AI-Powered Customer Engagement In Women-Led Businesses

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Abstract
Businesses are undergoing a transformation because of the implementation of artificial intelligence (AI), which is improving customer engagement, operational efficiency, and individualized marketing tactics. This study piece investigates the influence that artificial intelligence has on increasing consumer engagement in businesses that are run by women. The utilization of artificial intelligence provides female entrepreneurs with several options, including the enhancement of consumer relations through digitization, AI in social media, and personalization. Number of challenges are presented by the adoption of artificial intelligence, including the technical complexities of AI technology, concerns over data privacy, and biases that are inherent in algorithms. This article reviews the current literature, analyses the advantages and obstacles encountered by women entrepreneurs in integrating artificial intelligence technology, and offers guidance on the practical application of AI to enhance consumer engagement and sustain business growth.
Keywords: Customer engagement, Artificial Intelligence, Women, technology, women Empowerment, Entrepreneurship, social media, Digitalization

INTRODUCTION

A new era is dawning with the rise of women entrepreneurs; if we examine the history of women entrepreneurs, it is different from the present. Before the 20th century, women were not considered as contributors to the business sector or as a source of additional income in many countries. Women were relegated to domestic roles and were seen as housewives, their contribution to the fields of business and commerce was considered ineffective. Similarly, the term 'entrepreneur' was traditionally associated with men; however, the development of technology, increasing industrialization, globalization, and changing social norms, along with the spread of knowledge, have helped women gradually progress from domestic roles to prominent professional positions. In recent years, women have crossed all boundaries and have effectively established themselves in all aspects of life, both at home and in the office, demonstrating their equality in the corporate sector as well. Entrepreneur, 2016. The power of social media is illustrated by recent studies that show that women use it at a rate of 71% compared to 62% of men. People once believed that the technology sector was dominated by men, but times have changed, and women are now just as active. There are hundreds of examples of successful women at Facebook's headquarters, including Sheryl Sandberg as CEO and Marissa Mayer as President and CEO.

In 1956, John McCarthy introduced the term "Artificial Intelligence" (AI). According to McCarthy (2000), it is "the science and engineering of constructing intelligent machines." The scientific objective of AI is to comprehend intelligence by developing computer software programs that exhibit intelligence within the machine through symbolic inference or knowledge. It is anticipated that AI systems will create their own programming languages in order to more effectively utilise information (Syam and Sharma 2018). Additionally, Huang and Rust 2018) Artificial intelligence (AI) is a software application that is intended to execute duties that would typically necessitate human intelligence. In other words, it is a system that is capable of imitating human intelligence to perform specific tasks, including perception of imagery, recognition of speech, suggestions, classification, and making decisions.

"We use the term to describe a machine's ability to replicate individual's traits like learning and critical thinking." The capacity of a computer or a robotic system to analyze data and create outcomes in learning, decision-making, and problem-solving that are comparable to human cognitive processes is referred to as artificial intelligence. It's difficult to provide a precise definition for "artificial intelligence." This endeavor focusses on developing intelligent machines, whose intelligence is defined as their capacity to respond effectively and consistently to their surroundings. The phrase "artificial intelligence" encompasses processes such as cloud computing, networked devices, robotics, computers, and the generation of digital materials. Additionally, the term "artificial intelligence" refers to a wide range of organizational processes,

