

TRANSFORMING MOROCCAN E-COMMERCE THROUGH GENERATIVE AI: EVIDENCE FROM AN EMPIRICAL STUDY

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ABSTRACT

This research investigates the potential role of generative artificial intelligence (AI) within the e-commerce industry. Generative AI is employed in a variety of applications, such as automating content creation and personalizing user experiences, which significantly improve operational efficiency and customer engagement for e-commerce companies. For example, AI-driven product recommendations tailored to individual customer preferences have been shown to increase conversion rates, while AI-powered chatbots help you keep your customers satisfied and loyal with 24/7 customer service. However, the existing academic literature tends to focus on technological capabilities of AI in developed markets, leaving a considerable gap in understanding how these technologies are implemented and perceived in emerging economies such as Morocco. This paper seeks to address how e-commerce businesses can overcome specific barriers in order to effectively harness AI. Despite the obvious benefits, several challenges stand in the way of widespread adoption of generative AI in the e-commerce landscape. These include inadequate technology infrastructure, a shortage of qualified AI professionals, and significant ethical and regulatory concerns. Issues relating to data protection, privacy and transparency of AI algorithms are particularly pressing, requiring rigorous scrutiny and strong regulation frameworks to guarantee the ethical implementation of AI. The purpose of this study lies in the need to bridge the gap between worldwide progress in AI and national implementation strategies, in order to ensure that the digital transformation is adapted to the Moroccan context, both culturally and economically. For this study, a qualitative research was conducted through in-depth interviews with e-commerce professionals in Morocco. The analysis of the results was made by Maxqda Software. The results indicate that generative AI can boost efficiency, improve customer satisfaction and extend market reach. The study concludes that while challenges remain, the strategic implementation of generative AI, supported by appropriate policies and frameworks, can act as a catalyst for growth and innovation in e-commerce, positioning it competitively in the global marketplace. This research lays the foundations for further studies into the impact of AI on e-commerce, and offers practical recommendations for stakeholders wishing to leverage generative AI for business growth in Morocco.

Keywords: *Generative AI, E-Commerce, Empirical Study, Technology Acceptance.*

1. INTRODUCTION

Over the past two years, the field of generative AI (GAI) and its evolving capabilities have undergone an incredible transformation, revolutionizing and redefining the global technology arena [3]. With increasingly “advanced” digitized platforms and consumers frequently using digital technology instead of physically visiting stores, the application of AI has unquestionably become the key to e-commerce industry. Based on Babayev & Israfilzade (2023) research, AI becomes an

inseparable part of the value creation process in electronic commerce, radically altering the way a business functions and interacts as well as engages with its customers [1]. More than ever, brands are also turning to the use of emerging technologies to provide valuable service and engage their customers [4]. Recent studies have showed the multiple applications of this technology; for instance, generative AI is currently being used to create high-quality synthetic images of products, thereby reducing the need for costly photo shoots, as well as to perform automated analysis of massive volumes

of customer reviews in order to forecast market trends [23]. In addition, AI-based dynamic pricing models are integrated with generative AI to create personalized discount offers in real time [15]. Some of these new technologies that is expected to have a major positive influence on consumer services is that of generative artificial intelligence, also known as generative AI [6]. Thanks to generative AI, marketers can create more value for their customers by providing them with personalized brand content that perfectly meets their specific requirements and enables them to reduce their overall marketing costs.

Based on Susarla et al (2023), generative AI has opened up the possibility creating newly digitized content using written text, visual images, and other elements. As a result, the content design process has been made simpler and more accessible within the reach of a search toolbox [20]. Almost exactly half of all experienced content marketing professionals are currently using generative AI for brainstorming purposes and keyword research, and a third are proactively deploying generative AI to create their own content.

In this article, we will provide a conceptualization of generative AI as well as the online commerce industry in order to project an overview that links the two concepts. The article will present the use of generative AI within the electronic commerce to improve marketing strategies in terms of personalization, customer content management and support. Nor will it overlook the challenges posed by generative AI. Moreover, the present research paper will deepen the study through a qualitative investigation based on e-commerce professionals experience in the Moroccan context.

