LUMEN ET VIRTUS

AUTOMATION: THE IMPACT OF TECHNOLOGY ON ACCOUNTING COMPANIES

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ABSTRACT

This article addresses the importance of automation in accounting offices. The research problem is: how are accounting entrepreneurs updating themselves through new technologies? The general objective is to analyze the process of updating accounting firms certified by PQS - SESCAP Quality Program in the face of process automation. The specific objectives are: to verify how the automation process is going in companies certified by PQS, to investigate how companies are through the automation process, to evaluate the importance that accounting entrepreneurs give to investing in technology and to verify which technological tools companies are using. This research is descriptive, exploratory, bibliographic and qualitative, the data and results were collected through the application of a questionnaire. The survey pointed out that the automation of processes is already a reality for these companies and takes place through the acquisition of new software, as it

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brings more agility, optimizes the performance of tasks, since technology is a great ally to have more productivity, reduce costs and have a more consultative accounting.

Keywords: Automation. Technology. Accounting.

INTRODUCTION

Technology has impacted several processes in relation to accounting firms, among some of these impacts, include the level of professional training of accountants, the professional has to be well prepared for innovations. For (FIGUEIREDO, 2013) the introduction of innovations in accounting practices end up generating structural changes in accounting offices, as they impact the costs of organizations and the entire restructuring of their production processes.

According to Scott (2009), technological innovation has been having an impact on the accounting profession, with the market more competitive the need for qualification than simply the knowledge and application of techniques for recording the facts that occurred, and there may be other effects on these professionals resulting from innovations, quality of work, creativity, skill, security to solve problems, ability to innovate and create.

Automation is a system that makes use of computerized or mechanical techniques to reduce the use of labor, reduce costs and increase the speed of information, automation in offices and the process of implementing technologies to assist in tasks, reducing time and effort. According to automation systems (CAMPOS, 2016) are present in the most diverse areas and sectors, it is directly linked to the idea of machines that streamline tasks almost always without the need for human interference.

Industry 4.0 or Fourth Industrial Revolution is an expression that brings together some technologies for automation and data exchange, it is an industry concept that brings together the main technological innovations, it means a new period with smart factories, several changes in the way products will be manufactured, impacting productivity, cost reduction and control in the production process. Second (TESSARINI; SALTORATO, 2018) changes in the production model, directly associated with the increase and agility of production systems, have been supported by a set of technological advances, which has been called Industry 4.0.

Artificial intelligence is a system that reasons and acts in a similar way to humans, it emerged with the objective of developing systems to perform tasks, make decisions and solve problems. For Mattar (2017, p.131), artificial intelligence consists of the ability of machines to think like human beings, learning, and deciding which paths to follow, rationally, in certain situations. The SESCAP Quality Program (PQS) aims to develop a culture of business management in service companies, using the best corporate governance practices, collaborating with participating organizations to increase customer satisfaction.

The survey asks the question: How are accounting firms certified by the SESCAP Quality Program (PQS) updating themselves in the face of process automation?

To answer the research question, the following general objective was established: To analyze the process of updating accounting firms certified by the SESCAP Quality Program (PQS) in the face of process automation.

The specific objectives are: To verify how the automation process is going in companies certified by PQS, to investigate how companies are through the automation process, to evaluate the importance that accounting entrepreneurs give to investing in technology and to verify which technological tools companies are using.

The methodology used in this article is based on bibliographic, qualitative, exploratory and descriptive research.

The work justifies what importance companies certified by PQS are giving to the use of process automation, for Rede Jornal Contábil, it is very important to make use of technology to automate processes and keep up to date, after all, accounting also benefits from innovation. For Figueiredo (2013), all innovation starts from creative ideas, search, discovery, development, adoption of new products and new organizational techniques.

The present work is divided into five topics, in the first the introduction is presented, contextualizing the specific objectives, object of the research and justification, in the second process automation, which addresses the importance of automation to optimize time and increase productivity, in the third methodology is described, in the fourth there are results that were obtained through a questionnaire, finally, in the fifth, the final considerations of the subject addressed.

