

# Impacts of covid-19 on corporate university and trends

## *Impactos da covid-19 na universidade corporativa e tendências* *Impactos del covid-19 en la universidad corporativa y tendencias*

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**Resumo:** Este artigo tem como propósito central identificar principais ações adotadas por Universidades Corporativas (UCs) durante o período da pandemia da covid-19, bem como tendências quanto ao período pós-pandêmico. Para tal, revisão sistemática da literatura foi realizada nas bases de dados *Scopus* e *Web of Science*. Um questionário foi desenvolvido e validado por especialistas do tema de Educação Corporativa e o link da *survey* disponibilizado na plataforma *Qualtrics* àqueles com atuação ou interesse na temática. Também foram realizadas entrevistas com executivos de UCs de grandes organizações brasileiras durante o período da pandemia. Os dados do questionário foram analisados utilizando estatísticas descritivas e análise inferencial, além da análise do conteúdo das entrevistas. Como resultados, as principais ações tomadas pelas UCs concentraram-se na qualificação de seus instrutores, líderes e profissionais. Registra-se aumento nos investimentos das UCs, com ênfase na adoção de tecnologias digitais, acompanhadas de ações voltadas ao engajamento, motivação e saúde emocional. As principais tendências para o período pós-covid-19 apontam para expansão dos cursos híbridos de

curto prazo e para alterações nos modelos de negócios com vistas a se ajustarem aos novos desafios gerados pela pandemia. Como principais consequências da pandemia destaca-se o considerável reconhecimento, por parte de funcionários das organizações, usuários e lideranças das UCs da importância de abordagens sociais e ligadas às humanidades adotadas por elas. Ademais, compreende-se que o papel relevante das UCs tende a ser reforçado com base no crescente valor da noção de sustentabilidade em seus cursos e práticas de treinamento gerencial voltados para o desenvolvimento sustentável das organizações e da sociedade.

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**Palavras-chave:** Educação Corporativa; Universidade Corporativa; Sustentabilidade; Competências; Covid-19.

**Abstract:** *The main purpose of this article is to identify the main actions adopted by Corporate Universities (CUs) during the covid-19 pandemic period, as well as trends for the post-pandemic period. To this end, a systematic literature review was conducted on Scopus and Web of Science databases. A questionnaire was developed and validated by experts in the field of Corporate Education, and the survey link was made available on the Qualtrics platform to those involved or interested in the topic. Interviews were also conducted with executives from CUs of large Brazilian organizations during the pandemic period. The questionnaire data were analyzed using descriptive statistics and inferential analysis, as well as content analysis of the interviews. As a result, the main actions taken by CUs focused on the qualification of their instructors, leaders, and professionals. There was an increase in investments by CUs, with an emphasis on the adoption of digital technologies, accompanied by actions aimed at engagement, motivation, and emotional well-being. The main trends for the post-covid-19 period point to the expansion of short-term hybrid courses and changes in business models to adapt to the new challenges generated by the pandemic. One of the main consequences of the pandemic is the considerable recognition, by employees of organizations, users, and leaders of CUs, of the importance of social and humanities approaches adopted by them. Furthermore, it is understood that the relevant role of CUs tends to be reinforced based on the increasing value of the notion of sustainability in their courses and managerial training practices aimed at the sustainable development of organizations and society.*

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**Keywords:** *Corporate Education; Corporate University; Sustainability; Competencies; Covid-19.*

**Resumen:** *Este artículo tiene como propósito central identificar las principales acciones adoptadas por Universidades Corporativas (UCs) durante el periodo de la pandemia de covid-19, así como las tendencias para el periodo post-pandémico. Para ello, se realizó una revisión sistemática de la literatura en las bases de datos Scopus y Web of Science. Un cuestionario fue desarrollado y validado por expertos en el tema de Educación Corporativa, y el enlace se hizo disponible en la plataforma Qualtrics a aquellos con experiencia o interés en el tema. También se llevaron a cabo entrevistas con ejecutivos de UCs de grandes organizaciones brasileñas durante el periodo de la pandemia. Los datos del cuestionario se analizaron utilizando estadísticas descriptivas y análisis inferencial, así como el análisis del contenido de las entrevistas. Como resultados, las principales acciones tomadas por las UCs se centraron en la cualificación de sus instructores, líderes y profesionales. Se registró un aumento en la inversión de las UCs, con énfasis en la adopción de*

*tecnologías digitales, acompañadas de acciones orientadas al compromiso, a la motivación y a la salud emocional. Las principales tendencias para el periodo post-covid-19 apuntan a la expansión de cursos híbridos de corta duración y a cambios en los modelos de negocios para adaptarse a los nuevos desafíos generados por la pandemia. Como principales consecuencias de la pandemia se destaca el considerable reconocimiento, por parte de los empleados de las organizaciones, usuarios y líderes de las UCs, de la importancia de los enfoques sociales y humanistas adoptados por ellas. Además, se entiende que el papel relevante de las UCs tiende a ser reforzado en base al creciente valor de la noción de sostenibilidad en sus cursos y prácticas de capacitación gerencial orientadas al desarrollo sostenible de las organizaciones y de la sociedad.*

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**Palabras clave:** *Educación Corporativa; Universidad Corporativa; Sostenibilidad; Competencias; Covid-19.*

## INTRODUCTION

The covid-19 pandemic is described as devastating, as it generates high levels of uncertainty, affects numerous aspects of social life, and aggravates inequalities related to income, education, and employment; significantly transforming organizational relationships and dynamics. Despite this, even though previous experiences show that pandemics generate numerous social and economic transformations, there are considerable difficulties in assessing the recent context given the intensity and magnitude of this social shock (Jorda; Singh; Taylor, 2020).

Although the literature on the subject is in rapid growth, the subject of this research is still incipient, mainly due to its contemporaneity. With the emergence of new variants, the reality is one of coexistence with the virus, which points to an uncertain horizon concerning other pandemics. Trends before covid-19 were leveraged during the pandemic, leading to a new type of globalization with high connectivity and low tangibility. In this sense, the changes driven by the pandemic do not represent a drastic break from the past; instead, they continue the ongoing transformations in countless segments of society (Yeganeh, 2021).

