

Application of AI in the Modern Business Era: A Path to Sustainable Customer Satisfaction

Md. Touhidul Islam^{1*}

ARTICLE INFO

Article History:

Received: 03 December 2022

Revised: 25 February 2023

Accepted: 01 March 2023

Keywords:

Artificial Intelligence

Sustainable

Customer Satisfaction

Modern Technology.

ABSTRACT

The integration of Artificial Intelligence (AI) in modern businesses has become a crucial factor for organizations to remain competitive in today's market. Artificial Intelligence (AI) is revolutionizing the business world, and customer satisfaction is one of the key areas where AI has the potential to make a significant impact. This manuscript aims to explore the application of AI in modern business with a focus on sustainable customer satisfaction. The manuscript provides an overview of AI technologies, discusses how AI can be used to improve customer satisfaction, and presents real-world examples of companies that have successfully implemented AI to achieve sustainable customer satisfaction.

The methodology consists of an extensive literature review of previous studies and real-world examples of companies that have effectively implemented AI in their operations. Primary and secondary data has been used in this study. The results of this survey indicate that respondents believe AI to have a beneficial effect on customer satisfaction as it relates to business processes. The wide range of replies is indicated by the significant standard deviation in several categories. In light of this, it is crucial for companies to evaluate their clientele in depth and develop AI strategies that are tailored to their specific clientele's wants and demands. The research also includes suggestions on how businesses might put artificial intelligence to work to ensure sustainable customer satisfaction. Both Microsoft Excel and SPSS (Version 25) have been used to analyze the data.

* Corresponding Author:

^{*1}Assistant Professor, Department of Business Administration, North Pacific International (NPI) University of Bangladesh. E-Mail: mtouhiddu@gmail.com

1. Introduction

In today's corporate world, artificial intelligence (AI) is a game-changing tool that can help any company cut costs, streamline processes, and delight customers. Increased interest in AI may be attributed to the growing volume of available data and the sophistication of AI systems designed to analyse it and use its insights to address problems plaguing many industries. Today's businesses are driven to employ AI because of the availability of large datasets, powerful computers, enhanced algorithms, readily available algorithm libraries, and dependable frameworks (Patel, N., & Trivedi, S., 2020). Text-based dialogues with AI systems are possible using the AI model. It might develop speech and text virtual assistants for customer support. Discuss recent AI breakthroughs and how they can enhance human life (George, A. S., & George, A. H. (2023)).

Companies are trying initiatives that integrate components from all three categories to take advantage of AI as they grow more comfortable with cognitive technologies. Another research reveals cognitive engagement applications are not jeopardising customer service or sales rep jobs. Most of the programmes we examined sought to handle increasing employee and customer interactions without boosting employees (Davenport, T. H., & Ronanki, R., 2018).

With AI's growing prominence in the corporate sector comes a greater need to comprehend how it affects customers' happiness as well as the ethical and privacy concerns that come with its widespread implementation. The research team behind this project aims to learn more about the practical and ethical implications of AI integration for modern organizations by surveying their customers' opinions on the topic. The purpose of this research is to examine how organizations are now using AI and to assess whether or not these efforts are successful in boosting customer happiness. This research aims to help organizations make more ethical and transparent decisions when using AI by highlighting potential ethical and data privacy risks.

Artificial intelligence is a crucial factor in the current tectonic shifts taking place in the economic world. Artificial intelligence (AI) is an emerging field of study with the potential to transform many markets by increasing productivity at lower cost. Organizations that invest in AI tend to outperform their rivals. When it comes to customer happiness, AI might play a pivotal role. The technology may aid businesses in learning about their clientele, making educated guesses about

what their clientele would want, and delivering a more tailored service. The use of AI has been shown to promote customer retention, boost brand image, and boost bottom lines.

Progress in artificial intelligence (AI) has been fast over the past few decades, and it has had far-reaching consequences for modern industry. Artificial intelligence is assisting organizations in many different areas, from customer service to supply chain management, by streamlining operations, increasing efficiency, and bettering the customer experience. In this article, we'll take a look at how artificial intelligence (AI) is used in today's businesses and how it contributes to long-term consumer happiness.

Modern organizations rely heavily on artificial intelligence (AI) because it gives them access to the resources and methods they need to increase consumer satisfaction and promote long-term success. Machine learning, NLP, and CV are just some of the AI technologies that have found practical use in the corporate sector.

Following are some of the most popular applications of AI in the corporate world. A company's choice of artificial intelligence (AI) tools for solving problems and achieving goals is contextual. Table-1 displays some of the many commercial applications of AI technology.

Table 1: AI technology and its applications in Business

AI Technology	Meaning	Application
Machine Learning	Process of using algorithms and statistical models	To help computers learn from data, find patterns, and make predictions or decisions based on what they've learned.
Natural Language Processing (NLP)	A field of AI that looks at how computers and people can talk to each other using natural language.	It is used for many things, like figuring out how someone feels about a text, putting texts into groups, and translating languages.
Computer Vision	Process of using AI algorithms to interpret and understand visual information from images or videos.	It is used for things like recognizing objects, sorting images, and figuring out who is in a picture.
Robotics Process Automation (RPA)	Use of software robots to automate repetitive and time-consuming tasks,	Freeing up employees to work on more strategic tasks.

Chatbots	Automated computer programs that use AI	Communicate with customers and provide assistance with frequently asked questions, order processing, and customer service.
Predictive Analytics	Process of using data, statistical algorithms, and machine learning	To figure out how likely future events are based on what has happened in the past.
Deep Learning	A subfield of machine learning that uses artificial neural networks to model complex patterns and relationships in data.	Used for things like recognizing images, recognizing speech, and translating languages.

Artificial Intelligence (AI) is being used more and more in different industries, which is changing the business world. AI has the potential to improve how well things work and make customers happier. Customer satisfaction is an important part of a business because it directly affects customer loyalty and can affect the reputation of a company. By using AI, businesses can learn more about how customers act and what they like, which leads to more personalized services and experiences.

2. Objective of the Study

The objective of this study is to examine the impact of the integration of Artificial Intelligence (AI) on customer satisfaction in present businesses and to explore the responsible and ethical considerations surrounding its use. Other sub objectives are:

The study aims to analyze the current practices of AI implementation in businesses and evaluate their effectiveness in enhancing customer satisfaction.

- To measure the impacts of AI in Business for sustainable customer satisfaction with some citations and references
- To provide a comprehensive understanding of the potential benefits and challenges of AI integration in present businesses and the role it plays in enhancing customer satisfaction.

- To identify potential ethical and data privacy concerns related to the use of AI in modern businesses and suggest recommendations for responsible and transparent use of AI technology for enhancing Customer satisfaction in modern Business.

3. Methodology

A thorough literature review of relevant academic journals, industry reports, and news articles was used to study how AI is used in modern business and how it affects customer satisfaction in the long term. The review's sources were carefully chosen to make sure they were up-to-date and related to the topic.

