



# INNOVATION IN THE DIGITAL CONTEXT BETWEEN THE WORK PRACTICES OF CREATIVE ECONOMY PROFESSIONALS, AND INFORMATION AND COMMUNICATION TECHNOLOGIES

A INOVAÇÃO NO CONTEXTO DIGITAL ENTRE AS PRÁTICAS LABORAIS DE PROFISSIONAIS DE ECONOMIA CRIATIVA E TECNOLOGIAS DA INFORMAÇÃO E COMUNICAÇÃO

INNOVACIÓN EN EL CONTEXTO DIGITAL ENTRE LAS PRÁCTICAS LABORALES DE LOS PROFESIONALES DE LA ECONOMÍA CREATIVA Y LAS TECNOLOGÍAS DE LA INFORMACIÓN Y LAS COMUNICACIONES

## ABSTRACT

**Objective:** The objective of this study is to understand how professionals characterize their work practices within the digital context.

**Methodology:** 19 interviews were carried out with professionals in the areas of information and communication technologies and creative economy, using the long interview method, scrutinized through interpretative content analysis.

**Results:** The findings showed work practices that are intertwined and immersed in the digital technological environment, revealing a necessary and predictive adaptation on the part of professionals.


**Limitations:** The limitations of the research, in turn, are linked to methodological aspects in relation to (a) delimitation and (b) quantity and choice of respondents.


**Practical implications:** The research contributes to the field by presenting how professional innovation practices are expressed empirically in the activities of innovation professionals.


**Social implications:** The results can serve as a basis for managing the work of innovation professionals and their appropriate training, as well as for the development of public policies in the field of innovation.


**Originality:** The professional practice of innovation forms an important construct, still little investigated in the area.

**Keywords:** Work practices. Information and communication technology. Creative economy. Innovation professionals. Interpretive content analysis.

 **André Luiz Maranhão de Souza-Leão**  
Ph.D.  
Federal University of Pernambuco - Brazil  
[andre.sleao@ufpe.br](mailto:andre.sleao@ufpe.br)

 **Bruno Melo Moura**  
Ph.D.  
Federal University of Pernambuco - Brazil  
[brunomtop@gmail.com](mailto:brunomtop@gmail.com)

 **Ana Carolina Assis Sampaio**  
Ph.D. Candidate  
Federal University of Pernambuco - Brazil  
[ana.sampaio@ufpe.br](mailto:ana.sampaio@ufpe.br)

 **Jéssica Maria Vasconcelos de Morais**  
Graduated  
Federal University of Pernambuco - Brazil  
[jessica.vasconcelos@ufpe.br](mailto:jessica.vasconcelos@ufpe.br)

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## RESUMO

**Objetivo:** O objetivo do presente estudo é compreender como os profissionais caracterizam suas práticas laborais inseridos no contexto digital.

**Metodologia:** Foram realizadas 19 entrevistas com profissionais das áreas de tecnologias de informação e comunicação e economia criativa, utilizando-se do método de entrevista longa, escrutinadas por meio de análise de conteúdo interpretativa.

**Resultados:** Os achados evidenciaram práticas laborais imbricadas e imersas ao ambiente tecnológico digital, revelando uma adaptação necessária e preditiva por parte dos profissionais.

**Limitações:** As limitações da pesquisa, por sua vez, se vinculam aos aspectos metodológicos em relação à (a) delimitação e (b) quantidade e escolha dos respondentes.

**Implicações práticas:** A pesquisa contribui para o campo ao apresentar como as práticas profissionais da inovação são expressas empiricamente nas atividades dos profissionais da inovação.

**Implicações sociais:** Os resultados podem servir de base para a gestão do trabalho dos profissionais de inovação e sua adequada formação, bem como para a elaboração de políticas públicas no campo da inovação.

**Originalidade:** A prática profissional da inovação forma um importante construto, ainda pouco investigado pela área.

**Palavras-Chave:** Práticas laborais. Tecnologia da informação e comunicação. Economia criativa. Profissionais da inovação. Análise de conteúdo interpretativa.

## RESUMEN

**Objetivo:** El objetivo de este estudio es comprender cómo los profesionales caracterizan sus prácticas laborales en el contexto digital.

**Metodología:** se realizaron 19 entrevistas a profesionales de las áreas de tecnologías de la información y la comunicación y economía creativa, utilizando el método de entrevista larga, analizadas a través de análisis interpretativo de contenido.

**Resultados:** Los hallazgos mostraron prácticas laborales entrelazadas e inmersas en el entorno tecnológico digital, revelando una adaptación necesaria y predictiva por parte de los profesionales.

**Limitaciones:** Las limitaciones de la investigación, a su vez, están vinculadas a aspectos metodológicos en relación con (a) delimitación y (b) cantidad y elección de los encuestados.

**Implicaciones prácticas:** La investigación contribuye al campo al presentar cómo las prácticas profesionales de innovación se expresan empíricamente en las actividades de los profesionales de la innovación.

**Implicaciones sociales:** Los resultados pueden servir de base para la gestión del trabajo de los profesionales de la innovación y su adecuada formación, así como para el desarrollo de políticas públicas en el ámbito de la innovación.

**Originalidad:** La práctica profesional de la innovación constituye un constructo importante, aún poco investigado en el campo.

**Palabras Clave:** Prácticas laborales. Tecnología de la información y la comunicación. Economía creativa. Profesionales de la innovación. Análisis interpretativo de contenido.



## INTRODUCTION

Technological advancements make feasible the new productive arrangements to reconfigure the core aspects of work practices (Antunes, 2018; Gondim *et al.*, 2024; Greenhaus, Callanan & Godshalk, 2018). These updates have impact on the organizational scope when Information and Communications Technology (ICT) is intensely adopted, and it justifies the need of discussing them as factors capable of changing work relationships (Tomasello, 2023; Tse & Shum, 2022).

On the one hand, continuous technological enhancement sets the demands for manpower qualified to deal with multiple platforms, with connectivity and with innovative practices (Balsmeier & Woerter, 2019). On the other hand, it highlights the need of having professionals capable of dealing with technological changes and of being always updated, so that they can enhance and develop new skills to act in an over-competitive labor market under systematic change (Alves, Lima & Moreira, 2014; Kipper *et al.*, 2021).

Both cases corroborate the reconfiguration of daily labor activities, such as technological and structural changes that mainly affect innovation professionals (Zhu & Andersen, 2020) who are closely related to digital and media devices. Therefore, academic investigations focused on the impacts of changes in ICT professionals' work practices (Kellogg, 2022) and in Creative Economy (CE) (Allagui, 2023; Duff & Sumartojo, 2017; Lwakatare *et al.*, 2019) have been carried out in the last few years. According to Malik *et al.* (2023), this research line is featured by the sense that daily ICT and CE professionals' activities derive from their ability to adjust to technological changes and from the capacity of their organizations to embody these advancements in order not to lose space in their market.

Thus, it is important delimiting these labor sectors. Moura Júnior and Helal (2014) point out the difficulty to define ICT professionals' delimitation due to the multiple versions still available in the literature. These authors show the conceptual mismatch among concepts, according to which, these professionals are defined based on their professional skills, by the technologies

they use and by their functions.

Just as it is observed in the ICT field, studies focused on CE also do not define these professionals' work concerns. According to Howkins (2013), CE would be the association between creativity and economy, so it would involve value creation. Nevertheless, CE can be also understood as the set of economic activities that depend on a symbolic content (Salles, 2022). Thus, it gets closer to (immersed) the emergence and outspread of new ICTs (Tse & Shum, 2022; Van Laar *et al.*, 2020). Accordingly, creativity is pointed out as the most significant factor for goods and services' production given its close association with economic, social and cultural aspects interacting with technology and intellectual property (Oliveira, Araújo & Silva, 2013).