systems, and activities that occur round the clock. We can trace the existence of computers with artificial intelligence to the past, present, and future (Ramesh, 2021). The future marketing operations will heavily rely on the adoption and development of artificial intelligence. As a result of the rapid pace at which technical advancements are being created, businesses who are currently concentrating their efforts on marketing artificial intelligence software will be in an excellent position to reap the benefits of future technological advancements. Businesses use artificial intelligence software on a regular basis to improve their operations, reduce their overhead costs, shorten their turnaround times, and increase their production. Businesses who have turned their focus to marketing artificial intelligence can stand to earn considerably from the next technical innovation (Dube, 2020). Technology is advancing at an unprecedented pace. In today's digital world, artificial intelligence (AI) is being used more and more. The advertising and marketing industries are not exempt from this trend. For example, the nasty and humorous voice of Siri, the self-driving cars of Tesla, and the ability of Google AI to comprehend video games within hours are all examples of how artificial intelligence is bringing about a change in various different industries. Artificial intelligence can be utilized for various purposes, including the identification of data trends, the reduction of market risk, the enhancement of virtual personal assistant services, and the identification of compliance issues among the millions of papers that a corporation holds on its computers within its organization. On the other hand, businesses are beginning to conceive of and plan for the potential that artificial intelligence and robots will provide (Levesque, 2022).

Self-learning systems in artificial intelligence are employed across several domains, including natural language processing, data mining, and pattern identification. Artificial intelligence is much better for business than human intelligence because it can be used on a large scale and saves a lot of money. Moreover, the systematic, rule-driven frameworks of artificial intelligence empower organizations to eradicate mistakes. Long-term adaptability of the system, along with its ability to be improved over time and processes being carefully documented, creates business opportunities for making money. Among the many uses of AI are tasks related to computer vision, robotics, machine learning, speech recognition, and linguistic processing. Contemporary technology provides significant opportunities for corporate growth. Machine learning has a subset called deep learning, which is a way to understand how machine learning works. Deep learning systems draw inspiration from the architecture and operations of the human brain. The arrival of new technology has had a big impact on marketing, just like it has in other areas. This impact is only going to get bigger in the years to come. The advancements in AI have significantly enhanced marketing performance across various dimensions. For instance, projections indicate a significant increase in the anticipated influence of artificial intelligence in the coming years. Automation may replace sales personnel, and eye-tracking insights could dynamically adjust and organize online platforms (Franzke, 2022).

Objectives

- To examine how artificial intelligence (AI) tools and technologies enhance customer engagement in women-led business.
- To investigate customer Perceptions and experiences with AI based Interactions in Women-led Businesses.

Artificial Intelligence In Business Transformation

Artificial intelligence systems have been recognized as innovative within various sectors, including healthcare, finance, retail, and education. artificial intelligence utensils like robotics, speech recognition, information analytics. Allow enterprise to computerize stint, foretell customer deportment and improve judgement for female entrepreneurship, artificial intelligence provide major possibilities to perfect functioning, lower sexuality discrimination in marketing and appointments also give higher quality of affairs to consumers. Common AI Tools for Engaging Customers:

- **Chatbots** for prompt answers
- **AI-powered (CRM)** customer relationship management systems
- **Recommendation Engines** for personalized product suggestions
- **Sentiment analysis** for emotional tone and response
- **Voice assistants** for assistance or voice-based purchasing

Ai Algorithms And User Experience In Social Media

The social media platforms that you interact with on a regular basis are those that are extensively utilized, and artificial intelligence plays a significant part in these platforms. It can manage specific aspects of social

media creation and oversight within a matter of minutes. The paper illustrates that the effects artificial intelligence within social media.

- **Facebook** uses the platform for a broad range of purposes, such as friend recommendations, content recommendations, facial recognition, and targeted advertising. Facebook utilizes a wide range of artificial intelligence (AI) capabilities to improve the experience for every user.
- **Instagram** employs advanced algorithms to analyse and suggest visuals and images. The early implementation of artificial intelligence by Instagram is clearly observable on its Explore page.
- **LinkedIn** utilizes artificial intelligence to suggest connections, job opportunities, specific content in your feed, and people to follow. The system generates connection suggestions, customizes content for individuals, and proposes specific job opportunities.
- **Pinterest:** The tailored content showcased on Pinterest significantly contributes to its widespread appeal among users. Rather than inputting keywords, individuals can utilise Pinterest Lens to take photos and explore related items. Over eighty percent of Pinterest's users consistently engage in purchases through the platform, thanks to the tailored content that Pinterest offers.

