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Organizational Strategic Challenges of Generative Artificial Intelligence: A Case of Canadian Business Organizations

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Abstract

Artificial Intelligence (AI) has revolutionized the systems of organizations across the world during the last two decades or so. Recently, Generative Artificial Intelligence (GAI) has been discussed, debated, and studied in professional and academic research arenas. Various advantages and positive sides of GAI have been reported. However, empirically the perceptions and stance of organizations on the adoption of GAI has not been fully explored. Moreover, there is evidence that many organizations are hesitating to adopt GAI, but there are limited studies on reporting the actual challenges of organizations, particularly the challenges of business organizations while adopting GAI. Additionally, empirically it is yet to bring evidence of why certain challenges exist and what conditions are responsible for adopting challenges of GAI in business organizations. Therefore, this study is filling these gaps by exploring the challenges of business organizations while adopting GAI and investigating the driving factors for these challenges by looking at the case of business organizations in Canada. This research employs a case study method to study 20 Canadian Business organizations where GAI has potentially been used or the case of GAI is being considered for its adoption. The study will provide empirical evidence on the potential of GAI to enhance the competitive advantage of business organizations and the challenges that must be addressed to leverage the technology successfully. Moreover, the study will contribute to the existing body of knowledge on the implications and the use of GAI for global markets and the business world.

Keywords: *Adoption, Business organizations, Canada, Generative Artificial Intelligence.*

Introduction

Artificial Intelligence (AI) has revolutionized the systems of organizations across the world during the past few decades, especially with the introduction of ChatGPT which has rapidly become the fastest consumed application after social media [19]. Generative Artificial Intelligence (GAI) has become popular amongst many industries. It is defined as the type of AI which can generate high quality information, such as text, audio, codes, images, videos, etc. [17]. The significant implications of GAI in the business world have captured the attention of many researchers, including its potential benefit in mundane operations, customer service, business forecasts, and managerial procedures [1][5]. In the last two decades, research has seen tremendous positive impacts of groundbreaking technical advancements. For example, digitalization has led to an increase in innovation and competitive advantage among businesses and has compelled many companies to become more efficient and relevant to the market [3][23]. Moreover, GAI has the ability to analyze consumer habits, track their demands, and degenerate data for managers to design and implement projects according to the

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needs of the customer and dynamic market conditions [30].

However, the development of GAI has to play the role of a catalyst in business development with the collaboration of managers and employees, instead of replacing human capabilities [22]. Moreover, plenty of literature focuses on the infancy of AI and its further exploration in other fields [16]. Even though numerous benefits and positive sides of the use of AI and GAI have been discussed, however, empirically the perception of relevant organizations is still underexplored [32]. It is, therefore, imperative to bring evidence from the business organizations and their perceptions and concerns about the use of GAI in their business practices. Moreover, studies are scarce on reporting the actual challenges of organizations particularly challenges of business organizations while adopting GAI [24]. Additionally, empirically it is yet to bring evidence of why certain challenges exist and what conditions are responsible for adopting challenges of GAI in business organizations. Therefore, this study aims to fill these gaps by exploring the challenges of business organizations while adopting GAI and investigating the driving factors for these challenges. The study also aims to provide empirical evidence on the potential of GAI to enhance the competitive advantage of business organizations and the challenges that they must address to leverage the technology successfully. Moreover, the study will contribute to the existing body of knowledge on the implications and the use of GAI for global markets and the business world.

Research Questions

RQ1: How can GAI assist business organizations for its implementation in Business organizations in Canada?

RQ2: What are the challenges of adopting GAI in business organizations in Canada?

Research Objectives

To achieve this further, the study pursues four specific objectives:

1. To explore how GAI is important for business organizations and how these organizations perceive GAI for their business operations
2. To examine the adoption challenges of GAI in business organizations
3. To investigate the factors triggering challenges for adopting GAI in business organizations
4. To develop a framework for effectively adopting GAI in business organizations

Hypotheses

Despite this study being qualitative in nature, it sets the following assumptions

1. Business organizations are motivated to use the GAI in their business operations
2. Ethical considerations have significations impacts on adopting GAI in business organizations
3. Access to advanced technology affects adopting GAI in business organizations

Literature Review

Integration of GAI in Business Practices

Contrary to popular belief GAI is not only beneficial for generating text and images but also assists humans in major decision-making and analytical domains [13]. Developed in the early 1960s, AI has proved to be an effective mechanism with significant uses in the current business world. For instance, the development of chatbots has significantly improved business operations and customer service since 2014 [21]. GAI is being utilized widely in the areas of customer service by responding to the dynamic needs of customers, providing a competitive edge to the business [12]. Hence, GAI is being integrated at a large scale in business management, daily operations, inventory management, and marketing [11]. Moreover, it was proved by many researchers that the adoption of ChatGPT in the business

community resulted in efficiency and reduced human error [18]. Apart from its potential application in business operations, it also provided several benefits in providing real-time data for assessing future market trends and creating customized services according to the needs of the clients and customers [15].

