Trust in AI: Perspectives of C-Level Executives in Brazilian Organizations

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Abstract

Context: With the advancement of Artificial Intelligence (AI) and its increasing integration into business processes, the trust of top management in Brazilian companies has become a crucial issue. Business leaders must be aware of the challenges and opportunities associated with adopting AI in their operations. A lack of understanding and knowledge about the capabilities and limitations of AI can lead to hesitations and concerns from top management regarding its use. **Goal**: This work aims to identify the main challenges preventing C-level executives from fully trusting AI and its applications within their organizations in the Brazilian context. Additionally, a reference guide is proposed to help top management better understand how AI can be effectively and ethically integrated into their business strategies. **Method**: We conducted a survey with 30 business leaders from various sectors to understand their perceptions of trust in AI and their concerns regarding its implementation. **Results**: The results revealed that the main obstacles faced by top management in Brazilian companies were the lack of understanding about AI's capabilities and its ethical implications. Therefore, it is imperative for business leaders to invest in education and awareness about AI, seeking to understand its benefits and challenges. Only then will they be able to make informed decisions and fully trust AI solutions to drive innovation and sustainable growth in their organizations and the improvement of organizational processes.

CCS Concepts

• **Human-centered computing** → **User studies**; • **Social and professional topics** → **Management of computing and information systems**; **Professional topics**.

Keywords

Organizational Leaders, C-Level Executives, Ethical Implications in AI, Limitations of AI, Governance

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1 Introduction

In recent years, the advancement of Artificial Intelligence (AI) has raised questions regarding the trust of senior management in its application. The improper or unethical use of AI can lead to significant consequences for both companies and society at large [9, 24]. Therefore, it is crucial for business leaders to understand the benefits and challenges associated with AI, such as demographic, cultural, linguistic, temporal, confirmation, and ideological & political biases [12]. In addition, business leaders need to understand the most common AI ethics challenges in the industry, which include a lack of ethical knowledge, absence of legal frameworks, insufficient monitoring bodies, and machine distortion [17]. Therefore, they must be fully informed and familiar with the ethical principles in AI [9, 10, 26] to make decisions based on the established ethical guidelines in the literature [15, 17].

Budic [6] conducted an empirical study on public attitudes towards various aspects of AI utilization and identified that public service users in Serbia have divided opinions on the use of AI. Half of the study's participants had a positive perception, while the other half had a negative perception. Additionally, the authors reported that perceptions could be influenced by variables such as age, education, profession, level of religiosity, and prior knowledge of AI. Younger individuals, highly educated, non-religious, with highly skilled jobs—especially IT professionals—and those more familiar with the concept of AI exhibited more positive attitudes towards its use. Furthermore, the authors identified that public service users are concerned about the loss of certain professions due to AI development and discrimination by AI systems. The results suggest the need to educate users about the challenges and ways to prevent them, increase transparency in decision-making processes related to AI implementation, and promote dialogue between users, the

State, and the private sector. The study also found that user opinions have not shaped conversations about AI usage, highlighting the necessity for more research on user attitudes and experts in AI applications, as well as the ethical challenges related to these applications.

Pant et al. [24] conducted a study to understand the awareness of AI professionals regarding AI ethics and the challenges of incorporating ethics. The authors gathered perceptions from 100 AI professionals and identified that most of them had a reasonable familiarity with the concept of AI ethics, primarily due to workplace rules and policies. Protection and security of privacy were the ethical principles most well-known among AI practitioners. Formal education and training were considered useful in preparing professionals to incorporate ethics in AI. The authors identified the following challenges faced by AI professionals in developing ethical AI systems: (a) general challenges, (b) technology-related challenges, and (c) human-related challenges.

Khan et al. [17] conducted a survey with 99 AI professionals and policymakers from 20 countries to gather their perceptions on AI ethics. The findings revealed that transparency, accountability, and privacy are the most critical AI ethical principles. Conversely, a lack of ethical knowledge, the absence of legal frameworks, and the lack of monitoring bodies are considered the most common ethical challenges in AI. The authors also identified that implementing ethical principles in practice is one of the biggest challenges for AI professionals and that the lack of monitoring bodies and mechanical distortion compromise the existing capability maturity models for supporting the development and quality assessment of ethically aware AI systems. Although previous studies have examined the role of trust in technology adoption across various contexts, there is limited research on how trust directly influences leadership decisions regarding AI implementation in organizations. This study aims to address that gap by offering insights into the important role of leadership trust in AI adoption, which is especially important in today's business environment, where emerging technologies play a key role and trust is vital for strategic decision-making.

Against this backdrop, this research conducted a survey to investigate the level of trust that high-level executives (C-levels) have regarding the use of Artificial Intelligence (AI). The survey targeted key decision-makers in organizations to understand their perceptions, expectations, and concerns about the implementation and integration of AI technologies in their operations. This study identified the main barriers and facilitators influencing the adoption of AI in the corporate environment and provided insights into the intention of C-levels to trust and invest in emerging technologies to drive innovation and competitiveness. Thus, given the lack of empirical studies exploring the principles and challenges associated with AI ethics from the perspective of decision-makers, this paper aims to answer the following question:

RQ.1: Is the level of trust decision-makers have in the use of AI in Brazilian organizations?