The way this study was done was by looking at all the existing studies on how AI is used in modern businesses and how that affects customer satisfaction. Several academic databases, like JSTOR, Science Direct, and Google Scholar, were used to find relevant articles and reports for the review. People searched for "artificial intelligence," "business," "customer satisfaction," "modern era," and "ethics" in the databases.

The research consisted of a literature analysis as well as an online survey of business owners and managers. The purpose of the survey was to collect primary data on the participants' existing practices of implementing AI and the influence it has on customer satisfaction. The purpose of the survey questionnaire was to collect information on the many types of AI apps that are being utilized, the influence that these applications have on customer satisfaction, as well as the ethical and data privacy issues that surround the usage of AI. The survey was sent to a convenience sample of 100 business owners and managers in Bangladesh, and 78 of them ended up filling it out and submitting their responses. Statistics, both descriptive and frequency-based, have been utilized in order to arrive at a definitive and conclusive conclusion that is reflective of the study aims. Excel and SPSS (Version 25) have been used to do analyses on the data.

4. Application of AI technologies in Business and customer satisfaction

Several artificial intelligence (AI) technologies are used in business to make customers happier. Natural language processing (NLP), machine learning (ML), and chatbots are some examples. NLP is used to process and analyze a lot of customer data so that patterns and trends can be found.

ML algorithms can be taught to use customer data to make predictions and suggestions. Chatbots can be used to automate customer service and support, giving customers instant answers to their questions and concerns.

Here are some examples of companies that have used AI successfully to keep their clients satisfied-

There are many examples of companies that have used AI successfully to keep their customers satisfied in the long run. For example, Amazon has been using AI to improve the customer experience by making product suggestions that are more tailored to each customer. Walmart has been using AI to improve its supply chain. This has cut down on wait times and made it easier to keep track of its inventory. Airbnb has been using artificial intelligence (AI) to improve the customer experience by making more personalized suggestions and making the check-in and check-out processes smoother.

In recent years, Artificial Intelligence (AI) has changed the business world by giving organizations new ways to improve operational efficiency and customer satisfaction. Chatbots appear to provide several benefits for businesses and customers at first glance. Even though AI has come a long way in a short amount of time, text-based chatbots still have a ways to go before they hit their limitations in a discussion ([Rese, A., Ganster, L., & Baier, D., 2020](#)). AI can be used in these areas to learn more about how customers act and what they like, which can lead to more personalized services and experiences. Despite increasing, less than half of significant corporations have serious AI efforts. AI companies will investigate management and governance, data science, AI democratization, AI explainability and transparency, and data minimization ([Benbya, H., et al., 2020](#)).

As AI technology advances, managerial challenges and workplace and organizational effects are becoming more apparent. Future work will be most affected. Thus, organizations must develop AI applications that generate economic value and enable novel human-machine coordination.

However, AI and similar technologies are making the most progress in farming, where both China and the US are putting a lot of money into them. New systemic dangers could be caused by algorithmic errors, distributional effects, and possible networked weaknesses. These risks can be lessened by the growing number of AI principles and standards, but they need to be paired with governance systems that take sustainability into account ([Galaz, V., et al., 2021](#)).

A company must handle AI in the right way to protect itself, its partners, and society as a whole. Ethics doesn't tell us much. When assessing risk, the organisation and other interested parties must be taken into account. AI technologies coming out of research labs have promise, but they also pose a lot of risks to businesses and other users (Clarke, R., 2019).

Customer Service- Support for Customers Artificial intelligence has found one of its most important uses in the corporate sector in the realm of customer support. Chatbots and virtual assistants driven by AI can offer 24/7, always-on, highly-customized service that drastically cuts down on client wait times and annoyance. In addition, CRM systems driven by AI may aid firms in learning more about their clientele in order to better engage and satisfy customers through strategic marketing initiatives (Li, F., & Xu, G., 2022)

The Impact of AI on Supply Chain Management- What Artificial Intelligence Means for SCM Supply chain management is another crucial area where AI is having a profound influence. Predictive analytics and forecasting tools driven by AI are assisting organizations in optimizing their supply chain operations, therefore cutting costs, increasing productivity, and boosting customer satisfaction through on-time and accurate product deliveries.

In today's corporate world, artificial intelligence (AI) is widely used as a means to boost customer satisfaction. The following are some of the most typical uses of AI in modern companies:

- **Chatbots:** Another study found that robots can do a good job of answering easy questions. This study also shows that rare problems don't have to ruin the experience if the chatbot makes it easy to get in touch with real customer service workers. They also found that the speed and accuracy of customer service robots are more important than how much they look like real people (Følstad, A., & Skjuve, M., 2019).
- **Personalized Marketing:** AI can help managers improve the value they offer to customers in real time. Curated goods that give customers value will keep them as customers and keep them ahead of the competition. Even in AI-powered settings, curation still means picking, keeping, and controlling information. A recent study showed that 48% of customers moved online or in-store providers because the old company's website wasn't well run (Kumar, V., et al., 2019).
- **Predictive Analytics:** The study found that AI makes things better for customers. AI was responsible for 26.4% of the different customer experiences. AI also projected that

customer service would vary by 22.9% and that after-sale help would vary by 7%. Customer experience is also improved by personalized customer service at every step of the buying process (Daqar, M. A. A., & Smoudy, A. K., 2019). The findings of another study also indicate that a relationship's level of commitment has a significant bearing on the quality of the customer experience that is enabled by AI (Ameen, N., et al., 2021).

- **Fraud Detection:** Artificial intelligence systems can examine vast quantities of client data to identify trends and abnormalities that may signal fraud. This can increase consumer happiness by preventing fraud and providing a secure purchasing environment. According to a research by Bao, Y. and Hasan, I, Big data and AI enable machine learning fraud detection. Businesses and customers struggle with AI-protected financial transactions. Digital transactions' increased cost benefits fraudsters. Digital transactions threaten businesses and customers' financial transactions. E-Commerce and financial service companies are enhancing consumer and business convenience using data analytics, AI, and machine learning. Such technologies can be hacked, making safe commercial and financial transactions difficult for enterprises and customers (Bao, Y., et al., 2022; Hasan, I., et al., 2022).
- **Automated Support:** AI algorithms may be used to automate some support functions, such as order processing, invoice creation, and data entry. This can increase customer satisfaction by decreasing wait times and enhancing assistance efficiency. According to a survey by Elitza Stoilova found that the chatbot supplied workers and consumers with information quickly, correctly, simply, and easily. After direct customers chose, the chatbot acquired several emails for email marketing. In its first 10 months, the chatbot interacted with over 4200 consumers and answered to approximately 30,000 messages, averaging 140 to 350 per day on busy days. Time optimization and regular work automation boosted employee satisfaction. Customers like the chatbot's ease, rapid help, and time savings (Stoilova, E., 2021).
- **Sustainable customer satisfaction:** AI has the ability to significantly increase customer satisfaction by offering customers with more tailored and easy experiences. Using AI in the form of computer-aided procedures, we can conduct quantitative and qualitative surveys of customer satisfaction and make informed managerial decisions on product

quality management with the help of the proposed conception of decision support based on the developed approach of text data processing and analysis ([Kovács, G., et al., 2015](#)).