2. CONCEPTUALIZING GENERATIVE AI AND E-COMMERCE

2.1 Generative Artificial Intelligence

The growing domain of generative AI, which refers specifically to artificial intelligence (AI) based algorithms capable of developing innovative results from input data, offers the possibility of radically rethinking the way users choose to create and access online content. Unlike previous generations of AI processing algorithms, which were primarily designed to detect and predict patterns, AI's generative approach enables users to create their own content in the form of pictures, textual information, sound, video and others, in the same way as experts do, but in much shorter

timescales, for a small fraction of the price, and with surprisingly high levels of originality.

Generative AI refers to a subcategory of artificial intelligence which utilizes neural networks to produce innovative types of content based on vast quantities of data. Artificial intelligence is particularly valuable because it replaces daily procedures, automates innovation and offers a variety of possible new functions in all parts of the company and its value chain. According to McKinsey forecasts, AI-induced productivity growth is set to reach trillions of dollars over the next decade, by 2030. The large-scale deployment of these technologies, illustrated by Dall-E 2, GPT-4 and Copilot, is radically transforming some of the ways in which we work and interact with our environment.

In many ways, generative AI is set to redefine the different ways in which businesses operate. For example, in the creative industry, it accelerates the content creation cycle in order to help both designers and creators. In the e-commerce market, it can personalize new product recommendations and design customized items. Businesses can further leverage AI-generated advertising marketing content, conserving times well as resources without sacrificing their ability to innovate.

According to Goldman Sachs 2023, recent industry research, it is estimated that the potential of generative AI may help increasing and evolving the global gross domestic product (GDP) by almost a rate of 7%, while potentially replacing the employment of 300 million knowledge workers.

In generative AI, there are deep learning models called “base models”. These models are pre-disciplined to handle large datasets, enabling algorithms to be adapted to a range of other downstream functions, such as content generation.

2.2 Ecommerce

Our modern world is characterized by the use of technical terminology, but we should bear in mind that e-commerce is the equivalent of “electronic commerce”. In this case, we're interested in process innovation, in which technology is applied to reshape current commercial and supply transactions, as well as to launch entirely new offerings. Dussart (2000) refers to digital media as

well as the Internet as a means of selling goods and services [8].

In parallel with the rapid spread of Information and Communication Technologies (ICT), particularly the Internet, global companies are increasingly adopting electronic (business-to-business) commerce. Since the Internet puts consumers in direct contact with the entire global economy, they are able to compare prices between regions, explore how prices differ according to demand, and become aware of product substitution. Buyers have a decisive advantage. With the introduction of open marketplaces, buyers can quickly and easily compare e-commerce offers from different websites. Competitors are only a few clicks away if e-commerce is involved. If consumers are dissatisfied with certain products, content or services online, they can adapt even more quickly than in the traditional way. As far as salespeople are concerned, they don't really need a bricks and mortar store [9].

Over the past 15 years, the information and communication technologies (ICT) revolution has given the global economy a unique and unprecedented boost. Successful companies, i.e. those that increase their market share by 10% or more per year, have a tendency to use sophisticated sales technologies, establish mixed sales teams, develop a variety of skills, harmonize their sales approaches in their own market and in third markets, achieve maturity in e-commerce across the entire channel, and develop a strong brand presence, and provide "hyper-personalization" ("one-to-one targeting" of decision-makers based on their individual requirements, personality profile, attitudes and interactions including past and future).

2.3 Overview of Generative AI for E-commerce

Sestino and De Mauro (2022) argue that the involvement of generative AI in electronic commerce has fundamentally altered the mindset of old-school businesses, alongside digitally driven transformations and enhancements to the ease of doing business environment. With widespread digitization, generative AI is emerging as a requirement for e-commerce companies and their customers, helping businesses to better integrate with modern artificial intelligence technology [19].

The biggest benefit, from the consumer's point of view, is that it's a huge improvement and time-saver, conveniently accessible wherever they

are. Whenever they want, consumers have the freedom to make their purchases [17]. With the help of AI, the overall online shopping experience is greatly enhanced by the ability to provide personalized product suggestions. Machine learning algorithms recognize customer data, such as previous purchases, browsing history and browsing habits, to predict preferences and recommend appropriate products [14].

