



## Rethinking Agrifood: Digital Strategies to enhance Food Safety A qualitative Approach

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### Abstract:

The agri-food sector in Algeria faces significant challenges related to traceability and food safety, issues that affect both domestic consumption and export opportunities. The lack of transparent tracking systems leads to inefficiencies and a loss of consumer trust. This study examines the impact of digital strategies, such as ERP systems, blockchain, and digital marketing, on improving efficiency, transparency, and customer loyalty.

The methodology employed involves semi-structured interviews with industry professionals, which help identify the benefits and barriers associated with the implementation of these technologies.

The research highlights the role of blockchain in ensuring end-to-end product traceability, offering consumers greater confidence in food safety and authenticity. ERP systems streamline operations by integrating supply chain processes, reducing inefficiencies, and improving product quality. Digital marketing emerges as a critical tool for engaging with consumers, promoting transparency, and reaching broader markets. Addressing challenges like limited infrastructure and digital illiteracy requires coordinated efforts, including investments in technology, training programs, and public-private partnerships to foster a supportive ecosystem for digital adoption.

**Key words:** Digital, Agri-food, Website, Blockchain, Traceability.

**JEL Classification Codes :** F40, H40, C65, P65, X65.

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## **Introduction:**

Food safety remains a major global challenge, with significant concerns regarding the quality, availability, and accessibility of food products. Moreover, food safety is intrinsically linked to the quality and traceability of food (Baker & McFarlane, 2020). The World Health Organization (WHO) defines food safety as “physical and economic access to sufficient, safe, and nutritious food” (WHO, 2023), making it a crucial issue for consumers and public authorities.

With the rapid evolution of the digital environment, digital marketing has become an essential pillar of the agri-food sector. According to Chaffey (2022), digital marketing not only promotes products but also strengthens transparency, traceability, and consumer trust. The use of social media, e-commerce, and content marketing enables direct interactions with consumers, addressing their concerns about product quality and safety (Smith & Hunsicker, 2021). Furthermore, digital tools offer agri-food companies opportunities to expand their market while emphasizing their commitment to food safety (Davis et al., 2022).

In Algeria, awareness of food safety has grown significantly, particularly due to concerns about the quality of both local and imported food products. In response, Algerian authorities have introduced regulations to enhance the safety of agri-food products (Ministry of Agriculture and Rural Development, 2022). Digital marketing provides local companies with a means to promote the quality and safety of their products while meeting consumers' growing expectations for transparency and traceability. According to Belkacem and Ali (2021), Algerian companies are beginning to adopt digital strategies to reassure consumers about the origin and quality of the products they consume.

As consumer behavior evolves, digital consumers increasingly demand transparent, traceable, and guaranteed-quality products. This shift pushes companies to integrate digital strategies to meet these growing needs. This raises a central question: How can digital marketing strategies transform the Algerian agri-food sector by enhancing food safety and consumer trust?

This central question leads to three sub-questions:

1. What specific digital marketing levers can promote food safety in the agri-food sector in Algeria?
2. What digital tools do Algerian companies use to ensure the traceability and quality of food products?
3. How can digital platforms be used to establish a lasting relationship of trust between companies and consumers regarding food safety?

The main objective of this research is to analyze how digital marketing can be used to improve food safety in the Algerian agri-food sector. Specifically, the study aims to :

1. Analyze the impact of digital marketing on the promotion strategies of agri-food products and its contribution to ensuring food safety in Algeria.
2. Evaluate the digital tools used by Algerian companies to guarantee the quality and safety of food products.
3. Examine the implementation of digital strategies by companies to enhance food safety and differentiate themselves in the Algerian market.
4. Propose recommendations on how agri-food companies can optimize the use of digital tools to strengthen food safety.

This research adopts a qualitative approach to better understand how digital marketing strategies can contribute to improving food safety in the Algerian agri-food sector. The study focuses on the perceptions of professionals and experts in the sector to gain an in-depth understanding of current practices, challenges, and opportunities associated with the integration of digital tools to promote food safety.

The objective is to explore in detail the strategies implemented by local companies operating in various sectors, such as olive cultivation, beekeeping, canned foods, dairy products, and local specialties, to assess the effectiveness of these strategies in meeting the expectations of consumers and regulators regarding food safety.