By having in mind the herein presented arguments, the present study investigates (a) the relevance of continuous enhancement in work practices, (b) the scene of changes in new technologies and (c) their impacts on ICT and CE professionals' activities. The match among these three investigative opportunities is made clear by the following research question: **how do professionals feature their work practices in the digital context?**

The present study seeks to set an in-depth discussion substantiated by professionals' socio-cultural configuration in this field, which needs a consolidated and/or accurate definition. Yet, understanding these professionals' new work practices is important and it must take into consideration innovation relationship bond to changes capable of affecting organizations (see Zhu & Andersen, 2020) and the fact that digital activities used to be embodied as "organization knowledge".

Consequently, the aim of the present study is to broaden the understanding about participation in social networks (see Camarinha-Matos *et al.*, 2019). In order to do so, experiences in information exchange environment and knowledge construction exceeded the very experiences in virtual environments and digital technologies, besides the useful practices observed in the professional life of the herein assessed professionals (Pekkala & Van Zoonen,



2022; Scaraboto & Almeida; Fleck, 2020).

Thus, 19 interviews were carried out with ICT and CE professionals based on the long-interview method. Interviews were scrutinized through interpretive content analysis. Nevertheless, it is important highlighting that the present study was split into four sections: theoretical reference, which aimed at introducing the concepts of professional activities typical of the investigated professional sectors; the aforementioned methodological procedures and results descriptions used to introduce the recorded results; and, finally, the final considerations, which addressed the articulated results to set research contributions and originality.

## THEORETICAL REFERENCE

### Professional Activity

Production and communication technological advancements affect career and employment scenarios due to changes in core labor aspects (Gondim *et al.*, 2024; Greenhaus *et al.*, 2018). Digitalizing organizational tasks demands qualified manpower ready to operate and to work in digital environment (Balsmeier & Woerter, 2019; Van Laar *et al.*, 2020). This context demands new competences and skills in work environments, such as digital literacy, ability to constantly learn, to adjust and to get associated with career values (Belitski, Korosteleva & Piscitello, 2023; Goulart, Liboni & Cezarino, 2022; Greenhaus *et al.*, 2018; Mazzurco *et al.*, 2021).

Besides matters bond to personal skills, the very nature of work practice has been changing, overtime. It is so, because work activities are immersed in digital environments where professionals produce, work and interact with their peers, mainly when it comes to professionals immersed in the technological and innovative context. Accordingly, new technologies open new room for changes in the construction of multi-disciplinary collaboration networks (Camarinha-Matos *et al.*, 2019).

Mazzurco *et al.* (2021) analyzed the literature about engineers' work practice. They stated that labor activity theoretical references regard *common workplace activities* and labor transformation factors. These authors point out that the

literature on workplace concerns management knowledge (coordination, collaboration, problem solving, and communication, among others) and design (fast techniques, incremental models). Thus, factors that have impact on these professionals' activities regard organization, individual, society, economy, politics and technology functions (complexity, uncertainty and pressure).

Accordingly, one can understand that the conditions and features of the technical scenario mainly affect ICT and CE professionals. Using ICT leads to a new space/time understanding (Zamani & Spanaki, 2023). Yet, non-human agents also form these professionals' creative production (Duff & Sumartojo, 2017).

### Information Technology and Communication, and Creative Economy Professionals

The term "Information Technology" comprises a large range of fields and holds several definitions, and this is the strongest barrier to define who the professionals working in this field are (Moura Júnior & Helal, 2014). ICT professionals are defined based on their applications and on skills linked to innovation abilities and to the creation of new products and processes (Moura Júnior & Helal, 2014; 2019; Suhaimi *et al.*, 2012).

Thus, it is worth pointing out that Suhaimi *et al.* (2012) featured these individuals based on their functions. They focused on those involved in processes' creation and maintenance. Therefore, ICT is the professional sector holding a whole set of professionals capable of managing information systems, of developing apps and of data processing (Kellogg, 2022; Suhaimi *et al.*, 2012), who are also related to the design, management and users' experience fields (Moura Júnior & Helal, 2014, 2019).

CE professionals, in their turn, although not having a determined concept due to the diversity of theoretical perspectives and demarcations (Allagui, 2023; Serra & Fernandez, 2014), have a definition linked to the creative class (Malik *et al.*, 2023). According to Florida (2012), the creative class is not only limited to using creativity at work, but to professionals who are paid for their intellectual production. Thus, they are defined based on their ability to solve complex issues



and on their high “human capital” level, which is associated with cognitive and social aspects (Mellander & Florida, 2021). This process includes professionals who circulate across the technical and artistic fields.

It is likely seeing two sectors intertwined. ICT professionals exert functions that can be compared to those performed by creative class professionals. Similarly, the technological aspect is already entangled to the creative economy discussion, mainly to audiovisual (AV) and new media, such as software, games and creative digital contents (Flew, 2018; Malik *et al.*, 2023; Oliveira, Araújo & Silva, 2013; Peukert, 2018). However, there is a difference in the literature between these two professionals: ICT professionals stand out for their functional profile and for improvements in organizational processes and the creative class is closely associated with cultural and symbolic matters. Despite the overlap of sectors, the focus of the present study lies on such a crossing, since there are CE aspects that are not found in ICTs.

It is so, because both fields of action are simultaneously approached when innovation (e.g. Hotho & Champion, 2010; Saura, Palacios-Marqués & Ribeiro-Soriano, 2023) and creativity management (e.g. Calasans & Davel, 2020; Maciel, Lins & Fernandes, 2020) are discussed. However, innovation is also related to creativity, and it can be boosted in organizational environments by creative-capital management (Acar, Tarakci & Van Knippenberg, 2019; Saura, Palacios-Marqués & Ribeiro-Soriano, 2023). After understanding the similarity and differences between ICT and CE, it is important pinpointing that the focus of the present study lies on two intertwined fields. It aims at investigating elements closely linking the professional practices in digital media and technologies. Thus, the present research heads towards professional practices in the ICT and CE labor market.

## METHODOLOGICAL PROCEDURES

The present study followed the qualitative approach (Creswell & Creswell, 2021). The long interviews suggested by McCracken (1988) were adopted for data collection purpose. This data-collection instrument was chosen because it allows insight projections over data-collection conduction, and because it enables simultaneously minimizing the dangers posed by researchers' likely familiarity with the interviewee and with its experience.

The research problem allowed defining interviewees' profile, namely: ICT and CE professionals. It was drawn by crossing data introduced by UNCTAD (2021) and by creative economy sectors proposed by FIRJAN (2019) as new technologies. Accordingly, it is worth highlighting that the UNCTAD document (available in the chapter about digital frontiers - *forging ahead at the digital frontiers*) was approached as new technologies: artificial intelligence, internet of things, big data, blockchain, 5G, 3D printing, robotics, drones, nanotechnology, genetic edition and solar energy.

ICTs were taken as main elements in the present research, because option was made for excluding the two last segmentation categories, since they are not seen as belonging to the herein assessed sectors. Similarly, the ICT material observed in the creative industry mapping carried out by FIRJAN (2019) was selected. Creative industry components that did not regard information and communication technology (handcrafting, historical patrimony, among others) were excluded from the analysis. Thus, the selected professional sectors are listed in Table 1.

