Digital Networks and Transnational Education

Migration and online media use in international pathways associated with education between Brazil and Germany

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Contents

List of Acronyms

API: Application Programming Interfaces

BAMF: Bundesamt für Migration und Flüchtlinge

BFD: *Bundesfreiwilligendienst* (Federal Volunteer Service)

FSJ: *Freiwilliges Soziales Jahr* (Voluntary Social Year)

IBGE: *Instituto Brasileiro de Geografia e Estatística* (Brazilian Institute of Geography and Statistics)

IT: Information Technology

LDA: Latent Dirichlet Allocation

QCA: Qualitative Content Analysis

SNS: Social Media Sites

TM: Topic Modelling

TNE: Transnational Education

VET: Vocational Education and Training

List of Tables

List of Figures

1. Introduction: Migration, Education, Social Networks, and Media

The use of digital media among migrants has been raising public interest for the last ten years. Some press headlines give us an impression of that: In 2015, *The Independent* told its readers: "Surprised that Syrian refugees have smartphones? Sorry to break this to you, but you're an idiot" (O'Malley, 2015). More recently, *The New York Times* published a piece entitled "Live from the Jungle: Migrants Become Influencers on Social Media" (Turkewitz, 2023), and *The Los Angeles Times* described "How TikTok changed the way people migrate…" (Gerber, 2023). In Germany, *Deutsche Welle* called attention to "How social media helps to turn migrants into slaves" (Deutsche Welle, 2024), and, in Brazil, immigrants from the country made a headline in the newspaper *Folha de São Paulo*: "The success of Brazilian influencers telling the 'real life' of migrants in the US: Construction and cleaning workers have hundreds of thousands of followers on social networks" (Amâncio, 2022). As digital media becomes increasingly present in daily life (cf. Hepp, 2020), it is not surprising that its uses, perks, and dangers gain attention. Nevertheless, migrants' digital media uses sometimes seem to be described as quaint or unexpected, as some of the headlines above illustrate. At the same time, these headlines also capture the fact that digital media has been potentially impacting migration pathways, regardless of migrants' different backgrounds, motivations, or opportunities (cf. Leurs, 2023). This thesis contributes to the growing body of research in that area. Here, I look at migrants' digital media use in pathways associated with educational opportunities.

Academic researchers have also been interested in the phenomenon. There are already studies about the nexus between digital media and migration from different perspectives: the digitalisation of borders, the datafication of migratory control mechanisms, social practices, such as the uses of digital media to maintain connections across borders and to collect information, as well as the opportunities and dangers created by these uses (cf. Smets et al., 2020). The nexus between migration and education and its connection to digital media use has also started receiving attention (Jayadeva, 2020, 2023). Contributing to that area, this thesis explores the role of education in migrants' digital media use. I look particularly at how that happens on social media platforms. To do that, I draw from theories about migration networks. Concretely, I look at networks of social connections established digitally on social networking sites, or "social media" platforms, as they are more commonly known. Migrant Facebook groups were the starting point of my research.

Social networks composed of relationships established among friends, family, and acquaintances have been central to migration research. Analyses of these networks have revealed their importance in facilitating migrants' establishment abroad by offering different kinds of resources, such as helpful information, strategies, social contacts, money, or emotional support. Furthermore, these networks eventually also facilitated the migration of other network members (Basch et al., 1994; Schiller et al., 1992). Here, I look at digital connections established among people who participate in the same digital network due to a shared nationality and interest but who do not know each other personally. The main trigger of these digital connections is information exchanges between those who have questions and those who have answers or opinions about it (cf. Haythornthwaite, 2002).

In this thesis, I explore interpersonal online connections triggered by education-related information exchanges. I consider any formal learning as "education". Hence, when collecting the data, I looked at mentions about learning in an organised and structured environment with objectives and intentional from the learners' point of view (Cedefop, 2011). That means I considered mentions of

educational institutions that issue certificates or degrees after the successful completion of a curriculum, courses offered by private teachers, or mentions of interest in studying or self-learning. Concretely, this includes schools, universities, institutions offering vocational education and training (VET), language schools, private teachers, or people mentioning their educational aspirations.

This thesis analyses online information exchanges related to education among Brazilian migrants and aspiring migrants in Germany. The case of Brazilians in Germany offers insights into a diverse population with very different socio-economic conditions migrating to a country in the Global North that has been investing in attracting migrant labour, especially in highly demanded areas such as IT and care work. Some other particularities of Brazilian migrants' social media use and the German educational system make this combination interesting. I describe these in the following paragraphs.

Facebook groups are commonly used among Brazilian migrants (Dedecek Gertz, 2023b; Falcão et al., 2024; Foletto, 2018; Picanço Cruz et al., 2022; Silva et al., 2022). Although social media platforms can quickly evolve and change, organising and participating in social media groups or forums has been a common social practice among Brazilian migrants for a decade already (Oosterbaan, 2010, 2013; Schrooten, 2012). Generally, social media use in Brazil is widespread, regardless of socio-economic class (cf. Spyer, 2018; Statista, 2022b), which makes this population an interesting one to learn about the use of social media in migratory pathways related to education among a socially diverse group. Furthermore, migration from Brazil to Germany associated with educational opportunities, may facilitate upward socio-economic mobility in some cases (cf. Carnicer, 2018; Fürstenau, 2019). Hence, this project also builds upon that body of research.

Germany is not a major destination for Brazilian migrants. However, Germany is an interesting case for studying education-related migration pathways among a migrant population characterised by a great diversity of underlying social conditions, such as the Brazilian one (cf. Assis, 2011). This is due to a peculiarity of the country's education system that may facilitate the migration of some young people from lower socio-economic classes, namely the offer of paid vocational and educational training (VET) programmes. An example of a VET-related pathway among migrants from lower socio-economic classes has been described among young Brazilian women in Germany (Fürstenau, 2019). They first enter the country through the Au Pair programme, for which they are hosted by a family and receive pocket money to look after the family's children and do some housework. Some of these migrants then pursue a paid VET programme in the care sector, which becomes, for some, a strategy for achieving a stable migration status and access to higher education (idem). In this way, they can afford living costs, obtain a degree, and learn a profession in high demand in Germany, increasing their chances of finding a job after graduation. Information on how to pursue this strategy, as well as social, financial and emotional support, circulates among these women's friends and family networks. In this thesis, I do not focus on migration networks specifically related to education in the care sector. My connection to that previous research project relates to the study of migration networks through which concrete information and support circulate. The difference is that, instead of analysing networks among friends, family, or acquaintances, I look at migrant networks established online.

Drawing on findings on the role of networks among Brazilian migrants with different characteristics and backgrounds in accessing education in Germany (Carnicer & Fürstenau, 2021) and considering the relevance of digital networks in migration related to education (Jayadeva, 2020), this thesis

further contributes to filling a research gap on the role of digital networks in migration pathways, especially those related to educational opportunities. Specifically, the guiding research question I pose is:

> *How do migrants and aspiring migrants use digital networks in their transnational trajectories associated with education between Brazil and Germany?*

In the following pages of this introduction, I explain the thesis's organisational structure as a compendium of four peer-reviewed papers and an overarching text, which started with this introduction.

1.1. Reading a Compendium of Publications

This thesis consists of four independent papers and this overarching text. The papers are presented here as chapters (section 4.7.4. and chapters 6 to 8). These chapters may break the flow of the reading, as they are composed of papers that stand alone. To avoid that, I provide a summary of the findings of each paper in Chapter 5. Therefore, there are three ways of reading this thesis: 1) by reading this overarching text first and then the papers, 2) by following the order of the chapters (considering the break and inevitable repetition of information in the papers), or 3) by reading the papers first and then this overarching text. Considering the flow of the text, the first option might be a better one.

I adopted an exploratory approach based on digital ethnography (Hine, 2015; Pink et al., 2016). The research field comprised the digital networks of latent ties available on migrant Facebook groups (cf. Burrell, 2009). Concretely, I examined the circulation of information about education in these networks, mapping its prevalence, roles, and meanings. The analysis began with a broad, quantitative overview in Paper 1, followed by a closer, qualitative look in Paper 3. Based on this overview, specific actors within the field were identified and presented in Paper 4. As the concrete procedures of data collection and analysis are described in each empirical paper, in this overarching text, I explain how the different methods of each paper together form the digital ethnography and how the results of each method are related to each other.

To help the reader decide which order to proceed in, here is a summary of each (title, research question, data and method, main outcome, information about the journal in which it is published, and authorship):

Paper 1 is entitled "Migration and Educational Projects Online: A Topic Modelling Approach of Discussions on Social Media Groups". It asks, "What is the prevalence of education-related topics in Facebook groups of 'Brazilians in Germany'?". To establish that, my co-author and I used topic modelling to analyse a sample of over 7.000 posts published in such Facebook groups. This paper provides a broad overview of the field and reveals that education appears among the main topics discussed in randomly selected Facebook groups of "Brazilians in Germany". Paper 1 is published in the special issue "Emerging topics of media and communication scholarship in Europe: Alumni of the ECREA doctoral school of 2021" by *Mediální studia* | *Media Studies*. The paper is co-authored with Florian Süßer who conducted the data collection and supervised the coding for the analysis on R.

Paper 2 is entitled "Collecting migrants' Facebook Posts: Accounting for Ethical Measures in a Text-as-data Approach". It discusses some ethical aspects of Paper 1, asking, "How to justify the collection and analysis of migrants' digital traces for academic research purposes?". To address that question, I reflect upon the contextual integrity of research supported by new technologies (Nissenbaum, 2010). This paper shows how academic research with data produced by migrants on social media platforms can comply with the main ethical imperative of "doing no harm". Therefore, the paper argues that complying with restrictive Terms of Service from big tech platforms could restrict academic research. This paper is published in the special issue "Migration Studies and the Digital: Datafication, Implications and Methodological Approaches" by *Frontiers of Sociology*. I am the single author of this paper.

Paper 3 is entitled "Migration and Education on Social Media: What Migrants Discuss about Education in Facebook Groups". It asks, "What topics related to education are discussed among migrants and aspiring migrants in online groups?". To address that question, I used a qualitative content analysis (Schreier, 2012) to analyse education-related posts on selected Facebook groups of Brazilians in Germany. This paper provides a closer look at the field, pointing out that information exchange about education in those groups can serve as indicators of some inequalities in the access to education abroad as well as strategies, aspirations, and perceptions associated with that. The paper is published in the special issue "Insights in Migration and Society: 2022" by *Frontiers in Sociology*. I am the single author of this paper.

Paper 4 is entitled "Migrant Content Creators as Social Media Agents of Transnational Education". It describes the case of three Brazilian migrants who systematically collect, organise, and disseminate content about education in Germany through social media: they are "content creators" (cf. Duffy, 2017). The paper asks, "How do these migrants participate in the transnationalisation of education?". To address that question, I used non-participant observations of Facebook groups of Brazilians in Germany and on other social media platforms of these three subjects and conducted in-depth interviews with them. Describing the actions and motivations of these young migrants and content creators, the paper shows that the content they circulate online reveals a demand for educational opportunities abroad besides university education. Furthermore, these migrants' online activity can contribute to the transnationalisation of education. The paper is co-authored with Javier Carnicer and Sara Fürstenau, who contributed to the data analysis and textual revision. Javier Carnicer also wrote part of the theoretical section of the paper. This paper has been submitted to a journal of education studies.

The papers are embedded in the body of the thesis. That can facilitate finding specific sections through the index of contents, yet it also causes Paper 2, in particular, to have extremely fine-grained sections. Although the numbering of these fine-grained sections can cause some confusion, the logic of the paper should help to follow the text. The published versions of each already published paper, formatted with the publisher's template, are available in the appendix. The contents of the embedded and the formatted papers are the same, apart from some small grammar improvements, and from the abstract, keywords, and other acknowledgements present in the formatted papers. The papers follow the writing conventions of American English, which differs from this overarching text.

1.2. Chapters' Overview

This thesis has ten chapters. In this first introductory one, I contextualised the overarching research question (section 1), explained my focus on Brazilian migrants in Germany and their media use (section 1.1), and presented the four papers that compose the compendium of publications (section 1.2).

In the second chapter, I establish four main theoretical aspects that help explain my findings. These are the understanding of how migration networks can compose "social spaces" that expand beyond nation-states' borders (section 2.1), the role of digital connections in migration networks (section 2.2), the role of "social capital" and trust in migration networks (section 2.4), and, finally, the aspect of "cultural capital" attributed to accessing education abroad as well as how that access to education also composes "social spaces" expanding beyond borders (section 2.4).

In the third chapter, I provide contextual information about Brazilian migration, especially to Europe and Germany (section 3.1). I also present some important aspects of Brazilian migrants' media use (section 3.2). Finally, I describe some aspects of inequalities in the education systems in Brazil and Germany (section 3.3) to explain why some Brazilians would migrate to Germany and only have access to education there, as well as what discriminatory barriers these migrants might encounter in Germany.

In the fourth chapter, I describe methodological decisions, procedures, and the connection between the different methods I employed. I first define what a *digital* ethnography is (section 4.1) then, I describe how I entered the digital networks that compose my research field (section 4.2) and how I conducted observations in that digital field (section 4.3). Moving on to connecting the methods I used, I describe how they served to map the field (section 4.4) from a broad, quantitative overview to a qualitative closer look at it. After this, I zoom in on my interviews with actors in that field (section 4.5). This section contains an unusual sub-section for a methods chapter in which I describe the activities of two interviewees, one of which is important to follow my analysis in the last chapters of this overarching text. That is so because all other results are presented on the papers and adding a results chapter in the overarching text would be too repetitive. Finally, I dedicate the last section to ethical aspects concerning informed consent and data protection, particularly regarding the quantitative data collection (4.6). Because of its thematic fit with ethical aspects, I close this chapter with a reproduction of the paper "Collecting migrants' Facebook posts: Accounting for ethical measures in a text-as-data approach" (Dedecek Gertz, 2023a, Paper 2). First, I provide a summary of the paper. As a title for this summary section, I write the main outcome from Paper 2 instead of the title of the paper, which can be read right after the summary of outcomes.

In the fifth chapter, I summarise the main outcomes of the four papers. This way, this overarching text can be read as a stand-alone piece without the digression into the papers. After this, the chapters are composed of reproductions of the papers. Here, I also use the main outcomes of the papers as titles for the sections.

The sixth chapter is a reproduction of the paper (Dedecek Gertz & Süßer, 2022, Paper 1).

The seventh chapter is a reproduction of the paper (Dedecek Gertz, 2023b, Paper 3).

The eighth chapter is a reproduction of the paper (Dedecek Gertz et al., forthcoming, Paper 4).

In the ninth chapter, I discuss how migrants and aspiring migrants use digital networks in their transnational trajectories associated with education between Brazil and Germany. I do so first by looking at what the digital networks I analysed can reveal about inequalities among the actors within the digital networks I analysed (sections 9.1 to 9.3). Then, I discuss how migrants' exchange of information about education online has become an institutionalised social practice and how latent ties can serve as important social resources in migrants' access to education abroad (section 9.4).

In the tenth and last chapter, I conclude the thesis by describing some developments after I stopped collecting data and point out further research directions.

2. Theoretical Background

In this chapter, I first describe some elements of "transnational social spaces" and the role of migrant networks in general in the circulation of these elements, followed by the specific role of ties established online in these networks. Then, I explain how transnational networks serve as social resources and support for migrants' trajectories, and I describe the role of reciprocity, solidarity, and trust in acquiring and maintaining social resources. Wrapping up the chapter, I look at the concept of "transnational *educational* spaces" and compare it with the concept of "transnational education", looking particularly at the aspect of cultural capital of education.

2.1. Transnational Social Spaces and Migration Networks

Much of migration research is concerned about reasons to migrate, such as push and pull factors. These are central aspects to understand international migration and mobility. Yet, here, I focus on migrants' ordinary digital social practices and cross-border connections and their use by migrants to exchange information about education. More concretely, I explore migrants' use of social media in association with educational interests and opportunities. To do this, I draw from a transnational perspective, which seeks to understand "the processes by which migrants forge and maintain multi-layered social relations that link their societies of origin and settlement" (Basch et al., 1994, p. 8). This perspective challenges the assumption underlying some migration research that nation-state borders would be natural boundaries of the spaces in which migrants' lives unfold. Such an assumption tends to position migrants as either "here" or "there" – either in the place to which they have migrated or in the place from which they come, or which they aspire to leave, without much overlapping between the two (Wimmer & Schiller, 2003). Instead, a transnational perspective contends that borders do not restrict social relations, which are neither disrupted after migration (Levitt & Schiller, 2004) That is so especially in times when technological developments allow near real-time communication. Hence, I set the focus on migrants and their networks, which allows to observe migrants' different positionalities as well as their role in the transnationalisation of societies (Schiller et al., 1992). This way, transnational migration theory is open to an underlying interest in socio-economic differences and inequalities impacting migrants and their networks as well as in the consequences thereof for the societies in which they are involved (cf. Faist, 2019).

Relying on their social connections in their place of origin and those established in their place of settlement, migrants can "construct secure cultural, social or economic bases within their new settings" (Schiller et al., 1992, p. 9). Through these connections, migrants establish and maintain "transnational social spaces", that is "pluri-local, durable and dense configurations of social practices, systems of symbols and artefacts that span places in different countries." (Pries, 2001, foreword). These spaces depend on the frequent and constant circulation of concrete information as well as perceptions, beliefs, strategies, experiences, and symbols among migrants and non-migrants who are part of a network (Faist et al., 2013; Pries, 2001). The network connections themselves and the circulation of these elements within networks constitute transnational social spaces (cf. Pries, 2001). These elements that circulate through transnational networks and contribute to the establishment of transnational social spaces can be grouped into three main configurations impacting both "here" and "there" (Adick, 2018; Faist & Özveren, 2017; Pries, 2001):

- Social practices: interpersonal communication, unspoken norms and values, strategies, information, expectations for the future, and work;
- Symbols: signs which give meaning to social practices, serving as a collective representation for norms, values, and expectations (e.g. flags, posters and placards, objects, foods, places, a common language, literature, audio-visual expression), and;
- Material artefacts: objects that can circulate among networks (e.g. money, books, food, Balikbayan boxes), as well as infrastructures and technologies (e.g. roads, internet, cables, electricity, airplanes) that enable the flow of objects, social practices, and symbols.

Over time, the frequent cross-border circulation of social practices, symbols, and material artefacts creates social institutions. The institutionalisation of networks can have different degrees of formalisation according to the relevance attributed to shared social practices and symbols. These can be highly formalised institutions (companies, religious groups, and small kinship groups) or less formalised institutions (networks of business people or advocacy, and networks between individuals and organisations) (Faist & Özveren, 2017). Social practices in the context of migration can also become institutionalised. That happens particularly when social practices, material artefacts, and symbols become known, understood, and, eventually, repeated or taken as role models by members of a transnational network. An example of the institutionalisation of a transnational social practice is the frequent diffusion of gendered migration strategies associated with obtaining a degree in the care sector in the Global North. Specifically, this has been observed in a network of young Brazilian migrants from lower socio-economic backgrounds who were able to establish themselves as care workers in Germany after completing VET in this field (Carnicer, 2019; Fürstenau, 2019). They communicated this strategy to other family members, some of whom also followed similar migratory paths. These people may eventually communicate this strategy to others in their networks, who may also consider migrating this way, turning that strategy into an informally institutionalised transnational social practice. Networks are a central element in this phenomenon.

Networks have different characteristics, such as size, frequency, content, durability, reachability, cluster, multiplexity, or *strength of ties* (Vertovec, 2009, p. 34). This latter aspect is a broader, more comprehensive characteristic central to my analysis. The strength of ties that compose networks relates mostly to different social expectations. It characterises different relationships such as among family, friends, acquaintances, workplace colleagues, friends of friends, as well as among people participating in online forums who do not know each other personally. These different relationships are the social connections, or ties, that compose networks. The strength of those ties can be placed in a continuum varying according to "the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services" between individuals (Granovetter, 1983, p. 1361; cf. also with Ryan, 2023; Faist & Özveren, 2017). Strong ties define connections between individuals who share high levels of trust, frequent interaction, and emotional intensity and are important particularly for emotional and financial support, as more commonly observed in family and close friendships. Weaker ties define connections between individuals who interact sporadically, such as workplace colleagues. These can be important to find a new job or to receive a promotion, in which case some degree of reciprocity, solidarity, or trust must also be present (Ryan, 2011).

These ties can be established beyond nation-state borders, creating transnational networks. Analyses of transnational networks have predominantly focused on ties established in social spaces

such as the family and among friends. Online social networks are increasingly relevant in creating and maintaining transnational social spaces. Yet they are comparatively less the focus of scholarly attention. Ties established online can expand one's transnational network connections, becoming helpful in collecting diverse information and perspectives based on other people's experiences, which would otherwise not be accessible (cf. Brown & Michinov, 2019; Jayadeva, 2020). Those connections can be defined as "latent ties" (Haythorntwite, 2002). Social media platforms are currently the main source of such ties. In the next section, I comment further on their role in migration networks.

2.2. Latent Ties in Migration Networks

Technological advancements in communication infrastructures contribute to transformations in migration. Since the past decade, fast and affordable communication through digital media has been a focus of migration and mobility researchers, particularly in studies about transnational families (to name a few, Cabalquinto, 2020; Greschke, 2021; Hepp et al., 2011; Madianou & Miller, 2012; Nedelcu & Wyss, 2016). The advance of digitalisation also allowed the emergence of migrant networks in digital spaces. Looking at these networks, several studies have described the role of digital spaces in facilitating migratory decisions and processes (Dekker et al., 2018; Jayadeva, 2020; Oosterbaan, 2013; Schrooten, 2012; Wall et al., 2017). "Latent ties" are the kind of ties that enable networks in digital spaces and have been defined as ties "for which a connection is available technically but that has not yet been activated by social interaction" (Haythornthwaite, 2002, p. 389).

Social media are a main space where latent ties can be activated. Some of these platforms allow the creation of forum-like spaces, such as Facebook groups. These groups serve as a pool of connections that are technically available yet that must be first activated by social interaction. To access these groups, one has to create an individual profile and search the social media platform for known contacts or topics of interest. Looking for topics of interest, a social media platform can function to establish latent ties, potentially connecting people with similar characteristics or interests (e.g. Brazilians living in Hamburg or Brazilians who want to pursue a degree in Germany). It is common for these groups to have thousands of participants. Someone who joins such a group may already have acquaintances, friends or family who are also members of it. However, given the large number of participants, it is likely that most of them do not know each other yet – hence, the groups serve as a pool of potentially new connections that have not yet been activated. Once someone writes a question, comments or announces something in the group, a cue for establishing a latent tie is created. When another group participant replies to that question, comment or announcement, a latent tie is established (cf. Haythornthwaite, 2005). From there on, it can develop or not into a weak or a strong tie.

Latent ties have similarities with weak ties. Both describe a network connection that is rather infrequent and with limited emotional significance, but that can be valuable to access information and opportunities through connections to people with diverse other resources (cf. Granovetter, 1983; Haythornthwaite, 2002; Putnam, 1995). However, unlike weak ties established between individuals personally connected through common acquaintances or participation in institutions, latent ties *depend* on technical structures established by "community organizers" (Haythornthwaite, 2002, p. 389). Founders and managers of migrant Facebook groups act as "community organisers", creating a digital space in which transnational ties are technically available.

Latent ties activated through social media can be an important source of strategic information for aspiring migrants, particularly for those who do not have access to other types of transnational networks (Dekker & Engbersen, 2014). They allow migrants and aspiring migrants to collect information beyond official sources, thereby providing them with practical advice on migration processes based on personal experiences and knowledge acquired through migration. This appears to be the case for a range of migration-related issues, from crossing borders (Dekker et al., 2018) to searching for housing or work (Oosterbaan, 2010; Schrooten, 2012), and enrolling in educational programmes (Dedecek Gertz, 2023b; Jayadeva, 2020). Nevertheless, there are differences in migrants' media use according to perceptions of the accuracy of information coming from social media according to their migratory circumstances (cf. Wall et al., 2017). These differences relate to perceptions of trustworthiness and a sense of reciprocity or solidarity in migrant networks, which are emphasised in a transnational migration perspective (Bilecen, 2022, 2022; Faist et al., 2013). Latent ties can also function based on similar principles of trust(worthiness), reciprocity, and solidarity among migrants in similar circumstances (cf. Jayadeva, 2020). However, those aspects are still relatively under-researched within transnational networks composed of latent ties. In the next section, I look closer at reciprocity and trust(worthiness) in social networks, drawing connections to social capital (or resources).

2.3. Social Resources, Reciprocity, and Trust(worthiness) in Migration Networks

Transnational networks provide migrants with financial, emotional, and social support (cf. Faist et al., 2015; Schiller et al., 1992). This support is a result of the social capital acquired through access to and participation in transnational networks. Concretely, social capital is an "aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition" (Bourdieu, 1986, p. 21). Social capital is also defined by the reciprocity, trustworthiness, and sense of connection among network members (cf. Putnam, 1995). Trust, solidarity, and reciprocity are essential to acquiring social capital or establishing network ties. Migrants can also leverage the trust, solidarity, or reciprocity within their networks to facilitate their migration, and, once settled abroad, they are likely to reciprocate these benefits to their network (cf. Bilecen, 2022; Faist et al., 2015). For example, a migrant may receive financial support from their family, and, upon having an income in the new location, reciprocate the support by sending remittances to the family. Notably, certain networks exhibit a high level of exclusivity, demanding either an inherited social capital (e.g., being born into a wealthy family) or an "unceasing effort of sociability" (Bourdieu, 1986, p. 24-25) coupled with the corresponding economic resources to invest time and energy in such sociability efforts. In this sense, acquiring social capital and participating in networks tend to be class-bound. As a consequence, networks also tend to reproduce privileges.

I rely on Bourdieu's (1986) idea conveyed by the concept of social and cultural capital, but I will mostly use the term "resource" to refer to them. Social and cultural resources can eventually be converted into economic capital, in which case they take on the character of social or cultural capital (cf. Anthias, 2007). For example, a social *resource* may become social *capital* when a social connection is established with a person who can invest money and support the creation of a business. However, it is beyond the scope of this thesis to analyse whether the social and cultural resources I found on

digital networks can be transformed into economic capital. Therefore, to stay within the possibilities of this project, I am referring to social and cultural *resources*.

Latent ties are a type of social resource that can be accessed by joining a migrant Facebook group, for example. To do that, one needs some level of literacy (including media literacy), internet access, and a Facebook account. Hence, access to latent ties demands some economic resources, yet it demands comparatively fewer (or no) social resources. Because of this easier access to a transnational group, latent ties can expand migrants' social networks and, consequently, their social resources (Jayadeva, 2020). That way, migrants can access potential resources, particularly in the form of concrete information and mutual support (cf. Dekker & Engbersen, 2014; Jayadeva, 2020). Similarly to other social networks, latent tie connections also demand some level of mutual acquaintance and recognition (Bourdieu, 1986). In networks of latent ties, such mutual acquaintance and recognition is evidenced in the fact that thousands of migrants and aspiring migrants participate in Facebook groups in which people with some similar characteristic (e.g. nationality) or interest (e.g. pursuing VET abroad) gather to exchange information and offer and receive support. Concrete examples can be found in the Facebook groups of "Brazilians in Germany" (which I describe later on) and in how some individuals refer to these groups as "community" or "family" and use kinship words when writing to each other (Jayadeva, 2020, p.2251). In this sense, networks of latent ties are also formed by "more or less institutionalised relationships of mutual acquaintance and recognition" (Bourdieu, 1986, p. 21) and can also offer resources, particularly in the form of information and eventually also in form of social or emotional support. Based on this premise that transnational latent ties can be a source of social resources and that establishing such ties functions similarly to other non-digital networks, trust(worthiness), solidarity, or reciprocity are also conditions for establishing latent ties and potential resources found in these networks.

Solidarity and reciprocity are similar concepts, yet they are not necessarily synonyms. Solidarity is commonly expanded towards a group or community, rooted in a sense of social justice and socio-political action, and those who declare themselves to be in solidarity with a group have no expectation of receiving anything in return (cf. Agustín & Jørgensen, 2019). Reciprocity defines a similar attitude. However, it happens among individuals, not groups or communities (cf. Bilecen, 2022, p.163). Still, when reciprocity is *generalised*, it also assumes a pattern of solidarity towards a group, unlike *balanced* reciprocity, when a short-term "repayment" is expected (Bilecen, 2022, drawing from Sahins, 1972). Because of the collective aspect of generalised reciprocity, the "repayment" of a favour can be extended towards others indefinitely (Bilecen, 2022, drawing from Offer, 2012). Although social capital tends to reproduce inequalities, solidarity or generalised reciprocity among network members is useful in finding emotional as well as social support. In transnational networks (also digital ones), that is evidenced in migrants asking for and offering help in job and housing search, as well as in migrants supporting other migrants' businesses or services (cf. Ryan, 2022; Schrooten, 2012). Here, I will mostly refer to reciprocity in its generalised sense, the one closer to the concept of solidarity.

Trust is another important component of social networks (Putnam, 1995). Trust can be broadly defined as "confidence in one's own expectations" (Luhmann, 1968, p. 1, own translation); in other words, it relates to an expectation that people (or institutions) will behave as one expects them to do. In this sense, some level of trust is a central component for establishing and maintaining social

networks. Trustworthiness is a prerequisite to trust the information a person shares. Trustworthiness is only partly verbalised: it is otherwise secured by one's moral evaluation of the other's attitudes, behaviour, and appearance (cf. Luhmann, 1968). These aspects can derive from the *context* or the *content* of the information exchange. For example, a person from Brazil who frequently uses social media for various activities (cf. IBGE, 2022; Spyer, 2018; Statista, 2024) and who aspires to migrate to Germany joins a Facebook group entitled "Brazilians in Germany". They are not acquainted with anyone from the thousands of people participating in this group. This aspiring migrant sees questions ranging from "Where do I find Brazilian food in Frankfurt?" to "Can someone help me with a visa issue?" receiving informative and supportive answers. Some group participants share their own stories (Dedecek Gertz, 2023; Jayadeva, 2020, also reports similar findings). People participating in these interactions are unlikely to know each other due to the high number of members in the group. Still, they provide each other with answers without requiring anything in return. This online behaviour is likely to be positively evaluated by the aspiring migrant who recently joined the group, conferring an impression of trustworthiness to the information and personal experiences circulating in it. Later, making a decision based on such information and personal experiences is, to some extent, an action based on trust in the information circulating in Facebook groups. For instance, the aspiring migrant who joined the Facebook group "Brazilians in Germany" decides to apply to a particular VET programme that has been recommended in the group. In other words, the aspiring migrant decides to take a risk confiding in their own expectation about the information circulating in a digital network.

The level of trust migrants have in information shared by latent ties from social media varies according to their migration context. On the one hand, migrants tend to be more sceptical in contexts where there is "information precarity", that is, where access to news, personal information, and interpersonal communication can be suspicious, uncertain or unstable (Wall et al., 2017). Some migrants fleeing war and conflict tend to trust information from smartphone applications from companies or organisations (e.g. job searching and language translation apps developed by known companies or organisations), as well as information shared online by people they have met in person (cf. Alencar, 2018; Graf, 2018). Unsurprisingly, they are more likely to be sceptical towards information coming from latent ties and tend to cross-check such information with strong and, eventually, weaker ties (cf. Dekker et al., 2018). On the other hand, latent ties tend to be trusted by migrants in less time-pressing circumstances. That is the case of those who are not fleeing or who have access to a residence permit through work, education, family reunification, or double or EU citizenship (cf. Jayadeva, 2020; Lášticová, 2014; Oosterbaan, 2013; Schrooten, 2012). In such cases, information based on personal experiences shared through latent ties can be helpful in preventing aspiring migrants from making "errors and sub-optimal decisions", for instance, when applying to universities abroad (Jayadeva, 2020, pp. 2254–2255), as well as serving as a source of social and, to some extent, emotional support. These groups can also facilitate the formation of weak and strong social networks through the arrangement of face-to-face meetings (cf. Oosterbaan, 2013; Schrooten, 2012), which further contributes to expanding one's social networks and building social capital.

Trust and reciprocity in networks of strong ties are more or less expected. Among weaker ties, information circulating in networks of latent ties can be seen as trustworthy by some. That can have some influence on migratory decisions, for instance, as described in contexts involving educational opportunities abroad (cf. Dedecek Gertz, 2023b; Dedecek Gertz et al., forthcoming; Jayadeva, 2020). Assuming that the information in those networks can be helpful and that aspiring migrants would

hardly have access to it through their strong or weak ties, in some cases, latent ties can expand migrants' social resources and facilitate migration. However, little is known about whether networks of latent ties can increase chances of upward mobility or whether they tend to reproduce pre-existing inequalities, like non-digital networks.

2.4. Cultural Resources, Transnational Education, and Transnational Educational Spaces

Wrapping up this chapter and circling back to the concept of "transnational social spaces" (Pries, 2001) presented in the first section, I describe the connection between transnational migration and education. In the context of migration, the association between education and cultural resources (or capital) has been captured by the concepts of "transnational education" and "transnational educational spaces". The first refers to formal educational programmes, particularly from universities with campuses located in a different country from the one where the awarding institution is based (cf. UNESCO & Council of Europe, 2001). The second concept can be applied to less formally structured spaces in which interactions and exchanges relating to education occur across national borders. "Transnational educational spaces" (Kesper-Biermann, 2016) are not confined to formal academic programmes and can include various educational practices and interactions across borders. This latter concept is the one I rely the most on in this thesis as it relates more explicitly to broader socio-economic dynamics and the role of migrants in developing and maintaining transnational social practices within education-related settings. In the next paragraphs, I explain the concepts of cultural capital, looking particularly at educational resources, and I discuss both concepts relating to the transnationalisation of education.

Cultural capital (Bourdieu, 1984, 1986) is expressed in three forms: embodied, institutionalised, and objectified. Each carries its social meanings as well as distinct modes of acquisition and transfer. The embodied state refers to individuals' long-lasting dispositions and behaviour, such as manners, values, or language knowledge. This state of cultural capital is close to the notion of cultivation (cf. Lareau, 2011). Institutionalised cultural capital includes certificates and academic degrees, serving as formal or official recognition of knowledge, competence, or authority. Objectified cultural capital consists of objects, like books, musical instruments, or works of art, to which symbolic value is socially attributed and which often require specific competencies or knowledge to be appreciated and used. The symbolic value of these three states of cultural capital underscores an individual's socio-economic position, marking social distinction in cases of high cultural capital (cf. Bourdieu, 1984). Education emerges as a primary conduit for acquiring and reproducing cultural capital.

If access to formal education is a form of socio-economic distinction, accessing educational institutions abroad is a redefinition of that distinction. In times of a relative expansion of access to education in Brazil (IBGE, 2023), a degree from an international institution is an asset in the national labour market, functioning as a distinctive element (cf. Dias Lopes, 2020; Weller & Reis, 2022). That leads to a new socio-economic inequality between those with access to education abroad and those without (cf. Almeida, 2015; Zanten et al., 2015).

Responding to such a demand for distinction, educational institutions, particularly in the Global North, have been undergoing expansions and adaptations. To analyse this phenomenon, some researchers have been using the concept of "transnational education" (TNE), defined by the UNESCO and the Council of Europe as institutions and their provision of educational programs that operate

across national borders (UNESCO & Council of Europe, 2001). In academic research, the concept of TNE has been developed looking mostly at offshore university programs and international schools, directed mainly to students from privileged social socio-economic backgrounds (cf. Adick, 2018; Knight, 2016).

Aside from international university branches or other educational institutions, research about TNE also delves into the experiences of students of such institutions. In the case of international branch campuses of universities based elsewhere, students do not have to migrate to access TNE. In other cases, students migrate internationally to pursue university degrees. From the perspective of migrants, the motivations and implications of the acquisition of distinctive cultural capital through TNE has been described looking particularly at the case of migrants from East Asian countries who study in the UK and other anglophone countries (cf. Beech, 2015; Brooks & Waters, 2010; Jayadeva, 2020). Furthermore, that kind of mobility has also been identified among school-aged children migrating with their parents, who wish their children access British schools, thereby acquiring credentials that can contribute to reproducing the family's status and lifestyle (Waters, 2015). In that sense, the distinction provided by TNE happens markedly through the acquisition and accumulation of embodied and institutionalised cultural capital (cf. Sin, 2009; Waters, 2015).

That use of the concept of TNE exists alongside that of "transnational educational spaces". Both look at individuals' mobility and analyse how education is shaped by processes beyond national borders as well as its social meanings and implications. Given that TNE stems from a definition for transnational higher educational institutions (UNESCO & Council of Europe, 2001) and in order to highlight the focus on migrants and migration, instead of institutions, I use the concept of transnational educational spaces. Drawing from Pries' "transnational *social* spaces" (2001), "transnational *educational* spaces" describe how the transnational circulation of social practices, symbols, and material artefacts broadly surrounding educational aspects forms and consolidates such spaces (Kesper-Biermann, 2016, p. 93). Highlighting the role of migrants and their networks, the concept challenges the assumption that nation-state borders are the sole determinants of educational opportunities, practices, systems, and institutions (Kesper-Biermann, 2016). This perspective underscores some broad roles of migration and education by looking at educational spaces formed through the circulation of information, symbols, and social practices in transnational networks. For instance, among lower socio-economic strata, migratory pathways associated with educational opportunities can be a collective strategy for upward mobility (cf. Fürstenau, 2019). That can be seen in families whose members migrated from Brazil to Germany following educational opportunities (cf. idem). After receiving a VET degree and establishing themselves in Germany, these family members who migrated were able to support their families in Brazil financially and eventually facilitate the migration and access to education of other family members. This case illustrates how migrants from low socio-economic classes also contribute to the transnationalisation of education via their own migration (cf. idem). Also, through the transnational circulation of resources, information, and strategies relating to education and migration, they further contribute to establishing transnational educational spaces.