THEORETICAL FRAMEWORK

PROCESS AUTOMATION

According to Martins (2012), automation is the result of several industry needs, it is when machines are able to perform more complex activities without any human intervention, introducing intelligent technologies and devices to automate a part of the processes, optimizing time, costs and material losses. Automating processes enables more quality information, better planning and control of production, mapping all the company's activities, seeking to identify waste and inefficiencies, allowing corrections to improve results, automation is of enormous importance for the survival of companies, ensures improvement in the production process, enables competition in the market, bringing great results (GROOVER, 2011).

INDUSTRY 4.0 AND AUTOMATION

Industry 4.0, "known as the fourth industrial revolution" is directly linked to process automation, with the implementation of technology in activities makes processes optimized and with less possibility of failures (Globo, 2021).

For the Fundação Instituto de Administração (2021), industry 4.0 encompasses both automation and information technology.

According to the Industry portal (2021), industry 4.0 involves several technologies, innovations, including artificial intelligence, robotics, internet of things, and cloud computing.

For Raquel (2019) the term industry 4.0 emerged in 2011 at a fair in Germany, it was presented to the public by incentive from the German government to present changes in relation to the way factories used to operate, this initiative had the support of universities and technology companies.

To improve the production of a factory and make it more efficient, industry 4.0 needs to make use of a series of software and hardware technologies, one of the main points is industrial automation, that is, smart factories, where industrial machines and equipment are able to operate in agile ways, optimizing the industrial processes of an operation, replacing manual labor (ARKTIS, 2015). Some of its objectives are to give more autonomy to machines and equipment, reducing manual efforts that are spent during the execution of certain tasks within an operation, improving results, more qualified production processes, reducing energy consumption, reducing waste emissions, etc. (ARKTIS, 2015).

PROCESS AUTOMATION IN ACCOUNTING

According to Hernandes (2018) technology has been changing several activities for some time, the main factor is not whether companies will end or professions, including accounting firms, but whether professionals or companies will adapt according to what the market evolves.

The main objective for accounting automation is to ensure more operational efficiency, agility, and accuracy at the lowest cost and least effort (CONTÁBEIS, 2021).

Digital transformation has had a great impact on micro, medium and large companies, companies have had to change their operating models, in which digital transformation combined with management platforms in the near future will support entrepreneurs to manage through artificial intelligence, machine learning and voice commands (EXAME, 2021).

In (CONTÁBEIS, 2021) automation in accounting, the accountant is able to perform more of his function, that is, to work more directly on the analysis, making the company

generate more results, through human knowledge, while repetitive activities are automated by machines. With this, the accountant has more time to assist and seek new strategies for companies.

In (GLOBO, 2021) José Eduardo Fiates, director of innovation and competitiveness at FIESC (Federation of Industries of the State of Santa Catarina) says that people must understand how they work, however, they will adapt to new technologies and although it is a challenge when it comes to difficulty and effort, it is a way to prepare for the future.

There are several advantages that one has with automation: safety and optimization of processes, increase in productivity, reduction of rework and costs. In process optimization, information is secure, this technology allows faster, more accurate information, without overloading employees, generating positive results consequently profit (CONTÁBEIS, 2021).

For (GLOBO, 2021) many fear automation as a fear of being a threat to the worker, but what it brings are gains in productivity.

Reduction of rework, because in manual work it is more susceptible to failures, with automation, errors are practically nullified. The increase in productivity is directly linked to automation, bringing greater results and even an increase in the customer portfolio (CONTÁBEIS, 2021).

Another very important factor is the reduction of costs, there are quality software at affordable prices, which bring more gains to companies, eliminate tasks, that is, the cost-benefit of having good technology is perceived both in time optimization and in the financial part (CONTÁBEIS, 2021).

For (GLOBO, 2021) a study carried out at the World Economic Forum showed that 40% of companies in the US are at risk of being automated, although in Brazil it is in a smaller proportion, it will be significant. In the long term, the worker will need to develop skills including critical thinking and creativity.

For Hernandes (2018), the adoption of new tools that involve the improvement of companies' processes does not evolve equally. However, if the pace of evolution is too slow, this company lags behind those that are keeping up with the pace of technological advancement.

We conclude the theoretical framework by stating that process automation has brought several advantages and benefits to accounting firms and professionals, with the use of technological tools, minimizing manual and bureaucratic activities, making tasks more agile, reducing rework and occurrences of possible errors.

