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Robotic Process Automation in Accounting

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ABSTRACT

This study aims to investigate the adoption of Robotic Process Automation (RPA) in the accounting field in the region of Chapecó, Santa Catarina, Brazil, analyzing its influence on processes, professionals' perceptions, and the challenges faced. The research adopted a descriptive and quantitative approach through the application of structured questionnaires conducted electronically with a sample of accounting professionals from the Chapecó region in the state of Santa Catarina. The results reveal a growing use of automation tools, especially for routine tasks, contributing to cost reduction, increased efficiency, precision, and agility in accounting routines, in addition to improving the quality of the work performed. The conclusions reinforce the importance of a proactive stance regarding professional training and the adoption of technological innovations to consolidate digital transformation in the accounting sector, supporting competitiveness and the strategic role of accounting professionals. The study contributes to the understanding of the current scenario of automation in regional accounting and provides insights into future technological implementation initiatives in the field.

Keywords: Robotic Process Automation; Accounting; Systematic Review.

INTRODUCTION

Technology has been promoting profound changes in the way administrative and management processes are performed, constituting a new era of automation and efficiency. The service sector has benefited from the use of digital transformation tools, as technology can perform activities traditionally carried out by humans, promoting significant innovations in data processes and improving the collection, management, and analysis of financial data (Steens et al., 2024).

Technologies and artificial intelligence have significantly impacted information processing by automating tasks that were previously manual and complex, while also offering new challenges and opportunities for information professionals (Gomes, 2022).

In the accounting field, process automation has become an essential strategy to address challenges arising from the shortage of skilled labor. The adoption of Robotic Process Automation (RPA) systems in accounting has shown great potential to reduce repetitive tasks, decrease operational errors, and increase the efficiency of daily routines. These advances allow accounting professionals to focus on more strategic activities, such as financial analysis and advisory services, fostering an evolution in the quality of services provided (Hsiung & Wang, 2022).

The change in the accountant's professional profile is also notable. Accountants are increasingly required to adopt a posture oriented toward organizational strategy, demanding involvement with business operations and strong cooperation with other functions, allowing the integration of accounting information with financial indicators (Burns & Baldvinsdottir, 2005). Originally viewed as professionals responsible for controlling and fulfilling tax obligations, accountants have migrated to a more active and strategic position within organizations (Cabral, 2022).

Adapting to the new market demands is an imperative requirement for accounting professionals who wish to remain relevant and competitive. The services provided by accounting firms have also evolved, with a growing need to offer managerial and advisory services in addition to operational routines. Therefore, the education and continuous development of accountants' competencies are essential to meet new market expectations, consolidating their position in management and business strategy (Cabral, 2022).

The implementation of automated systems does not reduce the relevance of accountants in organizations and companies; on the contrary, technology enhances their role in management, transforming them from executors of routine tasks into strategists (Ng, 2023). In this context, professionals must identify strategic opportunities for process automation, seeking to optimize operations, reduce errors, increase productivity, and allow professionals to focus on analytical, interpretative, and advisory activities of higher added value (Coman et al., 2022; Lacurezeanu et al., 2020; Perdana et al., 2023).

The adoption of enterprise management systems (ERP) and cloud-based accounting software has grown significantly, promoting improvements in control, operational agility, and real-time collaboration, essential aspects for the modernization of accounting processes (Bjelland & Haddara, 2018). At the same time, the implementation of artificial intelligence and process automation tools has expanded the possibilities for analyzing large volumes of data, enabling activities such as predictive analysis and the synthesis of unstructured information, which enhances strategic decision-making within organizations (Alruwaili & Mgammal, 2025). This technological evolution highlights a trajectory of digital transformation that redefines the role of accounting professionals, requiring new competencies and strategies for integrating these tools to maximize their benefits.

Several technologies have played a fundamental role in this transformation process, particularly Robotic Process Automation (RPA), which has been widely incorporated into the accounting field. This technology is not limited to automating repetitive operational tasks; it also promotes efficiency optimization, improves the quality of information, and fosters innovation in business processes. In this context, RPA enables accountants to focus on higher value-added activities, such as strategic analysis and decision-making, consolidating their role as agents of digital transformation within organizations (Nakano, 2022).

