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Sumy State University

Academic and Research Institute of Business, Economics and Management

(Institute/faculty)

Department of Economics, Entrepreneurship and Business Administration

(department)

QUALIFICATION WORK

TOWARDS ATTAINING A MASTER'S DEGREE

specialty   *073 Management,*

(code and title)

educational-professional   program   *Business Administration*

(educational-professional / educational-scientific)   (program)

Topic: _ **Influence of AI on Business decision Making**

Student   __ БА.м-21ан   _ Ozims Stanley Chukwuemeka _

(group code)   (surname, name)

The qualification work contains the results of own research. The use of ideas, results and texts of other authors are linked to the corresponding source.

_____   __ Ozims Stanley Chukwuemeka

(signature)   (student's Name and SURNAME)

Supervisor ____ *Oleksandra KUBATKO* _____

(position, academic degree, academic title, Name and SURNAME)   (signature)

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Ministry of Education and Science of Ukraine

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DEPARTMENT OF ECONOMICS, ENTREPRENEURSHIP AND BUSINESS ADMINISTRATION

APPROVED

Head of the Department

of Economics, Entrepreneurship and Business Administration

_____Oleksandra Karintseva

"___" _____ 20___ .

ASSIGNMENT

for the qualification work

towards attaining a Master's Degree

Student of group БА.м-21ан, 2 year of study___ARIBiEM_____

(Institute)

Specialty 073 "Management"

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Ozims Stanley Chukwuemeka _____

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Topic of the qualification work: **Influence of AI on Business decision Making**

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Artificial intelligence and Decision-Making in an Organization

Concept of Business Decision-Making in an Organization

Factors Affecting Business Decision-Making

Influence of AI on Business Decision-Making

Theoretical Framework and Technological Determinism of Business Decision-Making in an Organization

Empirical Review Business Decision-Making in an Organization

Theoretical Framework of Business Decision-Making in an Organization

Empirical Hypothesis Testing how business decisions depends on the integration of AI

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Familiarity with AI in Business Decision-making

 Ethical considerations or biases in AI-driven decision

Showing the implementation of AI technologies for business decision-making_____

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Master Thesis supervisor *Oleksandra Kubatko* _____

(academic title, Name, and SURNAME)

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Student signature

Notes:

This assignment constitutes a crucial component of the qualification work required for the attainment of an educational degree and is positioned immediately following its title page.

Upon task completion, students are expected to acquaint themselves with the following:

A calendar schedule delineating the preparation stages of the qualification work, inclusive of specified deadlines for each stage's implementation.

- The procedural guidelines for assessing the qualification work to identify any indications of academic plagiarism.
- The criteria and requirements governing the evaluation of the qualification work, providing a clear understanding of the expectations and standards to be met.

Introduction

Decision-making stands as a cornerstone for success in an ever-evolving landscape of business enterprises (Sugiarto, 2023). As industries adapt to a digital era, the integration of Artificial Intelligence (AI) into business processes has emerged as a transformative force (Wamba-Taguimdje et al., 2020). AI technologies, encompassing machine learning, natural language processing, and predictive analytics, are reshaping the traditional paradigms of decision-making within organizations (Cantu-Ortiz, 2021). This evolution prompts a critical examination of the intricate interplay between AI systems and the decision-making frameworks employed by businesses.

Businesses' perspectives on decision-making processes have completely changed as a result of the introduction of AI technologies (Stone et al., 2023). Historically, human intuition, past experiences, and a small amount of available data were frequently used to guide decisions. But as AI becomes more widespread, businesses are using advanced analytics and algorithms more often to guide and improve their decision-making (Gupta et al., 2023). This change is more than just technological; it represents a fundamental rethinking of the environment in which decisions are made, upending long-standing conventions and bringing with it both opportunities and difficulties.

Gupta et al. (2023) claim that organizations can analyze enormous volumes of data with previously unheard-of speed and accuracy when artificial intelligence (AI) is used in decision-making. AI systems excel at extracting meaningful patterns and insights from complex datasets, providing decision-makers with a more comprehensive and accurate understanding of the business environment (Kumar, 2023). This capability fundamentally alters the decision-making dynamic,

empowering organizations to make data-driven decisions that were once considered unattainable.

Moreover, one of the significant contributions of AI to business decision-making is its role in predictive analytics (Sarker, 2021). Bharadiya (2023) explained that through the use of sophisticated algorithms, AI can analyze historical data, identify trends, and forecast future scenarios. This predictive capability enhances strategic planning and risk management, enabling businesses to proactively address challenges and capitalize on emerging opportunities (Sarker, 2021). Therefore, AI acts as a strategic partner, augmenting human decision-making by providing valuable foresight into the consequences of different choices.

