# CHATGPT IN SUSTAINABLE BUSINESS, ECONOMICS, AND ENTREPRENEURIAL WORLD: PERCEIVED USEFULNESS, DRAWBACKS, AND FUTURE RESEARCH AGENDA

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#### Abstract

Considering some drawbacks, the application of Chat Generative Pre-training Transformer (ChatGPT) in sustainable business, economics, and entrepreneurial projects has numerous advantages. This review seeks to comprehend the present scenario of ChatGPT utilization in business, economics, and entrepreneurial domains and its perceived benefits and drawbacks. The researchers employed a scoping literature review. Researchers used the SCOPUS and Google Scholar databases from January 2023 to March 2024. The research employed a five-stage process to design the study along with the guidelines of the PRISMA-ScR checklist. Finally, to synthesize the result, researchers used a thematic framework. Researchers included 40 studies excluding non-English records, clinical studies on ChatGPT, comparisons of ChatGPT performance on examinations to people and publications from non-academic sources like newspapers, internet websites, magazines, etc. The findings reveal that ChatGPT can augment decisionmaking procedures and boost the effectiveness of diverse business, economic, and entrepreneurial operations. In addition, organizations can enhance their ability to engage with consumers and clients, resulting in improved relationship-building and quick decision-making processes. Moreover, the overdependence on ChatGPT raises ethical and privacy apprehensions. It is crucial to consider that ChatGPT requires further improvement in terms of reliability; it is currently prone to numerous errors and generates unsuitable responses for some contexts. The study also provides directions for future research on the application of ChatGPT. Ultimately, business organizations, entrepreneurs, and general readers will comprehensively understand the advantages and disadvantages of incorporating ChatGPT in the business, economics, and entrepreneurship world.

#### **Research Paper**

**Keywords:** ChatGPT; Challenges; Economics; Entrepreneurship; Sustainable Business; Perceived Usefulness; Scoping Review; and TAM

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## Introduction

ChatGPT, a buzzword in the present world relying on a Large Language Model (LLM) impacting multiple facets of our lives as this era can easily be called an "Era of AI" (Rahaman, Ahsan, Anjum, Rahman, et al., 2023). While adopting ChatGPT is still nascent, academic research is beginning to gravitate towards them, with experts consistently evaluating their reliability and efficacy (Abu Shawar & Atwell, 2007; Albayati, 2024; Altun et al., 2024; Aydin & Karaarslan, 2023; Dahmen et al., 2023; Dwivedi, Pandey, et al., 2023; Ghimire et al., 2024; Gordijn & Have, 2023; Iku-Silan et al., 2023; Kumar et al., 2024; Kung et al., 2023; Mich & Garigliano, 2023, 2023; Pavlik, 2023; Raman et al., 2023; Rosen & Saban, 2023; Shen et al., 2023; Sherif et al., 2024; Shihab et al., 2023; van Dis et al., 2023; Vrontis et al., 2023). There was a booming interest regarding this particular topic, and this can be evidenced by indicators; the number of scientific papers published covering this specific topic (Alawida et al., 2023; Albayati, 2024; Iku-Silan et al., 2023; Pavlik, 2023), interviews with the experts of Artificial Intelligence (Dwivedi, Kshetri, et al., 2023), conferences sections, and the public media coverage it got, such as the articles in magazines, numerous online podcasts, Facebook, YouTube and other social media contents, TV programs, etc (Dahmen et al., 2023; Dwivedi, Kshetri, et al., 2023; Fui-Hoon Nah et al., 2023; Sliż, 2024).

ChatGPT launched an initial impression as "Chatbot" that can simulate the style of conversation like humans for entertainment purposes. But in a broader context, it has a different set of purposes beyond that (Abu Shawar & Atwell, 2007; Altun et al., 2024; Iku-Silan et al., 2023; van Dis et al., 2023); ChatGPT is assisting users' queries; responding a nice way with sophisticated answers, just like a nonhuman assistant to the humans (Cao et al., 2023; Curtis

& ChatGPT§, 2023; Jain et al., 2023; Rahaman, Ahsan, Anjum, Rahman, et al., 2023; M. Rahman et al., 2023). This cutting-edge technological wonder has implications in many aspects, in terms of business and society in several areas, such as e-commerce, sports, education, healthcare, entrepreneurship, banking, genetic engineering, chemical engineering, and many other service sectors (Abu Shawar & Atwell, 2007; Albayati, 2024; Altun et al., 2024; Aydin & Karaarslan, 2023; Dahmen et al., 2023; Dwivedi, Pandey, et al., 2023; Ghimire et al., 2024; Gordijn & Have, 2023; Iku-Silan et al., 2023; Kumar et al., 2024; Kung et al., 2023; Mich & Garigliano, 2023, 2023; Pavlik, 2023; Raman et al., 2023; Rosen & Saban, 2023; Shen et al., 2023; Sherif et al., 2024; Shihab et al., 2023; van Dis et al., 2023; Vrontis et al., 2023). Researchers and other professionals have already tried to adopt ChatGPT to take help in many aspects including but not limited to writing research papers, essays and speeches (Lund & Wang, 2023; M. Rahman et al., 2023), enhancing employee collaboration and productivity (Dwivedi, Kshetri, et al., 2023; Prieto et al., 2023; Vrontis et al., 2023), virtual assistant (Aguinis et al., 2024; Jain et al., 2023; Korzynski, Mazurek, Altmann, et al., 2023; Teubner et al., 2023), facilitating team communication (Kumar et al., 2024), managing knowledge (Alghizzawi, 2024; Deike, 2024; Kumar et al., 2024), performance management (Deike, 2024), providing training and development (Vrontis et al., 2023), writing contents (Cao et al., 2023; M. Rahman et al., 2023) generate computer code (van Dis et al., 2023), statistical analyses and so on (Rachman et al., 2024; Rudolph et al., 2023; van Dis et al., 2023).