In the next topic we will start the methodology of our research, explaining how the information and data collection were collected.

METHODOLOGY

The general objective of this research is to analyze the process of updating accounting firms certified by the SESCAP Quality Program (PQS) in the face of process automation.

The research is descriptive, as it describes the automation process in companies certified by PQS 2020. For Mattar (2001), descriptive research is used to describe characteristics of a given population, processes, being elaborated from documents, data collection and field approaches.

This research is exploratory. According to Marconi and Lakatos (2010), exploratory research presents hypotheses, increases the researcher's familiarity with the environment, to carry out a more accurate future research, and data collection, interview and content analysis can be used.

As for the approach to the problem, this research is qualitative because it allows us to understand the need for automation in accounting offices. According to Creswell (2010), qualitative research makes an interpretation and analysis of data, describing human behavior or scenario, more detailed, thus giving more emphasis and understanding of the research results.

This research fits as a bibliographic. For Marconi and Lakatos (2010), bibliographic research is an investigation of data, done through the study stored in books, documents and scientific articles, with the aim of keeping the researcher up to date to carry out a good research.

Below we will show the analysis and results found in accounting firms with SESCAP 2020 Quality Program certification.

ANALYSIS AND RESULTS

A questionnaire was applied to the 21 companies certified by the SESCAP Quality Program (PQS), which obtained certification in 2020, of the companies studied, 9.10% have 1 to 5 years in the market, 45.50% have 6 to 10 years, 18.10% have 11 to 15 years and 27.30% have more than 20 years. It is observed that the companies that won the certificate are very young in the market. From the perspective of observing the qualitative of customers, we have table 1.

Chart 1- Customers

Number of Customers	Percentage
11 to 20 customers	9,10%
21 to 30 customers	9,10%
More than 40 customers	81,80%

Source: Prepared by the authors (2021).

Although the companies interviewed are mostly young in the market, more than 80% have a high quality of customers, showing that the companies in the survey are young and large. Looking at the quality of customers, it is important that these companies have software that meets the needs of customers and allows them to offer quality service.

To understand the importance of ERPs and software for the companies in the survey, it is important to understand the degree of knowledge that the survey has of ERPs. Table 1 shows the behavior of management in relation to software.

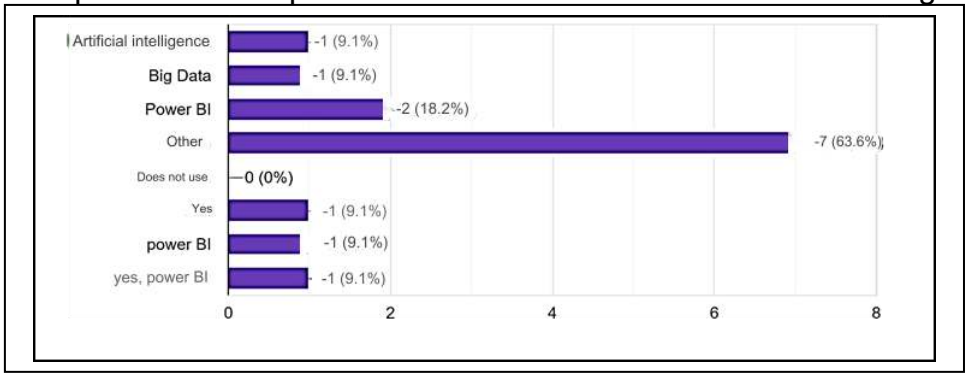
Table 1 - Software.

Owner partners know the technologies	Yes	No	In process
	36,40%	45,50%	18,20%
Knowledge of ERPs	Very good	good	Regular
	63,30%	27,30%	9,10%
Training in the use of new technologies	Yes	No	Rarely
	81,80%	9,10%	9,10%

Source: Prepared by the authors (2021).

It is observed that companies train their employees when they invest in new technologies. The interviewees consider their knowledge of ERPs to be between regular and very good, most of the interviewees from the management of accounting firms consider their knowledge in ERPs very good (63.30%), the top management in turn does not know the new technologies, probably because they do not operate the systems. Regarding the technologies available in the market, in graph 1, the most sought after technologies are observed.