Moreover, Dhoni, (2023) explained that the integration of AI in decision-making processes extends beyond mere data analysis. Skrodelis et al., (2023) also explained that the advent of Natural Language Processing (NLP) has enabled machines to comprehend and generate human-like language, which has facilitated interaction between AI systems and decision-makers. Therefore, this linguistic proficiency not only enhances the accessibility of AI insights but also streamlines the communication between diverse stakeholders, fostering a collaborative decision-making environment.

However, the transformative influence of AI on business decision-making is not without its complexities and ethical considerations (Rodgers et al., 2023). The more organizations increasingly rely on AI algorithms, questions about accountability, transparency, and bias come to the forefront. The 'black-box' nature of some AI systems poses challenges in understanding the rationale behind specific decisions, raising concerns about the ethical implications of delegating critical choices to non-human entities (Mokander et al., 2021).

This research work, therefore, delves into the influence of AI on business decision-making. Through the examination of the technical, strategic, and ethical dimensions of this phenomenon, the study seeks to unravel the implications that AI

integration brings to the decision-making table. And by a comprehensive analysis, this study aims to contribute to the understanding of how businesses can harness the power of AI to enhance decision-making while navigating the ethical considerations inherent in the use of AI.

1.   Business Decision-Making in an Organization
1.1   Artificial intelligence and Decision-Making in an Organization

Artificial intelligence incorporation into business decision-making processes is a paradigm shift that has significant implications for business enterprises. While it is clear that AI can improve decision-making, several difficulties and complications need to be addressed (Kumar, 2023). Schlögl et al., (2019) explained that the adoption of AI in business decision-making is not without hurdles. Organizations face technical and operational challenges in integrating AI systems into existing workflows (Benbya et al., 2020). Resistance to change from stakeholders who are accustomed to traditional decision-making processes further complicates the implementation of AI (Schlögl et al., 2019). Saha et al., (2023) also explained that the infusion of AI into decision-making processes introduces ethical considerations that demand meticulous scrutiny. AI systems, when trained on biased datasets, have the potential to perpetuate and even exacerbate existing biases (Rodgers et al., 2023). Therefore, this raises concerns about fairness and equity in decision outcomes, particularly when AI is employed in critical areas such as hiring, finance, and healthcare. The ethical implications of biased decision-making not only impact individuals but also have broader societal consequences, necessitating an understanding of how AI can be ethically integrated into business decision-making frameworks. Lockey et al., (2021) also explained that the reliance on AI introduces new dimensions of risk, particularly concerning the security of AI systems and the data they process. AI is becoming more and more prone to cyberattacks as it advances in sophistication. Maintaining the integrity and dependability of decision-making processes depends critically on AI systems' cybersecurity. Given the possible impact of AI-related hacks on decision-making, preventative steps against vulnerabilities and illegal access are necessary.

Therefore, the major goal of this study is to examine comprehensively the influence of Artificial Intelligence (AI) on business decision-making processes, other objectives include to:

- assess the Integration of AI in Business Decision-Making

- evaluate the contribution of AI on the accuracy of business Decision.

- examine the Ethical Implications of AI in Decision-Making

In order to provide solutions, the following research questions are posed.

- How has AI been integrated into Business Decision-Making?

- What are the contribution of AI to the accuracy of business Decisions?

- What are the ethical implications of AI in decision-making?

This research uses available literature as a primary source of information and data to attempt to answer the questions mentioned earlier.

1.2 Concept of Business Decision-Making in an Organization

Business decision-making is a complex and critical aspect of organizational management, influencing the trajectory of enterprises and their ability to navigate an ever-evolving marketplace. Decision-making in business enterprise comprises psychological, organizational, and strategic perspectives. The psychological aspects of decision-making have been extensively explored in the literature (Nazarov and Miltina, 2023, Eberhard, 2023). Wakker (2023), explained that Kahneman and Tversky's prospect theory (1979) laid the foundation for understanding how individuals make decisions under uncertainty. Research in behavioral economics and psychology has identified cognitive biases, such as anchoring, confirmation bias, and loss aversion, that can significantly impact

decision outcomes (Banerji et al., 2020; Kartini & NAHDA, 2021). The understanding of these biases is crucial for businesses seeking to enhance the quality of decision-making at both individual and group levels.

Organizations are complex entities where decisions are often made through processes involving multiple stakeholders (Sydelko et al., 2021). Research by Shannon et al., (2019) introduced the concept of "bounded rationality," highlighting that decision-makers within organizations often operate with limited information and cognitive resources. The organizational decision-making literature emphasizes the role of structures, routines, and communication channels in shaping how decisions are formulated and executed (Joseph & Gaba, 2020, Sydelko et al., 2021). The concept of decision-making within the organizational culture and climate has also gained prominence (Mokander et al., 2021).

According to Sugiarto (2021), Strategic decision-making is central to the long-term success of businesses. Scholars such as Dagnino et al., (2021) argue that strategic decisions play a pivotal role in shaping the competitive advantage of firms. They explore decision-making processes related to resource allocation, diversification, and competitive positioning. The Study of Zhou et al., (2019) also explores how strategic choices affect a company's success and how dynamic capabilities help a company adjust to shifting conditions.