A qualitative research methodology based on expert interviews will provide a detailed and nuanced understanding of digital marketing strategies in the Algerian

agri-food sector and their role in improving food safety. The findings will contribute to informing current practices among companies and provide recommendations for better integrating digital tools into the promotion of food safety.

## **1- Key Concepts of Digital Marketing:**

### **1.1- Definition and Main Tools:**

Digital marketing refers to the use of digital technologies and online channels to promote products, services, or brands to consumers. It includes tools and strategies such as search engine optimization (SEO), content marketing, social media marketing, email marketing, and e-commerce. This type of marketing aims to reach a broader audience, foster consumer engagement, and deliver a personalized, real-time experience (Chaffey & Ellis-Chadwick, 2023; Kotler et al., 2022).

Digital marketing relies on several key concepts, each contributing to transforming how businesses interact with their consumers. Among them, content marketing involves creating relevant and engaging content to attract and retain users, helping to build long-term relationships (Chaffey & Ellis-Chadwick, 2023). Search engine optimization (SEO) is also crucial, enhancing business visibility on search engines and increasing organic website traffic (Haug, 2023). Social media marketing enables direct and personalized interaction with consumers, promoting higher engagement (Rodrigues & Filho, 2023). Finally, e-commerce and email marketing are powerful tools for direct sales and customer loyalty, allowing businesses to tailor offers and messages to consumer preferences (Smith & Taylor, 2023)

### **1.2 Specificities of Digital Marketing in the Agri-Food Sector:**

Digital marketing in the agri-food sector has unique characteristics linked to the necessity of building trust with consumers. One of the main challenges for agri-food companies is transparency. Consumers increasingly seek information about product origins, production methods, and sustainable practices. The use of digital tools enables companies to meet these expectations by sharing real-time data through websites, mobile applications, or even blockchain technology to ensure product traceability (Vargas et al., 2023).

Moreover, digital marketing in this sector is characterized by extensive use of social media to create direct connections with consumers. These platforms not only promote products but also highlight the values and stories of agri-food brands. By creating interactive content, such as manufacturing videos or testimonials on sustainable practices, companies can strengthen consumer engagement and foster loyalty (Papadopoulou et al., 2023).

Content marketing strategies are also essential for agri-food companies. By producing useful and informative content, such as recipes, nutritional advice, or insights into supply chains, brands can address consumers' growing concerns about health and food safety. This type of marketing creates an emotional bond with consumers, contributing to their loyalty (Chen et al., 2022).

## **2. The Role of Digital Marketing in the Agri-Food Sector:**

Digital marketing plays a crucial role in the agri-food sector by providing modern tools to meet consumer expectations while strengthening the competitiveness of businesses. By leveraging technologies such as social media, e-commerce, and content marketing, it facilitates traceability and transparency in production chains, which is a major challenge in digital marketing within the agri-food sector. Technologies like blockchain and the Internet of Things (IoT) enable real-time tracking of product origins, production conditions, and distribution stages. This ensures increased transparency, reduces food fraud risks, and enhances consumer trust. According to Galvez et al. (2022), the integration of these tools strengthens brand credibility and regulatory compliance. Additionally, Kamilaris et al. (2022) highlight that these technologies also improve companies' responsiveness to food crises by enabling quick and accurate product recalls.

In addition to reinforcing transparency and consumer trust, digital marketing is an essential lever for optimizing product and brand visibility. Improving the visibility of products and brands is a key dimension of digital marketing in the agri-food sector. Through digital technologies, companies can reach a broader and more diverse audience using tools like search engine optimization (SEO), online advertising

campaigns, and social media. According to Durand and Lefèvre (2023), these strategies not only position products effectively in markets but also enhance their attractiveness. Furthermore, creating engaging content, such as recipes or videos about product origins, fosters increased interaction with consumers, thereby strengthening brand image and boosting sales (Lemoine et al., 2023).