The implementation of RPA in accounting significantly contributes to improving operational efficiency, reducing costs, increasing accuracy in repetitive tasks, and enhancing agility in information management, enabling a comprehensive digital transformation within organizations (Hsiung & Wang, 2022; Huang & Vasarhelyi, 2019; Kokina & Blanchette, 2019; Sandy et al., 2022; Steens et al., 2024). This technology facilitates process automation by increasing productivity and freeing professionals from manual and repetitive activities, thereby optimizing the use of time for more strategic tasks (Gotthardt et al., 2020).

This method represents a cutting-edge technological innovation characterized by the automation of routine tasks, which in turn enhances the capabilities of accounting professionals, particularly in performing procedures with greater agility and accuracy in the collection and processing of information. The integration of contemporary accounting information systems emerges as an effective strategy to improve the accuracy of financial reports, enabling deeper data analyses that support informed decision-making (Nur et al., 2023).

Furthermore, the shortage of qualified labor in the accounting field has driven the development and continuous improvement of RPA technologies, which promise not only to enhance the operational efficiency of accounting firms but also to promote a more cohesive integration of systems that are often disconnected. RPA solutions operate by collecting, manipulating, and interpreting vast streams of data dispersed across multiple applications and information technology platforms, efficiently performing repetitive tasks that traditionally occupy accountants' time, thus allowing them to concentrate on activities of greater strategic value (Egiyi & Chukwuani, 2021).

Recognizing the broad advantages arising from automation processes in accounting, both in terms of operational efficiency and professional development, this study proposes an in-depth analysis of the implementation and practical presence of these technological innovations in everyday accounting practices. The investigation aims to identify emerging opportunities that may contribute to the improvement of professional

routines and the optimization of accounting procedures, promoting a critical and systemic understanding of the potentialities and challenges that automation presents within the context of digital transformation in the sector.

In this sense, it becomes essential to conduct a comprehensive analysis of accounting professionals' perceptions regarding the use of technological tools in their daily practices, as well as to investigate how the opportunities provided by the integration of artificial intelligence into accounting processes can enhance operational efficiency, improve the quality of the information produced, and consolidate the strategic role of accountants as central actors in organizational governance and decision-making.

ROBOTIC PROCESS AUTOMATION (RPA)

Robotic Process Automation (RPA) has emerged as one of the transformative technologies in the field of operations management and information systems, offering a highly scalable and relatively fast implementation solution for the automation of routine and repetitive tasks (Huang & Vasarhelyi, 2019). RPA enables the replacement of manual activities with digital agents capable of mimicking human interactions autonomously and efficiently. Its implementation allows substantial improvements in the accuracy, agility, and governance of organizational processes while also challenging traditional internal control structures, requiring a reassessment of supervision mechanisms and risk management practices (Kokina & Blanchette, 2019).

Its application has become widespread across various industrial sectors, including accounting and auditing, where it enhances operational efficiency, reduces costs, and minimizes human errors. Furthermore, RPA not only automates tasks but also frees human resources to perform activities that require analytical judgment and decision-making, promoting a reconfiguration of professional competencies and organizational roles (Huang & Vasarhelyi, 2019).

Despite its transformative potential, the adoption of RPA faces barriers related to the complexity of process documentation, the transfer of internal controls to digital automation systems, and systemic integration. These challenges require a strategic approach that considers technological, organizational, and governance aspects (Kokina & Blanchette, 2019).

The application of RPA in accounting has been widely studied in literature, and several authors highlight different aspects related to the perceptions, challenges, and benefits of this technology. The implementation of RPA in accounting represents an innovation with significant potential to automate operational routines, contributing to the transformation of professional competencies, particularly in relation to the analytical and critical thinking skills of accountants. However, research also highlights a scenario marked by difficulties related to the implementation and acceptance of the technology, including gaps in understanding its functionalities, perceived limitations in the Brazilian context, and cultural and organizational barriers that hinder its full adoption (Cabral, 2022).