**Table 1***ICT and CE sectors adopted for the analysis*

<b>Adopted sectors</b>	
<b>Publicity and Marketing</b>	<i>Big Data</i>
<b>Architecture</b>	<i>Blockchain</i>
<b>Design</b>	5G
<b>Music, Audiovisual</b>	3D printing
<b>Development Research</b>	Robotics
<b>Information and Communication Technology</b>	<i>Drones</i>
<b>Artificial Intelligence</b>	Nanotechnology

Source: Elaborated by the authors.

Screening was carried out right after defining the relevant sectors for the research. It was done to point out the most important technolo-

gical parks in Brazil and to set the regions these parks were located in. In total, 8 technological parks were identified, namely: *Porto Digital*, *Tecnopuc*, *San Pedro Valey*, *Parque Tecnológico São José dos Campos*, *Sapiens*, *Santa Rita do Sapucaí*, *Parque Tecnológico da UFRJ*, and *Parque Científico e Tecnológico da UNICAMP*. The Northern Region was excluded at the first round because it did not have technological parks. Technological parks that did not match the adopted sectors were excluded from then study at the second round: *São José dos Campos* and *Santa Rita do Sapucaí* parks. Recife's technological park (*Porto Digital*) was defined at the third round in order to start the prospection of, and interviews with, the selected professionals. This last choice was substantiated by the accessibility provided by this park.

Technological parks and their respective regions are highlighted in Table 2.

**Table 2***Technological parks*

<b>Technological parks</b>	<b>Region</b>	<b>City</b>
<b>Porto Digital</b>	Northeastern	Recife - PE
<b>Tecnopuc</b>	Southeastern	São Paulo - SP
<b>San Pedro Valey</b>	Southeastern	Belo Horizonte - MG
<b>Sapiens</b>	Southern	Florianópolis - SC
<b>Parque Tecnológico da UFRJ</b>	Southeastern	Rio de Janeiro - RJ
<b>Parque Científico e Tecnológico da UNICAMP</b>	Sudeste	Campinas - SP

Source: Elaborated by the authors.

Companies in the defined sectors were mapped to choose the professionals to be interviewed; it started from *Porto Digital*. The first contact with companies that could nominate qualified professionals interested in joining the research was carried out. All contacts were made by e-mail. The snowball method was applied after the main nominees were approached (Parker *et al.*, 2019). This strategy was used on purpose, since interviewees could nominate other professionals who were not necessarily working in the same field. The idea was to reach all sectors in ICT

and CE.

Thus, interviewees from different fields were reached, and all professionals were considered to be working in sectors found the ICT/CE intersects. All professionals worked with ICT and were literally producing in and for the digital space to convey digital products. Accordingly, interviewees were linked to professions typical of CE – Architects (who work developing systems for Architecture and Urbanism), Musicians (who use technology in creation, recording, remastering,



and music and samples publications) and designers (who work in games' development) – and to professionals focused on ICT occupations (IT and ICT professionals, such as programmers, who also compose the CE group).

It is important stressing that researchers have tried to broaden the study's reach based on other technological parks. They were selected to the current study during the whole process to get in contact with, and to select, interviewees. However, since they did not get a positive response and, in some cases, there was no response at all, option was made to follow the snowball method. This outcome explains the fact that all interviewed professionals came from Northeastern Brazil, but it is also empirically justified, since Porto Digital is one of the biggest technological parks in the country and the biggest one in this region. It comprises more than 400 national and foreign companies in its ecosystem (Porto Digital, 2022).

In total, 19 interviews were carried out between April and July 2022, with professionals from companies forming the delimited sectors. Interviews were performed through videoconference on Google Meets and on Microsoft Teams. They lasted from 1 to 1:30-h and were recorded under interviewees' authorization. All interviews were later transcribed for analysis purpose. It is essential once more highlighting that interviewees were chosen because they worked in CE and ICT companies. The interview stage was over after the two adopted criteria were met, namely: representativeness and saturation. The association among interviewees, their positions in the company, professional work sector and the Brazilian state they work in is shown in Figure 1.

**Figure 1**  
*Interviewees' Profile*

***Interviewees' Profile***

Code n.	Position	Sector	Function	Region
E_01	Product Manager	ICT	Programming	NE
E_02	Business Director	Publicity and Marketing	Marketing	NE
E_03	Project Manager	ICT	Programming	NE
E_04	Software Development (CEO)	ICT	Programming	NE
E_05	Software Development (CEO)	ICT	Programming	NE
E_06	Businessman (Audiovisual production)	Audiovisual	Film maker	NE
E_07	Software developer	IT	Programming	NE
E_08	Businessman (CEO)	Architecture	Architecture	NE, S e SE
E_09	Software developer	IT	Programming	NE
E_10	Designer (game designer)	Design Digital	Game designer	NE
E_11	Lab Coordinator	IT	3D printing	NE
E_12	Audiovisual producer	Audiovisual	Audiovisual	SE
E_13	Designer (Motion and Animation)	Design	Digital Animation	CO e SE
E_14	Music producer	Music	Music	NE
E_15	Music producer	Music	Music	NE
E_16	<i>Designer (Illustration)</i>	Design	Digital Illustration	SE
E_17	Businessman (CMO)	Blockchain	Blockchain	NE
E_18	Businessman (CEO)	Blockchain	Blockchain	NE
E_19	<i>Designer (UI/UX)</i>	Design	Design	S

Source: Elaborated by the authors based on research *corpus*.



Data analysis process started right after interviews' transcription. In order to do so, Interpretive Content Analysis (ICA) was adopted to interpret data content and meaning by focusing on the deepest meaning of what was said (Mozzato & Grzybovski, 2011; Sousa; Santos, 2020). The analytical proposal by Souza-Leão *et al.* (2021) was followed to set the association between the content of interviewees' speech and the context they work in. It was done to find meanings capable of making propositions to the herein investigated social phenomenon.

The aim of the present study was to meet the quality criteria set for the herein adopted quality approach. Consequently, Figure 2 was elaborated to explain the association between the adopted research quality criteria and the methodological stages applied to the present investigation.

**Figure 2**  
*Methodological stages*

### ***Methodological stages***

<b>Orientation and epistemological position</b>	Presented either in theoretical and methodological choices or in writing.
<b>Reliability</b>	Delimited by the consistency of data collected after method adoption
<b>Triangulation</b>	Aimed at finding research inconsistencies. Triangulation took place over the research and involved four researchers.
<b>Reflexibility</b>	Highlighted either in scientific writings or in data analysis. Results derive from the constant assessment of the constancy of interpretations resulting from the association between data and researchers.
<b>Corpus construction</b>	Expressed in the present section.
<b>Detailed description</b>	Introduced in the next section.

Source: Elaborated by the authors based on Hayashi, Abib and Hoppen (2019) and Paiva Júnior, Souza-Leão and Mello (2011).

## **RESULT DESCRIPTIONS**

A análise dos resultados levou a identificação Result analysis led to seven categories substantiated by sixteen codes. It is essential clarifying that the observed codes reflect the analysis of contents found in interviewees' speeches.

The likely correlation among the identified codes enabled setting the groups that inductively allowed proposing seven categories: management, creativity, technology, work, association between people and work, career and occupational health. The definition and names given to categories and codes were based on the references in the literature review section. These references were revisited to corroborate the validity of findings in the present investigation.