Beyond facilitating traceability and transparency in production chains, as well as improving visibility, digital marketing promotes the strengthening of ties between agri-food companies and consumers by offering continuous and personalized interaction opportunities. Digital platforms, such as social media or mobile applications, allow businesses to respond to consumer needs promptly and specifically. According to Bousquet et al. (2022), these interactions strengthen customer loyalty and satisfaction by valuing feedback and offering content tailored to individual needs. Moreover, Durand and Lefèvre (2023) emphasize that digital interactivity allows for co-creating value by involving consumers in the development of products and marketing campaigns, thus enhancing their sense of brand ownership. This interactive approach, based on bidirectional communication, contributes to building a sustainable and profitable relationship.

### **3. Link between Digital Strategies and Food Safety:**

#### **3.1 Impact of Digital Technologies on Food Traceability:**

The impact of digital technologies on food traceability is seen through the integration of blockchain, IoT, and Big Data in the agri-food value chain. Blockchain ensures complete traceability by securely and transparently recording each step of the production to consumption process, thus strengthening consumer trust (Bousslama & Mellouli, 2022). IoT enables real-time monitoring of storage conditions, reducing the risks of contamination and ensuring product quality (Chakour et al., 2023). The use of Big Data and AI helps analyze data to predict health risks and optimize supply chains, increasing efficiency and safety in the agri-food sector (Benslimane & Benali, 2021).

### **3.2 Transparency and Strengthening Consumer Trust:**

Agri-food companies use digital technologies to enhance transparency and consumer trust, particularly through direct communication via social media and interactive platforms. These tools allow brands to respond in real-time to consumer concerns, share information about production and product safety, and build a more personal relationship with their clientele. According to Durand and Lefèvre (2023), continuous interaction via social media strengthens consumer loyalty and improves their perception of the brand. Moreover, digital certification and quality proofs through QR codes and mobile applications represent another important lever for ensuring transparency. By scanning a QR code, consumers can access detailed information about the origin of products, their traceability, and the quality standards they meet. This immediate accessibility reinforces brand credibility. As Bousquet et al. (2022) highlight, the integration of such technologies strengthens consumer trust by ensuring clear and verifiable product traceability and meeting the growing demand for transparency in the agri-food sector.

### **3.3 Specific Strategies of Algerian Companies:**

In Algeria, digitalization is gradually becoming essential in all economic sectors, playing a strategic role in optimizing processes and improving company competitiveness. Generally, companies are adopting digital tools to enhance their competitiveness, improve supply chain management, and meet consumer demands. According to Boudjellal and Mekki (2022), digital transformation is a key lever for modernizing processes and fostering innovation, although challenges such as limited access to digital infrastructure persist.

In the agri-food sector, this transition is particularly significant as it addresses food safety, traceability challenges, and consumer satisfaction. According to Benali and Khoudour (2022), adopting digital technologies in this field allows companies to modernize their supply chains, increase operational efficiency, and better meet the expectations of local and international markets.

Digitalization plays a central role, especially in food safety management. Companies use technologies like blockchain to ensure efficient traceability of products, essential for meeting international standards (Mebarki et al., 2023). Digital tools, such as IoT sensors, enable precise monitoring of storage and transport conditions, thus improving the quality and safety of agri-food products (Benali and Khoudour, 2022).

However, specific challenges in the Algerian context hinder this transformation. According to Touati et al. (2022), gaps in digital infrastructure, limited regulations, and the low adoption of technological tools by SMEs represent major obstacles. Despite this, opportunities arise, particularly through public initiatives such as the "Algérie Numérique 2025" digital transformation program. This program aims to support the adoption of digital solutions in key sectors, including agri-food.

Finally, in the context of food safety, digitalization can play a vital role in strengthening consumer trust. Algerian agri-food companies are starting to integrate digital certifications and QR codes to offer increased transparency in response to the growing demand for traceable products that comply with health standards (Boussaid and Ziani, 2023). This demonstrates a willingness to adopt innovative practices to meet the needs of the local and international market.

#### **4. Research Methodology:**

##### **4.1 Methodological Approach:**

To address the objectives of this study, a qualitative approach was chosen, based on expert interviews. This methodology is well-suited for exploring the complex phenomena of the agri-food sector and gaining an in-depth understanding of the perceptions and practices of key stakeholders (Yin, 2018). Interviews allow for the collection of detailed, context-rich data from the experience of the respondents (Quivy & Campenhoudt, 2017). This approach is particularly relevant in areas where quantitative data are insufficient, as it allows for the examination of challenges related to digitalization and food safety. Moreover, it helps identify the specificities of the Algerian context, crucial for understanding the adoption of digital tools in the sector.