Pursuing an international degree is an option seen as more available to students from upper middle-class strata. However, some students from lower socio-economic backgrounds also rely on educational opportunities abroad both as a strategy to migrate and to access higher education

altogether. That is the case, for instance, at universities that participate in state-funded exchange programmes, which allow students from lower socio-economic backgrounds to afford their stay abroad (Iorio & Pereira, 2018). Also, the presence of students from these strata becomes visible when looking at other educational institutions, such as those that offer vocational education and training (VET). Although it happens in exceptional cases, migrating to Germany and pursuing a VET programme can be a common strategy among young Brazilian women from socio-economic backgrounds way below the middle classes (cf. Fürstenau, 2019). Their migratory decisions are partially motivated by the lack of social protection, perspectives for upward mobility, and blocked educational opportunities in Brazil. However, in these cases, education is not only instrumentally used as a means to migrate, accumulate cultural resources, and reach upward mobility. These migrants are also motivated by the expectation of having the opportunity to access higher levels of education, learn a profession and a new language, "expand horizons", as well as facilitate the access to education of other family members (cf. Carnicer, 2019; Fürstenau, 2019). Hence, in these cases, access to education is part of a migratory strategy. However, more than that, it also becomes a way to overcome the educational and socio-economic exclusion experienced in Brazil.

In Brazil, the young migrants interviewed by Javier Carnicer (Carnicer, 2019) and Sara Fürstenau (Fürstenau, 2019) lived in *favelas* or other precarious circumstances. With great effort, they migrated to Germany, learned the language, pursued VET, found a job, and now they can save enough money to help support their families in Brazil. They experience upward mobility compared to their situation and opportunities before migration. Meanwhile, there are other Brazilian aspiring migrants for whom pursuing higher education in Germany appears to be obvious. These are, for instance, a young aspiring migrant from an upper-middle-class background who graduated from prestigious "German Schools Abroad" (GSA), passed competitive university admission exams, and have close friends studying in Germany (cf. Carnicer & Fürstenau, 2021). Migrants from that background do not have to support their families in Brazil and, graduating from the GSA, they can show certificates that allow them to study in Germany. After graduation, they can either stay in the country, if they decide to go back, they have a competitive transnational curriculum to present in job applications in the Brazilian labour market (cf. Adick, 2018; Almeida, 2015; Zanten et al., 2015).

Comparing these situations, migrants who previously lived under precarious circumstances have improved their socio-economic status through migrating and accessing education abroad. However, at the same time, the GSA graduate who also migrated had the opportunity to increase his cultural and social resources even further. In other words, while the first migrant has achieved a stable income, status abroad, and earned a VET certificate, the second migrant ascended to another level of social distinction. Still, despite the unequal access to economic, social, and cultural resources, networks of migrants both from lower as well as from upper socio-economic classes contribute to the transnationalisation of education in Germany and Brazil. In this context, for some, education serves as a source of distinction through the acquisition of cultural capital and educational advancement. In contrast, for others, it can be a way to mitigate socio-economic exclusion.

Summing up, in this chapter, I described the emergence of transnational social and educational spaces within migration networks (Pries, 2001; Kesper-Biermann, 2016). A core aspect of the establishment and maintenance of these spaces is the transnational circulation of social practices, symbols, and material artefacts among members of networks that expand beyond national borders

(cf. idem). This perspective is well-established in migration research (cf. Faist et al., 2013), and the possibilities and roles of digitally establishing and maintaining such networks have been gaining attention (cf. Smets et al., 2020). The strength of network connections, or ties, is an important feature characterising the kind of capital or resources available in these networks (cf. Granovetter, 1983; Ryan, 2023; Vertovec, 2009). Network connections can be established online, for example, when a person writes a question in a migrant Facebook group and receives replies. These are "latent ties" (Haythornthwaite, 2002). In some circumstances, those ties can represent a source of social resources through which migrants can collect useful information for their pathways (cf. Dekker & Engbersen, 2014; Jayadeva, 2020). A perception of trustworthiness about the information being shared through networks of latent ties is an important mechanism for the functioning of those networks (cf. Graf, 2018; Jayadeva, 2020). A sense of reciprocity or solidarity among migrants and aspiring migrants with similar backgrounds and aspirations is a base component of the formation of that perception of trustworthiness and, as a consequence, of the overall functioning and usefulness of latent tie networks (cf. Bilecen, 2022; Dekker et al., 2018; Graf, 2018). I concluded this chapter by describing the roles of education in transnational migration and its position as a cultural capital or resource. Literature about transnational education (TNE) has highlighted the role of international certificates and degrees as distinctive aspects, particularly among upper classes (cf. Waters, 2015; Zanten et al., 2015). At the same time, looking beyond universities and international private schools, the concept of "transnational educational spaces" has served to analyse the role of educational opportunities in migration pathways and networks of people from different socio-economic classes (cf. Carnicer & Fürstenau, 2021; Fürstenau, 2019). Relying on this latter concept, in this thesis, I look at how migrants' networks of latent ties can be contributing to the transnationalisation of education. Moving on, in the next chapter, I present some contextual information about Brazil and Germany in relation to migration, media use, and education.

3. Contextual Information

This chapter provides the contextual information about Brazil and Germany necessary to follow the findings and discussion. I first present the reasons why some Brazilians migrate and some of the uses of digital media among Brazilian migrants. Then, to address the focus on access to education in this migratory context, I discuss educational inequalities in Brazil, which can serve as a push factor for some migrants, as well as education inequalities in Germany, where some migrants, migrants' descendants and people from lower socio-economic backgrounds, have a difficult path to access higher education institutions.

3.1. Brazilian Migration

Brazilians have significantly different socio-economic conditions that underlie their migratory aspirations and shape their possibilities. Since the 1980s, poverty and inequality have been important drivers of emigration from Brazil. However, skilled workers and students, both men and women, from the upper classes also form a significant part of that emigrant population (Evans, 2020; Evans & Souza, 2013). Following the tendency of feminisation of migration (cf. Haas et al., 2022), of the registered Brazilians living in Germany, approximately 63% are women (own calculation based on information from the Statistisches Bundesamt, 2022). Many of these women migrate driven by work, study offers, or the aspiration to look for a way to settle in the country they migrated to once they arrived there; some also migrate to accompany their partners (Evans & Souza, 2013, p. 11).

Studying the case of migration to Germany associated with educational opportunities is interesting due to the availability of paid vocational education and training (VET) programmes there. Still little is known about the impact of education on migration decisions, particularly among migrants from low socio-economic backgrounds. For some of those who are excluded from achieving higher levels of education in Brazil, accessing a paid VET programme in Germany can be a way to mitigate socio-economic inequalities through migration and to access higher education (cf. Carnicer 2018; Fürstenau, 2019). Additionally, Germany is the fifth most popular destination for Brazilian migrants in Europe (Ministério das Relações Exteriores, 2021). This puts Germany ahead of other countries where language, for instance, would be less of a barrier for Brazilians, such as France and Ireland. Nevertheless, knowledge about Brazilian migrants in Germany is scarce. Hence, this thesis contributes to advancing knowledge regarding a) the roles and meanings of education in the mobility of a feminised migrant group with significant class differences, b) the roles and meanings of paid VET programmes in Germany among such a group of migrants, and c) the roles and meanings of digital networks in the context of migration associated with education.

Although water-related metaphors are nowadays viewed critically in migration research (Taylor, 2021), some researchers classify Brazilian international migration into "waves". Research about Brazilian migration is focused mainly on Brazilians in Portugal (Fernandes et al., 2020; Góis et al., 2009; Padilla, 2006), but also in the UK and the US (Assis, 2007; Dias & Martins Júnior, 2018). These studies suggest that the "first wave" of Brazilian migration began with "pioneers" who migrated between the 1980s and the 1990s. After establishing socio-economic networks in the countries they migrated to, these "pioneers" functioned as a point of contact for further migratory movements. These "pioneers" are mostly described as "young, male, middle-class and predominantly from the southern and south-eastern [Brazilian] states – the richest parts of the country" (Dias & Martins

Júnior, 2018, p. 115). As a result, they would have been able to settle in the country of destination and contribute to creating migratory networks. The economic hardships of the time are pointed out as a reason why mostly the middle class could migrate without having previous connections in the country of destination (cf. Dias & Martins Júnior, 2018). Using the networks available through the migration of the "pioneers", other Brazilians also began migrating, forming a "second wave" in the 1990s (Padilla, 2006). According to some accounts, in the mid-2000s, the increase in migration of highly skilled workers and young Brazilians who migrated to study abroad could be interpreted as a "third wave" (J. Iorio & De Albuquerque Ferreira, 2013). Between 2016 and 2019, claims of a "steep increase" in Brazilian migration to Portugal have been described as a "fourth wave", which would only have been slowed down by the COVID-19 pandemic (Fernandes et al., 2020). In summary, migration from Brazil does not have a single trigger or a main cause: it can be motivated by economic hardship, aspirations of upward mobility, as well as access to education, family reunification, or to live an international experience (Evans, 2020).

Until the 1970s, some Brazilians came to Germany fleeing persecution from the corporate-military dictatorship (1964–1985), and some of these migrants came through networks established between religious groups associated with the German Lutheran church (Badan Ribeiro, 2020). Later, migration from Brazil to Germany seemed to follow a pattern similar to the aforementioned "waves" of migration (cf. Stelzig-Willutzki, 2012). It also seems to follow the trends of feminisation (Haas et al., 2022), which is also evidenced by Brazilian women working in waxing studios (Lidola, 2014) and in care work (Fürstenau, 2019). Some Brazilian women are also victims of human trafficking and prostitution in Germany (Stelzig-Willutzki, 2012). Among Brazilian women, decisions to migrate to Germany can be motivated by various reasons, such as opportunities offered by the establishment of relatives abroad, accompanying or joining partners, curiosity about an international experience, job offers or studies (cf. Carnicer & Fürstenau, 2021; Fürstenau, 2019; Portugueis, 2016; Stelzig-Willutzki, 2012). Brazilian migrants in Germany also organise religious spaces, which can serve both places of worship and social networking as well as a source of income for established migrants and "circular migrants", who live more permanently in Brazil but come to Germany to work in religious events (Bahia, 2015).

3.2. Internet Connection in Brazil

In Brazil, around 80% of people surveyed by the Brazilian National Institute of Geography and Statistics (IBGE) in 2021 have access to a high-speed internet connection (IBGE, 2022). However, that implies that around 20% of the population (more than 28 million people) had no internet access or a poor connection. Based on the IBGE's report (idem), most of those excluded from digital connectivity lived in rural areas and the socio-economically disadvantaged northern regions of the country. Among those with access, slightly more women actually use the Internet. In socio-economically disadvantaged regions of the country and among families from lower socio-economic backgrounds, this access is mainly through mobile data that can be activated on smartphones. Smartphones are the most commonly used device for accessing the internet, regardless of socio-economic background. Less than 50% of respondents use other devices, such as computers, to access the internet.

These national statistics do not tell the whole story of digital exclusion in Brazil. Some low-literate or illiterate Brazilians living in rural areas and with poor internet connection also frequently use their smartphones to access social media and messaging apps, especially Facebook and WhatsApp (Spyer, 2018). In these areas, social media can positively impact young people's reading and writing skills as well as women's socio-economic independence, as it can improve their chances of finding a formal job or even accessing university in some cases (Spyer, 2018). However, internet connectivity among Brazilians from lower socio-economic backgrounds is sometimes very precarious and dependent on self-organised community networks, relying on the free labour and commitment of community members who have the knowledge and experience to manage such technological infrastructures (Barbosa et al., 2022). The impact of the pandemic on children's education has further highlighted the digital divide. Some pupils from low socio-economic backgrounds did not have access to digital devices, their parents or guardians were unable to assist them with their schoolwork, and some teachers had difficulty accessing and using digital devices and the internet (Medina Macaya & Jereissati, 2021). Meanwhile, some private school students could both attend online classes from their personal computers and meet their friends online to play video games or participate in extracurricular activities organised by the schools (Quadros, 2022).

3.2.1. Brazilian Migrants and Social Media Use

The first social media platform most used in Brazil and, consequently, by Brazilian migrants was "Orkut". Like Facebook, Orkut allowed users to create forum-like spaces that could be joined based on shared interests or characteristics and in which group members could interact in written form. As early as a decade ago, these online groups were identified as important sources of network connections and mutual support among Brazilian migrants (Schrooten, 2012). These groups have been used to discuss politics, arrange face-to-face meetings and exchange information about documentation, legal procedures, employment opportunities and where to find Brazilian products abroad (cf. Dekker et al., 2016; Oosterbaan, 2013; Schrooten, 2012). Through these digital networks, aspiring migrants can establish connections with others who have navigated legal procedures, collect information from migrants who are employed, and meet fellow migrants seeking new friendships (cf. idem). After Orkut, Facebook became the most popular forum-like social media platform. Although its user base is declining, it is still popular: in 2022, about 74% of the Brazilian population had a Facebook account (own calculation based on IBGE, 2023; Statista, 2022a). After Facebook took over Orkut's place, Brazilian migrants created new groups on Facebook that served similar purposes to those on Orkut (cf. Dedecek Gertz & Süßer, 2022; Escudero, 2022; Foletto, 2018; Iorio, 2019). Following this trend of switching to the most popular social media platform, it is likely that Brazilian migrants will organise themselves on other digital platforms once Facebook is no longer in operation.

3.3. Educational Inequalities in Brazil and Germany

Inequality still characterises all levels of the Brazilian education system, from childcare to tertiary education (cf. Câmara & Almeida, 2012; Sampaio & Oliveira, 2016; Windle, 2022). Inequality in access to education is also among the many reasons some Brazilians may decide to migrate (Carnicer, 2019). National education measurements show improvements, but, in 2019, the average schooling of Brazilians was 9.4 years, and only 17% of the population aged 25 or more had completed tertiary education (IBGE, 2020). Irrespective of race or sex, the most common reason for Brazilians to leave

school is the need to work (IBGE, 2020), highlighting the impact of inadequate or under-financed policies in the education system.

Paradoxically, while public schools are seen as failing to prepare students for university, public, tuition-free universities enjoy a prestigious status (cf. Trevisol & Nierotka, 2016). Access to public universities in Brazil is highly competitive, and class schedules hardly allow students to combine class attendance with gainful employment – resulting in either a high dropout rate or the choice of less prestigious, private universities that are more accessible, offer evening classes, and for which students can apply for a loan (cf. Pereira & Reis, 2020). That way, university education might be more accessible to some. However, some students still have to cope with the exhausting demands of managing full-time work and eventual family responsibilities and deal with the uncertain prospects of finding adequate employment after graduation. Considering these inequalities, some young aspiring migrants from lower socio-economic backgrounds might initially migrate seeking better socio-economic conditions. However, once abroad, some might consider engaging in educational opportunities, which can somewhat compensate for the educational inequalities they faced in Brazil (cf. Carnicer, 2019). Transnational social networks are central for these migrants to discover opportunities to access education and establish themselves in Germany (cf. idem; Fürstenau, 2019).

Despite recent improvements, in Germany, the education system still tends to discriminate against migrant students, non-migrants with a family history of migration, and non-migrants from low socio-economic backgrounds (cf. Dumont et al., 2014; Mafaalani, 2021). This is particularly evident in the traditional selection patterns applied in some federal states: after four years of primary education, pupils (aged 10) may be recommended to continue with the *Gymnasium* ('upper secondary school'), which is considered more prestigious, or with other modalities that also allow access to tertiary education, but are sometimes considered less prestigious (cf. Trebbels, 2015). Children with a migration history in the family are often not recommended for the *Gymnasium*, which influences the lower representation of students from this background at German universities (cf. Hunkler, 2016; Trebbels, 2015).

For non-EU migrants, the path to tertiary education in Germany is also complex: foreign educational certificates are sometimes recognised as a lower level, requiring migrants to repeat or supplement their studies; apart from the formal migration process, educational institutions require knowledge of the German language verified by expensive certificates, and the lack of certification for some competences can make the path to vocational training no easier than the path to university (cf. Seeber et al., 2019). Moreover, prospective non-EU students wishing to enrol at a German university have to meet requirements that, due to the considerable financial investment involved, are likely to exclude students from the middle or upper classes, such as the presentation of a publicly certified translation of the school-leaving certificate (and the BA certificate for MA candidates – around €80 per document), a German language certificate (between €195 and €285 – not counting German language courses prior to the certificate examination), confirmation of health insurance (around €110 per month), a blocked account with around 11,000€ (or confirmation of a scholarship or sponsorship), payment of visa processing fees (€110 for the first application), and attendance of a preparatory course for those with a non-German school leaving certificate who wish to study at a German university (the *Studienkolleg*) (BAMF, 2023; Goethe-Institut, 2023, own calculation based on information from translation and insurance companies). Given the exchange rate between the euro

and the Brazilian Reais (at the time of writing, a 1:5 rate), meeting requirements to enrol in a German educational institution, particularly a university, can be an expensive endeavour.

In Germany, VET programmes are paid, last about 3 years, and are offered in a dual system. Students must attend classes and complete supervised work experience, similar to an internship. The starting salary for those beginning a VET programme in 2023 is at least 620 euros, with annual increases thereafter (Bundesamt für Justiz, 2005). Although this salary is half of what is considered the poverty line for people living by themselves in Germany (Statistisches Bundesamt, 2023), the fact that VET is paid in Germany is perceived as an advantage by some Brazilian migrants from lower socio-economic backgrounds (Carnicer 2019; Fürstenau, 2019). This phenomenon has been identified, for instance, in a network of young women who pursue VET in highly demanded health-related fields, such as nursing or caring for the elderly, and, once established in Germany, they can eventually facilitate the migration of other relatives or family members (cf. idem).

Summing up, in this chapter, I provided contextual information about Brazilian emigration, the internet connection and media use among those migrants, and educational inequalities in Brazil and Germany. Concretely, I presented some reasons why Brazilians have been migrating since the 1980s, which can go from seeking better socio-economic conditions to living an intercultural experience (cf. Carnicer & Fürstenau, 2021; Evans & Souza, 2013; Fernandes et al., 2020; Góis et al., 2009). I also commented on the uses of social media platforms among Brazilian migrants, highlighting the relevance of these platforms for over a decade (cf. Oosterbaan, 2010; Schrooten, 2012). In this last section, I have focused on educational inequalities in Brazil, highlighting some aspects that cause people from lower socio-economic backgrounds to be excluded from higher education (cf. Almeida, 2015; Trevisol & Nierotka, 2016). I also highlighted a tendency of discrimination against immigrants in the German educational system, particularly at the school level (cf. Mafaalani, 2021). I described the costs that non-EU students may have to access higher educational levels in Germany.

In the next chapter, I describe the methods that compose the "digital ethnography" (cf. Hine, 2015) I conducted to collect data and analyse how migrants and aspiring migrants use digital networks in their transnational trajectories associated with education between Brazil and Germany.

4. A Digital Ethnography of Brazilians' Use of Digital Networks in Transnational Trajectories Associated with Education in Germany

To research how Brazilian migrants use social media in their transnational pathways associated with education, I conducted a digital ethnography (Hine, 2015; Pink et al., 2016), for which I employed mixed methods. Concretely, the methods I used were observations of the Facebook groups as well as other digital platforms where Brazilian migrants and aspiring migrants exchange information, a quantitative analysis of randomly selected posts from migrants' Facebook groups (Paper 1), a qualitative analysis of only education-related posts from these Facebook groups (Paper 3), as well as interviews with participants of Facebook groups of "Brazilians in Germany", some of which I analyse on Paper 4. I employed the different methods simultaneously. Hence, the results of one paper were not necessary to begin the data collection and analysis of the other. Because implementation details of each method are described in the respective empirical papers, in this chapter, I discuss the purpose of each method, how they relate to or complement each other, and some methodological decisions and processes that did not fit the scope of the papers.

In the sub-section 4.5.3.1, I present two people I interviewed and describe their activity online. These two are Marcus and Vitória. They also systematically compile and share information about education in Germany and reply to questions they receive on their social media profiles, similar to the three content creators presented in Paper 4 (Antônia, Joana, and Mariele[1]). However, the focus of Marcus and Vitória's content and their socio-economic background differs from that of Antônia, Joana, and Mariele. Hence, they were not presented on Paper 4. Nevertheless, Marcus' case, in particular, offers an interesting ground for comparison with the cases of Antônia, Joana, and Mariele. Even though it is unusual to present such research results in a methodological chapter, I do so here in a sub-section to avoid a much longer text, to maintain the cohesion of presenting the results in each paper and still be able to present a new analysis in this overarching text.

4.1. Defining "Digital Ethnography"

An ethnographic study aims to understand the meanings of social practices in their contexts (cf. Geertz, 1973). Hence, ethnography is a research strategy involving a range of methods. These methods are more often (but not only) qualitative ones, such as observations, informal conversations and qualitative interviews (cf. Breidenstein et al., 2020). These data collection procedures are carried out in a specific field where the social practices being researched take place. This field is often defined by spatial boundaries (e.g. neighbourhoods and schools). However, because people are mobile, social practices can unfold in different geographical spaces. To capture that complexity, the concept of "multi-sited ethnography" emerged (Marcus, 1995). For migration research, this facilitates studying transnational social practices and the networks that sustain them – including online networks.

A *digital* ethnography typically follows the same approaches to data collection as a "non-digital" ethnography. This includes observations, note-taking, qualitative interviews, and informal conversations (cf. Hine, 2015). However, a key difference from an on-site ethnography is the field. That is so because a digital ethnography explores social interactions and practices that unfold

[1] All names are pseudonyms.

primarily in *digital* social spaces (Hine, 2016). These digital social spaces can be found in any internet platform where people interact, whether by exchanging written messages, images, audio or video, or by observing others doing so. Therefore, an email list, a WhatsApp group conversation, or a Facebook group can all be fields for digital ethnography research. Observing and participating in those interactions through a digital ethnography is a way of doing multi-sited ethnography without physical mobility.

These digital social spaces are shaped by people's access to material artefacts and infrastructures, such as internet connection and digital devices, as well as by the possibilities provided by a digital platform (cf. Hine, 2015). For instance, Facebook allows its users to create and join digital spaces according to similar interests or characteristics. These spaces are "Facebook groups". Another aspect that shapes digital social spaces is the interactions in those spaces. These interactions form networks of latent ties (cf. boyd, 2014; Burrell, 2009; Haythornthwaite, 2002; Hine, 2015).

In migration research, transnational networks themselves often serve as field sites. This reflects the fact that different network participants may be based in different geographical places, incorporating a multi-sited approach. In other words, instead of looking at how migration unfolds and impacts one specific place, a transnational perspective on migration looks at migrant networks beyond borders and the elements flowing within those networks (material artefacts, social practices, and symbols). From that perspective, social phenomena can be investigated by looking at how they unfold and impact multiple places (e.g. a city, a school) or spaces (e.g. transnational network connections). In this sense, a network can be a transnational social space and, consequently, a field for research (cf. Mazzucato, 2009). Here, I look at transnational social networks in digital spaces using digital ethnography to analyse online social practices that expand beyond geographical boundaries.

Apart from being multi-sited, a digital ethnography can also be multi-platform. As people tend to use different social media platforms for different purposes or in different situations (Schrøder, 2018), a digital ethnography can follow these different uses and social practices across platforms. Despite this focus on media platforms, the central interest in a digital ethnography is in "what people are doing that is related to media" (Couldry, 2012, p. 35) and not in how a particular platform causes a social phenomenon (cf. Pink et al., 2016). Departing from a "media effects" perspective, I look at media as practice (Couldry, 2012), focusing on the uses of social media and its meanings.

In the next sections, I describe the methods I used to collect the data and how they are connected or complemented each other. I also discuss ethical measures and data protection. Because I discuss ethical aspects of the quantitative data collection of migrants' posts in Paper 2, this paper is reproduced in the last section of this methodological chapter. The other three papers are reproduced as individual chapters (Chapters 6-8).

4.2. Entering the Field

Facebook groups of "Brazilians in Germany" were my point of entry into the digital social spaces relevant to my research. I joined a Facebook group called "Brazilians in Hamburg" for the first time a few months before arriving in Hamburg in 2016. I was looking for a place to live, and I thought these groups could be a good way to find one. I quickly realised that it was impossible to keep up with the number of messages exchanged in the group: my post asking for tips on where to find

accommodation received a few replies and was pushed down in the list of posts within minutes, buried by many other posts with different questions, offers of goods and services, and invitations to events. Three years later, when I started my PhD, I recalled this experience in connection with my colleague's analysis of the "non-digital" social networks of young Brazilian migrants in Germany (Carnicer, 2019; Fürstenau, 2019).

For my research project, I created a new Facebook account, as I erased the one I used when I arrived in Germany. I used my university email, my full name and the same picture of myself that is available on the university's website. I also described myself as a PhD candidate at the University of Hamburg and provided a link to the university website where I am listed as such. I did not use this Facebook profile to write any posts. I also refrained from following Facebook pages related to my socio-political opinions and interests. The heated political debate following the election of the far-right extremist Jair Bolsonaro in 2018 has created a divide in the Brazilian socio-political landscape, and by not expressing my position against Bolsonaro and the policies he supports, I hoped to avoid losing potential interviewees with interesting stories to tell, but who might disagree with me.

Having decided to use Facebook groups as my entry point in the field and decided how I would present myself on Facebook, I began to search for groups of Brazilians in Germany. I first searched Facebook for groups with general titles such as "Brazilians in Germany" and groups of Brazilians in specific cities (e.g. "Brazilians in Hamburg"). In these groups, users who asked questions related to a profession (e.g. care work) or a social aspect (e.g. parenthood) were sometimes informed by other group participants about the existence of groups that gathered Brazilians in Germany around such specific topics. I joined these specific groups as well. Apparently, Facebook's algorithm identified my interest in "Brazilians in Germany", and other similar groups were suggested to me on the landing page when I logged in to Facebook. Following some of these suggestions, I joined other groups of Brazilians in specific German cities or groups of Brazilians looking for work in Germany. I joined 43 groups with at least a thousand participants and three posts in a week. I refer to these groups as "active groups" because of their large number of participants and high level of interaction. I reasoned that these two characteristics would make it more likely that education-related issues would be mentioned in information exchanges.

Facebook groups had two statuses. Some were set as "public" on Facebook by their administrators, so anyone could participate in them without asking for permission. Others were "private", meaning anyone could find the group on Facebook and ask to join them, but an administrator had to approve the request. To join some of these private groups, I also had to fill out a questionnaire with questions such as "What is your interest in joining this group?" and "Do you agree not to post advertisements in the group?". In these cases, I briefly answered the questions and used these forms to explain who I was and my research interest in joining the group. I also used these questionnaires to indicate how I would proceed with respect to privacy (what I present later on in this chapter). Seven of the 29 private groups for which I filled out such questionnaires refused to allow me to join without giving a reason.

Once I started reading the posts and replies in these active groups, other social media emerged as relevant platforms for interaction and as sources of information for newcomers or aspiring migrants. These were the YouTube channels and Instagram profiles of Brazilian migrants, who document, compile, and share information about their activities and pathways between Brazil and Germany. They also post comments in Facebook groups or respond in detail to questions from other group

members. Some of these specific group participants focus their content on educational opportunities in Germany. To join other social media platforms and follow the pages of these actors I had identified, I made decisions similar to those I made when I joined Facebook: I created an account using my institutional email and introduced myself as a PhD candidate at the University of Hamburg.

Facebook was my entry point because of my personal experience using a migrants' Facebook group and because of the large user base of that social media platform among Brazilian migrants. I entered that field with a general and everyday-life empirical interest (cf. Breuer et al., 2019): What do people discuss about education in these groups? Later on, the concept of latent ties (Haythornthwaite, 2002; also used by Jayadeva, 2020) allowed me to connect the information exchanges I was observing to a broader framework of digital networks and migration. This concept and framework then allowed me to go back to the field, collect further data and analyse the prevalence of education-related topics in transnational information exchange among migrants and aspiring migrants in Facebook groups (Paper 1), the nuances of discussions about education-related topics in these groups (Paper 3), and to identify the existence of young Brazilian migrants who systematically compile and circulate information about educational opportunities in Germany (Paper 4).

4.3. Observations in the Field: Lurking and Selecting Groups

Facebook groups function as online forums: those who have joined them can ask questions, reply, as well as read questions and replies posted by others, without ever posting something themselves. This means that active participation is not required and that one can read what others post there anonymously. I was one of these group participants who read but did not interact. This behaviour is known as "lurking". Because I was lurking and because of my anonymity among thousands of other participants, my presence had no influence on what was being discussed in the groups.

There is no consensus among researchers who conduct digital ethnographies about whether lurking is a "participant" or a "non-participant" observation. Those who see it as participant observation claim that because of their own affiliation or involvement in the community they are studying. They emphasise that lurking is a "native practice" because many other group participants who are not researchers do the same (cf. Greschke, 2010; Marino, 2021). On the other hand, the fact that a researcher can go completely unnoticed when lurking is highlighted as a key feature of a non-participant observation (cf. Hewson et al., 2016; Hine, 2008). To avoid going into details of this discussion, it suffices to say that, as a Brazilian in Germany, I belong to the groups I was lurking in. However, I cannot say that I am actively involved in an imaginary "Brazilian community in Germany".

An important point in defining what kind of observation lurking is has to do with the ethical aspect of it in terms of anonymity and informed consent. Particularly for the quantitative and qualitative text analyses I conducted, it was difficult to obtain informed consent to collect the posts due to their volume. Hence, I treated these texts as if I were standing in a public space and listening to the conversations around me. I was interested in the content of these conversations and what they reveal about the people involved in them. I approached some of the people whom I "heard" talking about education (in this metaphorical public space), and I conducted formal interviews with them. These people then knew who I was and that I was present in the Facebook groups. However, once I was back in that "public space", I was again an anonymous Facebook group participant. Therefore, I understand my lurking as a non-participant observation.

To select the groups where I would conduct these observations, I logged onto Facebook every other day between January and March 2020 and lurked for about 20-30 minutes. I actively accessed one of the active groups and scrolled through the latest posts, looking for posts related to education. To see if there were any older posts about education, I used Facebook's "search" function to look for posts containing education-related words, such as studying, school, VET, and university. I also read the posts selected by Facebook's algorithm that appeared on my landing page right after logging into my account. Actively accessing the groups was more productive because, at the time, the algorithmically selected posts seemed to prioritise the most recent ones with many comments, which were not always related to education. After about two weeks of reading the posts, I decided to organise the groups by type. The reason for this division was that I noticed different interests about education in the different groups. Below, I explain each group's broad focus and the main education-related interests of its participants.

Table 1: Main topic and number of all observed Facebook groups.

Location groups	13
General groups	12
Groups of other activities	11
Professional groups	5
VET groups	2
Total	43

Location groups connect Brazilian migrants or aspiring migrants who live or want to live in a particular German city (e.g. "Brazilians in Hamburg"). Some group participants use these groups to try to establish new contacts, share job opportunities, and advertise products and services (e.g., Brazilian foods, cosmetic services, cleaning services, and language courses). Education-related topics appear in these groups when aspiring or newcomer immigrants ask about enrolment in educational institutions, especially VET and language schools in these cities, as well as when parents or guardians ask about schools for children and adolescents in the city or certain districts.

General groups have titles such as "Brazilians in Germany". These groups are used to advertise products and services, ask questions about documentation and migratory procedures that apply to Brazilian nationals, and ask for favours. They can also serve as an entry point for aspiring or newcomer migrants seeking specific information. For instance, one participant asked about the requirements for enrolling in VET in an IT-related area in the city of Hamburg, and other participants suggested that the person could find "first-hand" information in the professional or location groups.

Groups of other activities include groups of Brazilian Au Pairs in Germany, groups dedicated only to circulating job announcements, groups dedicated to "bureaucracies", and even groups dedicated to gardening and beauty "for Brazilians in Germany". Among these groups, education-related aspects appear more frequently in the Au Pair groups associated with questions about the options for permanence in Germany after the end of the Au Pair experience – joining VET is a common mention in this case.

Professional groups are used by newcomers and aspiring migrants who wish to pursue VET or a university degree in a particular profession. Established professionals also use them to exchange work experiences, including comparisons of incomes in different parts of Germany, comparisons between the labour market and work styles in Brazil, Germany, and other countries, as well as to discuss conflicts at the workplace and suggestions about how to solve them. In this category, the most active groups were those of nurses and one of IT professionals. This was expected as there is a high demand for professionals from both these areas in the Global North (cf. Lutz & Palenga-Möllenbeck, 2011; Make it in Germany, n/d; Raghuram, 2004), making it attractive for aspiring migrants to pursue a degree in these fields as a strategy to find stable employment and obtaining a residence permit after graduation.

VET groups are used particularly by aspiring and newcomer migrants to ask about formal requirements that are similar to most VET courses (e.g. school leaving certificate and its recognition in Germany, proof of language skills) and ask for recommendations on how to find and apply for a VET course. Other group participants also spontaneously share information about their experiences in finding a VET placement, attending the courses, and applying for jobs in Germany afterwards. Antônia, Joana, and Mariele, the three migrants who systematically create content and engage in discussions about education that I present in Paper 4, are particularly active in VET groups, as the group participants are a target audience for their content.

Posts relating to education were more frequent and discussed in more detail by more participants in VET, professional, and location groups. Because of that, I started lurking more frequently on these groups and selecting posts and comments that comprised the dataset for the qualitative content analysis (Paper 3). Through these observations, I also identified the activity of the migrants and "content creators" (Paper 4). Lurking on these Facebook groups gave me a general perception of the topics discussed in each group. I resorted to quantitative and qualitative textual analysis methods to analyse the prevalence and meanings of education-related aspects in these networks. Because these digital networks compose my field of research, these two methods also serve to describe that field.

4.4. Overview of the Field: Topic Modelling and Qualitative Content Analysis

To provide a broad overview of my research field, my co-author Florian Süßer and I determined the prevalence of education-related topics in information exchanges among migrants in Facebook groups (Paper 1). To draw the field in more detail, I analysed the meanings of these education-related information exchanges (Paper 3).

Here, I first explain some relevant aspects of the dataset, the functioning of the automated data collection and the quantitative analysis, and describe how its outcomes serve as a broad view of the field. Moving to a closer look at the field, I describe my approach to "qualitative content analysis" and how that method provided a more detailed overview of information exchanges about education among latent ties.

4.4.1. Broad View: How Prevalent are Education-Related Topics in Information Exchanges Among Latent Ties?

Our (my co-author's and mine) quantitative data consists of posts made on selected Facebook groups – more specifically, the dataset is composed of the *texts* of the posts. To automate the collection of these texts, we used a web scraper. This web scraper does the same as a human's manual collection of texts could do, copying and pasting the texts from the Facebook groups into another file. This other file was in a spreadsheet format. In this spreadsheet, each post had its own cell. The posts were grouped according to which Facebook group they came from, so each spreadsheet file contained posts from one group.

Our dataset was composed of 7.389 posts. These were the newest ones and had the most interactions (replies and "likes") at the time of the data collection. We could not collect data from all 43 Facebook groups identified at the beginning of the research (cf. Table 1) because Facebook's interface apparently limited our ability to do so when it was identified that we were using an automated web scraper. Among the 14 randomly selected groups, "location" and "general" groups outnumber the other types of groups:

Table 2: Main topic and number of observed Facebook groups.

Location groups	5
General groups	5
Groups of other activities	2
Professional groups	1
VET groups	1
Total	14

If our texts came mostly from posts from VET groups, we would be cherry-picking our data because the focus of these groups is exactly on education. However, the majority of the groups in our sample are location, general, and "other activities" groups, which encompass diverse topics, including, but not limited to, education. Furthermore, because in the original dataset there were more general and location groups than other types of groups, the 14 randomly selected groups are still an adequate sample.

To analyse that quantitative dataset, we used a topic modelling (TM) approach. TM is a statistical technique used to identify prevalent topics in a collection of "documents". In our case, a "document" is each post made on a Facebook group. In other words, our dataset is composed of 7.389 documents. Our TM followed the description of David Blei (2012) and Justin Grimmer, Margaret Roberts, and Brandon Stewart (2022), which I summarise and paraphrase in the next paragraphs.

TM assumes an unknown set of topics, or themes, in the documents being analysed and considers each document a potential mixture of several topics. That is, the documents can belong to more than one topic: they can be about education and bureaucratic requirements of migration at the same time, for instance. In TM, each topic is represented by a particular pattern of frequently connected words.

Hence, topics are composed of a mixture of several words according to the relevance of their connection. That distribution is calculated through an algorithm.