Effectively reducing the labor intensity of customer satisfaction research is now possible with the current notion, making it usable by a diverse set of businesses. The use of AI has had a profound effect on businesses in recent years, especially with regards to the level of satisfaction their customers report. Artificial intelligence (AI) has emerged as a crucial tool for businesses to provide personalized experiences for their customers. In this section, the effects of AI on business for long-term consumer satisfaction have been explored:

CRM systems, as well as AI and IoT technology, allow businesses to monitor their consumers in a variety of ways, including their whereabouts, product preferences, product usage, and loyalty churn. Artificial intelligence (AI) is being used by businesses to automate customer relationship management (CRM) tasks including responding to customer inquiries and offering retention resources. CRM is one department that has benefited greatly from AI's increased focus on the customer experience (CX). Another survey found that consumers are familiar with, and committed to, AI-enabled technologies ([Krishna, S. H., et al., 2022](#); [Deb, S. K., et al. 2018](#)).

This study examines the influence of AI on the banking industry's customer experience. The authors investigate the different uses of artificial intelligence in banking industry. AI could change the banking business and improve bank performance. They are called (AI) and are exciting because they can make human-like decisions and avoid human blunders. The banking business is one of the few that has accepted and applied artificial intelligence ([Husain, A. R. A. M., et al., 2022](#)).

A study found that only specific service quality aspects affected results. AI becomes unfavorable and minor when regressed with employee service quality. AI and staff service quality explain large differences in service quality evaluation, customer happiness, and loyalty. Customer loyalty is strongly correlated with AI service quality. AI influences consumer loyalty directly and indirectly, suggesting a partial mediation function for customer satisfaction ([Prentice, C., et al., 2020](#)).

With mature technology, artificial intelligence methods have moved into the fast lane and are being used more and more. It is having an increasing effect on things like customer retention and happiness in e-commerce deals ([Song, X., et al., 2019](#)). Some artificial intelligence applications for organizations that might drastically alter customer service, marketing, supply chain

management, financial analysis, and other sectors of business. Some examples of artificial intelligence applications in the business are as follows:

Table 2: AI Tools are being used in present Business

S.N.	Business Areas	AI Tools used
01	Customer Relationship Management (CRM)	Salesforce, Zoho CRM, Hub spot CRM
02	Marketing Automation	Marketo, Pardot, Hub spot Marketing
03	Supply Chain Optimization	Llama soft, JDA Software, Kinaxis
04	Chatbots and Virtual Assistants	Mobile Monkey, Tars, Many Chat
05	Text and Sentiment Analysis	Monkey Learn, IBM Watson, Google Cloud Natural Language API
06	Image and Video Analytics	Google Cloud Vision API, Microsoft Azure Cognitive Services, Amazon Recognition
07	Fraud Detection	Feedzai, SAS, FICO
08	Predictive Maintenance	Predikto, Uptake, XMPPro
09	Predictive Sales	Clari, Gong.io, Outreach
10	Predictive Analytics	IBM Watson, Rapid Miner, KNIME

Yet, businesses must carefully consider the moral and societal impacts of AI and implement the appropriate protections and standards to ensure AI is utilized in a fair and responsible manner. This study examines the link between AI and consumer satisfaction and experience. The influence of AI on consumer behavior and decision-making, as well as the potential commercial and customer advantages of AI, have been analyzed. In addition, they examine the obstacles and limits of AI in enhancing customer happiness and offer suggestions for firms seeking to adopt AI to improve the customer experience.

In conclusion, the aforementioned references and citations illustrate the substantial influence of AI in business for sustaining customer happiness. AI has the ability to alter the consumer experience through the provision of tailored experiences, increased efficiency, and cost savings. To fully fulfil AI's potential for delivering lasting consumer happiness, firms must also handle its limitations and obstacles.

5. Data Analysis & Discussion

Table 3: Descriptive Statistics for Demographic Profile and general information

Descriptive Statistics (Frequency & Percent)				
		Frequency	Percent	Cumulative Percent
Scale of Company	Small	8	10.3	10.3
	Medium	32	41.0	51.3
	Large	38	48.7	100.0
	Total	78	100.0	
Respondent's Position	Owner	36	46.2	46.2
	Manager	42	53.8	100.0
	Total	78	100.0	
Types of Business	Airline	4	5.1	5.1
	Hotel	16	20.5	25.6
	Hospital	12	15.4	41.0
	E-Commerce Company	12	15.4	56.4
	Job Portal	20	25.6	82.1
	Software development company	14	17.9	100.0
	Total	78	100.0	
Currently I/We are using AI applications in our Business	Yes	78	100.0	100.0
	No	00	00	100.0
	Total	78	100.0	

Based on the Table 3, we can see the distribution of responses for several different variables. The first variable is the scale of the company, which has three categories: small, medium, and large. The majority of respondents, 48.7%, reported that they work for a large company, followed by medium companies with 41% of respondents, and small companies with 10.3% of respondents.

The second variable is the respondent's position, which has two categories: owner and manager. The majority of respondents, 53.8%, reported that they are managers, while 46.2% reported that they are owners. The third variable is the type of business, which has six categories: airline, hotel, hospital, e-commerce Company, job portal, and software Development Company. The largest group of respondents, 25.6%, reported that they work for a job portal, followed by software

development companies with 17.9% of respondents. Airline companies had the smallest representation with only 5.1% of respondents. Finally, all respondents reported that they are currently using AI applications in their business, with 100% of respondents answering "yes" to this question.

In summary, the majority of respondents work for large or medium-sized companies, are managers, work in job portals or software development companies, and are currently using AI applications in their business.