Krishnamoorthy and Keating (2021) analyzed the impact of covid-19 on education and its implications for the future of work, postulating that traditional universities, corporate universities, and the educational technology sector (EdTech) are central actors in the training of people for the labor market, before, during and after the pandemic and, therefore, these actors must be seen in an integrated and articulated manner. It is also expected that there will be an increase in total expenditure on higher education and corporate education until 2029, accompanied by a 30% increase in corporate investment in training its employees through its Corporate Universities (Dua *et al* 2020)

Likewise, in 2019, the educational technology sector, which is present in both traditional and corporate universities, invested significantly in training individuals (Dua; Rounsaville; Viswanath, 2020). Thus, these three actors — EdTech, traditional universities, and corporate universities — are responsible for applying the lessons learned from both the pre-pandemic era and the covid-19 period to reformulate discussions and develop actions to adapt training to corporate and societal needs. It is in this context that this study aims to comprehend the various implications of covid-19 on education in organizations, identifying actions taken by them given the urgency imposed by the pandemic, related to the survival of organizations, the health, and the well-being of employees. Specifically, this article seeks to answer the following research question: What are the main actions taken by Corporate Universities (CUs) considering the reality imposed by the covid-19 pandemic? For that reason, this study seeks to emphasize central aspects of the literature on corporate education during the pandemic, as well as to present considerations on trends in CUs in the post-pandemic period.

The valorization of education, previously related to the academic world, is increasingly demanded by organizations, due to the needs of the productive sector. Hence, Corporate Education (CE) is a current and relevant topic, especially when we consider a reality where companies demand the development of skills necessary for sustainability and organizational innovation (Haney; Pope; Arden, 2020). This concern is even more evident when faced with a pandemic with a worldwide impact.

In terms of practical contributions of this research, it can highlight that the managerial perspective regarding the potential and effective value contribution of the CU for the companies has increased, and it can be inferred that this recognition and appreciation could be explained for CU's support to the social pillar of sustainability. Academically, this research systematically reviewed the literature on corporate education in the pandemic context that due to the contemporaneity of the theme has limited academic contribution so far.

In view of the serious consequences of the pandemic in the world and emerging countries such as Brazil, it is important that education, in general, and the courses offered within the scope of the CUs, value sustainable content and practices in a context that needs to present responses that ensure the productivity of corporations, aligned with economic, environmental and social goals.

The remainder of this paper is organized as follows. Section 2 provides the theoretical framework and relates the literature on Corporate Education (CE), including its evolution and the challenges posed by covid-19. Section 3 explains the methodology, detailing the systematic literature review, the field research with the application of a questionnaire, and the interviews conducted with executives from renowned organizations in the field of CE. In sequence, Section 4 presents and

discusses the research findings, including the articles most aligned with our research topic, as well as findings related to the main actions taken during the covid-19 pandemic and trends from the perspective of interviewees and respondents. Section 5 concludes, presenting the main findings, limitations, and trends of CE, as well as suggestions for future research.

## THEORETICAL FRAMEWORK

### CORPORATE UNIVERSITIES: ORIGIN, EVOLUTION, MODELS, AND LIMITATIONS

Corporate Education (CE) or Corporate Universities (CU) has its origin associated with the organizations' training centers. The mismatch between the skills demanded by organizations and the training offered in academic programs compromised the company's overall productivity. Thus, the training centers aimed to fill gaps in the training of their employees and respond to criticism directed at the formal Education sector, which did not meet the needs and demands of organizations (Narayandas; Rangan; Zaltman, 1998).

CUs are structures developed within organizations, whether public or private, to enhance organizational performance through education in the following dimensions: human, economic, financial, social, environmental, technological, and communication (Silva *et al.*, 2020). According to Renaud-Coulon (2013), CUs focus on the collective intelligence of the organization and business solutions.

The first CE was created in the 1960s, at McDonald's, initially being called Hamburger University. The purpose was simple: to adapt the knowledge acquired in management schools to the needs of the organization. In the same decade, General Motors Corporate University also emerged intending to meet the company's specific training needs (Buryakov *et al.*, 2019).

In the 1990s, large Western corporations contributed to the expansion of CUs in several countries — Canada, Europe, and Latina America — promoting the idea of a corporate university. Partnerships were signed with universities for the vocational guidance of workers, and corporate universities were created to train and retrain employees, accompanying them throughout their careers. Thus, the financial health of organizations would be guaranteed, improving work efficiency and increasing the level of competence of specialists (Buryakov *et al.* 2019).

In Brazil, in the 1990s, it was also observed the growth of CUs influenced by the international literature and organizational practices, which promoted the advantages for organizations' investments. However, the first CU originated in 1952 after the National Petroleum Council signed an agreement with the Federal

University of Bahia to train oil engineers. This institution later became Petrobras, currently one of the world's largest oil and gas companies, relying on a strategic decision to train high-level professionals to develop technologies that would enable them to play a leading role in the production of oil and gas in deep waters. Thus, actions related to CU existed before the formal creation of Petrobras' CU, in 2005 (Chagas, 2004).

For Soroichinsky *et al.* (2020), during corporate training, employees improve their professional skills, mastering certain skills and abilities in a specific field and, in addition to learning, there is the opportunity to disseminate knowledge, creating a virtuous circle of benefits for the organization. As organizations are in a dynamic and competitive environment, they need to be in constant development, with the continuous training of qualified personnel. Employees, therefore, are considered the main competitive advantage of organizations and must be trained in the specific knowledge and skills necessary for the good performance of their work and for innovation purposes (Aires *et al.* 2017).

There is constant research with a focus on improving the quality of teaching at CUs. The work of Murthy and Pattanayak (2019) applied the concept of *academagogy*, which is a learning approach based on andragogic (student-centered learning) and *heutagogical* (self-determined learning) principles in training in a corporate environment. There was little improvement in technical learning; however, there were good results in the behavioral aspects of the participants, encouraging employees to set goals and take responsibility for their work, as well as to act collaboratively with other team members.