Baiod and Hussain (2024) emphasize that the effective implementation of RPA can profoundly transform traditional roles in the accounting field, promoting significant gains in efficiency, accuracy, and agility in operational processes. However, they highlight that this transformation requires more than simple technological adoption; it demands changes in professional training, as professionals must develop technical and analytical skills related to new digital tools.

Accountants recognize the strategic value of automation in allowing them to focus on higher value-added tasks; however, they also emphasize the need for continuous training and the development of new digital competencies (Gomes, 2022). Nakano (2022) identified professionals to perceive RPA as a complementary tool capable of increasing work efficiency and effectiveness, but they also express concerns regarding the potential replacement of the workforce, raising reflections about the balance between automation and human skills.

At the international level, Imoniana et al. (2024) highlight that the adoption of RPA in accounting routines has contributed to the reduction of operational costs, increased data accuracy, and improved process agility, which are fundamental aspects for organizational competitiveness in a global context. According to Bavaresco et al. (2023), the implementation of automation technologies, such as RPA and artificial intelligence, has shown positive impacts on the efficiency and precision of accounting routines, contributing significantly to the competitiveness of organizations internationally. However, the authors emphasize that the acceptance of these innovations by professionals is essential for the success of the automation process, as factors related to user experience and perceived usefulness directly influence the adoption and effective use of these tools.

In Brazil, the adoption of Robotic Process Automation (RPA) has shown significant growth, driven by the potential for optimizing back-office processes, especially in the accounting field. This expansion is evidenced by the increasing number of implementations and studies focused on this technology, highlighting its relevance within the Brazilian organizational context (Cabral et al., 2022).

Regarding its applicability and characteristics, RPA can be defined as automation software developed within the same graphical interface used by humans (front-end programming), capable of performing tasks in a way like

human behavior by using structured digital data. Additionally, the technology operates in a non-invasive manner within the organization's existing IT infrastructure (lightweight technology), executing predefined routines with high precision and interacting with multiple systems in an integrated way (Cabral, 2022).

Among the main RPA tools used globally are UiPath, Automation Anywhere, Blue Prism, Microsoft Power Automate, and NICE (Carvalho et al., 2024). These platforms are recognized for their ability to automate repetitive tasks and provide integrated solutions for accounting processes.

According to the research conducted by Carvalho et al. (2024), which analyzed the main Robotic Process Automation tools, leading market solutions such as UiPath, Automation Anywhere, Microsoft Power Automate, NICE, and SS&C Blue Prism offer a high level of usability, advanced features, and strong community support. However, these tools generally require paid licenses for access to their full versions, which may limit adoption by smaller organizations. Additionally, the study highlights that free alternative such as OpenRPA, BotCity, and Python Auto GUI present efficient usage potential, although they require greater technical expertise, especially in programming, for their full utilization.

These analyses reinforce the growing importance of RPA tools in business digital transformation and highlight the intrinsic relationship between accessibility, cost, and the functionalities available in proposed solutions (Carvalho et al., 2024).

Sandy et al. (2022) presented the implementation of a prototype for accounting process automation based on RPA, specifically applied to invoice processing using the UiPath platform. The empirical results demonstrated a drastic reduction in execution time, decreasing from an average of 2 minutes and 41 seconds in manual operations to only 19 seconds with automation, an increase in efficiency of approximately 745%, representing performance seven times higher than the traditional method. Additionally, the automated system performed without any recorded failures or errors during operational sessions, demonstrating high system reliability.

These findings reinforce the transformative potential of RPA in optimizing repetitive activities in the accounting field, contributing significantly to improvements in productivity and process accuracy, as well as offering important implications for the adoption of automation technologies in complex organizational environments, particularly from the perspective of operational efficiency and human resource management.

According to Steens et al. (2024), accounting professionals perceive that their current knowledge of digital technologies is insufficient to meet the future demands of the sector. The authors identify a positive correlation between perceived knowledge and expectations for competency development, indicating that professionals recognize the need for significant improvement. However, there is a tendency to underestimate future requirements, reinforcing the importance of prioritizing continuous training in digital competencies to remain relevant in the rapidly evolving accounting sector.