## **4.2 Population and Sampling:**

The sample of this study consists of four Algerian companies operating in the agri-food sector, selected for their diversity of activities and their role in key areas. ASWEL represents the olive oil sector, highlighting the integration of technologies to optimize production and ensure complete traceability of its olive oils. La Miellée, specializing in beekeeping, stands out for its efforts in traceability and food safety in the production of 100% natural honey. Amor illustrates modern practices in food manufacturing and preservation, particularly regarding the monitoring of supply chains. Tassili Lait, a major player in dairy products, focuses on digitalization to ensure rigorous quality control and reassure consumers about the origin and quality of its products.

This selection of companies allows for exploring digital practices applied to critical processes such as production, traceability, and food safety, while shedding light on their impact on consumer trust.

## **4.3 Interview Guide:**

The interview guide was designed to cover the fundamental dimensions of the issue, focusing on the interactions between digital marketing, agri-food products, and food safety. The following themes were explored in depth to address these three interconnected dimensions:

- **Digital Strategies and Digital Transformation:** This theme highlights the importance of digital tools in enhancing competitiveness and modernizing the agri-food sector. It explores the strategic goals of digital transformation in the company, the tangible benefits such as cost optimization and workflow improvements, as well as increased customer satisfaction. Additionally, it examines the challenges and resistance faced by companies in adopting digital technologies, highlighting the importance of overcoming these obstacles for successful transformation.
- **Digital Marketing in the Agri-Food Sector:** This theme addresses the effectiveness of digital marketing strategies for promoting agri-food products and strengthening the relationship with consumers. It examines the channels used, such as social media, online campaigns, and e-commerce, as well as content creation strategies

focused on authenticity, storytelling, and highlighting local values. It also analyzes the impact of these campaigns on the company's visibility, customer engagement, and sales, underscoring their key role in the success of digital initiatives.

- **Food Safety and Traceability:** This theme emphasizes the use of digital tools, such as blockchain, QR codes, and databases, to meet the growing demands for quality and transparency in the agri-food sector. It also covers quality control processes and the obtaining of certifications to ensure strict standards. Finally, it highlights the impact of these practices on consumer trust and access to regulated markets, showcasing their importance for the credibility and expansion of agri-food businesses.

- **Specific Issues in Algeria:** This theme analyzes local specificities influencing digital strategies, linking the company's global ambitions with the realities of the national market. It explores the opportunities and constraints of the Algerian market, consumer expectations regarding quality, traceability, and innovation, as well as government and private sector initiatives supporting digital transformation in the agri-food sector. These elements provide a better understanding of how local actors adapt their digital strategies to Algeria's specific economic and cultural context.

#### **4.4 Content Analysis:**

The analysis of data from the interviews was conducted using NVivo software, a powerful tool for managing and analyzing qualitative data. It allowed for structuring the collected information, identifying recurring themes, and coding responses according to the categories in the interview guide. With its advanced features, NVivo facilitated data organization, providing a clear view of the relationships between the different themes. It also enabled the generation of word clouds, visualizing the most frequent terms and highlighting key concepts from the interviews. This approach ensured a rigorous and thorough analysis of the results.

### **5. Results of the Qualitative Study:**

#### **5.1 Presentation of the Companies:**

We will now present the companies that make up the sample of this study, specifying their sectors of activity and their relevance to our analysis.

- ASWEL is an Algerian company specialized in the production of high-quality olive oil, located in the M'chedallah region, in the Bouira province of Kabylie, an area renowned for the richness of its olive groves. The company places particular emphasis on combining traditional methods with modern technologies to produce extra virgin olive oil, with full control over production from the field to the bottling process.

- Miellée was founded with the aim of promoting local beekeeping products. It is a company specialized in the production and marketing of high-quality honey in Algeria. The company relies on artisanal production methods that are environmentally friendly, and it places great importance on ensuring the traceability and authenticity of its products. By combining innovation with respect for traditions, La Miellée has established itself as a key player in the local agri-food sector, associating its products with values of health, sustainability, and excellence.