Since the heavy use of generative AI for e-commerce is becoming a core part of the marketing strategies of diverse companies and digital platforms, Esch and Black (2021) state that AI is profoundly impacting digital marketing, with a primary concentration on generating "content for campaigns." [21]. Deep learning models can predict market demand and consumer behavior more accurately as they become increasingly sophisticated. These models can examine large data sets drawn from a variety of sources, enabling companies to predict market trends and adjust their strategies accordingly.

As we can attest, OpenAI technology has not only become a trend, but a necessity, given the widespread application of ChatGPT in various industries. In fact, we are on the verge of witnessing a wave of changes in e-commerce. ChatGPT is now considered one of the most sophisticated language models, covering processes such as marketing targeting, customer service, and business process automatization, according to Orzoła & Szopik Depczyńska (2023) [15]. Thanks to this technology, digital marketers can automatically generate good-quality text, pictures, and even video content that can spark consumer interest in all possible interactions.

3. USE OF GENERATIVE AI IN E-COMMERCE

3.1 Generative AI boosts Marketing Strategies

Generative AI goes beyond traditional AI prospect identification and segmentation through web scraping and basic top-of-funnel prioritization. With automated chatbots and virtual assistants, AI dramatically improves customer interactions. Zendesk Chat leverages AI to effectively manage customer interactions across a wide range of platforms, providing quick answers to common

questions and seamlessly transferring more complex questions to human agents [10].

An increasing variety of brands are adopting generative AI chatbots to perform customer service tasks in areas like complaint resolution, identification of purchased items and after-sales support. Current Australian consumer research indicates that generative AI chatbots will become increasingly important, particularly in the case of basic requests and assignments (increasing from 0% in 2020 to reach 15% in 2022; CPM, 2023). Generative AI creates tailor-made content for each user, taking personalized marketing to the next level. By leveraging vast data sets on user preferences and behavior, generative AI can create personalized emails, social media posts and advertising content that will resonate more deeply with each recipient.

Individuality is at the heart of effective customer relationship management, and generative AI takes it to new levels. Consumers have a preference for purchasing from a brand that offers relevant, personalized recommendations. Generative AI is an AI system with the possibility of generating new content using text, images, audio, and video, etc... Based on De Cremer et al. (2023) research, Intelligent Autonomous Machines (IAM) represents an emerging generation of AI technology capable of producing digital content solely from user-supplied data [7].

The rise of generative AI has been a catalyst for the emergence of content automation. The term AI-generated content (AIGC) was coined to describe content that uses generative AI algorithms to support and/or replace human interaction in the creation of customized, rich-quality content at a quicker pace and lower expense.

Generative AI can modify item images in real time to respond to user requests or to show what products look like in different scenarios. The promise of e-commerce marketing lies in the ability to capitalize on the power of generative AI to develop tailored, relevant experiences for consumers. This is an important and exciting challenge for the industry, as it requires a deep understanding of data, machine learning and customer behavior" - Rohit Prasad, Vice President & Principal Scientist for Amazon Ale

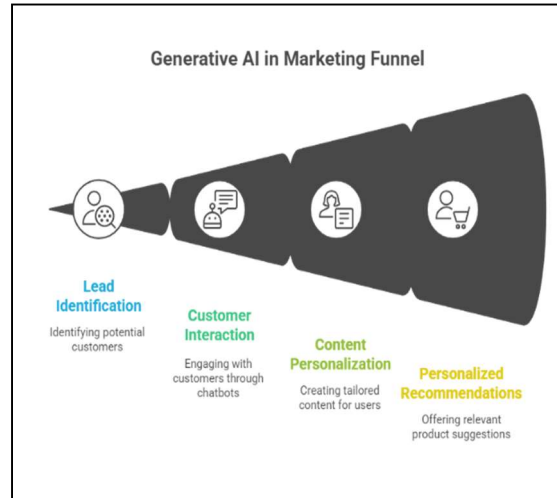


Figure 1 Generative IA in Marketing Funnel

3.2 The Challenges of Generative AI

One of the main areas of concern is privacy, as the collection of large amounts of data, necessary for the proper functioning of these AI systems, must be balanced against people's right to privacy. As the boundary between human-generated and AI-generated content is often blurred, the challenge is to maintain authenticity and align generated content with brand identity. AI-generated responses can be based on false information and/or non-existent data, due to an inability to distinguish between reliable and unreliable data, or between real and fake data. These replies have been described as "hallucinations" [11], [16]. Illusions induced through false, incomplete, or corrupted data can be extremely harmful, as they highlight the lack of control over one's own reality.