There are several models of corporate education: on one hand, some aim to develop skills related to the institution's core business; on the other, some aim to develop skills related to the institution's core business, others expand their target audience to stakeholders and employees' families, and, within a logic of social responsibility, act to the reduction of social inequalities (Oliveira, 2004). Silva *et al.* (2020) aim to identify ways of acting for CUs to internalize and promote a culture of social responsibility in the exercise of their activities through partnerships with organizations and educational institutions. Castro and Eboli (2013) emphasize that CUs should operate based on a logic focused on productivity/competitiveness and not on social responsibility, as being competitive, the company already contributes to social development. So, to invert these roles would be to subvert and jeopardize the sustainability of the corporate education structure.

It is worth noting that, after nearly three decades of expansion of CUs, and the release of Meister's seminal book on the subject, criticism persists, and formal education's responses to the challenges of the labor market continue to be slow. Even before the pandemic, organizational leaders had been expressing their

concerns about the inability of graduates in the traditional and formal educational system, in the face of the demands of the labor market (Meister, 1994; Pfeffer; Fong, 2002; Cummins *et al.*, 2019). Furthermore, such concern also applies to the lack of training of employees already in the market, who need to be updated due to advances in automation or digitization. Thus, in the pre-pandemic context of covid-19, discussions aimed at training the workforce already valued technology, automation, digitization of information, and the different skills needed for a changing world. However, it is important to note that the role of CUs is not to compete with or negate the importance of traditional educational institutions, but rather to complement them by offering alternatives and actions aimed at preparing people for the challenges of organizations (Cesconetto, 2011; Silva *et al.* 2020).

The criticisms also extend to the CUs that, even after decades of growth and investments in training their employees, did not present favorable results. According to a McKinsey survey, 87% of executives interviewed complained of gaps in the training of the workforce and at least half of them had solutions to solve the problem (Capozzi *et al.*, 2020). Despite the high investment in CUs and the growth in the training of the workforce, only 8% of CEOs perceived some impact on the business, presenting an interesting paradox to be investigated (Christensen, 2020). Given the important role of CUs in training employees, it is expected that, in the long term, they can be compared in quantity with traditional universities, as they have the advantage of offering proposals and solutions to organizational problems faced daily in a customized way (Luna-Amaya *et al.*, 2016).

## CORPORATE UNIVERSITY IN THE COVID-19 PANDEMIC

The pandemic made it imperative for people to adapt to work, study, shop, hold meetings, and communicate digitally from home. All these activities require a robust and reliable digital infrastructure, making them a high priority for national and local governments (Carnevale; Hatak, 2020). Digital technology plays a fundamental role in society and its importance will remain for decades to come. Nevertheless, it is uncertain how managers will deal with the impact of technology in reducing jobs, creating new professions, changes in organizational culture, and the move to working from home that has imposed a 24/7 employee availability (Allen; Fukami; Wittmer, 2021; George, 2020).

Yeganeh (2021) supports that the pandemic, like other crises, considerably influences the market and eliminates smaller and fragile businesses, saving large corporations and their solid digital infrastructure. Therefore, with the advent of covid-19, small business activity dropped dramatically across all major industries. Furthermore, small businesses are often disadvantaged in e-commerce because

they traditionally operate as one-person businesses. As a result, they face an unprecedented existential threat (Carracedo; Medina; Selva, 2020; Economist, 2020; Zahra, 2020). covid-19 also discouraged startups and their innovation potential, and many of these technology-specific startups saw their capital and revenue decrease considerably (Bofinger *et al.*, 2020; Kuckertz *et al.*, 2020).

However, large technology companies must emerge from this crisis even more robust, as is the case with Facebook, Amazon, Microsoft, and Apple, which can capitalize on their vast technological resources to innovate, increase market share, and, consequently, prosper. The technology sector moves away from the business models of the last decade towards more sophisticated and profitable models based on subscriptions, e-commerce, big data, cloud computing, and business infrastructure (The Economist, 2020).

Aligned with this scenario, it is worth mentioning the transformation that Petrobras' CU, the largest Brazilian organization, has been undergoing since 2019. The organizational model of Petrobras University was revised to meet the challenge of strategic repositioning, and a new model was created, with a network of Academies directly linked to the management of critical processes within the company. Additionally, opportunities brought by Digital Transformation enabled the establishment of the foundations of Petrobras Digital University. With the declaration of the pandemic, concrete actions were quickly taken, and regarding face-to-face classes, 70% of the portfolio that was previously in-person was adapted to remote classes (Granja, 2020).

Hence, one of the main consequences of the covid-19 pandemic is the rapid obsolescence of conventional business models and the emergence of a new type of globalization, based on increasing levels of connectivity in virtual space and economic production marked by more digital, intangible assets and with fewer employees. However, as organizations shift to telecommuting and remote business, new problems associated with distance management emerge and demands for skills and abilities to manage uncertainty and facilitate global work become more critical (Caligiuri *et al.*, 2020).

Similarly, the implications of covid-19 for business schools have destabilized operating models, creating an urgency for them to quickly adapt and learn new virtual educational alternatives. However, simultaneously, new opportunities emerge with the pandemic, demanding an education that is attentive to social challenges, which can give greater legitimacy to the curricula by turning to responsible management education (Falkenstein; Hommel; Powell, 2021).

Studies that address the impact of the digital transformation and covid-19 on Corporate Education emphasize the need for these units to rapidly expand the use of technologies, to learn new skills, to adopt new ways of teaching, placing



educators in the position of students whom they need to update themselves and quickly present responses to a new reality. Consequently, changes have had effects on both those who educate and those who teach, and in the academic and business environment (McFadden *et al.*, 2020; Prata, 2020).

Thus, education in the recent past, present, and future is connected to the “digital all” movement (Baldwin, 2020). There is no doubt that EdTech has advanced with the covid-19 pandemic, becoming an important part of the educational equation for both traditional and corporate universities. EdTech has been the main vehicle for teaching, learning, and working as the world becomes virtual. However, criticism is attributed to EdTechs for not prioritizing solid pedagogy and learning, giving more importance to business goals (Knox; Williamson; Bayne, 2020; Teräs *et al.*, 2020).