The emergence of the digital era has expanded the scope of corporate decision-making. Organizations can now make decisions based on real-time data and predicted insights thanks to information technology and data analytics (Davenport et al., 2010). The research on digital decision-making conducted by Green et al. (2018) and Kumar et al. (2018) examines big data, artificial intelligence, and machine learning, emphasizing how these technologies might support decision-making procedures.

Nazarov and Mitina (2023), explained that decision-making is influenced by cultural factors, and research in cross-cultural management has shed light on how

decision-making processes vary across different cultures. Cultural dimensions, such as individualism-collectivism and power distance, impact decision-making styles and preferences (Mann and Sahni, 2019). Understanding the relationship between culture and decision-making is crucial for businesses operating in globalized environments.

1.3. *Factors Affecting Business Decision-Making*

Business decision-making is a multifaceted process influenced by several factors that span individual, organizational, environmental, and contextual dimensions Zhou et al., (2019). These factors have provided insights into the complexities that decision-makers face in various settings.

At the individual level, cognitive and psychological factors significantly impact decision-making. Wakker, (2023) explained that the works of Kahneman and Tversky (1979) on prospect theory have illuminated how individuals make decisions under conditions of uncertainty, highlighting the influence of cognitive biases. Individual decision-maker's risk attitudes, cognitive styles, and emotional states contribute to the complexity of the decision-making process (Banerji et al., 2020). Understanding how these individual factors come into play is crucial for comprehending decision-making outcomes in business.

Joseph and Gaba (2020) opined that organizational structures, cultures, and processes play a pivotal role in shaping business decisions. The concept of bounded rationality, introduced by Shannon et al., (2019), underscores the limitations individuals face in processing information, emphasizing the role of organizations in structuring decision-making. Research by Sutcliffe and McNamara (2001) further explores how routines and procedures within organizations influence decision-making processes. The organizational context, including power dynamics and communication channels, contributes to the complexity of decision-

making (Joseph and Gaba, 2020). Organizations need to consider these factors to optimize decision-making processes.

Ashill and Jobber, (2014) explained that the external environment significantly affects business decision-making. Pfeffer and Salancik (2015) emphasized how organizations rely on their external environment and how resource constraint affects how decisions are made. The decision-making environment is shaped by industry-specific factors, including market developments, regulatory changes, and technological advancements (Liu et al., 2015). Decision-makers must navigate the dynamic interplay between internal organizational factors and external influences to make informed and adaptive choices.

Technological developments have changed the information landscape and affected how firms collect, handle, and apply information to make decisions. In their 2010 discussion of how information technology affects decision-making, Davenport and Harris highlighted the importance of data analytics and real-time information. The emergence of big data, machine learning, and artificial intelligence technologies has presented decision-makers with both new opportunities and difficulties (Green et al., 2018). For organizations to properly use these technologies, they must adjust to the rapidly evolving technology landscape.

Human factors, such as interpersonal relationships, collaboration, and leadership styles, contribute significantly to decision-making within organizations (Abubakar et al., 2019). Additionally, cultural factors play a crucial role in shaping decision-making preferences and styles across different regions and industries (Pfeffer and Salancik, 2015)). Understanding and navigating these human and cultural dimensions are essential for effective decision-making, especially in globalized business environments.

1.4. Influence of AI on Business Decision-Making

A new era marked by improved analytical capabilities, predictive insights, and the potential for disruptive change has begun with the integration of Artificial Intelligence (AI) into commercial decision-making processes. AI's fundamental influence on business decision-making stems from its rapid and accurate analysis of large datasets. Scholars like Stone et al. (2020) highlighted the revolutionary potential of data-driven decision-making, claiming that AI technologies allow businesses to leverage large data for more strategic and informed decision-making. Specifically, machine learning algorithms have demonstrated their value in revealing patterns and trends in datasets that human analysts could miss, thus enhancing the decision-making process (Davenport et al., 2010).

The advent of AI has given rise to predictive analytics as a cornerstone of strategic planning. By leveraging historical data and employing algorithms capable of identifying patterns, organizations can anticipate future trends and potential challenges (Lockey et al., 2021). This predictive capability enhances the strategic foresight of decision-makers, enabling proactive responses to market shifts, customer preferences, and competitive landscapes (Kumar et al., 2018). As a result, AI serves as a strategic ally, contributing to the development of agile and responsive business strategies.

The infusion of AI into decision-making processes introduces ethical considerations that have garnered significant attention in the academic discourse. Benbya et al. (2020) emphasized the importance of addressing bias in AI algorithms, particularly when trained on datasets reflecting historical inequalities. The perpetuation of biases in decision outcomes, such as those related to gender, race, or socioeconomic status, raises concerns about fairness and equity (Schlogl et al., 2019). Researchers call for the development of ethically grounded AI systems

that prioritize transparency, accountability, and fairness in decision-making (Rodgers et al., 2023).