The most commonly used algorithm for TM is Latent Dirichlet Allocation (LDA). The functioning of this algorithm is similar to organising a library: the documents (i.e. the Facebook posts) are the books, and the topics are the categories of books in that library (i.e. the topics of the Facebook posts). Just like books on similar topics are grouped on shelves, LDA groups words that appear together in a document related to a specific topic. It works by looking at the words in a set of documents and grouping them based on their co-occurrence patterns. The idea is that words that frequently appear together are more likely to be related to the same topic. LDA uses a mathematical model (a Markov chain) to group the words (Blei et al., 2003). Once the probabilities have been assigned to each word according to frequency and proximity, then the words are grouped into topics.

The topics organised through that procedure are words that frequently appear together in the documents. The results are expressed in "estimated topic proportions". These estimations are percentages: a value of 0.2 for a topic means that this topic is likely to be present in 20% of the collected documents (the posts).

Topic modelling does not substitute a human interpretation of texts. It mostly serves to organise a large text *corpus*. Hence, once the topics have been algorithmically organised, they must be manually analysed and labelled by a person based on her background knowledge about the topic contained in the documents.

The choice of how many topics will be selected is also set by the person analysing them. The more topics the person decides to select, the more diluted the collection of words is. Hence, it is more difficult to infer what the documents (the collection of Facebook posts) are about. For Paper 1, we settled on 7 topics. That decision was made after running tests selecting between 5 and 20 topics. Because the *corpus* consisted mostly of very short texts, typical of social media communication, selecting too many topics made it impossible to identify a concrete topic. Similarly, selecting too few topics (3 or 5, for instance) also made it impossible to identify concrete topics because multiple topics were grouped as one. After several attempts, seven topics proved to be the best for interpreting relevant and consistent themes in the dataset.

The outcome of the TM is strings of lemmatised words. Lemmatisation puts words together according to their inflected forms. This way, they can be analysed as a single item. For instance, "studying", "studied", "student", and "study" are grouped together and represented by their stemmed version of "stud". The LDA process then organises groups of lemmatised words frequently appearing together in the documents and presents them on a string. An example from our data (Dedecek Gertz & Süßer, 2022, p. 246): Topic 5 is composed of the following string of lemmatised words (in Portuguese): "preci, brasil, fal, ajud, consegu, saud, pesso, pai, document, pag". In English, these means: "need", "Brazil", "speak", "help", "to get/to reach", "health", "person", "father" ("pai") or, most likely, "country" ("país"), "document", "payment", "receive" and "arrive".

To interpret and label these topics, I relied on qualitative methods. Through the process of observing interactions, collecting, and analysing the posts from a qualitative perspective (Paper 3), I was exposed to information exchanges both to topics relating to education as well as to topics unrelated

to my focus (e.g. housing, documentation, social relations, buying and selling goods, offering services). This was central to interpreting the topics that emerged from the TM approach. Because I was acquainted with the topics that were frequently discussed among migrants on those Facebook groups, I could identify core words that together composed each topic. That is, TM is a tool to organise large datasets of texts, but it does not substitute a nuanced interpretation of a human. Topic 5, for instance, was the most prevalent topic in our dataset. Based on the qualitative observation of the interactions on the selected Facebook groups, the qualitative analysis of the posts, and what interviewees told me about their use of those Facebook groups, I interpret that topic as capturing requests for information about documentation.

Quantitative methods are often used to verify a hypothesis. Yet, we implemented TM in an exploratory approach: We were interested in determining the prevalence of education-related topics in information exchanges in Facebook groups of "Brazilians in Germany". We showed that education appears among the seven most frequent topics circulating in the transnational digital networks we analysed. That outcome is a broad snapshot of the field. It points out that education is an important topic being discussed in those networks, yet it does provide further insights about the meanings of education in those discussions. For that, a qualitative approach was necessary.

4.4.2. A Closer Look: Meanings and Associations of Education-Related Topics

Through topic modelling (TM), we determined that education-related topics figured among the seven most prevalent topics circulating in the field (Dedecek Gertz & Süßer, 2022, p. 248). To shed light on education-related issues, I conducted a qualitative content analysis (QCA). QCA is a method for describing the meaning of qualitative data in a systematic way (Schreier, 2012). I used it to analyse what Brazilian migrants in Germany discuss about education in Facebook groups. Considering that my field of analysis was formed by latent ties established through education-related conversations, I provide a closer overview of that field through this method.

QCA is systematic, reduces data, and is flexible (Schreier, 2012). The systematic aspect of my implementation of QCA starts with the observations I made during the initial phase of the data collection when I was lurking on the Facebook groups. Based on my observations, I selected six groups in which interactions about education were more frequent: two location groups, two professional groups, and two VET groups.

I reduced data through QCA by looking only at relevant education-related posts in groups where education was a frequent topic. Among the education-related posts I collected from these selected groups, I disregarded posts with sensitive information and posts in which education was mentioned in unrelated contexts, for instance, a discussion about differences between Brazil and Germany in which a group participant claims that "Brazilians are too poorly educated to make good political choices". The development of coding categories also aimed at reducing data, as the categories were broad enough to capture only relevant aspects to answer my research question and, at the same time, focused enough in order not to lose nuances in the content (see coding categories on Paper 3: Dedecek Gertz, 2023b, p. 5).

QCA's flexibility contributed to the elaboration of those coding categories. In an iterative way, I developed a coding scheme with inductive and deductive codes. I started with some deductive codes

based on other studies (particularly Carnicer, 2019; Fürstenau, 2019; Wall et al., 2017) and developed inductive codes based on my observation and during the data collection and first readings. Hence, deductive codes that initially seemed relevant could be set aside if they were not as relevant as expected. For instance, when I started coding posts from the two VET groups, I created a code for every mention of different areas where one can pursue VET in Germany, leading to a fine-grained division into 11 areas. As I continued to read the posts from the other groups, such a detailed categorisation proved to be too descriptive and lacked the analytical value to help capture the contexts and meanings of the information exchanges. A typical situation was when the specific VET course was simply mentioned, such as in "Does anyone here do VET for hotel manager?" with no replies or further comments. Hence, I subsumed all those VET categories under the broad category of "VET", which I could then compare with other educational levels. Later on, important differences emerged between IT professionals and care workers, particularly because these two professions are on the titles of the two professional Facebook groups I selected for the QCA. Based on this, I reintroduced these two codes for VET in IT and care work when coding posts from all other groups.

TM served to map the prevalence of education-related topics within the digital networks I investigated. QCA served to map the details of that field. In an analogy of how the two methods stand along with each other, TM can be seen as a map of a region, while QCA is a map of a city within that region. The results from the QCA also provided some insights into the socio-economic contexts of those who were participating in the information exchange about education. For instance, to some extent, I could interpret the meanings of the data connected to socio-economic aspects that group participants made explicit or implicit in their posts. These aspects were related to socioeconomic background (where they live, educational aspirations, earned degrees, salaries) and gender (based on first names, profile pictures, use of adjectives and pronouns in feminine or masculine form). Looking for more details about the participants of these digital networks, I conducted interviews, whose procedures I discuss in the next section.

4.5. Zooming in the Field: Backgrounds, Social Practices, and Motivations of Specific Actors

My fourth paper is based on interviews and observations with three specific actors I identified in the field during the broad (TM) and the closer (QCA) overview of that field. These interviews were central to understanding these actors' socio-economic backgrounds and motivations. Through these interviews, I could add details to social practices that I had observed in the Facebook groups.

These specific actors are young Brazilian migrants who systematically collect and disseminate information about education in Germany via digital networks. Lurking and reading the interactions of Facebook group participants, I noticed that some participants frequently engaged in discussions and provided long and detailed answers to questions about migratory procedures and requirements, as well as about educational opportunities in Germany. They also shared links to their profiles on YouTube or Instagram or to their blogs in which they present aspects of migration, education, and daily life in Germany. Because I was looking particularly for participants posting about education in the Facebook groups, that kind of behaviour stood out. Apart from observing their behaviour online, I also interviewed these individuals to understand who they are, what they do online, and why they do that.

4.5.1. Interviewees: Reaching out and Sample

To contact potential interviewees, I sent them direct messages. I decided which people to contact based on what they wrote on the Facebook groups I was observing. Their posts were frequently asked questions such as "Has anyone accomplished VET in dentistry in Germany and can give me some insider information about it?", "do you recommend the German courses at [language school] to reach B2? [a level commonly required for VET]", "Does anyone know whether non-Europeans can apply for the BAföG [German state student loan]?". I also started seeing other education-related posts without information requests, such as "Do you want to know more about the possibilities of pursuing VET in Germany? Read my newest blog post/check my video on Instagram!". I started sending direct messages to the authors of such posts. In these messages, I explained who I was and why I was contacting them and informed my institutional email and phone number in case they wanted to validate my identity. From the 47 direct messages I sent, 22 people agreed to give me an interview. Most of my direct messages were not replied to. It is possible that many direct messages were not even seen, as they might have landed in the "requests" box of the receivers[2].

The majority of my research participants were female (16 women:6 men). The youngest interviewee was born in 1999, and the oldest in 1981. Of the 47 message requests I sent, 15 were directed to men. Of these 15, six agreed to give me an interview. It was more difficult to recruit men for interviews. They often ignored my requests or stopped responding as soon as I made clear that I was purely interested in an interview for a research project. My sample is overwhelmingly female also because, during my observation, I saw mostly women posting education-related questions. In this sense, my sample relates to a recurring pattern of this phenomenon. Also, once I identified the existence of migrants who create content about education, my focus shifted to that phenomenon. As most of the people I identified acting like that were women anyway, I dropped my concern about a gender imbalance.

4.5.2. Interview Procedures

A common recommendation for digital ethnography is observing interviewees' offline settings and media use in everyday contexts (Burrell, 2009; Hine, 2016). However, I started interviewing at the beginning of 2020, four weeks before a lockdown was implemented in Germany due to the COVID-19 pandemic. Since interviews and observations could be conducted only online, immobility allowed me to choose to approach Facebook group participants based on the relevance of what they posted on the group, unconstrained by the need to travel. Geographical distance was no longer a barrier to interviewing someone. Some people lived in small German villages, others in huge Brazilian cities, and others in medium-sized or large German cities. Hence, the multi-sited aspect of this digital ethnography is also partially covered despite the geographic immobility. As COVID-19 regulations

[2] Facebook allows its users to send direct messages to other users. Those direct messages are only seen by the sender and the receiver. However, if the sender is not on the receiver's "friends" list, Facebook classified the sender's direct message as a "request" and the receiver might not be notified about that, depending on their settings for notification and privacy. The receiver is always able to read the message marked as "request", but the sender does not know whether the receiver has read the message or not. If the receiver decides to reply, then both the receiver and sender receive notifications of new messages, even if they do not add each other to their "friends" list. In this case, both can also receive confirmations that their direct messages were read by the other.

relaxed, some interviews could be conducted at a distance in open spaces like parks or, later on, even in closed spaces. From the 22 interviews I conducted, 8 were in person, and 14 were online.

My interviews had two parts. The first one was in-depth and unstructured. The second one included a visual reconstruction of the interviewees' media repertoire (cf. Hasebrink & Domeyer, 2012). The interviews lasted between 1 and 1.30 hours. I usually started the first part of the interview with questions about the interviewees' present situation, asking about their life in Germany (if they were already living in the country). Then, I moved to questions about their decisions and experiences in the migration process. Finally, I asked about their life in Brazil prior to migration. Apart from learning about their opinions and experiences, I was interested in understanding their socio-economic positionality, as that impacts their educational opportunities and migratory decisions. I asked them, for instance, why and how they came to Germany, how they were financing their stay or studies in Germany, their housing situation both in Brazil and in Germany, their migratory status, whether they had a double Brazilian-EU citizenship (because this influences their access to education and the labour market in Germany), the profession and educational attainment of their parents or guardians, and the ways they kept in touch with family and friends (e.g. about what did they talk now that they are not geographically close, which media they use to talk to whom). Because these topics often intermingle, the order of the questions was not linear, and the topics were not strict.

I started the interviews with a non-conspicuous mention of my interest in media and then focused on media during the second part. I aimed to see whether aspects relating to media would be mentioned by the interviewees without any explicit input, thereby indicating some prominent roles of media in the interviewees' practices and daily lives (cf. Klein et al., 2018; Schrøder, 2018). Unsurprisingly, in the first part of the interview, "the internet" was often mentioned in connection to finding out about work or study opportunities in Germany.

The first part of the interview (unstructured and with open-ended questions) usually took between 40 minutes and 1 hour. Sometimes, when I noticed the answers were becoming shorter or the interviewee started looking around or avoiding eye contact, I considered that I no longer had their attention. Then, I moved on to the second part of the interview about their media use in their migratory pathways. Most of the time, this way, I could get their attention back.

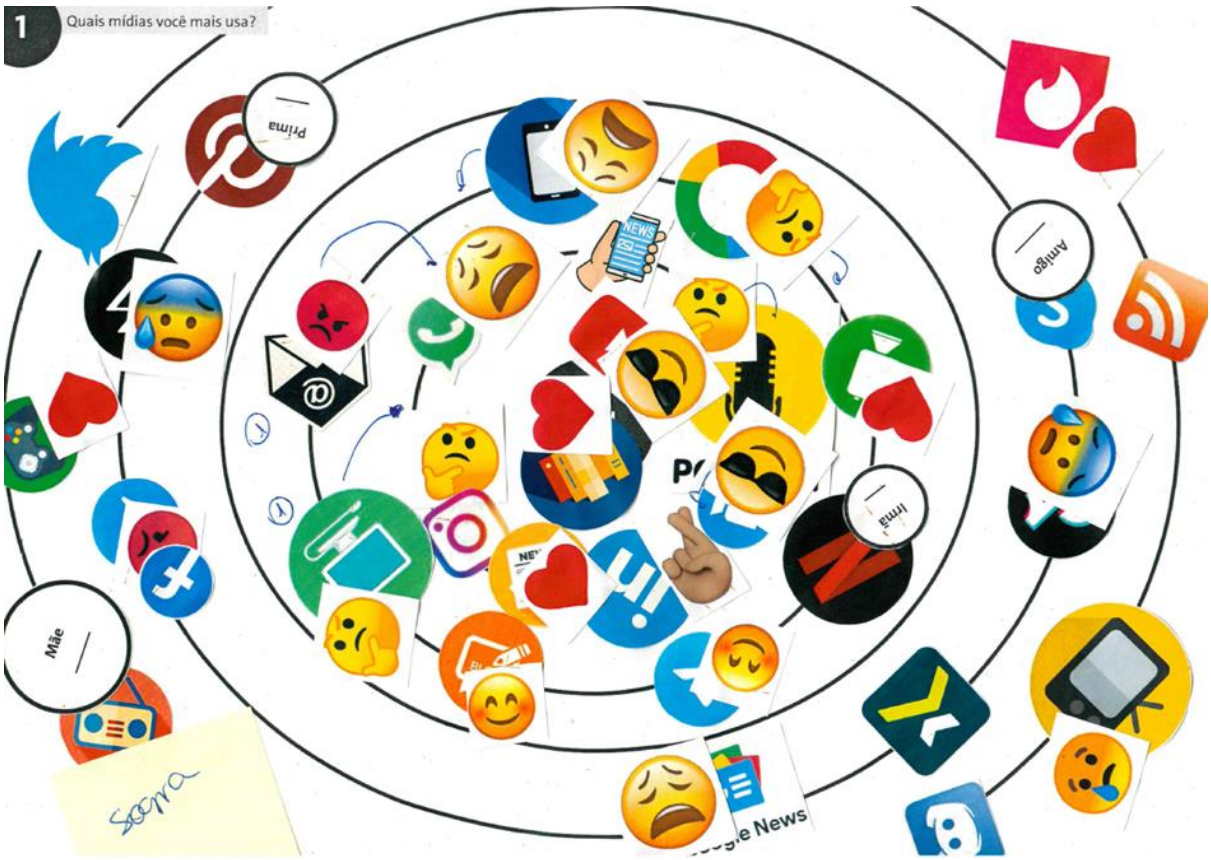
During the first interviews, I was unsure whether starting a second part after a 40-minute interview would cause discomfort, thinking the person might already be tired. On the contrary, it seemed to stimulate their curiosity. Most interviewees went on for another 30 minutes (one even went on for a full hour). I was convinced that this two-part interview approach was appropriate when one interviewee, who was a friend of another person I had interviewed earlier, said that she was looking forward to "the part of the game" that her friend had told her about – by "the game" she was referring to the second part of the interview.

In this second part, I invited interviewees to construct what I called "media maps". This was a way to reconstruct their "media repertoire", that is, the entire media outlets and platforms that a person regularly uses (Hasebrink & Domeyer, 2012, p. 758). I handed them (or sent them via post when the interviews went online) three small plastic bags with paper icons: one with media icons (social media logos), another with "emotion" icons (emojis), and a third bag with words referring to personal relations (friend, mother etc.). Inspired by Uwe Hasebrink and Hanna Domeyer (2012, p. 767), the

"map" itself was composed of circles of growing amplitude printed on A4 paper and had the word "me" in the centre (Figure 1). The closer to the centre, the more relevant the media was for the interviewee.

These maps were not analysed per se. They served as a cognitive aid so that interviewees could look at the media icons and activate their memory about their media use rather than relying only on their recall. They could also associate which media they used to communicate with whom (the personal relations icons) and whether they associated platforms with specific experiences or feelings (the emotion icons). I asked them to explain to me aloud how they were organising the paper icons on the sheet. During that process, I intervened with prompts and questions, for instance, about which platforms they used or used to collect information for their migration or which media were important to maintain contact with friends and family. Apart from learning whether, how, and which sources of latent tie connections (the social media platforms) were useful in their migratory pathways, I was looking for unexpected themes or patterns that could emerge when interviewees talked specifically about their media use habits. I further discuss this procedure elsewhere (Dedecek Gertz, Cabalquinto & Leurs, 2024).

Figure 1: A "media map" by Mariele. She is a content creator: she frequently and systematically uses social media to share her experience and knowledge about migrating to Germany and accessing educational opportunities there.



4.5.3. Identifying Migrants and Creators of Content about Education in Germany

Interviewees mostly confirmed that Facebook groups were useful for collecting information for their migration pathways. However, the most interesting was the case of five migrants' frequent and systematic media use habits. They frequently replied to questions on Facebook groups with long and detailed answers. They created texts and audio-visual material to post on different platforms about migration and educational opportunities in Germany. Based on this behaviour, they can be defined as "content creators" (cf. Duffy, 2017).

Antônia, Joana, and Mariele, three of these migrants and content creators, are described in Paper 4. They were selected because they share similar media use habits and have similar socio-economic backgrounds, migration pathways, and expectations about their activity as content creators. I relied on interviews and observations of their online behaviour to analyse their role. The transcribed interviews were discussed in a workshop with colleagues focusing on aspects of socio-economic positionality, migratory reasons and pathways, the content they create, the "latent tie" character of their activity online (e.g. replying questions from strangers on Facebook groups), and the reasons why they do what they do. The final analysis was written in collaboration with Javier Carnicer and Sara Fürstenau.

4.5.3.1. Marcus and Vitória: Migrants and Content Creators about Other Educational Topics

I identified five migrants and content creators. Antônia, Joana, and Mariele have similar low socio-economic backgrounds and the topics of the content they create concern migratory opportunities for young people from that same background. Marcus is another content creator who creates similar content, yet he directs it to an upper-middle-class or wealthier audience. Vitória is 20 years older than all four other content creators I identified, and the content she creates is directed towards parents who migrated from Brazil to Germany.

The cases of Antônia, Joana, and Mariele are analysed in Paper 4. Here, I present some information about Vitória and, especially, Marcus. I rely on Marcus's case to draw comparisons in the discussion section. The description of these two is odd in a chapter about research methods. However, I present them here as they are also part of the group of migrants and content creators I identified, and especially because Marcus' case is important for a comparison I make in the discussion chapter (Chapter 9).

Vitória focuses her content on children's education and parenting as a migrant in Germany. She is older than the other four content creators, and her content is directed towards migrants who are also parents of children and teenagers. She discusses, for instance, aspects of "intercultural" parenting, comparing different patterns in social practices and attitudes she sees among German and Brazilian parents. She also comments about specific cases, for instance, about children's "difficulties in adaptation to a new environment" and how parents can deal with cases of racism in schools and Kindergarten. Similarly to all other four content creators, she also offers private consultation sessions.

Marcus is one of these four migrants and content creators who focus on higher education in Germany. Marcus comes from a wealthy socio-economic background. He studied in one of the most expensive private schools in Brazil. He participated in international sports competitions; all his school friends

were enrolled in renowned universities in Brazil or abroad, and, at first, he was not sure whether he would prefer to study in Germany or the U.S. – he could choose between the two. He first came to Germany to visit a friend of his father's. After the visit, Marcus decided to study in Germany, and he lived with this friend during his first months in the country. He entered Germany first as a tourist, and then, to be granted a visa, he enrolled in a language course. For the enrolment, he had to present a blocked account from a German bank and an international health insurance. Later, he enrolled in a preparatory course for those with a non-German high school degree who wished to study at a German university (offered by institutions called *Studienkolleg*). When I met Marcus, he was going to start his university studies in Engineering and had a part-time job at a warehouse. He was also looking forward to engaging in a transnational student business association. He mentioned that his father thought it was important that he have a job while studying in order to become independent. On the other hand, his mother did not support that idea and thought he should focus only on studying.

While doing his media map, Marcus focused on how he uses media for leisure and to keep in touch with family and friends. Before migration, he mentioned using Google to check the information his father's friend gave him and emailing him to send university or job applications. He uses Facebook groups of Brazilians in Germany to buy and sell "things", as he says, and once, he tried to use it to find an apartment or a room in a shared flat. Otherwise, he accesses these groups to share his new posts about education in Germany. He started systematically producing content for social media when he realised that his friends were interested in what he posted on his personal account about studying in Germany. Based on such comments from friends, he felt that his posts could be useful for more people. He began targeting a broader audience of aspiring Brazilian migrants who wished to study at a German university. On his Instagram profile, there are pictures of him and his friends participating in a start-up event, a university auditorium with hundreds of places, wooden panels and a large chandelier hanging from the ceiling, a panoramic view from the window in a university library, him driving to university with friends, buying Apple electronics and a TV. He also makes lists of what one can study in Germany, clothes brands, and "what you may not like in Germany" (for instance, "Germany is different from the U.S.", "food", "cold weather", "Germans' coldness"), and financial tips (websites with discounts on famous brands, "start to do a financial planning with your parents already when you're on high school").

4.5.4. Topic Modelling, Qualitative Content Analysis, Non-Participant Observations, and Qualitative Interviews: From the Broad to the Zoom in the Field

The TM and the QCA served to describe the field, and the qualitative interviews served to uncover a social practice by certain actors in that field. Non-participant observations were also important in identifying those actors and interpreting the results from the text-based methods. Through the broad overview based on the outcomes of the TM, I established whether and which education-related topics were prevalent in the information exchanges on Facebook groups. Narrowing down to information only about education, with the QCA, I explored what and how migrants and aspiring migrants "talk" about education in those groups. Finally, zooming in on a group of actors that I found on the field, I identified the existence of migrants who are also content creators about migration and educational opportunities in Germany. From the broad perspective to the detail of a specific group of people, I attempted to map a transnational digital field composed of networks of latent ties between Brazil and Germany.

Once I identified the existence of migrants who are also content creators about education in Germany and found similarities among the three of them, I considered that I had discovered a kind of actor important to the establishment of transnational educational spaces. Hence, in 2022, I decided it was time to stop the observations and interviews and focus on analysing that data. In the meantime, I had already started writing up both papers that provide an overview of the field (Paper 1, based on the TM, and Paper 3, based on the QCA). Paper 2, where I discuss ethical and legal aspects of collecting and analysing Facebook posts, was already undergoing peer review.

4.6. Ethical Measures in Qualitative Data Collection

Non-participant observation minimises the effect of behaviour modification upon awareness of being observed — the more so in a digital space where one can go unnoticed. Because of the high number of participants and because I did not post anything on the groups, my presence and my interest in those groups were ignored by the majority. Only administrators of private groups were aware of that because they requested that participants fill out a form upon entry. In this context and considering the number of posts I analysed, informed consent from the authors of the posts would be very difficult – if not impossible. However, sharing personal information is an accepted practice among some participants of the groups I observed. Some would write their phone numbers, mention where they work and in what position, and explain their migratory situation in detail, looking for an accurate answer that would fit their case. Hence, I avoided reproducing personal information in my notes and kept screenshots in a digital file within my university account.

The detailed personal information shared on these groups also made me consider how to care for this data in collecting and analysing the posts. I decided not to reproduce posts word-by-word to preserve users' anonymity. As these groups can be found and accessed by anyone with a Facebook account, reproducing posts would imply the possibility of de-anonymisation of people who could not be informed about the research project and agree to participate in it. Thus, I paraphrased posts (cf. Zimmer, 2010): I substituted names of places for similar ones, professions for other ones within the same field as the original, and the order of sentences was changed, as long as the sense of the content was not thereby lost.

4.6.1. Interviewees' Data

All my interviewees had regularised statuses in Germany through their enrolment in an educational institution, work, or double Brazilian-EU nationality. They were all above 21 years of age, so they could legally provide informed consent by themselves. All were also literate; hence, they could read, understand, and sign the informed consent letter – which was written in Brazilian Portuguese. In addition to covering the research topic, data storage procedures, and my contact information, the informed consent letter explicitly informed participants of their rights during the interview and regarding the recording. These included the freedom to decline to answer questions without providing a reason, terminate the interview without justification, withdraw their participation, and request the deletion of their recording at any time.

At first, I was afraid that explicitly mentioning that interviewees could stop the interview or refuse to answer questions could give the impression that the interview would touch upon uncomfortable topics or emotions and make the interview start in a defensive tone. I decided to keep this information

explicit to comply with ethical guidelines and because I could not control what memories and emotions my interviewees would access based on my questions. Still, to avoid the interview, beginning with a defensive tone, after the person read the letter and agreed to be interviewed, I orally informed them that my questions were not deliberately thought to be "difficult" ones. Apparently, this worked well, as interviewees talked freely about their experiences.

The signed informed consent documents were kept in a drawer with a key lock. In the transcripts, names, places, and institutions were anonymised. The interview recordings, transcripts, print screens of social media interactions, and my notes were stored on a password-protected university server. Access to this server was limited to myself and a student who assisted with transcriptions for this project. Before gaining access to the audio recordings, this student was informed about ethical and data protection considerations and signed a non-disclosure agreement.

4.6.2. Paper 2: Academic Research Using Social Media Texts Produced by Migrants Can Maintain the Primary Ethical Imperative of "Doing No Harm"

Summary: In Paper 2 (Dedecek Gertz, 2023a), I discuss ethical aspects of collecting quantitative textual data for the topic modelling analysis. I do so by discussing nine points to analyse information flows and the contexts in which they happen. This nine-point heuristics was proposed by Helen Nissenbaum (2010) to assess ethical issues when researching new technologies. She contends that the data collection and, later on, dissemination must be appropriate to the context and comply with social norms or expectations of how that data is expected to be handled. Here, the contexts of data collection (Facebook groups), dissemination (peer-reviewed academic papers), and the Terms of Services of Facebook are central. I discuss my data collection, analysis, and dissemination based on Nissenbaum's (2010) nine-point heuristics, and I contend that academic research based on quantitative textual data collected on social media fulfils ethical measures towards the producers of that textual data (migrants and aspiring migrants, in my case).

Dedecek Gertz, H. (2023). Collecting migrants' Facebook posts: Accounting for ethical measures in a text-as-data approach. Frontiers in Sociology, 7, 932908. https://doi.org/10.3389/fsoc.2022.932908

Collecting migrants' Facebook posts: Accounting for Ethical Measures in a Text-as-Data Approach

4.6.2.1. Introduction

The analysis of migrants' media use can produce valuable knowledge about decision-making and networks in migratory context. Methodologically, the interest in researching migrants' media use has added to the complexity of carefully handling migrants' data, and obtaining informed consent for research purposes. Accordingly, the ethics of collecting migrants' digital traces has been gaining attention, particularly among qualitative researchers (Leurs, 2017; Siapera and Creta, 2020; Sandberg et al., 2022b). Most of these ethical reflections agree that, because of the vulnerability of certain migrant populations, researchers need to go beyond procedural ethics and care for the safety and well-being of researched subjects.

Quantitative studies based on migrants' digital traces generate different problems relating to "profiling, informed consent, data sharing processes and ethical approval and data management procedures" (Mahoney et al., 2022b, p. 230). As there are fewer studies about migration applying topic modeling to social media data created by migrants, there are correspondingly fewer analyses on the ethics of collecting and analyzing such quantitative data. Mahoney et al. (2022b, p. 232) analyzed large textual datasets from migrants on Twitter, collecting only "explicitly public social media data". They contend that ethical issues of such data collection become more intricate the more social media develops and the identification of public and private spaces becomes more complex (Idem, p. 235). Elsewhere, they carefully commend that datasets coming from migrant Facebook groups require consent, while collecting migrants' Twitter data would be closer to observing public behavior and therefore less problematic (Mahoney et al., 2022a; p. 339–340). A similar recommendation comes from Sandberg et al. (2022a).

As detailed on the section "Comparative evaluation based on studies using Facebook posts and a topic modeling approach," studies using large amounts of Facebook texts tend to acknowledge that

their methodological procedure can be liable to ethical critique, but do not analyze that ethical critique systematically. The most common solution for this dilemma tends to be to collect data that is interpreted as public or with fewer privacy constraints, such as posts from profiles with less privacy settings. By discussing the collection of large textual datasets posted by migrants on a social media platform, or Facebook more specifically, this paper systematically analyses the ethical decisions of an empirical research situation and argues in favor of research in digital humanities and social sciences. Against that background, this paper asks "how to justify the collection and analysis of migrants' digital traces for academic research purposes?" The discussion emerges from the procedures of collection and analysis of quantitative textual data from Facebook groups of migrants and aspiring migrants. Here, the outcomes of that empirical analysis are put in the background, giving way to a detailed reflection on the choices and consequences of the methodological decisions.

Following, first, the context and research design of the empirical base study is outlined. After that, the ethical issues and corrective measures are discussed guided by the heuristics of "contextual integrity" of information flow within new technologies proposed by Nissenbaum (2010) and as applied by Zimmer (2018). Although Nissenbaum presented her heuristics over a decade ago, they are based on broader concepts which make them comprehensive and abstract enough to be applied to different analytical situations. So much so that the heuristics are appropriate to discuss different empirical topics, such as data breaches from a dating app (Zimmer, 2018) and migrants' posts on Facebook groups. The paper summarizes the ethical boundaries of automated data collection, as encountered in the empirical base study conducted by Helena Dedecek Gertz and Florian Süßer (henceforth "we", "our", or "the authors") and presents our suggested measures to comply with migrants' data protection, adding up to the arguments for a reflexive and critical data collection based on ethics of care (Leurs, 2017). The central argument is that, although acknowledging that collecting textual data from social media users without their explicit consent is rightfully prone to critique, researchers, as a community, can care for migrants' anonymity throughout the process of research by making careful decisions to this end and by asking adequate research questions.

4.6.2.2. Context of the Data Collection

The data that motivates the discussion here derives from a research project that aimed at identifying the roles of media in migratory pathways relating to education. Empirically, the project focuses on media uses of Brazilians who live in Germany or who aspire to do so. The project was based on a mixed-methods approach, consisting of a qualitative content analysis of interactions in migrant Facebook groups, qualitative interviews with participants of these groups, and a topic modeling of posts made in the groups. The ethical discussion in this paper derives from the empirical paper that applied the topic modeling approach to establish the prevalence of topics relating to education in debates among Brazilian migrants in Facebook groups. The outcome reveals that vocational education and training (VET) and language learning for certification purposes are the most relevant education-related topics debated among these migrants.

The background of that project is based on research that shows that, in the context of migration, formal education can represent a means to secure residence status, access the job market, and acquire certificates that contribute to building migrants' cultural capital (Waters, 2015). People who migrate to pursue educational pathways contribute to the transnationalization of educational institutions in the country of destination. Transnational education (TNE) is more often approached in

research about higher education; nevertheless, migrants from families with low income and low educational attainment are also actors in TNE. Fürstenau (2019) and Carnicer (2019) have described how Brazilian women from such backgrounds migrate to Germany first as Au Pairs, then complete VET (which is usually remunerated in Germany), and thereby secure both employment and stable residence status.

Based on that background, the topic modeling (the empirical analysis that motivates this paper) had two assumptions. Based on the findings presented in the previous paragraph, one is that access to education can be a motivator for migration across socioeconomic classes, i.e., not only among migrants who can afford the pursuit of a university degree or educational exchanges abroad. The other assumption is that information exchanges through social media platforms are important for migrants' decision-making (Dekker et al., 2018; Richter et al., 2018). Although studies in this direction are mostly conducted among migrants who fled war and conflict using their smartphones to evaluate the safest options to reach their countries of destination, information and communication technologies (ICTs) and exchanges with latent ties (Haythornthwaite, 2002) are relevant in other migratory contexts, such as those associated with educational aspirations (Jayadeva, 2020). Based on these two assumptions, we contended that people cross borders, regardless of their socioeconomic background, following educational projects and that digitally mediated communication, particularly through social media, plays a role in decision-making for these projects.

Specifically for the Brazilian case, similar findings confirm the relevance of social media information exchange in contexts of migration. Brazilian migrants have been exchanging information on social media for at least a decade when the most used platform among them was Orkut (Schrooten, 2012; Oosterbaan, 2013). Nowadays, Brazilian migrant groups on Facebook groups have taken on that role in these online interactions (Foletto, 2018). Most of these studies on Brazilian migrants on social media describe its uses for solving bureaucratic issues, job-seeking, and also for organizing social gatherings. Educational aspects remain under-commented, although education is a means to fulfilling migratory pathways, and it can become part of migrants' lives once they are established in the country and their children start attending school. While it is known that migrants who wish to pursue university degrees abroad use social media to facilitate that process (Jayadeva, 2020), the role of media use for achieving other educational levels, such as VET or schools for migrants' children, remains understudied.

Against that background, the quantitative textual analysis that motivated this ethical reflection reveals that topics relating to education, VET, and language-learning in particular, are among the most prevalent ones in information exchanges on Facebook groups of Brazilians in Germany. That conclusion was only possible through a topic modeling approach, which demanded the collection of quantitative textual data produced by migrants in the context of a social media platform. The following sections reflect on the ethics of collecting and analysing this data produced by individuals who are potentially vulnerable due to their legal status in Europe. Following, the methodological decisions that were ethically critical for this analysis are detailed; after that, we analyze our decisions based on the heuristics to guide ethical decision-making in projects involving ICTs proposed by Nissenbaum (2010) and commented on by Zimmer (2018). We conclude by arguing that, while researchers strive to comply with anonymization and data security, the lack of transparency from

social media platforms can be harmful to critical, independent, and public-interest-oriented research, which in turn can impair the development of knowledge about social phenomena.

4.6.2.3. Methodological Decisions

In this section, we first discuss the choice of Facebook as a data source followed by an overview of ethical discourses in research about migrants' social media use and digital data collection. After that, we present our rationale for choosing Facebook groups adequate to answer our research question, explain our procedure of textual data collection, and argue in favor of a topic modeling approach to analyze the data.

4.6.2.3.1. Creating a Facebook Account for Research

In migration research, Facebook has been mostly used as an empirical data source in qualitative approaches. Some accounts based on interviews about Facebook use among migrants (Leurs, 2014; Dekker et al., 2018) are exempt from a discussion such as the one we propose here, as informed consent can be acquired. As Leurs (2017) observes, however, researchers must still be careful with publishing digital traces of migrants, such as print screens or detailed information about certain media use patterns, even though interviewees themselves might have agreed to provide such data. That position is aligned with a way of arguing for a careful collection, management, and analysis also of quantitative textual data from Facebook, as "informed consent does little to protect participants" (Brown et al., 2016, p. 855) and researchers share the responsibility of caring for research participants' privacy and anonymity at all situations. Following such principles of care and transparency towards research participants, one of the authors created an account on Facebook.

The Facebook profile used for research was created using the researcher's real name and with information identifying her as a researcher. Some friends and acquaintances added her and she joined five groups of her private interest (university and academic research related). She "liked" 76 public pages, most of them from organizations of Brazilians in Germany, but also some university profiles and a few of private interests. Finally, she joined 43 groups of Brazilians in Germany. Although she created this profile for research purposes, it is not a dummy account used simply to collect data because she is clearly identified, with her name and picture, and with information signalling her as a researcher at Hamburg University. Her university e-mail and the website leading to the university's website, where she figures as a researcher, are also available on the page, as to make public other forms of contact with her (e-mail and telephone number on the faculty website) and to have some proof of her identity (the link to the website). Indeed, one person with whom the researcher got in touch through Facebook to ask for an interview for the qualitative part of the study, replied to her via email— and not through the Facebook chat where she sent out the message requesting the interview—to "be sure about the identity of the person who contacted me", as the potential interviewee explained. Also, Facebook allows users to add free text to their profiles. In this space, she wrote her position at the university and the name of the project she works for and informed me that the profile was created for research purposes. This information was written in Portuguese, German, and English. Apart from this research-related information, there are traces of her personal interests (university groups and "likes" on pages) and information about her background (the town where she was born, where she currently lives, and her educational pathway).