In short, considering that corporate education has similarities with traditional university education, the challenges to be faced are equivalent. The isolation of students and staff during the learning process, the difficulty in adapting to the online reality in the pandemic, and uncertainties in the post-pandemic are challenges to be overcome by HEIs and CUs. Both must support students and staff, guide them in best practices, provide infrastructure and platforms for online or hybrid learning, and need to develop strategies to deal with psychological issues - stress, anxiety, depression - intensified by the pandemic.

In the face of the intense changes generated by the pandemic, the CU had to adapt to deal with the scenario imposed by covid-19. It is a fact that large organizations with resources suffered less impact as they had already been investing in digital technologies and innovations. However, based on the literature, among the main advances and trends in the scope of CU, it can be mentioned the consolidation of online learning, hybrid learning, and microlearning - short-duration courses focused on more immediate applications in organizations. Additionally, there is a growing interest in gamified activities that bring challenges, competition, collaboration, and problem-solving opportunities (Andrade, 2021; Moran, 2023).

As trends, the protagonism of employees in defining the content and the learning path for their training should be mentioned. Another trend is the use of artificial intelligence and chatbots to clarify doubts and facilitate learning (Engage, 2021). On the rise are applications of Artificial Intelligence, a source of concern for the risks and impacts on society, but also a source of inspiration in this new phase of AI, called cyber-social intelligence (Cope; Kalantzis, 2022), in which technology is driven by feedback relations between machines and people mediated by computing. In this scenario, it is understood that AI has broad potential for application in education and Corporate Universities, contributing to learning

and skill development, interacting with students, teachers, and professionals in companies, making teaching and learning more dynamic and more directed by feedback from evaluations.

## METHOD

The methodology used was based on two main steps. The first focused on identifying the reference bibliography on the researched topic: Corporate Education in the context of covid-19. The second resorted to field research to obtain insights from different stakeholders involved with the CU regarding the main changes that occurred in their activities because of covid-19.

### SYSTEMATIC LITERATURE REVIEW

According to Petticrew and Roberts (2006), systematic literature reviews guide researchers, practitioners, and policymakers. Sandelowski and Barroso (2003) described different steps in this process, including the formulation of the research question, literature search, evaluation, and inclusion of articles, as well as interpretation.

The literature search focused on the Web of Science and Scopus databases on 07/16/2021, using the Boolean formula: ([“Corporate Education” OR “Corporate University” OR “Corporate Academia”] AND “Covid”), having identified a total number of 1,251 articles. Articles from the last 5 years were filtered. From the analysis of the title and abstract, it was possible to eliminate those that did not adhere to the research objective, reaching 27 articles. Additionally, complementary articles were sought in other databases such as SciELO and EBSCO, thus incorporating a further 41 articles, in all, 68 articles were used as the basis for the elaboration of the theoretical framework of this study.

### FIELD RESEARCH

A questionnaire was developed and made available on the Qualtrics platform from October 2020 to July 2021 and distributed to approximately 300 companies. Although the survey was applied to a group of 325 individuals, only 65 respondents completed the entire survey, justifying the number of respondents considered in this quantitative part of the analysis.

The questionnaire contained questions related to demographic data, actions traditionally taken by corporate universities, actions taken during the period of the pandemic, and related to the organization to which the corporate university

is linked. In addition to descriptive statistics and inferential analysis, qualitative research through interviews was used to broaden and deepen the understanding of the results obtained in quantitative research (Eisenhardt, 1989).

The study evolved eight large CUs located in Brazil as its unit of analysis, selected based on the accessibility criterion, that is, companies with more than 3,500 employees. The eight CUs are in the following fields: mining (1); energy (1); oil & gas (1); technology (1); sectors and four national ones operating in the banking (2), mining (1) and mobile phone (1) sectors. The interviews were structured from a set of questions defined based on the researched literature and the Qualtrics questionnaire. The in-depth interviews were conducted with managers who occupy leadership positions in Corporate Education at the organizations surveyed.

The data analysis method used was content analysis, a set of techniques for systematization, interpretation, and description of the information content (Bardin, 1977). For the analysis of the interviews, a priori categories were created from the questions used in the survey, which gave rise to the quantitative results (Eisenhardt, 1989), as shown in Table 1.

**Table 1 - Analysis categories**

Categories	Subcategories
Pandemic Context	<ul style="list-style-type: none"> <li>● Actions taken</li> <li>● Main investments</li> <li>● Importance attributed to the CU</li> <li>● Skills valued</li> <li>● Course methodologies</li> <li>● Learning methods</li> </ul>
Post-pandemic Context	<ul style="list-style-type: none"> <li>● Skills valued</li> <li>● Course methodologies</li> <li>● Learning methods</li> <li>● Business model</li> </ul>

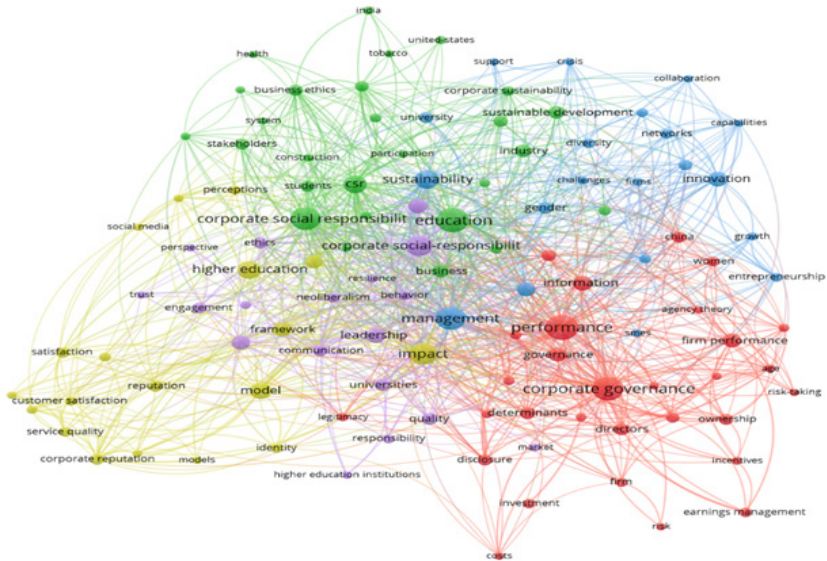
Source: Elaborated by the authors

## FINDINGS AND DISCUSSION

### SYSTEMATIC LITERATURE REVIEW

For the systematic literature review, we adopted the VOSViewer software together with the search terms in the initial Boolean formula (without filters), obtaining the content shown in Figure 1, which allows the visualization and analysis of the most common subjects in the scientific literature. It is noticed that the themes of education, higher education, corporate social responsibility, sustainability, and performance were the most present, ensuring alignment with the research theme.