Our findings reveal that, although the C-levels of Brazilian companies are enthusiastic about the transformative potential of Artificial Intelligence (AI) and Generative AI (GenAI), significant challenges need to be overcome for effective adoption. Most executives recognize substantial benefits, such as increased operational efficiency and improved decision-making processes, but also highlight the need for continuous and specialized training. Additionally, concerns about the lack of specific skills, high implementation costs, and issues related to security and ethics are important barriers that must be addressed. The results emphasize the importance of developing an innovative organizational culture and establishing strategic partnerships. Our findings provide valuable insights into the perceptions and expectations of executives regarding the use of AI, indicating a promising yet challenging future for the technology's use in Brazilian companies.

2 Background

2.1 Artificial Intelligence Ethics Principles

The ethical principles in Artificial Intelligence (AI) are fundamental to ensuring that the development and application of these technologies occur responsibly and beneficially for society. The main principles are [9, 17]:

- **Transparency**: Professionals must ensure that AI processes and decisions are understandable and explainable, fostering user trust and the possibility of audits.
- **Fairness**: AI should be developed and used in a way that avoids biases and discrimination, ensuring equity and fair treatment for all individuals and groups.
- **Accountability**: The creators and users of AI must be responsible for its impacts, ensuring that there are clear mechanisms for accountability and remediation in case of errors or harm.
- **Privacy**: It is crucial to protect user data privacy, ensuring that the collection and use of personal data are conducted ethically and in accordance with existing legislation [11].
- **Security**: AI should be developed with robustness against cyberattacks and failures, minimizing risks and ensuring the security of systems and users.
- **Beneficence**: AI applications should aim to enhance societal well-being, promoting social, economic, and environmental benefits.

Professionals should consider these principles at all stages of the AI application development lifecycle to ensure that the software produced is ethical and responsible [9–11].

2.2 ISO/IEC 38507:2022

ISO/IEC 38507:2022 [13] provides guidance for members of an organization's governing body on enabling and managing the use of artificial intelligence (AI), aiming to ensure its effective, efficient, and responsible implementation. AI use is broadly defined as the development or application of AI systems throughout their lifecycle to achieve organizational objectives and create value. This includes interactions with any organizational function that provides or utilizes such systems. The standard addresses the nature and mechanisms of AI, offering insights into its governance implications, risks, opportunities, and responsibilities. Rather than focusing on a specific AI technology or application, it covers a wide range of AI technologies and methods. The emphasis is on the governance of AI use within the organization, a task carried out by humans, though effective governance requires an understanding of

the underlying technologies [13]. The scope of the standard relates to the implications for an organization of the use of AI. Like any powerful tool, the use of AI brings new risks and responsibilities that must be addressed by the organizations that use it. AI is not inherently "good" or "bad", "fair" or "biased", "ethical" or "unethical", although its use can be or appear to be so [13].

The standard for Standardization [13] provides guidance for the members of an organization's governing body to enable and govern the use of AI to ensure its effective, efficient, and acceptable use within the organization. Additionally, the standard proposes the applicability of governance to both current and future uses of AI, as well as the implications of this use for the organization itself, including public and private companies, governmental entities, and non-profit organizations of any size, regardless of their dependence on data or information technologies.

2.3 Related Work

The concept of trust has been extensively discussed in the literature, with some studies examining the minimum level of trust necessary for the effective use and application of AI in organizations. Additionally, these studies explore the commodification of trust in academic and political discourses on AI, emphasizing how trust is discursively constructed as an essential resource in the context of large-scale data collection [2, 3, 7, 19, 27, 28].

Courtenage [8] investigated the attribution of moral responsibility to intelligent and collective machines. The author explored the necessary conditions for an entity to be considered morally responsible, including control over its actions, intentionality, and knowledge of the outcomes of its actions. The study provided a robust foundation for understanding executives' concerns about implementing AI in their companies. Understanding the difference between the responsibility attributable to humans and machines can help delineate clearer business policies and practices. Executives need to know the extent to which they can trust decisions made by AI systems, especially in critical areas. This focus is essential for developing ethical guidelines that can enhance C-level executives' trust in AI.

Ladak [20] explored the criteria necessary for artificial intelligence to be considered morally significant. The study addressed the challenges and implications, and the authors argue that considering the uncertainty about which criteria an entity must meet to be morally relevant and the strategic considerations on how such decisions will affect human behavior and other entities. The authors concluded that understanding the criteria that determine the moral relevance of AI systems can help delineate clearer business policies and practices. The discussion on the possibility of AI reaching a sufficient level of cognitive sophistication to be considered morally significant is relevant to the context of our research, as it opens an investigative field on how to develop AI systems that can be more reliable and accepted by executives.

Al-Sulaiti et al. [1] investigated the need and different levels of transparency in AI systems in the workplace. The study underlines the importance of transparency and explainability as fundamental to building trust among executives. Understanding how transparency can be practically implemented can provide valuable insights for strengthening C-level executives' trust. The practical challenges discussed by the authors, such as balancing precision and recall and the implications for human accountability, are also important for understanding C-level executives' concerns and resistance to AI adoption in the decision-making process.

Bartneck et al. [4] investigated how demographic characteristics and personality traits are associated with the desire to strictly regulate AI use. The study detailed how personality traits, such as neuroticism and agreeableness, influence attitudes toward AI regulation. This provides an understanding of how individual characteristics of C-level executives can affect their trust and acceptance of AI. Although the study was conducted in New Zealand, the factors examined, such as demographics and personality, are universal and can be applied to the Brazilian context. Understanding these correlations can help identify potential barriers and facilitators in the adoption of AI in Brazilian companies.