Nevertheless, the description of categories and their codes – see the following sub-section –

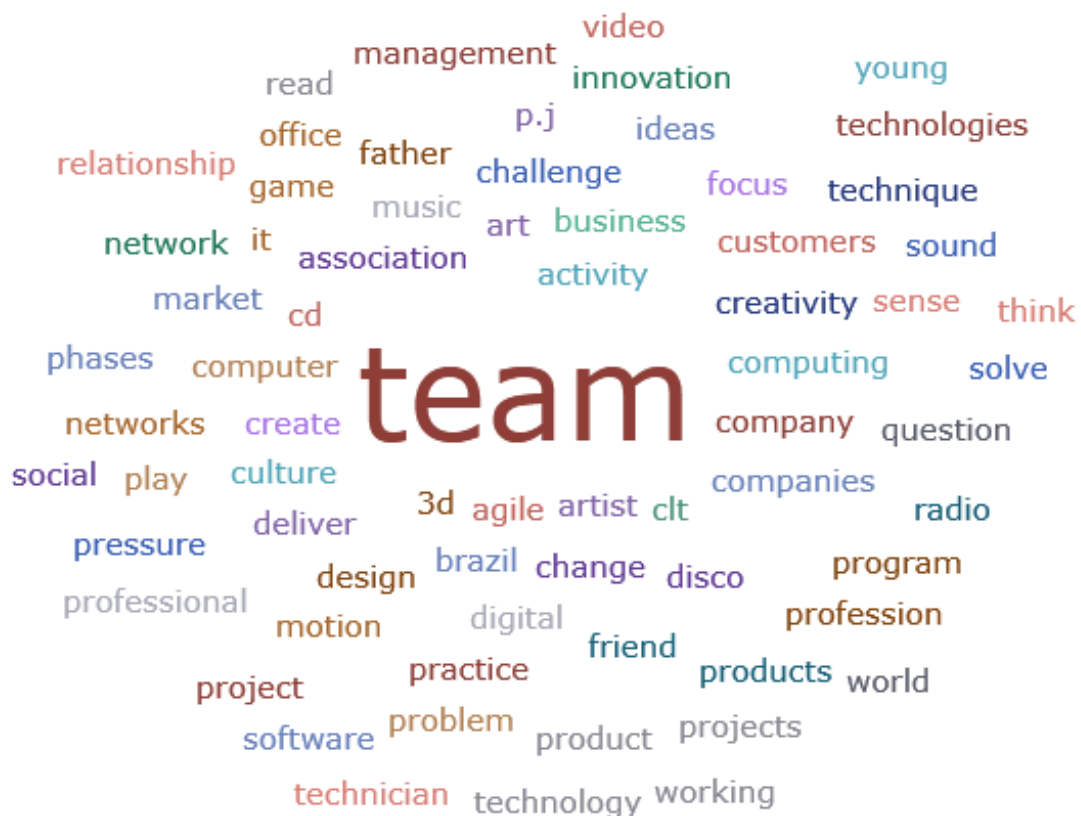
aims at approaching all empirical profiles of these codes. Thus, the categories were arranged into three branches to improve the understanding of research findings, namely: professional activity, professional sector and the professional.

It is worth pointing out that a pre-analytical stage was followed to map the cloud of words and to identify interviewees' speech patterns. This analysis was carried out through triangulation among researchers, as informed in the methodological section. The word cloud map was plotted in Atlas.ti software (Figure 3).





**Figure 3**  
Word Cloud Map



Source: elaborated by the authors based on research *corpus*.

Figure 3 highlights the words 'technology, world and company' in the interviews, which were followed by 'market, association and creativity'. This highlight derives from the focus given to interviewees' relationship with the carried out professional activities. Subsequently, readers will have access to the branches describing and presenting evidences for the aforementioned codes and categories.

### Professional Activity

This branch encompasses categories regarding work practices, themselves, namely: management, creativity and technology. Figure 4 describes the codes found in these categories.

Professional activities cover management, creation and technological activities related to each other, even if they are approached in separate. Accordingly, technological activities, such as data analysis and code writings, are management and creativity activities, respectively. The structural associations these careers are subjected to show issues typical of the digital work like local flexibility and time, besides expansion, deregulation and sector precariousness.



**Figure 4**  
*Description of Professional Activity codes*

### Description of Professional Activity codes

Professional activity		
Category	Code	Description
<b>Management</b>	Leadership	Management activities of people focused on the leader figure. It regards teams' orientation, communication with the team.
	Negotiation	It refers to the negotiation process, to the process of getting related to peers, to customers, and of creating social networks.
	Managerial activities	Activity focused on organizing to achieve good company functioning. It regards commercial, financial and procedural activities.
	Strategy	Activities closely related to the management of company resources. It regards these resources' capture and optimization. In addition, it concerns communication strategies, such as media communication, work disclosure and media management.
<b>Criativity</b>	Proactivity skills	Approaches creativity as the muscle to be constantly activated. It shines light on the non-regulation of the act of creating by crossing a playful and bureaucratic aspect.
	Cooperation	highlights the constant use of creativity and of creative solutions.
	Reinvention	It regards finding solutions based on the resources available. It concerns the impossibility of having an automated and outsourced creativity.
	Standardization	It regards the production that follows a model. Different products within the same sector (audiovisual) that follow the same ethical/productive orientation.
<b>Technology</b>	Technological activity	It regards activities that use technology to support the production of pieces/artifacts, such as data analysis activity, software development and artistic production.
	Automation	It regards activities' full and partial automation. Software used to speed up the processes and to develop complete activities.

Source: Elaborated by the authors based on research *corpus*.

Management activities, within the first category, explore relational and technical-strategic aspects. Thus, professionals work based on a creative leadership that shows a flexible hierarchy substantiated by the common understanding of team members (Silva, Muzzio & Paiva Júnior, 2019). Other aspects of management knowledge (Mazzurco *et al.*, 2021) were also introduced in the findings, such as the formation of diversified teams, partnerships (Krupahtz, Werner & Teixeira, 2021), media (e.g. online portfolio management) (Calasans & Davel, 2020; Scolere, 2019) and management.

The creative category encompasses activities performed based on practices (Mumford & England, 2020) and they are related to management activities, such as problem solving (Weisberg, 2019) associated with organizational creativity (Dourado & Davel, 2022). Findings point towards creativity standardization, which is typical of mass culture.

Finally, technological activities emerge as fully integrated to professional practices, either in creative or managerial activities, since they are expressed by the association between human and non-human interactions (Duff & Sumartojo, 2017; Jarrahi, Sawyer & Erickson, 2022). It also



holds the full and partial activity automation aspects (Filippi, Banno & Trento, 2023), which are understood as being positive to work optimization.

Although professionals are inserted in an innovative environment, they declare themselves immune to the discrimination and privileges observed in the socio-historical-cultural construction. Thus, each of the aforementioned scopes – categories – must be assessed to help better understanding how they feature these professionals' work practices.

## Management

Management comprises practices linked to strategic, optimization and planning managerial activities applied to human and material resources. From the relational viewpoint, it heads towards **leadership** and is empirically related to teams' management. This practice concerns communication and managerial strategic alignment among team members (Figure 5).

### Figure 5

#### *Leadership example expressed by Interviewee 04*

[...] the main function of this company that I have built, that I have a partner, lies on aligning expectations and customers and on making my team, together with their team, often follow all pre-set targets [...] (I\_04)

Source: Elaborated by the authors based on research *corpus*.

According to the speech of Interviewee 04, this professional management practice involves a specific leadership among creative-project teams that have flexible hierarchy and open communication supported by common understandings, since it allows ideas to come up and flow (Silva et al., 2019). His excerpt also shines light on the negotiation aspect, since it is necessary "aligning the expectations" not just within the team, but mediating the relationship between customers and company.