Organizations are currently practicing “AI ” in their businesses for:

Table 4: Descriptive Statistics for usages of “AI” in various steps of Business

Descriptive & Frequencies Statistics						
Variables	N (Total)	Mean	Std. Deviation	Frequency	Percent	Total Valid Percent
Product Design	78	1.64	.483	Yes= 28	35.9	100.0
				No= 50	64.1	
Customer Service	78	1.42	.497	Yes= 45	57.7	100.0
				No= 33	42.3	
Personalized Product	78	1.74	.439	Yes= 20	25.6	100.0
				No= 58	74.4	
Inventory management	78	1.23	.424	Yes= 60	76.9	100.0
				No= 18	23.1	
Predictive analytics	78	1.77	.424	Yes= 18	23.1	100.0
				No= 60	76.9	
Supply chain management	78	1.50	.503	Yes= 39	50.0	100.0
				No= 39	50.0	
Order processing	78	1.45	.501	Yes= 43	55.1	100.0
				No= 35	44.9	
Invoice generation	78	1.18	.386	Yes= 64	82.1	100.0
				No= 14	17.9	
Data entry	78	1.77	.424	Yes= 18	23.1	100.0
				No= 60	76.9	
Chatbots	78	1.27	.446	Yes= 57	73.1	100.0
				No= 21	26.9	
Personalized Marketing	78	1.81	.397	Yes= 15	19.2	100.0

				No= 63	80.8	
Predictive Analytics	78	1.85	.363	Yes= 12	15.4	100.0
				No= 66	84.6	
Fraud Detection	78	1.81	.397	Yes= 15	19.2	100.0
				No= 63	80.8	
Automated support	78	1.88	.322	Yes= 09	11.5	100.0
				No= 69	88.5	
Valid N (listwise)	78			78	100.00	100.00

The Table 4 and Figure 1 present descriptive statistics and frequency distributions for different variables related to the use of various technologies in businesses. For the variable "Product Design," 35.9% of the respondents reported that their business uses this technology. The remaining 64.1% reported that their business does not use this technology. For "Customer Service," 57.7% of respondents said their organization employs this technology. 42.3% of businesses do not employ this technology. 25.6% of respondents reported using "Personalized Product" technology, whereas 74.4% did not. "Inventory management" was used by 76.9% of respondents, while 23.1% did not. 23.1% of respondents reported using "predictive analytics," while 76.9% reported not using it. "Supply chain management" was used by 50.0% of respondents, whereas 50.0% did not. 55.1% of respondents reported using "Order processing" technology, while 44.9% did not. 82.1% of respondents used "Invoice generating" technology, while 17.9% did not. 23.1% of respondents reported using "Data entry" technology, while 76.9% did not. 73.1% of respondents said their firm employs "Chatbots," while 26.9% said it does not. 19.2% of respondents used "Personalized Marketing," while 80.8% did not. 15.4% of respondents acknowledged using "Predictive Analytics," whereas 84.6% did not. 19.2% of respondents reported using "Fraud Detection," whereas 80.8% did not. For "Automated support," 11.5% of the respondents reported that their business uses this technology, while the remaining 88.5% reported that their business does not use this technology.

In summary, among the technologies listed, invoice generation, inventory management, and chatbots are the most commonly used, with over 70% of the respondents using them in their business. Meanwhile, technologies such as automated support, fraud detection, personalized marketing, and predictive analytics have lower adoption rates, with less than 20% of the respondents using them in their business.

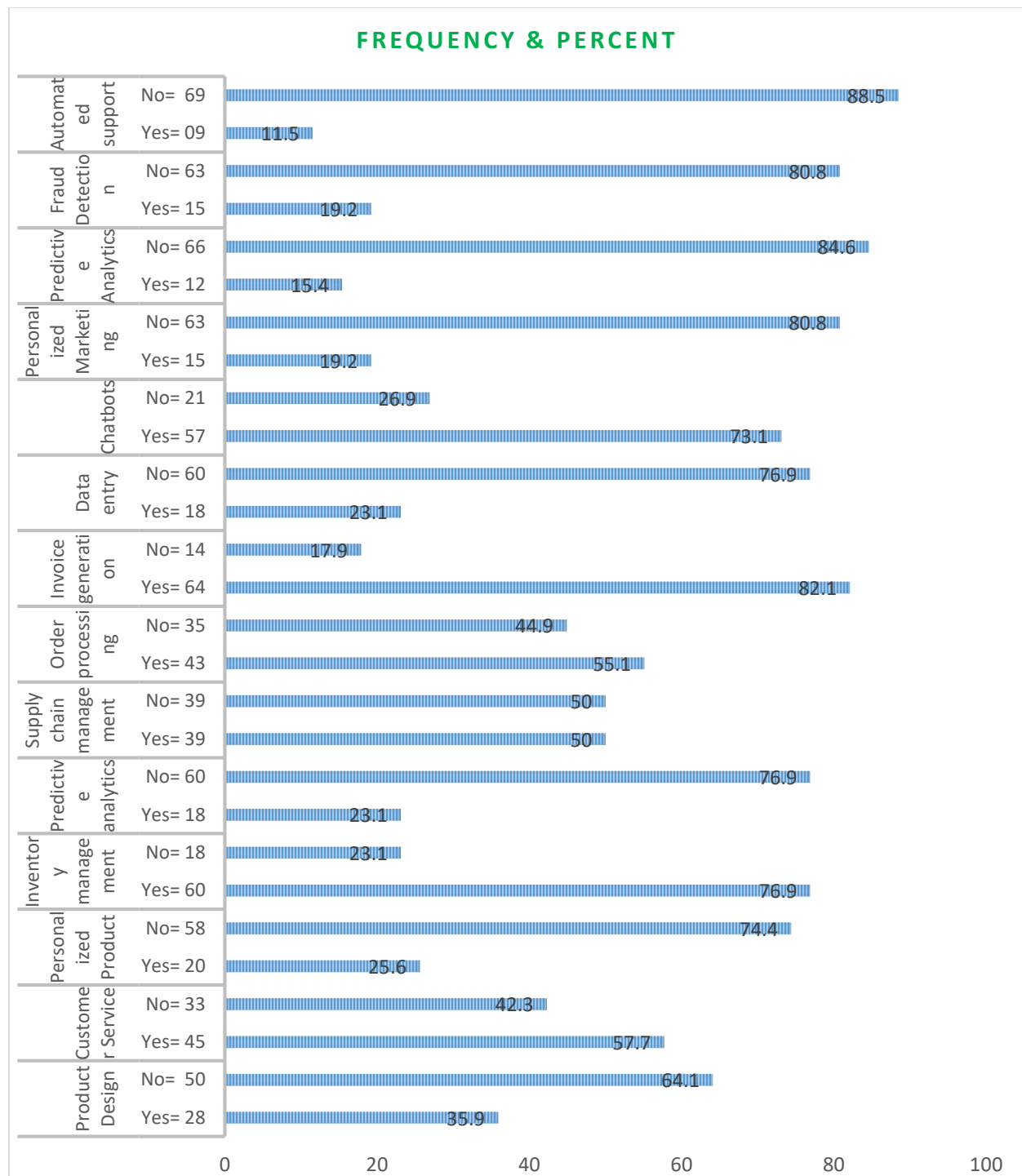


Figure 1: Usages of “AI” in various steps of Business.