Braunschweig et al. [5] presented a summary of how AI reliability should encompass a wide range of attributes, such as accountability, accuracy, reliability, security, transparency, and privacy. The authors also highlighted the importance of considering trust as an essential design principle for AI systems, which is directly relevant to understanding how C-level executives perceive the reliability and safety of these systems in their companies. The authors discussed innovative methods and metrics for evaluating AI reliability, which can be adapted and applied to our research on C-level executives' trust, providing a solid foundation for the analysis and validation of AI systems in Brazilian companies.

Radar [25] presented a comprehensive analysis of the adoption and impact of AI and Generative AI in global companies, based on a survey conducted with 1,406 executives. The majority of executives (71%) plan to increase technology investments in the coming years, prioritizing AI and Generative AI, highlighting the growing importance of these technologies. However, many executives expressed dissatisfaction with their organizations' progress, citing a lack of talent and skills (68%), unclear roadmaps (66%), and the absence of responsible strategies (64%) as their main concerns. Only 6% of companies have managed to train more than 25% of their employees in Generative AI tools so far, indicating the need for greater reskilling efforts. There is limited trust in the capabilities of executive teams in Generative AI, with only a minority of professionals expressing full trust in their leadership's competencies. These points reflect global trends in AI and Generative AI adoption, emphasizing the need for continuous investment, training, and responsible strategies to maximize the benefits of these emerging technologies.

3 Study Settings

This study aims to explore the key challenges that hinder C-level executives from fully trusting AI, along with their perceptions of using AI to support decision-making within their organizations. Considering that the challenge of adopting AI technologies is relevant for both newcomers to the field and seasoned professionals—even for highly experienced AI specialists—we deemed it important to collect and investigate the perceptions of practitioners regardless of their level of experience. The sole requirement for participating in the research was to be an executive or a member of the senior management team in an organization, to correlate AI implementation practices with business strategies, considering the specific context

of AI adoption in Brazil and the improvement of organizational processes.

The survey was disseminated through a systematic approach, primarily using social media platforms and professional networks. The main platforms utilized were LinkedIn, Facebook, WhatsApp, and Microsoft Teams. Direct messages were sent to 500 professionals, specifically selected based on their leadership roles (C-level) and their involvement in Brazilian organizations. Participants were intentionally chosen to include executives in high-level positions, such as CEOs, COOs, CTOs, and CFOs, across various economic sectors. Additionally, public posts were made in specialized technology and business management groups and forums, broadening the reach to a wider audience. This strategy aimed to maximize respondent diversity, ensuring the sample represented different profiles and business sectors. However, participants were not randomly selected, as the focus was on leaders in strategic positions who could provide valuable insights into the adoption of AI within their organizations.

For conducting the study, the following supports were developed: an AI application scenario proposing different implementation strategies and practices; diagrams visually representing AI use within organizational structures, enabling a clear understanding of the implications and benefits. All these materials were provided to participants after obtaining prior consent to participate in the research.

The diagrams illustrated how AI technologies integrate with business operations, focusing on areas like customer service, decision-making, and automation. They emphasized AI's alignment with strategic objectives such as cost reduction, operational efficiency, and innovation. Additionally, the diagrams outlined ethical and security frameworks, highlighting data flows, privacy, and compliance measures aimed at mitigating risks associated with AI adoption. The diagrams were reviewed by all authors of this research and five experts in AI and software engineering to ensure both theoretical and practical accuracy. Based on feedback from researchers during the pilot phase, the diagrams were refined with input from the AI experts to enhance clarity.

The final version was then presented to survey participants, whose responses and insights validated the diagrams' practical applicability within an organizational context. Participants answered the questionnaire asynchronously, providing flexibility and reducing the waiting time between data collection and result analysis. The primary objective of the survey was to assess how AI adoption by senior management could impact business strategy and decision-making, as well as to identify the main challenges and opportunities associated with AI use.

To analyze the collected data, a methodological approach combining quantitative and qualitative methods was applied. The qualitative analysis allowed an in-depth understanding of participants' perceptions and experiences, while the quantitative analysis provided statistically significant insights into patterns and trends in AI adoption by senior management in Brazilian companies. The survey aimed to identify the key challenges that hinder C-Level executives from fully trusting AI, while also exploring their perceptions of AI's role in supporting decision-making within their organizations, specifically in the Brazilian context.

3.1 Scenario

The proposed scenario aims to provide a comprehensive view of executives' perceptions, concerns, and aspirations for the future regarding the adoption of AI in their organizations. The study participants were selected among executives from organizations across various economic sectors, based on profile and professional experience criteria. Each participant represents an organization where they hold a strategic leadership position.

Throughout the research, participants expressed their perceptions about AI adoption in their organizations. They recognize AI's potential to drive operational efficiency, improve customer experience, and generate valuable insights from organizational data. However, participants also voiced concerns related to data privacy and security, as well as the potential impact of AI on the labor market and organizational culture. Moreover, they shared their desires and expectations for the future of AI adoption, seeking to ensure that the implementation of this technology is ethical, transparent, and responsible, while also enhancing the quality of organizational processes. A diversity of opinions and experiences among the participating executives was observed, highlighting the complexity and nuances involved in AI adoption by senior management in organizations.

3.2 Survey

The survey consisted of 34 open-ended questions grouped into 7 sections (S), S1. Executives and Companies Profile; S2. Investments in Technology and AI; S3. Trust, Empowerment, Challenges and Benefits; S4. Implementation Strategies and Expected Results; S5. AI's Culture and Organizational Adaptation; S6. Partnerships, Collaborations, Security and Ethics; and S7. AI'Short and Long Vision of the Future, as shown in Table 1.