### Figure 6

#### *Example of negotiation extracted from the speech of Interviewee 15*

[...] someone wants to produce a song and it gets in touch, and we make a deal and I make it [...] we need to have other people in the chain [...] it is cool to have another person, and it is linked to another element and it also has some added value, to have other person applying its knowledge and talent [...] (I\_15)

Source: Elaborated by the authors based on research *corpus*.

**Negotiation** encompasses customers and partners' maintenance. These professions stand out for forming diversified teams, which also regard setting partnerships to elaborate projects (Krupahtz, Werner & Teixeira, 2021). This aspect is observed in the excerpt from Interviewee 15 (Figure 6).

The relational aspect comprises communication management to the outside audience, i.e., this is a **media communication management**. This element is highlighted by findings linked to activities focused on product outspread, participation in advertisement events and social media management (used as portfolio) (Figure 7).

### Figure 7

#### *Example of communication management extracted from Interviewee 16*

You are always posting works in the social networks, kind of personal works about what you think is cool and then you keep on posting. You have several portfolio platforms like Instagram, Facebook, and then, from this point on, someone sees it and hires you because of that, due to something it has seen on the internet, that you have posted, you know [...] then, there is a smaller fraction that is the kind of people who we know personally [...] like something that I haven't mentioned and, since the pandemic I never did it again, but I expose in free fairs, you know? I print my work and I expose it in fairs and shows [...] (I\_16)

Source: Elaborated by the authors based on research *corpus*.

Creative work in nowadays digital times demands regular presence in social media, and it requires a whole set of features, such as connectivity, dynamics and regularity (Scolere, 2019). Professionals must outspread their work and turn themselves into their own brands given the career individualization reality (Calasans & Davel, 2020).



Despite the communication issue, management requires more operational **strategic technical** aspects focused on commercial, financial, managerial and business management (filling out charts, capturing resources through notices) and more analytical practices (support and project management, prioritizing activities, checking business feasibility, identifying users' demands). Thus, it concerns practices linked to organizations' good functioning (Figures 8 and 9).

### Figure 8

#### *Example of managerial activity extracted from Interviewee 05*

[...] as businessman I end up accumulating some functions, so I also make the commercial of some project costumers, those I know more about, I also work with strategy, financial and company HR. [...] The daily routine means making proposals to costumers, screening the requirements and needs to develop costumers' software [...] I'm mostly businessman, and I spend most of my time in strategic activities linked to data analysis to measure the company based on operational cost, orientation, and dealing with costumers' support, making things managers are expected to. (I\_05)

Source: Elaborated by the authors based on research *corpus*.

These speeches approach daily and complex activities common for businessmen (Interviewee 05), as well as employees (Interviewee 01) and autonomous' practices (Interviewee 11). Interviewee 05 is a micro/small businessman who accumulates and performs several managerial activities, just as Interviewee 01, who seeks to analytically measure productive and financial returns. Interviewee 11 introduces resources' capture through common notice among creative and innovation professionals who seek funds to develop their projects (Wolff, 2020).

### Figure 9

#### *Example of resources' management extracted from Interviewees 01 and 11*

[...] we have to make sure that it is technically feasible to be done, will it bring some value to somebody's businesses? And also will they have some return from the investment? So, I'm in charge for the team ceremonies, for making daily ceremonies to plan sprints and to make some recalling [...] (I\_01).

Most equipment we have here, almost all the lab, was financed by some promotion. Or, some notice we have joined and won. We are applying for a notice at this moment to get resources, and the concept of these resources lies on having a permanent team. [...] (I\_11)

Source: Elaborated by the authors based on research *corpus*.

### Creativity

Creativity is a fundamental aspect for the development of innovative and creative organizations (Silva et al., 2019), and it means echoing on professional activities. Creativity as **practice** (e.g. Dourado & Davel, 2022) is observed in findings as constant activity to develop one's own practice by solving problems through unconventional ways, by using creative solutions or, yet, through playful thinking. The speech by Interviewee 19 points towards these ideas (Figure 10).

### Figure 10

#### *Example of creative practice code extracted from Interviewee 19*

I think that it is more like a process to find solutions and to think differently, then they come to us with an issue, but without a given scenario, and then we have to use creativity to explore these possibilities we present [...] or the new ways to think about it, or a problem solution, or the new ways to explore the problem. Creativity, in my opinion, demands an action in something, and not being creative due to creativity, you know? Different from art, once you can have art just as art, you don't have to apply it to anything. In my opinion, creativity must have orientation, or, in my opinion, it is not creativity, it is just a cool thing [...] So, we can use creativity to take a step back and think of a better solution for a problem or we choose the means and through it we will solve the problem, and then creativity ends up being the engine moving the problem solving process. There is no innovation without creativity, it is very hard because you are thinking of something new, so it cannot be separated (I\_19)

Source: Elaborated by the authors based on research *corpus*.

The excerpt highlights creative action oriented to problem creation or solving. Thus, it is bond to a solution deriving from the act of facing a problematic situation and from a business perspective related to analytical thinking (Weisberg, 2019). Therefore, the excerpt explores creativity expressed by execution/use/creation and by the "skills" acquired through the practice, through training (Mumford & England, 2020).

### Figure 11

#### *Example of Reinvention Code extracted from Interviewees 10 and 13*

[...] basically, we have to solve problems and the only tool to do it is the software, the technology that we will use and the only thing that solves the problem is creativity, we can authorize processes for each case, and it is artificial intelligence, we cannot work with it, actually it is the stem of artificial intelligence, so I believe that, for real, creativity, is the element moving all my work, we just work because we have the possibility of creating something new. (I\_10)

But you basically have to solve problems. The person wants to shoot a footage because it thinks that it needs a footage for something, and it has the idea and then you got to be creative to first of all be creative to get to know what it will turn out into, based on your budget, among others [...]. In audiovisual, you create products, or you are part of a products' creation. Thus, by definition, creative means creating. So, every project is creative, I believe that, some are more creative than others, but, you know, everything is creativity. (I\_13)

Source: Elaborated by the authors based on research *corpus*.



Interviewees' statements also point towards creativity as reinvention. Accordingly, creativity gains feature types like non-authorized/outsourced bureaucracy (inserted in the organizational logics), which are inherent to their profession. They are bond to creating solutions among material limitations, since it is important finding results in the available resources; and to using creativity in decision making. The excerpts synthesize the presented ideas (Figure 11).

Professional activities, themselves, concern creating and developing products and processes. Thus, by themselves, these activities are related to creativity, and they are inherent to the profession, as shown in the excerpt above. It is important pointing out that professionals' creative practices are bond to managerial activities, which is organizational creativity (Dourado & Davel, 2022). It is so, because creativity is used to manage the available resources and process elaboration.

Creativity 'matching' can lead to a mimetic logic. Thus, nowadays, standardization is expressed by interviewees' speeches about the outspread of what has been produced. The statement in Figure 12 expresses this code.

### Figure 12

#### *Example of Standardization Code extracted from Interviewee 15*

[...] I think that music has suffered a little from it [...] you will listen to certain genres, so, it seems that you are listening to the same music, so, there are some genres that you listen to and it seems that it is the same person singing, the same band playing [...] (I\_15)

Source: Elaborated by the authors based on research *corpus*.

## Technology

Technology is permanently inserted in professionals' work practices, and it is growing. Devices, networks, software do not just help the process, but are integrated parts of it. Empirically, technological activities are associated with using digital devices for work practices (also associated with management and creativity), such as data analysis, software infrastructure development, among other ICT activities. This aspect can be seen in the following excerpt (Figure 13).