The creation of a digital technology which may have specific attributes that human beings don't completely understand has also increased concerns about if humans are designing and developing something that will surely harm humanity [18]. Ensuring that AI is aligned with humans is considered to be a relevant step for the reliable deployment of this digital tool on a large scale. Generative AI compounds these problems by facilitating the creation of content (articles, content videos, audios, etc.) which disseminates misinformation at staggering speed.

By continuing to learn from existing information, AI will have an unlimited capacity to generate vast amounts of misinformation that appears to be real and, perhaps more worryingly, to

use the false information it creates to generate new results. As stated by (A. G. Khan, 2016), in emerging economies, it is customary to buy products by negotiating the price with the seller, which is not easy to do in the case of e-commerce in emerging economies due to the lack of infrastructure [12]. Reducing the price of the Internet is one of the main challenges. Authorities are striving to keep the price of access bandwidth as low as possible. However, the high cost of network rollout and operating expenses make it difficult to keep internet prices low. Trust is the most important factor in the use of e-commerce. Traditional paper-based rules and regulations can create uncertainty as to the validity and legality of e-commerce transactions. In developed countries, modern legislation and the impartiality of e-commerce form the very basis of trust.

In developing countries, where legal and judicial systems are undeveloped, e-commerce-based transactions are disadvantaged by a lack of real or perceived security. Even today, in many developing countries, payment on delivery is the most commonly accepted method, and even checks and credit cards are not yet wide spread [2].

Legal definition, recognition and authorization will be required for new transaction methods, new instruments and new service providers. For example, it will be essential to define electronic signatures and give them the same legal status as handwritten signatures. It will also be necessary to review existing legal definitions and authorizations, such as the legal description of a bank and the concept of national territory [5].

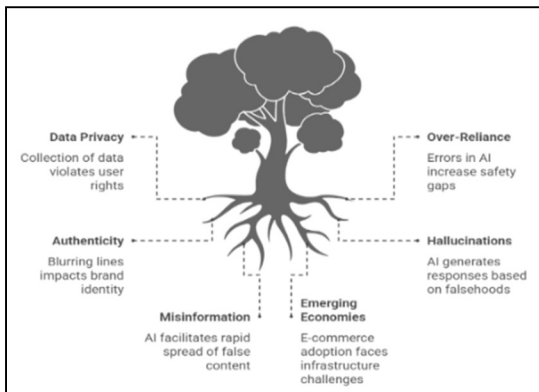


Figure 2 Generative AI adoption hindered by inherent risks

4. EMPIRICAL STUDY

4.1 Methodology

This study adopts an exploratory qualitative approach, aiming to better understand the uses, perceptions and impacts of generative artificial intelligence in the context of Moroccan electronic commerce industry. Given the novelty of the subject as well as the contextual specificity of the local market, a qualitative approach enables us to capture the richness of the discourses and the diversity of experiences expressed by practitioners.

Analysis of the responses was based on a hybrid approach combining:

- Inductive manual thematic analysis;
- Semantic analysis assisted by MAXQDA software.

4.2 Data Collection

Data were collected through open-ended interviews conducted with a purposive sample of ten e-commerce professionals in Morocco, representing diverse sectors such as fashion, electronics, and digital services. The interviews explored multiple dimensions, allowing participants to express their views freely and spontaneously, without being limited by predefined response categories. This approach is particularly appropriate for investigating an emerging phenomenon.