Before conducting the survey, we performed a pilot test [22] with the assistance of two professors in Software Engineering and AI who were not involved in our study. This test was used to cross-examine and clarify the questions and response options. Based on their feedback, we made several improvements and validated the survey questions. The pilot participants took an average of 14 minutes to complete the survey, and we informed respondents of this average time when the survey was made publicly available.

The data analysis was conducted using a mixed-method approach, integrating both qualitative and quantitative methods. For the qualitative analysis, we applied content analysis to the open-ended responses, beginning with open coding to identify recurring themes and patterns in the executives' perceptions of AI challenges and benefits. These responses were then grouped into broader categories to highlight key trends and concerns. For the quantitative analysis, descriptive statistical methods were used to assess the multiple-choice and scale responses, providing insights into the distribution of perceptions regarding trust in AI, investment expectations, and organizational impact. Finally, the qualitative and quantitative results were triangulated to offer a comprehensive view of the participants' trust in AI within their organizations.

ID	Questions
	S1. Executives and Companies Profile
Q01	In which state do you currently live?
Q02	How old are you?
Q03	What is your educational level?
Q04	How many years of experience do you have?
Q05	What is your executive role?
Q06	What is your company's sector of activity?
Q07	What is your company's annual revenue range?
Q08	What is the current number of employees in your company?
	S2. Investments in Technology and AI
Q09	Is your company planning to increase investments in the coming years?
Q10	What is the priority of AI/GenAI for the coming years?
Q11	How confident are you in your team's proficiency level?
Q12	How many of your employees have been trained on GenAI?
	S3. Trust, Empowerment, Challenges and Benefits
Q13	Select which of the challenges below would your company face when implementing AI/GenAI?
Q14	Your company is waiting to see how specific regulations for AI develop?
Q15	Is your company implementing responsible AI principles?
	S4. Implementation Strategies and Expected Results
Q16	What is your company's expectation regarding cost savings with AI/GenAI in the coming years?
Q17	Your company is investing in GenAI to increase productivity and/or revenue growth?
Q18	Your company is building strategic relationships with technology partners?
	S5. AI's Culture and Organizational Adaptation
Q19	Your company has a clear and defined implementing roadmap for AI/GenAI?
Q20	Which areas of your company do you believe will be most impacted by AI/GenAI?
Q21	Your company is using AI/GenAI to automate routine tasks?
Q22	Your company is developing new products or services?
Q23	How does your company measure the return on investment?
Q24	What is the level of acceptance among your employees?
Q25	Your company's senior management actively participates in the promotion and adoption of AI/GenAI?
Q26	Your company integrating AI/GenAI into its strategic decision-making processes?
	S6. Partnerships, Collaborations, Security and Ethics
Q27	Your company collaborating with universities or research institutes for AI/GenAI projects?
Q28	Your company exploring partnerships with AI startups?
	S7. AI'Short and Long Vision of the Future
Q29	What would be your company's biggest concern regarding data privacy when using AI/GenAI?
Q30	Your company exploring for innovation in business models?
Q31	What would be the main opportunity your company sees?
Q32	Does your company offer regular training for employees?
Q33	What are your company's future plans to expand the use of AI/GenAI in the next five years?
Q34	If you have any suggestions, please add them here

Table 1: Survey Questions

3.3 Survey Invitation

We used the Google Forms platform[1] to create the survey questionnaire. Next, we made it available through cards and text on social media platforms. We used three strategies: posts, c-levels groups posts and direct messages. We posted on Twitter, LinkedIn, Facebook, and Instagram, and we sent direct messages to profiles on these platforms, in addition to WhatsApp and e-mails. The questionnaire was available from June 20th to July 10th, 2024 (20 days), We collected 30 answers.

4 Results

4.1 Participants' Profiles

30 C-Level Executives from Brazilian companies participated in the survey. The majority of the survey participants live in the Federal District (Q01 from Table 1) and have more than 15 years of

[1]https://www.google.com/forms

professional experience in their respective fields (Q04). The predominant age group (Q02) of the participants is between 41 and 50 years. In terms of educational level (Q03), most participants have completed postgraduate studies, which reinforces the high level of qualification of the executives who participated in the survey.

The executives hold different roles in their organizations (Q05), such as Chief Executive Officer, Chief Operating Officer, Chief Technology Officer, among others. This diversity of high-responsibility roles in the organizations demonstrates a broad perception of decision-makers within the organizations. Regarding the nature of the organizations (Q06) in which the participants work, most of them are in service companies (83.3%), mainly in the area of creating new products and services. We can infer that the survey participants are experienced executives with a good level of education and occupy key positions in their organizations, which allows them to have a strategic and managerial view of organizational investments and the challenges and advantages of implementing AI in their organizations. The professional experience and qualifications of the participants also suggest that their perceptions and opinions about AI are well-founded and based on a solid understanding of the opportunities and challenges that the use of AI represents. The complete profile of the participants is presented in Table 2.

While our findings may be applicable to organizations in other countries, this study is specifically limited to the Brazilian context, as all participants are either employed by Brazilian companies or hold Brazilian nationality. It is important to note that the conclusions of this study should be interpreted in light of Brazil's cultural, economic, and regulatory specificities, which may influence the adoption and perception of AI in local organizations and may not reflect the cultural dynamics of other countries.

While our sample of 30 participants may seem limited compared to the total population of decision-makers in Brazil, the participants were selected based on rigorous criteria related to their profiles and professional experience. This group represents C-level executives from various Brazilian organizations, encompassing a range of characteristics and business focuses. Thus, this sample provides an initial analysis of leaders' perceptions regarding AI adoption and serves as a foundation for future studies involving larger samples.

