategy at the marketing operations of the startup.
- Sustainable development goals should be explicitly built into their marketing strategy to capture the interest and trust of socially responsible consumers.
- Investment in AI systems for segmentation and real-time adaptations should be considered by any startup as an effective investment in environmentally sustainable marketing practices.
- Governments and funding agencies should offer incentives and fund programs to encourage AI usage by start-ups focused on sustainability.

More research should be undertaken to find out the long-term impacts of AI-driven marketing strategies in sustainable sector transformation.

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