- The Amor Benamor Canning Factory (CAB), founded in 1984 and a member of the Amor Benamor Group, is a pioneer in the production of canned food in Algeria. To optimize its production and management processes, the company has integrated modern digital tools, including ERP systems. Additionally, Amor launched an interactive website that serves as a virtual showcase for its products, allowing customers to discover the full range and make online purchases. This website also facilitates better communication with consumers.

- Tassili Lait is one of the leading companies in the dairy sector in Algeria. Specializing in the production and marketing of milk and dairy products (yogurts, cheeses, creams, etc.), it has diversified and expanded its presence nationwide. The company is recognized for its commitment to quality and for meeting international health standards, relying on advanced technologies to improve its production processes.

## **5.2 Interview Results:**

### **5.2.1 Digital Strategies and Digital Transformation:**

One of the key pillars of this digital transformation has been the launch of a dedicated website for online sales and product presentation. The Marketing Manager of

La Miellée emphasizes the importance of this tool: "The website has transformed the way we work. It allows us to reach customers all over Algeria and even internationally. Today, nearly 40% of our orders come directly from the site. This has significantly expanded our market while simplifying our interactions with consumers."

In recent years, Amor has adopted innovative technologies to improve its efficiency and meet consumer expectations. As the Communications Manager explains: "We understood that to stay competitive, we needed to modernize our operations. For example, implementing an ERP system has allowed us to track our inventory in real-time and better anticipate demand."

Meanwhile, tools like Google Analytics and campaign management software (CRM) are helping to better understand customer expectations and refine marketing strategies. As the Marketing Manager of Aswen highlights "With Google Analytics, we analyze visitor behavior on our website, and with CRM, we personalize our marketing campaigns to better meet our customers' expectations."

Blockchain plays a central role in Tassili Lait projects to ensure exemplary traceability and enhance transparency with consumers. One of the key projects underway is the integration of QR codes on our products, allowing customers to easily trace the origin and production steps of the product. As the owner explains: "We want our customers to trust the quality of the milk. With the QR codes, they will be able to see exactly where each jar comes from, which is essential for building a relationship of transparency and loyalty, especially with our international customers".

Figure (1): Digital Strategies and Digital Transformation



The source: Nvivo

### **5.2.2 Digital Marketing and Content Creation:**

Social media has become a pivotal tool for La Miellée and Aswen in promoting their products and engaging with their respective communities. Both companies have embraced a diversified digital strategy, leveraging platforms like Instagram, Facebook, and TikTok to boost visibility, drive sales, and foster deeper relationships with their customers. Through a combination of engaging content creation and innovative marketing campaigns, both brands have successfully built a strong digital presence.

For La Miellée, the core of its digital marketing strategy revolves around authenticity and storytelling. The company launched a series of captivating videos that take the audience on a journey through the production process of their honey, from the hives to the consumer's table. This approach not only showcases the craftsmanship behind the product but also educates customers about the importance of quality and sustainability. The Marketing Manager reflects on the success of this campaign: "We launched a series of videos showing the journey of our honey, from the hives to the consumer's table. This captivated our audience."

Content creation at La Miellée goes beyond promoting the product—it's about building a community. The company actively invites its customers to participate by sharing their own recipes incorporating La Miellée's honey. This interactive strategy creates a sense of belonging and helps solidify the bond between the brand and its customers. A recent campaign encouraged consumers to post photos of their culinary creations, further enhancing the community feel. As the Marketing Manager explained: "We invite our customers to share original recipes with our honey, which has helped create a real sense of community. This also allows us to showcase the versatility of our product and build stronger connections with our customers."

The company has successfully converted social media engagement into sales. The Marketing Manager further commented: "Since we intensified our online presence, the number of visits to our e-commerce site has doubled. Social media now accounts for a significant portion of our digital revenue, and we are seeing direct results from our efforts."

Like La Miellée, Aswen—a company in the olive oil industry—has implemented digital marketing strategies to increase customer engagement and streamline operations. Aswen has adopted innovative digital tools, including a customer relationship management (CRM) system and Google Analytics, to refine its marketing strategies. With Google Analytics, Aswen monitors visitor behavior on its website, gathering valuable insights that help them tailor their content to meet customer needs. The CRM system further aids in personalizing communication and offers targeted campaigns based on consumer data. As the Marketing Manager for Aswen explained: “With Google Analytics, we analyze the behavior of visitors on our website, and thanks to our CRM system, we personalize our marketing campaigns to better meet the needs of our clients.” Aswen’s commitment to content marketing is similarly rooted in consumer education and trust-building. The company actively shares content about the quality and sourcing of its olive oil, helping to establish transparency and reliability with its audience.