Table 1. Respondent Profile

Variable	Categories	Freq (n=10)	(%)
Field of activity	Electronic products	3	30%
	Services (training, coaching, etc.)	2	20%
	Agriculture / Food / Toys / Beauty / Fashion	1 each	10%
Seniority in e-commerce	Less than 1 year	5	50%
	1 to 3 years	3	30%
	More than 5 years	2	20%
Annual turnover	Less than 500,000 Moroccan Dirham	6	60%
	500 000 – 1 million Moroccan Dirham	1	10%
	More than 1 million Moroccan Dirham	3	30%

4.3 Thematic Analysis

4.3.1 Adoption and uses of generative AI

The study reveals that 70% of companies surveyed are using generative AI, mainly in the electronics, services and beauty sectors. Usage is concentrated in three key areas:

- **Content creation:** Automatic generation of product descriptions, advertising voice-overs and publications for social networks.
- **Customer support:** Chatbots and translation tools to enhance the user experience.
- **Data analysis:** Identification of product trends and marketing optimization, although often limited to free tools such as ChatGPT.

4.3.2 Positive impacts

The benefits observed fall into two categories:

- **Operational gains:** Automation of repetitive tasks (e.g. copywriting, data analysis), freeing up time for strategic activities. 71% of users report significant time savings, while 43% note a measurable increase in sales.
- **Sales improvement:** Increased sales and customer satisfaction, notably through more targeted marketing campaigns.

4.3.3 Challenges and Barriers

Despite these advantages, obstacles persist:

- **High costs:** 30% of respondents consider premium tools too expensive.
- **Uneven quality:** some outputs lack customization or reliability.
- **Cultural reluctance:** some managers (especially in agriculture) reject AI out of distrust or perceived lack of relevance.

4.3.4 Perspectives

Respondents anticipate further AI integration in the next 3 to 5 years, notably via:

- More intelligent virtual assistants.

- Real-time personalization of customer paths.
- Extended automation of logistics and after-sales services.

5. DISCUSSION OF RESULTS:

5.1 Results Summary

The study confirms that generative AI is a competitive lever for Moroccan e-commerce, but its adoption remains heterogeneous. Small and medium-sized enterprises (SMEs) use it mainly for immediate gains (productivity, costs), while more mature companies (sales > 1 million Moroccan Dirham) derive strategic benefits (predictive analysis, customer experience). AI is effective for repetitive tasks, but its strategic potential (decision-making, innovation) is under-exploited. Financial and technical obstacles limit its adoption by Very Small Enterprises (VSEs).

5.1.1 Frequency analysis

The qualitative study reveals that generative AI is perceived as a transformational lever for Moroccan e-commerce, with 67% of respondents citing its potential for advanced automation and content creation. However, this adoption comes with major challenges, notably high costs (22%) and ethical issues (33%), reflecting a tension between opportunities and practical constraints. Local players seem particularly sensitive to efficiency gains (productivity and time savings, 33%), but struggle to implement ambitious projects due to limited information technologies infrastructure and often insufficient data quality (11%).

Among the applications cited, personalization (11%) and hyper-personalization (11%) remain marginal, suggesting that advanced tools such as chatbots and algorithmic recommendations are still being adopted only tentatively. This lag could be explained by a lack of technical expertise or a cultural mistrust of automating customer interactions.

The interviews highlight an instructive contradiction: while automation is associated with cost reduction (22%), its deployment is hampered by prohibitive initial investments for Small and medium-sized enterprises (SMEs). Furthermore, the fear of human substitution (11%) is emerging

quietly, but seems less prevalent than in Europe, where debates on the ethics of AI are more advanced. This highlights a Moroccan specificity: AI is primarily perceived as a support tool, not as a threat to employment

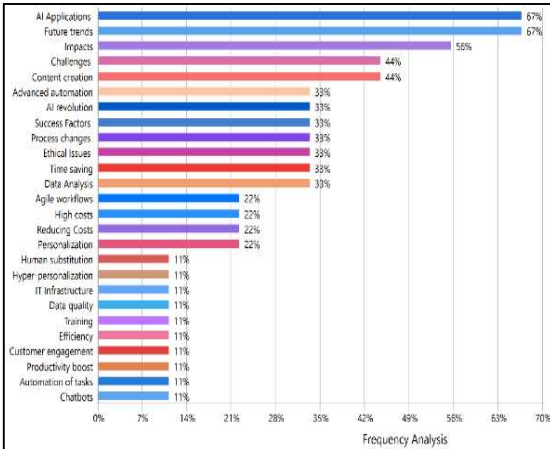


Figure 3 Frequency Analysis

5.1.2 Cloud analysis

The word cloud analysis reveals that generative AI is perceived by Moroccan stakeholders as a powerful lever for process optimization and automation. The terms “optimization,” “automation,” and “creativity” appear as central themes, highlighting the appeal of these technologies capable of transforming marketing operations and the customer experience. This trend is part of a global context of growing adoption of AI solutions, but with marked local specificities.