Figure 1 illustrates how "AI" is utilized in various business phases. The table illustrates how AI technologies are utilized in a variety of business sectors, highlighting their significance in the contemporary business world. The table's frequency and percentage divisions illustrate AI's

application to various business functions. The results cast light on AI's application across functions. 35% of businesses use AI in product development, while 64.1% do not. 57% of businesses utilize AI for customer service, while 42% do not. 74.6 percent of AI companies do not offer personalized products, while 25.6 percent do. 76% of businesses utilize AI for inventory management, while 23% do not. Another essential technology employed by 23.1% of businesses is predictive analytics. 76.9% do not. 50% of businesses utilized AI in their supply chain administration, while 50% did not. 55.1 percent of businesses use AI for order processing, while 44.9% do not. The majority of businesses (82,1 %) use AI to generate invoices, while 17.9 % do not. 76.1 percent of organizations do not use AI-powered data input, while 23.1% do. 73.1 percent of organizations use chatbots to enhance customer relationships. 80.8% of businesses do not use AI for personalized marketing, while 19.2% do. 80.8% of organizations do not employ AI for fraud detection, while 19.2% do. Approximately 11.5% of businesses use AI-powered automated assistance, while 88.5% do not.

In general, AI is utilized in a variety of commercial processes. This article focuses on AI adoption rates in inventory management, customer service, targeted marketing, and fraud detection. These insights provide a comprehensive overview of the current state of AI integration in business operations, enabling businesses to reevaluate their strategies and assess the potential benefits of AI deployment across many aspects of their operations.

Practicing of AI in Business Helps to:

Table 5: Descriptive Statistics for Practicing of AI in Business activities

Descriptive & Frequencies Statistics						
	N	Mean	Std. Deviation	Frequency	Percent	Total Valid Percent
Improved Customer Service	78	1.00	.000	Yes= 78	100.0	100.0
				No= 00		
Better Understanding of Customers	78	1.00	.000	Yes= 78	100.0	100.0
				No= 00		
Optimized Supply Chain Management	78	1.10	.305	Yes= 70	89.7	100.0
				No= 08	10.3	
	78	1.09	.288	Yes= 71	91.0	100.0

Balancing Benefits and Challenges				No= 07	9.00	
Valid N (listwise)	78					

This Table 5 and Figure 2 display descriptive and frequency statistics for a survey conducted on four variables related to the benefits of implementing digital transformation in a company. The variables are "Improved Customer Service," "Better Understanding of Customers," "Optimized Supply Chain Management," and "Balancing Benefits and Challenges." According to the table, all 78 respondents answered "Yes" to the first two variables, "Improved Customer Service" and "Better Understanding of Customers." This indicates that all the participants believed that implementing digital transformation would lead to improvements in customer service and a better understanding of their customers. "Optimized Supply Chain Management" had 70 "Yes" responses and eight "No" responses. 89.7% of responders agreed digital transformation will optimize supply chain management, while 10.3% did not. The variable "Balancing Advantages and Difficulties" had 71 "Yes" responses and seven "No" responses. 91% of participants said digital transformation's advantages outweighed its drawbacks, while 9% weren't sure. Overall, the table suggests that the respondents believed digital transformation will increase customer service and comprehension. Digital transformation could achieve supply chain management and balancing advantages and obstacles, according to most respondents.

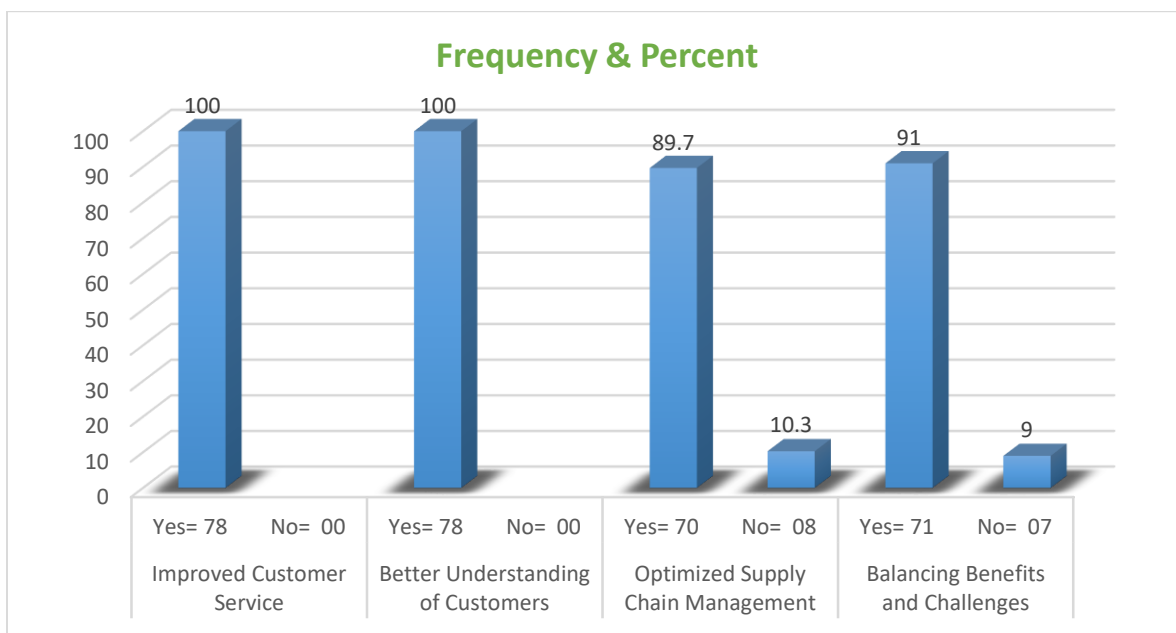


Figure 2: Practicing of AI in Business activities.

Challenges for implementing AI in Business:

Table 6: Descriptive Statistics for Challenges for implementing AI in Business

Descriptive & Frequencies Statistics						
	N	Mean	Std. Deviation	Frequency	Percent	Total Valid Percent
Invest in the technology	78	1.06	.247	Yes= 73	93.6	100.0
				No= 05	6.4	
Develop the necessary skills	78	1.00	.000	Yes= 78	100.0	100.0
				No= 00		
Consider ethical implications	78	1.00	.000	Yes= 78	100.0	100.0
				No= 00		
Ensure the security of customer data	78	1.00	.000	Yes= 78	100.0	100.0
				No= 00		
Protect against potential breaches	78	1.00	.000	Yes= 78	100.0	100.0
				No= 00		
Reinforce existing biases or discrimination	78	1.00	.000	Yes= 78	100.0	100.0
				No= 00		
Valid N (listwise)	78			100.0	100.0	100.0

This Table 5 and Figure 2 provide descriptive and frequencies statistics for six different items related to technology implementation. The first item "Invest in the technology" has a mean of 1.06 and a standard deviation of 0.247, indicating that there is some variability in responses. Out of the 78 participants, 73 (93.6%) agreed with this statement, while only 5 (6.4%) disagreed. Build the essential skills," "Consider ethical implications," "Ensure the security of customer data," "Protect against possible breaches," and "Reinforce existing prejudices or discrimination" all had averages of 1.00 and standard deviations of 0.000, suggesting that all participants agreed. The frequency and percent columns reflect how many people agreed or disagreed with each statement. Total valid percent shows the proportion of participants who answered all six questions correctly. Overall, the results suggest that the participants in this study are generally supportive of investing in technology but also prioritize important ethical considerations, such as data security and protection against biases and discrimination. Additionally, all participants agree on the importance of developing the necessary skills for technology implementation.