Studies also indicate that professionals' perceptions regarding RPA tend to vary depending on the stage of adoption and the organizational context. It is common for professionals to recognize benefits such as a greater focus on strategic tasks and improvements in operational efficiency (Reis & Faria, 2024; Silva & Momo, 2022). Nevertheless, challenges related to implementation concerns, technological integration, and team training remain present.

The literature emphasizes that a thorough understanding of processes and adequate organizational preparation are essential for the successful adoption of RPA. It also highlights the importance of strategies aligned with cultural changes and the development of specific competencies among accounting professionals (Cabral et al., 2022; Silva & Momo, 2022).

METHOD

This study can be classified as descriptive and quantitative in terms of its methodological procedures. According to Sampieri et al. (2013), the characterization of a research study involves defining its methodological design, including aspects related to its type, approach, and objectives. In the context of this study, the investigation is classified as descriptive, since its purpose is to identify the implementation and perception of artificial intelligence and robotic process automation in accounting within the region of Chapecó, Santa Catarina.

Regarding the methodological approach adopted, a quantitative method was prioritized, considering that data collection was conducted through structured questionnaires, whose analysis was performed using appropriate statistical techniques. This approach aligns with the recommendations of Sampieri et al. (2013) for studies focused on the objective and systematic understanding of the investigated phenomena.

According to Sampieri et al. (2013), the population of a study corresponds to the set of all elements that share the characteristics that researchers intend to investigate. In this study, the population consisted of accounting professionals residing in the Chapecó region in the state of Santa Catarina, Brazil.

The data collection period occurred between March and August 2025. Contact with respondents was established through accessibility methods, in which each participant was contacted via WhatsApp and email. For

data collection, the questionnaire was sent to a sample of 220 accounting professionals, covering different roles and levels of experience.

At the end of the data collection period, 101 valid responses were obtained, representing a response rate of approximately 45.9%. This sample allowed for a representative analysis of the perceptions and practices of accountants in the region regarding process automation and the use of artificial intelligence in accounting.

To achieve the objective of this research, a descriptive study design was adopted, supported by the survey research technique, through the application of a structured questionnaire (Table 1), made available electronically using the Google Forms platform.

Table 1 Questionnaire on automation and accounting

1	Your name
2	What is your area of expertise?
3	What is your current position?
4	How long have you worked in the accounting field?
5	In your opinion, what is the greatest risk or challenge associated with the use of Artificial Intelligence (AI) in companies?
6	Can the adoption of process automation help the accounting market in its daily activities?
7	How do you perceive the demand and supply of labor in our region, and what is the level of knowledge and preparedness to use and manage AI tools in accounting?
8	Do you use any artificial intelligence or process automation tools? If so, which functions or tasks have been automated?
9	In your opinion, what are the three tasks that could be automated with the help of Artificial Intelligence (AI) in your daily work?
10	Do you believe that the adoption of process automation can help the accounting market in its daily activities? If so, what investment range would you be willing to allocate?

The development of the research instrument considered the recommendations of DeVellis (2017), who emphasizes the importance of validating content, ensuring semantic clarity, and maintaining coherence between theoretical constructs and observable indicators. Thus, the questionnaire included variables related to professional profile, level of knowledge, previous experiences, perceptions of risks and benefits, and willingness to invest in the adoption of automation and artificial intelligence.

DATA ANALYSIS AND DISCUSSION

The results presented below detail how process automation and artificial intelligence are being perceived and implemented in accounting practice in the region of Chapecó, Santa Catarina. Based on the data collected through the applied questionnaires, it was possible to gain a deeper understanding of the stage of consolidation and diffusion of accounting process automation and artificial intelligence (AI) technologies within the accounting market in the Chapecó region in the current context.

The responses obtained allowed the identification of the profile of the professionals involved, as well as a detailed analysis of their perceptions, practical experiences, and expectations regarding the incorporation of these technologies in local accounting firms. This approach provides relevant insights into the dynamics of technological adoption, as well as the challenges and opportunities perceived by professionals in the context of digital transformation in the sector.

From the set of collected information, it was possible to identify relevant variables such as the professionals' area of activity, position held, and length of experience in the accounting market, in addition to their level of knowledge regarding artificial intelligence technologies and task automation. This analysis also made it possible to understand the risks and challenges perceived by professionals, as well as to evaluate their level of preparedness to use these technological tools.