Although using ChatGPT in sustainable business, economics, and entrepreneurial projects has advantages, there are also some drawbacks (Albayati, 2024; Gordijn & Have, 2023; Salamzadeh et al., 2013, 2021, 2022, 2024; Yakubu et al., 2022; Soleimani et al., 2023Gozalo-Brizuela & Garrido-Merchan, 2023; Kumar et al., 2024; Mich & Garigliano, 2023). The most recognizable issue is about keeping personal information safe and secure (Divito et al., 2024; Huallpa & Al, 2023); it is essential to be mindful of the sensitive information shared in business operations (Alghizzawi, 2024; R. Gupta et al., 2024). Using big sets of information to teach ChatGPT models also brings up questions about where the data comes from, who owns it, and how to make sure it is fair for everyone (Gordijn & Have, 2023; Gozalo-Brizuela & Garrido-Merchan, 2023). Also, the mysterious way AI algorithms like ChatGPT work makes it difficult to understand and interpret their results, raising ethical concerns (Alawida et al., 2023; Cotton et al., 2024; Shen et al., 2023). This could make it hard for people to trust and understand how this works (Dwivedi, Pandey, et al., 2023). The information used to train and make decisions in AI programs can be biased; ultimately, that can make inequalities worse and stop fair and lasting results (Cotton et al., 2024). Also, using ChatGPT too often or depending on it too much could make it difficult for people to be creative and learn new things (Dwivedi, Pandey, et al., 2023). People might be in fear of losing their jobs because of not being of expertise to command AI (Khennouche et al., 2024). Therefore, it is obvious that business owners, entrepreneurs, and employees should be aware of the proper utilization of the most recent innovation, ChatGPT.

Previous studies showed TAM (Technology Acceptance Model) helps people to understand the use of technology and its implications for business organisations (Rahman et al., 2023; Saif et al., 2024). In this study, TAM also explains how much people find ChatGPT chatbot easy to use and any problems they might encounter (Saif et al., 2024), along with, considering plan to

use it (Abdaljaleel et al., 2024; Liu & Ma, 2024; Salloum et al., 2024). As more people use ChatGPT, their feelings about technology become stronger coming up with many more new ideas and changes (Abu Shawar & Atwell, 2007; Albayati, 2024; Altun et al., 2024; Aydin & Karaarslan, 2023; Dahmen et al., 2023; Dwivedi, Pandey, et al., 2023; Ghimire et al., 2024; Gordijn & Have, 2023; Iku-Silan et al., 2023; Kumar et al., 2024; Kung et al., 2023; Mich & Garigliano, 2023, 2023; Pavlik, 2023; Raman et al., 2023; Rosen & Saban, 2023; Shen et al., 2023; Sherif et al., 2024; Shihab et al., 2023; van Dis et al., 2023; Vrontis et al., 2023). These viewpoints show the complex discussion about ChatGPT status in the business world and the community (George & George, 2023; Short & Short, 2023; Wu et al., 2023). It is essential to see how ChatGPT helps with eco-friendly practices, making the economy better, and generating new business ideas. Thus, the review is trying to see how helpful people think ChatGPT is for business, economics, entrepreneurship, and other activities with challenges when using it and what else can be studied about it in the future.

#### **Research concepts in line with theory**

The Technology Acceptance Model (TAM) is popular in the field of information systems, which helps people and organizations understand how they get and use new technologies (Mogaji et al., 2024; Hadizadeh et al., 2024; Tajpour et al., 2021; Rahman et al., 2024). The model says that user's intention to use technology is mainly based on how useful they think it is (perceived usefulness) and how easy/difficult they think it is to use (perceived ease of use) (Abdaljaleel et al., 2024; Saif et al., 2024; Salloum et al., 2024). People may have different feelings about technology based on how much it helps them and how easy it is to use (Abdaljaleel et al., 2024; Liu & Ma, 2024; Salloum et al., 2024). In this research, researchers used ChatGPT as the part of proposed framework (Figure 2). The individual will choose whether they want to use ChatGPT at work, depending on whether they like it. In business and entrepreneurship, perceived usefulness means how helpful ChatGPT is for improving business operations (Mogaji et al., 2024; Salloum et al., 2024). ChatGPT can help companies get information quickly and make better choices to become successful (Dwivedi, Kshetri, et al., 2023). ChatGPT might only be famous for business and entrepreneurship if it is easy to use. Although ChatGPT has advantages, some businesses and entrepreneurs may have reasons to refrain from using it (Curtis & ChatGPT§, 2023; Eloundou et al., 2023; Korzynski, Mazurek, Altmann, et al., 2023; Rudolph et al., 2023). People might be concerned about the price of technology, how it could impact their information privacy and safety, and how it could affect their jobs. Also, employees who need to learn how to use the new technology or who are content with their current communication and decision-making methods may want to stay the same (Deike, 2024; Sliż, 2024). Therefore, it is essential for businesses and entrepreneurs, before implementing ChatGPT, to conduct an exhaustive analysis of these potential major obstacles and devise strategies to overcome them.

#### Methodology

#### Justification of Scoping Review

Scoping reviews are extremely helpful for synthesizing the research findings to categorise the existing literature on a given field in terms of the character-

istics, nature, or volume. The scoping reviews are like a preliminary exploration of the availability and scopes of the research, just like a primary feasibility test. Scoping reviews normally aim at identifying the basic nature and extent of a particular research topic. This type of review is ideal for studies where there is a lack of adequate comprehensive reviews in the body of research, where there are too large or complex data exists, or for the nature of the study which is too diverse for a stricter systematic review (Malik et al., 2024; Agu et al., 2024). As ChatGPT is becoming a more widely used tool for people from various sectors (Rahaman et al., 2023), it certainly demands a closer look at the risk of the threats posed by this chatbot. This scoping review approach enables the users to synthesize the previous papers with their key findings and helps them conclude the implications of ChatGPT on various sectors of society more accurately. This scoping review follows a 5-stage framework (Arksey & O'Malley, 2005), including, Identification of the Research Question; Identifying Relevant Studies; Selection of Studies; Data Charting; and finally, Data Collating, Summarizing, & Reporting the Results. The reporting followed the guidelines and instructions of the Preferred Reporting Items of Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-Scr) guidelines (Page et al., 2021) as completely outlined in the file attached as the supplementary file.