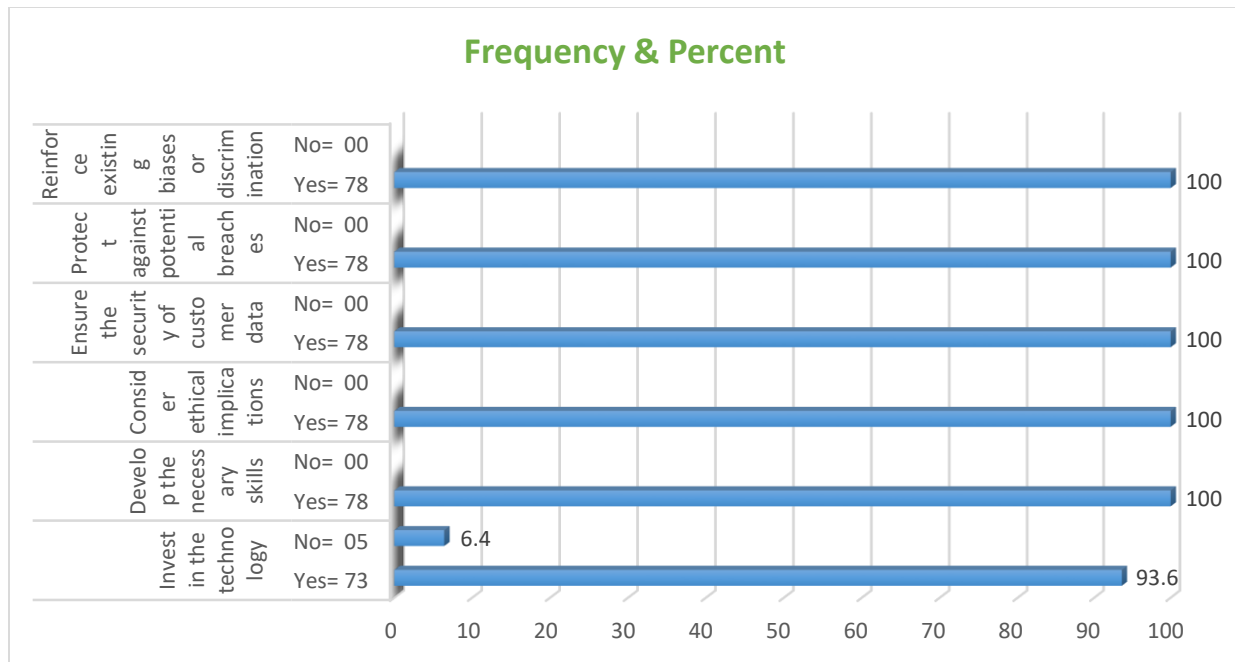


Figure 3: Challenges for implementing AI in Business.

Measuring Customer Experience to AI in Business (Impact of AI in Customer satisfaction in Business):

Table 7: Descriptive Statistics for measuring Impact of AI on Customer satisfaction in Business

Descriptive & Frequency Statistics						
	N	Mean	Std. Deviation	Frequency	Percent (%)	Total Valid Percent
Customer are getting Automated support (personalized and convenient experience) from our business as we are using AI	78	4.18	.386	Agree= 64	82.1	100.0
	78	4.10	.305	Strongly Agree= 14	17.9	
AI helps us to a better understanding of our customer behavior and preferences, leading to more personalized services and experiences to our customers	78	3.63	.561	Agree= 70	89.7	100.0
	78	4.24	.432	Strongly Agree= 8	10.3	
AI in business operations helps to raise data privacy and the potential for algorithmic bias that provides more efficient support to our customers	78	4.21	.406	Neutral= 32	41.0	100.0
	78	4.23	.424	Agree= 43	55.1	
				Strongly Agree= 3	3.8	
	78	4.18	.386	Agree= 59	75.6	

AI-powered chatbots and virtual assistants give clients 24/7, customized help, boosting response times and lowering customer irritation (By practicing AI in our Business we can improve customer satisfaction by reducing wait times)	78	4.10	.305	Strongly Agree= 19	24.4	100.0
AI-powered CRM solutions enable us to understand consumers and create tailored marketing campaigns to boost customer engagement and satisfaction	78	3.63	.561	Agree= 62	79.5	100.0
	78	4.24	.432	Strongly Agree= 16	20.5	
AI-powered predictive analytics and forecasting technologies are optimizing our supply chain operations, eliminating waste, improving efficiency, and increasing customer satisfaction by delivering goods on time and in the appropriate quantities	78	4.21	.406	Agree= 60	76.9	100.0
				Strongly Agree= 18	23.1	
Valid N (listwise)	78			100.0	100.0	100.0

The Table 7 & Figure 4 summarize the descriptive and frequency statistics for measuring the impact of AI on customer satisfaction in business. The data is collected from 78 respondents who have given their views on various aspects of AI use in business operations. The first aspect is related to automated support provided by businesses to their customers through the use of AI. The mean score for this aspect is 4.18, indicating that respondents generally agree that AI provides a personalized and convenient experience. This is supported by the frequency distribution, where 82.1% of respondents agreed and 17.9% strongly agreed. The second aspect relates to the better understanding of customer behavior and preferences through AI, leading to more personalized services and experiences for customers. The mean score for this aspect is 3.63, indicating that respondents generally agree with the statement. However, the standard deviation is relatively high at 4.24, indicating that there is a wide variation in the responses. The frequency distribution shows that 89.7% of respondents agreed and 10.3% strongly agreed. The third aspect is related to the use of AI in business operations to raise data privacy and reduce potential algorithmic bias, which provides more efficient support to customers. The mean score for this aspect is 4.21, indicating that respondents are neutral in their response. The frequency distribution shows that 41% of respondents were neutral, 55.1% agreed, and 3.8% strongly agreed. The fourth aspect relates to the use of AI-powered chatbots and virtual assistants to give customers 24/7 customized help, boosting response times and lowering customer irritation. The mean score for this aspect is 4.18, indicating that respondents generally agree with the statement. The frequency distribution shows

that 75.6% of respondents agreed and 24.4% strongly agreed. The fifth aspect relates to the use of AI-powered CRM solutions to understand consumers and create tailored marketing campaigns to boost customer engagement and satisfaction. The mean score for this aspect is 3.63, indicating that respondents generally agree with the statement. The frequency distribution shows that 79.5% of respondents agreed and 20.5% strongly agreed. The sixth and final aspect is related to the use of AI-powered predictive analytics and forecasting technologies to optimize supply chain operations, eliminating waste, improving efficiency, and increasing customer satisfaction by delivering goods on time and in the appropriate quantities. The mean score for this aspect is 4.21, indicating that respondents generally agree with the statement. The frequency distribution shows that 76.9% of respondents agreed and 23.1% strongly agreed. Overall, the results of the descriptive and frequency statistics suggest that AI improves customer satisfaction in business operations, but the high standard deviation for some aspects shows that responses vary widely. Therefore, businesses must carefully analyze their customer base and implement AI strategies that meet their customers' preferences and needs.