Furthermore, many successful entrepreneurs, such as Bill Gates, Elon Musk, and employees from Google and Apple Inc. have also embraced GAI in their daily business operations [31]. ChatGPT is a successful tool in helping researchers and academicians across the world [29]. Moreover, the developments in GPT software over time have helped many employees and managers in making crucial business decisions and project planning [15].

Use of GAI in Organizational Processes

GAI has also proved its capability in time and cost effectiveness of businesses that allows employees to become more efficient in their daily tasks. This is supported by many authors, claiming that GAI in business analytics have optimized supply chain management, forecasting of future market demands, and potential financial and non-financial risks [8][9][35]. By using AI data analytics, businesses are able to streamline their managerial procedures. Moreover, the valuable insights developed by GAI has improved efficiency by reducing human error in decision-making and other processes [34].

Use of GAI in Firm Decision Making

The inclusion of GAI in business procedures has produced innovative results. A viral technology, known as neural networks, has helped many organizations and startups to boost their managerial procedures through economic forecasting [4][27]. Moreover, GAI offers a vital advertising tool that involves photo editing known as DragGAN. This tool is known for helping users with its three-dimensional pictures. Hence, users admire this tool and do not compromise on pixel quality [33]. This implies that the business world and managers can benefit significantly from GAI and use innovative opportunities to boost work. Project managers can use GAI easily and streamline their processes. Many project leaders use this tool and make informed decisions. Therefore, it leads to better decision-making and allows them to use skills to improve outcomes. This can be replicated with other artificial intelligence tools as well [34].

Challenges of Adopting GAI

However, literature also has an opposing view, and some scholars believe that AI is there to assist humans and not replace them. Simply put, successful implementation of GAO lies in the collaboration between AI tools and managers [2]. Moreover, the data generated by AI may be almost accurate, but it is not perfect and might not suit the needs of the user as well [7]. Also, issues related to data privacy, ethics, and security are fairly common when it comes to AI integration in business processes and create technical issues for managers who are not technically sound [14][26]. A huge amount of personal information has to be shared with AI tools, such as ChatGPT, to be able to create accurate responses. This threatens the privacy of firms by disclosing such sensitive information [28]. Furthermore, overreliance on GAI can reduce vital human skills, such as creativity and critical thinking and create human automation bias [20][29].

Successful integration of these technologies requires careful navigation of ethical considerations, regulatory challenges, and significant shifts in workforce dynamics. Therefore, this study develops a framework for adopting GAI in business organizations by looking at the case of business organizations in Canada.

Methodology

To understand the role of GAI in the business world, a qualitative approach was adopted for this research. To limit its scope, it

was explored in the Canadian context by exploring the impact of GAI and its limitations in the Canadian business world. While there is an abundance of quantitative and qualitative explorations of the subject, country-specific context held develop deeper insights into this emerging field. Furthermore, using the qualitative approach helps stakeholders to understand the meanings, concepts, and definitions properly without indulging in mathematical information used in the quantitative approach [25].

The qualitative method for this research regarding GAI was effective in exploring this novel technology. Both academic researchers and organizational managers need this study to examine GAI in detail and to discuss the technology in depth. This is the main reason qualitative methodology aims to offer a better understanding of this subject. Scholars also argue that using a quantitative approach is more useful for researchers because it offers an objective and precise methodology to examine data to arrive at reliable outcomes [25].