### Figure 13

#### *Example of Technological Activity Code extracted from Interviewee 01.*

[...] I'm in charge of the required documents, I'm in charge of validating the prototypes, I interview internal costumers on a daily basis, everything regarding data measurement to performance analysis, use, engagement, retention, I'm in charge of product advertisement, you know? (I\_01)

Source: Elaborated by the authors based on research *corpus*.

All functions mentioned by the interviewee are performed with ICT's help. Besides using devices, the work itself has been undergoing an automation process. The automation code in the findings is checked through full and partial activities that used to be manually carried out by workers. Thus, technology works as support, as creation tool and speeds up processes. These issues are perceived in the excerpts shown in Figure 14.

### Figure 14

#### *Example of Automation Code extracted from Interviewees 08 and 10.*

From the technical viewpoint, I develop algorithms that generate artifacts, be them design or architecture. So, I program the design and the architecture rather than, in the past people, architects, drew, right? Hand drawn. Later, it underwent changes, the programing design. (I\_08)

This is an extremely connected work with technology, but I believe that there was just not one tool because there is not such a thing like 'oh, it is easier because [it is] in the computer'. Skill to draw and theoretical knowledge is the same. So, if I need to draw on paper I know how. Truth is that sometimes there are people who have a hard time adjusting to the digital table tool, you know? [...] because it is digital, it makes some functions faster, you can certainly have things that make your life easier, but I think that you use the tools you have available, I think that they do not reduce your work, actually I think that it gets worse. (I\_10)

Source: Elaborated by the authors based on research *corpus*.

Technology is closely linked to the methods and processes carried out by these professionals. Either technological activities or automation show that the work is almost exclusively performed by digital devices, and products emerge from human and non-human interactions, as observed in all excerpts. These issues are explored in creative processes and in analytical digital activities (Duff & Sumartojo, 2017; Jarrahi, Sawyer & Erickson, 2022; Lwakatare et al., 2019). However, although automation is a process linked to several occupations (Duff & Sumartojo, 2017; Jarrahi, Sawyer & Erickson, 2022; Lwakatare et al., 2019), it is closely related to the herein assessed professionals. Moreover, digital technologies are attractive and necessary for activities' optimization (Amadori et al., 2012). Yet, it is worth pointing out that artistic knowledge is essential, even if one is



helped by digital tools, as seen in Interviewee 10.

### Professional secto

Professional sector is an element holding action-field features and it regards work, which must describe the dynamism marked by flexibil-

ity, innovation, expansion and precariousness, as well as by labor relationships featured by privileges and discriminations. Codes' description is available in Figure 15.

**Figure 15**  
*Description of Professional Sector*  
**Description of Professional Sector Codes**

Professional sector		
Category	Code	Description
Work	Flexibility	Is expressed in the time, space and performance aspect. First, it regards the possibility of managing time; the second regards remote work and mobility; the third aspect explores individual and collective action, managing the customers and easy access to market (it can be formal or informal).
	Innovation	It regards multiple actions, innovation inherent to the activity and constant pressure. Multiple action evidenced by activities demanding knowledge about several processes and disciplines. Regardless of the activity, it is inserted in the innovation scope, it is immersed in a dynamic and mutable environment, thus, it is an innovative activity. Accordingly, pressure does not stop.
	Professional profile	It regards professionals' necessary features that are already seen in ICT and CE professionals' profile to help their evolution. There are also changes happening fast in this interaction medium.
	Work precariousness	It regards regulating these professionals' sectors and the process to become a judicial entity. It points towards the devaluing of professionals, which is expressed by the low salaries. This context leads to the need of acting in multiple companies/projects.
Work relationships	Discrimination	It regards the prejudice against professionals because of their skin color, gender, age, sexual orientation, in their action field.
	Privilege	It regards the advantages professionals have access to due to their skin color, gender and social class

Source: Elaborated by the authors based on research *corpus*.

Professional sector also explores the expansion issue and the precariousness of this action field. Market expansion (Gomes, 2022) bonds to market flexibility and it shines light on the valuing dynamics (salary increase and opportunities) and, at the same time, shows the loss of rights (Freitas *et al.*, 2018; Antunes, 2018). Consequently, either flexibility or innovation are seen by professionals - self-declared as belonging to the ICT and CE sector - as possible bonus or onus linked to the way they relate to organizations and to work opportunities.

On the other hand, they see work as flexible, as something that was made possible by the current technological stage. It has potentiated (Kniffin *et al.*, 2021) changes in the understand-

ing of time/space during the pandemic (Zamani & Spanaki, 2023). Work linked to pressure and multi-disciplinary profiles typical of the creative/innovative process (Loeschea & Torre, 2020; Patriota & Muzzio, 2021) are associated with mobility, and it allows connecting teams and collaboration among them in the digital space (Camarinha-Matos *et al.*, 2019).

On the other hand, work relationships revealed historically built prejudice structures perpetuated in several occupations. Prejudice against age (Hanashiro & Pereira, 2020), sexuality (Diniz *et al.*, 2013; Souza, 2020) and ethnicities (Costa Junior & Silva, 2020) is already discussed in the literature. This input regards this sector's link to reality, which is sometimes featured by inclusion.



Thus, the professional sector featuring highlights two branches that show the labor relationships of the herein interviewed professionals. Accordingly, each one of these branches is discussed based on more properties, on details in interviewees' speeches and on their correspondence to aspects available in the literature.

## Work

Category work encompasses codes that point out the features and particularities of these professionals. **Flexibility** is the first element to stand out. This code is featured by the possibility of choosing work schedules and workplaces (remote and flexible work), even if it is market by moments of collective and individual work. It is also possible understanding 'easy' access to formal and informal labor market, because it 'only' demands knowledge and digital access. These understandings can be observed in empirical excerpts from Interviewees 05 and 13 (Figure 16).

### Figure 16

#### *Example of Automation Code extracted from Interviewees 05 and 13*

[...] computing is easy to [be] freelancer because you only need one computer, like a designer [...] (I\_05)

[...] there are days when I need to work, there are days that I have to work a lot, it changes. [...] a lot of audiovisual stuff you can produce on your own in a computer, but other things cannot. [...] shootings you cannot do well on your own [...] edition, theoretically it is not logic to do it alone, but, at first, you can do a lot, a lot of things alone. So, I thought that it was something that I could do alone (I\_13)

Source: Elaborated by the authors based on research corpus.

Professionals have a new experience regarding space/time in their relationship with work (Zamani & Spanaki, 2023). This possibility is aligned to the logics of digital nomads (Atanasova et al., 2023; Nash, Jarrahi & Sutherland, 2021) who are free to decide about their displacement and to manage their own time. Migration to remote work has been feasible for a long time and practiced by these professionals. The pandemic potentiated ICT using as movement to change workplaces (Kniffin *et al.*, 2021). The possibility of being flexible became real due to the current technological condition and by interviewees' professional choices.

These professional sectors are marked by the innovation aspect that was expressed by the broad diversity of fields and disciplines, by professionals' multifunctional profile, by constant pressure and by different innovation degrees capable of being performed by certain professions. These professionals are inserted in a labor logic that regards product creation and development, since these products must remain up-to-date and have significant impact. This code is synthesized in speeches shown in Figure 17.