In line with La Miellée’s approach, Aswen also values community engagement through digital platforms. The company’s social media presence includes user-generated content, such as recipe ideas, cooking tips, and customer testimonials. This interaction not only boosts engagement but also reinforces brand loyalty. Aswen’s marketing team emphasized: “Social media has allowed us to connect directly with our customers. We are always thrilled when they share their experiences using our products, whether it’s a recipe or a story about our olive oil. This kind of engagement helps us build stronger relationships with our community.”

Figure (2): Digital Marketing and Content Creation



The source: Nvivo

### **5.2.3 Food Safety and Transparency:**

For Aswen, food safety is a critical concern that is deeply integrated into its operations. The company takes every measure to ensure the highest quality of its olive oil, emphasizing that each batch is rigorously tested for impurities, contaminants, and compliance with safety standards. To achieve this, Aswen collaborates with certified laboratories equipped with the latest testing technology. This process ensures that every product leaving the production line meets stringent safety standards, reassuring consumers about the purity and quality of the olive oil they purchase. As the Communication Manager of Aswen puts it, "We have invested in advanced equipment to ensure impeccable quality. Our clients know they can trust us." The company's dedication to food safety is not only a regulatory requirement but also a part of its brand promise to provide top-quality products that consumers can rely on. Through these efforts, Aswen strengthens its reputation and builds consumer loyalty by creating a transparent and accountable supply chain.

Tassili Lait, a major player in Algeria's dairy sector, also places a high priority on food safety and transparency. The company uses cutting-edge technologies such as blockchain to ensure complete transparency in its production processes. Blockchain allows Tassili Lait to securely record every step of its dairy product production, from raw materials to finished goods, providing an immutable record that can be accessed by consumers to verify product integrity. This level of transparency builds trust and reassures customers that they are consuming high quality, safe products.

Moreover, Tassili Lait employs digital databases to monitor and store the results of laboratory tests performed on each production batch. These databases ensure that each batch is traceable and its safety validated before reaching consumers. In the event of a safety issue, Tassili Lait can quickly identify and isolate the affected batch and track the production chain back to its source. This capability is crucial for addressing potential concerns swiftly, minimizing any risks to consumer safety. As the Communication Officer at Tassili Lait states, "If a problem is detected, we can immediately identify the batch in question and trace the entire production chain to

resolve the issue." This proactive approach to food safety and transparency ensures that consumers receive only the best-quality products, while also maintaining a high level of accountability within the company. It strengthens the trust between the company and its consumers and enhances the brand's credibility in the market.

Both Aswen and Tassili Lait demonstrate how digital tools, such as blockchain and digital databases, not only ensure product quality and food safety but also contribute to building stronger relationships with consumers by promoting transparency. By embracing these technologies, they are able to meet the growing demand for transparency in the food industry, and in doing so; they are positioning themselves as leaders in food safety and consumer trust.

Figure (3): Food Safety and Transparency



The source: Nvivo

#### 5.2.4 Challenges and Opportunities in the Algerian Context:

The Communications Manager of La Miellée highlights the challenges related to infrastructure limitations in Algeria: "Many of our beekeepers work in rural areas where access to the internet is limited. This complicates the implementation of our digital tools." Another challenge identified by Tassili Lait Marketing Manager is the initial skepticism towards new technologies: "At first, our partners were skeptical about using blockchain. We had to show them how it could improve their work and enhance their credibility." Despite these challenges, La Miellée sees a promising future for the digital agro-food sector in Algeria. The owner adds: "Algerian consumers are becoming

increasingly sensitive to the quality and origin of the products they consume. This creates a real opportunity for brands like ours.”

The company also plans to collaborate with local start-ups to develop tools suited to the Algerian context, such as mobile applications to help manage beekeeping production. These innovations would not only facilitate production management but also increase traceability and transparency, elements highly valued by consumers today.