Figure 1 - Themes network generated on VOSViewer



Source: Research Data

Of the 68 pre-selected articles, 10 were considered the most aligned with the research objective (Table 2). The articles address the importance and role of corporate education, the challenges faced by organizations to respond to the pandemic, the migration of companies for the digital environment, different approaches to dealing with employee anxiety, skills valued in organizations, and reflections on the consequences of the pandemic after covid19.

**Table 2 - Articles on corporate education and COVID-19's impact on the organizational context**

	<b>Authors</b>	<b>Journal</b>	<b>Impact Factor (Scopus)</b>
1	Krishnamoorthy and Keating (2021)	American Journal of Economics and Sociology	0.8
2	Watermeyer <i>et al.</i> (2021)	British Journal of Sociology of Education	3.3
3	Gonzalez-Perez <i>et al.</i> (2021)	Corporate Governance International Journal of Business in Society	4.1
4	Scavarda <i>et al.</i> (2021)	Sustainability	3.9
5	Buryakov <i>et al.</i> (2019)	International Journal of Economics and Business Administration	1.9
6	Jilková (2021)	TEM Journal of Technology Education in Management	1.2
7	Sundaray, Sarangi and Patra (2021)	Journal of Mental Health Training Education and Practice	1.1
8	Jestine and Aguilar (2021)	Journal of Education for Business	1.6
9	Biberhofer <i>et al.</i> (2019)	International Journal of Entrepreneurship and Innovation	3.1
10	Green <i>et al.</i> (2021)	International Review of Education	1.9

Source: Elaborated by the authors.

## FIELD RESEARCH

### DESCRIPTIVE ANALYSIS

The sample is well-balanced in terms of gender, with 51% of respondents identifying themselves as men. Either 43% of respondents are between 46 and 60 years old and have completed or ongoing education at the specialization level (35%) or master's (34%). Furthermore, about 41% of respondents are in management, directorship, or presidency positions, and most have between 1 to 5 years of work (42%) or between 11 to 20 years in the institution (27%). When asked specifically about their work at the institution's corporate university, the groups with the highest concentration are repeated: individuals who have between 1 to 5 years of work (50%) or between 11 to 20 years at the corporate university (17%).

Regarding the actions taken during the pandemic period, the core of this article, some descriptive data are worth mentioning. Short online courses were identified as the type of education with the highest number of respondents (32%), followed by seminars, technical conferences, and distance lectures (23%), and graduate online courses (17%) (Table 3).

**Table 3 - Courses during the pandemic with the highest n. of participants**

Type of Course	Abs. Freq.	Rel. Freq.
Short online courses	80	32%
Graduate online courses	43	17%
Seminars, Technical Congresses, Distance Lectures	56	23%
MOOCS, Coursera	20	8%
Mentoring, Coaching	22	9%
There were no training courses/initiatives in this period.	11	4%
I don't know how to inform	10	4%
Others	5	2%

Source: Research data.

On the other hand, courses aimed at qualifying teachers and instructors were identified, in general, as the most important action taken by the corporate university during the pandemic (31%), followed by courses for qualified employees (21%) or investments in digital technologies (19%) (Table 4). This is in line with Buryakov et al. (2019), Jestine and Aguilar (2021), Kiron et al. (2016), Siebel, (2017), Castro and Eboli (2013), and Sorochinsky et al. (2020) that state that the financial/social health and competitiveness of organizations are directly associated with work efficiency improvement and social development contribution by increasing the level of competence, skills, and abilities of its specialists, based in the digital environment that requires technologies knowledge. Nevertheless, it is not aligned with the CEO's point of view, which did not perceive or recognize the impacts of workforce training.

**Table 4 - Main actions taken during the pandemic**

Type of Course	Abs. Freq.	Rel. Freq.
Courses to qualify teachers/instructors/facilitators	43	31%
Courses to qualify employees	29	21%
Courses to support/engage employees	17	12%
Investments in digital technologies	26	19%
Partnerships with national institutions	13	9%
Partnerships with international institutions	7	5%
Others	4	3%

Source: Research data.

It was also noticed that investments in the corporate university during the pandemic increased (41%) or remained constant (27%) (Table 5).

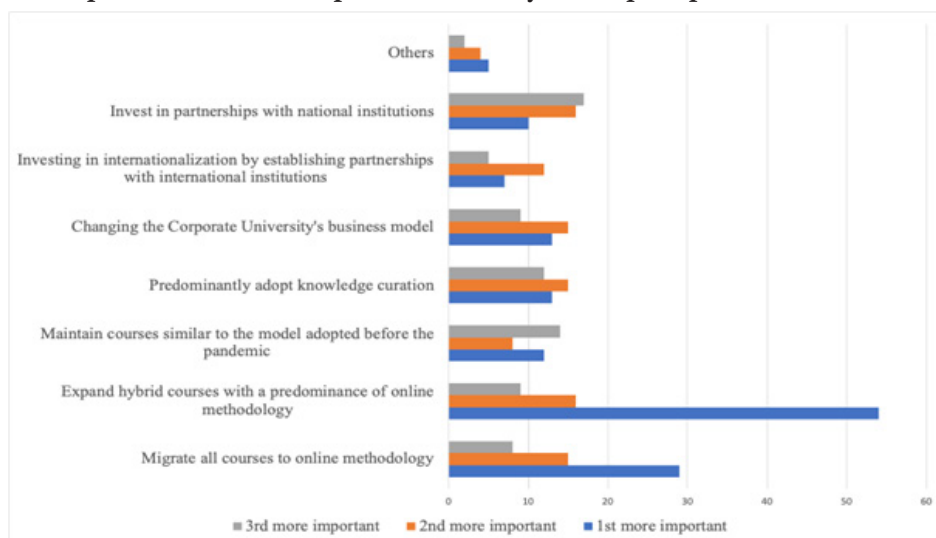
**Table 5 - Perception of investments during the pandemic**

Perceptions	Abs. Freq.	Rel. Freq.
Increased in comparison to the two previous years	40	41%
The investment was kept stable	26	27%
Reduced the investment	18	19%
I don't know how to inform	13	13%

Source: Research data.