As organizations navigate the integration of AI into decision-making, understanding the dynamics of human-AI collaboration becomes paramount. Olan et al., (2022) argue that effective collaboration involves complementing the strengths of AI with human expertise, emphasizing the importance of maintaining a balance between technical precision and human intuition. Studies suggest that successful integration hinges on fostering a collaborative culture, where human decision-makers actively engage with AI-generated insights, leveraging their interpretative skills to extract meaningful implications (Olan et al., 2022).

The adoption of AI in business decision-making is not without its challenges. Research by Rodgers et al., (2023) identifies technical, organizational, and cultural barriers to implementation. Technical challenges include the integration of AI systems with existing infrastructure, data quality issues, and the need for specialized expertise. Organizational barriers often revolve around resistance to change, as employees and stakeholders accustomed to traditional decision-making processes may be skeptical or apprehensive about AI-driven approaches (Saha, 2023). Cultural factors, including a lack of trust in AI systems, further complicate the implementation landscape.

The increasing reliance on AI introduces new dimensions of risk, particularly concerning the cybersecurity of AI systems. As AI technologies become more sophisticated, they become attractive targets for cyber threats (Stone et al., 2020). The potential consequences of AI-related cyberattacks on decision-making processes, including data manipulation and unauthorized access, highlight the need for robust cybersecurity measures to safeguard the integrity and reliability of AI-driven decisions (Mokander, 2021).

2. Theoretical Framework and Technological Determinism of Business Decision-Making in an Organization

2.1 Empirical Review Business Decision-Making in an Organization

The emergence of AI has resulted in a major transformation in making business decisions. According to Trunk et al., (2020) a dynamic relationship exists between making the right business decisions and as well as Artificial Intelligence (AI). There are several insights from research studies on the impact of AI on decision-making processes (). The study of Gupta et al., (2023) explains how AI algorithms analyze large business datasets at unparalleled speeds, thereby providing decision-makers with data-driven insights into decision-making processes. The study iterated how AI has impacted business processes leading to paradigm shifts in cultural and organizational practices, especially in making data-driven decisions (Gupta et al., 2023).

Furthermore, the research conducted by Saadatmanesh, (2023) showcases the transformative ability of AI-powered models to enhance stakeholders in making business decisions to predict market trends, respond to dynamic business environments, and also to optimize resource allocation. According to Stone et al., (2020), the advent of AI has placed more emphasis on the importance of predictive analytics and forecasting as a critical component of business decision-making. However, the study of Chintalapati and Pandey, (2022) explores the impact of AI on marketing analytics. The study highlighted the role of AI in personalized marketing strategies and campaign optimization. Also, Rodgers et al., (2023) applied AI models in the human resources decision-making process. The study investigated HR practices and how AI supports talent acquisition, performance evaluation, and work planning. The study of Mohapatra et al., (2022) also

showcases the impact of AI on decision-making in the manufacturing industry. Investigating the manufacturing sector, the study explores how AI technology can contribute to process control, quality assurance, and safety management. Moreover, Gupta et al., (2023), show the influence of AI-drive automation on the optimization of operational decisions.

The integration of AI in business decision-making cannot be overemphasized. Zekos and Zekos (2021) explained that AI has become a reliable instrument in risk management. Belhadi et al., (2022) analyzed how AI algorithms can use historical data to identify and mitigate risks, thereby contributing to more resilient and adaptive decision processes and business operations. The study of Wong et al., (2022) also examines the influence of AI technology in managing risk within the manufacturing sectors, thereby showcasing how machine learning contributes to proactive decision-making measures.

Sharma et al., (2022) explore the use of AI in retail decision-making while the research of Belhadi et al., (2022) gives insights into how AI has impacted the decision-making supply chain and logistic planning. The study of Davis-Stramek et al., (2015) examines the efficiency of decision-making in the supply chain. According to Baryannis et al., (2019) AI application in the supply chain has led to optimizing logistics, demanding forecasting as well as risk management. However, there is more rapidly evolving research on understanding the impact of AI on decision-making, emerging technologies, industrial applications, and socioeconomic life. The transformative impact of AI on contemporary business decision-making provides a foundation for future research for businesses navigating the use of AI-driven decisions.

2.2 Theoretical Framework of Business Decision-Making in an Organization

Technological Determinism

The theory of technological determinism is rooted in the belief that advancement in technology can drive societal change Smith and Marx, (1994). This theory offers valuable insight into the influence of AI on business decision-making (Dwivedi et al., 2021). Since AI has become a major backbone of organizational processes, they have become integral to decision-making in an organization. Several studies such as Duan et al., (2019) argued that the adoption of AI has altered the decision-making processes through the introduction of new possibilities, capabilities, and challenges. However, from the standpoint of the Technological determinism theory, it is safe to say that the use of AI in decision-making processes can be seen as a deterministic progression (Smith and Marx, (1994). This is due to the revolution brought about by the integration of AI technologies in the way organizations make their decisions. This theory therefore motivated this research to explore not only the immediate impact of AI but also the changes it brings to the organization as well as society.