Furthermore, participants' opinions were collected regarding which tasks they consider appropriate or priority for automation and their willingness to invest in this area, providing an overview of perceptions and possible directions for future actions related to technological implementation and professional training in the field.

Table 2 Percentage data of participants by professional role

Role	Description	Percentage (%)
Analysts	Analyze data to support decision-making	28.7%
Assistants	Operational activities	27.7%
Partners / Owners	Strategic decision-making	23.8%
Coordinators / Supervisors	Team leadership	14.9%
Managers	Strategic planning and decision-making	4.9%

The analysis of Table 2 indicates a heterogeneous distribution of professional roles among the participants, reflecting a multifaceted organizational structure within the accounting field. A significant portion of respondents, 28.7%, work as analysts, playing a central role in data analysis and interpretation, which suggests an emphasis on data-driven decision-making.

This participation highlights the importance of analytical competencies, which are essential for efficient management and for the implementation of automation processes, given the need for professionals capable of interacting with automated systems.

The presence of 27.7% of assistants indicates a workforce with an operational profile, whose function is to support routine and operational activities. This segment represents a potential area for automation and integration with artificial intelligence technologies. This representation highlights an organizational structure that combines support functions with analytical roles, enabling greater potential for automated processes, particularly in operational tasks.

Partners and owners, representing 23.8% of the respondents, occupy a prominent role in strategic decision-making. This reflects the importance of professionals with business vision and leadership skills capable of guiding technological innovation and automation processes aligned with organizational objectives.

Coordinators and supervisors (14.9%) play an intermediary role between operational and strategic levels, acting as key actors in implementing technological changes and managing teams involved in automated processes.

Finally, the smallest representation was observed among managers (4.9%), indicating a smaller presence of high-level leadership roles within the sample. Despite this smaller proportion, these professionals play a crucial role in defining innovation policies and supervising automation strategies.

Overall, this distribution suggests an organizational hierarchy in which most professionals operate at operational and intermediate levels, reinforcing the importance of targeted training programs to facilitate the integration of automation and artificial intelligence technologies within accounting practices.

These findings corroborate the literature emphasizing the importance of a multifaceted organizational structure for the implementation of digital technologies, as highlighted by Kokina and Blanchette (2019) and Gotthardt et al. (2020). The high participation of analysts reflects the growing importance of analytical competencies for data-driven decision-making.

Additionally, the significant presence of operational assistants reinforces the idea that routine activities represent a potential segment for automation, as discussed by Figueiredo et al. (2022). This workforce configuration reveals a professional profile that combines operational support with strategic functions, facilitating the adoption of emerging technologies and contributing to more efficient accounting processes.

To deepen the understanding of the profile of the participants involved in the study, an analysis of the respondents' professional experience was conducted, as illustrated in Table 3.

Table 3 Professional experience of respondents

Professional experience	Percentage (%)
More than 10 years	39.6%
5 to 8 years	21.8%
1 to 2 years	20.8%
3 to 4 years	17.8%

Table 3 shows that the largest portion of participants has more than ten years of professional experience, indicating a predominance of experienced professionals in the accounting market. This distribution suggests a strong base of accumulated knowledge, which may significantly influence their perceptions and attitudes toward technological innovations in the sector. Additionally, professionals with more recent experience are also represented: 21.8% have between five and eight years of experience, 20.8% between one and two years, and 17.8% between three and four years. This diversity of experience indicates a heterogeneous professional profile that includes both experienced professionals and those at early or intermediate stages of their careers. This diversity

potentially contributes to a multifaceted understanding of the dynamics of adoption and resistance to automation and artificial intelligence technologies in the accounting context.

According to Gomes (2022), the professional trajectory and experience of individuals play an important role in their receptiveness to technological innovations in the information sector and, consequently, in accounting. Professionals with longer careers may demonstrate greater resistance to change due to the consolidation of traditional practices over time. This observation aligns with the results shown in Table 3, where a significant portion of respondents reported more than ten years of professional experience, indicating a strong knowledge base and potentially a more cautious stance toward digital transformation and automation.