Finally, in a post-pandemic context, most respondents consider the expansion of hybrid courses, with a predominance of online methodology, as the most important trend to be adopted by corporate universities (38%), followed by the migration of all courses for online methodology (20%). Carnevale and Hatak (2020), Baldwin (2020) in line with mention this, and Falkenstein, Hommel, and Powell (2021) that the pandemic sped the digital migration to the digital world, quickly adapt and learn new virtual educational alternatives, as all activities should be done by home. Graph 2 presents other categories, as well as the distinction between the orders of importance attributed by the respondents.

**Graph 1 - Trends of corporate university in the post-pandemic context**



Source: Research data.

While the descriptive analysis of the data was limited to just presenting the sample of respondents and information related to corporate universities, both in the context of the pandemic and perspectives in relation to the post-pandemic

context, the next subsections focus on the relationship between demographic variables - gender, age, educational background, hierarchical position and length of service - and some of the variables related to the main actions taken by companies in relation to covid-19.

Therefore, this section was divided into two subsections: the first presents the main findings related to the actions taken during the covid-19 pandemic, while the second one presents the trends in the post-pandemic context. In each of the subsections, the inferential results of the questionnaires are presented together with the discussion arising from the interviews carried out with the managers of 8 companies.

## ACTIONS IN THE COVID-19 PANDEMIC

This section quantitatively analyzes the influence of demographic variables in indicating the main actions taken by CUs during the pandemic. It can be inferred that, although men have a slight preference for implementing qualification courses for teachers, instructors, and facilitators, the difference between both genders is not statistically significant ( $x_{men} = .4545$ ,  $x_{women} = .3750$ ,  $p\text{-value} > .10$ ), as shown in Table 6.

**Table 6 - Analysis of the main actions taken by corporate university during the pandemic**

	(1)	(2)	(3)	(4)	(5)	(6)
	Qualification courses	Qualification courses	Qualification courses	Qualification courses	Qualification courses	Qualification courses
	[teachers, instructors, facilitators]	[teachers, instructors, facilitators]	[teachers, instructors, facilitators]	[teachers, instructors, facilitators]	[teachers, instructors, facilitators]	[teachers, instructors, facilitators]
Man	.0795 (0.523)					
Age		.0394 (0.711)				
Educational background			.0599 (0.399)			
Hierarchical position				.0249 (0.561)		
Time at the institution					-.0014 (0.983)	
Time at the University						.1254 (0.236)
Constant	.3750*** (0.000)	.3157 (0.255)	.2466 (0.240)	.3383** (0.020)	.4254** (0.022)	.1719 (0.453)
Observations	65	65	65	63	64	60
R-Squared	0.0065	0.0022	0.0113	0.0056	0.0000	0.0241

*Notes.* This table shows the estimation of the impact of demographic variables on the indication of qualification courses for teachers, instructors and facilitators as the main action to be taken by the corporate university during the period of the COVID-19 pandemic. Male is a dummy variable that assumes a value of 1 for those who are male. Age Group, Education, Position, Time since Institution and Time at University are ordinal variables that have values linked to the scale to which they belong. \*\*\*, \*\* and \* denote significance at the 1%, 5% and 10% level, respectively, and the p-values are reported in parentheses.

Source: Research data.



The same can be inferred when one distinguishes by age, educational background, hierarchical position, or length of service at the institution or corporate university. Although we find that older individuals, with a higher level of education, who belong to higher hierarchical positions, with less time at the institution and working longer in corporate universities, prefer to implement courses to qualify teachers, instructors, and facilitators, these effects are indistinguishable from zero given the lack of statistical significance. We also emphasize the very low explanatory power of all models presented in this table.

When considering the interviews with managers concerning the actions taken in the context of the pandemic, they mentioned that, when the pandemic was decreed, the urgency of organizations turned to actions aimed at digital technologies (E1, E2, E4, E6, E7) and aimed to develop skills and prepare leaders for crisis management and employees to remote work (E5, E6), both actions are in line with the study from Scavarda et al. (2021).

Having said that, according to Jilková's (2021), the priority given to actions aimed at employee engagement, motivation, emotional support, and occupational and mental health (E1, E2, E4, E5, E7, E8) was mentioned as the second most important by the interviewees, in line with as cited by Buryakov *et al.* (2019) and Jilková's (2021) that highlight the importance of the CUs to human capital development, with engagement and loyalty. Respondents also mentioned that their companies have developed programs aimed at the welfare of employees and online meditation programs (E2, E5), in line with Jilková's (2021). The interviewees also cited the qualification of instructors and teachers as the 3rd most important action (E4, E5), which is not in line with Scavarda *et al.* (2021), that mentioned that during the crises, teacher training was not the focus.

It is observed that the main actions taken by the managers interviewed converge with the literature (Jestine; Aguilar, 2021) and the results of the questionnaire, considering the difference in the order of importance attributed. In this sense, the interviewed managers pointed out the most important actions those aimed at digital technologies, followed by those aimed at supporting and engaging employees. The analysis of the questionnaire highlights the qualification of professors/instructors/facilitators, followed by courses for employees as the main actions taken by the CUs during the pandemic.