Executives Localization	%
Distrito Federal	56.7
São Paulo	26.7
Rio de Janeiro	10.0
Others	6.6
Executives Age	%
>60	10.0
51-60	26.7
41-50	40.0
31-40	23.3
Executives Education Level	%
Doctorate Degree	10.0
Master's Degree	26.7
Postgraduate	53.3
Others	10.0
Executives Years Experience	%
>15	86.7
13-15	3.3
10-12	6.7
7-9	3.3
Executives C-Level Position	%
CEO – Chief Executive Officer	10.0
COO – Chief Operating Officer	52.8
CFO – Chief Financial Officer	6.6
CTO – Chief Technology Officer	24.1
CIO – Chief Information Officer	3.3
Others	3.3
Company's Sector of Activity	%
Services	83.3
Industry	10.0
Commerce	6.7
Company's Annual Revenue Range	%
>R$5B	26.7
R$2B-R$5B	6.7
R$1B-R$2B	10
R$501M-R$1B	13.3
R$101M-R$500M	20
Up to R$100M	23.3
Company's Employees Number	%
>5000	44.8
1001-5000	13.8
101-1000	17.2
Up to 100	24.1

Table 2: Executives and Companies Profile (n=30)

4.2 RQ.1. Level of trust decision-makers in the use of AI

The survey participants exhibited a positive perception regarding the AI investments made by their organizations (Q09 from Table 1). They asserted that these investments are executed with adequate planning and are focused on enhancing the quality of organizational processes. Additionally, the organizations intend to increase investments and implement new AI technologies over the next five years (Q10).

The trust in the use of AI (Q11) is moderate, with variations in responses concerning the provision of regular training in AI/GenAI, indicating a need for greater capacity building (Q12) and organizational transparency. Participants acknowledge the advantages of AI in areas such as customer service, product development, and human resources. However, there is significant concern regarding security and ethical aspects, reflecting the importance of establishing robust partnerships and adopting rigorous governance practices to ensure the responsible and reliable use of AI in companies. Figure 1 presents the executives' perceptions regarding questions Q09, Q14, Q17, Q18, Q19, Q21, Q22, Q25, Q26, Q27, Q28, Q30, and Q32 from the survey.

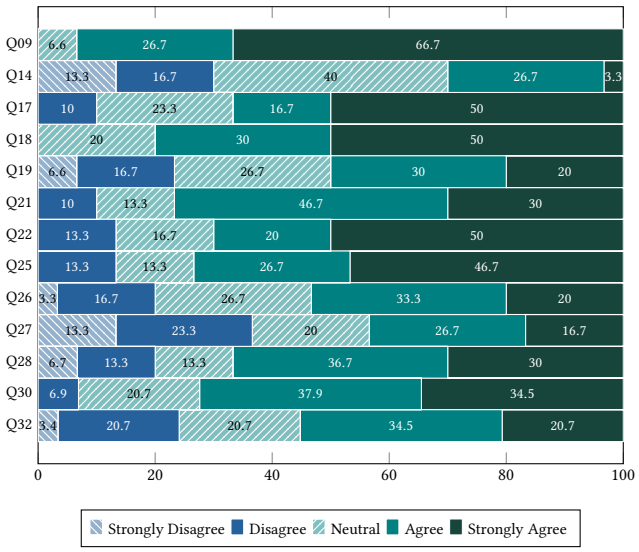

Figure 1: Executives' Perceptions

Al-Sulaiti et al. [1] discussed the importance of transparency in AI systems within the workplace and how the need for transparency varies according to perceived risk and the increase in tasks performed with the support of AI. Our findings indicate that the majority of participants agree that the company should provide regular AI/GenAI training for employees (Q32) as shown in Figure 1. This finding corroborates the results of Al-Sulaiti et al. [1], where the authors identified that transparency and training are fundamental for increasing trust in AI systems.

Bartneck et al. [4] investigated how personality traits and demographic factors are associated with the desire to regulate AI. Traits such as agreeableness, neuroticism, and honesty-humility are positively related to support for regulation, while openness to experiences is negatively related. The survey data show the distribution of age, educational level, and executive role of the respondents, among other demographic factors, according to questions Q01, Q02, Q03, Q04, Q05, Q06, Q07, and Q08 of our survey (Table 2). Comparing our findings with those of Bartneck et al. [4], it is possible to identify that executives with more experience and education tend to be more confident in the use of AI, while those working in higher-risk organizations/sectors stated that more comprehensive regulation is necessary to ensure the reliability of AI systems. Personality traits are not directly addressed in our research.

Braunschweig et al. [5] highlighted the need to consider trust as a design principle in AI systems, covering different dimensions of safety, ethics, and approval processes. The survey participants stated that their organizations have future plans to expand the use of AI in their organizational processes, such as increasing investments and implementing new AI technologies. The authors' findings align with our findings from questions Q27, Q28 (Figure 1), and Q33 (Figure 2), which emphasized the importance of having robust design and evaluation processes in organizations to ensure trust in AI. The inclusion of regular training and plans for expansion into new business areas also reflect the important need to build trust in AI.