At the same time, the presence of professionals with shorter career paths reinforces the diversity of perceptions within the accounting environment and highlights the need for specific training strategies to promote the effective adoption of new Technologies (Gomes, 2022).

Table 4 presents the willingness of professionals to invest in task automation technologies, considering the different investment ranges included in the questionnaire.

Table 4 Intention to invest in task automation technology

Investment intention	Description	Percentage (%)
Up to R$ 50,000	Interest in investing, but with a conservative approach	67.3%
From R$ 50,000 to R$ 100,000	Willing to invest moderate amounts	19.8%
Above R$ 100,000	Willing to invest higher amounts	12.9%

Notably, approximately 67.3% of respondents expressed interest in investing up to fifty thousand reais, reflecting a conservative or cautious approach regarding the financial investment required to implement these technological solutions. In contrast, 19.8% of professionals demonstrated willingness to invest between fifty and one hundred thousand reais, indicating a more expressive, though still moderate, investment intention. Finally, 12.9% of respondents showed a willingness to invest amounts exceeding one hundred thousand reais, suggesting a more ambitious adoption perspective among a smaller portion of participants, potentially associated with perceived return on investment or the financial capacity of their organizations.

These findings reveal a predominantly cautious stance regarding investments in automation technologies, which may be attributed both to concerns about implementation costs and to the need for clearer evidence regarding the tangible benefits of adopting such technologies. According to Perdana et al. (2023), investments in Robotic Process Automation represent one of the main challenges faced by organizations due to the costs associated with implementation. However, the authors argue that these investments tend to provide relatively rapid returns due to tangible benefits such as increased productivity, improved quality and accuracy of processes, and reduced operational costs. Thus, the perception of faster returns and efficiency gains appears to act as motivating factors that, although not yet sufficient to eliminate all reservations, encourage the gradual adoption of these technological solutions.

The results presented in Table 4 also corroborate findings from previous studies indicating a cautious approach among professionals when investing in automation technologies such as RPA. Cooper et al. (2019) highlight that many companies, particularly small and medium-sized enterprises, demonstrate resistance to implementation due to difficulties in evaluating the economic and strategic impacts of automation, reflecting a decision that still lacks clear guarantees of return.

Harris et al. (2020) reinforce this perspective by pointing to the lack of familiarity and specific competencies among accounting professionals, which influences decisions regarding technological investments. These authors also emphasize the importance of incorporating these competencies into academic education. Similarly, Ng (2023) observes that the adoption of less technically demanding artificial intelligence applications remains limited due to uncertainties regarding their real benefits.

Hofmann et al. (2020) further complement this analysis by emphasizing the scarcity of empirical studies that deeply evaluate the relationship between the costs and benefits of implementing RPA in the accounting field, which makes decision-making more complex for organizations. Overall, literature indicates a tendency toward caution in the face of uncertainty and the need for stronger empirical evidence to support technology adoption.

The analysis of the collected data clearly reveals the consolidated presence of automation resources in the professional routines of accountants, demonstrating that these technologies have become an undeniable reality, as illustrated in Table 5. Among the tools identified as commonly used are ChatGPT, Ottimizza, Taskdoo, and Optiwork, which have become essential elements in the modernization of accounting processes. The reduction observed in task execution times, particularly attributed to RPA solutions, constitutes empirical evidence of the potential of these technologies to significantly support human activities by efficiently automating repetitive tasks.

This dynamic reinforces Sandy's (2022) understanding that such technological functionalities not only increase productivity but also enhance the quality of the work performed by professionals, promoting a substantial improvement in operational efficiency.

Table 5 Respondents using RPA

Uses RPA	Does not use RPA
70.3%	29.7%

Although approximately 29.7% of professionals reported that they do not currently use automation tools in their work environments, the survey clearly demonstrates a strong interest and curiosity regarding the future adoption of such technologies. This finding suggests a favorable environment for the progressive incorporation of automated processes, indicating openness to technological innovations and highlighting the potential for training and awareness initiatives aimed at accelerating the adoption of these tools. In this context, automation can be seen as a catalyst for efficiency, quality improvement, and competitiveness within the accounting sector.