4.6.2.3.2. Contextualizing Migrant Facebook Groups Selected for Research

This section contextualizes the space of our data collection, namely Facebook groups gathering Brazilian migrants in Germany. First, we define these groups. Afterward, we describe the rationale behind the choice to analyze groups of Brazilians in Germany and the data collection procedure. Finally, we argue in favor of our decision to work with quantitative textual data in this context accounting for the research quality and ethics of our decisions. This section is already part of the contextual integrity analysis. Nissenbaum (2010) proposes nine points for the decision heuristics (see section "Discussing ethical decisions of research with migrants' textual data"). The second point of the heuristics is to identify the prevailing context of the information flow. As this section does exactly that, namely giving background information about the source of the data, this section substitutes the section "Prevailing context".

Facebook groups of Brazilians in Germany gather registered users with similar interests, locations, jobs or professions, and aims. Some of these groups are public, meaning that their content can be seen by any other user logged on to Facebook. Other groups are private and might request users to fill up a form upon entry in order to be accepted by the administrators. Posts and comments on these groups are visible to all participants. These two types of groups can be found using Facebook's search tool and were included in this collection. There are "secret groups" for which one has to be invited to participate—there are none of these types in the dataset.

Although it has been argued (e.g., Naughton, 2022) that the use of Facebook has been declining, Brazilian migrant groups are still active and diverse, ranging from the general "Brazilians in Germany", to the location-based groups, like "Brazilians in [German city]", to specific groups like "Brazilian women in Germany", to work-related groups, such as "Brazilian IT professionals in Germany", "Brazilian Au Pairs in Germany", aim-related groups "Ausbildung in Germany from Brazil", and other interest groups "Gardening for Brazilians in Germany". Finally, Brazilian migrants' fondness for social media groups is not new, as it has been reported already over a decade ago (Oosterbaan, 2010; Schrooten, 2012), nevertheless its uses for educational projects have not been studied. The paid VET programmes in Germany have the potential to attract migrants who are excluded from tertiary education in their countries of origin, as is the case of some Brazilians (Carnicer, 2019; Fürstenau, 2019)—hence the choice to focus our research on Germany as a country of destination. As to the decision to focus on Brazilians, the best-described case of migrants from low income backgrounds pursuing tertiary education in a European country seems to be that of Brazilians. Similarly, the well described case of Brazilians using social media to establish migrant networks in Europe (Oosterbaan, 2010; Schrooten, 2012; Foletto, 2018) lays the grounds for choosing that particular nationality.

To select relevant groups for the empirical research, first Facebook was searched for the terms "Brazilians" and "Germany" (in Portuguese). After that, groups relating to migration were selected, and these were once again filtered according to their level of interaction: using the information provided by Facebook itself, the author joined 43 "active groups", i.e., groups with at least a thousand participants and three posts made in 1 week. From that total, 30 groups required participants to fill up a form upon entry to inform group managers about their interest in joining the group. We used the forms to inform the managers about our research interests, data collection, and anonymization measures. To perform the analysis, we used the structural topic modelling (STM) approach (Roberts et al., 2019), which allowed us to correlate the posts with the groups they came from. In this context,

a topic is "a mixture over words where each word has a probability of belonging to a topic" (Roberts et al., 2019, p. 2). The outcome of the procedure reveals that among the seven most relevant topics, two are related to education, particularly to language learning and accessing vocational education and training in Germany. Across all groups, there is some mention of one of these topics, meaning that in a group gathering Brazilians in a specific city (but not explicitly related to education) or in a group gathering Brazilians who wish to pursue a degree in Germany, there is some mention of both education-related topics.

4.6.2.3.3. Automated Textual Data Collection Using a Web-Scraper

The empirical data for this analysis is textual and comes from posts and comments made by group participants. We solved the issue caused by the "APIcalypse" (Bruns, 2019) by automating our data collection using the WebDriver API *Selenium*, which allows us to automatically control a web browser. The scraper logs into the researcher's Facebook account and systematically goes through the groups that we could join. All posts, comments, and sub-comments were copied to a local file system. *Selenium* controls the web browser as if a human is sitting in front of it: all data obtained is exactly the same data available to the human Facebook user. No clicking behavior or friends list is collected, for instance. A human could do the same procedure, however, with a much bigger investment of time and effort. Although we could have set up a Facebook Developer account that would allow us to use Facebook's API, the process using *Selenium* is not subject to Facebook's Graph API which includes rate limits. Summing up, automation simply sped up the process of data collection.

4.6.2.3.4. Reliability, reproducibility, and ethics in migrants' textual data collection

For the automated data collection, we considered whether and to what extent we would be violating terms of use from a giant social media company and if that would make us liable to a legal process. In that regard, we argue with those who stand for critical research (Hargittai & Sandvig, 2016; Bruns, 2019), and we support that independent data collection for social science and digital humanities research is rules-based and can comply with user privacy. Still, that does not solve the issue of the impossibility of gaining consent from all users when conducting such large data collection.

There are central differences between big techs' data extractivism and our procedures for data collection, storage, and analysis. These differences are due to the scientific interest, access, and use of the data. Regarding our data gathering, we, as researchers using a Facebook user's interface with Selenium, only had access to what other individual Facebook users also have. In that sense, we could control what information was collected. As for the storage procedure, the textual data was saved on a file shared only between the two authors of the empirical paper and that could only be accessed through a closed network. The applied "text as data" approach (Grimmer & Stewart, 2013) follows a standardized and, theoretically, reproducible methodology while complying with measures for data protection and having no financial profit. Nevertheless, because data from Facebook groups can be erased, entire groups or Facebook itself can cease to exist, and the platform can change its access rights, a reproducibility test is unlikely to result in the same *corpus*. Hence, such a test is not feasible.

It could be argued that there are other ways to research media use for educational projects on migration that would not demand a large textual data collection, therefore sparing this paper's discussion. That critique can also be directed to the nature of such quantitative textual data from

social media: these Facebook posts are not connected to traits that characterize social positionality (e.g., socioeconomic background, educational attainment), which does not allow for an analysis that accounts for inequality and discrimination. In that sense, we agree with Leurs' critique (Leurs, 2017) that such procedures assume a "detachment from a discrete, knowable world" and tend to "naturalize the politics of knowledge production" (p. 134). However, because our empirical research question could only be answered with quantitative textual data focused on the prevalence of interactions involving education in migrant Facebook groups, the lack of such background information about group participants is not critical. Our topic modeling study is part of a larger project that includes a qualitative content analysis of the posts made in these Facebook groups and a digital ethnography, for which 30 group participants were interviewed. Following the logic that "all quantitative models of language are wrong—but some are useful" and that topic models need validation (Grimmer and Stewart, 2013, p. 269–270), apart from providing new research outputs by themselves, these qualitative approaches were used to validate findings from the topic modeling.

Finally, we do not treat data as "public" (Zimmer, 2010): we did not reproduce posts word-by-word, both as an ethical measure and because that was not useful for answering our empirical question. As a final compliance measure to counterbalance the impossibility of getting consent from group users and to reassure that anonymity is preserved, the empirical paper was presented to group managers and opened to their critique.

4.6.2.4. Discussing Ethical Decisions of Research with Migrants' Textual Data

After contextualizing the study that generated this debate in the first section and describing methodological decisions in the previous section, we move on to discuss ethical decisions of our research design based on Nissenbaum's (2010) nine points for a contextual integrity analysis when using emerging media technologies for research. We also rely on ethical guidelines for internet research elaborated by the Association of Internet Researchers (AoIR) (franzke et al., 2020, p. 9-23).

Nissenbaum's nine points for contextual integrity are the following:

1. Describe the new practice in terms of its information flows (see our section Information flows).
2. Identify the prevailing context in which the practice takes place at a familiar level of generality, which should be suitably broad such that the impacts of any nested contexts might also be considered (section Prevailing context referring to section Contextualizing migrant Facebook groups selected for research).
3. Identify the information subjects, senders, and recipients (section Information subjects, senders, and recipients).
4. Identify the transmission principles: the conditions under which information ought (or ought not) to be shared between parties. These might be social or regulatory constraints, such as the expectation of reciprocity when friends share news, or the obligation for someone with a duty to report illegal activity (section Transmission principles and its subsections).
5. Detail the applicable entrenched informational norms within the context, and identify any points of departure the new practice introduces (section Detail the Entrenched Information Norms and its subsections).

6. Make a prima facie assessment: there may be a violation of contextual integrity if there are discrepancies in the above norms or practices, or if there are incomplete normative structures in the context to support the new practice (section Prima facie assessment).
7. Evaluation I: Consider the moral and political factors affected by the new practice. How might there be harms or threats to personal freedom or autonomy? Are there impacts on power structures, fairness, justice, or democracy? In some cases, the results might overwhelmingly favor accepting or rejecting the new practice, while in more controversial or difficult cases, further evaluation might be necessary (section Evaluation I).
8. Evaluation II: How does the new practice directly impinge on values, goals, and ends of the particular context? If there are harms or threats to freedom or autonomy, or fairness, justice, or democracy, what do these threats mean in relation to this context? (section Evaluation II).
9. Finally, on the basis of this evaluation, a determination can be made as to whether the new process violates contextual integrity in consideration of these wider factors (section Final determination). (Nissenbaum, 2010; p. 182–183).

In what follows, we address these items proposed by Nissenbaum thereby analyzing the ethical issues of collecting migrants' digital traces for academic research.

4.6.2.4.1. Information Flows

There are at least nine information flows on Facebook:

1. The first one is from the users to the company "Facebook" (clicking patterns, location, cookies).
2. The second one is the flow of information about the author who created the profile from the Facebook service to search engines and other non-users (if the profile is indexed on Google, for instance).
3. The third one is non-textual information from the profile owner to other users registered on Facebook (such as "likes" on profile pages and participation in groups).
4. The fourth one is from the private posts and friends list on the personal profile of the author who created the profile to their friends.
5. The fifth one is composed of posts written on private groups (groups, for which the administrator has to grant access to the requester), which can only be read by other group participants.
6. The sixth one is composed of posts written on public groups (groups, whose content can be seen by people who are not participating in it), which can be read by anyone who opens the group link.
7. The seventh one is replies to questionnaires elaborated by group administrators, as a requirement to be accepted in certain private Facebook groups.
8. The eight one is direct messages exchanged through the Facebook chat (which was used to contact potential interview partners for the qualitative study), i.e., a two-way flow between the profile owner and another person.
9. The ninth one is multiple-way direct messages exchanged among a closed group through the Facebook chat.

From this list, only the flows described in numbers 4 and 9 were not part of the interactions of the author who owns the profile, as she did not post anything on her private profile and did not send direct messages to multiple people. We did not create a dummy profile. Although the profile was created for research purposes, the owner was clearly identified on it and she did not try to conceal her intentions to group administrators when filling in questionnaires requesting to join the groups. By running the web-scraper, we did introduce a tenth information flow from the groups to our closed database, however our data did not include users' personal information. Finally, as our database is not public, the raw information flow is kept within the circuit of Facebook users (including the author who has a Facebook profile) and will be destroyed as soon as the research is concluded. One could argue that, once the analysis based on this data is published, there would be the eleventh flow of information toward the general public, nevertheless, that information is anonymized, filtered, and analyzed based on a specific research question. That flow is not of raw data; thus, it is a new circuit of information flow (from the publisher to its readers, etc.).

4.6.2.4.2. Prevailing context

The prevailing context relates to the social context in which data is gathered (Nissenbaum, 2010, p. 149). For this paper, the prevailing context is that of Facebook groups of Brazilian migrants in Germany, as described particularly on section Contextualizing migrant Facebook Groups selected for research. This includes, among other aspects, the high level of use of Facebook among Brazilian migrants for networking and the opportunity of migrating to Germany to pursue tertiary education.

4.6.2.4.3. Information subjects, senders, and recipients

In the context of our data collection, "information subjects" are the Facebook users who interact by writing posts with a question or a piece of information or by commenting on those posts in groups of Brazilians in Germany. People who participate in the groups but never had any interaction on them are not our information subjects. Within these information subjects, the senders are those who pose questions or share other kinds of information on the groups and those who reply to such questions. The recipients are all group members who read the interactions (either group participants or not, in the case of public groups). Because our dataset is not publicly available, we did not expand the role of recipients to the general public.

4.6.2.4.4. Transmission Principles

Transmission principles are rules that constrain the information flows (Nissenbaum, 2010, p. 145). In our case, there are three such sets of rules:

1. Because most of the information flows happen within a context, controlled by a private company, Facebook's Terms of Service (ToS) are one of the regulators.
2. Because the data was collected in Germany, the General Data Protection Regulation (GDPR) from the European Union is a second regulator.
3. Because the collected data is part of an academic research, academic research ethics guidelines (e.g., franzke et al., 2020) apply.

Following, we comment on the central guidelines from these three sets of rules.

4.6.2.4.4.1. Facebook ToS

Facebook prohibits scrapping, but not manual data collection. We could have done the same procedure manually and acquired the same data however securing anonymity here would have been even worse because the person manually collecting the data would have seen what each group participant has written. The company's decision to prohibit scrapping after the Cambridge Analytica scandal is probably useful in constraining other companies to harvest and sell personal data that could be used for skewing public opinion on matters such as migration. However, that decision is harmful to social research (Sandvig, 2017; Bruns, 2019; Mancosu and Vegetti, 2020).

4.6.2.4.4.2. GDPR

GDPR recognizes that "by coupling information from registries, researchers can obtain new knowledge of great value… within social science, research on the basis of registries enables researchers to obtain essential knowledge about the long-term correlation of a number of social conditions such as unemployment and education with other life conditions". As GDPR defines personal data as "any information relating to an identified or identifiable natural person" and as Facebook posts always appear associated with a profile, these texts could be interpreted as personal data. However, GDPR highlights that "information that identifies an individual … may be personal data if you are processing it to learn something about that individual or if your processing of this information will have an impact on that individual". In this sense, the data we collected is in a gray zone: it is being used neither to learn something about an individual in particular nor to undertake actions that would have any foreseeable impact on an individual. In fact, we use these data to describe the social world, more specifically, digital information exchange relating to transnational education and migration.

Kotsios et al. (2019, p. 6–10) provide further instructions to assess the consequences of GDPR's seven principles relating to the processing of personal data in social media research. We present these seven principles and associate them with our case based on the comments by Kotsios et al. (2019) and on our experience with the empirical data described in the previous paragraphs:

1. Lawfulness, fairness, and transparency: Processing must be lawful, fair, and transparent to the data subject.

Because Facebook itself does not provide "transparent data access to critical, independent, public-interest research" (Bruns, 2019, p. 1561), we cannot fully comply with this point. Facebook managers are likely aware that, even after closing their API, private companies still use web scrapers as well as researchers. The issue is that now the procedure is made opaque both to researchers and, as a consequence, to research subjects as well. We have taken the measures in our power to secure fairness and transparency as to our research purposes and data management standards.

2. Purpose limitation: Data must be processed for the legitimate purposes specified explicitly to the data subject when collected.

Our data collection was conducted for public interest purposes, not for profit (Kotsios et al., 2019; p. 9-10), as is the case of private companies that also use web scrapers. The data we collected is going to be used solely for this research purpose and with our previously determined research question.

3. Data minimization: Only as much data as absolutely necessary for the purposes specified must be collected and processed.

We had a defined timeframe for data collection (from December 2020 to January 2021) and we collected strictly data that was needed to answer our previously determined research question.

4. Accuracy: Personal data must be kept accurate and up to date.

Once the collection timeframe was closed, the texts of collected posts were not edited content-wise. For the topic modeling analysis, we deleted stop-words (e.g., pronouns and conjunctions), diacritics (e.g., the letter "ç" or "ã"), and converted typical internet shortcut words into their traditional format (e.g., in Portuguese "as well" means "também" and is often written in online interactions as "tb" or "tbm"). This manipulation does not change the accuracy of posts' content. Instead, it serves to raise the accuracy of our topic modeling results.

5. Storage limitation: Personal identifying data can only be stored for as long as necessary for the specified purpose.

The data will be destroyed as soon as the research project is finished.

6. Integrity and confidentiality: Processing must be done in such a way as to ensure appropriate security, integrity, and confidentiality (e.g., by using encryption).

We have complied with this as described in section Methodological decisions.

7. Accountability: The data controller is responsible for being able to demonstrate GDPR compliance with all of these principles.

As data controllers, we can comply with this measure.

As demonstrated, research based on social media texts can strive to comply with GDPR measures. However, social media companies like Facebook do not provide transparent information about their algorithm functionality and no longer facilitate data collection for academic research purposes, which puts researchers in a gray zone regarding GDPR.

4.6.2.4.4.3. AoIR Guidelines

AoIR guidelines (franzke et al., 2020) are based on similar concerns as GDPR's, such as securing data privacy. However, AoIR guidelines are not laws but rather stances for decision-making recommendations for scientific research.

Instead of providing a panacea, AoIR guidelines emphasize researchers' ability to make sound judgments, which most importantly protect research subjects and researchers themselves (p. 23). These were the main guidelines we followed in our decision-making described at the beginning of the paper.

There is a clash: We are complying with AoIR, and we are in a gray zone of the ToS and GDPR. Our compliance rationale for these three constraints in information flow (ToS, GDPR, and AoIR) aligns

with the conclusions reached by Mancosu and Vegetti (2020), who claim that collecting textual data from Facebook pages can be "ethically and legally (GDPR) acceptable" (p. 9), but it might be in conflict with Facebook's ToS.

4.6.2.4.5. Detail the Entrenched Information Norms

Such norms "describe the existing practices that prevail in a given context, encompassing the flows of information, transmission principles, and expectations of the actors involved" (Zimmer, 2018, p. 8). In our context, there are three groups of actors involved: migrants and aspiring migrants who participate in the groups, the group administrator(s), and the researchers. Because the interests of a company are divergent from those of these actors, Facebook is not accounted for here. Its entrenched information norms-related expectations can be interpreted according to the ToS described in the section Facebook ToS.

4.6.2.4.5.1. Migrants and Aspiring Migrants' Expectations

As highlighted in the section "Methodological Decisions", migrants have different reasons to join social media platforms and exchange information on these platforms. The entrenched information norms they have, however, are likely to be similar, namely that other humans will read what they have posted on the groups. There is an expectation that these other humans probably share similarities with them: be Brazilian migrants or aspiring migrants in Germany, have some relationship with Brazil and/or with Germany. There is also an expectation that the questions and other shared information on these groups will be replied to by these other humans who are likely to hold valuable information that can help solve the issue being asked about. As these groups are formed by over a thousand participants, it is not expected that all participants see the messages and reply to them, as well as there is an understanding that there are participants who are lurking in these groups (i.e., group participants who read the interactions but do not write). As these groups are highly populated and administrators cannot guarantee the identity of those who access groups, participants are likely to be careful with sharing personal information, and it is not uncommon that migrants anonymize themselves by not using their real names on social media. Finally, some public groups even accept the presence of company profiles that promote their services.

4.6.2.4.5.2. Group Administrators

Group administrators of public groups are likely to hold fewer entrenched information norms than administrators of private groups. The former is probably interested in having fewer moderation duties and possibly being recognized as the administrator of a large group highly relevant for the information exchange of a specific population (e.g., for the case of migrants in a specific town or migrants looking for education and employment in specific areas). For these administrators, which users participate in the group and for what purposes is probably irrelevant, as long as participants comply with their rules. The latter type of administrator is probably interested in having more control over who can access the group. Based on the questions from entry forms, their expectation is to filter participants who are likely to fuel disrupting discourses and those interested in using the groups to sell products and services. These administrators were informed about our interests as researchers.

4.6.2.4.5.3. Researchers

Our expectation was to observe migrants and aspiring migrants' textual interactions in a non-controlled situation. In doing so, we wanted to analyze the role of information exchanges in migratory projects related to education—or, how education projects relate to migration. More concretely, we expected to understand what migrants and aspiring migrants debate about education in these groups and to determine the relevance of education-related topics in these information exchanges. From the perspective of other group participants, as the researcher who owns the profile did not interact in the groups, she could be interpreted as a lurker.

As the author who created the profile is clearly identified on Facebook and as we did not harvest information such as location or other sensitive information that users may have made available on their personal Facebook profiles themselves, we did not disrupt users' expectation of being in a group with other people they do not know. In the eyes of these participants, we as researchers could be seen as any other lurker. As we did not expect to breach anonymity or to promote services or products, nor to do harm to participants, we complied with entrenched information norms of group administrators—and with ours as researchers. Furthermore, administrators of closed groups were explicitly informed about our expectations. Our results will also be shared with them in order to reassure them that we have secured that no group participant can be deanonymized. Finally, as we are not making our data publicly available, we are not disrupting the informational norms of any actor.

4.6.2.5. Prima Facie Assessment

Nissenbaum (2010, p. 182) contends that "a breach of informational norms yields a prima facie judgment that contextual integrity has been violated because presumption favors the entrenched practice". Here, we land in a gray area. Considering that these groups are highly populated and therefore, participants are careful with the information they publish in the group, that private groups' administrators were informed and allowed us to participate, and we did not go against the expectations of public groups' administrators, we could argue that no informational norm was breached. Nevertheless, if we consider that the expectations of group participants were to exchange information, not to participate in a research project, then an informational norm was breached, particularly in relation to group participants and public groups' administrators. Still, our academic publication opens another information flow because we have processed and analyzed the data, and therefore, we are not sharing data that is part of the information flow described in part 4.1. In that sense, because there are two information circuits (the one among Facebook users only and the one derived from the publication of a paper based on the Facebook posts), and the data of one is not shared with the other, the situation is more complex and the entrenched information norms from the second circuit should also be assessed. Shortly, in that second circuit, peer-reviewers and the academic readership would probably like to have access to the data from the first circuit in order to assess the reliability of our analysis. However, if we do that, we would merge the two circuits of information and then doubtlessly breach contextual integrity by making our data public.

4.6.2.6. Evaluation I

Considering that gray zone in relation to migrants' privacy and the breach of Facebook's ToS, we assume there is potential for a violation of contextual integrity and therefore, proceed to the first evaluation step to assess the gravity of the potential violation (Nissenbaum, 2010, p. 182).

Based on previous studies investigating migrants' use of social media (e.g., Dekker et al., 2018; Jayadeva, 2020), there is no evidence that such a topic of investigation might have caused harm to migrants. Researchers in this field have followed ethical procedures of anonymization and their research questions do not put the groups researched by them under any particular doubt or surveillance from authorities or other actors of migration. In that sense, there is no evidence that academic research about migration and digital media use has ever caused migrants to lose control over their information. Similarly, our proposal accounts for such security measures. In this sense, we are "doing no harm", a primary ethical imperative (Fuchs and Unterberger, 2021).

4.6.2.7. Evaluation II

The second evaluative step asks to assess how the new practice directly impinges on the values, goals, and ends of the particular context (Nissenbaum, 2010, p. 182). If we consider that, although one of us was participating in the groups not for the interest of exchanging information, but rather in analyzing it, then one could argue that we are not aligned with the goals of the context. However, as the person participating in the groups was completely identified, we treated the data carefully, we did not interfere in any discussions in the group, we did not collect private information, and users are not naive about participating in a group with over thousand unknown people, hence not sharing sensitive information and sometimes anonymizing themselves with aliases, one cannot say that we bluntly disrupted the values of the groups or of participants we have researched.

A model to assess factors affecting consent suggested by McKee and Porter (quoted in Elgesem, 2015, p. 15–16) and adapted to research with social media data by Elgesem (2015) helps to think about consent and anonymity within this gray area. What is helpful in that model is that it is based on scales, not on absolute statements. Assessing these scales can inform whether there is a requirement to obtain consent or if it is important to have consideration for consent (Elgesem, 2015; p. 18–19) and for the impossibility of obtaining it. The scales account for whether the data is rather private or rather public, and whether there are rather high or rather low issues involving topic sensitivity, degree of interaction of the researcher with subjects, and degree of vulnerability of subjects. For our case, the data collected are not personal communications between a small group of people, yet it was posted in a specific group of Brazilian migrants to which we had access, hence on this scale, we would still be in a gray area. Regarding topic sensitivity, we have a clear research question focused on transnational educational projects, which is not a topic of particular concern especially because we are not closely interacting with the researched subjects. Although remembrance of the experience of shattered educational aspirations and projects, for instance, can cause distress, our empirical research question focuses on what general topics are discussed in these groups. Furthermore, as we are not requesting group participants to access memories or share plans with us, i.e., we have a very low level of interaction with subjects, both our topic and our degree of interaction imply a comparatively low requirement of consent. Regarding the last factor, the subjects' vulnerability, we must consider that we are researching migrants and aspiring migrants whose legal status is unknown to us. Again, we go back to our research question to judge whether there is a rather high or low requirement for consent.

Differently from investigating migrants who use social media to inform their pathway to claim asylum and might have to resort to irregular practices for border crossing (Dekker et al., 2018; Fischer and Jørgensen, 2021), our research question relates to an issue that requires migrants to have a regularized status in the country, as without a residence permit, they cannot enroll in tertiary educational institutions. However, the situation is different for children and teenagers, who can access schools even though their parents might not have a regular migratory status in Germany. The possibility of inflicting direct psychological harm through our research topic is also low, as we did not interact with group participants. The possibility of inflicting indirect harm based on the outcomes of our research is also low, due to the focus of our research question in migratory projects involving education.

4.6.2.8. Comparative Evaluation Based on Studies Using Facebook Posts and a Topic Modelling Approach

This section comments upon other empirical research based on a topic modeling approach that also used data collected on Facebook. At the time of writing, to the best of our knowledge, there is no study using migrants' posts based on such an approach. The focus of this section is on other researchers' solutions and ethical justifications for data collection on Facebook regardless of the empirical topic of the studies. This overview reveals researchers' concern about the ethics of collecting such data but also an apparent avoidance of discussing these concerns in depth, perhaps either due to the earlier facilitated access to collecting Facebook posts (before the API's closure) or due to implicit perceptions of what public data is.

The discussion presented in this paper could have been spared if we had followed a less troublesome approach to data collection. An option could have been recruiting migrant Facebook users to participate in the research and requesting them to sign a consent form, as Verheijen and Stoop did for their linguistic analysis among Dutch speakers (Verheijen and Stoop, 2016, p. 249–258). They analyzed posts made only by these subjects who explicitly consented to have their posts collected. That would hardly be an option to research migrant Facebook groups. The reason for that is twofold: first, we could not force participants to post in the migrant Facebook groups, hence, if a participant did not post at all, we would have no data; and second, had we recruited participants with a high rate of posts, we would be cherry-picking the data since there is no evidence that most group participants have a high posting rate. Furthermore, even if we maximized or minimized demographic differences of such hypothetical participants, we would still have a non-representative sample because we do not know exactly what are the socio-economic characteristics of regular participants of these migrant Facebook groups. Hence, Verheijen and Stoop's (2016) solution would not suit our research aim.

Although also not related to migrants' use of Facebook, other methodological solutions closer to the one described in this paper reveal similar ethical concerns and contend that they cannot guarantee anonymization despite measures taken by the researchers (Merrill and Åkerlund, 2018, p. 340), while others do not focus on discussing the data collection and storage procedures (Puschmann et al., 2020; Amara et al., 2021; Heft et al., 2022). Most of these analyses are based on "public posts" or "publicly available profiles", i.e., comments on Facebook pages of political parties and private organizations made by users who did not restrict who could view their posts. That decision seems to be implicitly presented as an ethical justification for collecting those posts. Furthermore, unlike ours, these other

studies were conducted before Facebook closed its API, hence they do not mention the harms of that restriction to research.

The restriction posed by Facebook to social researchers is an obstacle in analysing social interactions, their causes, and consequences. Still, researchers keep using that platform and other platforms owned by the same company for their data collection, due to the social relevance it has reached. If earlier research, as described above, mentioned ethical concerns in a few sentences or left these concerns implicit, the closing of access to collect Facebook data has given impulse to reflect on ethics in practices of collecting digital traces (e.g., Bruns, 2019; Puschmann, 2019). That does not mean that the trade of "closing the access to relevant empirical data" for "elaborating on the ethics of collecting that data" was worth it: ethics of research using digital data had already been brought up before the closing of Facebook's API (e.g., Zimmer, 2010) and, as digitalization increases, there is no evidence that the ethical discussion in this field would have stopped. Nevertheless, this situation promotes advancements in the ethics' discussion at the same time that it sheds light on the power that a big-tech company has over academic research and researchers, as researchers might have to consider whether they make themselves liable for prosecution or decide to investigate topics through other methodological approaches even though using Facebook would be relevant.

4.6.2.9. Final Determination

The last point proposed by Nissenbaum (2010, pp. 182–183) is the final determination as to whether there was a violation of contextual integrity and, if so, how grave this violation is toward whom and whether and how these violations are defensible. This final point is similar to our research question about how to justify the collection and analysis of migrants' digital traces for academic research.

We could have hired someone to copy and paste all posts and comments from Facebook, thereby complying with the ToS of not using an automated web scraper. The person doing this, however, would have had much more insight into who wrote what than an automated procedure. Facebook's decision to prohibit web scraper might be well-thought to avoid companies profiling users and tackling the criticism toward the company after the Cambridge Analytica scandal, nevertheless, these policies are harmful to researchers who care for ethics and anonymity—as they can make themselves liable even though they have the best interest of not exposing vulnerable populations.

In this paper, we made transparent our data collection procedure and analyzed it in the light of ethical and legal frameworks. Along with Bruns (2019) and other critical researchers of digital media, we have added up the argument that such social media platforms nowadays occupy an important role in social phenomena and thus must "provide transparent data access to critical, independent, public interest research" (p. 1561). For researchers studying migration and social media use, the lack of transparency of social media platforms implies a forced lack of control over the collected data. In turn, that also impacts migrants who could profit from critical views about digital media: research in this area can provide insights into reasons to migrate and decision-making processes supported by information exchanges on social media which can inform policies and support arguments in favor of migrants and diversity in media educational institutions, public discourses, and political spheres.

Based on the heuristic described in the previous eight points, the measures we took for the data collection through a topic modeling approach and its subsequent analysis do care for the anonymity

of potentially vulnerable group participants. On the one hand, our decision not to make the data collected from the groups freely available further secures anonymity. On the other hand, that puts us in a critical situation regarding the reliability of our data, as it cannot be shared. However, as securing data protection and anonymity of migrants who participate in these Facebook groups is more important in order to avoid harm, we decided to put more weight on that aspect than on the quality assessment of the academic community. In that sense, to some extent, securing the anonymity and data protection of vulnerable populations in academic research is a group commitment.

The collection of large textual datasets of migrants' digital traces for academic research purposes can be justified when researchers are invested in securing the collected data from anonymity breaches—by not collecting certain profiling data and by not creating another information flow by making their dataset available. The fact that academic research is guided by methodological and ethical guidelines and tends to be detached from financial profit also speaks in favor of the possibility of securing such datasets collected from migrant or vulnerable populations. In the unlikely case that researchers had an interest in selling their dataset for target advertising or political action against migration, for instance, the contextual integrity analysis described here would no longer be applicable, and multiple contextual integrity violations would have been committed. Finally, although the procedures described here could be interpreted as in a legally gray zone, no involved parts were harmed in this data collection and analysis procedure. Therefore, such research is defensible when an appropriate research question is addressed and standards are followed, as researchers have already been doing (Mahoney et al., 2022a; Sandberg et al., 2022a).

4.6.2.10. References

Amara, A., Hadj Taieb, M. A., and Ben Aouicha, M. (2021). Multilingual topic modeling for tracking COVID-19 trends based on Facebook data analysis. Appl. Intell. 51, 3052–3073. doi: 10.1007/s10489-020-02033-3

Brown, B., Weilenmann, A.,MacMillan, D., and Lampinen, A. (2016). "Five provocations for ethical HCI research," in Proceedings of ACM CHI, 7–12 May, San Jose, CA, USA.

Bruns, A. (2019). After the 'APIcalypse': social media platforms and their fight against critical scholarly research. Inf. Commun. Soc. 22, 1544–1566. doi: 10.1080/1369118X.2019.1637447

Carnicer, J. (2019). Transnational Migration and Educational Opportunities: A Case Study of Migration from Brazil to Germany. London Rev. Educ. 17, 14–25. doi: 10.18546/LRE.17.1.02

Dekker, R., Engbersen, G., Klaver, J., and Vonk, H. (2018). Smart refugees: how syrian asylum migrants use social media information in migration decisionmaking. Soc. Media + Soc. 4, 2056305118764439. doi: 10.1177/20563051187 64439

Elgesem, D. (2015). "Consent and information—ethical considerations when conducting research on social media," in Internet Research Ethics, eds D. Elgesem,

C. Ess, A. O. Larsson, M. Lüders, R. Prabhu, K. U. Segadal, et al. Cappelen Damm Akademisk/NOASP, 14–34.

Fischer, L., and Jørgensen, M. B. (2021). "Impossible research? ethical challenges in the (digital) study of deportable populations within the European Border Regime," in Research Methodologies and

Ethical Challenges in Digital Migration Studies: Caring For (Big) Data?, eds M. Sandberg, L. Rossi, V. Galis, and M. Bak Jørgensen, 141–166. London, UK: Palgrave Macmillan.

Foletto, L. (2018). Usos sociais do facebook por migrantes brasileiros na Suécia: os grupos na construção identitária. Mediação 20, 91–112.

franzke, A. S., Bechmann, A., Zimmer, M., Ess, C., and Association of Internet Researchers. (2020). Internet Research: Ethical Guidelines 3.0. Available online at: https://aoir.org/reports/ethics3.pdf

Fuchs, C., and Unterberger, K. (2021). The Public Service Media and Public Service Internet Manifesto. London: UK: University of Westminster Press. doi: 10.16997/book60

Fürstenau, S. (2019). Educational Aspirations of Underprivileged Female Migrants. An Ethnographic Case Study of a Transnational Network of Care Workers between Brazil and Germany. Germany: Zeitschrift Für Erziehungswissenschaft.

Grimmer, J., and Stewart, B. M. (2013). Text as data: the promise and pitfalls of automatic content analysis methods for political texts. Pol Anal. 21, 267–297. doi: 10.1093/pan/mps028

Hargittai, E., and Sandvig, C. (2016). "How to think about digital research," in Digital research confidential: The secrets of studying behavior online, eds E. Hargittai and C. Sandvig. Cambridge, MA: The MIT Press, 1–28

Haythornthwaite, C. (2002). Strong, weak, and latent ties and the impact of new media. Inf. Soc. 18, 385–401. doi: 10.1080/01972240290108195

Heft, A., Pfetsch, B., Voskresenskii, V., and Benert, V. (2022). Transnational issue agendas of the radical right? Parties' Facebook campaign communication in six countries during the 2019 European Parliament election. Eur. J. Commun. 026732312211001. doi: 10.1177/02673231221100146

Jayadeva, S. (2020). Keep calm and apply to Germany: how online communities mediate transnational student mobility from India to Germany. J. Ethnic Migr. Stud. 46, 2240–2257. doi: 10.1080/1369183X.2019.1643230

Kotsios, A., Magnani, M., Vega, D., Rossi, L., and Shklovski, I. (2019). An analysis of the consequences of the general data protection regulation on social network research. ACM Transac. Soc. Comput. 2, 1–22. doi: 10.1145/33 65524

Leurs, K. (2014). Digital throwntogetherness: young londoners negotiating urban politics of difference and encounter on facebook. Popular Commun. 12, 251–265. doi: 10.1080/15405702.2014.960569

Leurs, K. (2017). Feminist data studies: using digital methods for ethical, reflexive and situated socio-cultural research. Feminist Rev. 115, 130–154. doi: 10.1057/s41305-017-0043-1

Mahoney, J., Le Louvier, K., and Lawson, S. (2022a). "The ethics of social media analytics in migration studies," in: Information and Communications Technology in Support of Migration. Security Informatics and Law Enforcement, eds B. Akhgar, K. L. Hough, Y. Abdel Samad, P. Saskia Bayerl, A. Karakostas. Berlin, Germany: Springer, Cham.

Mahoney, J., Le Louvier, K., Lawson, S., Bertel, D., and Ambrosetti, E. (2022b). Ethical considerations in social media analytics in the context of migration: lessons learned from a Horizon 2020 project. Res. Ethics 18, 226–240. doi: 10.1177/17470161221087542

Mancosu, M., and Vegetti, F. (2020). What you can scrape and what is right to scrape: a proposal for a tool to collect public facebook data. Social Media + Soc. 6, 205630512094070. doi: 10.1177/2056305120940703

Merrill, S., and Åkerlund, M. (2018). Standing up for Sweden? The racist discourses, architectures and affordances of an anti-immigration facebook group. J. Comput. Med. Commun. 23, 332–353. doi: 10.1093/jcmc/zmy018

Naughton, J. (2022). For the first time in its history, Facebook is in decline. Has the tech giant begun to crumble? The Guardian. Available online at: https://www.theguardian.com/commentisfree/2022/feb/06/first-time-historyfacebook-decline-has-tech-giant-begun-crumble

Nissenbaum, H. F. (2010). Privacy in Context: Technology, Policy, and the Integrity of Social Life. Stanford Law Books.