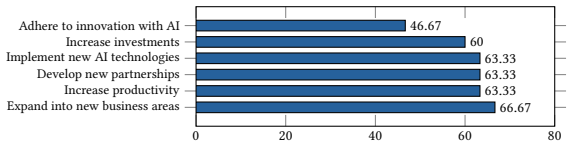

Figure 2: Growth and Innovation

Ladak [20] explored the moral responsibility of intelligent machines and collective agents, discussing the ethical implications of control and agency. The survey participants expressed varying levels of agreement regarding the provision of AI training, which is crucial to ensure that employees understand the moral and ethical responsibilities associated with the use of AI. The perception of ethical and moral responsibility can directly influence executives' trust in AI. This is supported by our findings from question Q15 (Figure 3), where the majority of participants stated that their organizations do not implement responsible AI principles, potentially affecting their trust in AI. Additionally, question results Q32 from Figure 1 revealed that organizations do not provide regular AI training to their employees, further impacting trust levels.

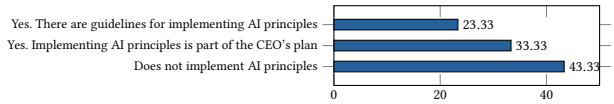

Figure 3: AI/GenAI Priority

Our findings indicated a diversity of perceptions among the survey participants regarding plans for AI usage among Brazilian executives, reflecting the importance of transparency, regulation, reliability, and moral responsibility in improving organizational processes through AI technologies. The collected data provided a comprehensive view of the perceptions and challenges faced by Brazilian executives in adopting AI technologies in their companies. Integrating theoretical and empirical perspectives with organizational practice can enrich the understanding and strategic approach of organizations and increase trust in AI, both in decision-making and in the commitment of organizational team members.

4.2.1 Investments in Technology and AI. The executives demonstrated a diverse perception regarding the investments in technology and AI made by their organization:

- Investments in Technology: 93.4% of the survey participants stated that their organizations are increasing investments in AI/GenAI in the coming years, and 6.6% of them were neutral (Q09), as presented in Figure 1.
- Planning in AI/GenAI: 46.67% of executives stated that investing in AI/GenAI is one of their top three priorities in the coming years, and 36.67% indicated that the investment in AI/GenAI holds a high priority in their organizations, as presented in Figure 4. Organizations plan to increase the use of AI/GenAI in the next five years (Q33) by expanding into new business areas (66.67%) and implementing new AI technologies, developing new partnerships, and increasing productivity (63.33%), respectively, as shown in Figure 2.

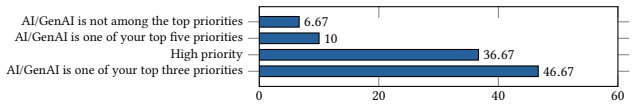

Figure 4: AI/GenAI Priority

4.2.2 Trust and Training in AI/GenAI. The executives' trust in AI/GenAI is influenced by the training courses offered by their organizations:

- Regular Training: 55.2% of executives agree that their organizations offer regular training in AI/GenAI, while 24.7% disagree and 20.7% are neutral, as shown in Q32 of Figure 1.
- Trust in AI: 53.3% of executives trust in AI's ability to improve organizational processes, while 20% disagree and 26.7% are neutral, as presented in Q26 of Figure 1.
- Trust in Team Proficiency: 56.67% of executives stated they have some positive level in their teams' proficiency in AI/GenAI, 40% expressed limited confidence, and 3.33% reported having no confidence (Q11) as shown in Figure 5.

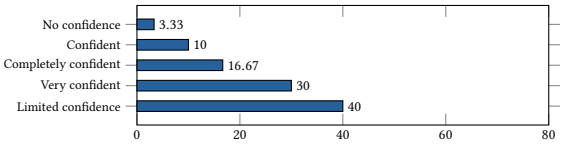

Figure 5: Team's AI/GenAI Proficiency Trust Level

4.2.3 Challenges and Benefits of AI/GenAI. The executives identified several challenges and benefits related to the implementation of AI:

- Challenges: The main challenges include the lack of specialized AI skills (30%), unclear roadmap and investment priorities (23.33%), and lack of end-user trust in AI (23.33%) (Q13) as presented in Figure 6.
- Benefits: The most mentioned benefits (Q31) by the participants were increased operational efficiency (37.9%), the ability to create new products and services (27.6%), and improving the end-user experience (17.2%), as shown in Figure 7.

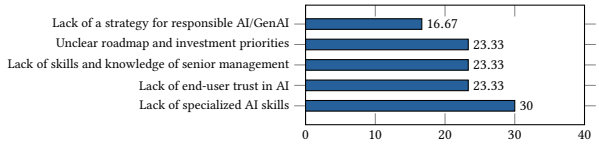

Figure 6: AI/GenAI Challenges

4.2.4 Strategies and Expected Outcomes. Organizations' strategies for implementing AI technologies are aligned with the expected outcomes:

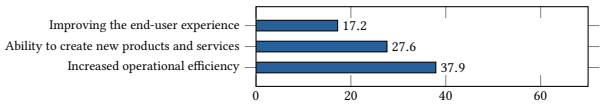

Figure 7: AI/GenAI Benefits

- Strategies: The main strategies include partnerships with technology companies (80%), integration of AI into existing business processes (53.3%), and employee training (55.2%), as presented in Q18, Q26, and Q32 of Figure 1.
- Expected Outcomes: 46.67% of executives stated their organizations expect some cost savings from AI/GenAI (Q16), although the cost savings are not quantitatively measured, and 33.33% stated they expect savings between 10% and 20% of the organizational budget, as presented in Figure 8; 73.3% of survey participants reported that their company measures the return on investment (ROI) of AI/GenAI projects (Q23) by evaluating improvements in the organization's operational efficiency and 70% stated it is through increased revenue, as presented in Figure 9. 37.9% of participants identified increased operational efficiency as the main opportunity their organization sees in adopting AI/GenAI (Q31), as presented in Figure 7. 63.33% of executives stated that their organization's future plans include expanding the use of AI/GenAI in the coming years (Q33) to enhance productivity, as shown in Figure 2.