Social media is evolving beyond its traditional role as a medium for personal interaction and connectivity. At present, forward-thinking companies are utilizing social media for ecommerce, customer service, marketing, public relations, and various other applications. The application of artificial intelligence in social media companies is widespread. Examples of artificial intelligence on social media platforms include the analysis of text, examination of images, identification of spam, management of advertisements, gathering of social information, and collection of data. The subsequent sections explore a range of applications, including social media advertising, marketing strategies, social insights, security and injustice issues, automation processes, social listening techniques, and the use of chatbots, among others.

Social media advertising is increasingly dominated by AI, which is taking a leading role in the landscape of marketing technology. There are tools available that can autonomously create social media advertisements for you. Various social media platforms incorporate built-in advertising systems that can enhance the effectiveness of marketing initiatives. Social media platforms enable individuals as well as enterprises to connect with others, while also providing brands the opportunity to execute paid advertisements that leverage behavioral targeting and demographic insights. AI has the capability to generate concise advertisements for platforms like Facebook and Instagram. Similarly, Chatbots have provided numerous advantages to advertisers on social media platforms. Artificial intelligence-powered chatbots are providing numerous advantages to digital advertising professionals. Organizations leveraging social media can implement AI-driven chatbots to swiftly address enquiries from consumers. Artificial intelligence tools enable organizations to automate message responses through the creation of user-interactive AI chatbots. Companies can leverage chatbots to deliver tailored assistance to consumers. The paper illustrates the role of chatbots as artificial intelligence within the realm of digital advertisement. Moreover, the influence of Marketing AI is transforming the landscape of social media marketing. This approach will enhance your financial performance, set you apart from rivals, and fortify connections with your clientele. Marketers utilize various social networking tools to gain insights into consumers and prospects. The integration of social media marketing with artificial intelligence is referred to as "social artificial intelligence." Sponsored advertising can now be executed by marketers across various social media platforms targeting consumers. Artificial intelligence assists organizations in identifying potential customers, curating content, and enhancing promotional efforts. Individuals utilize artificial intelligence for advertising on platforms like Facebook and Instagram. Advertisers must enhance the digital experiences of customers while ensuring that comfort and privacy remain intact. The significance of human touch remains paramount in social media marketing. Advancements in machine learning are poised to enhance marketing and branding strategies significantly.

The influence of AI on social listening is significant. A variety of businesses employ social listening to track their social media platforms and gain insights into customer feedback regarding their products and services. Organizations can efficiently examine numerous discussions and identify patterns using social media listening tools. The data can guide their marketing strategy. In a similar vein, the application of AI within social media presents considerable benefits, especially regarding automation. Organizations are set to achieve heightened productivity because of automation. Automation finds its application in various areas such as social listening, interaction, scheduling, republishing, and analytics tracking. Furthermore, technologies driven by artificial intelligence have the potential to extract valuable insights from your brand's social media content, profiles, and audience interactions. The utilization of AI-driven social media

insights has the potential to enhance brand value, uncover consumer patterns, analyze target audiences, and suggest content based on your posts as well as those of other businesses. AI technology has the potential to enhance efficiency, reveal emerging trends, expand audience reach, identify effective strategies for specific niches, assess outcomes, and refine campaigns in real time.