Oosterbaan, M. (2010). 'Virtual Migration. Brazilian Diasporic Media and the Reconfigurations of Place and Space'. Revue Européenne des Migrations Internationales 26, 81–102. doi: 10.4000/remi.5037

Oosterbaan, M. (2013). "Chapter two. orkontros: brazilian migrants, social network sites and the european city," in Contemporary Culture: New Directions in Art and Humanities Research, eds J. Thissen, R. Zwijnenberg and K. Zijlmans. Amsterdam: Amsterdam University Press, 37–50

Puschmann, C. (2019). An end to the wild west of social media research: a response to Axel Bruns. Inf. Commun. Soc. 22, 1582–1589. doi: 10.1080/1369118X.2019.1646300

Puschmann, C., Ausserhofer, J., and Šlerka, J. (2020). Converging on a nativist core? Comparing issues on the Facebook pages of the Pegida movement and the Alternative for Germany. Eur. J. Commun. 35, 230–248. doi: 10.1177/0267323120922068

Richter, C., Emmer, M., and Kunst, M. (2018). "Flucht 2.0. Was Geflüchtete wirklich mit ihren Smartphones machen," in Social Transformations, Vol. 2.

Available online at: https://www.socialtrans.de/index.php/st/article/view/20 Roberts, M. E., Stewart, B. M., and Tingley, D. (2019). stm : An R Package for Structural Topic Models. J. Stat. Soft. 91. doi: 10.18637/jss.v091.i02

Sandberg, M., Mollerup, N. G., and Rossi, L. (2022a). "Contrapuntal connectedness: analysing relations between social media data and ethnography in digital migration studies," in Research Methodologies and Ethical Challenges in Digital Migration Studies, eds M. Sandberg, L. Rossi, V. Galis, M. Bak Jørgensen. London, UK: Palgrave Macmillan, Cham.

Sandberg, M., Rossi, L., Galis, V., and Bak Jørgensen, M. (2022b). Research Methodologies and Ethical Challenges in Digital Migration Studies. Berlin, Germany: Springer International Publishing.

Sandvig, C. (2017). Heading to the Courthouse for Sandvig v. Sessions [web log]. Available online from: https://socialmediacollective.org/2017/10/ 19/heading-to-the-courthouse-for-sandvig-v-sessions/ (retrieved April 27, 2022).

Schrooten, M. (2012). Moving ethnography online: researching brazilian migrants' online togetherness. Ethnic Racial. Stud. 35, 1794–1809. doi: 10.1080/01419870.2012.659271

Siapera, E., and Creta, S. (2020). "The ethics of media research with refugees," in S. Jeppesen, P. Sartoretto. Media Activist Research Ethics. Global Transformations in Media and Communication Research—A Palgrave and IAMCR Series. London, UK: Palgrave Macmillan, Cham.

Verheijen, L., and Stoop, W. (2016). "Collecting Facebook posts and WhatsApp chats," in Text, Speech, and Dialogue. TSD 2016. Lecture Notes in Computer Science, vol. 9924, eds P. Sojka, P, A. Horák, I. Kopecek, K. Pala. Berlin, Germany: Springer,˘ Cham, 249–258.

Waters, J. (2015). Educational imperatives and the compulsion for credentials: family migration and children's education in East Asia. Child Geogr. 13, 280–293, doi: 10.1080/14733285.2015.972646

Zimmer, M. (2010). "But the data is already public": on the ethics of research in Facebook. Ethics Inf. Technol. 12, 313–325. doi: 10.1007/s10676-010-9227-5

Zimmer, M. (2018). Addressing conceptual gaps in big data research ethics: an application of contextual integrity. Social Media + Soc. 4, 205630511876830. doi: 10.1177/2056305118768300

5. Summary of Findings

In this chapter, I summarise the main findings of each paper. This summary intends to facilitate reading this overarching text as a stand-alone piece. After this, the reader may be interested in the details of each paper and then proceed to read them following the page order from chapters 6 to 8. Otherwise, this summary provides an overview of the main outcomes, equipping the reader to follow the overarching discussion I undertake in Chapter 9.

I start this overview with the broad, quantitative perspective of the field (Paper 1). That is followed by the main outcomes of the closer, qualitative overview of the field site (Paper 3)[3]. Lastly, I summarise the main outcomes of the interviews and observations with Antônia, Joana, and Mariele, the three young Brazilian migrants and creators of content about education in Germany (Paper 4). The titles of the sections are the main outcomes of each paper.

5.1. Paper 1: Education-Related Topics Appear Among the Most Discussed in Migrant Facebook Groups

Paper 1 (Dedecek Gertz & Süßer, 2022) provides a broad overview of the field by showing that education is a prevalent topic in posts made in Facebook groups by Brazilians in Germany. Language learning and vocational education and training (VET) were the most prevalent topics. The analysed posts were collected in 14 randomly selected groups, with only one group explicitly related to education. The presence of more education-related groups would have skewed the sample, as they would have pushed education-related topics to the top. This means that VET and language learning are prevalent topics in the posts made in the location, professional, general ("Brazilians in Germany") and in the "other activities" groups. These results show that there is a demand from migrants for information about these educational areas in Germany. This demand can be partially explained by the fact that enrolment in an institution offering VET or language courses is a condition for applying for some types of residence permits and also because VET students in Germany receive a salary. Finally, an aspect that contributes to the prevalence of language learning is the presence of language teachers who use these migrant Facebook groups to advertise their courses and highlight the importance of language knowledge for studies and the job market. These teachers' use of those Facebook groups shows the relevance of language learning as an educational aspect in the groups.

5.3. Paper 3: Migrants' Information Exchanges about Education on Facebook Groups Reveal Class and Gender Inequalities

Paper 3 (Dedecek Gertz, 2023b) shows education-related topics about which migrants exchange information in Facebook groups of Brazilians in Germany. The migrant Facebook groups I researched are used for three main purposes relating to education, namely: 1) ask for concrete information, 2) cross-check hearsay information, and 3) ask about opinions or personal experiences from others about access to education, courses, and educational programmes. These uses point out that some migrants see the information on these groups as potentially trustworthy – otherwise, they would probably do the contrary, collecting and cross-checking information they found online with people they already know and trust. This latter kind of behaviour has been identified among migrants fleeing

[3] I presented Paper 2 within the methodological chapter, in section 4.6.2.

war and conflict, who feel that they cannot entirely trust what others write on Facebook groups for fear of being exposed to danger on their migratory routes. Hence, they cross-check information with people they already know (Wall et al., 2017). Because information about *education* shared on Facebook groups tends to be comparatively more trusted (cf. Jayadeva, 2020), such digital networks are likely to influence migrants' educational decisions. In the groups I analysed, this happens on a rather instrumental level through the sheer collection of (potentially) useful information. Group participants rarely show explicit interest in keeping in touch with those who replied to their questions. Nevertheless, some attentive answers, detailed accounts of personal experiences, and motivational messages circulating in those groups can contribute to attributing trustworthiness to the information shared by other participants.

VET was the most present topic in the posts – as expected based on the outcomes of Paper 1. Apart from revealing migrants' demand for information about education in Germany apart from university levels, VET is associated with more possibilities for stable income and migratory status. In contrast, university education is sometimes described as "irrelevant" to the labour market (Dedecek Gertz, 2023b, p. 9). Particularly in the group of Brazilian nurses in Germany, that perceived "irrelevance" is met with frustration: in Brazil, nurses are required to have a BA degree, which is recognised in Germany as a VET degree. Some group participants are frustrated about "losing" a university degree, and others are frustrated with having to undergo a VET course in Germany despite having a BA degree and work experience in the area. At the same time, some participants aspire that their children will be able to access a "prestigious German university" (Dedecek Gertz, 2023b, p. 8). Others warn parents that migrant children tend not to be recommended to the *Gymnasium*, which is associated with prestige.

What migrants discuss about education in those Facebook groups is also shaped by gender and economic inequalities. That is particularly visible when comparing groups of IT professionals and nurses, two highly gendered professions (cf. Lutz & Palenga-Möllenbeck, 2011; Raghuram, 2004). Nurses were frustrated with the perceived "loss" of a university degree, were concerned about whether they would be able to support their families with a nurse's salary in Germany, and about the likelihood that their children would be able to have good educational opportunities. Conversely, participants in the IT professionals' group mostly supported each other, sending optimistic messages to aspiring migrants. Among the reasons for optimism are the alleged "irrelevance" of a degree to find work in the area, the access to "prestigious" German universities for children, and mentions of six-digit yearly salaries. A concern among some IT professionals and aspiring migrants was whether they would be able to maintain their lifestyles and high salaries as migrants. Finally, while in the IT professionals' group, some migrants associate migrating with children with access to "child benefits" through their jobs, some nurses lamented that "migrating with children is more difficult" (Dedecek Gertz, 2023b, p. 8).

Given that migrants see value or even seem to trust information about education circulating in Facebook groups, the information collected on such digital networks likely influences migration decisions to some degree. However, having access to latent ties that can serve as important sources of information does not necessarily contribute to overcoming inequalities. The contrast between the groups of IT professionals and nurses illustrates that. Some of the posts suggest that particularly nurses may experience upward mobility in comparison to their situation in Brazil. Meanwhile,

participants in the IT professionals' group seem to have an already high socio-economic status in Brazil, and, after migration, seem to maintain that status and aspire for their children to achieve further distinction through education. Hence, pre-existing income inequalities in those gendered labour areas may persist after migration – for a future study, interviews can provide further insights for this comparison.

5.4. Paper 4: Brazilian Migrants and Creators of Content about Education in Germany Contribute to the Transnationalisation of Education – Especially Vocational Education and Training (VET)

Paper 4 (Dedecek Gertz et al., forthcoming) describes a specific group of actors whom I identified in the field. This group of actors are young migrants who systematically compile content about educational opportunities in Germany, circulate this content on their own social media accounts, pay attention to visual aspects, and often answer questions related to education and migration formalities in Germany both in the Facebook groups I observed and in their other social media accounts, such as Instagram or YouTube. They are "content creators" (cf. Duffy, 2017).

The three young women, migrants, and content creators described in Paper 4 (Antônia, Joana, and Mariele) have similar low socio-economic backgrounds and migrated to Germany following similar pathways. In their journeys, they collected information and advice on social media to make decisions and learn about the requirements to migrate and access educational institutions in Germany. They began sharing their knowledge and experiences on social media, compiling information about different educational opportunities in Germany, and circulating it on their visually curated social media platforms. Their motivations to do so are threefold: 1) they enjoy using social media, 2) they see it as a way to build a portfolio in the expectation that this might eventually be helpful for their future careers, and 3) they understand it as a way to show solidarity, or to reciprocity, with other young migrants, particularly women, who are in a situation they once were too.

These content creators have thousands of followers and focus their work on educational opportunities for migrants in Germany. This reveals a demand from migrants for information about how to access education abroad, especially among young women from low socio-economic backgrounds. While not all of the aspiring migrants who follow these content creators will effectively migrate, the fact that some do so and access education abroad points out that migrants from lower socio-economic backgrounds are participating in transnational flows concerning education partly aided by information compiled and shared by other migrants on social media. Finally, the positive feedback they receive and the stories of accomplished migrations from their followers show the trust that some migrants place in information about education circulating on social media.

6. Paper 1: Migration and Educational Projects Online: A Topic Modelling Approach of Discussions on Social Media Groups

Dedecek Gertz, H., & Süßer, F. (2022). Migration and educational projects online: A topic modelling approach of discussions on social media groups. *Mediální Studia*, *16*(2), 236–256.

6.1. Introduction

Since the 1990s, social inequality and poverty have been important drivers of Brazilian migration, but specialists and students seeking higher education also make up for Brazilians who decide to leave the country. Migration for educational reasons has been mostly related to high and middle-class contexts since it requires a considerable amount of economic resources and academic certificates. However, studies about Brazilian migration to Germany have described how educational aspirations drive the migration of young people also in underprivileged socioeconomic contexts. For these migrants, transnational social networks are decisive, as they provide valuable resources for pursuing educational opportunities through migration (Carnicer, 2019, 2018; Fürstenau, 2019). As in other migratory contexts, these social networks are constituted mainly by rather strong ties between relatives and friends who usually maintain long personal relationships (Boyd & Nowak, 2012). In this paper, we explore the role of online social networking sites (SNS). These networks can usually be accessed without a prior personal relationship. In this way, they offer not yet 'weak' but rather latent ties: technically available connections that have not yet been activated by social interaction but can be activated online at any time (Haythornthwaite, 2002, p. 385). An example of those ties is migrant Facebook groups: participants of such groups do not necessarily know each other but they gather online around a common nationality (implying a common language and similar bureaucratic procedures required to migrate, for instance) and interests (e.g. aspirations to migrate to Germany to pursue a degree). By posting a question in such online groups, participants activate connections with unknown people who can help solve doubts and provide valuable information about the migratory process (Jayadeva, 2020). As a first approach to evaluate the influence of SNS in migration and transnational educational pathways, we assess in this paper the relevance of education in communication through SNS. Concretely, we address the research question, what is the prevalence of education-related topics in Facebook groups of 'Brazilians in Germany'? In a second step, we look at the ways how these topics are clustered in particular migrant Facebook groups. This allows a first characterisation of the main topics addressed in the education-related discussions on SNS. This research aims to assess if SNSs provide latent ties that support migration pathways associated with educational projects. To do that, we resort to a topic modelling approach of posts written on those groups.

The next section places this paper within transnational migration, mediatisation and social network theory, focusing on latent ties and Brazilian migrants' SNS use, followed by an overview of studies relating education to migration. To contextualise the empirical data and justify the choice to analyse Brazilians in Germany, the fourth section provides information about the educational system in Brazil and the German educational system. After that, our decisions in regard to the topic modelling approach are explained, and the results are presented. In the discussion, we contend that education is among the most prevalent topics debated in these groups, in particular vocational education and training (VET).

6.2. Transnational Migration, Online Social Networks and Their Latent Ties

Transnational migration theory relies on evidence from migrants' activities, patterns of behaviour and network connections to claim that migrants build social fields spanning beyond national borders and thereby securing "cultural, social and economic bases" (Glick-Schiller et al., 1992, p. 9). Here we

set the focus on transnational migrant networks, particularly those established in online environments, understanding networks as "a set of socially relevant nodes connected by one or more relations" (Marin & Wellman, 2014, p.11). These nodes represent members of a network – for the case of this paper, participants of Facebook groups. The connections among these nodes are our patterns of interest, namely connections established by exchanging information about educational opportunities in Germany. Following, this section highlights the roles of online media within migrants' social networks, focusing on its uses among Brazilian migrants and on the concept of "latent ties" (Haythornthwaite, 2002) found in such networks. The next section then draws the connection between education and migration.

Information exchange is a core aspect of the establishment and maintenance of transnational social networks. In migratory contexts, constantly developing media platforms and information and communication technologies (ICTs) are a means for parenting from a distance, providing financial and emotional support, and forming identity (Cabalquinto, 2019; Gomes & Yeoh, 2018; Leurs, 2019; Madianou & Miller, 2012). Among Brazilian migrants, the uses of SNS have been shown to serve as a source of "a variety of social capital … which assists in the migration transition" (Schrooten, 2012, p. 1801). Analysing Brazilian migrants in Europe who participated in groups on the now deactivated SNS "Orkut", Mieke Schrooten (2012) and Martijn Oosterbaan (2010; 2013) report about mutual aid in regards to bureaucratic procedures and job-seeking, revealing the uses of such online connections for newcomers to establish themselves in the new settings. These groups are also used to arrange in-person gatherings (Oosterbaan, 2013; Schrooten, 2012), evidencing an interest in establishing or reinforcing ties with acquaintances made in SNS groups. After Orkut was shut down in 2014, new groups of Brazilian migrants were created on Facebook with the same purposes. Recent reports show that these groups are highly active, with a mean of 66.8 monthly posts in one group only (Foletto, 2018, p. 99) and some with more than 24 thousand participants (Dedecek Gertz, forthcoming). Those findings from different points in time (first Orkut, now Facebook) demonstrate the relevance of online networking in transnational migratory contexts regardless of the platform: when Orkut was no longer available, migrants gathered on Facebook and kept using the platforms for similar purposes. If Facebook was to be no longer active, migrants would likely re-organise on other digital platforms.

As of February 2022, 174 million Brazilians had a Facebook account, and of that total, almost 30 per cent are between the ages of 25 and 34 (NapoleonCat, 2022) – when people are more likely to migrate through and for educational opportunities (Kandel & Massey, 2002). With such a large number of users, these migrant groups are likely to be heterogeneous regarding socioeconomic background and educational attainment. While the aforementioned studies provide an overall impression of what is discussed and of the uses of Brazilian migrant online groups, analysing information exchanges specifically about education helps map the roles of SNS in transnational educational projects across socioeconomic backgrounds.

6.3. Migrants' latent ties and mediatisation of transnational education

Departing from an attempt to measure media effects on migration, the sensitising concept of mediatisation serves to explain societal changes in connection to developments in media and technology. Mediatisation can be understood as the experience that "technological communication

media saturate more and more social domains which are drastically transforming at the same time" (Hepp, 2020, p. 3). By putting human practice at the centre through the analysis of information exchange on SNSs, we produce empirical evidence that can build up arguments about how mediated connections may result in broader social transformations and consequences (Hepp, 2020; Couldry & Hepp, 2017). In other words, we are rather interested in how media use by humans transforms social practices than in how media developments provoke transformations in human behaviour and social practices. In that sense, an analysis of the prevalence of education-related topics in migrant Facebook groups provides insights into how mediated communication transforms migration pathways and contributes to the transnationalisation of education. In our analysis, we consider mediated communication as a process (Hepp, 2020) and focus on individuals' interaction through media. Other analyses about the mediatisation of education focus on aspects of pedagogy (Friesen & Hug, 2009), policy (Rawolle & Lingard, 2014), or institutional perspective (Breiter, 2014). Here, we propose an analysis of the mediatisation of education that focuses on the implications of media use for migration and transnational educational pathways.

Brazilian migrants were already using SNSs in the early 2000s and their use of transnational latent ties has already been described a decade ago (Schrooten 2012; Oosterbaan 2013). What is new in the case of Facebook groups compared to participants of Orkut groups in the past relates to particular quantitative trends (Hepp, 2020, p. 40). The groups of Brazilian migrants on Orkut described by Oosterbaan (2013) and Schrooten (2012) were mostly general groups, gathering Brazilians in a given city or country. Nowadays on Facebook, those groups are still popular, yet there is a differentiation process happening that gives way to the creation of niche groups with similar high amounts of participants and levels of interaction. Media's omnipresence is another quantitative aspect of mediatisation that shapes the media use of migrants. To access Orkut, one had to be (media) literate and have to access a personal computer, internet connection, and free time to browse that SNS sitting in front of a computer. With the increase in digitalisation and the accessibility of gadgets with an internet connection, Facebook groups can be accessed from a smartphone on a bus on the way to work, for instance. Formally illiterate people are also able to use SNS on their smartphones, as described in an ethnography study in a rural area in Brazil (Spyer, 2017).

In this paper, we offer a snapshot of online information exchange on a specific topic: migratory projects involving transnational education. In that sense, this study contributes to analysing the mediatisation processes of transnational education by describing the relevance of education-related topics in migrants' activation of latent ties on online forums.

6.4. Migration and Educational Projects

Transnational education (TNE) is often associated with international private schools or university education. That association often results in analyses that highlight the role of TNE among socioeconomic strata that hold resources to access a global educational market (Adick, 2018). On the one hand, the transnational mobility of students within that socioeconomic context tends to be regarded as a strategy to gather social and cultural capital (Brooks & Waters, 2010). On the other hand, the transnational mobility of people from lower socioeconomic backgrounds pursuing educational pathways tends to be disregarded as TNE and associated with issues of "migration" and "integration" (Carnicer & Fürstenau, 2019). Nevertheless, recent qualitative data have highlighted

that students from disadvantaged backgrounds also migrate to pursue educational aspirations and thereby contribute to the transnationalisation of education (Carnicer, 2019; Fürstenau, 2018).

Educational opportunities abroad and own educational aspirations are relevant factors in migration decisions. Both the lack of access to formal education in the country of origin and the possibility of securing a stable migratory status and a job by accomplishing a degree in the country of destination are both reasons and means to migrate (Carnicer, 2019; Fürstenau, 2019). Migrants from these backgrounds are likely to see in TNE "an educational strategy that is not directed towards a symbolic capital that legitimates an inherited social position, but towards overcoming social exclusion" (Carnicer, 2019, p. 22). Differently than trajectories of migrants from socioeconomic strata who can migrate autonomously (e.g. those accepted at universities and who thus have access to institutional infrastructures that provide information and assistance), migrants who may feel excluded from educational opportunities in their countries of origin and seek such opportunities abroad, are likely to rely on interpersonal social networks composed by strong and weak ties (Carnicer, 2019; Fürstenau, 2018). In this paper, we argue that SNS provide aspiring migrants with information and resources comparable to those of personal networks.

Within information exchanges among migrants in SNS, educational opportunities are present as topics for discussion, as seen in Facebook groups gathering migrants who wish to pursue university degrees abroad (Jayadeva, 2020). Even in groups in which the focus is not on education, but rather on specific cities, jobs, and other opportunities, such as Au Pair work, educational aspects are also mentioned, such as what aspects one has to be aware of when looking for a school for children, what options for vocational education and training (VET) are there, and what certificates are needed to navigate the job market (Dedecek Gertz, forthcoming). The centrality of education is clear within groups that gather migrants who aspire to pursue degrees abroad. Nevertheless, discussions about issues relating to education within other groups might be present as well and are likely to be more diverse, encompassing migrants interested in educational levels other than university degrees, such as VET. Putting in perspective how relevant educational issues are within these diverse groups can help map the role of SNS in migratory movements involving transnational education "from below" (Smith & Guarnizo, 1998).

6.5. Educational Pathways: Inequality in Brazil, Discrimination, and Opportunity in Germany

The Brazilian educational system faces inequalities across all its levels, from children's education to access and permanence at universities (Windle, 2021; Sampaio & Oliveira, 2016; Câmara & Almeida, 2012). In Germany, migrants who manage to access the educational system are likely to suffer discrimination. Socioeconomic class is a central factor shaping the access and successful conclusion of degrees in both countries.

With a Gini Coefficient of 53.4 as of 2019, it is not surprising that poverty has been the main driver of Brazilian migration since the 1980s, although labour migration of skilled professionals is also prevalent (Evans et al., 2013) and some young people from low-income backgrounds also migrate following educational aspirations (Carnicer, 2019; Fürstenau, 2018). One of the main reasons for Brazilians to quit formal education is the need to find gainful employment (IBGE, 2020). That is particularly the case for 'Black' and 'Brown' people who compose only 31% of university graduates in

the country, while 'white' people comprise over 66% of that total (Silva, 2020, p. 23). Despite affirmative actions to facilitate the access of high school graduates to public, tuition-free, and prestigious universities, access to tertiary education in Brazil is highly competitive and lectures schedules hardly allow students to accommodate studying with gainful employment – resulting in either a high drop-out rate or in the choice for less-prestigious, private universities (Pereira & dos Reis 2020; Trevisol & Nierotka 2016). Javier Carnicer (2019) and Sara Fürstenau (2019) describe how migrants who feel excluded from educational opportunities in Brazil and thus have fewer options for socioeconomic upward mobility, find ways to fulfil their educational and mobility aspirations in Germany, making use of social networks and some particularities of the educational systems.

In Germany, migrants, as well as non-migrants from low-income backgrounds, might have easier access to formal education in comparison to the Brazilian situation, however, these populations are still discriminated against within the German educational system (Dumont et al., 2014; El-Mafaalani, 2020). That is evidenced in German schools' selection pattern: at the age of 10, students are recommended to continue towards the prestigious Gymnasium, which allows direct access to university after completion of final exams, the *Abitur*, or to other school modalities that do not enjoy the same status as the *Gymnasium* (*Gesamtschule, Gemeinschaftsschule, Stadtteilschule, Realschule* or *Hauptschule*, depending on federal-state legislation). Students who complete their schooling within these other modalities can access VET (the *Ausbildung*) without constraints, however, their pathway toward university education is longer than that of *Gymnasium* graduates. Some areas of VET in Germany are remunerated (e.g. hospital care work and children's nursing). However, university stipends are hardly available for non-German citizens with foreign school degrees and no residence permit. School students who migrated to Germany, or those born in Germany to migrant parents, are more likely not to be recommended to access the *Gymnasium*, which in turn results in a lower representation of this population in German universities (Hunkler, 2016).

In 2020, almost 31% of all Brazilian migrants lived in Europe (Ministério das Relações Exteriores, 2021, p.4) and, following a contemporary feature of the feminisation of migratory movements (Lutz, 2010), around 64% of Brazilians in Germany are women (Statistisches Bundesamt, 2022), what is likely due to the high labour demand in the care sector, which is still predominantly perceived as a female area. While the rate of women in Brazil who earn university degrees is higher than that of men, this does not reflect higher salaries for women (IBGE, 2021). In Germany, a pathway for some Brazilian women is to take advantage of the gendered perception of care-work and pursue paid VET degrees in that area, thus accomplishing a tertiary educational degree in the country leading to more chances of landing a job and a secure residence status (Carnicer, 2019; Fürstenau, 2019). These women rely first on Au Pair programmes and on personal connections to fulfil their educational and upward mobility projects (Carnicer, 2019; Fürstenau, 2019). Our focus on Germany as a destination country is due to the existence of such paid VET programmes and because German university fees are comparatively low, which attracts migrants who feel excluded from the Brazilian educational system (Carnicer, 2019).

Social networks based on personal ties are central to migration pathways associated with educational projects. As latent ties are also formative of social networks, they are likely to be relevant for such projects as well. While that is the case within SNS groups of migrants and aspiring migrants who wish to pursue university education abroad (Jayadeva, 2020), little is known about information exchanges surrounding educational aspirations and education-related migratory projects in SNS groups that gather migrants with more diverse backgrounds. To fill up that gap, we investigate the

prevalence of topics relating to education in discussions within these diverse groups. A further question relates to the clustering of these topics: that provides indications about what professional areas, degrees or levels of education are more discussed and in which particular groups. To address these questions, we resort to a topic modelling approach, which is detailed in the next section.

6.6. Topic Modelling

To select relevant groups for analysis, first, we searched Facebook for the terms "Brazilians" and "Germany" (in Portuguese). After that, all groups relating to migration were selected and these were once again filtered according to their level of interaction: using the information provided by Facebook itself, one of the authors joined 14 groups with at least a thousand participants and three selected made in one week.

Brazilian migrant groups are varied and highly active, ranging from the general "Brazilians in Germany", to the many "Brazilians in [German city]", and to niche groups, such as "Brazilian women in Germany", "Brazilian IT professionals in Germany", "Brazilian nurses in Germany", "Brazilian Au Pairs in Germany", "Brazilians seeking VET in Germany" – and even "Gardening for Brazilians in Germany". Brazilian migrants' fondness for SNS groups is not new, as its use has been reported already over a decade ago (Oosterbaan, 2010; Schrooten, 2012). Nevertheless, its use for educational projects has not been studied.

Our research design is based on a text-as-data approach (Grimmer & Stewart, 2013). Text-as-text approaches (as used in qualitative analyses) are organised according to the rules of language and are used for analysing the meanings of what is being communicated. Processing text-as-data involves imposing some abstraction and structure that summarises large amounts of text, which can be used to uncover patterns (Benoit, 2020, p. 463-465). Based on this text-as-data logic, we follow a structural topic modelling (STM) approach (Roberts, Stewart & Tingley, 2019), which allows assigning metadata to the documents to be analysed. That way we can correlate posts with the groups where they were written.

The data we analyse is composed of posts and their comments written in the selected groups on Facebook. We collected posts written between December 2020 and January 2021 using the WebDriver API Selenium, which allows automatic control of a web browser. The software was programmed to copy and save what users wrote in the groups: because only visible data was collected, a human could do the same procedure, however with a more significant investment of time and effort. In other words, automation sped up the process of data collection.

In the data cleaning phase, we subsumed relevant multiple-word expressions, words, and acronyms that have the same meaning so that the weight of the topic could be properly accessed (for instance, "Ausbildung" is sometimes misspelt like "Ausbilung" and the Portuguese expression "curso técnico" is also used in the groups to refer to the "Ausbildung", hence both the misspelling and the Portuguese translation were assigned as equal to the German word "Ausbildung"). We also removed diacritics (e.g. "ç" and "ã"), punctuation, numbers, hyperlinks, symbols (like emojis), and stopwords both in Portuguese, German, and English, as these languages are the most used ones in the groups. The first results revealed that our code included other irrelevant words for topic clustering such as greetings, pronouns, proper nouns, and expressions used in SNS communication such as "haha" or abbreviations. We manually included these in the list of words to be ignored. The remaining words

were then stemmed so that words like the noun "escola" and the adjective "escolar" would be clustered together.

In topic modelling, a topic is "a mixture over words where each word has a probability of belonging to a topic", and a document is "a mixture over topics, meaning that a single document can be composed of multiple topics" (Roberts, Stewart & Tingley, 2019, p. 2). In our case, documents are each post and comment made on each group.

We have 7,389 documents. The content of these documents can be composed of one or more topics, a mixture of covariate words. For STM "the sum of the topic proportions across all topics for a document is one, and the sum of the word probabilities for a given topic is one" (Roberts, Stewart & Tingley, 2019, p. 2). In simplified terms, word clustering on STM occurs through a process similar to Latent Dirichlet Allocation (LDA) distribution, accounting for covariate words across documents which affect the "proportion of a document devoted to a topic ... and the word rates used in discussing a topic" (Roberts, Stewart & Tingley, 2016, p. 989).

We defined relevant words to be selected to compose topics as those that appear at least 20 times and in 5 or more documents. That decision was also useful in cleaning the data given that texts from social media tend to be short, sometimes consisting of only one word, which can skew the results of topic modelling (Albalawi, Yeap, & Benyoucef, 2020). The researcher must establish the number of topics and the appropriateness of that number depends on the interpretability of the outcome. A high number of topics gives a fine-grained insight into the data but at the cost of being less precise. After running the code with a different number of topics, ranging from 5 to 25, we found that 7 topics resulted in a model with good interpretability. With fewer topics, the contents are condensed, and the relevance of the topic is clearer. The assignment of words to topics is arbitrary: Topic 1 is not necessarily more relevant than Topic 7. In Figure 1 (p. 14), in the results section, we see the top 14 words that compose these seven topics.

Our data collection approach brought problems with it. First, since the human interface to Facebook, which we used, does not order groups' posts by time, we could not arbitrarily set the time frame of posts we wanted to have. For example, posts with high activity are promoted by Facebook and thus jump up in the timeline. Second, the human user interface to Facebook is limited in requests per time. Therefore, our data collection was inhibited, and as a result, we collected about 26,000 posts (by their ID) but could only retrieve the text body of 7,389, which are the ones that went into our analysis here. Nevertheless, that amount is still significant as posts with high activity are likely to be more representative of the interests of group participants.

6.7. Results

In this section, we first describe the most prevalent topics in our data, particularly those related to education. Then, we comment on the estimated proportion of these topics across all 14 groups.

Of the seven topics from all groups, two relate to education. One of these two is among the top three most prevalent. The three most discussed topics (Topics 5, 2, and 4) have no similarity among themselves. Topic 5, the most discussed one, contains words such as "need", "Brazil", "speak", "help", "to get/to reach", "health", "person", "father", "document", "payment", "receive" and "arrive". This topic is likely related to requests for information regarding bureaucratic procedures and family relations.

Topic 2, contains words such as "buy", "sell", "live", "friend", "know/meet", "to find", "pretty", "share", and "shop". This topic most likely relates to commerce, as it implies people offering products or services and recommendations by friends. The verb "to share" probably relates to those users who are offering their products or services inviting those interested in it to share the information, following a common logic of SNS.

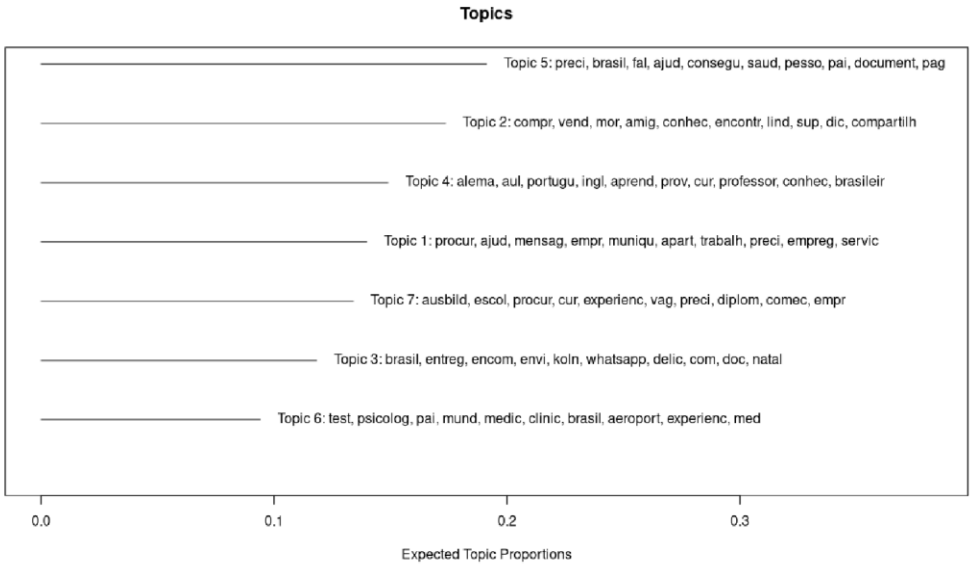
The most relevant topic relating to education is the third most prevalent topic of all seven. Topic 4 contains words like "German", "class", "Portuguese", "English", "learn", "exam", "course", "teacher", "know", "Brazilian", "speak", "online", "book", and "information". This topic covers information exchanges about learning languages. It encompasses both people seeking information about language certificates needed to enrol in formal education courses or to request a residence permit and language teachers who offer their services on these migrant groups. Some language teachers who participate in the active groups offer online classes as well.

In the fourth position appears a topic relating to job and apartment search (Topic 1), which contains words like "search", "help", "message", "company", "apartment", "work", "job", "live", "rent", "pay", and "contract". The words clustered in this topic, and also on Topic 5, are aligned with Oosterbaan's (2013) and Schrooten's (2012) descriptions of newcomer migrants' using SNS to look for jobs and navigate bureaucratic procedures.

The fifth most prevalent topic is Topic 7, which contains words such as "Ausbildung" (VET), "school", "search/look for", "course", "experience", "vacancy", "need", "diploma", "begin", "company", "get", "work", "process", and "recognition". This topic encompasses questions regarding access to VET, as words are either explicitly related to educational levels ("VET"), institutions ("school"), studies area or teaching situation ("course" in Portuguese can relate both to "class" and to "subject"), or degree outcomes ("diploma"). Other words relate to educational requirements to access higher levels of education or to exercise certain professions, such as nursing. That is the case of nouns like "diploma" and "recognition": having certificates, diplomas, and school records that have to be recognised by German educational authorities is an issue, especially for nurses who obtained their training in Brazil. The connection between education and the interest in landing a job is also revealed through the relevance of words like "get", "work", "vacancy", "experience", or "company".

The last two topics relate again to commerce (Topic 3) and health issues (Topic 6). Topic 3 contains words like "deliver", "order [a product]", "send", "WhatsApp", "delicious", "food", "sweet", "Christmas", and "product". Similar to the other commerce-related topic (Topic 2), this one also points out the use of other SNS platforms for business (the mention of WhatsApp). Differently from Topic 5, this topic seems to relate to the commerce of food items, possibly connected to the Christmas season. The last relevant topic, Topic 6, contains words like "test", "psychologist", "father", "medic", "clinic", "airport", "secure", "quarantine", and "flight". This topic most likely relates to the Coronavirus pandemic, its consequences on physical and mental health and travel requirements.

Figure 2: Two of the seven topics discussed in migrant groups relate to education (Topics 4 and 7). Topic 5 is the most present one and Topic 6 the least present among the seven most discussed topics.



After assessing the seven most relevant topics, we estimated their proportions across all groups (see Figure 2). We comment on the results in the order of prevalence presented in Figure 1.

Topic 5, the most prevalent one and which relates to requests for information regarding documentation, is only not relevant in two groups, one about working in Germany and in one of the two groups gathering Brazilians living in Frankfurt. Interestingly, that is not true for the second group of Brazilians in Frankfurt. Topic 5 is most relevant in a group gathering Brazilians who wish to participate in the German paid volunteer work programmes (the "voluntary social year", FSJ, or the "federal volunteer service", BFD[4]) and in a general group of Brazilians in Germany. Because it encompasses topics relating to documentation for applications, we can say this is a bureaucracy-related topic.

Topic 2, the second most prevalent one related to commerce, has little relevance for the FSJ/BFD group, for groups of Brazilians seeking employment in Germany, for a group of Brazilian nurses in Germany, and for a group to exchange VET information. This topic is more popular in cities and general "Brazilians in Germany" groups. We could assume that people gathering in work, VET, and FJS/BFD groups are not as established in the country as most participants of city and general groups, hence the lack of interest in advertising and selling products in these former groups.

The third most relevant topic is also the first education-related topic: Topic 4 relates to language learning and certification. This topic is mostly present in two general groups of Brazilians in Germany. Surprisingly, even though language knowledge is a requirement for enrolling in formal education courses and pursuing FSJ/ BFD, Topic 4 has low scores in these groups. We cannot say, however, that language learning is constantly relevant for all city and country groups, as it has a low score, for

[4] FSJ/BFD participants receive a stipend and a residence permit to work up to one year in different areas, from environmental conservation to elderly care. Non-Europeans can also apply for those programmes provided they show a certificate of language knowledge and are accepted by the institution managing who offers FSJ or BFD. Usually, applicants must be under 30 years of age.

instance, in groups of Brazilians in Frankfurt and Hamburg and in one of the general groups of Brazilians in Germany. Both high score results could be skewed by the activity of language teachers who intensely advertise their service in these groups. The fact that some group administrators ban advertising could also justify the low score on the topic.