#### Stage 1: identifying the research question

The Technology Acceptance Model (TAM) addresses the users' perception of adopting new technologies. The perceived usefulness is determined by the respondents' opinion of utility and the perceived ease of use is determined by their perception of the effort needed in using the system. ChatGPT in business increases communication and decision-making techniques, yet, there are barriers, like expenditure and unwillingness to adopt the technology. Businesses must overcome these challenges to be able to efficiently execute their ideas, considering the facts as training, safety, and the impact on jobs. So, the researchers seek to address the questions:

**RQ1:** What are the potential benefits (perceived usefulness) of employing ChatGPT in the business, economic, and entrepreneurial worlds?

**RQ2:** What are the potential limitations (drawbacks) of employing ChatGPT in the business, economic, and entrepreneurial world and what are the possible recommendations against drawbacks?

**RQ3:** What are the future research directions?

## Stage 2: identifying relevant studies

In compliance with ChatGPT's public release on November 30, 2022 (Fui-Hoon Nah et al., 2023), the researchers conducted a search of the SCOPUS and Google Scholar databases between the timeframe of January 2023 to March 2024. The researchers conducted the review using the PRISMA-Scr model Specific search terms ("ChatGPT and Business Management", "ChatGPT and Entrepreneurship", "ChatGPT and Finance or Accounting", "ChatGPT and Marketing", "ChatGPT and Supply chain Management", "ChatGPT and Industry", "ChatGPT and Human Resource Management", "ChatGPT and Innovation", "ChatGPT and Customer Service", "ChatGPT and Corporate governance", "ChatGPT and Project management", "ChatGPT and Multiple sector", "ChatGPT and perceived usefulness", "ChatGPT and Limitations", and "ChatGPT and TAM") were created for the initial Google Scholar search to identify relevant publications. These search terms were targeted to find papers that address the study's focus.



Figure 1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram for the scoping review process. Between 2023 and 2024, 112 papers (Peer-reviewed) were first chosen based on their titles and abstracts. Subsequently, an additional search was conducted on Scopus to supplement the Google Scholar findings. To find more pertinent research studies, the search strings in Scopus were customized in compliance with the search criteria of the Google Scholar database. The search strategy, which concluded on 26 April 2024, was as follows: "ChatGPT" AND "Business" OR "Economics" OR "Entrepreneurship" AND PUBYEAR > 2021 AND PUBYEAR < 2025 AND ( LIMIT-TO ( SUB-JAREA, "BUSI")) AND (LIMIT-TO (PUBSTAGE, "final") AND ( LIMIT-TO (EXACTKEYWORD, "ChatGPT") OR LIMIT-TO (EXACT-KEYWORD, "Commerce"). 166 papers came from this strategy. There were actually two steps followed for the paper selection. First, the 112 publications found from Google Scholar were reviewed using inclusion and exclusion criteria. Those publications that were directly relevant to the study objectives were kept for further examination. Also, to guarantee the quality of the selected publications, the Google Scholar Rapid Journal Quality Check Extension was used, with validation performed by two independent researchers. In the final step, the 166 papers obtained from Scopus were screened in a similar manner, guided by established inclusion and exclusion criteria. Then, the papers that were found to be repetitions in both databases were removed and the remaining publications were evaluated for their applicability. From this process, 67 papers were found to be included in the scoping review. Again, 27 papers were excluded due to the criteria gap, finally, 40 landmark studies (based on article indexing) were included in the final selection to improve the scoping review's comprehensiveness and validity (See Table 1). These studies were found to focus on the ranking as SJR Q1, Q2, and Q3 and WoS indexed.

Cross-referencing the chosen landmark research with journal metrics and Scimago Journal Rank (SJR) ensured further validation. The PRISMA flow diagram detailing exclusions is presented in Fig. 1.

## Stage 3: study selection

The selection criteria included English-language works released across different publication forms (e.g., quantitative/qualitative articles in journals, reviews, investigations, abstracts and pre-prints) that examined ChatGPT in business, service, trade, marketing, tourism, management of human resources, entrepreneurship, healthcare, accounting, finance, and diverse sectors. The exclusion criteria included non-English records, clinical studies on ChatGPT, comparisons of ChatGPT performance on examinations to people and publications from non-academic sources like newspapers, internet websites, magazines, etc.

## Stage 4: charting the data

In response to the research question, two reviewers worked separately to extract data about the use of ChatGPT in particular contexts. The reviewers verified information like the author(s) of the study, published year, discipline, context, study design, and findings (usage, applicability, limitations, and suggestions). The two reviewers addressed any differences they could not agree upon till they resolved.