For La Miellée, as well as Tassili Lait, the demand for transparency and quality assurance among local consumers is seen as a key opportunity. By embracing digital solutions such as blockchain for better product traceability, both companies are positioning themselves to meet this rising consumer demand. Tassili Lait, in particular, is leveraging these technologies to improve its relationship with both local and international consumers, ensuring that each product’s origin is clearly traceable and transparent.

Despite the initial resistance towards new technologies, all four companies—La Miellée, Aswen, Amor Benamor, and Tassili Lait—are working to innovate and adapt to the changing market. The potential for growth within Algeria’s digital agro-food sector is significant, driven by the increasing consumer focus on quality, traceability, and ethically sourced products. As these companies continue to expand and develop tailored tools for the Algerian market, they are paving the way for a more digitally empowered agro-food industry in the future.

Figure (4): Challenges and Opportunities in the Algerian Context



The source: Nvivo

## **Conclusion:**

The objective of this paper was to explore how digital strategies can transform the agro-food sector while addressing the crucial challenges of traceability, food safety, and customer satisfaction. Through a qualitative methodology based on semi-structured interviews, several key insights have emerged.

The results show that the adoption of digital tools, such as ERP systems and blockchain, significantly optimizes internal operations and improves product traceability. These technologies provide agro-food companies with the ability to guarantee the quality and authenticity of their products, while strengthening consumer trust. Traceability, made possible through initiatives like the use of QR codes, is seen as a major lever for meeting the growing demands for transparency and compliance.

On the marketing side, digital strategies, particularly through social media and analytical tools like Google Analytics or CRMs, have proven effective in improving customer relationships, increasing brand visibility, and personalizing offers. Participatory campaigns, such as sharing recipes or direct interaction with consumers, create strong engagement and customer loyalty. These innovative approaches enhance brand awareness while building communities around their products.

However, the results also highlight specific challenges related to the local context, especially in emerging countries. Limited digital infrastructure, a lack of awareness about the importance of these tools, and cultural or regulatory barriers sometimes hinder the adoption of these practices. These obstacles require strategic efforts, including targeted investments and partnerships to maximize the impact of digital solutions.

In conclusion, this paper emphasizes the central role of digital technologies and digital marketing in transforming the agro-food sector. It underscores that these tools are not only levers for competitiveness but also strategic responses to challenges related to food safety, traceability, and consumer expectations. These findings provide a solid foundation for guiding companies in developing integrated strategies suited to a constantly evolving market.

## Appendices :

### Interview Guide:

#### 1. Objective of the Interview Guide:

To explore the impact of digital tools and digital marketing strategies on performance, food safety, and traceability in the agro-food sector.

#### 2. General Questions about the Company:

- Can you briefly describe the main activity of your company?
- What are the flagship products of your company, and in which markets are you primarily present?
- What do you think are the main challenges your company is currently facing in the agro-food sector?

#### 3. Digital Strategies and Digital Transformation:

- When did you start integrating digital tools into your operations?
- What digital tools or platforms are you currently using (e-commerce, blockchain, CRM, etc.)?
- How have these tools influenced your production, distribution, or customer communication methods?
- Have you encountered any resistance or obstacles when implementing these technologies? If so, how did you overcome them?

#### 4. Digital Marketing in the Agro-Food Sector:

- What digital marketing strategies have you implemented to promote your products?
- What communication channels (social media, websites, email campaigns, etc.) have been the most effective in reaching your customers?
- Have you noticed any changes in your customers' behavior due to your digital campaigns?

#### 5. Food Safety and Traceability:

- What digital systems do you use to ensure the traceability and food safety of your products?
- How do these systems contribute to building consumer trust in your products?
- Has food safety regulation influenced your technological choices?

#### 6. Specific Challenges in Algeria:

- How do you assess the digital ecosystem in Algeria for agro-food companies?

- What do you think are the main barriers to digitalization in the Algerian agro-food sector?
- What roles should the government and other stakeholders play to encourage this digital transition?

#### **7. Future Perspectives and Improvements:**

- What are your future projects in terms of digital transformation and digital marketing?
- How do you foresee the evolution of food safety through digital tools in the coming years?
- What advice would you give to other Algerian companies in the sector to succeed in their digital transformation?

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