As opposed to the quantitative approach, the study utilized a qualitative approach based on in-person interviews having skills within the domain of AI. The size of the data sample is crucial to understanding the demographics of participants. Given the scarcity of skills and expertise, participants are also low in number in the industry [10]. Hence, this study incorporated 20 participants. Moreover, the confidentiality and integrity of respondents were protected by keeping their identities confidential. Therefore, the data collection procedure was based on 15 main questions. The first set of five questions were subsets of RQ1 which aimed to explore the importance of GAI in the business community and how its integration is beneficial for business operations. The second set of questions were subsets of RQ2 which aimed to understand the challenges associated with the adoption of GAI. The third set of questions aimed to answer RQ3 which was important to understand what motivates businesses in Canada to inculcate GAI into their operations. Additionally, the study also incorporated secondary data from quality and relevant academic articles. Main aspects, such as how GAI is used practically and which publications will ensure the best data for the research were given priority.

Furthermore, the study acquired descriptive statistics and a thematic analysis technique. Researchers can effectively use thematic analysis techniques to explore vital data relationships [6]. Therefore, this technique offered a good understanding of patterns related to each question of the study.

Results

The purpose of this qualitative study was to explore the challenges of business organizations while adopting GAI and investigating the driving factors for these challenges. This chapter sheds light on the key findings of the study through interviews conducted by the author. Moreover, the key themes generated in the data analysis process are also explained in this chapter along with the original responses from the respondents.

AI-Driven Strategic Decision-Making and Business Growth

The first analytical theme emerging from the data related to the contribution of AI in decision-making and growth of businesses by the participants. This portion of the discussion with the participants set the foundation of understanding how AI supports strategic growth, aligns with the long-term goals of businesses, and improves decision-making. This theme aligns well with RQ1 and covers some elements of RQ3 by exploring how AI contributes to business value. Two subthemes emerged from this theme:

Strategic Planning

According to majority of the participants, AI has the potential to have significant impacts on the strategic planning of businesses. It has the ability to align with the existing procedures of

the firm and contribute in the long-term goals. Furthermore, by integrating AI into the business procedures, businesses refine their visions by drawing insights from the future and identifying growth opportunities. Moreover, integration of AI in business processes also helps businesses gain a competitive advantage. This provides businesses value and align with their vision by making processes easier and convenient.

"Implementing specific GAI functionality for carefully selected use cases where there is a clear ROI will add a significant competitive advantage for the early adopters. One specific example is using GAI to draw insights from existing customer interaction data and identify more targeted marketing." ~Participant 3

Decision-Making

The second sub-theme focuses on the contribution of AI in decision-making areas of businesses. It is important for businesses to make informed decisions. AI transforms the traditional decision-making approach by providing data-driven insights. This is done through predictive analytics and advanced algorithms through which businesses can predict market conditions, identify potential risks, and develop strategies such that they align with the potential future trends.

One of the key benefits of GIA is predictive modelling which can enhance the decision-making process in the scenario it is deployed in. For e.g. a GAI predictive model implemented to determine project success probability will facilitate higher quality decision making for future projects. ~Participant 5

Operational Efficiency and Automation

The second analytical theme emerging from the data related to the contribution of AI in decision-making and growth of businesses by the participants. This theme helps understand how AI increases the operational efficiency and reduces costs. This theme also aligns well with RQ1 and covers some elements of RQ3 by exploring the operational potential of AI. Two subthemes emerged from this theme:

Increased Efficiency

According to all participants, AI has revolutionized business operations by enhancing efficiency through task automation. This allows them to complete repetitive and mundane tasks with more precision and reduced human errors. This results in enhanced management procedures and improves overall efficiency and productivity of the firm. This also allows for streamlined managerial tasks and lesser reliance on manual labor.

"It shortens the amount of time and effort required to narrow down on suitable solution options, debugging efforts and provides the luxury for personalized queries." ~ Participant 4

Cost Effectiveness

Cost effectiveness is also another perspective of the participants, regarding the contributions of AI. they are of the view that reduction of manual labor cuts down labor costs and streamlines inventory management. moreover, this enables businesses to be freed from human resources and focus more on strategic alignment of businesses. This can enhance product and service quality and result in revenue growth.

"Initially, no as the investment in AI will be high but as AI is implemented more, the savings may be in staff reduction and better products quicker to market (ie more revenue)." ~Participant 6

However, some view that this might have serious repercussions and demand for labor may decrease in the market, leaving many jobless. Moreover, it requires adaptation of the workforce from current practices to new ones which also require advanced technical skills. Hence, organizations must also invest in employee training, skill upgrades, and overcome the resistance to AI by enabling traditional employees to accept such a change.