However, this adoption is not without reservations. The words “cost,” “lack,” and “reliability” temper the enthusiasm, reflecting the concrete concerns of Moroccan companies. These obstacles seem to be particularly linked to technical integration challenges and the necessary investments, as evidenced by the terms “alignment” and “integration,” which appear significantly. This observation highlights the gap that shows between the theoretical abilities of AI and its real practical implementation in the Moroccan context.

The tension between automation and creativity emerges as a key theme. On the one hand, respondents see AI as a way to free up time by automating repetitive tasks, while others see it as a tool to boost marketing creativity. This duality reflects the search for a balance between operational efficiency and competitive differentiation. Frequent mentions of “personalization” and “campaigns” suggest that expectations are highest in digital marketing.

In light of these findings, a strategic imperative is emerging for Moroccan companies: successfully reconciling technological innovation and operational reality. The terms “alignment” and “integration,” which recur throughout the analysis, point to the need for a structured approach to overcome technical and financial obstacles. This organizational challenge could well be the determining factor in the race to adopt generative AI in Moroccan e-commerce.



Figure 4 Cloud Analysis

5.1.3 Analysis of AI applications

Moroccan E-commerce businesses favor operational AI applications, with 36% using them for content creation. These tools meet immediate productivity and efficiency needs.

However, advanced uses remain marginal: only 18% for personalization and 9% for chatbots. This lag reveals technical barriers and a lack of expertise, despite the obvious potential of these technologies.

The market is gradually evolving, with 27% adoption for data analysis. This transition suggests that companies are beginning to explore more

strategic applications, paving the way for future maturation of AI uses in the sector.

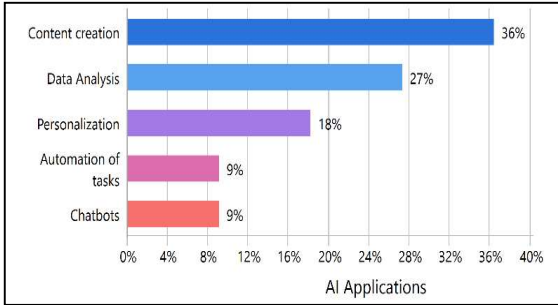


Figure 5 AI Applications

5.1.4 Analysis of AI impacts in E-commerce

The impact analysis reveals that 43% of Moroccan e-merchants clearly identify time savings as the main benefit of AI, followed by reducing costs (29%). These figures confirm the utilitarian adoption of these technologies to optimize daily operations.

However, only 14% mention customer engagement and productivity boost, a surprising gap that suggests that:

- Initial investments still absorb potential gains;
- The financial impact is not immediately visible;
- Profitability requires a period of adaptation.

Customer engagement (14%) appears to be the poor relation, revealing an under-exploitation of AI's relational potential. Yet this lag represents a major opportunity in a competitive market where customer experience is becoming a differentiator.

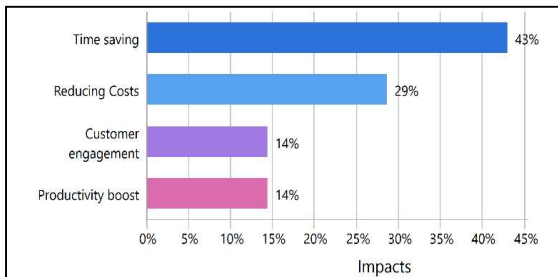


Figure 6 Impact Analysis

5.1.5 Challenges for AI adoption analysis

The high cost of AI solutions (40%) is a main obstacle to their adoption by Moroccan e-commerce businesses. This financial barrier

particularly affects SMEs, limiting their access to the most advanced technologies.