### Figure 17

#### *Example of Innovation Code extracted from Interviewees 06 and 08*

Plurality of several fields: human, physical, chemical, among others, but it is also a very important practical technical matter; sometimes we get far from technological evolution and then we end up losing space in the future. This is a great exercise of dealing with new media, with new platforms, new ways of communicating, besides the theoretical background (I\_06)

[...] [a] professional challenge lies on dealing with a little of pressure. It is natural because we are working with Innovation. Timing sometimes is a very strong thing. We have to be developing fast to follow market changes... the existing pressure is natural (I\_08)

Source: Elaborated by the authors based on research corpus.

As already presented, these teams are marked by multi-disciplinary activities (Patriota & Muzzio, 2021). Yet, professionals also learn and deal with team tasks. In addition, professionals experience time pressure over the 'environment' due to careers' innovative aspects, which are inherent to the creative process (Loeschea & Torre, 2020; Baer & Oldham, 2006).

Other necessary aspects to be pointed out are related to professional sectors regarding the dynamics between expansion and precariousness. The growing use of digital technologies and their adoption by organizations lead to the expansion of this field's actions. This question is reported in Figure 18.

Interviewees experienced the expansion of the digital economy in their workplace (Gomes; Lopes & Ferreira, 2022). This field expansion also highlights professionals' interest in better salaries. Interviewees point out 'valuing' (based on remuneration) and work opportunities outside their locations (state or federal). In addition, it regards professionals' qualification disparities.



## Figure 18

### *Example of automation extracted from Interviewees 10, 13 and 17*

[...] we inform when we have vacancies, you know? Then, we check the profile of people who show up for the vacancies and then there is a lot of people crazy to migrate to technology [...] (I\_17)

I think that we are living a "boom" in this creation field and we never had so many vacancies in this field as nowadays. [...] I think this field is always growing, always giving opportunities and, at the same time, it is always renewing itself, because technology is here to stay [...] (I\_10)

The specific case of footages increased during the pandemic [...], [because of the pandemic] there was a technical jump and people's perception about using the mobile phones, to meet others, and to work remotely, I think it was a forced education that we had to experience, and it helped the market to develop, you know? (I\_13)

Source: Elaborated by the authors based on research corpus.

On the other hand, this expansion also shows a fast change in institutional and social requirements. Reports associated with the socio-economic context express work **precariousness**. Professionals who do not get to afford their living with 'only' one job/project/function must accumulate jobs. This aspect goes against the previous code, and highlights this field's devaluing, need of setting legal entities and lack of regulations. Speeches in Figure 19 express this scenario.

## Figure 19

### *Example of Precariousness Code extracted from Interviewee 02*

[...] this is a work that you can do anywhere on the world because of lack of regulation and of the easiness of working anywhere on the planet because of it. This home office thing during the pandemic sped up the process, and there is a lot of vacancies worldwide, there is a lot of people making money with computing and it is standing out, computing, as a whole, everybody wants to change fields. There is a huge "boom" because there is lack of manpower, we are losing position to the rest of the world, because Brazil has not purchase power as the rest of the world, and Brazilian companies are losing manpower for companies abroad. (I\_05)

[...] There is still the legal entity issue, you know? In the market, and these legal entity relationships where professionals are not just a company, they are several companies [...] (I\_02)

Source: Elaborated by the authors based on research corpus.

Expansion in association with mobility makes expert professionals chose to work outside the "domestic market". Thus, professionals get bond to organizations as service providers in order to get better financial conditions and flexibility in work relationships (Freitas *et al.*, 2018). The legal entity aspect explores these sectors' precariousness. It is so, because workers lose several institutional rights that have already been in place when they become legal entities and take all the risks linked to their activity (Antunes, 2018).

## Personal and work relationships

This category regards the relationship between the professional and its action medium. It refers to structural conditions observed in work relationships from interviewees' perception due to their work practices. This category shines light on codes regarding the discriminations and privileges pointed out by the interviewees. Discrimination concerns prejudice against "social minorities" due to their age, gender and sexuality. Privileges point towards the opposite direction, the benefited ones due to society's racist and elitist structures. These codes are shown in Figure 20.

As presented in interviewees' speech, although it regards an innovative field, it still faces structural discrimination relationships. Prejudice concerning age (Hanashiro & Pereira, 2020) and the LGBT community (Diniz *et al.*, 2013; Souza, 2020) refers to historical social constructions that are the very basis for oppression. Similar scenario is observed for privilege matters. Black candidates are in disadvantageous position in comparison to the white ones (Costa Junior & Silva, 2020); therefore, whiteness is also pointed out by the professional who calls the attention to her financial and ethnic condition, since it has impact on both her work and trajectory.





### Figure 20

#### Example of Privilege and Discrimination Codes extracted from Interviewee 02

[...] it started to involve things of my personal life. I mean, I am a person, a bisexual woman who is having a relationship with a man, and they started to invalidate it [...] there were many reports about me, but not about my partners, everything was about me, everything was oriented to me [...] this market is highly prejudicial towards its professionals, there is a lot of prejudice that older adults shall not work with digital communication, they won't understand digital communication [...] it is always important highlighting that, well I'm talking about the privilege as woman, white, and I would say high-class family, but I will talk about a comfortable financial situation [...] (I\_02)

Source: Elaborated by the authors based on research *corpus*.

### The professional

This last sector regards the individual. It concerns matters linked to the professional's trajectory and well-being, and also covers material support and valuing bonds. Dimensions and codes referring to this scope are explored in Figure 21.

Findings in this branch focus on the professional and explore career aspects regarding professional identity, support network and professionals' relation to their own health. On the other hand, interviewees take into account a specific career, which is featured by self-identification in this sector and by support from third parties (most specifically from those who act in sectors that are closely related to technological changes). This identification takes place due to the sense of belonging and to interest in technology, digital media and exact sciences (this last one reveals not just interest, but also fear). Thus, this category expresses Tsakissiris and Grant-Smith's (2021) understanding of how the sense of having a career is developed by the individual, itself, and by its interpersonal relationships.

### Figure 21

#### Description of codes featuring the professional

#### Description of codes featuring the professional

The professional		
Category	Code	Description
Career	Professional identity	It regards the professional's interest in the action field. This identification is expressed when the professional informs that it works with what they like, by the sense of belonging and by its bonds to values (worldview). This code is linked to closeness to the media and to exact-sciences knowledge. There is still the possibility of associating this identification with financial aspects, since this professional tends to migrate to a more profitable field.
	Support network	It regards support and influence from friends, mates and family members at the time to choose the labor activity
Occupational health	Getting seek	It regards diseases that are associated with labor activities.

Source: Elaborated by the authors based on research *corpus*.

On the other hand, it highlights the occupational health issue. Interviewees' speech allowed identifying symptoms of Techno-stress, which is related to ICT using, such as anxiety and burnout (De Paula & Cappellozza, 2021; Salla *et al.*, 2022). It is important pinpointing that such aspects are influenced not just by technological conditions, but by other economic and structural

matters that draw these professional's labor market.

Thus, the in-depth analysis of fundamental aspects set for the aforementioned categories will be available for readers, who will also have access to codes based on concepts found in the literature and in reports extracted from the research *corpus*.



## Career

This category regards a whole set of subjective aspects linked to the herein assessed professionals, and they concern their private and family relationships, which influence their choice for, and interest in, this work sector. Professional identity involves preference for and trend to choose the technological and innovative sector. This code comprises the 'awakening' to this profession, which is linked to the sense of belonging, which is often observed from childhood, to interest for this profession (which is generated by the media and/or by the university) and to search for occupations that make them happy (working with what one likes) and that are pragmatic. Figure 22 provides the speeches exemplifying these ideas.