Finally, it is important to note that, according to the perception of the interviewed leaders (E1, E2, E3, E4, E7), the CUs started to be more valued during the pandemic by managers, who (E5, E6, E8) understand that the importance of the CUs remained significant. Additionally, employees (E1, E2, E3, E4, E5, E7) consider that the CUs have become more valued, and (E6, E8) also highlighted that their importance has remained. Although this is in line with the literature (Buryakov

*et al.*, 2019, Sorochinsky *et al.*, 2020), these results show a paradigm change (from negative to positive) from a management perspective about the importance of the CU to the company, as now they recognize the CU's value due a pandemic faced a previous negative vision mentioned by Capozzi, Dietsch, Pachtod, and Park (2020), and Christensen (2020). It is reasonable to assume that if the CUs, before the pandemic, were predominantly based on the logic of human capital aimed at training employees in line with organizational strategy, the pandemic imposed another reality. Organizations had to reinvent themselves quickly, training leaders, employees, and instructors to ensure the organization's financial, physical, and emotional health of its leaders and employees and, above all, survival.

We also analyzed the perception of the increase or decrease in investments made in corporate universities during the pandemic period. It was found that although men have a slightly higher mean perception ( $x_{men}=3.06$ ) than women, the difference between them is not statistically significant ( $x_{women}=2.84$ ,  $p\text{-value} >.10$ ) at the levels of reliability usually accepted in the academic environment. Results reported in the regression analysis reiterate this finding: although men have a higher average score than women by 0.2237 points, the  $p\text{-value}$  is equal to 0.441 ( $\beta=.2237$ ,  $p\text{-value} >.10$ ) and the explanatory power of the model is very close to zero.

The same can be inferred when we distinguish by age, educational background, hierarchical position, or length of service at the institution or corporate university. Although we realize that younger individuals, with a higher level of education, who belong to higher hierarchical positions, or with longer years of service have a perception that there is an increase in investments made in corporate universities, these effects are indistinguishable from zero given the absence of statistical significance and the remarkable low explanatory power (Table 7).

**Table 7 - Analysis of the perception of the investments made by corporate university during the pandemic**

	(1)	(2)	(3)	(4)	(5)	(6)
	Investments' perception	Investments' perception	Investments' perception	Investments' perception	Investments' perception	Investments' perception
Man	.2237 (0.441)					
Age		-.1578 ( 0.524)				
Educational background			.1347 (0.416)			
Hierarchical position				.1338 (0.187)		
Time at the institution					.1755 (0.263)	
Time at the University						.3415 (0.172)
Constant	2.8387*** (0.000)	3.3508*** (0.000)	2.5695*** (0.000)	2.5090*** (0.000)	2.5177*** (0.000)	2.2313*** (0.000)
Observations	63	63	63	61	63	59
R-Squared	.0098	.0067	.0109	.0294	.0205	.0325

Notes. This table shows the estimation of the impact of demographic variables on the perception of increased investments made in the corporate university during the period of the COVID-19 pandemic. Male is a dummy variable that assumes a value of 1 for those who are male. Age Group, Education, Position, Time since Institution and Time at University are ordinal variables that have values linked to the scale to which they belong. \*\*\*, \*\* and \* denote significance at the 1%, 5% and 10% level, respectively, and the p-values are reported in parentheses.

Source: Research data.

It was noticed through the interviews that all the leaders of the CUs interviewed informed that there was an increase in investments in digital technology for training for remote work. It should be noted that actions aimed at investments in digital technologies and for the physical and mental health of employees are initiatives mentioned by authors during the pandemic (Sundarey *et al.*, 2021; Scavarda *et al.*, 2021). Such findings, in addition to being in line with previous results mentioned earlier, can be corroborated by the engagement, motivation, and support for the employees' physical and emotional health. Seven of the eight managers (E1, E2, E3, E4, E6, E7, and E8) mentioned that there was an increase in investment in actions focused on supporting employees in the home office and situations of social isolation, such as webinars, lives, and even consultancies.

In contrast, however, one of the interviewees mentioned that there was no increase in the CU budget, with only urgent and intense actions to train employees for the remote reality and to keep them motivated and engaged in their work. This required the organization to pay attention to the physical and emotional health of its employees, as well as the need to develop communication channels to clarify doubts, keeping them participative and committed to the established goals. In other cases, some investments were reduced or maintained, such as, for example, the qualification of employees and partnerships with national and international institutions (E2, E5).

## COVID19 POST-PANDEMIC TRENDS

This section provides preliminary results about the influence of demographic variables on the main trends identified for corporate universities in the post-pandemic context. It can be inferred that, although men have a slight preference for expanding hybrid courses with a predominance of online methodology, the difference between both genders is not statistically significant ( $x_{men}=.8484$ ,  $x_{women}=.7500$ ,  $p\text{-value} >.10$ ).

The same can be inferred when analyzing by age group, educational background, position, or years of work at the institution or corporate university.

Although we realize that older individuals, with a higher level of education, belonging to higher hierarchical positions, or who have worked longer, indicate the expansion of hybrid courses with a predominance of online methodology as the main trend in the post-pandemic context, these effects are indistinguishable from zero given the lack of statistical significance, as shown in Table 8. We also emphasize the very low explanatory power of all models presented in this table.

**Table 8 - Analysis of corporate university trends in the post-pandemic context**

	(1)	(2)	(3)	(4)	(5)	(6)
	Extension of hybrid courses with an online predominance	Extension of hybrid courses with an online predominance	Extension of hybrid courses with an online predominance	Extension of hybrid courses with an online predominance	Extension of hybrid courses with an online predominance	Extension of hybrid courses with an online predominance
Man	.0984 (0.329)					
Age		.0360 (0.677)				
Educational background			.0522 (0.365)			
Hierarchical position				.0351 (0.303)		
Time at the institution					.0521 (0.335)	
Time at the University						.1328 (0.118)
Constant	.7500*** (0.000)	.7091*** (0.002)	.6529*** (0.000)	.7047*** (0.000)	.6830*** (0.000)	.5232*** (0.006)
Observations	65	65	65	63	64	60
R-Squared	0.0152	0.0028	0.0131	0.0174	0.0150	0.0415

Notes: This table shows the estimation of the impact of demographic variables on the perception that the main trend of corporate universities in the post-pandemic period is the expansion of hybrid courses with a predominance of online methodology. Male is a dummy variable that assumes a value of 1 for those who are male. Age Group, Education, Position, Time since Institution and Time at University are ordinal variables that have values linked to the scale to which they belong. \*\*\*, \*\* and \* denote significance at the 1%, 5% and 10% level, respectively, and the p-values are reported in parentheses.