Socio-Technical System Theory

This theory emphasizes the interdependence of social and technical elements within organizations (Cao et al., 2021). The theory shows the importance of considering both the technological and human components when applied to the study of AI in business decision-making (Rizun and Shmelova, 2017). The study of Jarrahi (2018) argues that effective integrations of AI require an understanding of how these systems interact within the organization. This theory encourages researchers to investigate not only the technical capabilities of AI but also the organizational structures, culture, and human factors that shape decision processes (Cao et al., 2021). This perspective recognizes that successful AI integration involves aligning technological advancements with human needs and

organizational goals. Organizations, therefore, need to navigate the intricate balance between technical efficiency and social adaptability to fully harness the potential of AI in decision-making (Rizun and Shmelova, 2017).

Human-Computer Interaction (HCI) perspective

The HCI perspective focuses on the interaction between humans and computer systems, offering insights into the design and usability of AI interfaces and their impact on decision-makers (Xu et al., 2023). In making business decisions the HCI theory suggests that the success of AI integration is closely tied to the user experience. The research by Saeed and Omlin (2023) explained the importance of user-friendly interfaces, asserting that decision-makers must be able to interpret and trust the insights generated by AI systems (Xu et al., 2023). Therefore, the integration of AI into decision-making processes is not merely a technical challenge but also a human-centered one. This aligns with the HCI-perspective theory. The theory also draws attention to the design considerations, communication channels, and user experiences that influence the effectiveness of AI in supporting decision-makers. This perspective shows the need for interaction between AI systems and human decision-makers, ensuring that the technology enhances rather than hinders the decision-making process (Saeed and Omlin, 2023).

Organizational Learning

The theory of Organizational Learning posits that organizations evolve and improve through continuous learning processes (Ege et al. 2017). This theory, when applied to the integration of AI in business decision-making, suggests that

organizations must cultivate a learning culture to maximize the benefits of AI technologies (Ege et al. 2017). Jarrahi, (2018) explains the importance of organizations adapting their decision-making processes based on feedback and evolving data provided by AI systems. Therefore, the theory of organizational learning offers a dynamic perspective on how AI influences decision-making (Ege et al., 2017). The theory prompts researchers to explore how organizations can learn from the insights generated by AI, adapting and refining their decision-making approaches over time. Therefore, understanding the role of Organizational Learning in AI and decision-making is crucial for organizations seeking to leverage AI technologies not just as tools but as catalysts for continuous improvement and adaptive decision processes (Jarrahi, 2018).

3. Research Methodology of *AI* estimation *on Business Decision-Making*

3.1. Research Design and Data Collection

Research methodology is defined as the methodical and deliberate investigation conducted to provide knowledge for the solution of a problem, methodology is defined as the activities involved in gathering and analyzing all necessary data and information for the research assignment (Kapur, 2018). A research methodology is the methodical, scientific process of gathering, documenting, and evaluating information regarding issues and challenges related to the distribution of substances or objects that exist on the surface of the earth as well as the management and administration of goods and services (Flick, 2015). The many types of methods utilized to obtain the required data are the main topic of this chapter. It covers the procedures needed to accomplish the goals and objectives of a research project.

The research adopted a mixed-methods approach, combining quantitative and qualitative methods to provide a comprehensive understanding of the influence of Artificial Intelligence (AI) on business decision-making (Hah and Goldin, 2021). The study involves both survey-based data collection and in-depth interviews with professionals in diverse industries. A stratified random sampling technique was employed to ensure representation from various industries and organizational sizes. The target sample size is 20 professionals involved in decision-making roles within their organizations. Purposive sampling were be used to select participants for in-depth interviews. Approximately 5-10 professionals with diverse experiences in AI-driven decision-making were invited for interviews.

The methods of data collection used in this research project are Primary data. A structured questionnaire was developed based on the research objectives. The survey was administered electronically through professional networks, industry forums, and email invitations. Data were collected using Google Forms, ensuring anonymity and confidentiality.

3.2 *Data Analysis Method*

Frequency, Percentage, Bar chart and Pie chart were used to analyze survey responses. Inferential statistics such as Chi Squared was employed to identify significant relationships between variables.

$$\chi^2 = \sum_{i,j=1}^{n} \frac{(f_0 - f_e)^2}{f_e}$$

Where: X^2 = chi-square, f_o = frequency observed, f_e = frequency expected, df = degree of freedom

$$df = (r - 1)(c - 1)$$

r = Number of rows, c = number of columns. Note: tolerance level is 5% or 0,005.