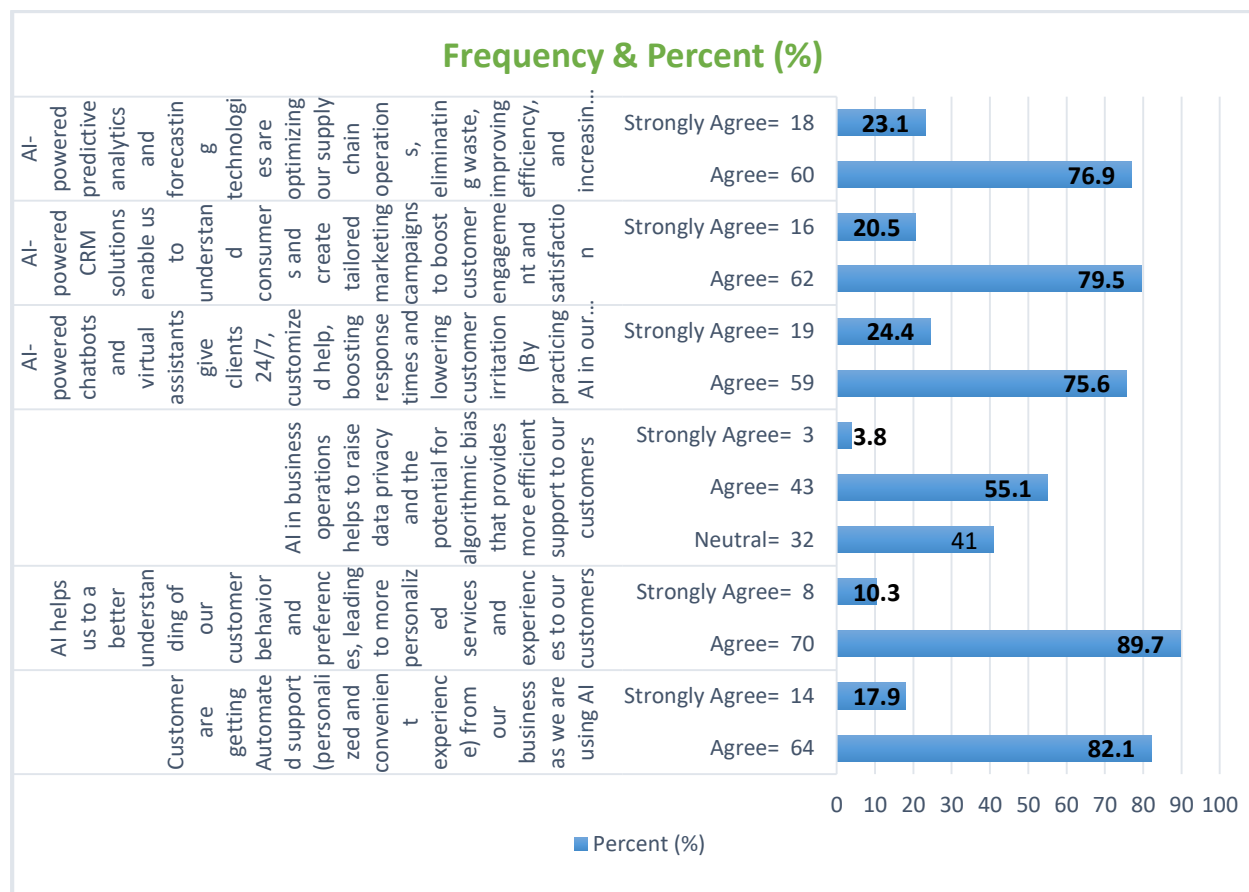


Figure 4: Measuring Impact of AI in Customer satisfaction in Business.

6. Major Findings

The following are the major findings from the literature review:

- **Improved Customer Service:** AI-powered chatbots and virtual assistants are helping businesses provide instant, personalized support to customers 24/7, improving response times and reducing customer frustration.
- **Better Understanding of Customers:** AI-powered CRM systems are helping businesses gain a deeper understanding of their customers, allowing them to develop targeted marketing campaigns and improve customer engagement and satisfaction.
- **Optimized Supply Chain Management:** AI-powered predictive analytics and forecasting tools are helping businesses optimize their supply chain operations, reducing waste, improving efficiency, and enhancing customer satisfaction.
- **Need for Investment and Skills Development:** To fully realize the benefits of AI, businesses must be willing to invest in the technology and develop the necessary skills to effectively utilize it.
- **Balancing Benefits and Challenges:** While the benefits of AI are clear, there are also challenges that businesses must overcome, such as data privacy and security, ethical considerations, and the potential for job loss.

7. Recommendations

Based on the findings of this study, the following recommendations are made for the responsible and transparent use of AI in modern businesses. Organizations can take the following steps to effectively utilize AI in their operations and enhance customer satisfaction:

- i. **Invest in AI training and education:** Employees should be trained on the use of AI technology to ensure efficient implementation and operation.
- ii. **Prioritize data quality and security:** Organizations should ensure the quality and security of data used for AI operations to ensure accurate results and protect customer information.
- iii. **Experiment with AI in various fields:** Companies should experiment with AI in different fields and use cases to find the most effective ways to implement the technology.

- iv. Partner with AI experts: Organizations can form partnerships with AI experts to access the latest technology and stay up-to-date on trends and best practices in the field.
- v. Consider ethical implications: Organizations should consider the ethical implications of AI, such as data privacy and bias, to ensure responsible and transparent use of the technology.
- vi. Businesses should implement robust data privacy policies to ensure the security of customer data and to protect against potential breaches and it conduct regular audits of AI algorithms to ensure that they do not reinforce existing biases or discrimination.
- vii. Businesses should be transparent about the use of AI in their operations and should provide customers with clear information about the data that is being collected and how it is being used.
- viii. Businesses should prioritize the development and implementation of AI applications that are designed to enhance customer satisfaction, rather than those that focus solely on operational efficiency.