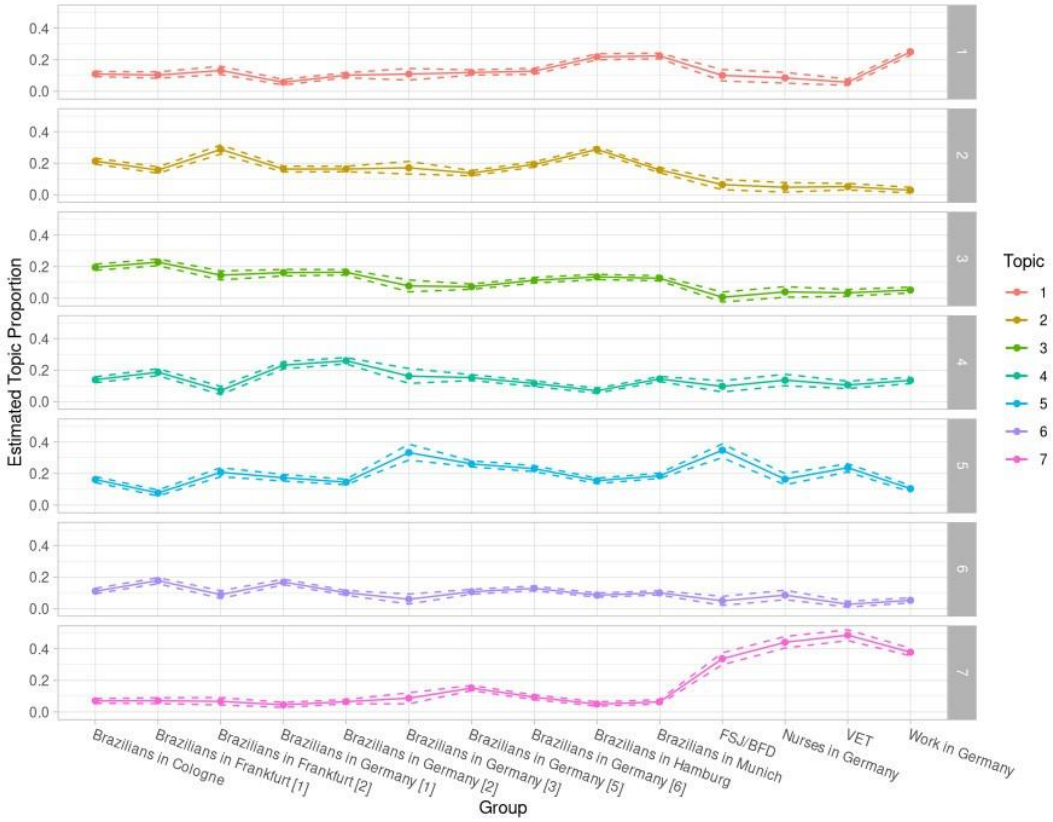
Topic 1, related to job and housing search, is particularly relevant in a group of work in Germany, and two city groups. The high score in the work-group is given, as the topic relates to job search. The fact that these issues are more prevalent in city groups than in general "Brazilians in Germany" groups could be due to migrants' interest in settling in specific cities.

Topic 7, the second education-related topic, has the highest score of all topics but is concentrated in only four groups. The commonality among these four groups is that none is a city or a general "Brazilians in Germany" group. Unsurprisingly, Topic 7 has the highest score in the VET group, followed by a nurses' group, a "work in Germany" group, and an FSJ/BFD group. Although with a considerably lower score in comparison to these four groups, Topic 7 is also somewhat relevant in a group about "first steps" in Germany. This latter group is composed of aspiring migrants who are gathering their first pieces of information about their possibilities to migrate. Probably, once they find out about the VET or FSJ/BFD opportunities, they move on to those other groups. Topic 7 scores low in all other groups.

Topic 3, related to food commerce, has low scores in the VET, FSJ/BFD, nurses', and "Work in Germany" groups, and medium scores throughout the other groups. A similar outcome for the other commerce-related topic (Topic 2). Participants of the former four groups are probably focused on exchanging information only about education and work opportunities, and/or administrators might moderate posts containing advertising – hence the low scores on these topics.

Topic 6, the Coronavirus-related topic, is probably present among the most relevant topics due to its urgency and implications. It was mostly present in a group of Brazilians in Frankfurt, a city where the German airport with most connection flights to Brazil is located. The topic is also mostly discussed in the most populated group of Brazilians in Germany. Probably, the high participant density and the fact that the Coronavirus affected people regardless of their cities and national regulations instead of local ones were more important and contributed to the high score on the topic in that group. Although this topic was highly discussed, Topic 6 is not more important than commerce-related, bureaucracy-related, or education-related topics.

Figure 3: Estimated topic proportion across groups. Topics 4 and 7 are the education-related ones.



Interestingly, schools and university education are not prevalent terms in the topics, as Figure 1 shows. This does not mean that Brazilian migrants are not interested in accessing German universities or that children and teenage education are not relevant topics for them. Questions about language learning, for instance, might be posed in city groups by people who wish to achieve one of the requirements to be accepted at a German university or from parents concerned about the role of language in their children's school performance.

6.7. Discussion

The fact that education-related topics figure among some of the most prevalent on migrant Facebook groups indicates that a mediatisation process is probably taking place on migration pathways involving educational projects. In this section, we first comment on what is the prevalence of education-related topics in "Brazilians in Germany" Facebook groups. Then, we discuss the implications of these results for migration involving educational projects and for transnational education. We contend that the increase in the use of technology-mediated communication and the consequently increased access to latent ties has the potential to facilitate the migration of people who otherwise would possibly not have easy access to information about education abroad.

6.7.1. Latent Ties on Facebook Groups as Relevant for Migration Pathways Through Educational Projects

To find out what is the prevalence of education-related topics in "Brazilians in Germany" Facebook groups and how these topics are clustered, we resorted to an exploratory quantitative approach using topic modelling. While we cannot imply causality, our data provides insights into the relevance of

latent ties in transnational migratory pathways associated with educational projects. The outcome reveals that education-related issues, clustered in language learning and vocational training and education (VET) topics, figure among the top seven most discussed issues in Brazilian migrant Facebook groups.

We cannot claim that those who asked for information about education in these groups indeed migrated and pursued degrees or language courses in Germany. However, such information exchange reveals that there is a relevant demand to pursue a degree and acquire language knowledge. Based on that observation, we can claim that educational-related questions are core topics that lead to the activation of latent ties in migrant groups on Facebook. Consequently, those latent ties are potentially relevant for information-gathering to fulfil migration pathways associated with educational projects, as well as for those beyond university degrees.

Our results indicate a high score on the topic relating to VET and an absence of a topic relating to university education among those with high scores. Based on our data, we cannot state the reasons for that. Still, the low prevalence of terms such as "university", "bachelor", or "school" in comparison with VET points to a potential quantitative preference for VET among those who resort to latent ties to gather information. What also serves as evidence for this quantitative preference is that the two groups of Brazilians who wish to study in Germany did not meet the threshold of the number of participants and posts to be selected for analysis.

Language learning is another educational-related topic revealed as relevant but not usually discussed in transnational education studies (TNE) and is traditionally associated with debates about migrants' "integration" rather than transnational education. The low score on the language-learning topic in the VET and FSJ/BFD groups might be due to an instrumental interest in learning German. Language learning might be present in FSJ/BFD groups embedded in references to "certificates" and "courses" since migrants interested in these opportunities have to prove language knowledge, hence learning German appears as a means to reach a specific objective in these groups, i.e. migrants requesting information in VET and FSJ/BFD groups discuss language learning as another requirement in their check-list. This assumption is backed up by the high score on the topic related to VET, diploma, and certificates both in the VET and FSJ/BFD groups, and also in a "Work in Germany" group and a group of Brazilian nurses in Germany.

People who discussed education-related topics in these groups did not necessarily migrate to pursue educational aspirations. However, the high prevalence of education-related topics within these groups reveals trust and interest in the experiences of group participants in accessing the German educational system, particularly VET. Both education-related topics and other high-score topics from our sample (commercial activities, health, bureaucracy, and job and apartment seeking) are not particularly connected to social gatherings in person where latent ties might develop into stronger ones, as highlighted in earlier studies (Schrooten, 2012; Oosterbaan, 2013). The interest in activating latent ties through commerce and job-seeking topics is given. However, the activation of latent ties for education-related topics implied that there are migrants asking questions about it and other migrants answering those questions. This can be an indication that latent ties activated through education-related topics could be established for solidarity toward aspiring migrants.

6.7.2. Transnational Education and Mediatisation

By establishing that education-related topics are among the most prevalent in information exchanges among migrants on Facebook groups, we can claim that latent ties have an important role in sharing information among migrants who wish to pursue educational projects abroad.

In the 2000s, Oosterban (2013) and Schrooten (2012) described the existence of SNS groups of Brazilians who lived in certain cities or countries outside Brazil. While we cannot claim that there was a quantitative increase in the participation of these SNS groups on Facebook, that is likely to have happened with the increase in internet access in Brazil. Hence, hypothetically, these quantitative developments of mediatisation might have led to increased participation in SNS by migrants and aspiring migrants, among which some migrate to pursue educational projects.

Studies about transnational education have described how youth from the middle classes in the Global South see educational opportunities abroad as a means to improve cultural and social capital, particularly of their younger members (Adick, 2018; Brooks & Waters, 2010). Migrants from such backgrounds usually already have access to enough economic capital or strong network ties. Hence, they can either have information provided by the institutions where they are going to study, or they can resort to family or friends' connections who are already in the country where they aim to study. As a qualitative aspect of mediatisation, the relevant position of information exchanges about VET and language courses described in our paper points toward a migration of people who either cannot resort to institutions to gather information or rather trust best the experience of the latent ties available on SNS (Jayadeva, 2019). This also adds a mediatised aspect to the descriptions of migratory pathways of people from low-income families who successfully pursue tertiary education through VET in Germany (Carnicer, 2019; Fürstenau, 2019). In these previous descriptions, pioneer migrants who accomplished their education abroad serve as strong network ties for other family members or friends who are also considering pursuing educational projects abroad. This outcome serves as the first evidence that qualitative and quantitative processes of mediatisation and the consequent establishment of latent ties through SNS are likely to contribute to the transnationalisation of education from below (Smith & Guarnizo 1998), reinforcing the argument that educational levels beyond university or private schools are also part of transnational education (Adick, 2018).

Agreeing with Justin Grimmer and Brandon M. Stewart's (2013) position about the wrongfulness and, at the same time, the usefulness of topic modelling approaches. On the one hand, we demonstrated that there is good evidence that education-related topics assume a relevant position in information exchanges on Facebook groups of Brazilian migrants and aspiring migrants in Germany. Latent ties from these groups have been activated to gather information about educational opportunities, processes, and enrolment requirements. More importantly, we have shown that mediatisation processes are also present in migration pathways involving educational projects. That occurs through latent ties and the potential increase in access to them due to processes of rapid digitalisation.

6.8. Conclusion

Using the case of migrant Facebook groups, we have discussed the connection of mediatisation for migration pathways involving education through the concept of latent ties (Haythornthwaite, 2002).

We argued, along with other authors (Adick, 2018; Carnicer, 2018, 2019: Fürstenau, 2018), that transnational education goes beyond university degrees. Furthermore, we have shown that education-related topics beyond university degrees figure among the most discussed ones in migrant Facebook groups. Based on that outcome, we argued that education is a central motivation to activate latent ties in online migrant networks. For our empirical case, that high interest in finding out about education-related possibilities to migrate could be yet another consequence of blocked educational opportunities in Brazil.

Comparisons with other groups of migrants and on other SNS could reveal other relevant aspects and provide new insights into transnational education movements. Although migrants most likely gather information across other media, following a manifold perspective of media use (Couldry & Hepp, 2017), our focus on one SNS only was relevant because of the forum-like structure of Facebook groups. That structure was ideal to answer our research question which required measuring the prevalence of interactions about education among migrants. A structure like Twitter or Instagram would not suit our aim because of its focus on individual posts. A qualitative study that accounts for the media manifold can fill this gap and add details to the use of media to pursue educational projects abroad. Such a study would provide context to how education is debated in migrant groups and shed light on social inequalities in migratory pathways involving educational projects by assessing the uses of media according to migrants' socioeconomic backgrounds.

Based on the tendency of increasing mediatisation (Hepp, 2020), the entanglements between migration involving education and digital media use will keep evolving. In that case, a pressing aspect that deserves further analysis is that big-tech companies like Facebook/Meta are possibly taking a relevant position in migratory pathways for people fleeing war and conflict or seeking educational opportunities abroad (Dekker et al., 2018; Jayadeva, 2020). The use of latent ties in migration pathways might be facilitating information gathering and decision-making processes. However, thereby migrants are not only sharing information but also generating information about their interests and decisions that a company with profit interests stores and that can be used for purposes unknown to migrants and aspiring migrants.

6.9. References

Adick, C. (2018). Transnational education in schools, universities, and beyond: Definitions and research areas. *Transnational Social Review*, *8*(2), 124–138. https://doi.org/10.1080/21931674.2018.1463057

Albalawi, R., Yeap, T. H., & Benyoucef, M. (2020). Using Topic Modeling Methods for Short-Text Data: A Comparative Analysis. *Frontiers in Artificial Intelligence*, *3*(42). https://doi.org/10.3389/frai.2020.00042

Benoit, K. (2020). Text as data: an overview. In *The SAGE handbook of research methods in political science and international relations* (Vol. 2, pp. 461-497). London: SAGE

Benoit, K., Watanabe, K., Wang, H., Nulty, P., Obeng, A., Müller, S., & Matsuo, A. (2018). quanteda: An R package for the quantitative analysis of textual data. *Journal of Open Source Software*, *3*(30), 774. https://doi.org/10.21105/joss.00774

Blei, D. M. (2012). Probabilistic topic models. *Communications of the ACM, 55*(4), 77–84. https://doi.org/10.1145/2133806.2133826

Breiter, A. (2014). Schools as Mediatized Worlds from a Cross-cultural Perspective. In: Hepp, A., Krotz, F. (eds) *Mediatized Worlds*. Palgrave Macmillan, London.

Brooks, R. & Waters, J. (2010). 'Social Networks and Educational Mobility: The Experiences of UK Students'. *Globalisation, Societies and Education, 8*(1), 143–57. https://doi.org/10.1080/14767720903574132.

Boyd, M., & Nowak, J. (2012). Social networks and international migration. In M. Martiniello & J. Rath (Eds.), *An introduction to international migration studies: European perspectives* (S. 79–106). Amsterdam: Amsterdam University Press. Cabalquinto, C. E. (2020). 'They could picture me, or I could picture them': 'Displaying' family life beyond borders through mobile photography. *Information, Communication & Society, 23*(11), 1608-1624, DOI: 10.1080/1369118X.2019.1602663

Câmara, A.C.M., & A.M.F. Almeida. (2012). 'Classe Social na Creche'. *Educação & Linguagem, 15*(26), 35–64. https://doi.org/10.15603/2176-1043/el.v15n26p35-64.

Carnicer, J. A. 2019. 'Transnational Migration and Educational Opportunities: A Case Study of Migration from Brazil to Germany'. *London Review of Education, 17*(1), 14–25. https://doi.org/10.18546/LRE.17.1.02.

_____ (2018). Transnational family and educational trajectories. *Transnational Social Review, 8*(2), 170–184

Carnicer, J. A., & Fürstenau, S. (2019). Transnational Education: a Concept for Institutional and Individual Perspectives (Editorial). Diskurs Kindheits- und Jugendforschung / Discourse. *Journal of Childhood and Adolescence Research, 14*(4), 385-389. https://doi.org/10.3224/diskurs.v14i4.01

Couldry, N. & Hepp, A. (2017). *The mediated construction of reality*. Polity Press, Cambridge.

Dedecek Gertz, H. (2023). Migration and education on social media: What migrants discuss about education in Facebook groups. *Frontiers in Sociology*, 8, 1177411. https://doi.org/10.3389/fsoc.2023.1177411

Dekker, R., Engbersen, G., Klaver, J., & Vonk, H. (2018). Smart Refugees: How Syrian Asylum Migrants Use Social Media Information in Migration Decision-Making. *Social Media + Society, 4*. https://doi.org/10.1177/2056305118764439

Dumont, H; Maaz, K; Neumann, M. & Becker, M. (2014). 'Soziale Ungleichheiten Beim Übergang von Der Grundschule in Die Sekundarstufe I: Theorie, Forschungsstand, Interventions- Und Fördermöglichkeiten'. Zeitschrift für Erziehungswissenschaft 17 (SUPPL.2), 141–65. https://doi.org/10.1007/s11618-013-0466-1.

El-Mafaalani, A. (2020). *Mythos Bildung: die ungerechte Gesellschaft, ihr Bildungssystem und seine Zukunft*, Cologne: Kiepenheuer & Witsch Evans, Y., Tonhati, T, & Souza, A. (2013). *Imigrantes Brasileiras Pelo Mundo*. London: Queen Mary - University of London.

Foletto, L. R. (2018). 'Usos Sociais Do Facebook Por Migrantes Brasileiros Na Suécia : Os Grupos Na Construção Identitária'. *Mediação, 20(*26), 92–112.

Friesen, N. & Hug, T. (2009). The Mediatic Turn: Exploring Consequences for Media Pedagogy. In K. Lundby (Ed.). *Mediatization: Concept, Changes, Consequences*. New York: Peter Lang. Pp. 64-81. Online version available at: http://learningspaces.org/papers/Media_Pedagogy_&_Mediatic_Turn.pdf

Fürstenau, S. (2019). Educational aspirations of underprivileged female migrants. An ethnographic case study of a transnational network of care workers between Brazil and Germany. *Zeitschrift Für Erziehungswissenschaft*, 22(S1), 185–202. https://doi.org/10.1007/s11618-019-00882-4

Glick-Schiller, N.; Basch, L. & Blanc-Szanton, C. (1992). Transnationalism: A New Analytic Framework for Understanding Migration, *Annals of the New York Academy of Sciences, 645*(1), ix-xiv

Gomes, C., & Yeoh, B. S. A. (Eds.). (2018). *Transnational migrations in the Asiapacific: Transformative experiences in the age of digital media*. Rowman & Littlefield Publishers.

Grimmer, J. & Stewart, B. M. (2013). Text as Data: The Promise and Pitfalls of Automatic Content Analysis Methods for Political Texts. *Polit. anal., 21* (3), 267–297.

Haythornthwaite, C. (2002). Strong, weak, and latent ties and the impact of new media. *Information Society, 18*(5), 385–401

Hepp, A. (2020). *Deep Mediatisation*. London: Routledge.

Hunkler, C. (2016). Ethnische Unterschiede beim Zugang zu beruflicher

Ausbildung. In: Diehl, C., Hunkler, C., Kristen, C. (eds.) *Ethnische Ungleichheiten im Bildungsverlauf*. Springer VS, Wiesbaden. https://doi.org/10.1007/978-3-658-04322-3_14

IBGE (2021). *Estatísticas de Gênero: Indicadores sociais das mulheres no Brasil*, nr. 38, 2nd ed.. https://biblioteca.ibge.gov.br/visualizacao/livros/liv101784_informativo.pdf

_____. (2020). 'Educação 2019, PNAD Contínua'. Pesquisa Nacional Por Amostra de Domicílios Contínua 2019 (2), 1–16. https://biblioteca.ibge.gov.br/visualizacao/ livros/liv101736_informativo.pdf.

Jayadeva, S. (2020). Keep calm and apply to Germany: how online communities mediate transnational student mobility from India to Germany. *Journal of Ethnic and Migration Studies, 46*(11), 2240-2257

Kandel, W. & Massey, D. S. (2002). The Culture of Mexican Migration: A Theoretical and Empirical Analysis. Social Forces, 80(3), 981-1004. https://doi.org/10.1353/ sof.2002.0009

Leurs, K. (2019). 'Transnational Connectivity and the Affective Paradoxes of Digital Care Labour: Exploring How Young Refugees Technologically Mediate Co-Presence'. *European Journal of Communication, 34*(6), 641–49. https://doi.org/10.1177/0267323119886166.

Lutz, H. (2010): Gender in the migratory process. In: *Journal of Ethnic and Migration Studies 36*, S. 1647–1663

Madianou, M. & Miller, D. (2012). *Migration and New Media: Transnational families and Polymedia*. London: Routledge.

Marin, A. & Wellman, B. (2014). Social network analysis: an introduction. In *The SAGE handbook of social network analysis* (pp. 11-25). SAGE Publications Ltd, https://dx.doi.org/10.4135/9781446294413

Ministério das Relações Exteriores (2021). *Comunidade brasileira no exterior: Estimativas referentes ao ano de 2020*, available at:https://www.gov.br/mre/pt-br/assuntos/portal-consular/arquivos/ComunidadeBrasileira2020.pdf, access on 8.3.2022

NapoleonCat (2020). Facebook users in Brazil - February 2022. Available at https://napoleoncat.com/stats/facebook-users-in-brazil/2022/02/, access on March 9, 2022

Oosterbaan, M. (2013). Chapter Two. Orkontros: Brazilian Migrants, Social Network Sites and the European City. In J. Thissen, R. Zwijnenberg & K. Zijlmans (Ed.), *Contemporary Culture: New Directions in Art and Humanities Research* (pp. 37-50). Amsterdam: Amsterdam University Press_____ (2010). Virtual Migration. Brazilian Diasporic Media and the Reconfigurations of Place and Space. *Revue Européenne Des Migrations Internationales, 26*(1), 81–102

Pereira, T. I. & dos Reis, K. C. (2020). 'Estudo Da Evasão Universitária Em Contextos Emergentes: Desafios À Permanência Estudantil'. *Revista Da Faculdade de Educação, 33*(1), 209–25. https://doi.org/10.30681/21787476.2020.33.209225.

Rawolle, S. & Lingard, B. (2014). 26. Mediatization and education: a sociological account. In K. Lundby (Ed.), *Mediatization of Communication* (pp. 595-616). Berlin, Boston: De Gruyter Mouton. https://doi.org/10.1515/9783110272215.595

Roberts, M. E.; Stewart, B. M. & Tingley, D. (2019). stm : An R Package for Structural Topic Models. *Journal of Statistical Software, 91*(2). DOI: 10.18637/jss.v091.i02.

Roberts, M. E., Stewart, B. M., & Airoldi, E. M. (2016). A Model of Text for Experimentation in the Social Sciences. *Journal of the American Statistical Association, 111*(515), 988–1003. https://doi.org/10.1080/01621459.2016.1141684

Sampaio, G. T. C. & de Oliveira, R. L. P. (2016). 'Dimensões Da Desigualdade Educacional No Brasil'. *Revista Brasileira de Política e Administração Da Educação - Periódico Científico Editado Pela ANPAE, 31*(3), 511. https://doi.org/10.21573/vol31n32015.60121.

Statistisches Bundesamt (2022). Ausländer: Deutschland, Stichtag, Geschlecht/ Altersjahre/Familienstand, Ländergruppierungen/Staatsangehörigkeit, available at https://www-genesis.destatis.de/genesis/online, access on 8.3.2022 Schrooten, M. (2012). Moving ethnography online: Researching Brazilian migrants' online togetherness. *Ethnic and Racial Studies, 35*(10), 1794–1809

Smith, M. & Guarnizo, L. E. (Eds.) (1998). *Transnationalism from Below Comparative Urban and Community Research*. London: Routledge

Spyer, J. (2017). *Social Media in Emergent Brazil: How the Internet Affects Social Change*. UCL Press, London.

Trevisol, J. V. & Nierotka, R. L. (2016). 'Os Jovens Das Camadas Populares Na Universidade Pública: Acesso e Permanência'. *Revista Katálysis, 19*(1), 22–32. https://doi.org/10.1590/1414-49802016.00100003.

Silva, T. D. (2020). *'Ação Afirmativa e População Negra Na Educação Superior: Acesso e Perfil Discente'*, 1–54. https://www.ipea.gov.br/portal/images/stories/PDFs/TDs/td_2569.pdf.

Vertovec, S. (2009). *Transnationalism*. New York: Routledge

Windle, J. (2021). '*School Segregation in Rio de Janeiro: Geographical, Racial and Historical Dimensions of a Centre-Periphery Dynamic*'. Comparative Education. https://doi.org/10.1080/03050068.2021.1894868.

7. Paper 3: Migration and Education on Social Media: What Migrants Discuss about Education in Facebook Groups

Dedecek Gertz, H. (2023). Migration and education on social media: What migrants discuss about education in Facebook groups. Frontiers in Sociology, 8, 1177411. https://doi.org/10.3389/fsoc.2023.1177411

7.1. Introduction

This paper investigates education-related information, opinions, and experiences shared by migrants and aspiring migrants on social media. While social media became an important part of migration journeys and education can be an important driver for some migrants, there has been relatively little investigation of the intersection of migration, social media, and education, except for a few studies (e.g., Chang et al., 2018; Jayadeva, 2020). Existing research on transnational education tends to focus on migrants pursuing university degrees abroad (Brooks and Waters, 2010; Beech, 2015) and the intersection of migration, media, and education also seems to go in that direction (Jayadeva, 2020). This paper broadens that scope to include other educational opportunities, such as vocational education and training (VET). Specifically, this paper aims to answer the research question: What education-related topics are discussed among migrants and aspiring migrants in social media groups? Empirically, it explores the case of Facebook groups of Brazilian migrants and aspiring migrants who wish to move to, or already live in, Germany. Henceforth, these groups are referred to as groups of Brazilians in Germany. The results illustrate how migrant networks of latent ties can be used to collect information about transnational education beyond university degrees.

In what follows, I provide contextual information to justify the focus on Brazilian migration to Germany. I also comment on the migratory conditions of nurses and information technology (IT) professionals to Germany, as these professional groups are relevantly present in the data. After that, I describe the concept of "transnational education" (UNESCO and Council of Europe, 2001) and how it is associated with social networks, particularly in migratory cases associated with educational levels beyond university studies (Carnicer, 2019; Fürstenau, 2019). I then present the concept of "latent ties" (Haythornthwaite, 2002) and describe how these are activated in migratory contexts, followed by a comment on Brazilian migrants' media use. In the research design section, I explain the sampling and data collection decisions and the procedures for conducting a qualitative content analysis (Schreier, 2012). Finally, I present the findings in four sections: the demand for transnational education beyond university degrees, the potential association of education-related topics with economic and gender differences, the perception that university studies can be sometimes irrelevant or associated with frustration in this migratory context, and the trust in information shared by latent ties in education-related topics. While it is not possible to assert whether people who exchanged information in the groups of Brazilians in Germany migrated and fulfilled their educational aspirations, the outcomes support that demand for transnational education goes beyond university degrees and that information shared in these groups is potentially relevant for migratory pathways associated with education.

7.2. Contextual Information

In this section, I justify the focus on Brazilian migration to Germany and outline the German labor market conditions for migrant nurses and IT professionals.

7.2.1. Brazilians in Germany and Education

Although the number of Brazilians in Germany is small compared to migrants from other nationalities (Statistisches Bundesamt, 2022), Germany figures among the top five European countries of destination for Brazilian migrants (Ministério das Relações Exteriores, 2021). Therefore, from a

Brazilian perspective, studying this population in Germany is of quantitative interest. From a German perspective, focusing on Brazilian migration provides insights into the migration of a socioeconomically diverse population who primarily migrate for reasons other than fleeing war and conflict. While the findings here are not generalizable, they might be similar among other populations, as social media use is widespread. The diversity of the Brazilian population is potentially reflected in the composition of Facebook groups of Brazilians in Germany, as almost 77% of that population uses social media (Statista, 2022), and such high figures seem to be prevalent regardless of class and gender, and across rural or urban areas (Spyer, 2018; IBGE, 2022; NapoleonCat, 2022). All sampled Facebook groups of Brazilians in Germany have over two thousand participants, which increases the likelihood of a diverse socioeconomic composition.

The Brazilian education system has historically disadvantaged people from low-income backgrounds, despite recent improvements such as the implementation of quotas in public universities (Câmara and Almeida, 2012; Sampaio and Oliveira, 2016; Windle, 2022). While there have been improvements in national education measurements, as of 2019, the average formal education attendance among Brazilians was only 9.4 years, with only 17% of people aged 25 or over having completed tertiary education (IBGE, 2022, p. 1). The need to work is the most common reason for Brazilians to drop out of formal education, regardless of race or sex (IBGE, 2022, p. 11–13), which highlights the deficient policies for promoting educational continuity. Furthermore, structural racism is evident in the Brazilian educational system with the imbalance in tertiary education achievements. In 2017, only 31% of university graduates were Black or Brown, while 66% were white (Dias Silva, 2020, p. 23). Some of the students who cannot enter or conclude university degrees in Brazil see migration as a way to both access tertiary education and have an opportunity for upward mobility (Carnicer, 2019; Fürstenau, 2019).

In Germany, VET programmes are paid, last around 3 years, and are offered in a dual system. That means the students must attend teaching units and undergo supervised practical experience, similar to an internship. The starting salary for those beginning a VET programme in 2023 is at least 620 Euros with yearly increases thereafter (Bundesamt für Justiz, 2005). For aspiring nurses, the starting VET salary is around 1,166 Euros and, for an IT specialist in data and process analysis, the starting VET salary is 1,011 Euros (AUBI-plus, 2023). This salary is one of the conditions that enable young migrants from lower socioeconomic backgrounds who are excluded from the educational system in Brazil to pursue VET in Germany (Carnicer, 2019; Fürstenau, 2019). As of 2022, around 4.2 thousand Brazilians were enrolled in German universities (Destatis, 2022).

In Germany, the educational system tends to discriminate against migrant students, non-migrants with a migration history in the family, as well as non-migrants from low socioeconomic backgrounds (Dumont et al., 2014; Olczyk et al., 2016; Mafaalani, 2021). This issue has been improving, however, it is still observable in the traditional selection patterns of the school system. After 4 years of primary education, students (aged 10) can be recommended to continue toward the Gymnasium (higher secondary education) or to other modalities that also allow access to tertiary education, but are seen as 'less prestigious'. Pupils whose caretakers migrated to Germany tend to be discriminated against when it comes to recommendations to the Gymnasium, sometimes leading to a harder pathway in the access to tertiary education (Trebbels, 2015; Hunkler, 2016). For non-EU migrants, the path to VET in Germany is also a complex one: foreign school certificates are

sometimes recognized as a lower level requiring migrants to repeat studies; apart from the formalities of the migration process, educational institutions require knowledge of German language verified through expensive certificates which can make the way to VET no easier than the one to university.

7.2.2. Nurses and IT Professionals

Two relevant professional groups in the dataset are nurses and IT professionals. In Brazil, nurses must hold a specific BA degree. IT professionals, on the other hand, do not need a mandatory higher education certificate to work in the field. In Germany, these two professions are listed as highly demanded on the official website dedicated to informing and attracting foreign professionals to the country (Make it in Germany, 2023).

Nurses profession is regulated in Germany, hence, those who did not complete their training in the country are requested to have their certificates recognized, prove German knowledge through an officially recognized certificate, provide a certificate of mental and physical fitness signed by a German medical doctor, and show proof that they do not have a criminal record (Make it in Germany, 2022b). The costs of degree recognition vary according to federal states. In Hamburg, for instance, this may reach up to 722 Euros (Freie und Hansestadt Hamburg, 2022). Apart from those costs, applicants must also count with costs for, for instance, publicly sworn translations of their diploma, and German language exams, which can cost around 194 Euros in Brazil (Goethe-Institut, 2023). Based on all job announcements for nurses on the job-seeking portal Glassdoor, the average salary of these professionals in the private sector in Brazil is around 639 Euros monthly (Glassdoor, 2023d). For IT professionals working in Brazil, the mean salary is around 2.380 Euros monthly (Glassdoor, 2023b). If a migrant has a job offer in Germany in an IT area with a salary of at least 52.560 Euros yearly, they can apply for a Blue Card visa. For that, they must show proof of at least 3 years of professional experience in the area, some professional certificate or examination, and a German language certificate, which may be disregarded in case the working language in their future company is not German (Make it in Germany, 2022a). In the private sector in Germany, the salary of an IT consultant can reach around 5.000 Euros monthly (Glassdoor, 2023c). Nurses in Germany receive around 3.100 Euros monthly (Glassdoor, 2023a).

In the global labor market, some trained nurses might perform domestic work after migration (Parreñas, 2015). To describe this phenomenon, Rhacel Parreñas introduced the concept of "contradictory class mobility" which, among other factors, arises from the devaluation of degrees obtained in the Global South (Parreñas, 2015, p. 118). Parreñas' interviewees expressed frustration about not being able to work in positions they were trained for in the Philippines, but also acknowledged that their migration allowed them to afford living standards they would not have been able to achieve otherwise. In other words, while their financial conditions improved, their perceived social status decreased (Parreñas, 2015, p. 219). Unlike health-related labor areas, the relatively de-regulated nature of the IT profession poses one barrier less for migrants working in that area. Still, migrant women working in IT seem to be disadvantaged, as requirements to live flexible and hypermobile lives "sit uneasily with gender norms, which demand women's participation in and taking responsibility for the running of geographically fixed households" (Raghuram, 2004, p. 174).

7.3. Transnational Education and Social Networks

The term "transnational education" was proposed by the UNESCO to refer to "all types of higher education study programmes, or sets of courses of study, or educational services (including those of distance education) in which the learners are located in a country different from the one where the awarding institution is based" (UNESCO and Council of Europe, 2001, p. 2). Research in that area tends to focus on university education and, sometimes on private international schools (Adick, 2018). Among transnational education studies, the focus on university degrees comes along with an interest in institutional aspects (Waters, 2018), and migrants' expectations of acquiring cultural capital abroad (Waters, 2015; Yu, 2021). This kind of international mobility associated with education is held for a strategy of the middle classes, however, migrants from lower socioeconomic backgrounds also follow migratory projects based on educational aspirations and opportunities (Carnicer, 2019; Fürstenau, 2019). For some of these migrants, particularly in the German case, accessing VET is a means to fulfill their migratory goals and educational aspirations, as well as to support their families and achieve upward mobility (Carnicer and Fürstenau, 2021).

The migration of these Brazilians who wish to pursue VET in Germany supports the notion that migration is a project seldom planned and achieved individually, as migrants are embedded in "multi-stranded social relations that link together their societies of origin and settlement" (Basch et al., 2005, p. 8). This highlights the networked aspect of migration, where interpersonal connections are crucial for its accomplishment. Migrant network analyses have focused on strong and weak ties established through personal connections to describe migratory pathways involving education (Brooks and Waters, 2010; Beech, 2015; Carnicer and Fürstenau, 2019). These network connections can also be established online, and be used both to navigate dangerous migration journeys as well as to access information about university education abroad (Dekker et al., 2018; Jayadeva, 2020). Following that premise, the next section explores the establishment and uses of such online ties in migratory contexts.

7.3.1. Latent Tie Connections and Information Precarity in Migration Contexts

Social media have the potential to bridge different social groups: aspiring with settled migrants, job-seekers with jobholders, individuals with experience in the foreign educational system and newcomers (Komito, 2011; Nedelcu, 2012; Jayadeva, 2020; Kotyrlo, 2020). Such online connections bridged through social media can be named "latent ties," i.e., connections "for which a connection is available technically but that has not yet been activated by social interaction" (Haythornthwaite, 2002, p. 385). On social media, latent ties can be the pool of users participating in an online forum: most of them do not know each other, and a tie is established only when a user publishes something and receives replies from other users. These are, at first, rather instrumental connections that can serve to bridge people with experience in relevant matters for aspiring and newcomer migrants. For instance, latent ties can be activated in situations when official information is not available or when trustworthy information is hard to identify (Dekker et al., 2018). This situation has been described as "information precarity," a condition of instability, identified particularly among asylum seekers using media to collect information for decision-making and to access personal data, which leaves them potentially vulnerable to misinformation (Wall et al., 2017; Dekker et al., 2018). While the migratory context presented in this paper is different from that of asylum seekers. These migrants seem to

prefer social media information based on personal experiences or shared by users with whom a stronger social connection is already established, as these is perceived as more trustworthy (Dekker et al., 2018). Along with other platforms, Facebook groups are mentioned as convenient sources of information, however, the authenticity of such information is still cross-checked with personal acquaintances (Dekker et al., 2018, p. 8).

In migratory journeys related to education, Jayadeva (2020) has described the use of Facebook groups among Indian youth who wish to access universities in Germany. She suggests that information shared by latent ties can facilitate migrants' access to university education by expanding aspiring migrants' social capital (Jayadeva, 2020). In that context, Facebook groups are seen as a source of guidance in the process of applying to universities and even as a better alternative to paid education consultancy services. Although the migrant group studied by Jayadeva (2020) were in a different situation than the refugees studied by Wall et al. (2017) and Dekker et al. (2018), both groups of migrants rely on information shared on social media, evidencing the relevance of latent ties in migratory journeys, even in those in which information precarity is not necessarily the case (Jayadeva, 2020).