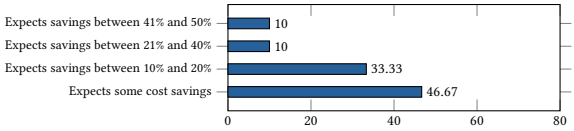

Figure 8: Cost savings from AI/GenAI

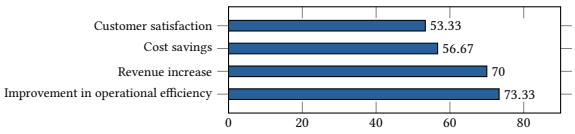

Figure 9: Measuring Return on Investment (ROI)

4.2.5 Organizational Culture and Adaptation. Organizational culture is a critical success factor for the successful adoption of AI:

- Culture of Innovation: 72.4% of executives stated that their organizations have a culture favorable to innovation, while 6.9% disagreed and 20.7% were neutral, as presented in Q30 of Figure 1.
- Organizational Adaptation: The majority of executives reported that their companies are rapidly adapting to the changes brought by AI. 76.7% of practitioners consider the use of AI for automating routine tasks (Q21); 70% for developing new products (Q22); and 73.4% for the active participation

of top management in AI adoption (Q25), as shown in Figure 1. Additionally, 83.33% of executives believe (Moderate and High) in the level of acceptance of AI among employees contributes to this adaptation (Q24).

4.2.6 Partnerships and Collaborations. Executives view partnerships as an important facilitator for AI implementation:

- Strategic Partnerships: 80% of executives highlighted the importance of strategic partnerships with technology companies, as presented in Q18 of Figure 1, 43.4% stated that their organizations are collaborating with universities or research institutes to develop AI/GenAI projects (Q27), and 66.7% of executives reported that their organizations are exploring partnerships with startups working on AI/GenAI (Q28), as presented in Figure 1.
- Collaborations: 63.33% of organizations plan to expand the use of AI/GenAI in the coming years through the development of new partnerships (Q33), as presented in Figure 2.

4.2.7 Security and Ethics in AI/GenAI. Security and ethics in AI/GenAI are central concerns for executives:

- Security: Executives express concerns regarding data privacy. 33.33% are particularly worried about the protection of personal data, 30% are concerned about cybersecurity, and 23.33% of executives are worried about regulatory compliance (Q29), as presented in Figure 10.
  This result reveals a significant convergence with the findings of Golda et al. [14]. The authors identified privacy and security concerns as the primary challenges for the adoption of AI/GenAI. Additionally, they emphasized the need for advanced techniques to protect users' personal data and the importance of mitigating adversarial attacks. Our findings reveal that Brazilian executives also consider data security a critical factor for trust in AI. The authors also highlighted the necessity for users and organizations to trust AI technologies, to implement ethical principles, especially concerning the use of deepfakes. Thus, user trust is essential for the successful implementation of AI in organizations.
  The authors also pointed out the lack of clarity in existing regulations and the need for specific policies to ensure compliance with data privacy laws in the secure adoption of AI, just as our findings revealed that Brazilian executives also agree on the necessity for specific legislation to ensure the safe and ethical implementation of AI.
  Our findings also corroborate the findings of Klemmer et al. [18]. The authors concluded that practitioners in software development teams widely use AI assistants for critical security tasks, such as code generation, threat modeling, and vulnerability detection, despite having significant concerns about the security and quality of the code generated by OpenAI tools. Our findings also revealed that Brazilian executives consider user data security a critical factor in ensuring trust in AI applications.
  The authors also mentioned that despite widespread use, there is a general mistrust towards the suggestions of AI assistants, leading practitioners to review AI recommendations similarly to human code reviews. The executives participating in the survey stated that trust is one of the biggest challenges for the implementation of AI by organizations. This mistrust reflects the caution observed in using AI for critical tasks, with an emphasis on verifying recommendations. The similarity in these concerns and expectations highlights the importance of a cautious and informed approach to integrating AI into organizational practices and developing secure software.
- Ethics: Only 16.67% of executives consider the absence of a strategy for responsible and ethical AI/GenAI to be the greatest challenge for AI/GenAI implementation in the organization. Of all the challenges presented to the executives in question Q13 of the survey, the lack of a strategy for responsible AI/GenAI was the least selected concern (Figure 6). This finding differs from other studies, where guidelines to support the implementation of AI ethics are mentioned as important and mandatory in organizations [10, 16, 21, 23].

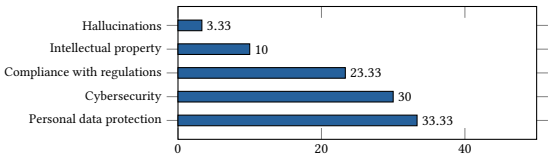

Figure 10: Data Privacy Concerns with AI/GenAI

4.2.8 Future of AI/GenAI. Executives have positive expectations about the future of AI:

- Growth and Innovations: Executives hold positive expectations for the future of AI. 66.67% agree that AI will enable their organization to expand into new business areas, and 63.33% agree that AI will allow the development of new partnerships, the implementation of new technologies, and increased organizational productivity (Q33), as presented in Figure 2.
  Courtenage [8] highlight the importance of building a trustful environment, providing adequate training, and strategically planning the expansion of AI/GenAI technologies, always considering concerns about user data privacy and security. The authors also emphasized the increasing adoption and development of AI technologies, asserting the need for robust regulation and policies to keep pace with the growing use of AI/GenAI. Our findings reveal that it is essential to plan the implementation of new AI/GenAI technologies and increase investments in AI and AI/Gen.