Source: Research data.

Corroborating the findings regarding the business model and given the drastic changes generated by the pandemic, in a qualitative perspective, a strong trend can be seen in the development of change in the business model of the UCs (E1, E2, E4, E7) according to the notes made by the managers of the CUs interviewed. Changing the business model means repositioning the UC's strategic performance, generating the possibility of greater autonomy to meet local demands, given that each location has its peculiarities and needs to act in accordance

with these specificities. Such statements point to sustainable entrepreneurship, which according to Biberhofer *et al.* (2019) is crucial for entrepreneurs to adopt sustainability-oriented actions, as well as being reflective and capable of acting and intervening in complex processes in transformation.

CU needs to change and expand its operations beyond a training repository; become a space to work the learning culture. In this sense, Knowledge Management will gain strength in the post-pandemic context, if companies are led to see the knowledge within them, the people's expertise, and the professionals' ability to transmit it (E1). However, according to one of the UCs managers interviewed (E6,) the business model did not change due to the pandemic since changes took place in the pre-pandemic period with the decentralization of actions and the creation of several academies linked to the UC.

Furthermore, it is noteworthy that one of the interviewees (E2) reported that his company took the pioneering decision for employees not to return to the offices, except for those whose activities require presence. In this case, during and after the pandemic, three work models began to coexist: 100% remote, 100% presently, and hybrid with an occasional visit to the company and face-to-face.

This decision by the presidency look likes to aim to reduce the risk to employees and is supported by the company's value attributed to employee safety. The areas with the most courses mentioned by the interviewees were the areas of Leadership and People Management, Health, and courses aimed at the company's core area. As for the type of courses, short-distance courses predominate (E1, E2). Regarding the learning methods most mentioned in the interviews, managers highlighted webinars, lives, video classes, and learning trails (E2, E3).

Finally, there is a convergence of the answers of the interviewed managers with the research results related to the main trends to be adopted by the CUs in the post-pandemic context. As previously presented in Graph 2 of the previous section, respondents also reported the need to expand hybrid courses with a predominance of online methodology (E1, E5) and the tendency to intensify the adoption of knowledge curators by CUs (E1, E5) as the main trends to be adopted in the post-pandemic context.

## CONCLUSION

The covid pandemic generated drastic changes and impacts on society, with long-lasting effects that will be felt for years. Hence, in addition to the demand for academic research on the topic, the Sustainable Development Goals (SDGs) highlight the importance of education for a more sustainable society that promotes economic stability, environmental protection, equality, and the welfare of citizens.

Therefore, it is important that organizations, through their Corporate Universities, effectively constitute themselves as a relevant stakeholder in this process, which indeed justifies the relevance of the study herein conducted.

Given this reality, this paper aimed at presenting the main actions implemented during the pandemic period, as well as the main trends that unfold in the post-pandemic, within the scope of Corporate Universities. The article was predominantly based on academic literature published during the pandemic and was anchored in the Human Capital Theory (HCT), which relates investments in employee qualification to increases in organizational productivity.

The survey showed the emergence of other priorities in the pandemic, with intense actions in terms of digital technology to prepare leaders and employees for remote work and ensure the survival of organizations. Furthermore, it highlighted the importance of training instructors and leaders to deal with the unknown, motivating their teams, with a quick ability to provide answers and adapt to new contexts. It also observed the growth of actions aimed at the well-being and attention to the physical and emotional health of employees, valued by employees, and inducing engagement and loyalty to organizations.

In terms of the managerial contribution of this research, the manager's vision regarding the potential and effective value contribution of the CU for the companies has increased, and it can be inferred that this recognition and appreciation could be explained for CU's contribution to the social pillar of sustainability, it means, the CU's support to the management and employees to deal with a stressed period of the pandemic. However, due to the criticism directed at the CUs regarding the understanding that investments in training people have little impact on business; efforts are needed to review the curricula and adapt them to training actions that meet the challenges and strategies of the companies.

It is worth reflecting on whether these actions, especially those aimed at the welfare and health of employees, are influenced by principles and strategies disseminated by the most recent approaches to socially responsible and sustainable management, or whether they are temporary emphases related to the context of crisis generated by the pandemic. Given the degree of maturity of organizations, it is expected that both perspectives are current; after all, covid-19 affected everyone, albeit in different intensities.

It is concluded that one of the main consequences of the covid-19 pandemic is the quick obsolescence of business models and the emergence of a world characterized by digital, intangible assets and with fewer employees. In this sense, the research showed a clear trend of significant changes in the business models of the CUs, already underway or under discussion within the organizations.

A considerable part of the survey respondents emphasized the challenge of developing a new business model that translates into a flexible work environment, with the predominance of the home office.

However, as organizations move to the home office and remote businesses, new demands arise the priority is the development of leaders with skills to manage uncertainty in digital environments, as revealed by the research. It is also important to mention the courses migrating to the hybrid modality or predominantly online, the video classes and webinars, contrasting with the pre-pandemic reality, in which most courses were in person.

In terms of academic contribution, this research sought to systematize the literature in the field of corporate education, which played an essential role in overcoming the difficulties arising from the pandemic, in addition to the limited literature that addresses this recent reality, including the challenges imposed by this context. It is expected that from then on, more academic contributions will be stimulated by the findings of this article, contributing to the discussion of the theme.

Finally, the research has some limitations: the predominance of managers among the survey respondents and the fact that all respondents are top executives at the CUs. The difficulty in interviewing the leaders in the CUs, due to the overload of work during the pandemic, made it difficult to expand the number of companies interviewed. For a better understanding of the effects of covid-19, it is suggested that future research consider the perspective of employees on the topics analyzed in this paper as well as develop studies that include other realities and organizations, including at the international level.

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