Ethical issues (60%) appear to be a challenge, revealing a growing awareness of the issues surrounding the responsible use of AI. Although less of a priority, this concern is gaining ground among professionals.

The significant gap between these two challenges highlights that economic considerations largely dominate the current debate on AI in Moroccan e-commerce. Stakeholders clearly favor affordable solutions over ethical considerations.

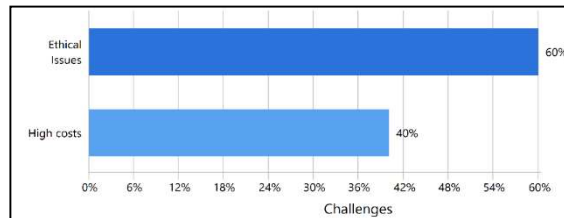


Figure 7 IA Challenges

5.1.6 AI adoption and process changes

The data reveals strong adoption of agile workflows (67%) by Moroccan e-commerce businesses, compared to 33% for solutions aimed at operational efficiency. This gap shows that companies prioritize flexibility and responsiveness, which are essential in a constantly evolving digital market.

This predominance of agile methods reflects the growing maturity of project management practices in the sector. Moroccan companies seem to have understood the importance of adapting quickly to market changes and consumer expectations. However, the relative lag in efficiency indicators suggests that fine-tuning processes comes second, once agility has been established.

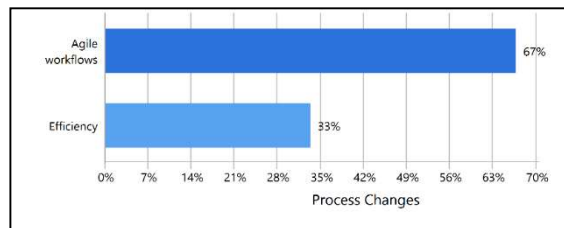


Figure 5 Process changes analysis

5.1.7 Pillars of AI success factors

The three pillars of AI success in Moroccan e-commerce are balanced and complementary. Information technologies infrastructure (33%) is the essential technical backbone, without which no AI project can be deployed effectively. This need reflects existing gaps in equipment and connectivity in some local companies.

Data quality (33%) emerges as the second critical factor, at the same level of importance. This result highlights a clear awareness: even the best AI remains ineffective with incomplete or erroneous data. Moroccan professionals seem to have integrated this fundamental challenge in order to obtain relevant results.

Team training (33%) completes this, demonstrating that technology alone is not enough. Human skills remain crucial to fully exploiting the potential of AI. This equal distribution of priorities reveals a mature and balanced approach to the conditions for success among the most advanced Moroccan Electronic-commerce businesses.

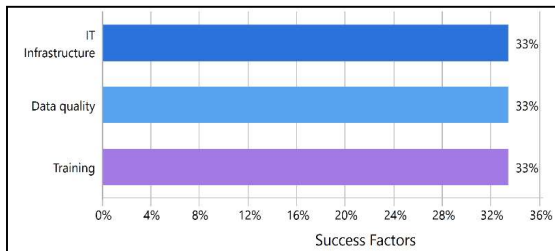


Figure 9 Analysis of AI success factors.

5.1.8 Future trends of AI in E-commerce

The potential future of AI within Moroccan e-commerce is shaping up around two major trends. Advanced automation and the AI revolution each garnered 38% of mentions, clearly dominating the outlook for change. These results show that professionals anticipate a profound transformation of business processes, far beyond simple productivity gains.

Other trends such as hyper-personalization and human substitution (13% each) appear more marginal. This gap reveals that Moroccan e-merchants are focusing their vision on operational optimization rather than more disruptive scenarios. The low mention of human substitution suggests a

careful and prudent approach to the social impacts of AI.