5 Threats to Validity

This section presents and discusses threats to validity [29]. No empirical study is perfect, and one reason is the inherent trade-off among different types of validity. Field studies, such as Action Research studies, excel in real-world applicability, whereas controlled studies prioritize the isolation of variables. External validity pertains to the ability to generalize the findings of a study. We address the risk of introducing threats to external validity by analyzing

the perceptions of C-Level Executives from various organizations Brazilian. Despite the number of responses (30) and the diverse geographical distribution across different Brazilian states, it's important to note that all survey respondents are exclusively from Brazil. Field studies, like Action Research, emphasize real-world relevance, while controlled studies focus on isolating variables.

- **Sample Size and Sampling:** The participation of 30 executive directors can be considered a relatively small sample size for generalizing the results to all decision-makers in Brazil. To mitigate this threat, it is important to increase the sample size in future research and include a greater variety of organizations in terms of size, sector, and location.
- **Possibility of Response Bias:** Participants may have responded in a socially desirable manner, presenting their organizations more positively, especially regarding the use of advanced technologies such as AI, to avoid appearing outdated or resistant to innovation. To mitigate this threat, respondent anonymity was ensured, and cross-validation techniques were employed to verify the consistency of the responses. Additionally, the survey included indirect questions that could reveal the participants' true attitudes and perceptions.
- **Variability in AI Knowledge:** The understanding and knowledge about AI and Generative AI can vary significantly among Brazilian executives, affecting how the survey questions were interpreted and answered. To mitigate this threat, a brief explanation of technical terms was provided at the beginning of the survey. Moreover, we segmented the results according to the respondents' level of AI knowledge and analyzed the differences in their responses.
- **Recruitment Methodology:** Most professionals were recruited through social networks, especially LinkedIn, which may introduce a bias. Active LinkedIn users may be more inclined to adopt new technologies and engage in discussions about innovation, not representing the views of all C-level executives in Brazil. We understand the importance of diversifying recruitment sources, including other platforms and offline methods such as trade associations and industry events. Nevertheless, our sample includes a variety of profiles.

While the research provides valuable insights into the trust C-levels have in the application of AI in Brazilian organizations, it is essential to consider the identified internal and external threats when applying the results in broader contexts or planning future research. Mitigating these threats through specific strategies, such as increasing the sample size, ensuring respondent anonymity, leveling AI knowledge, and diversifying recruitment sources, will contribute to the robustness and relevance of the data obtained. A careful and critical approach will ensure that decisions based on this data are well-founded and adaptable to the dynamic realities of the organizational environment.

6 Discussion

This study presented the perception of Brazilian C-level executives regarding the level of trust in the use of AI in Brazilian organizations for decision-making processes. The survey participants exhibited a positive perception of AI's potential to support business transformation. Our findings revealed that, although there is considerable enthusiasm for increasing AI investments and implementing new technologies in the coming years, significant challenges need to be addressed to ensure effective and sustainable adoption.

In comparison to other international studies, such as the one by Cantallops et al. [7], which emphasize concerns related to data security, Brazilian executives appear to be more focused on the impact of AI on strategic decisions and organizational efficiency. This finding underscores the necessity for a tailored local approach to AI adoption, taking into account Brazil's unique cultural and business context.

Another significant aspect is the resistance to automation and the fear of job replacement among executives, as noted by several participants. These findings indicate that trust in AI is influenced not only by technological factors but also by organizational and cultural perceptions. This highlights the necessity for training and education programs that enable executives to better understand the capabilities and limitations of AI, ultimately fostering greater trust in its adoption.

Ultimately, our research highlighted the need to deepen our understanding of how executives' trust in AI evolves over time and as the technology becomes more widely adopted. Future studies could explore how organizational culture and industry-specific factors shape this trust, offering richer insights into the Brazilian context and other emerging markets.

7 Conclusion

Executives recognize the substantial benefits that AI can bring, such as increased operational efficiency, improved decision-making processes, and the creation of new products and services. However, the results also highlight the need for continuous and specialized training, as trust in the proficiency of executive teams in AI is a crucial factor for its successful implementation in the organization. Some challenges, such as the lack of specific skills among organization employees, high implementation costs, and concerns about AI security, privacy, and ethics, must be faced and mitigated to ensure trust in the use of AI in decision-making processes. Moreover, the results emphasize the importance of developing an organizational culture that favors innovation and rapid adaptation to technological changes. Strategic partnerships with technology companies and research institutions were mentioned as important facilitators for overcoming the existing challenges in AI usage. Finally, the executives demonstrated positive expectations for the future of AI, believing in the continuous growth and disruptive innovations that this technology can bring to their organizations. However, for these expectations to materialize, it is essential that organizations invest in well-defined strategies, continuous employee training, and a solid commitment to security, privacy, and ethics.

In summary, our findings provide valuable insights into the trust C-levels have in AI application in Brazil, highlighting both the opportunities and challenges of AI usage. Successful AI adoption will depend on organizations' ability to balance their investments, training, and innovation with a careful focus on security, privacy, and ethics.

Data Availability Statement

The data that support the findings of this study are openly available in Zenodo at https://zenodo.org/records/10938484.

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