S/N	Landmark Studies	Title of the article	Context of the Study	Re- search Ap- proach	SJR Rank (2022)
01	(Schlagwein & Willcocks, 2023)	'ChatGPT et al.': The ethics of using (generative) artificial intelligence in research and science.	Education, Research, Business, Ethics and Sci- ence	Quali- tative	Q1
02	(Albayati, 2024)	Investigating undergraduate students' perceptions and awareness of using	TAM- (Perceived Useful- ness, Ease of use/draw- backs)	Quanti- tative	Q1

# Table 1. Characteristics of the selected studies.

		ChatGPT as a regular assistance tool: A user acceptance perspective study.	Customer Service, Edu- cation, healthcare, Mar- keting, Financ		
03	(Iku-Silan et al., 2023)	Decision-guided chatbots and cogni- tive styles in interdisciplinary learn- ing.	Learning and Develop- ment, Decision making Nursing training	Quanti- tative	Q1
04	(Pavlik, 2023)	Collaborating with ChatGPT: Con- sidering the implications of genera- tive artificial intelligence for journal- ism and media education.	ChatGPT, Capabilities, Limitations, and Implica- tions	Quali- tative	Q2
05	(Alawida et al., 2023)	A comprehensive study of ChatGPT: advancements, limitations, and ethi- cal considerations in natural language processing and cybersecurity.	Business and industry ap- plications, Customer ser- vice Marketing advertisement, Increase efficiency, reve- nue, and customer satis- faction,	Quali- tative	Q2
06	(Dwivedi, Kshetri, et al., 2023)	"So, what if ChatGPT wrote it?" Mul- tidisciplinary perspectives on oppor- tunities, challenges and implications of generative conversational AI for research, practice and policy.	Computer science, mar- keting, information sys- tems, education, policy, hospitality and tourism, management, publishing, and nursing	Quali- tative	Q1
07	(Dahmen et al., 2023)	Artificial intelligence bot ChatGPT in medical research: the potential game changer as a double-edged sword.	Literature review, data analysis and even the cre- ation of new hypotheses	Edito- rial	Q1
08	(Sliż, 2024)	The role of ChatGPT in elevating customer experience and efficiency in automotive after-sales business processes.	Capabilities, Applica- tions in business under- standing, Customer Experience and Efficiency supply chain manage- ment	Mixed Method	Q1
09	(Curtis & ChatGPT§, 2023)	To ChatGPT or not to ChatGPT? The impact of artificial intelligence on ac- ademic publishing.	Positive and negative use of ChatGPT in publishing	Quali- tative	Q1
10	(Lund & Wang, 2023)	Chatting about ChatGPT: how may AI and GPT impact academia and li- braries?	Can work alongside this technology to improve our work	Quali- tative	Q2
11	(Aguinis et al., 2024)	How to use generative AI as a human resource management assistant.	Workforce Dynamics. Automate employee onboarding. Freeing up HR profes- sionals to focus on more strategic tasks.	Quali- tative	Q1
12	(Korzynski, Mazurek, Altmann, et al., 2023)	Generative artificial intelligence as a new context for management theo- ries: analysis of ChatGPT.	management theories on decision-making, knowledge management, customer service, human resource management and administrative tasks	Quali- tative	Q2

13	(Teubner et al., 2023)	Welcome to the era of chatgpt et al. the prospects of large language mod- els.	Design, operation, and application of infor- mation systems Personalize customer in-	Quali- tative	Q1
14	(Alghizzawi, 2024)	A Review of the Chat GBT Technol- ogy Role in Marketing Research.	teractions. Provide a more engaging and personalized cus- tomer experience.	Quali- tative	Q3
15	(Deike, 2024)	Evaluating the performance of ChatGPT and Perplexity AI in Busi- ness Reference.	Relevant to business ref- erence: accessibility, li- brary referral	Quanti- tative	Q2
16	(Rudolph et al., 2023)	ChatGPT: Bullshit spewer or the end of traditional assessments in higher education?.	Strengths and limitations	Quali- tative	Q2
17	(Divito et al., 2024)	The tools of the future are the chal- lenges of today: The use of ChatGPT in problem-based learning medical education.	foster responsible usage, provide base-line profi- ciency	Quali- tative	Q1
18	(Huallpa & Al, 2023)	Exploring the ethical considerations of using Chat GPT in university education.	Ethical concerns of chatGPT in education.	Quanti- tative	Q2
19	(R. Gupta et al., 2024)	Adoption and impacts of generative artificial intelligence: Theoretical un- derpinnings and research agenda.	TAM Theory Marketing theories, adop- tion by marketers and consumers,	Quali- tative	Q1
20	(Cotton et al., 2024)	Chatting and cheating: Ensuring aca- demic integrity in the era of ChatGPT. Revolutionizing generative pre-	Training and develop- ment, Cheating, Risk, Education E-commerce, Healthcare,	Quali- tative	Q1
21	(Khennouche et al., 2024)	traineds: Insights and challenges in deploying ChatGPT and generative chatbots for FAQs.	Shopping	Quali- tative	Q1
22	( Rahman et al., 2023)	Examining students' intention to use ChatGPT: Does trust matter?. Chat-GPT; validating Technology	TAM theory, Trust, TAM Theory, Education	Quanti- tative	Q1
23	(Saif et al., 2024)	Acceptance Model (TAM) in educa- tion sector via ubiquitous learning mechanism.	The Theory, Education	Quanti- tative	Q1
24	(Abdaljaleel et al., 2024)	A multinational study on the factors influencing university students' attitudes and usage of ChatGPT.	Perceived ease of use, perceived usefulness, be- havioral/cognitive ele- ments, low anxiety,	Quanti- tative	Q1
25	(Liu & Ma, 2024)	Measuring EFL learners' use of ChatGPT in informal digital learning of English based on the technology acceptance model.	Attitude, Behavioral In- tention, and Actual Use	Quanti- tative	Q1
26	(Short & Short, 2023)	The artificially intelligent entrepre- neur: ChatGPT, prompt engineering, and entrepreneurial rhetoric creation.	Business information analyses, Business decisions mak- ing,	Quali- tative	Q1
27	(Dowling & Lucey, 2023)	ChatGPT for (finance) research: The Bananarama conjecture.	Finance related idea gen- eration and data identifi- cation	Quali- tative	Q1
28	(Mogaji et al., 2024)	"Is it the end of the technology ac- ceptance model in the era of genera- tive artificial intelligence?",	TAM theory, tourism re- search, Consumer Behaviour	Quali- tative	Q1
29	(Lim et al., 2023)	Generative AI and the future of edu- cation: Ragnarök or reformation? A	Threats and opportuni- ties,	Quali- tative	Q1