Table 1: Demographic Analysis of the Respondents

		Frequency	Percentage
Gender	Male	16	55.17
	Female	13	44.83
Age	Under 18 years	1	3.45
	18-24 years	7	24.14
	25-34 years	10	34.48
	35 – 44 years	5	17.24
	45-54 years	4	13.79
	55-64 years	2	6.90
	65 years and above	0	0.00
Occupation	Executive/Managerial	4	13.79
	IT/Technology	8	27.59
	Marketing/Sales	5	17.24
	Finance/Accounting	4	13.79
	Operations	2	6.90
	Others	6	20.69
Industry	Manufacturing	3	10.34
	Technology	5	17.24
	Healthcare	14	48.28
	Finance	4	13.79
	Retail	3	10.34
	Others	0	0.00

Table 1 shows that gender distribution has influenced the perception and use of AI in business decision-making. About 55% are Male while about 45% are Female. The result indicates that most of the respondents are in the 18-34 age range; this suggests that younger individuals, who may be more tech-savvy, are a key demographic for AI-related decisions. Limited representation from individuals aged 65 and above might imply a potential gap in understanding the needs or concerns of older decision-makers regarding AI. The IT/Technology sector has a significant representation, suggesting a high level of involvement or interest in AI applications. Executives/Managers and those in Marketing/Sales may have different perspectives on how AI influences decision-making, emphasizing the importance of considering diverse roles. The dominance of the healthcare industry in the sample indicates that findings might be particularly relevant to this sector. Industries with no representation might not benefit fully from the insights gathered, and the study's generalizability may be limited.

Fig. 1: Familiarity with AI in Business Decision-making

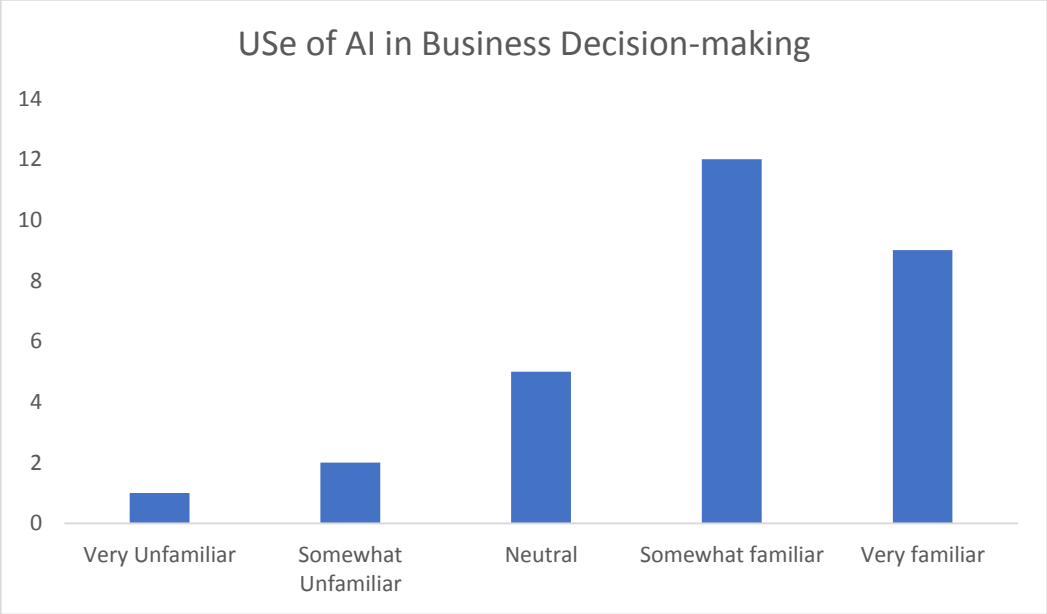USe of AI in Business Decision-making

Fig 1 indicates that most of the respondents are somewhat familiar while some are very familiar with the integration of AI in business decision making. This result indicated a higher level of acknowledgment and familiarity with the use of AI Integration in Business decision-making.

Fig 2. Showing the implementation of AI technologies for business decision-making