A study conducted by Martendal et al. (2024) in the state of Santa Catarina also revealed a positive perception regarding technological evolution in accounting. The study found that 90% of participants demonstrated a moderate or higher level of knowledge regarding accounting process automation, indicating an increasing assimilation of digital tools and a trend toward technological maturity within the sector. However, the same study revealed concerns that, although automation may increase the value of the accounting profession, it may also reduce employment opportunities, raising important reflections on the socioeconomic impacts of digitalization.

Thus, the adoption of innovative technologies in accounting should not be viewed solely as a technical process, but also as a behavioral and organizational transformation that requires strategic efforts related to cultural change and people management to ensure the effective implementation of technological innovations (Gomes, 2022).

In this context, it is important to understand the main risks and challenges faced by professionals during the process of adopting new technologies in the accounting field. To this end, a quantitative survey was conducted to identify participants' perceptions regarding the behavioral and organizational barriers that hinder the transition to an increasingly digitalized environment, as presented in Table 6.

Table 6 Risks and challenges perceived by participants

Risk and challenge	Percentage (%)
Cultural adaptation and resistance to change	55.4%
Data security	37.6%
Lack of qualified labor	28.7%
Interpersonal relationships	16.8%
Replacement of existing positions	13.9%
Risk of incorrect responses	1.0%

Table 6 presents the main risks and challenges perceived by participants regarding the process of digital transformation in accounting. It can be observed that cultural adaptation and resistance to change represent the greatest challenge, cited by 55.4% of respondents. This indicates that professionals' primary concern is not limited to the implementation of technologies but also involves the acceptance and transformation of organizational behaviors, which are essential for the success of digital transformation. Data security is highlighted by 37.6% of respondents, emphasizing the importance of protecting confidential and strategic information against cyber threats and potential data breaches, an issue that has become increasingly relevant in the context of automation and intensive data usage.

The lack of qualified labor appears at 28.7%, reinforcing the need to invest in training and professional development so that the benefits of new technologies can be fully realized. Interpersonal relationships, mentioned by 16.8% of respondents, suggest that the organizational climate and collaborative work are also relevant aspects that may influence the adoption of technological changes. Finally, the replacement of existing job positions, cited by 13.9%, reflects legitimate concerns regarding the potential loss of jobs due to automation, although this percentage remains relatively low. Specific risks such as incorrect responses represent only 1%, indicating that the main challenges are more closely related to cultural and security issues than to specific technical failures.

The results presented in Table 6 corroborate several findings in the literature that highlight the main obstacles to the adoption of digital transformation in accounting. Resistance to cultural change, which appears as the main challenge (55.4%), is consistent with the findings of Harris et al. (2020), who emphasize that the adoption of new technologies often encounters significant resistance due to professionals' lack of familiarity and feelings of insecurity, especially in organizations that do not yet possess a culture oriented toward innovation. Furthermore,

these authors emphasize the importance of promoting changes in behavior and perception regarding the advantages of automation, which is fundamental for the success of technological transition.

Concerns regarding data security (37.6%) are also reinforced by Hofmann et al. (2020), who highlight the vulnerability of automation systems to cyber threats and emphasize the need for rigorous security controls and information protection policies. In this context, Ng (2023) warns that the protection of confidential data has become increasingly complex, particularly with the growing use of artificial intelligence and automation, requiring greater attention from managers to mitigate risks associated with cybersecurity.

The issue of the lack of qualified labor (28.7%) is supported by Cooper et al. (2022), who advocate for the continuous training of accounting professionals so that they can fully benefit from emerging technologies. Harris et al. (2020) also reinforce this need for skill development, indicating that the acquisition of competencies related to automation and data analysis is essential for ensuring that digital transformation is successful and contributes to meaningful professional development.

Factors such as interpersonal relationships and the replacement of job positions appear in smaller proportions, while specific concerns such as the risk of incorrect responses or complacency toward artificial intelligence represent only 1%. This scenario demonstrates that the main obstacles to digital transformation are not limited to the implementation of emerging technologies but are primarily related to the ability of organizations and professionals to adapt their practices, behaviors, and mindsets to new work dynamics, ensuring that RPA tools are used in a safe, ethical, and strategic manner. As highlighted by Sandy (2022), it is essential to conduct a careful evaluation of the alignment between the use of artificial intelligence and the needs and expectations of the sector, to avoid superficial or inadequate adoption of these technologies and ensure integration that maximizes results while minimizing risks.