"Add finer grained security controls and provide air gapped GAI instances, and at the same time ensure that GAI is used to supplement existing workforce and not replace or reduce headcounts." ~Participant 6

"AI can elevate and challenge employees to upscale their skills at the workplace while taking over the routine, mundane tasks. AI can provide alternatives to problems offering solutions taking up the product offering to the next level." ~Participant 3

Innovation and Customer Experience

The third theme emerging from the data covers how AI drives innovation and improves customer service. This theme focuses on the major motivators for adopting AI in business operations and is further divided into two subthemes:

Innovation

From the interviews, it was evident that AI is a major driving force of innovation. Nowadays, businesses are transforming their products and services by designing them through predictive insights. AI technology, such as machine learning algorithms, copilots, and chatbots are increasingly enhancing business marketing by reshaping the business landscape through SI-assisted tools. The continuous improvement in product and service quality, AI has also fostered creativity and progress among many businesses, which provides them an edge over their competitors.

"In the Canadian market, GAI can be leveraged to drive innovation and gain a competitive advantage by personalizing customer experiences and optimizing resource allocation in industries like healthcare and telecommunications." ~Participant 1

Customer Service

Almost all participants agreed that when it comes to business and customer interactions, AI enables firms to create personalized customer experiences that meet individual customer needs. Moreover, tools like chatbots and copilot enable businesses to gain a competitive advantage over other similar businesses. Moreover, predictive analytics allow firms to create customized products and services according to the needs of the customers and emerging trends. AI assisted technology has also resulted in faster customer service by reducing manual labor which traditionally slowed down business operations and customer responsiveness.

"One cool example of Generative AI making a big difference was with customer service chatbots. They started handling tons of customer questions on their own, which sped up responses and let the human team tackle the trickier problems." ~Participant 7

Challenges in AI Adoption: Compliance, Ethics, and Quality Assurance

The fourth theme emerging from interviews discusses the critical challenges faced by businesses in AI adoption. It is important to also address the complications that arise in adopting AI in business operations, including regulatory issues, data quality and privacy, and ethical as well as legal concerns of firms. This theme widely explores RQ2 through three subthemes:

Regulatory Compliance

Even though participants agree that AI serves several benefits to their businesses, they also highlighted the challenges they face. Regulatory compliance was the prime concern for many participants. This is because businesses are usually subject to industry-specific guidelines and AI usage adds additional governance standards that must be adhered to. It is important for businesses to overcome such complexities by ensuring that their AI applications align well with the industry-specific standards. In case of failure to adhere to such standards, the businesses can face legal penalties as well. Some participants provided their opinions on how to manage such complex procedures; however, for some it was a tedious task.

"To ensure compliance with Canadian regulations and international standards, I regularly consult with legal experts, adhere to industry-specific guidelines, and incorporate compliance checks into the GAI deployment process." ~Participant 5.

Ethical Considerations and Data Quality

According to all participants, ethical considerations are equally important, especially when it comes to data privacy. Even though AI produces high quality data with minimal to no biases; however, poor data quality and biased algorithms can produce flawed results and lead to ethical misconduct. Moreover, hacking is a common method that threatens data privacy even for AI integration. Machines and software cannot fully replace human labor for businesses to flourish and thus require equal manual labor for optimum results.

"Related to data privacy it comes down to working with providers/platforms that support running models in secure enclaves or dedicated encrypted compute/storage for models and data. Ethical issues are harder to solve when it comes to usage rights and discrimination. Until model provide transparency and certifications on which datasets were used to train models or valid test cases to show lack of bias ethical issues will exist." ~Participant 8

"To address concerns regarding data privacy and ethical implications associated with Generative AI solutions, stringent adherence to data protection legislations is enforced, comprehensive security measures are implemented, and transparency regarding the use of data is maintained across all stakeholder interactions." ~Participant 3

Discussion

The results of this study were determined by a thematic analysis and revealed several factors that determined the adoption of GAI in business operations in Canada and the challenges they faced in adopting it.

Benefits of adopting GAI

It was most commonly found that the adoption of GAI in business operations provided several benefits to the organization and its employees. Firstly, GAI has the ability to improve strategic planning and management of businesses. By forecasting future market trends and potential risks associated with them, AI data analytics can help streamline business procedures and support project managers in making informed decisions [8][34]. In line with this, the study finds that AI transforms the traditional decision-making approach by providing data-driven insights.