WOMEN, TECHNOLOGY AND THE FUTURE OF ENTREPRENEURSHIP

Women are increasingly pursuing business professions, which is a positive development. The landscape of business, once predominantly male, is evolving as an increasing number of women embrace the challenge of launching their own businesses and stepping into leadership positions. A range of factors plays a role in this transformation, such as the development of social concepts, enhanced access to resources and education, and the recognition of women's distinct perspectives and abilities in the entrepreneurial sphere. Women are launching businesses in a variety of fields, including health care, technology, fashion, and finance. Future generations draw inspiration from female entrepreneurs who challenge limits and demonstrate how diversity enhances the business environment. This is because AI is a multifaceted tool that lets data be combined, makes analysis easier, and lets insights be used to make decisions better (Maura McAdam, 2018). To grasp the fundamentals of Artificial Intelligence and its future implications, one must consider the concept of digital transformation. Women in technology represent a formidable force for positive change in the world. These remarkable Indian women in AI are succeeding as digital entrepreneurs today by applying their expertise to advance AI, machine learning, and data analytics. From challenging established trends to devising creative solutions for longstanding issues, these women have accomplished it all. Despite the obstacles in the tech industry, these Indian women working in AI are inspiring a new generation of young Indian girls to go into science and tech-related fields (Roy, 2022).

Furthermore, engaging in entrepreneurship significantly impacts the nation's economy and generates numerous quality job opportunities in the marketplace. A significant number of individuals have initiated their enterprises due to initiatives such as Make in India and Vocal for Local. Women have increasingly become a significant contributor to enhancing India's business landscape. Similarly, this encompasses robots that make judgements necessitating human-like skill and react to stimuli in accordance with human reactions. Artificial intelligence (AI) and machine learning (ML) are growing quickly in the Indian industry thanks to new technologies, digital transformation, and decisions based on data. AI and ML have the potential to change many fields, including manufacturing, finance, healthcare, e-commerce, and agriculture (Boukherouaa.2021). Businesses use AI-driven analytics to obtain actionable insights that enhance consumer experiences via personalized recommendations, optimize supply networks, and boost medical diagnostics.

AI technologies could help small business owners be more productive by automating boring tasks and giving them useful information about industry trends, such as how customers act. The availability of AI technologies and their immense potential to transform society present ideal conditions for women entrepreneurs to step forward and build the intelligence-driven businesses of tomorrow (Majumdar, 2023). Furthermore, the technology of artificial intelligence offers potent instruments that can enhance creativity, efficiency, and production among women in entrepreneurship. Artificial intelligence can eliminate obstacles that hinder women's total involvement in the market. In addition, it may assist women in securing new or enhanced employment opportunities and guarantee that women entrepreneurs have access to emerging markets and financial inclusion. AI-driven content creation provides transformative methods to enhance brand marketing. Some studies have examined the relationship between an entrepreneurial mindset and the ability to analyze extensive datasets using artificial intelligence, influenced by environmental factors (Halim, 2022).

ONLINE BRANDING AND CUSTOMER INTERACTION IN WOMEN-DRIVEN BUSINESSES

The term "customer engagement" (CE) refers to a marketing strategy that involves the nurturing of connections between businesses and customers that extend well beyond the actual act of purchasing something. In the hope that this will improve their loyalty (Gambetti & Graffigna, 2010; Yau, 2021), businesses take the strategy of adding value to their encounters with their consumers by employing a variety of ways. This, in turn, may finally result in the formation of an emotional connection between the firm and the client. According to Trunfio and Rossi (2021), some activities, such as clicks, likes, comments, and shares, may be used to evaluate the degree of synergy that exists between the parties involved in a digital setting.

In this way, advertising engagement (AE) is comparable to customer engagement (CE) in that it makes an effort to attract customers to a certain brand. According to Kaczorowska-Spychalska (2019), the strategy does not focus on developing relationships with consumers; rather, it makes use of exposure and advertising in order to engage potential clients. It is possible to think of the circular economy (CE) as a long-term relationship, but the alternative economy (AE) is comparable to a fleeting love affair that is defined by continual desire and attraction. This is an effective analogy. Advertising on social media sites may encourage customers to respond quickly and get involved (Yang, 203). The significance of the function that influencers play in this environment is emphasized by Abhishek and Srivastava (2021). According to Alboqami (2023), Gwon and Seo (2021), Sands, (2022), and Youn and Jin (2021), artificial intelligence influencers in this field have the potential to increase customer trust and affect behavior.