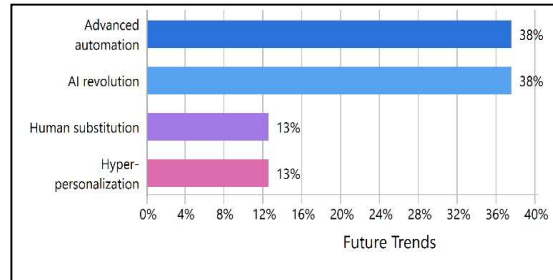


Figure 10 Future trends analysis

To sum up, the Moroccan market seems to favor a gradual evolution, where AI will first reinforce the existing system before bringing about major disruptions. This pragmatic vision corresponds to the challenges and opportunities identified in previous analyses.

5.2 Managerial Implications

Managerial implications of these results analysis could be divided into two main points:

For companies, investing in appropriate tools, they focus on solutions that are affordable and compatible with local needs (e.g. Arabic/Darija translation).

- **Train teams:** Fill the skills gap via workshops on the ethical and effective use of AI.
- **Monitor results:** Set up indicators to measure real impact (e.g. time saved, conversion rate).

For public authorities and ecosystems:

- **Subsidize access to AI:** Support VSEs/SMEs via dedicated programs (e.g. training credits, partnerships with local publishers).
- **Frame ethics:** Draw up guidelines on the responsible use of the data and content generated.

5.3 Comparison with Prior Research:

Unlike prior quantitative studies on generative AI in e-commerce, this research adopts an exploratory qualitative approach based on interviews with Moroccan e-commerce practitioners, allowing

a deeper understanding of real-world uses and perceptions. While the findings align with existing literature regarding productivity and efficiency gains, they reveal a more adoption process. In contrast to earlier studies assuming homogeneous readiness, this study highlights strong disparities driven by organizational maturity and resource constraints in an emerging market context.

The study reveals that the adoption of AI in Moroccan e-commerce is following a pragmatic path, focused on immediate operational gains (content creation, automation). However, this approach faces major obstacles, notably high costs and gaps in information technologies infrastructure, which are slowing down the deployment of more sophisticated solutions such as hyper-personalization or chatbots. Local players seem aware of the ethical issues, but these remain secondary to economic constraints.

6. LIMITATIONS

The investigation boundaries are the small sample (n=10) and sector bias (over-representation of electronics and services). Moreover, the qualitative nature of the study, based on practitioner's perceptions, introduces a degree of subjectivity and contextual dependency, limiting the generalizability of the findings beyond the Moroccan e-commerce context. In addition, the absence of cross-sectoral and cross-country comparisons restricts the ability to situate these results within a broader international or industry-wide perspective, as differences in regulatory frameworks, digital infrastructure, and organizational maturity may influence generative AI adoption patterns.

7. FUTURE DIRECTIONS FOR RESEARCH

Future trends confirm that advanced automation and the "AI revolution" dominate projections, while disruptive scenarios (human substitution) are downplayed. This caution reflects a gradual adoption, where AI is used primarily to optimize existing systems rather than radically transform models. The Moroccan market is characterized by:

- A priority for concrete and profitable applications;
- Structural barriers (costs, data, skills) limiting advanced uses;

- A vision of incremental evolution, aligned with local realities.

Firstly, these insights call for more studies about the development of hybrid solutions, combining affordability and skills development, to support the maturation of the sector. Secondly, future studies should consider cross-sectoral comparisons, examining how generative AI adoption differs between various e-commerce industries. This would help identify sector-specific drivers, barriers, and strategic uses of generative AI. Thirdly, cross-country or regional comparative studies could provide valuable insights into how contextual factors influence the transformation of e-commerce through generative AI.

8. CONCLUSION

In conclusion, generative artificial intelligence is the core step for the advancement of the electronic-commerce ecosystem. It offers new opportunities for businesses that are looking to differentiate themselves in an environment that is increasingly competitive by facilitating automated content creation, optimizing marketing campaigns and enhancing customer experience. However, the challenges associated with data management, algorithmic biases and regulatory compliance must be weighed against the benefits of this technology.

On the scientific front, more research is needed for the future-term implications of AI on business models as well as e-commerce ecosystems. To optimize the benefits of this technology in a way that minimizes its inherent risks, a solid regulatory framework and gradual adoption, accompanied by strategies to train and raise awareness among professionals, will be essential. So, provided it is adopted ethically and responsibly, generative AI can become a lever for sustainable transformation.

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