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		paradoxical perspective from man- agement educators.	Use in Operation man- agement exam		
30	(Rao et al., 2023)	Assessing the utility of ChatGPT throughout the entire clinical work-flow: development and usability study.	Decision making, Performance manage- ment	Quali- tative	Q1
31	(Ray, 2023)	ChatGPT: A comprehensive review on background, applications, key challenges, bias, ethics, limitations and future scope.	applications, key chal- lenges, bias, ethics, limi- tations of ChatGPT	Quali- tative	Q1
32	(Fosso Wamba et al., 2023)	ChatGPT and generative artificial in- telligence: an exploratory study of key benefits and challenges in opera- tions and supply chain management.	Improved customer satis- faction, cost minimisa- tion, and process efficien- cies.	Quali- tative	Q1
33	(Wake et al., 2023)	"ChatGPT Empowered Long-Step Robot Control in Various Environ- ments: A Case Application,"	subsequent task planning, eliminating the extensive record-keeping of prior task plans	Experi- mental	Q1
34	(Saygin et al., 2024)	Artificial Intelligence Model Chatgpt-4: Entrepreneur Candidate and Entrepreneurship Example.	Support business deci- sions making. expanding the business and making necessary analyses.	Experi- mental	Q1
35	(Mehta & Kappal, 2024)	"Good, bad and ugly experiences of non-binary gender inclusion at the workplace to frame employee value proposition",	enriching value proposi- tions, promote gender inclusion in corporate settings, long-term organizational success	Quali- tative	Q2
36	(Giuggioli & Pellegrini, 2022)	"Artificial intelligence as an enabler for entrepreneurs: a systematic litera- ture review and an agenda for future research",	Technological para- digms, such as smart fac- tory, the Internet of things (IoT), augmented reality (AR) and blockchain	Quali- tative	Q1 Emer- ald
37	(Abaddi, 2023)	"GPT revolution and digital entrepre- neurial intentions",	TAM usage in digital en- trepreneurial intention	Quanti- tative	Q1
38	(V. Gupta & Yang, 2024a)	Generative Artificial Intelligence (AI) Technology Adoption Model for Entrepreneurs: Case of ChatGPT.	TAM, Decision Making	Quali- tative	Q3
39	(V. Gupta & Yang, 2024b)	Study protocol for factors influencing the adoption of ChatGPT technology by startups: Perceptions and attitudes of entrepreneurs.	Start Up context	Quali- tative	Q1
40	(Korzynski, Mazurek, Krzypkow- ska, et al., 2023)	Artificial intelligence prompt engi- neering as a new digital competence: Analysis of generative AI technolo- gies such as ChatGPT	entrepreneurship, art, sci- ence, and healthcare	Quali- tative	Q1

Source: Authors' Developed

## **Findings and discussions**

By applying narrative synthesis methodology (Popay et al., n.d.), this study used a systematic strategy to synthesize data from both quantitative and qualitative research. In the beginning, written reviews of every investigation were created to help reviewers learn about and find similarities and variances in findings. Afterwards, articles were classified based on research matters to aid in analysis and pattern identification, with these categories being refined throughout the synthesis phase. Since the key objective of scoping reviews is to provide a thorough summary of the body of available data, a systematic quality assessment of the included studies was unneeded (Arksey & O'Malley, 2005; Levac et al., 2010; Paramba et al., 2023, 2024; Dana et al., 2022; Salamzadeh & Markovic, 2018). Reviewers, however, made sure that the included research claimed ethical permission and followed the right data collecting procedures in accordance with relevant to their research design or type of publication (Weingarten et al., 2004). A collaborative peer review process was undertaken to enhance reflexivity and mitigate individual biases (Dodgson, 2019). We have designed our findings based on our formulated research questions.

*Findings for RQ1: What are the potential benefits (perceived usefulness) of employing ChatGPT in the business, economic, and entrepreneurial worlds?* 

To synthesise the findings for RQ1, we have created three themes. In the following sections, we have discussed the findings based on themes. *Theme-01: ChatGPT in the business world: Perceived Usefulness* 

ChatGPT transformed the game for business owners and customers who wish to create individualized content for their target audience (Aguinis et al., 2024; Dwivedi, Pandey, et al., 2023; Korzynski, Mazurek, Altmann, et al., 2023; Kumar et al., 2024; Prieto et al., 2023; Rachman et al., 2024; Rosen & Saban, 2023; Salloum et al., 2024; Sherif et al., 2024; Sliż, 2024). Chatbots and real-time data analysis aid decision-making and customer assistance (Albayati, 2024; Dwivedi, Kshetri, et al., 2023). Therefore, to stay competitive, companies must use technology (Korzynski, Mazurek, Altmann, et al., 2023; Kumar et al., 2024), nowadays, strategically employ ChatGPT (Altun et al., 2024; Curtis & ChatGPT§, 2023; Gordijn & Have, 2023; Gozalo-Brizuela & Garrido-Merchan, 2023; Kung et al., 2023). Previous literature already established, business management uses ChatGPT to automate scheduling and data entry, freeing up staff for strategic objectives (Deike, 2024; Rane, 2023; Sliż, 2024; Teubner et al., 2023), enhancing cooperation, virtual support, and performance management (Curtis & ChatGPT§, 2023; Gordijn & Have, 2023), personalizing marketing interactions, increasing client engagement and pleasure (Albayati, 2024). Besides this usefulness, ChatGPT helps automated onboarding and data-driven talent management boost HR efficiency (Korzynski, Mazurek, Altmann, et al., 2023; Rachman et al., 2024). AI-driven inventory and delivery tracking optimization supports supply chain management (Dwivedi, Kshetri, et al., 2023). Last but not least, ChatGPT streamlines processes, reduces costs, and improves manufacturing, retail, and healthcare outcomes, indicating a shift toward intelligent and efficient operations (Abu Shawar & Atwell, 2007; Alawida et al., 2023; Shihab et al., 2023), Table 2 presents the core perceived usefulness in the business area.