7.3.2. Brazilian Migrants and Latent Ties

Brazilian migrants' fondness for social media is not new. Almost 10 years ago, Schrooten (2012) conducted a digital ethnography among Brazilian migrants living in Belgium who used Orkut (a platform deactivated in 2014). She pointed out that these groups "provide a variety of social capital … which assists in the migration transition" (Schrooten, 2012, p. 1,801). Schrooten reports political discussions, arrangements for in-person gatherings, and information exchanges about documentation, legal procedures, and employment opportunities. Also researching Orkut, Oosterbaan (2010, 2013) reports that employment search was one of the most relevant topics in groups of Brazilians in Barcelona and Amsterdam. Oosterbaan (2013, p. 46) highlights that some groups support in-person meetings, which evidences a willingness to develop strong ties and trust in unknown people based on shared nationality, participation in an online forum, and possibly similar migratory situations. Latent ties are part of the networked aspects supporting migration aspirations and decision-making among Brazilian migrants (Dekker et al., 2016).

In the 2010s, both Oosterbaan (2010, 2013) and Schrooten (2012) reported similar levels of interaction in Brazilian Orkut groups in three European contexts, finding over a thousand communities with titles of "Brazilians in [location]" (Oosterbaan, 2010). Schrooten (2012) highlights that Orkut was embedded in migrants' daily life already before they migrated and, after migration, it became a relevant source of social, political, and cultural connection to Brazil. After Orkut was deactivated, migrants and aspiring migrants created new communities on Facebook— with no sign of diminished interest in social media networking. Researching Facebook groups of Brazilians in Sweden, Foletto (2018) reports groups with over 1.7 thousand participants and a mean of 66.8 monthly posts—similar amounts as among groups of Brazilians in Germany (see Table 1). The main feature of online migrant groups is, hence, information exchange and mutual support in the migration process. Latent ties established on social media are thus relevant among Brazilian migrants and aspiring migrants. It remains to be described the role of education-related topics in the activation of these ties.

7.4. Research Design

Education-related topics are among the most prevalent ones debated in groups of Brazilian migrants in Germany (Dedecek Gertz and Süßer, 2022), and hence, they are among the most important cues to activate latent ties (Haythornthwaite, 2002). These education-related topics are connected to levels beyond university education, such as language learning and accessing VET (Dedecek Gertz and Süßer, 2022). This paper looks from a qualitative perspective at a share of these posts used to determine the prevalence of education-related topics in groups of Brazilians in Germany.

To select relevant groups, I first used Facebook's search tool to look for groups containing "Brazilian" and "Germany" (in Portuguese) and gained access to 43 "active groups," i.e., groups with at least a thousand participants and three posts published in one week. Most groups required filling up a questionnaire upon entry, which I used to inform about my research interest. Also, on my Facebook profile, I am identified as a researcher and provide my contact information. These 43 active groups were divided into "location groups," "professional groups," "vocational education and training (VET) groups," and "other" (Brazilians who wish to work as Au Pairs or to do voluntary work, "gardening for Brazilians" etc.). Anyone with a Facebook account could join the groups, however, due to the titles containing variations of "Brazilians in Germany," the frequent discussion of topics related to regulations and requirements that apply to Brazilians in Germany, and the use of Brazilian Portuguese in the groups, the majority of participants are likely to be Brazilian.

After reading what was posted in these groups in 2020, some stood out due to the level of daily interactions: users engaged with posts commenting on their experiences, giving tips, or starting discussions based on their different experiences and opinions. Two groups from each relevant type were selected: two "location groups" and two "professional groups," both with the highest number of interactions and the only two "VET groups" available. "Other" groups had no relevant education-related interactions and were therefore not selected. The amount of collected interactions (questions and answers), words per group, and participants at the time of the data collection were as follows:

Table 3: Interactions varied from over 800 words (in which concrete situations and doubts were explained, for instance) to 3 words (in short replies if someone asked for clarification to provide an accurate reply).[5]

Groups	*Interactions*	*Words*	*Participants*
VET group 1	450	21.379	4.936
VET group 2	1,051	62.289	4.713
Location group 1	123	9.654	4.520
Location group 2	321	36.195	24.180
Nurses' group	153	13.909	3.944
IT group	199	11.789	2.480

Posts made until the beginning of December 2020 were identified using Facebook's search tool and copied into a text editing document. Each group was screened for the following terms relating to formal education: learn, study, Ausbildung (the German word for VET), school, university, faculty, course, Studienkolleg[6], classes, and course. All posts and their respective comments containing at least one of these terms were collected. Although this selection encompasses a timeframe in which migration was limited due to COVID-19 restrictions, the levels of interactions were still high. In the dataset, the only mention of COVID-19 in association with education is a reply by a group participant informing that "students with a valid registration at a German university can enter the country" (Location group 2). The content of the posts also reveals that, regardless of the restrictions, this period was still used for planning migratory journeys: "even though there's not much to do now, I'm already collecting information" (VET group 1), writes a group participant.

After the data collection, posts that contained sensitive information, posts in which terms were used out of context, and posts containing advertising were eliminated. The posts were coded using MAXQDA according to the following deductive/inductive categories (Schreier, 2012).

- Educational levels being discussed
  - Kindergarten
  - School (*Gymnasium/Gesamtschule/Realschule/Hautpschule*)
  - VET (divided by areas, e.g., care work, IT)
  - University (BA, MA, Ph.D.)
- What was being discussed about education
  - permanence in Germany (e.g., being enrolled in an educational institution to apply for a residence permit)
  - professional aspiration (e.g., fulfilling requirements to apply for certain jobs)
  - upward mobility (e.g., achieving a certain income)
  - cultural capital (e.g., value attributed to diplomas)

[5] In total, 2.297 interactions were collected. Although some groups had more interactions, the number of words is lower because the interactions (questions/answers) were shorter. For instance, Location group 2 had fewer interactions than VET group 1, but more words because interactions in Location group 2 were more detailed.

[6] Public educational institutions that offer a one-year preparatory course for students who finished school outside Germany and wish to access a German university.

- Questions
  - recommendation or opportunity request (e.g., "I'm looking for a VET to work in a Kindergarten—if anyone knows about such an opportunity, let me know," VET group 1)
  - personal experiences (e.g., "has anyone undergone a certificate recognition lately and can tell me how it was?", VET group 1)
  - opinion request (e.g., "I'm having a hard time with the notary to have my high school certificate recognized—they claim a signature is missing but it is in fact there! What should I do?", VET group 2)
  - "information precarity" ["insecure, unstable, and undependable" information which could lead to potentially wrong, problematic or even dangerous decisions (Wall et al., 2017) such as "I heard say that having a university degree as a nurse is worthless. Is that true?", Nurses' group]
- Answers
  - based on "information precarity" (Wall et al., 2017) (wrong or incomplete information such as "people who cannot pay for VET can receive a public loan for that," VET group 1)
  - based on where to find official information (e.g., "you can find this information at the Job Center," VET group 1)
  - style or tone
    - e.g., detailed information (e.g., a 100-word answer about how to register in the city hall and the documents one has to present to start VET, including a comparison between Brazilian and German documents, as found in VET group 1)
    - e.g., frustrating, vague, or critical (e.g., "I'd also like more information about it but I could never find," VET group 1, or "if you have no experience in the area and have no degree, you can forget it!", IT group)
    - e.g., supportive (e.g., "if you're an engineer you have a great advantage! Just go have your diploma recognized," IT group)

A reliability test conducted by two trained coders resulted in a Cohen's Kappa value of 0.64, which can be considered "substantial" (McHugh, 2012, p. 279). To preserve users' anonymity, posts not will be reproduced word-by-word (Zimmer, 2010). As these groups can be found and accessed by anyone with a Facebook account, reproducing posts here would imply the possibility of de-anonymization. Thus, posts are paraphrased: names of places were substituted for similar ones, professions were substituted for other ones within the same field as the original, and the order of sentences was changed, as long as the sense of the content was not thereby lost. These paraphrased sentences serve as an illustration of patterns across the data.

7.5. Findings

Only two groups were bringing together Brazilians interested in pursuing higher education degrees in Germany: a group for Brazilian students and aspiring students of a university preparatory school (Studienkolleg) and one general group about studying in a German university. Although related to education, both groups did not reach the threshold to be considered "active groups," thus they were not part of the dataset. This relative inactivity of Facebook groups for Brazilians who wish to study at a German university contrasts with findings by Jayadeva (2020) about Indian aspiring migrants with that same goal. Nevertheless, the comparative absence of active groups of Brazilians wishing to access university education in Germany cannot be taken as evidence of lacking interest in that educational level. A hypothesis for that is that Brazilian students who wish to apply for university studies in Germany might rely on other sources of latent ties (such as existing specialized Instagram profiles or WhatsApp groups), on strong ties who already live in Germany, on paid consultancies, or ask questions directly to the institutions where they wish to study.

Although the active groups with the most participants is one of the location groups, the largest datasets came from the two VET groups. That is not surprising as VET groups are specific to those who are pursuing that educational level or who wish to do so. Hence, many interactions in these groups contained the words sampled in the data collection. Participants in location groups who ask questions relating to education are probably established in the city and are seeking educational options for their children, as school was a frequently used word in those groups. An explanation for the comparatively low educational-related topics in the IT group may be that these professionals can find jobs without a degree or without pursuing education in Germany. The number of interactions in the nurses' group is lower in comparison to the IT group, however, as the number of words in the nurses' groups is larger, interactions about education in the nurses' group are more extensive. This is probably due to the educational requirements for these professionals in Germany, which generates longer discussions.

As expected from forum-like online groups, interactions in the collected data follow a question-answers structure. Divergent personal experiences and opinions lead to debates but these were always replying to practical questions: no user posed divisive questions as a starting point, which suggests a common interest of participants to use the latent ties to exchange practical information and support each other (Jayadeva, 2020).

The findings indicate that there is a demand for educational levels beyond university degrees among migrants. Additionally, economic and gender differences become visible in discussions about expectations and frustrations related to education and migration. Also, university studies are discussed with frustration or are deemed irrelevant in the labor market, while it is associated with acquiring cultural capital for children. Finally, the detailed and supportive tone of some interactions, and the use of Facebook groups by some migrants to confirm information collected elsewhere point out that latent ties are trusted in education-related information exchanges.

7.5.1. Demand for Transnational Education Beyond University Degrees

Across groups, questions related to accessing university degrees are mostly associated with educational aspirations toward children or teenagers, as in:

> "My daughter is almost finished with high school. After she graduates, we intend to move to Germany. I am looking for information about the process so that she can enter a German university in the future. I would like to know what would be the step-by-step application process, please." (VET group 1)

> "I like to travel a lot and I want my children to study at an internationally recognized German university. Although I earned more money in Brazil, I don't regret coming to Germany also because of that [traveling and educational aspiration toward children]." (IT group)

Latent ties are thus activated to collect information and reinforce the cultural capital attributed to university education in migratory trajectories (Waters, 2015; Yu, 2021). Another circumstance in which university education was mentioned was when migrants or aspiring migrants provided background information about themselves with the expectation of having accurate replies according to their case, hence a rather instrumental mention of that level of education:

> "I already have a BA in Mathematics and Biology here in Brazil. Do you know if this could count toward diminishing the number of seminars I have to take for a VET?" (VET group 2)

> "Can people who studied in a private university in Brazil also work in Germany?" (Nurses' group)

In location groups, university education is mentioned by newcomer students. However, the information exchange encompasses rather peripheral aspects and education is mentioned as a self-introduction:

> "I'm a PhD student and I'm going to study in [city in Germany] in a few months from now. I'm trying to get to know the city from afar and learn how to find a place to stay. Which neighborhoods do you recommend?" (Location group 2)

The reasons why none of these groups seem to be used to collect information about accessing university education remains to be established, but the hypothesis I suggest for the lack of Facebook groups of Brazilians interested in accessing German universities might also apply to the lack of interactions about it.

VET requirements, experiences, and opportunities about that educational level, as well as school for children and teenagers, were main topics discussed across groups (cf. Dedecek Gertz and Süßer, 2022). In location groups, education inequalities in Brazil were also a topic of discussion. In one of these groups, when a newcomer migrant asked about which neighborhood would be recommended to live in, the availability of schools and Kindergarten was mentioned among other practical aspects, like transportation. Newly arrived parents also use the location groups to seek information about the educational system in Germany. Main concerns were the quality of educational institutions in Germany:

> "I've heard that public education in Germany is great, and there are even people who think that it is better to study there than in the most expensive private school in

> Brazil. Yet, I've heard parents complaining because they cannot find a place in schools. Is it also difficult in the private ones?" (Location group 2)

These discussions further reveal a rather instrumental discussion around education, which might inform broader migratory and settlement decisions. Other school-related posts were about fees and experiences with children and teenagers' social and linguistic adaptation. Answers to such posts warned about the tendency of teachers not to recommend migrant children to the Gymnasium, consequently, leaving these children with a harder pathway to access universities (Trebbels, 2015; Hunkler, 2016):

> "Schools will try to push many things on your son, but be sure to tell them you want him to go to the Gymnasium! They always try to push foreigners away from there. They'll tell you that the other school types are easier for your son and that he can still enter university after he has done VET—don't fall for that!" (Location group 2)

Although VET groups are not exclusively for care work or education-related professions, these areas are the most mentioned ones. In general, questions and answers about VET encompassed elementary ones, such as what it is, entry requirements, class schedules, teaching style, where to find vacancies, as well as the labor market:

> "Could someone here explain to me what is Ausbildung?" (VET group 1)

> "I've started a BA to be a nurse [in Brazil] but I didn't finish. Does anybody know if I can skip some classes from VET courses? And is it paid? I'm learning German on the level A2." (Nurses' group)

> "Did anyone in this group manage to pursue VET in an area that they reeeeally wanted? I see most people choosing care work because of the labor market…" (VET group 2)

> "Can anyone tell me what are all the requirements to apply for VET. Documents and all? Thanks." (VET group 2)

> "Is the Ausbildung valid only in Germany?! Like, if I go back to Brazil this certificate is worth nothing?!" (VET group 2)

> "I've graduated in nutritional sciences, but I've decided to change areas and now I'm specializing in web development here in Brazil. After that, I'd like to do a specialization in Germany. Is it a good idea? Does anyone recommend a VET course?" (IT group)

Questions like "What is an Ausbildung?" might be due to a translation issue or limited German knowledge because, in the Facebook groups, VET is mostly referred to with the German word, which is probably still unknown to newcomers or aspiring migrants. Such questions about elementary aspects reveal that latent ties might be the first source of information about educational levels beyond university degrees.

Some answers to questions about VET were lengthy and mentioned the need to show certificates of language proficiency and school completion, and some users also indicated where specialized information could be sought:

> "You must have your documents and diplomas translated and recognized through the apostille convention, including high school, VET or higher education. After that, they will be forwarded to the Ministry of Education in the region where you live in Germany, where the equivalence will be done to determine whether or not you are eligible to pursue VET. In this process, the job center in your city can offer direct assistance. It is important to note that starting VET and learning the language are two separate things. To begin a VET course, you must have at least a B2 level of proficiency in the German language." (VET group 1)

Questions about the labor market after VET also generated more elaborated replies, mostly based on personal experience:

> "Much more important than having a VET certificate is to have experience. But even folks with less experience have proportionally higher salaries here because of the high demand for IT professionals, I know this because we're hiring a lot in the company I work for and I am participating in the selection processes." (IT group)

The discussion about educational levels beyond university degrees appears to be an important one across the sampled groups. Education seems to be mostly discussed on an instrumental level: as a means to fulfill migratory aspirations by being able to apply for a visa as well as to make decisions such as where to live based on access to schools for children. Accessing VET, in particular, is viewed as a way to fulfill both educational and migratory aspirations (Carnicer, 2019; Fürstenau, 2019), even if that might result in frustration for a perceived devaluation of skills or having to choose a profession based mostly on the labor market (Parreñas, 2015).

7.5.2. Economic and Gender Differences in Education-Related Discussions

Economic and gender disparities are particularly visible in the groups of IT professionals and nurses. These professions are highly gendered, and although it cannot be generalized that mostly men participate in the IT group and mostly women participate in the nurses' group, in the dataset, most posts in the nurses' group were made by users with typical Brazilian female first names, who used adjectives and pronouns in the female form. In the IT group, posts were mostly made by users with typical male first names, who used adjectives and pronouns in the masculine form. Based on the composition of the dataset, it appears that education-related topics are mostly discussed by women in the nurses' group, and by men in the IT group, even though the overall gender balance in both groups cannot be determined with absolute certainty.

In the nurses' group, common debates were about whether the salary paid in Germany is enough to cover basic expenses, including children's education: they wish to know about costs and experiences with German schools, the chances migrant children have of being accepted at a German university or VET:

> "It was a very difficult period because I came first to Germany and my daughter and husband afterwards. But I see how much this pain was worth it, especially for my daughter. Here children can have the profession they want, independently of the family's financial situation." (Nurses' group)

> "Can I live in the city of Hildesheim and work as a nurse on a salary of 1.200 Euros during VET? I'm wondering about the cost of living for my family..." (Nurses' group)

> "Living in Germany will not make you rich, but you'll have a better life, better education for your children, more opportunities and safety! Here you can earn a good or a bad wage, but NEVER as bad as in Brazil." (Nurses' group)

Children are also mentioned in connection to hiring companies that offer services to mediate nurses' migration—such companies are one of the most discussed topics in the group. Some posts expose frustration and regrets, as a comment expressing concerns that such companies would not accept candidates with children. Some of these hiring companies pay for German courses and for VET in Germany, which is mentioned as an attractive offer, especially for aspiring migrants from low socioeconomic backgrounds, yet this process is not always transparent and reliable (CORRECTIV, 2020). Apart from being able to present the expected educational certificates, a central topic of concern regarding education and profession in the nurses' group is language knowledge. Aspiring migrants who are probably in their first steps of finding ways to migrate are mocked when asking about the need to have a good command of the German language: with sarcasm, other group participants tell the newcomer that it is "impossible" to acquire the needed certification and to work in Germany as a nurse without knowing German. Although participants show support and understanding for aspiring migrants, criticism is sometimes present in the nurses' group:

> "I came to Germany through that company. I am at the B2 level and these months have been very intense with German classes from Monday to Friday. Class attendance is very important, because not only the school evaluates your performance but also your future employer. The point is, you need to learn German, there is no magic, you need to dedicate yourself and make an effort to understand the language." (Nurses' group)

> "Do you even understand German? Have you read the whole explanation about degree validation on the website? Read it first and only then come discuss this with me." (Nurses' group).

In the IT group, there are mentions of salary expectations higher than in the nurses' group. However, these comments are contradicted by a few other group participants demanding aspiring migrants who are IT professionals to be careful not to assume that a five-digit income is a norm in the German job market:

> "A high salary for me is above 97k. I don't know any IT professional who has a hard time in Germany, even if they speak only English. I spent the first 10 years of my career in Brazil and nowadays I find it funny that I thought my salary was good there. Here I buy what I want and I can still save some money." (IT group)

> "At the beginning, you'll earn more than 40k but with some years of experience you'll earn up to 100k in some regions in Germany." (IT group)
>
> "I already earn over 5 thousand Euros in Brazil. I'm afraid my quality of life living with that amount in Germany would fall." (IT group)

Income expectations appear twice in relation to children's education: once in a discussion about the "advantages of public services in Germany" and another in a post by a user expressing the wish that their children will access "internationally prestigious German universities" (mentioned in Section 5.1). The state's financial support for parents is also positively associated with migrating with children. Learning German to access the job market and pursuing educational aspirations in Germany is associated with maintaining a middle-class status or with upward mobility.

> "With my Portuguese passport, will I be able to work and bring my wife with me? I'm thinking about waiting until my son is 6 and then go to Germany for a master's degree. Do you think it would be worth it?" (IT group)
>
> Answering the question above: "Bro, why would you miss years of child benefits?! Come soon, dude!" (IT group)

High salaries, no need to prove formal education or language knowledge, EU citizenship[7], and migrating without having to rely on intermediary companies reveal a comfortable status that IT workers possibly already had in Brazil and are likely to maintain in Germany. Due to high salaries and the disregard for state-recognized degrees in hiring processes, migrants working in IT might have an easier migratory pathway if compared to nurses (cf. Raghuram, 2004). The shared interest in migrating and maintaining socioeconomic status working in IT seems to create room for fraternal conversations in this group, in which unknown people treat each other as "bro" and "dude". Whereas, in the nurses' group, the lack of German knowledge was sometimes mocked, in the IT professionals' group, this was a neutral fact: if a person speaks German, good for her; if not, group participants tended to still encourage her to pursue their plans. Such supportive messages might contribute to building a community sense among people who serve as latent ties (Jayadeva, 2020) and contribute to ascribing trustworthiness to information shared by participants in these networks, as further discussed in Section 5.4 ("trust in latent ties in education-related topics"). The frustration expressed in the nurses' group might also serve as a way to build a sense of shared experience among group participants, which might fulfill a similar role as supportive answers among IT professionals. The economic and gendered differences in connection to education are evidenced in how group participants exchange information about children's education and how that connects with other migratory conditions, such as salary expectations and educational requirements for each profession. In both groups, migrating with children raises concerns about education and this is discussed rather in terms of maintaining or achieving a class status (Waters, 2015), however, differences based on apparent previous socioeconomic conditions become visible in the ways how that is discussed: while

[7] Some EU-countries allow double citizenship based on the principle of jus sanguinis, i.e., for the case in this paper, Brazilians who can prove they have ancestors from, for instance, Germany, Italy, Portugal or Spain (the most common EU-ancestries in Brazil) can apply for citizenship in those countries.

IT professionals hope their children will access "prestigious universities," nurses hope for better education and opportunities for their children.

7.5.3. University Studies: "Irrelevance" and Frustration

In Brazil, nurses need a bachelor's degree to exercise their profession. In Germany, they need a VET certificate, which must be recognized by the German state through a national exam. Particularly in the nurses' group, this classification of university degrees as VET is debated with frustration:

> "In Germany, our degrees are recognized as VET, which is not even considered higher education here." (Nurses' group)
>
> "I've been a nurse for 20 years in Brazil. I received a letter a few days ago informing me that I must do a training which lasts from 3 to 6 months to have my degree recognized. The more I learn about how things work here, the more confused I get." (Nurses' group)
>
> "My brother works at the university hospital here, even though he is very experienced, he can't do half of what he did in Brazil. Although he arrived here with a reasonable level of German, he had to do very simple work. He was frustrated when he saw the other nurses doing crap procedures and he couldn't say a word." (Nurses' group)
>
> "I have a BA in pedagogy but I was just informed that it won't be recognized here as such. Has anyone been through this as well? What should I do?" (VET group 1)
>
> Answering the question above: "If they told you that, that's it. You'll have to study again here and you can spare your energies fighting this system because in Germany it's like that." (VET group 1)

Having work experience disregarded and university degrees recognized as VET in Germany is met with remorse, particularly among nurses. The high value attributed to university degrees in the nurses' group is also visible in the comments of a group participant who challenged others by claiming to hold a bachelor's in the area from a German university. This participant felt offended by those who denied the existence of that degree. Such attitude illustrates the social value attributed to the degree among these professionals and the frustration of not having it recognized or compensated as that of a university graduate in Germany.

For IT professionals, due to the deregulated nature of this labor market, having a degree is discussed as being an asset but not particularly relevant:

> "I have friends who were also hired in Germany [for an IT position] and don't have any degree or certificate, but of course that makes it easier to find a job." (IT group)
>
> "I know several people without a degree who work with me, even earning more than me. Many started a degree, but
>
> didn't finish it. It's quite irrelevant." (IT group)

Unlike in the nurses' group, in the IT group, there were fewer group participants interested in pursuing VET. This might be because Brazilian degrees or VET certificates are accepted by companies in this profession without the need to have them officially recognized or because of the promises of finding such jobs by proving experience in the area, as mentioned in the group.

Facebook groups are also used by aspiring migrants with university degrees frustrated with salaries in Brazil and interested in VET as a means to migrate:

> "I need help. I have a MA degree in pedagogy and I earn way too little [in Brazil]. I want to try to go to Germany, so I think pursuing VET is the best way. I don't want to go to university in Germany! I want something that gives me a job." (VET group 2)

> "I have a BA in translation, does anyone know if with that I can work at a Kindergarten? I'm fine even to be an assistant or something like that." (Location group 2)

Within the group of IT professionals, having a university degree is described as beneficial but not essential for finding a job in Germany. On the other hand, in the nurses' group, a topic associated with university studies is frustration due to the perceived devaluation of their degrees in Germany. Similarly, other aspiring migrants with university degrees in other areas display frustration, as they perceive their degrees as being undervalued in Germany. These two latter cases seem aligned with Parreñas (2015)' concept of "contradictory class mobility": migrants seem to perceive, or even aspire to, a decrease in social status associated with university degrees and accept jobs for which they may be overqualified, in exchange for an expected economic improvement and stability as well as gaining access to public services, such as schools for their children.

7.5.4. Trust in Latent Ties in Education-Related Topics

Although not always the case, interactions across groups were mostly supportive and group participants provided suggestions and were willing to share their experiences. That is particularly the case of users searching for information about the requirements to pursue VET, which is also linked to the requirements to be granted a visa. Some participants mention that they have already searched for information in official sources, such as educational institutions and governmental websites, yet they claim to be confused and seek clarifications and ask for personal experiences on Facebook groups. Users who claim to have a good command of German also mention having difficulty finding information and thus resort to Facebook groups:

> "I've looked around in the websites and it looks like there is no English-taught BA in Engineering here. But maybe there are for other areas? Does anyone know of any degree like that?" (Location group 2)

> "To work in Germany in a Kindergarten, what should I do? I've graduated in Linguistics [in a Brazilian public university] and I already speak German." (VET group 1)

Even elementary questions, such as "What is an Ausbildung?", receive answers such as:

> "Unlike Brazil, where hairdressers and bricklayers learn their trade on the job, almost all professions in Germany require VET, which is called Ausbildung. It is a very good way to enter the job market because students are referred to work even during the course and most of the time they get a real job after they're done studying. It's also a good way to afford costs of living because you get paid to do an Ausbildung." (VET group 1)

The author of this last reply draws a comparison between Brazil and Germany, explains what an Ausbildung is, and what its advantages are, formulating an elaborated answer. Such an answer could have been found on other websites (the Goethe Institute in Brazil or blogs of Brazilians living in Germany, for instance), however, the user posing the question prefers to activate latent ties to find an answer. Some of these answers are accompanied by motivational messages along the lines of "I have done it, you can do it too" or "believe in yourself and go get it" (VET group 1). Asking elementary questions and receiving elaborated and supportive answers for it points out that some aspiring migrants might use Facebook groups as their first source of information about education beyond university levels in Germany and that group participants share a sense of empathy or solidarity, similarly as described by Jayadeva (2020).

Another use of these groups seems to confirm whether the information collected elsewhere is accurate. Such questions usually do not specify the source of the information the person holds:

> "I hear some people saying that [an institution] offers payment to pursue VET. I'd like to know whether that's true.
>
> Does anyone have experience with this?" (VET group 2)
>
> "I've heard that there is some system for migrants to complete high school here. Do you think I could do that with my elementary school certificate?" (VET group 2)

It appears that these individuals are seeking second opinions for their hearsay information by consulting with unknown participants of Facebook groups. Although they may also seek second opinions on official websites or by contacting institutions, relying on latent ties to clarify doubts demonstrates that the experiences and opinions of Facebook group members about education in Germany are considered valuable and trustworthy. Finally, some group members empathize with the position of these aspiring or newly arrived migrants who are seeking information on Facebook groups and provide detailed and supportive answers. This might reinforce a perception of reliability or trustworthiness among the group. Dekker et al. (2018) described a similar phenomenon, but in the other direction, with migrants checking information collected from latent ties against the knowledge and experience of personal acquaintances. However, in the case of migrants who are not fleeing war or conflict and who employ social media to search for education-related information, latent ties appear to be relied upon and utilized for verifying information.

7.6. Conclusion

Non-university education is a main topic of discussion in the analyzed migrant Facebook groups (Dedecek Gertz and Süßer, 2022). University studies were also present in the interactions. However, other educational levels, VET, in particular, were an important demand. This outcome is consistent with other studies which point out that transnational education goes beyond university degrees and extends to educational levels that may facilitate access to education abroad for students from lower socioeconomic backgrounds (Carnicer, 2019; Fürstenau, 2019). These other studies relied on network analyses of strong tie connections to describe how these migrants accessed education abroad. While it is not possible to establish whether the aspiring migrants whose interactions on Facebook groups were described here indeed migrated, it is possible to claim that latent ties (Haythornthwaite, 2002) are used to acquire and cross-check information about education abroad, particularly VET. Hence, such ties established online are also part of networks of transnational migratory pathways involving education (Jayadeva, 2020)—also beyond university levels.

Education is often discussed on an instrumental level among aspiring migrants in nurses' and VET groups, with a focus on migrating through such educational opportunities. In location and IT groups the interest in education may assume a character of cultural capital, especially when it comes to children's education. The interactions reveal concerns about fees in international schools, about the possibility of children not being able to reach the Gymnasium and proceed to a "prestigious German university," a similar concern of East Asian families of the middle and upper middle classes who expect that their children would acquire cultural capital through transnational education (Waters, 2015). Other aspects of formal education, such as proof of language proficiency and degrees, are relevant for all groups, but not much to IT professionals, who comment on the possibilities of applying for jobs and visas without either knowing the language or holding tertiary education degrees. This is unthinkable for migrant nurses, who must master the language and either have their Brazilian bachelor's degree recognized in Germany or pursue VET in the country, which reveals the advantages of tech workers, who may face fewer hindrances and frustrations than care workers (cf. Raghuram, 2004). Hence, instead of using education as a means or a goal of migrating, migrants with more stable economic means seem to associate education with the maintenance of socioeconomic status. For aspiring migrants in other economic conditions, a contradictory class mobility (Parreñas, 2015) by pursuing VET seem to be desirable and sometimes recommended by other migrants in the groups, even if the devaluation of work experience and Brazilian university degrees is met with frustration.

Differently than in other migratory contexts, when information collected online is validated with strong or weak ties (Dekker et al., 2018), some of the interactions described here point out that latent ties are also used to confirm information collected elsewhere. This is most likely related to the different contexts of migrants—who are not fleeing war and requesting asylum, as the ones researched by Wall et al. (2017) and Dekker et al. (2018)—and the sampling for education-related topics, as migration associated with education demands a preliminary personal organization, having documents translated, providing language certificates, among other requirements. The supportive tone, attentive answers, and descriptions of personal experiences provided by some group participants might also contribute to the apparent trust in information shared by latent ties. This interest in seeking information and support among migrants in similar situations aligns with what was observed a decade ago, on a social media platform which no longer exists, among Brazilian migrants (Schrooten, 2012; Oosterbaan, 2013), and also more recently, among Indian aspiring migrants on

Facebook and WhatsApp groups (Jayadeva, 2020). Hence, this phenomenon might also be identified among migrants from other nationalities and it is likely to continue regardless if a certain social media platform ceases to exist.

Some of the information shared in these groups is not accurate and the snapshot of the experience of someone else might convey only a partial truth about migrating and accessing education abroad. Hence, the role of information precarity (Wall et al., 2017; Dekker et al., 2018) in the context of migration involving education can be further researched through interviews. Another aspect that demands further research is whether education generally and VET, more specifically, is also an important topic in other national contexts. Because in Germany VET studies are paid, education-related debates are likely to be different among migrants seeking to access education in other countries. The economic and gender differences identified, particularly in groups of nurses and IT professionals, raise the question of whether latent ties connections may reproduce inequalities in education-related migratory pathways similarly as identified in networks of strong and weak ties (Beech, 2015). Future research could further examine whether latent tie connections contribute to or challenge these inequalities.

7.7. References

Adick, C. (2018). Transnational education in schools, universities, and beyond: definitions and research areas. Transnat. Soc. Rev. 8, 124–138. doi: 10.1080/21931674.2018.1463057

AUBI-plus (2023). Gehalt in Der Ausbildung [Salary during VET]. AUBI-Plus. Available online at: https://www.aubi-plus.de/ausbildung/ausbildungsverguetung/ (accessed April 14, 2023).

Basch, L. G., Schiller, N. G., and Blanc, C. S. (2005). Nations Unbound: Transnational Projects, Postcolonial Predicaments, and Deterritorialized Nation-States. London: Routledge. doi: 10.4324/9780203347003

Beech, S. E. (2015). International student mobility: the role of social networks. Soc. Cult. Geogr. 16, 332–350. doi: 10.1080/14649365.2014. 983961

Brooks, R., and Waters, J. (2010). Social networks and educational mobility: the experiences of UK students. Glob. Soc. Educ. 8, 143–157. doi: 10.1080/14767720903574132

Bundesamt für Justiz (2005). Berufsbildungsgesetz (BBiG):§ 17 Vergütungsanspruch Und Mindestvergütung. Gesetze Im Internet. Available online at: https://www.gesetze-im-internet.de/bbig_2005/BJNR093110005.html#BJNR093110005BJNG000101128 (accessed March 23, 2005).

Câmara, A. C. M., and Almeida, A. M. F. (2012). Classe social na creche. Educ.Linguagem 15, 35–64. doi: 10.15603/2176-1043/el.v15n26p35-64

Carnicer, J. A. (2019). Transnational migration and educational opportunities: A case study of migration from Brazil to Germany. London Rev. Educ. 17, 14–25. doi: 10.18546/LRE.17.1.02

Carnicer, J. A., and Fürstenau, S. (2019). Editorial. Diskurs Kindheitsund Jugendforschung. Discourse J. Childh. Adolesc. Res. 4, 385–89. doi: 10.3224/diskurs.v14i4.01

Carnicer, J. A., and Fürstenau, S. (2021). "Transnational mobility, education and social positioning between Brazil and Germany," in The Palgrave Handbook of Youth Mobility and Educational Migration, ed D. Cairns (Cham: Springer International Publishing), 107–117. doi: 10.1007/978-3-030-64235-8_11

Chang, S., Gomes, C., and Martin, F. (2018). "Transnational migrations in the Asia-Pacific: transformative experiences in the age of digital media," in Transnational Migrations in the Asia-Pacific: Transformative Experiences in the Age of Digital Media, ed C. Gomes and B. S. A. Yeoh (London; New York, NY: Rowman and Littlefield), 3–23.

CORRECTIV (2020). An Unsettling Business: How Agents Are Commoditizing Foreign Nurses for German Healthcare. Correctiv.Org. Available online at: https:// correctiv.org/en/latest-stories/2020/11/25/nurses-for-sale/ (accessed November 25, 2020).

Dedecek Gertz, H., and Süßer, F. (2022). Migration and educational projects online: A topic modelling approach of discussions on social media groups. Mediální studia. 16, 236–256. Available online at: https://medialnistudia.fsv.cuni.cz/front.file/download? file=medialni_studia_2_2022_5%20(1).pdf

Dekker, R., Engbersen, G., and Faber, M. (2016). The use of online media in migration networks: the use of online media in migration networks. Popul. Space Place 22, 539–551. doi: 10.1002/psp.1938

Dekker, R., Engbersen, G., Klaver, J., and Vonk, H. (2018). Smart refugees: How syrian asylum migrants use social media information in migration decision-making. Social Media. Soc. 4, 1–11. doi: 10.1177/2056305118764439

Destatis (2022). Anzahl Der Ausländischen Studierenden an Hochschulen in Deutschland Im Wintersemester 2021/2022 Nach Herkunftsländern [Number of Foreign Students at Universities in Germany in the Winter Semester 2021/2022 by Country of Origin]. Statistisches Bundesamt. Available online at: https:// www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bildung-Forschung-Kultur/ Hochschulen/Publikationen/Downloads-Hochschulen/studierende-hochschulenendg-2110410227004.pdf?__blob=publicationFile (accessed March 21, 2023).

Dias Silva, T. (2020). 'Ação Afirmativa e População Negra Na Educação Superior: Acesso e Perfil Discente'. Brazilian Institute of Applied Economic Research (IPEA). Available online at: https://www.ipea.gov.br/portal/images/stories/PDFs/TDs/td_2569. pdf (accessed May 31, 2023).

Dumont, H., Maaz, K., Neumann, M., and Becker, M. (2014). Soziale ungleichheiten beim übergang von der grundschule in die sekundarstufe i: theorie, forschungsstand, interventions- und fördermöglichkeiten. Zeitschrift Erziehungswissenschaft 17, 141–165. doi: 10.1007/s11618-013-0466-1

Foletto, L. (2018). Usos Sociais Do Facebook Por Migrantes Brasileiros Na Suécia: Os Grupos Na Construção Identitária. Mediação 20, 93–112.

Freie und Hansestadt Hamburg (2022). Informationen Über Das Verfahren Zur Anerkennung Einer Im Ausland Abgeschlossenen Qualifikation in Einem Gesundheitsfachberuf. Available online at: https://www.hamburg.de/contentblob/ 2914376/de36f733f87ca6144fdad5cff1da9d9d/data/anerkennung-ausbildunggesundheitsfachberuf-dt.pdf (accessed April 17, 2023).

Fürstenau, S. (2019). Educational aspirations of underprivileged female migrants. An ethnographic case study of a transnational network of care workers between Brazil and Germany. Zeitschrift Erziehungswissenschaft 22, 185–202. doi: 10.1007/s11618-019-00882-4

Glassdoor (2023a). Gehalt Als Krankenpfleger in Deutschland. Glassdoor. Available online at: https://www.glassdoor.de/Geh%C3%A4lter/krankenpfleger-gehalt-SRCH_ KO0,14.htm (accessed April 14, 2023).