Interviewees 09 and 19 identify the trend to choose the digital and media universe since childhood. Different from what was observed by Tsakissiris and Grant-Smith (2021), the sense of belonging emerges before the access to the labor market (seen in I\_01, I\_09, I\_18 and I\_19). Yet, there are those who present this interest later in life, as shown by Interviewee 18. It is worth highlighting those who only "awake" for the technological bias in college (when the sense of belonging would be observed after the bond to technological careers; Tsakissiris and Grant-Smith, 2021) – all interviewees reported some sort of approximation and interest in "pre-career" ICT. Finally, Interviewee 01 shows the choice oriented to the field capable of bringing along material fruits accounting for more "action", and for having social impact on the chosen career.

### Figure 22

*Example of Professional Identity Code extracted from Interviewees 01, 09, 18 and 19.*

I made my choice when I was still quite young, 14, 15 years, and at that time it was not a so popular career [...] choosing the technology field meant liking what I was doing than the hype or the salary, or prestige, since it did not happen at that time (I\_09)

Oh, since I was little, since that time, since always, since I was 10 years old, playing videogame, I wanted to be a game designer, since I had my computer, I don't know, at the age of 7 years or 6. Then, I draw. [...] I didn't choose like, I go from point A to point B, things happened in a kind of organic way [...] (I\_19)

Yes, I loved videogames and such, and cartoons, but my first contact with technology was with my PC, the one I had at home, it was 2001, 1998, I guess. [...] and I had not yet found my entrepreneurship profile at that time, it was in college that I started my ventures (I\_18)

I guess it was a much more pragmatic bias, like I have to make things happen, and it made me look closer to the technology field [...] like, this is where my work serves a greater purpose, you know? (I\_01)

Source: Elaborated by the authors based on research *corpus*.

Interviewees also link the IT field to exact-sciences disciplines. Thus, some of them declare to be familiar with it and some others state to "hate" it. The ones who hate it also say that they are afraid of this field. These "two profiles" are summarized in Figure 22.



### Figure 23

*Example of Professional Identity Code extracted from Interviewees 01 and 11.*

[...] I liked electric stuff and math, and I liked physics, so I attended the Electro-technical course [...] (I\_11)

[...] I had to choose a way [...] [and] everybody told me ‘go to the technology field, man’ [...] and I was like ‘well, I guess I’m not so good in math, I guess I’m not so good in logics [...]’ (I\_01)

Source: Elaborated by the authors based on research *corpus*.

Career also comprises **support network** in the findings’ coding, and it explores the influence and support of family members, friends and workmates. Excerpts in Figure 24 summarize this code.

Empirical findings clarify the connection between occupation and social networks due to personal trajectory. It is influenced by the closest cores and by connections in teaching environments (schoolmates) (Tsakissiris & Grant-Smith, 2021).

### Figure 24

*Example of Support Network Code extracted from Interviewees 01 and 07.*

[...] well, as I have said, my father used to work with it, so it called my attention and curiosity, because, at that time, I used to work with desktops, those huge machines. It was as big as a room, and it always called my attention, I was curious with that thing [...] (I\_07)

[...] my schoolmates could see how much I loved the technology field and one of them told me ‘hey, I’m leaving the company I’m working at, so there will be a vacancy in there, don’t you want to make part in it’ [...] (I\_01)

Source: Elaborated by the authors based on research *corpus*.

### Occupational health

Category ‘occupational health’ refers to medical issues used to mitigate certain illnesses faced by workers during their professional activities. This category encompasses the code of diseases and it is expressed in speeches regarding anxiety, burnout, stress and “infotoxication” (intoxicated with information).

These symptoms emerge from huge workload, from professional life pressure and from the amount of information these professionals get every day at work. It is possible introducing the code through speeches in Figure 25.

Professionals are inserted in a labor logic that demands constant assimilation of new information. These professionals must constantly comply with labor market changes, since this is an innovative sector where technology and media are closely related to the professionals’ practice. Thus, these symptoms are related to Techno-stress and to ICT using (De Paula & Cappelozza, 2021; Salla *et al.*, 2022).



## Figure 25

### *Example of Illness Code extracted from Interviewees 02 and 04*

To be honest, although it may look like, I often feel very stressed at home. I do not have patience, you know? I don't want to do anything, just rest. My wife often complains a lot about it with me, I end up absorbing too much and feeling the workload [...] (I\_04)

I don't feel anxious, I'm cool with it, because I started understanding that actually it is part of the job and it does not make me anxious, but I think it is killing the minds of 90% of the market. It is so, because it is very unreal the amount of information, things, adjustments I have to make [...] (I\_02)

Source: Elaborated by the authors based on research *corpus*.

## FINAL CONSIDERATIONS

Based on the described results, the interviewed professionals – self-declared as belonging to the ITC and/or CE fields – see their work practices as closely associated with innovation practices. Professionals highlighted how activities, themselves, the structural relationships they are inserted in, and the individual/work relationship at some levels, are affected by the continuous process of innovation, which is inherent to their professional sector. Each one of these scopes – categories identified during result analysis – points out an entanglement inherent to the multiple facets composing their work practices, which are quite intimate to a technological context that is often changing.

On the one hand, the Professional Activity provides some perspectives about a structure that is often adjusting itself, and it indicates opportunities and threats to these professionals. On the other hand, the Professional Sector points towards pre-set strengths and weaknesses that can have positive or negative impact on how these professionals deal with the organizations they work at, or with those they relate to. ICT and CE professionals, as intersection of both perspectives, are featured as individuals who need to self-manage their future by taking into account individual and personal aspects.

Thus, it is worth highlighting that the adopted methodology allowed better understanding the aim of the present study, since it was also possible picturing the profile of work practices

observed in the digital context of the ICT and CE sectors. This featuring was expressed in the three branches composing the interviewees' responses. Accordingly, it is important pointing out that the herein analyzed professional practices are quite diverse and have multi-disciplinary profile.

Consequently, one of the contributions by the current research lies on the empirical delimitation of innovation professionals at the ICT and CE professional scope. The literature separates STEM (*science, technology, engineering and mathematics*) professionals from the creative class. Thus, previous research had analyzed the connection between these two fields. Therefore, the present study discloses the close association between these professionals, and the management, creation and technology activities, a fact that points towards structural relationships concerning their work practices.

When it comes to the practical scope, the present study provided data capable of contributing to the elaboration of public policies. In addition, it provided information for companies and it can help selecting and retaining employees. It is so, because they disclose essential behavioral, relational and innovative needs to these professionals' actions. According to the professionals, this research enabled better understanding and updating the development of essential skills for the market. These skills exceed what is taught in classrooms, but also comprise knowledge acquired during their professional trajectory.

Research limitations are linked to method-



ological aspects: (a) delimitation and (B) number of, and choice for, respondents. The empirical scope was also adopted for professionals in the ICT and CE sectors, which are their action fields. Thus, it was necessary defining the sectors to be approached and which of them would be excluded for research development purpose. Yet, the analysis was carried out with a small number of respondents: only 19 interviewees were necessary to reach saturation. Another element related to interviewees' selection lies on the fact that interviews were carried out with Brazilian professionals working in the regions where technological parks are installed in. However, this choice was related to the very definition of the research scope.

With respect to future research, and by having in mind the scarce literature openly delimiting the intersection between ICT and CE professionals, it is recommended to conduct a future study based on the present research structure, but focused on expanding it to other countries. Thus, it would be interesting developing and screening data to allow comparing research results and identifying changes in other scenarios.

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