Areas	Perceived Usefulness	Sources
Customer Services	ChatGPT speeds up and personalizes customer service, im- proving response times and satisfaction. ChatGPT frees up customer support agents to handle more difficult issues by answering basic queries.	(Albayati, 2024; Deike, 2024; Korzynski, Mazurek, Altmann, et al., 2023; Pavlik, 2023; Ru- dolph et al., 2023; Sliż, 2024)
Lead Gener- ation	Engage with potential customers in real-time and gather in- formation about their needs and interests using ChatGPT. By utilizing this data, one can enhance lead generation and opti- mize the efficiency of sales and marketing endeavors. ChatGPT can leverage its capabilities to deliver tailored product suggestions and exclusive deals to customers.	(Aguinis et al., 2024; Divito et al., 2024; Korzynski, Mazurek, Altmann, et al., 2023; Rach- man et al., 2024; Shen et al., 2023; Sherif et al., 2024)
Content Creation	ChatGPT can generate unique and excellent content for many platforms, including websites and social media. This can ex- pedite the process and enhance companies' online presence. ChatGPT can also write articles, blog records.	(Albayati, 2024; Alghizzawi, 2024; Dowling & Lucey, 2023; R. Gupta et al., 2024; Korzyn- ski, Mazurek, Altmann, et al., 2023; Sliż, 2024)
Recommen- dations and Judgement	ChatGPT enables businesses to analyze massive amounts of data and provide meaningful insights and recommendations by integrating with data sources. This facilitates organisa- tions in making better-informed and more confident deci- sions, hence improving their operational efficiency.	(Deike, 2024; Divito et al., 2024; Kumar et al., 2024; Rawas, 2023; Spurlock et al., 2024; Teubner et al., 2023; Vrontis et al., 2023)
Process Au- tomation	ChatGPT streamlines monotonous chores and procedures, liberating time and resources for more significant endeavors. Implementing this can enhance operational effectiveness and minimize expenses for enterprises.	(Dowling & Lucey, 2023; Huallpa & Al, 2023; Raj et al., 2023; Sherif et al., 2024; Sid- erska et al., 2024)

Table 2. Perceived Usefulness of ChatGPT in the Business World.
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## Source: Authors' Developed.

# Theme-02: ChatGPT in Economics world: Perceived usefulness

ChatGPT technology is used in economics for tasks such as diverse language, data processing [13], and finding entities in financial and accounting documents (Albayati, 2024; Dowling & Lucey, 2023; Shen et al., 2023). According to previous studies (Dahmen et al., 2023; Shihab et al., 2023; van Dis et al., 2023; Vrontis et al., 2023) ChatGPT has been employed to provide financial reports, summaries, and financial projections, improving information's precision and reliability. According to (Sliż, 2024),this can be beneficial for predicting stock values and recognizing market trends. Chatbots like ChatGPT have proven highly useful in accounting (Albayati, 2024; BaiDoo-

Anu & Owusu Ansah, 2023; Dowling & Lucey, 2023; Teubner et al., 2023). They excel at automating routine tasks such as data entry and calculations, improving accounting reporting accuracy and efficiency (Dong et al., 2023). Additionally, they facilitate enhanced communication and collaboration with clients and colleagues (Dahmen et al., 2023; Shihab et al., 2023; van Dis et al., 2023; Vrontis et al., 2023). Chatbots also provide streamlined access to financial information and resources, offering personalized support for complex accounting inquiries and problem-solving (Dowling & Lucey, 2023; Shen et al., 2023). Its implementation increases productivity and reduces workload for accounting professionals (Shihab et al., 2023). Furthermore, ChatGPT contributes to improved data analysis and insights and can seamlessly integrate with accounting software and tools, significantly enhancing customer service and support (Abeysekera, 2024). ChatGPT can be utilized in the economic world in the following ways.

Table 3. Perceived Usefulness of ChatGPT in Economics World.

Areas	Perceived Usefulness	Sources
Fraud Detection	ChatGPT is able identify fraudulent transactions by analyz- ing vast volumes of data and identifying trends and abnor- malities. This can assist financial organizations in detecting fraud faster and more effectively, decreasing financial loss.	(BaiDoo-Anu & Owusu An- sah, 2023; Betz et al., 2023; Dowling & Lucey, 2023; Dwivedi, Pandey, et al., 2023; Teubner et al., 2023)
Personal Fi- nance Manage- ment	ChatGPT provides customized financial advice based on cli- ents' needs and goals which help clients make informed fi- nancial decisions and achieve their goals faster.	(Deike, 2024; Shihab et al., 2023; Siderska et al., 2024; Sliż, 2024; Vrontis et al., 2023; Wu et al., 2023)
Loan Function- ing	ChatGPT streamlines loan applications by automatically checking applicant information and making decisions based on predetermined criteria. Not only that, ChatGPT can help banks and clients to make loan decisions faster and decrease fraud.	(Dowling & Lucey, 2023; Eloundou et al., 2023; George & George, 2023; Shen et al., 2023; Sliż, 2024; Wu et al., 2023)
Streamlining Customer As- sistance	ChatGPT can answer consumer questions and deliver appro- priate information 24/7 and assist financial organizations in reducing customer support workload and improve customer experience.	(Albayati, 2024; Deike, 2024; Fui-Hoon Nah et al., 2023; George & George, 2023; Huang et al., 2023; Korzynski, Mazurek, Alt- mann, et al., 2023; Raj et al., 2023; Rudolph et al., 2023; Sliż, 2024)

Source: Authors' Developed.