Overall, the analysis of the results reveals that professionals in the accounting sector possess a clear understanding that technology, particularly the advancement of RPA tools, is becoming a central component in the reconfiguration of the market. Despite the difficulties inherent in the adaptation process and the cultural impact resulting from the introduction of these innovations, it becomes imperative for accountants to invest in continuous learning and professional development, whether through training programs offered by organizations or through independent initiatives for professional improvement. Such engagement is essential, as the success of future professional careers increasingly depends on the ability to adapt to new technological demands, ensuring not only the continued relevance of the professional but also greater efficiency, accuracy, and innovation in the provision of accounting services.

FINAL CONSIDERATIONS

The present study revealed that Robotic Process Automation (RPA) has been gaining prominence in the accounting sector of Chapecó, Santa Catarina, promoting significant changes in the routines of experienced professionals with more than ten years of experience, as well as among those in the early stages of their careers. The results reinforce that the implementation of these technologies represents a strategic opportunity to improve efficiency, ensure greater accuracy in accounting operations, and promote the modernization of organizational practices. Thus, this research contributes to consolidating the understanding of the current stage of adoption and the challenges surrounding this digital transformation in the sector.

The data collected reveal that a significant portion of professionals already integrate automation tools into their operational routines, while others express interest in future adoption, indicating a dynamic transition and potential technological change within the sector. Furthermore, the results highlight a pressing concern regarding the shortage of professionals adequately trained to work with emerging technologies, reinforcing the urgency of continuous training and professional development programs. Despite the optimism regarding the tangible benefits of automation, such as increased productivity, reduction of errors, and improvement of processes, a cautious stance is still observed regarding implementation costs and the need for practical evidence of the economic and operational returns of these technologies. Such a position reflects the complexity of balancing innovation and financial viability in a scenario marked by uncertainty.

Moreover, resistance to change emerges as the main barrier to the adoption of new tools, often accompanied by concerns related to information security and the shortage of qualified labor. These factors demonstrate that digital transformation in the accounting sector goes beyond the mere incorporation of technology and depends fundamentally on the ability of individuals and organizations to adapt to a new professional paradigm characterized by greater complexity and the demand for multidisciplinary competencies.

Considering this scenario, it can be concluded that automation, when implemented strategically and in a well-planned manner, should be viewed as a catalyst for transformation rather than as a threat to the traditional role of accountants. When combined with investments in continuous training and competency development, automation has the potential to enhance the reliability and strategic nature of accounting, consolidating its position as a

fundamental pillar in business decision-making. In this context, institutions that invest in preparing their processes and professionals will be better positioned to meet new market demands, demonstrating that the incorporation of RPA represents an opportunity for growth and for strengthening accounting professionals as strategic agents, particularly in a reality in which accounting is transitioning from an operational role to a more prominent position in management and contributions to society.

Finally, these reflections highlight the importance of valuing the accounting profession, which, by combining technical and technological knowledge, reinforces its relevance and redefines its role as a fundamental element in the strategic management of organizations. Therefore, the future of accounting will increasingly depend on continuous professional development and on the recognition of its role as a driver of innovation and social development.

The limitations of this study involve the regional scope of the sample and the data collection period, which may restrict the generalization of the findings to other contexts or regions. In addition, the rapid evolution of technology may cause some results to become outdated in a relatively short time. Therefore, future research is encouraged to explore different regions, including distinct sectors, and to monitor the development of automation technologies longitudinally to capture more dynamic and up-to-date changes.

Finally, future investigations may deepen the analysis of cultural and organizational barriers that are more specific to the adoption of RPA, as well as evaluating the impact of these technologies on the quality, productivity, and satisfaction of professionals. Moreover, studies that explore the role of leadership in promoting technological innovation and the influence of academic education in preparing professionals may also contribute to advancing the understanding of this phenomenon. The continuity of such research will be essential to consolidate best practices and implementation strategies in the accounting field.

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