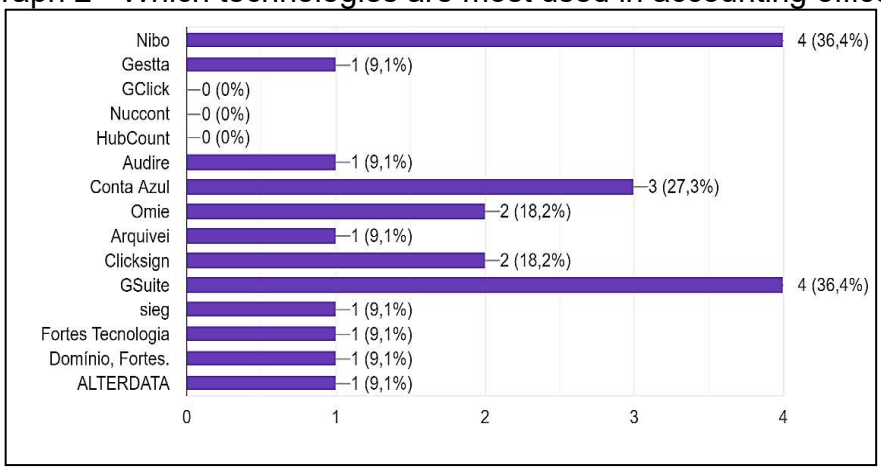
Graph 1 - The companies in which he works seek new technologies.



Source: Prepared by the authors (2021).

The companies in the survey signaled that they use technologies to facilitate and optimize their activities, most of them marked others in place of more robust technologies such as Artificial Intelligence. The other technologies marked as an option may indicate that most companies use the most traditional accounting support software available on the market. Graph 2 shows the technologies most used by law firms.

Graph 2 - Which technologies are most used in accounting offices.



Source: Prepared by the authors (2021).

According to (FACILITE, 2021) Domino, Fortes and Alterdata bring ease to the operational service of the offices, have an online integration system, which helps in the entry of tax invoices, dynamism and intelligence in payroll, controls accounts payable and receivable.

Audire has a unified view of all its customers on a single screen, monitors and delivers consolidated information classified by degree of importance for your decision-making (AUDIRECONT, 2021).

For (FINTECH, 2021) Conta Azul and Omie are fully online software and provide a management system that integrates the company's data and keeps it safe. Conta Azul focuses on contributing to the growth of the entrepreneur and takes the proposal of effectively simplifying your company's activities, integrating financial and management processes. Omie brings to its customers a proposal to centralize information that is usually scattered in several spreadsheets and different systems, thus preventing any information from being noticed.

Arquivei and Sieg are online systems that manage invoices automatically, they are powerful for the storage and management of your XML files (DRAFT; SIEG, 2021).

For (STACK,2021) Clicksing is a digital signature and electronic document management tool, this tool brings features such as sending documents by email, SMS and WhatsApp and a unique link for each signatory, in addition to editing documents with a logo

and using your brand colors. Gsuite is a very complete set of products from Google, which offers corporate solutions such as documents, spreadsheets and e-mails to facilitate the day-to-day life of companies, the platform integrates processes and information in the cloud and can be contracted through a monthly subscription (TECHTUDO, 2021).

It is concluded that 100% of offices use some basic tool or other similar technology, without this basic tool no office can work, the most used technologies in offices are Nibo, Gsuite and Conta Azul. Table 2 shows the technological choices of accounting firms.

Table 2 - Cloud Computing.

Regarding Cloud Computing	Yes 90,90%	No 0%	Partial 9,10%

Source: Prepared by the authors (2021).

As for Cloud Computing, 90.90% of companies store data in the cloud and 9.10% the server is internal, with partial external access. Table 3 shows the importance that companies give to robotization.

Table 3 - Robotization.

The company believes that robotization is important	Yes 36,40%	No 27,30%	Process 36,40%
About investing in technology	Defined the fund 18,20%	Happens without planning 54.50%	It does not have 27,30%

Source: Prepared by the authors (2021).

It is observed that 36.40% of the companies believe in the use of robots to perform tasks, 36.40% intend to study the application of robots, 27.30% do not believe that there are tasks applicable to robots. Of the companies studied, 18.20% have defined an annual IT investment fund, 54.50% consider the investment relevant, but it happens without planning and 27.30% do not have an investment policy, they do it when necessary. In table 4, we will discuss the augmented reality tool.