## Theme-03: ChatGPT in Entrepreneurial World: Perceived usefulness

ChatGPT, AI, technology, innovation, and entrepreneurship are currently of great interest to both theorists (such as academia and the research community) and practitioners (including business people, strategists, and decision-makers at all levels) (Abaddi, 2023; Fui-Hoon Nah et al., 2023; V. Gupta & Yang, 2024a; Md. M. Rahman et al., 2022, 2023; Saygin et al., 2024). Each subject has its own clearly defined area of study (B. B. Gupta et al., 2023). This ChatGPT assists entrepreneurs and owners of small and medium-sized enterprises (SMEs) in achieving industry-specific expansion and long-term viability (V. Gupta & Yang, 2024b; Rahaman, 2023a, 2023b; Shihab et al., 2023; Short & Short, 2023). Research indicates that AI, particularly ChatGPT, can be a good friend to entrepreneurs and owners of small and medium-sized enterprises (SMEs) (Iku-Silan et al., 2023; Mehta & Kappal, 2024; Rahaman, 2023a, 2023b; Raj et al., 2023; Siderska et al., 2024). ChatGPT can provide various other apparent benefits in the entrepreneurial realm, explaining Table 4.

Sub Themes	Perceived Usefulness	Sources
Market Re- search	ChatGPT assists in conducting market research by an- alyzing online discussions, customer reviews, and so- cial media interactions. ChatGPT also provide in- sights into market trends, customer preferences, and competitor analysis, helping entrepreneurs make in- formed decisions.	(Altun et al., 2024; Dwivedi, Kshetri, et al., 2023; Huang et al., 2023; Mogaji et al., 2024; Vrontis et al., 2023; Wang et al., 2023)
Personalized Recommenda- tions	By analyzing user data and preferences, ChatGPT can provide personalized product recommendations or suggestions to customers.	(Albayati, 2024; Dowling & Lucey, 2023; Korzynski, Mazurek, Alt- mann, et al., 2023; Lund & Wang, 2023; Spurlock et al., 2024)
Training and Development	Entrepreneurs can use ChatGPT to create training ma- terials or instructional content for their employees, such as interactive simulations, quizzes, or tutorials, to enhance learning and foster organizational skill de- velopment.	(Alsharif, 2024; Altun et al., 2024; Aydin & Karaarslan, 2023; Lim et al., 2023; Wu et al., 2023)
Decision Sup- port	ChatGPT analyses data, provides insights, and gener- ates alternative scenarios to help entrepreneurs make	(Abu Shawar & Atwell, 2007; Al- tun et al., 2024; Ghimire et al., 2024; Iku-Silan et al., 2023; Lim et

**Table 4.** Perceived Usefulness of ChatGPT in Entrepreneurial World.

		0.0			is allows entrepreneurs as- and make better business	al., 2023; Rahaman, 2023b; van Dis et al., 2023; Wang et al., 2023)
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#### Source: Authors' Developed.

*Findings for* **RQ2** (What are the potential limitations (drawbacks) of employing ChatGPT in the business, economic, and entrepreneurial world and what are the possible recommendations against drawbacks?)

Nevertheless, ChatGPT is significantly impacting various sectors of the business world. It is crucial to remember that ChatGPT is not infallible and may still commit errors or provide unsuitable responses in specific circumstances (Carrasco et al., 2 023; Korzynski, Mazurek, Altmann, et al., 2023). ChatGPT and similar language models are trained using an extensive collection of text from the internet, which may include sensitive content (Carrasco et al., 2023). This raises further concerns regarding ethics and privacy (Kasneci et al., 2023; Li et al., 2023). The concern of job displacement due to automation is a legitimate fear (R. Gupta et al., 2024; Khogali & Mekid, 2023). The ultimate efficacy of ChatGPT in a professional setting hinges on the meticulous consideration and prompt resolution of these limits (Rahaman, Ahsan, Anjum, Terano, et al., 2023). Table 5 below presents several key constraints identified previously.

Areas	Drawbacks	Recommendations for overcoming the drawbacks
Lack of do- main knowledge	Domain-specific knowledge is a major drawback of AI- based chatbots. ChatGPT typically lacks the expertise to give financial advice (Albayati, 2024; Carrasco et al., 2023; Gordijn & Have, 2023; Gozalo-Brizuela & Gar- rido-Merchan, 2023).	Chatbot managers need topic exper- tise to guide the bots in the right direc- tion. They ought to be well-versed in all the intricacies that may develop in relation to the chatbot's domain-spe- cific problems.
Bias and ethical con- cerns	A paper by (Graf & Bernardi, 2023) highlights the po- tential for AI-based chatbots to perpetuate and amplify biases present in their training data (Curtis &	It is essential for organizations to con- sider the ethical implications of using AI-based chatbots in potential biases.

Limited critical thinking	ChatGPT§, 2023; Divito et al., 2024; Kasneci et al., 2023; Kumar et al., 2024; Lim et al., 2023; Mich & Garigliano, 2023) The limited ability of AI-based chatbots to perform in- dependent critical thinking (Alawida et al., 2023; Bansal et al., 2023; Khennouche et al., 2024; Rosen & Saban, 2023).	For generating unique ideas, it is cru- cial for authorities to input sufficient data to GPT algorithm.
Vulnerabil- ity to cyber- attacks	The potential vulnerabilities of AI-based chatbots to cyber-attacks, particularly in the financial sector where sensitive financial information is being handled (Al- bayati, 2024; Divito et al., 2024; Gordijn & Have, 2023). Hackers can exploit vulnerabilities in chatbots' code or	It is highly recommended for organi- zations to develop robust security measures to protect against cyber-at- tacks and ensure the confidentiality of financial information.
Security Risks and Privacy	use social engineering techniques to trick users into re- vealing sensitive information, results chatbots at risk (Albayati, 2024; Eloundou et al., 2023; Gordijn & Have, 2023; Gozalo-Brizuela & Garrido-Merchan, 2023; Kumar et al., 2024).	Therefore, it is essential to ensure that chatbots are developed with security and they are regularly tested for vul- nerabilities.