The purpose of this research is to further comprehend AI powered customer engagement in women led enterprises. While this technique was created and used by numerous corporations for many years, it remains to be seen if it has spread to small enterprises run by female entrepreneurs. The paper revealed women's entrepreneurs' awareness of applications for artificial intelligence and the extent to customer engagement. It also looks at the challenges they experienced in incorporating AI into their enterprises.

As observed by Ahmed (2015), "Artificial Intelligence is the art of making machines intelligent" (Demis Hassabis, the creator of DeepMind, Google's AI Company). This description is widely recognized and serves as an appropriate reference, as AI is a term that encompasses a broad spectrum of meanings. Real-world AI applications, such as search suggestions, are the result of the division of AI into a variety of subcategories, which includes deep learning as well as machine learning.

Although these fortunate opportunities are diminished by the potential for governance, funding, and ignorance in AI development, artificial intelligence provides a blueprint for women-led enterprises by increasing efficiency and offering applicable knowledge. Disparities that affect women entrepreneurs, particularly those operating in emergent markets or small businesses, can serve as challenges to entry into the AI acquisition process.

Peri Fanis and Kitsios (2023) elucidated the functional advantages and metrics for achievement, but there were problems related to the use of AI, as indicated in the literature. The authors developed artificial intelligence competencies and integrated them into enterprise and information technology plans to enhance various streams of value. Enterprises can truly prosper within the contemporary digitally transformed scenario through meticulously embracing as well as applying such innovative technologies. The paper discussed the engagement of customers in women led businesses, which is still hard even though AI has the potential to entirely change things. This review will help both new and existing businesses improve a wide range of business outcomes. This is important because research into the strategic uses of AI in businesses is still in its early stages.

FINDINGS AND DISCUSSION

The investigation highlights the impact of AI on consumer engagement and the role of women in entrepreneurship within India. Artificial intelligence denotes the capacity of a computer or robotic system to process data and deliver outcomes in learning, decision-making, and problem-solving that resemble human cognitive functions. Despite these challenges, customers utilizing social media and artificial intelligence are engaging in entrepreneurial endeavours, with women establishing their firms motivated by a quest for economic autonomy and social empowerment. The study underscores the crucial impact of AI technologies and consumer involvement on women's entrepreneurial achievement. Diverse AI systems, including chatbots, facilitate text analysis, picture analysis, spam detection, advertisement identification, social information processing, and data collecting.

The discussions, through the engagement of customers in women entrepreneurship, emphasize the transformative potential of women entrepreneurs in reshaping their enterprises and contributing to economic development. The technology of artificial intelligence offers potent instruments that can enhance creativity, efficiency, and production among women in entrepreneurship. This study underscores the engagement of customers in women led businesses, which is still hard even though AI has the potential to entirely change things.

CONCLUSION

The study status of AI powered customer engagement in women entrepreneurship. While acknowledging the progress made, the study underscores the need for more initiatives and enterprises can truly prosper within the contemporary digitally transformed scenario through meticulously embracing as well as applying such innovative technologies. The implementation of AI-powered tools and methods has enabled personalized services, streamlined communications, and significant enhancements in customer satisfaction, fundamentally transforming consumer interactions. Nevertheless, to effectively capitalize on the benefits of artificial intelligence, it is necessary to solve problems such as gaps in technical expertise, significant initial investment, and concerns around data security. As artificial intelligence (AI) technologies continue to progress, the future of consumer interaction in organizations that are headed by women appears bright, with countless prospects for expansion and innovation. This paper revealed that Artificial intelligence (AI) technology is becoming more integrated into corporate operations across all sectors, particularly in customer interaction strategies. This has resulted in a transformation of business processes. The study concluded that most entrepreneurs were using AI for billing and invoicing, as well as implementing chatbots and virtual assistants. Another difference is how women entrepreneurs use technology for sales and marketing. Their biggest barriers to implementing AI in business were high installation costs and lack of infrastructure.

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