Implementing AI technologies for business decision-making

Not Sure 17%
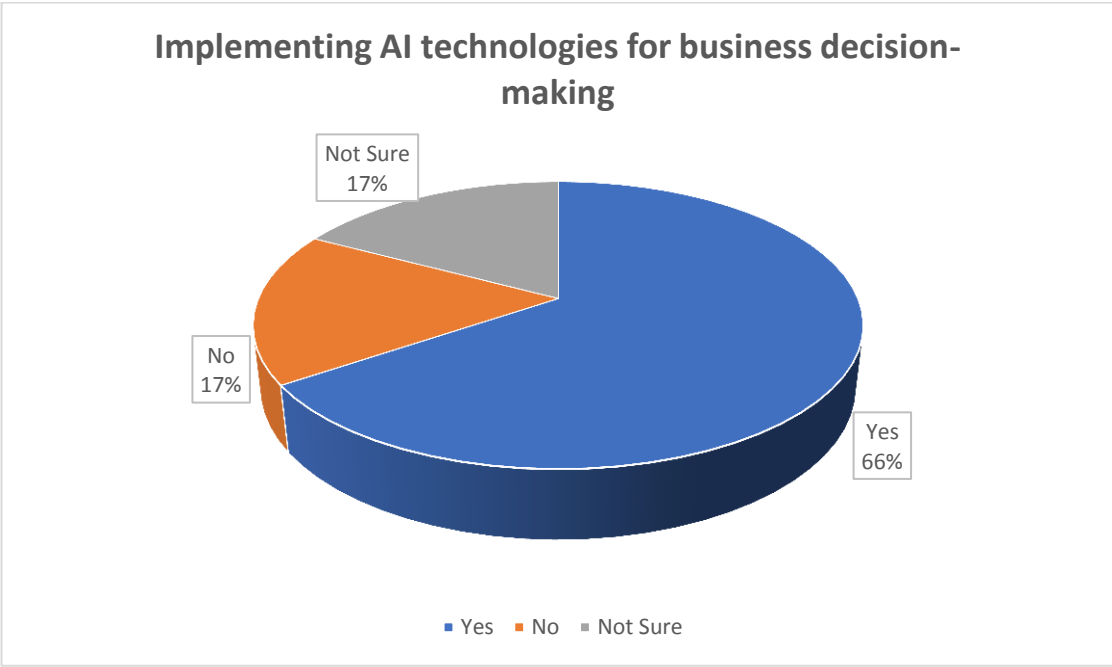
No 17%

Yes 66%

■ Yes ■ No ■ Not Sure

Fig 2 shows that 60% of the respondents affirm that AI technologies are implemented in business decision-making in their organization. 17% of the respondents affirm that AI isn't involved in their business decision-making while 17% of the respondents are not sure of the implementation of AI technologies in their business decision-making. This result shows that there is a significant level of adoption of AI in business decision-making among the respondents, indicating a recognition of the value that AI can bring to the decision-making landscape.

Table 2: Perceptions of AI Impact on Business decision-making

	Frequency	Percentage
Significantly Slower	2	6.90
Slightly Slower	2	6.90
No Impact	3	10.34
Slightly Faster	9	31.03
Significantly Faster	13	44.83

Table 2 indicates that a small portion of respondents perceived AI as slowing down business decision-making. However, about 10.34% believe that AI has no significant impact on the speed of decision-making in their organizations.

A majority of respondents (75.86%) believe that AI has a positive impact on decision-making speed. The fact that 75.86% of respondents perceive AI as making decision-making either slightly or significantly faster suggests a positive outlook on the role of AI in expediting business decisions. AI technologies are perceived as valuable tools for streamlining decision-making processes and gaining a competitive edge in the business environment.

Table 3: Contribution of AI to Accuracy of Business Decisions

	Frequency	**Percentage**
Do not Contribute	0	0.00
Slightly Contribute	1	3.45
Neutral	7	24.14
Moderately Contributes	13	44.83
Strongly Contributes	8	27.59

Table 3 shows that 72.42% of respondents perceive AI as making a positive contribution to the accuracy of business decisions. The majority of respondents believe that AI has a role in enhancing the accuracy of decision-making processes within their organizations. However, 24.14% of respondents neither agree nor disagree with the statement that AI contributes to the accuracy of business decisions. The neutrality suggests a segment of respondents who may be undecided or require more concrete evidence or experience to form a strong opinion about the impact of AI on decision accuracy.

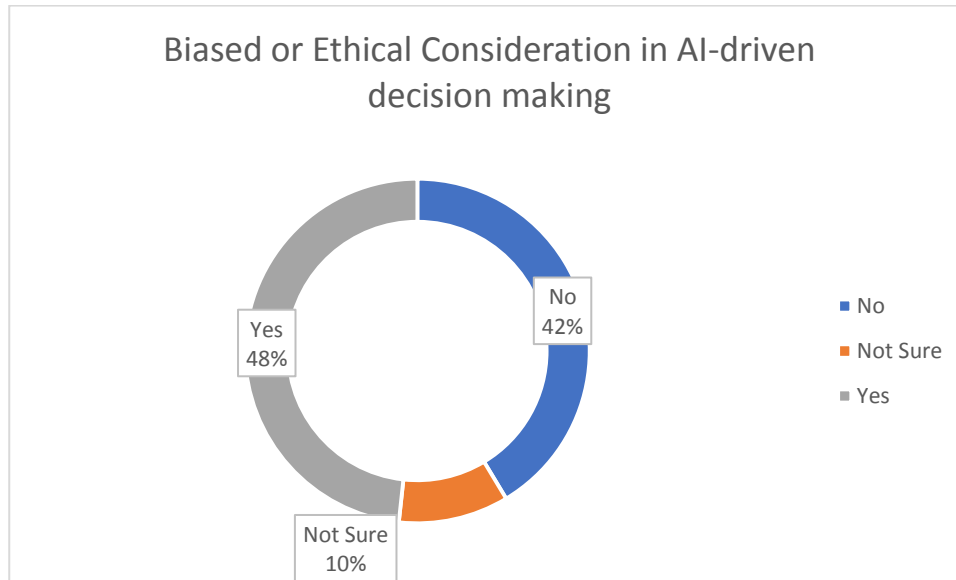*Fig 3. Ethical considerations or biases in AI-driven decision*