## Source: Authors' Developed

Based on the summary of the findings and discussions, the authors have de-

veloped the study model (Figure 2).



Figure 2. Proposed model (Source: Authors' developed based on the TAM

model)

# Findings for **RQ3** (What are the future research directions?)

Most ChatGPT studies used the TAM Theory; however, TTF: Task-Technology Fit; HCI: Human-Computer Interaction; TOE: Technology-Organization-Environment Framework; UTAUT: Unified Theory of Acceptance and Use of Technology; TRA: Theory of Reasoned Action; DOI: Diffusion of Innovations, should also be examined to understand how ChatGPT operates in diverse domains. Using more extensive and varied groups, complicated data collection, and modifying factors may improve approaches. To know how ChatGPT influences society, researchers should use quantitative and mixed-method studies. Future research directions (Table 6) could influence sustainable business and generate new ideas, notably in business and employing technology to develop entrepreneurs.

Re- search Area	ChatGPT induced poten- tial changes in Sustainable Business, Economics, and	Research Questions
	Entrepreneurial World	
Per-	Integration of ChatGPT in	How can ChatGPT improve business opera-
ceived	sustainable business prac-	tions and sustainability in decision-making?
Useful-	tices for enhanced effi-	-What are the economic sustainability benefits
ness	ciency and decision-mak-	of using ChatGPT in entrepreneurship?
	ing.	-Can ChatGPT streamline economic processes
		for sustainable development?
Draw-	Identification of limitations	-Are there any limitations to using ChatGPT in
backs	and drawbacks associated	sustainable business models and economic
	with the adoption of	frameworks?
	ChatGPT.	-What ethical factors affect ChatGPT adoption
		in sustainable business practices?
		-What are the hazards of overusing ChatGPT in entrepreneurship?
		-What ChatGPT technology trends can help
		sustain company operations and economic
		growth?

 Table 6. Future research directions.

Source: Authors Developed

# Contributions

## Practical/Managerial Contributions

Any business can avail of the potential offered by ChatGPT to improve efficiency in customer service, data analysis, and various decision-making processes within any organization. Managers can also benefit from ChatGPT by automating their routine activities better to put human resources into more complex and strategic activities. However, drawbacks in the form of probable biases and misinformation make it incumbent upon the institution of solid mechanisms of control that assure the accuracy and reliability of output produced by ChagGPT. Entrepreneurs should treat ChatGPT as something that brings in great ideas and allows for innovation, but they should always be critical of its limitations. Training and raising staff's awareness about using ChatGPT properly could bring maximum benefits and minimize potential risks. The integration of ChatGPT into business can give the company an edge in the long run. Still, it must be managed cautiously and continuously assessed for potential pitfalls.

## Theoretical Contributions

This review contributes to TAM in an integrated approach with the perceived usefulness and drawbacks of ChatGPT within the domains of business, economics, and entrepreneurship. Traditionally, TAM is focused on perceived usefulness and ease of use as the two most influential factors in technology adoption. This research suggests that potential drawbacks of ChatGPT related to bias or misinformation may prove equally influential in setting user attitudes and acceptance. The findings indicate that future TAM studies need to broaden the sets of variables, including perceived risks, to improve their prediction. By opening up the TAM framework, this study captures these nuanced factors much more comprehensively and, hence, makes a far more holistic contribution to the specific factors that influence the adoption of AI tools within business and entrepreneurial contexts.

#### Conclusion

This review shows that ChatGPT is very helpful in these areas, and many researchers and professionals use it. However, using ChatGPT can also be difficult because of ethical concerns, the difficulty of being transparent about how the research was done, and the chance of spreading wrong information. Even though there are difficulties, the good things about ChatGPT are too essential to disregard. The results of this study are important. They give us helpful information about how ChatGPT technology is useful, what problems it has, and what researchers can study in the future. The study shows how businesses can use ChatGPT to help with market research, help customers, and manage the supply chain. By using technology, companies can make their work better and faster, which can help them reach their environmental goals. Policymakers and regulators need to keep an eye on how ChatGPT is being used in businesses to ensure it is being used sustainably.

#### Notes

1. ChatGPT always comes up with some generic style of responding to the prompts, where they use words like "may", or "can", where in business and entrepreneurship, it is always a more preferable way of answering to the prompts with less uncertainty. Rather trying to be more concise and definitive is what matters.

2. ChatGPT was the pioneer in AI chatbots, once everyone used to rely on it in its early days, but the scenarios have changed a little. Nowadays, there are a number of rivals coming up with so many alternatives, offering a wide range of services. *Copilot, Gemini, Llama*, all are trying to showcase their capabilities and make a mark.

3. There is another thing that is very important, while implicating the suggestions of ChatGPT in sensitive sectors like finance or entrepreneurship, it has to be kept in mind that ChatGPT should get the proper command or instructions first in order to produce an effective suggestion, it has to know about the present market conditions and all the factors that are impacting the market. If the market scenario is not being portrayed properly, it will certainly come up with a suggestion that turns out to be ineffective in the end.

4. One important thing for ChatGPT users is, it is a continuously developing chatbot. There are thousands of areas where it can improve or can come up with brilliant responses. So, it is still too early to judge.

5. It is always a thing to remember that this is a must for every business decision-maker to carefully recheck the suggestions or propositions made by ChatGPT because they might not always be flawless. So, it is best if they recheck and make sure this is all perfect for implementation.

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