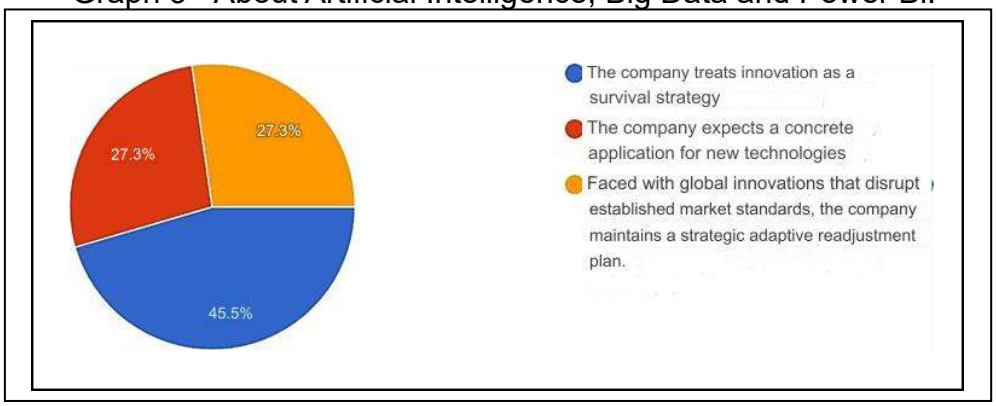
Table 4 - Augmented Reality.

About augmented reality (virtual environment)	Yes 45.50%	No 27.30%	In process 27.30%

Source: Prepared by the authors (2021).

About augmented reality, technology does not stop evolving, new possibilities arise, making the company have more financial gains, 45.50% of companies already offer this tool to customers, 27.30% are thinking of offering it, 27.30% have no plans to offer this tool. In graph 3, we will talk about technological innovation.

Graph 3 - About Artificial Intelligence, Big Data and Power Bi.



Source: Prepared by the authors (2021).

It is observed that 45.50% of the companies have innovation as a survival strategy, that investing is part of innovation, 27.30% maintain a strategic plan of adaptable readjustment, in the face of the innovations of the world, which cause ruptures with the standards established in the market and 27.30% expect a concrete application for technology. Access to software that is capable of performing more complex functions has made accounting easier and more efficient. Table 5 shows the implementation of intelligent algorithms in offices.

Table 5 - Algorithms.

Implementation of Intelligent algorithms	Yes 9,10%	No 54,50%	In process 36,40%

Source: Prepared by the authors (2021).

In the implementation of intelligent algorithms, 54.50% of companies do not have this functionality, 36.40% the IT sector is developing this ability and 9.10% have this functionality in the company.

It is observed that offices are adhering to technologies, as innovation is seen as a survival strategy and that companies consider investments in technologies important and believe that there are tasks that are subject to robotization. Next, we will enter into the final considerations.

FINAL CONSIDERATIONS

It is concluded that the objective of the research was to analyze the process of updating accounting companies certified by the (PQS) SESCAP Quality Program in the face of process automation, a questionnaire was carried out, with the objective of knowing how the update of these companies is regarding the automation process, what are the systems and technologies used.

It is clear that companies understand that it is necessary to update themselves through technological innovations, in which time is greatly optimized, costs reduced, consequently increasing profitability, in which they understand that innovation is a matter of survival, which must keep up with the pace of evolution.

We obtained as results of the survey relevant data such as: 45% of the companies have more than 20 years in the market, of these companies 81% with more than 40 customers, we had a considerable high number of 81% of the companies that offer training for technological innovations and a percentage of 54% of those that have an annual investment fund in technology, 63% of the companies studied have knowledge in ERPs and software focused on accounting, 45% of the companies treat innovation as a survival strategy and the three most used operational tools are: Nibo, Conta Azul and Gsuite.

As suggestions for further research, it is suggested that this reality be analyzed in several Brazilian states. As well as research aimed at the use of artificial intelligence.

With this, it can be seen that accounting firms are updating and looking for new tools to evolve technologically, such as new software, in which they bring new business opportunities, because with the robotization of tasks, the offices become more efficient. Having technology is having more productivity, optimizing time in carrying out the work, with more speed for a more personalized service with the customer.

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