Fig.3 shows that 48% of the respondents have experienced bias in AI-driven decision-making while 42% haven't experienced bias. 10% are not sure if they have ever experienced bias in AI-driven decision-making. The fact that 48% of respondents have experienced bias in AI-driven decision-making suggests a notable proportion of individuals who have encountered issues related to fairness or equity in the outcomes of AI algorithms.

3.3. Empirical Hypothesis Testing how business decisions depends on the integration of *AI*

The Hypothesis is to determine if the integration of AI depends on the accuracy of business decisions. Tables 4 and 5 give the result of the contingency table and the chi square test respectively

H_0: The Accuracy of business decisions does not depends on the integration of AI

H_1: The Accuracy of business decisions does depends on the integration of AI

Table 4: Contingency Table

		AI Integration			Total
		No	Yes	Not Sure	
Accuracy of Business Decision	Slightly Contribute	1	0	0	1
	Neutral	2	4	1	7
	Moderately Contributes	2	8	3	13
	Strongly Contributes	0	7	1	8
Total		5	19	5	29

The table shows the distribution of respondents based on both AI integration (No, Yes, Not Sure) and the perceived accuracy of business decisions (Slightly Contribute, Neutral, Moderately Contributes, Strongly Contributes).

Table 5: Chi-Square Table

	Value	df	P-Value
Pearson Chi-Square	7.819	6	.252
N of Valid Cases	29		

The Chi-Square tables show that the P-value of 0.252 is greater than the significance level of 0.05. Since the P-value is not less than 0.05, we fail to reject

the null hypothesis. There is insufficient evidence to suggest that the integration of AI significantly depends on the accuracy of business decisions.

The lack of a significant relationship between AI integration and the accuracy of business decisions suggests that, based on the current data, the two variables are not strongly associated. Organizations may need to explore other factors that contribute to the accuracy of business decisions, as the integration of AI alone may not be a decisive factor.

4.   Conclusions

The study conducted a comprehensive analysis to investigate the perceptions and experiences of individuals regarding the integration of artificial intelligence (AI) in business decision-making. The study involved a detailed examination of demographic characteristics, AI awareness, implementation status, perceived impact on decision-making speed and accuracy, and ethical considerations related to bias in AI-driven decision-making.

Based on the findings in this study, it can be concluded that the gender and age distribution of respondents influence the perception and use of AI in business decision-making. The study also concluded that AI-driven decisions are dominant in the Healthcare sector. Furthermore, based on the findings in the study, it is concluded that AI awareness and implementation indicated a generally positive outlook, with a significant level of acknowledgment and familiarity among respondents. Also, there positive perception of AI making decisions faster with a positive contribution to the accuracy of business decisions. However, there is a record of some biases in AI-driven decision-making. This highlights a significant concern in the fair and equitable application of AI algorithms. This shows the importance of addressing biases to ensure ethical decision-making.

The hypothesis testing aimed to determine if the integration of AI depends on the accuracy of business decisions. The chi-square test results concluded that there is insufficient evidence to suggest a significant relationship between AI integration and decision accuracy. This suggests that organizations may need to consider other factors influencing decision accuracy beyond the integration of AI.

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Appendix A. Letter of support

**Академія підприємництва
і менеджменту України**

Україна, м. Суми, 40014,
вул. Петропавлівська, буд. 98-А-1
Тел: +380-542-333297 / 335774

e-mail: melnyksumy@gmail.com

No. 59/2 from December 13 , 2023

LETTER OF SUPPORT

The Academy of Entrepreneurship and Management of Ukraine (Sumy regional branch) confirms the high relevance of the implementation of the Ozims Stanley Chukwuemeka diploma project on " Influence of AI on Business decision Making ".

The Academy highly appreciates the scientific potential and the level of implementation of practical developments in the field of entrepreneurship and trade. In particular, an acquisition of positive perception of AI making decisions fasters accuracy of business decisions . However , there is a record of some biases in AI- driven decision-making . This highlights a significant concern in the fair and equitable application of AI algorithms .

The Academy plans to use the results of the work for the scientific justification of the development strategy of the region's enterprises.

Director
Academy of Entrepreneurship and
Management of Ukraine
Leonid Melnyk