8. Conclusion

To summarize, the use of AI in the contemporary business environment carries with it the potential to bring about a sea change in the manner in which companies communicate with their clients and oversee their operations. The benefits of artificial intelligence are abundantly evident, ranging from improved customer service to optimized management of supply chains. Nevertheless, in order for companies to truly appreciate the benefits of AI, they must be ready to invest in the technology and develop the required skills to properly apply it. Only then will they be able to take advantage of AI to its fullest potential. If firms follow these steps, they may attain sustainable levels of consumer happiness, which in turn will promote long-term growth. The application of AI in today's organizations has the potential to significantly boost levels of customer satisfaction by providing more individualized services while also boosting operational effectiveness. Yet, the findings of this study emphasize how critical it is to take into account the ethical and data privacy concerns that are raised by its application. The findings of this study suggest that businesses should be transparent about the use of artificial intelligence (AI), priorities the development of AI applications that enhance customer satisfaction, and take steps to protect customer data and prevent algorithmic bias. These recommendations were made in light of the findings of this study. The use

of AI in the context of contemporary business environments has the potential to completely transform the ways in which companies communicate with their clients and run their enterprises. However, in order for businesses to fully realize the benefits of AI, they must be willing to invest in the technology and develop the necessary skills to effectively utilize it while balancing the benefits and challenges associated with its use. Only then will they be able to fully realize the potential of AI.

In conclusion, the use of AI in the contemporary corporate environment has the potential to bring about a sea change in the manner in which companies communicate with their clients and oversee their operations. Yet, in order for organizations to fully appreciate the benefits that AI has to offer, they must be ready to invest in the technology and develop the skills that are essential to properly deploy AI.

9. Limitations

In the present study, we aimed to investigate the application of AI in the modern business era and its impact on customer satisfaction. However, our research faced several limitations that need to be acknowledged. Firstly, the data availability was limited, as it was challenging to gather sufficient data on the implementation of AI in various businesses. Additionally, we faced limitations in our methodology, as it was difficult to accurately measure the impact of AI on customer satisfaction. Finally, the implementation of AI in a business environment is complex, and various challenges were encountered during the research process, such as resistance to change and difficulties in integrating AI with existing systems.

10.Future Research Directions:

The present study provides a broad overview of the application of AI in the modern business era and its impact on customer satisfaction. However, there are several avenues for future research that need to be explored. Firstly, it would be beneficial to investigate the application of AI in other sectors and industries, such as healthcare and education. Secondly, further research is needed to enhance our understanding of customer feedback and preferences and how AI can be used to tailor services to meet their needs. Additionally, new methods and approaches need to be developed to

improve the integration of AI with existing business systems and ensure sustainable customer satisfaction. Finally, it is important to consider potential challenges and ethical considerations when implementing AI in a business environment and address them in future research. In conclusion, continued research in this field is critical as AI technology continues to evolve and have a profound impact on business practices and customer satisfaction.

References:

- [1] Ameen, N., Tarhini, A., Reppel, A., & Anand, A. (2021). Customer experiences in the age of artificial intelligence. *Computers in Human Behavior*, 114, 106548.
- [2] Bao, Y., Hilary, G., & Ke, B. (2022). Artificial intelligence and fraud detection. *Innovative Technology at the Interface of Finance and Operations: Volume I*, 223-247.
- [3] Benbya, H., Davenport, T. H., & Pachidi, S. (2020). Artificial intelligence in organizations: Current state and future opportunities. *MIS Quarterly Executive*, 19(4).
- [4] Clarke, R. (2019). Principles and business processes for responsible AI. *Computer Law & Security Review*, 35(4), 410-422.
- [5] Daqar, M. A. A., & Smoudy, A. K. (2019). The role of artificial intelligence on enhancing customer experience. *International Review of Management and Marketing*, 9(4), 22.
- [6] Davenport, T. H., & Ronanki, R. (2018). Artificial intelligence for the real world. *Harvard business review*, 96(1), 108-116.
- [7] Deb, S. K., Jain, R., & Deb, V. (2018, January). Artificial intelligence—creating automated insights for customer relationship management. In 2018 8th international conference on cloud computing, data science & engineering (Confluence) (pp. 758-764). IEEE.
- [8] Følstad, A., & Skjuve, M. (2019, August). Chatbots for customer service: user experience and motivation. In *Proceedings of the 1st international conference on conversational user interfaces* (pp. 1-9).
- [9] Galaz, V., Centeno, M. A., Callahan, P. W., Causevic, A., Patterson, T., Brass, I., ... & Levy, K. (2021). Artificial intelligence, systemic risks, and sustainability. *Technology in Society*, 67, 101741.

- [10] George, A. S., & George, A. H. (2023). A review of ChatGPT AI's impact on several business sectors. *Partners Universal International Innovation Journal*, 1(1), 9-23.
- [11] Hasan, I., & Rizvi, S. A. M. (2022). AI-driven fraud detection and mitigation in e-commerce transactions. In *Proceedings of Data Analytics and Management: ICDAM 2021*, Volume 1 (pp. 403-414). Springer Singapore.
- [12] Husain, A. R. A. M., Hamdan, A., & Fadhul, S. M. (2022). The Impact of Artificial Intelligence on the Banking Industry Performance. *Future of Organizations and Work After the 4th Industrial Revolution: The Role of Artificial Intelligence, Big Data, Automation, and Robotics*, 145-156.
- [13] Kovács, G., Bogdanova, D., Yussupova, N., & Boyko, M. (2015). Informatics tools, AI models and methods used for automatic analysis of customer satisfaction. *Studies in Informatics and Control*, 24(3), 261-270.
- [14] Krishna, S. H., Vijayanand, N., Suneetha, A., Basha, S. M., Sekhar, S. C., & Saranya, A. (2022, December). Artificial Intelligence Application for Effective Customer Relationship Management. In *2022 5th International Conference on Contemporary Computing and Informatics (IC3I)* (pp. 2019-2023). IEEE.
- [15] Kumar, V., Rajan, B., Venkatesan, R., & Lecinski, J. (2019). Understanding the role of artificial intelligence in personalized engagement marketing. *California Management Review*, 61(4), 135-155.
- [16] Li, F., & Xu, G. (2022). AI-driven customer relationship management for sustainable enterprise performance. *Sustainable Energy Technologies and Assessments*, 52, 102103.
- [17] Patel, N., & Trivedi, S. (2020). Leveraging Predictive Modeling, Machine Learning Personalization, NLP Customer Support, and AI Chatbots to Increase Customer Loyalty. *Empirical Quests for Management Essences*, 3(3), 1-24.
- [18] Prentice, C., Dominique Lopes, S., & Wang, X. (2020). The impact of artificial intelligence and employee service quality on customer satisfaction and loyalty. *Journal of Hospitality Marketing & Management*, 29(7), 739-756.
- [19] Rese, A., Ganster, L., & Baier, D. (2020). Chatbots in retailers' customer communication: How to measure their acceptance?. *Journal of Retailing and Consumer Services*, 56, 102176.
- [20] Song, X., Yang, S., Huang, Z., & Huang, T. (2019, August). The application of artificial intelligence in electronic commerce. In *Journal of Physics: Conference Series* (Vol. 1302, No. 3, p. 032030). IOP Publishing.
- [21] Stoilova, E. (2021). AI chatbots as a customer service and support tool. *ROBONOMICS: The Journal of the Automated Economy*, 2, 21-21.