Secondly, GAI has the potential to increase time and cost effectiveness of businesses by reducing labor cost and taking over random, mundane tasks. This was found to enhance management procedures and improve the overall efficiency and productivity of the firm. The valuable insights developed by GAI have improved efficiency by reducing human error in decision-making and other processes [34]. For example, ChatGPT is a successful tool that has helped many employees and managers in making crucial business decisions and project planning [15]. Furthermore, it has also enabled many businesses to reduce the cost of hiring costly content creators to generate innovation in marketing strategies.

This leads the study to analyze that GAI has improved customer experience and helped businesses gain competitive advantage. It is being utilized widely in the areas of customer service by responding to the dynamic needs of customers [12]. Businesses are now bringing innovation to their products and services by designing them through predictive insights. AI technology, such as machine learning algorithms, copilots, and chatbots are increasingly enhancing business marketing by reshaping the business landscape through SI-assisted tools. Not only this, GAI has also helped in providing real-time data for assessing future market trends and creating customized services according to the needs of the clients

and customers to [15]. Furthermore, GAI in business analytics have optimized supply chain management, forecasting of future market demands, and potential financial and non-financial risks [8].

Challenges associated with GAI

Even though the adoption of GAI has proven its ability to benefit several domains of business, there is also an opposing view that highlights its key challenges. It is important to understand that AI tools can only be beneficial if they are operated with the collaboration of human employees. GAI is not supposed to reduce manual labor, rather assist humans in mundane procedures to achieve maximum efficiency. However, overreliance on GAI can reduce vital human skills, such as creativity and critical thinking and result in human automation bias [20][29].

Secondly, lack of technical expertise of employees poses a challenge for managers that are willing to integrate GAI for the growth of business. This is also significantly related to the creation of industry-specific guidelines for AI application and technological knowledge of employees. It was found by the study that it is important for businesses to overcome such complexities by ensuring that their AI applications align well with the industry-specific standards. However, huge amount of personal information has to be shared with AI tools to be able to create accurate responses which threatens the privacy of firms by disclosing such sensitive information [28]. If this becomes a violation of company standards, employees might face repercussions.

Moreover, hacking also threatens data privacy during AI integration. Machines and software cannot fully replace human labor for businesses to flourish. Lastly, issues related to data privacy, ethics, and security are fairly common when it comes to AI integration in business processes [14]. Therefore, machines and software cannot fully replace human labor for businesses to flourish and thus, require equal manual labor for optimum results.

Hence, to summarize the findings from this qualitative investigation, several key points shall be considered. Firstly, GAI has immense potential in the business sector to enhance its strategic management and decision making. It has the ability to transform business operations by providing data-driven insights that are beneficial to make informed decisions. Secondly, GAI has led to automation of mundane tasks that required greater labor costs and repetition. It also resulted in less human error. However, this has also caused workforce displacement and raised concerns for employees' job security. The study finds that instead of replacing human capabilities, GAI must be used to its full potential by collaborating with employees. Moreover, GAI has the ability to increase competitive advantage for businesses that include AI tools in their marketing decisions and generate customer and market centric processes. This has the potential to improve their market visibility, respond to customer expectations, and forecast future potential risks and minimize them. However, firms must also find balance between innovative use of GAI and maintaining ethical standards. Despite its significant positive role in business development, GAI poses serious challenges to organizational processes and work cultures as well. Some of the most prominent challenges include data privacy and quality issues, ethical misconduct, and overreliance on AI tools.

Conclusion

The study aims to provide empirical evidence on the potential of GAI to enhance the internal and external operations of business organizations and the challenges that they must address to leverage the technology successfully. According to the findings of this study, it is essential for businesses to address both the ups and down of integration of GAI into their practices. The framework provided by the study

serves as a pathway for Canadian businesses to effectively implement GAI into their daily and strategic managerial practices. Moreover, the framework can also enable businesses in other geographies to explore the role of GAI in their managerial practices. Moreover, by aligning GAI with the long-term planning and vision of organizations, they can unlock full potential of AI tools to make their businesses successful and gain competitive advantage over others.

However, businesses must also strive towards creating balance between integrating GAI into their practices yet also acknowledge that workforce is equally equipped with skills and creativity beyond the limitations of AI tools. Moreover, they should also work towards solving data quality and privacy issues and address major ethical concerns for optimum results. Future research can focus on the solutions towards workforce retainment and collaboration between employees and GAI for optimum results. Moreover, further research is needed in exploring the ethical challenges posed by GAI and a way forward to solve them. Additionally, future researchers can focus on creating an alignment between industry-specific guidelines and national standards for GAI integration.

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