Glassdoor (2023b). Salários Do Cargo de Especialista Em TI - Brasil. Glassdoor. Available online at: https://www.glassdoor.com.br/Sal%C3%A1rios/especialista-emti-sal%C3%A1rio-SRCH_KO0,18.htm (accessed April 14, 2023).

Glassdoor (2023c). Gehalt Als IT Specialist in Deutschland. Glassdoor. Available online at: https://www.glassdoor.de/Geh%C3%A4lter/it-specialist-gehalt-SRCH_ KO0,13.htm (accessed April 15, 2023).

Glassdoor (2023d). Salários Do Cargo de Enfermeiro – Brasil. Glassdoor. Available online at: https://www.glassdoor.com.br/Sal%C3%A1rios/enfermeiro-sal%C3%A1rioSRCH_KO0,10.htm (accessed April 15, 2023).

Goethe-Institut (2023). Goethe-Zertifikat B1. Goethe-Institut. Available online at: https://www.goethe.de/ins/br/de/sta/poa/prf/gzb1.html (accessed April 17, 2023).

Haythornthwaite, C. (2002). Strong, weak, and latent ties and the impact of new media. Inform. Soc. 18, 385–401. doi: 10.1080/01972240290108195

Hunkler, C. (2016). "Ethnische unterschiede beim zugang zu beruflicher ausbildung," in Ethnische Ungleichheiten im Bildungsverlauf, ed C. Diehl, C. Hunkler, and C. Kristen (Wiesbaden: Springer Fachmedien Wiesbaden), 597–641. doi: 10.1007/978-3-658-04322-3_14

IBGE (2022). Acesso à Internet e à Televisão e Posse de Telefone Móvel Celular Para Uso Pessoal 2021. Instituto Brasileiro de Geografia e Estatística. Available online at: https://biblioteca.ibge.gov.br/visualizacao/livros/liv101963_informativo.pdf (accessed March 21, 2023).

Jayadeva, S. (2020). Keep calm and apply to germany: how online communities mediate transnational student mobility from India to Germany. J. Ethnic Migrat. Stud. 46, 2240–2257. doi: 10.1080/1369183X.2019.1643230

Komito, L. (2011). Social media and migration: virtual community 2.0. J. Am. Soc. Inform. Sci. Technol. 62, 1075–1086. doi: 10.1002/asi.21517

Kotyrlo, E. (2020). Impact of modern information and communication tools on international migration. Int. Migr. 58, 195–213. doi: 10.1111/imig.12677

Mafaalani (2021). Mythos Bildung: die ungerechte Gesellschaft, ihr Bildungssystem und seine Zukunft: mit einem Zusatzkapitel zur Coronakrise. 2. Auflage 2021 KiWi 1795. Köln: Kiepenheuer and Witsch.

Make it in Germany (2022a). Visum Für IT-Spezialisten. Make It in Germany - Das Portal Der Bundesregierung Für Fachkräfte Aus Dem Ausland. Available online at: https://www.make-it-in-germany.com/de/visum-aufenthalt/arten/weitere/ it-spezialisten (accessed March 08, 2022).

Make it in Germany (2022b). Pflegekräfte. Make It in Germany - Das Portal Der Bundesregierung Für Fachkräfte Aus Dem Ausland. Available online at: https://www. make-it-in-germany.com/de/arbeiten-in-deutschland/gefragte-berufe/pflegekraefte#:

$\sim$:text=Anerkannter%20Abschluss%3A%20Ihr%20Abschluss%20als,gleichwertig%20zu%20deutschen%20Abschl%C3%BCssen%20ist (accessed April 04, 2022).

Make it in Germany (2023). Gefragte Berufe. Make It in Germany - Das Portal Der Bundesregierung Für Fachkräfte Aus Dem Ausland. Available online at: https://www. make-it-in-germany.com/de/arbeiten-in-deutschland/gefragte-berufe (accessed April 17, 2023).

McHugh, M. L. (2012). Interrater reliability: the kappa statistic. Biochem. Medica 22, 276–282. doi: 10.11613/BM.2012.031

Ministério das Relações Exteriores (2021). Comunidade Brasileira No Exterior Estimativas Referentes Ao Ano de 2020. Brazilian Ministry of International Relations. Available online at: https://www.gov.br/mre/pt-br/assuntos/portal-consular/arquivos/ ComunidadeBrasileira2020.pdf (accessed February 28, 2023).

NapoleonCat (2022). Distribution of Facebook Users in Brazil as of April 2022by Gender [Graph]. Available online at: https://www.statista.com/statistics/ 199239/distribution-of-users-on-facebook-brazil-gender/ (accessed April 01, 2022).

Nedelcu, M. (2012). Migrants new transnational habitus: rethinking migration through a cosmopolitan lens in the digital age. J. Ethnic Migr. Stud. 38, 1339–1356. doi: 10.1080/1369183X.2012.698203

Olczyk, M., Seuring, J., Will, G., and Zinn, S. (2016). "Migranten und ihre Nachkommen im deutschen Bildungssystem: Ein aktueller Überblick," in Ethnische Ungleichheiten im Bildungsverlauf, eds C. Diehl, C. Hunkler, and C. Kristen (Wiesbaden: Springer Fachmedien Wiesbaden), 33–70. doi: 10.1007/978-3-658-04322-3_2

Oosterbaan, M. (2010). Virtual migration. Brazilian diasporic media and the reconfigurations of place and space. Revue Eur. Migr. Int. 26, 81–102. doi: 10.4000/remi.5037

Oosterbaan, M. (2013). "Orkontros: Brazilian migrants, social network sites and the European city," in Contemporary Culture, eds J. Thissen, R. Zwijnenberg, and K. Zijlmans (Amsterdam: Amsterdam University Press), 37–50. doi: 10.1017/9789048517954.003

Parreñas, R. S. (2015). Servants of Globalization: Migration and Domestic Work. 2nd Edn. Stanford, CA: Stanford University Press. doi: 10.1515/9780804796187

Raghuram, P. (2004). Migration, gender, and the it sector: intersecting debates. Womens Stud. Int. Forum 27, 163–176. doi: 10.1016/j.wsif.2004.06.006

Sampaio, G. T. C., and Oliveira, R. L. P. (2016). Dimensões Da Desigualdade Educacional No Brasil. Rev. Brasil. Polít. Adminis. Educação 31, 511. doi: 10.21573/vol31n32015.60121

Schreier, M. (2012). Qualitative Content Analysis in Practice. Los Angeles, CA: SAGE.

Schrooten, M. (2012). moving ethnography online: researching brazilian migrants online togetherness. Ethnic Rac. Stud. 35, 1794–1809. doi: 10.1080/01419870.2012.659271

Spyer, J. (2018). Mídias Sociais No Brasil Emergente: Como a Internet afeta a Mobilidade Social. Why We Post. São Paulo : Fortaleza : London: EDUC; Editora Armazém da Cultura; UCL Press. doi: 10.2307/j.ctv550d07

Statista (2022). Social Network User Penetration in Brazil from 2018 to 2027. Available online at: https://www.statista.com/statistics/244933/social-networkpenetration-in-brazil/ (accessed June 15, 2022).

Statistisches Bundesamt (2022). Anzahl Der Ausländer in Deutschland Nach Herkunftsland von 2019. Bis 2021. Statista. Available online at: https://de.statista.com/ statistik/daten/studie/1221/umfrage/anzahl-der-auslaender-in-deutschland-nachherkunftsland/ (accessed March 3, 2023).

Trebbels, M. (2015). "Educational aspirations, expectations and choices of migrants," in The Transition at the End of Compulsory Full-Time Education, ed M. Trebbels (Wiesbaden: Springer Fachmedien Wiesbaden), 65–78. doi: 10.1007/978-3-658-06241-5_5

UNESCO and Council of Europe (2001). Code of Good Practice in the Provision of Transnational Education (Adopted by the Lisbon Recognition Convention Committee at Its Second Meeting, Riga). Available online at: https://www.coe.int/en/web/ higher-education-and-research/lisbon-recognition-convention (accessed June 06, 2001).

Wall, M., Campbell, M. O., and Janbek, D. (2017). Syrian refugees and information precarity. N. Media Soc. 19, 240–254. doi: 10.1177/1461444815591967

Waters, J. (2015). Educational imperatives and the compulsion for credentials: family migration and childrens education in East Asia. Child. Geogr. 13, 280–293. doi: 10.1080/14733285.2015.972646

Waters, J. (2018). International education is political! Exploring the politics of international student mobilities. J. Int. Students 8, 1459–1478. doi: 10.32674/jis.v8 i3.66

Windle, J. (2022). School segregation in Rio de Janeiro: geographical, racial and historical dimensions of a centre-periphery dynamic. Comp. Educ. 58, 91–105. doi: 10.1080/03050068.2021.1894868

Yu, J. (2021). Consuming UK transnational higher education in China: a bourdieusian approach to chinese students perceptions and experiences. Sociol. Res. Online 26, 222–239. doi: 10.1177/1360780420957040

Zimmer, M. (2010). "But the Data is already public": on the ethics of research in facebook. Ethics Inform. Technol. 12, 313–325. doi: 10.1007/s10676-010-9227-5

8. Paper 4: Migrant Content Creators as Social Media Agents of Transnational Education

Dedecek Gertz, H., Carnicer, J., & Fürstenau, S. (forthcoming). Migrant content creators as social media actors of transnational education.

8.1. Introduction

Social media has emerged as a crucial component in the lives of many migrants. In the context of educational migration, connections established on social media are used by newcomer migrants to obtain information and support to access universities abroad (Jayadeva 2020). Social media, and particularly social networking sites like Facebook, provide a platform for "many to many" communication in online forums. At the same time, this dynamic allows the formation of audiences who follow the publications of particular individuals. These audiences can be actively cultivated by creating content tailored to their interests. This paper explores this phenomenon in the intersection between migration, education, and media use.

Looking at education-related information exchanges on Facebook groups of Brazilians who live in Germany – or wish to migrate to that country –we identified some young people who migrated following educational opportunities and now create content for social media based on their own migratory experiences. This way, they provide aspiring migrants with information that may help them navigate requirements and regulations and enter educational institutions in Germany. In this paper, we describe the case of three of these migrants and creators of content related to educational opportunities. We ask: how do these migrants participate in the transnationalisation of education? To answer that, we look at the content these actors create and the motivation behind their activity.

The work presented in this article is part of a broader research project about the role of social media in transnational educational trajectories between Brazil and Germany (anonymised references). This study adopts an exploratory approach based on digital ethnography (Hine, 2015). The participation in various online platforms made it possible to identify three young Brazilian migrants who, due to their prolific and varied publications about immigration, learning, and educational opportunities in Germany, can be considered content creators in this field. Our findings indicate that, on the one hand, their activities in social media are related to expectations of future payoffs, resembling the "aspirational labour" described in other more commoditized areas (Duffy, 2017). On the other hand, their engagement in information sharing is also based on solidarity and mutual support (Bucholtz, 2019; Jayadeva, 2020) and paired with a personal enjoyment of social media use.

In this paper, we first discuss the concept of transnational education in connection to migration. After that, we contextualise education and migration from Brazil as well as Brazilian migrants' media use. The theoretical background section is wrapped up with the concepts of "latent ties" (Haythornthwaite 2002) and "aspirational labour" (Duffy 2017). The research design section describes the decisions and processes of digital ethnography (Hine 2015) through which the three migrants and content creators were identified and accompanied. In the results, we present who these actors are, what kind of content they produce, their role online, and their reasons for doing that. To conclude, we suggest that these migrants may serve as nodes in migrants' digital networks and argue that the information and the support they provide constitute a potential surrogate for the support offered by face-to-face transnational social networks. Furthermore, as they focus their content on education beyond university levels, their activity reveals a demand for those educational levels. Finally, these content creators can be seen as social media agents that contribute to the transnationalisation of education.

8.2. Transnational Migration and Education

The term "transnational education" has been coined by the UNESCO to designate the offshore provision of educational programmes (UNESCO and Council of Europe 2001). Studies under this label focus mainly on higher education, with some interest in international schools. These institutions are only accessible to socially and economically privileged groups with the resources to enter a global education market (Adick 2018). The symbolic capital they acquire there appears much more difficult to obtain in the public educational institutions of national states. This way, the transnationalisation of education contributes to a "redefinition of educational advantage", fostering new social inequalities between those who do and those who do not have access to the transnational education market (Zanten, Ball, and Darchy-Koechlin 2015). Areas like vocational education and training (VET), as well as education in informal and non-formal settings, have attracted little research from a transnational perspective (Adick 2018). Only recently has the related international mobility of students begun to be examined under the lens of transnational migration research (Bilecen and Van Mol 2017; Brooks and Waters 2010; King and Raghuram 2013). These studies highlight the increasing importance of transnational education strategies in the middle class. Among lower socioeconomic classes, however, we know little about the ways in which educational aspirations and strategies influence families and young people's decisions to migrate, as well as about their impact on transnational social spaces.

Transnational migration research attempts to understand "the processes by which immigrants forge and sustain multi-stranded social relations that link together their societies of origin and settlement" (Basch, Schiller, and Szanton Blanc 1994, 8). This perspective analyses the social practices of migrants and non-mobile persons embedded in broader contexts, like families and social networks. It describes the contributions of individuals and families to processes which have been labelled as "globalization" elsewhere. Transnational migration research stresses the fact that migration, or international mobility, is rarely accomplished by isolated individuals. Social relations are crucial in the decision to move and in its realisation. The transnational perspective points to the emergence of novel social realities and emphasizes that by "linking together their societies of origin and settlement" (ibid.), migrants contribute to the arousing of "pluri-locally spanned transnational social spaces" (Pries 2001, 3). Accordingly, transnational *educational* spaces "emerge and consolidate themselves by relations, interactions and perceptions" (Kesper-Biermann 2016, 93). Although transnational education can reinforce social inequalities, it may also be a means of upward social mobility, even if this only occurs in exceptional cases. Previous research indicates that educational aspirations may be an important reason for migration among the underprivileged, especially if linked to educational upward mobility (anonymized references). This is especially apparent in countries like Brazil, where the educational system can hardly fulfil the aspirations of striving lower socioeconomic classes.

8.3. Education and Migration from Brazil

Access to high-quality education in Brazil is dependent on economic resources. At primary and secondary levels, the quality of public schools varies greatly, yet, on the whole, according to PISA (Programme for International Student Assessment) and university transition rates, it remains low compared to the quality of private schools. For public school graduates, it is difficult to get a place at one of the free public universities, which, unlike public schools, are ranked higher than private ones. Graduates of expensive private schools have an advantage as they are better prepared for the highly competitive university entrance exams (Pfeiffer 2015). Policies aimed at widening access for Black students and public school's graduates have contributed to an increase in the number of students from disadvantaged backgrounds at public universities. Still, extreme educational inequality persists (Trevisol and Nierotka 2016).

In Brazil, studying abroad requires considerable economic resources and academic certificates and is usually possible only in high- and middle-class contexts. However, previous research has described settings that allow for transnational educational trajectories even in rather underprivileged socioeconomic contexts. These settings are based on transnational social networks that make transnational migration a viable education strategy through social support and shared norms, ideas, and knowledge. The transnational educational careers of underprivileged migrants are shaped not only by the educational systems of the emigration and immigration countries but also, in a decisive way, by labour markets and migration regimes. Migration and education regimes intertwine to determine the possibilities of residence, study and work. The knowledge of these possibilities can be difficult to acquire, and migrants often rely on advice to realize their plans. Social networks supply this advice. These provide information about the available opportunities and support their realization, both mostly based on previous experiences of participants of the network. This way, social networks may shape trajectories, functioning as an orientation for newcomers (anonymized references). [Anonymised author] describes a network of young female "care workers" from Brazil in Germany. The first of these women arrived in Germany as Au Pairs, which allowed them to stay in Germany, learn the language, and look for further educational opportunities. After one year, they applied for a voluntary social year, a *Freiwilliges Soziales Jahr* (FSJ), in a residential care home for the elderly, which appeared as the only option to prolong their stay. There, they discovered an area of work that they liked, but also a vocational training opportunity as geriatric nurses. Whereas professional training in Brazil is rarely free of charge, the German dual system offers free professional training plus a small salary for apprentices who work and attend vocational school simultaneously. Nowadays, this network offers younger relatives and friends in Brazil both career orientation, accommodation, contacts with families, and agencies for Au Pair stays as well as with homes for the elderly that are happy to employ these women. Given the lack of opportunities and resources to develop their own life plans in Brazil, the women involved in the network clearly perceive migration as an emancipatory step (anonymised reference). The network acts here as a structure that channels educational aspirations into transnational careers and contributes to institutionalization of particular forms of educational migration. As in other migratory contexts, these social networks are constituted mainly by rather 'strong' ties between relatives and friends who usually maintain long personal relationships (Boyd and Nowak 2013). Being involved in such networks entails opportunities not accessible elsewhere. In this sense, transnational social networks also constitute a factor of inequality.

8.4. Latent Ties and Brazilian Migrants' Media Use

The transnational networks described in previous studies about Brazilian migrants pursuing degrees in Germany comprised non-mediatised networks (anonymised references). However, mediatised networks have also been present in Brazilian migration already for a decade (Oosterbaan 2013; Schrooten 2012) with growing figures nowadays (Folletto, 2018; anonymised reference). Recently, the relationship between migration and social-media-based networks has also been explored (Bucholtz 2019; Dekker, Engbersen, and Faber 2016; Jayadeva 2020), describing migrants' use of online networks to establish "latent ties", that is, ties that are "technically available but have not yet been activated by social interaction" (Haythornthwaite 2002, 389). An example of this is the use of Facebook groups in which participants gather according to a shared nationality, interest or migratory aspiration. For instance, latent ties are activated when an aspiring migrant posts a question about the requirements to enrol in an educational institution abroad and receives replies from other unknown participants in the Facebook group (Jayadeva, 2020).

Brazilian migrants' fondness for social media is not new. Almost ten years ago, Brazilian migrants used Orkut (a platform deactivated in 2014) to engage in political discussions with other Brazilians abroad, to arrange in-person gatherings, and to exchange information about paperwork and employment opportunities (Oosterbaan, 2013; Schrooten, 2012). Orkut was embedded in migrants' daily life already before they migrated, and after migration, it became a relevant source of social, political, and cultural connection (Schrooten, 2012). After Orkut was deactivated, migrants and aspiring migrants created new communities on Facebook – with no sign of diminished interest in social media networking. Researching Facebook groups of Brazilians in Sweden, Laura Foletto (2018) reports groups with over 1.7000 participants and a mean of 66 monthly posts – growing amounts have been identified more recently in groups of Brazilians in Germany (anonymised reference). Hence, the main feature of such networks established online is information exchange and mutual support in the migration process, as well as in terms of education-related strategies and requirements (anonymised reference; Jayadeva, 2020).

8.5. Content Creators and Aspirational Labour

In this paper, we describe actors who participate in such latent ties' networks, compile information about educational opportunities in Germany, and publish it on social media in form of pictures, videos, and texts. They also engage in discussions on Facebook groups of Brazilian migrants and answer questions posed on these groups or on their accounts in other platforms, such as Instagram. We define these actors as "content creators": social media users who create and circulate texts and audio-visual material on different platforms, oftentimes "driven by an entrepreneurial spirit" (Arriagada and Ibáñez 2020, 1).

Some content creators perform "aspirational labour" (Duffy 2017), a concept that describes unpaid or underpaid activities, such as advertising products or services. The term "aspirational" is attached to this activity because people performing it hope their work will eventually pay off financially or serve as a portfolio to land them a job (Duffy 2017). Such activities are mostly associated with young people who strive to depict a branded lifestyle, attempting to present a polished, successful image of themselves (Abidin 2018; Duffy 2017; Hund 2023). A sense of "authenticity" is an important feature of how these content creators present themselves online: what they publish, how they interact with audiences, and how

they depict their daily lives should be perceived by the audience as resembling their genuine beliefs, attitudes, and daily activities (Hund, 2023, p. 7). Being "authentic" functions as a form of distinction from traditional media celebrities, such as famous actors in wealthy circumstances (Duffy 2017).

8.6. Research design

We collected data through a digital ethnography (Hine 2015). The leading question at the start was "how are social media used in transnational educational trajectories between Brazil and Germany?" and the field entry points were Facebook groups of "Brazilians in Germany", because these are highly used among Brazilian migrants (Foletto, 2018; anonymised reference).

During three months in 2020, we read posts in these groups and replies to them. Some group participants who posed questions about educational opportunities in Germany or answered such questions from other groups participants were contacted via a direct message and invited for an interview. These were group participants who mentioned an aspiration to enrol in VET or study at a university in Germany. 22 people agreed to be interviewed and were added to the "friends" list of the first author's Facebook profile, granting access to private posts. Some participants of these Facebook groups stood out as particularly active across groups and social media platforms. They engaged in providing detailed replies to newcomer or aspiring migrants who asked about the requirements and possibilities of pursuing a degree in Germany. These replies were tailored toward the situation described by the person posing the question in the group, hence they were not ready-made replies with information about, for instance, what documents one has to provide to enrol on a VET course. These same group participants also shared links in the groups: they announced when they published new posts on Instagram, YouTube or on their blogs; when a group participant asked about documents needed to request a student visa, the content creators invited them to check their video or blog post where the question was answered. Having identified this particular media use, the focus was set on three group participants who actively produced and circulated information about educational aspects as well as about lifestyle and migratory experiences in Germany. These three group participants received the pseudonyms of Antônia, Joana, and Mariele. Their cases were selected due to the commonality of their pathways and the focus of their content.

We read pictures, videos, and written interactions across social media platforms of these three content creators and made screenshots of posts involving education. This social media data was useful to understand what information and strategies associated to education these migrants share as well as their motivations to perform "aspirational labour" (Duffy, 2017). The three content creators were also interviewed about their upbringing, family, and educational pathways in Brazil, about their migratory decisions and experiences in Germany, and about their media use. The interviews were conducted in Brazilian Portuguese and analysed with a deductive/inductive coding structure which included their socioeconomic positionality prior to and after migration (e.g., educational attainment in Brazil, work situation of parents, interviewees' work situation in Germany), their migratory reasons and pathways (e.g., coming directly to enter university, migrating as an Au Pair), the kind of content they create (e.g., educational opportunities, vacation pictures), the "latent tie" character of their online presence (e.g., replying to people on Facebook groups or to direct

messages on their other online profiles), their reasons to perform such activities (e.g., "helping others", to show their lifestyle), and "aspirational labour" (Duffy 2017) (e.g., outcome expectations of their online activity).

8.7. Findings

The results are presented in four subsections that reconstruct how the three migrants and content creators contribute to the transnationalisation of education and what the motivations for their online activity are. In the first section, we describe the social positionality of the three creators interviewed. The second section describes the social media content they create, highlighting education-related themes. In the third section, we analyse how the three content creators may serve as nodes of latent tie connections (Haythornthwaite 2002) to audiences whose backgrounds and migratory aspirations are similar to theirs. Finally, the fourth section presents the motivations to perform such online activities.

8.7.1. Social positionality: Who are these migrants and content creators?

Antônia (aged 25), Joana (28), and Mariele (33) share similar socioeconomic and educational backgrounds. They completed their school degrees partially in public and partially in private schools for which they were either granted a stipend or which had affordable tuition fees. Antônia and Mariele both obtained their BA degrees from private universities while working part-time and receiving partial stipends to cover tuition fees. Joana, on the other hand, completed her BA at a prestigious public university. To keep costs of living and studying low, all three lived with their parents during their studies. The three come from a socioeconomic stratum in which people at a very young age usually have to combine studying with working, sometimes full-time jobs in precarious and poorly paid areas (Pochmann 2012), making it unaffordable for young people to leave their family's house.

After they finished their studies, Antônia, Joana, and Mariele were seeking for opportunities to gain international experience and to study in Europe. They first moved abroad as Au Pairs, which provided them with legal entry, a residence permit, and around 280 Euros pocket money during one year while they acquired proficiency in German and searched for further opportunities to remain in Germany. Following that year, they pursued different pathways. Joana participated in a paid volunteer program and subsequently began a VET in her field of study. Antônia began working in a field unrelated to her BA studies, and aspires to accomplish a MA in her field at a German university. Mariele, after her Au Pair year in Belgium[8], was admitted to an English-taught MA in a social-sciences field at an applied sciences university in Germany and worked part-time during the semester to finance her studies and living expenses. Staying in Belgium, as she intended, was not possible because to her "it is extremely, very expensive"[9]. All three interviewees hoped to continue their university education in Germany after the Au Pair year. This was motivated by an aspiration to continue the specialisation in their field of study while fulfilling requirements for a visa in Germany at the same time.

[8] Anonymised country.

[9] All quotations from interviews were translated from Brazilian Portuguese.

Thus, all three come from lower socioeconomic classes, migrated to Germany looking for an opportunity to gain international experience and were motivated by educational aspirations. Their migration support claims that migrants from lower socioeconomic classes can take part in the transnationalisation of education (anonymised references). They also contribute to that phenomenon through their activity as content creators.

8.7.2. Content: What do they do online?

Antônia, Joana, and Mariele use the same online platforms to depict their migration experiences and disseminate educational information. They are particularly active on Instagram, TikTok, and YouTube; Facebook is mainly used to circulate their content in groups of "Brazilians in Germany." In addition, they manage WhatsApp or Telegram groups in which newcomer and aspiring migrants share information and experiences. Joana is also an active participant in Facebook groups, answering questions on topics such as the validation of Brazilian certificates in Germany and the requirements for enrolling in VET. All three have authored manuals, which they call eBooks, detailing their migratory pathway, strategies for learning German, securing a VET placement or an internship, applying for visas, types of degrees available in German universities, and other aspects of the German educational system. These eBook contents are comparable to what they post on their social media platforms, where they focus on a curated visual display and promote their paid individual consultancy services. These eBooks, consultancy services, and social media curation can be useful for aspiring migrants, since there is trust in education-related information shared online, particularly if it includes personal experiences (anonymised reference; Jayadeva 2020).

Antônia's content focuses on the association of learning outcomes, in particular language learning, with entering the job market through internships and with the fulfilment of requirements for permanent residency in Germany. Those who purchase her eBook gain access to a private WhatsApp group, receive a guide on how to write a CV in German, and can book an online consultancy appointment with her. On Instagram, where she has approximately six thousand followers, Antônia posts pictures of herself in various settings, such as cafes and historical sites, accompanied by reflections on life as a migrant and information about au pairing, including visas and Au Pairs' purchasing power. Her education-related content focuses on language learning. She shares pictures of certificates commemorating her advancement to higher levels of the Common European Framework of Reference for Languages, acknowledges the challenges of learning German, and describes feeling overwhelmed, but also finds humour in her struggles and vents her frustrations. For instance, she posts a picture of an empty classroom with a green chalkboard covered in German text and comments on the frustration of learning the language: "I'm steaming off here for you to see that you're not alone in this [learning German]".

Joana's focus is on the link between educational opportunities and legal issues around migration. She also uses her Instagram account, which boasts around five thousand followers, to post pictures of her daily life in Germany, along with reflections about living abroad. In her content, she features pictures of herself or videos in which she presents visa options, life expenses and shopping in Germany, job markets for different professions, and educational opportunities in the country. Regarding the latter, Joana emphasizes how educational pathways are "more likely to lead to a secure status" in the country after degree

completion. She addresses common questions such as "when is the best time to apply for VET?" and "Are all VET paid?", making lists of study-related visas in Germany and explaining the requirements for most VET and university degrees. Additionally, she presents stipend options for university students, highlights that enrolling in a language course can also be used to obtain a visa and emphasizes that language proficiency is required for most degrees and for certain visas.

Mariele also focuses on accessing educational institutions in Germany and pursuing a degree as a strategy to be granted a visa. Her eight thousand Instagram followers are additionally informed about racism and elections in Germany, travel destinations, the educational system, and educational opportunities for migrants. Her education-related posts are presented in list formats that include information on the courses offered by various universities and their admission requirements, as well as rankings for the best institutions for specific subjects. Further, she provides lists of VET degrees related to areas more commonly associated with university courses, such as law or dentistry. Mariele also maintains a blog, a YouTube channel, and a podcast in which she discusses her migratory experience, describes housing and work, provides information on available study fields for VET and their requirements, and how to finance studies.

Having German degrees and being proficient in German are central themes in the content curation of all three. These aspects are presented as part of their migratory pathways, together with pictures of international vacation, purchased goods, and comments about living expenses, for instance. In that sense, degrees and language learning are associated with a promise of upward mobility for aspiring migrants of similar backgrounds as theirs. Talking about their experiences (including achievements and frustrations) and showing their routines and interests also serves as a way to attribute "authenticity" to their content (Duffy 2017). They do not try to depict their lives as unreachable or available only for those from wealthy backgrounds. Instead, they describe their trajectories, migrating first as Au Pairs, and expose situations in which they feel overwhelmed. This depiction of their lifestyle in Germany associated with the presentation of their knowledge about requirements to migrate and the educational system serve to build their presence as authentic and trustworthy sources of information about education and migration to Germany, thereby attributing value to the consultancy services they offer and engaging followers to interact with them.

8.7.3. Content Creators as Latent ties: What is Their Role Online?

Apart from giving information on educational opportunities in Germany, Antônia, Joana and Mariele's activity online serves as an inspiration to the many aspiring migrants who follow them. Their respective number of followers is similar to or even exceeds the number of participants in some Facebook groups of Brazilians in Germany. To Mariele, the demand is so high that she prefers not to interact that often with followers: "I'm not really active in the [Facebook] groups, helping people and so on. Otherwise, I don't do anything else in life (laughs)". Differently, Joana offers detailed replies to questions posed by newcomer or aspiring migrants on Facebook groups. She says that this behaviour of hers caught attention and, with an increasing amount of questions and realising these were mostly repeated, she started recording videos with her answers: "I always explained the same things. So, my idea is, when someone asks me something, I simply send the video". They became content

creators after observing that there is a demand for information about educational opportunities.

The three seem to have a primarily female audience, hence they sometimes refer to their followers as "elas" (the Portuguese word for "they" in the feminine form) or use a generic "folks" or "people", but never "eles" ("they" in the masculine form). They also seem to have an audience in mind that belongs to a similar socioeconomic class as themselves and is interested in Au Pairing in Germany as a way to migrate and look for further opportunities once they are in the country. What they suggest as further opportunities is based on their experiences, namely enrolling in a degree or language course. Antônia describes that her followers come to her social media profiles because they "want to see [her] life in Germany" and that these followers are usually "interested in coming [to Germany] to do Au Pair and want to know what there is to do after it". Mariele is interested in producing content for an audience aligned with her values. Hence, she posts about racism and anti-racism and became rather inactive on Facebook groups of Brazilians in Germany, where she claims a lot of discriminatory discourses were reproduced: "it was very heavy for me psychologically", she says. She limits her participation in these groups to announcing new posts she published on her Instagram account or blog and does not answer questions. This attitude is, first of all, a way to protect herself from the hateful and degrading content she identified in these groups. That decision might make her social media reach smaller; however, she seems more interested in attracting a specific audience than in making her activity online a main source of income. This way, her content creation stays authentic to her values and beliefs (Duffy, 2017).

Catering for an audience similar to themselves, the three content creators here have identified a niche demand for migration: people, most probably young women, for whom migrating first as Au Pair and then accessing education in Germany seems to work well as a strategy. The three depict themselves as successful examples for that and, given their number of followers and the intensity of interaction with them, seem successful in convincing others that the pathway they describe is a feasible one for those in similar socioeconomic conditions as they had in Brazil. This way, they both serve as an inspiration to young women who come from similar backgrounds and they show possibilities to access education by migrating.

Latent ties (Haythornthwaite 2002) can be activated when an aspiring migrant posts a question on a Facebook group and receives replies from other participants, in a many-to-many communication flow. Since the three content creators presented here have a high number of followers and interactions, they concentrate a flow of latent ties on them, thus serving as nodes of such mediatised networks. That happens because their content depicts feasible migration options: they present an "authentic" (Duffy 2017) version of their pathways and current situation by talking about their background prior to migration, their lifestyle, feelings, and experiences after migration. The fact that migrants seem to trust information about educational experiences shared online (anonymised reference; Jayadeva, 2020) probably also contributes to this centralisation of latent ties.

8.7.4. Enjoyment, Usefulness, and Aspirational Labour: Why Do They Do What They Do?

Three aspects motivate Antônia, Joana, and Mariele in their online activity: an enjoyment of using social media, the sense of fulfilment when they learn that their content was useful for someone aspiring to migrate, and having some expectation that what they do will pay off some day.

All three were already frequent users of social media before starting to publish content about migration. This enjoyment prevails, and is even more important than their interest in generating an income as content creators. As Antônia puts it: "I don't live off my Instagram, but I don't live without it". Similarly, Joana says that she uses social media "all the time". They regularly use social media to post about their experiences and, since migration and accessing education in Germany is part of that, they regularly share these insights into their lives. They also enjoy interacting with their followers, which contributes to building their image as people who are willing to share information and opinions about migrating.

Their followers sometimes send feedback about how their information and support were useful in their migratory journeys, as Antônia tells:

> They ["elas", the women who follow Antônia online] would check my Instagram and send me: "thank you so much for your help! Your videos are amazing! You helped me a lot to do my international exchange[10]! I'm already here in Germany!" And then I was very happy! (Antônia)

This positive feedback also motivates Mariele, whose main goal is to "make information available for people who want to study and do research in Germany". In their migration, the three themselves have also relied on information shared by other migrants on social media. Based on the feedback they receive and on their own experience, they know that aspiring migrants in situations similar to their own in the past seek information from latent ties. As Mariele says: "Facebook ... had a very big impact on decision and plans ... when I sought access to information, for study, for work, for everything". Joana had a similar experience: "The [Facebook] groups helped me ... helped me very, very much". The three have first-hand experience on the usefulness of social media for aspiring migrants and, based on that knowledge, they tailor their content to those with similar socioeconomic conditions and aspirations as themselves. When these followers send positive feedback, Antônia, Joana and Mariele report a sense of fulfilment for providing useful information and support to others. That, combined with a feeling of reciprocity, of giving back what once helped themselves, is another motivation for them.

They also have professional or income expectations regarding their social media activity. Antônia and Mariele have experience in (social) media-related subjects and use their accounts in a career-oriented way. They are not able to generate a stable income from their content creation as yet, but for Antônia that is a goal: "I don't take it off my list of things that I want to live on in the future". For Mariele, creating content serves as a way to showcase her

[10] These content creators and their followers commonly refer to Au Pairing as "international exchange".

abilities in social media management and communication: "I use it [Instagram] more … to strengthen my image, because I want to work in this area". Joana, on the other hand, has not studied nor has prior work-experience in media-related subjects. She is also not interested in having her main income anchored on her online activity. Nevertheless, she also uses social media to showcase her knowledge about migration and education in Germany and to indicate that she offers consultancy services and her eBook, similar to Antônia and Mariele. These activities are not a relevant source of income for them; however, it reveals that they have some interest in monetising their social media activity. They are not interested in becoming internet celebrities (Abidin 2018) but they either have some income expectation from the consultancy services and eBooks they offer or, as in the case of Antônia and Mariele, they build a portfolio of their media skills that may help them to land a job in the fields they graduated from. Therefore, a third motivation for their online activity is based on "aspirational labour" (Duffy 2017).

8.8. Conclusion

The content produced by Antônia, Joana, and Mariele combines posts about educational opportunities in Germany with a diverse range of topics related to migration and lifestyle abroad. These content creators assume that their audience are in similar situations as they once were: young women aspiring to migrate or newly arrived, from lower socioeconomic classes, without network connections that could contribute to affording expenses and fulfilling requirements to obtain a university student visa in Germany. With this audience in mind, they provide information on legal procedures of migration and accessing education as well as strategies for maintaining oneself financially abroad. These strategies include options such as migrating first as Au Pairs, working part-time while studying, or enrolling in paid VET programs. These content creators also offer motivational messages to their followers, highlighting the challenges of migrant life and providing quotes on how to overcome such challenges. Education and learning are portrayed both as means to attain a secure status as a migrant and to live an exciting international experience. Through insights into their lifestyle and into problems they experience in Germany, these content creators create a sense of "authenticity" (Hund 2023), as they show that they are neither internet celebrities nor wealthy migrants, but young women who migrated as Au Pairs and later on achieved a certain upward mobility and a stable migratory status.

Research on transnational education has predominantly focused on the international mobility of university students, often within the context of upper-middle class migration (Beech, 2015; Brooks & Waters, 2010; Waters, 2015). Although university education is also a topic covered by Antônia, Joana, and Mariele, they highlight alternative educational pathways to their followers. As they collected information on social media when planning their own migration, they know that circulating information about such alternative pathways is helpful for aspiring migrants. Hence, they share details about educational opportunities and migratory requirements in Germany and motivate aspiring or newcomer migrants by showcasing their own pathway and their knowledge. Doing so, they attracted so many followers that they can be seen as nodes of networks based on latent ties (Haythornthwaite 2002), particularly for migrants without other connections. Hence, these content creators serve as surrogates when other kinds of networks or resources are unavailable. Furthermore, their high number of followers indicates the existence of a demand for educational opportunities abroad also beyond university levels (anonymised references).

These content creators are motivated to function as nodes of latent tie networks in a threefold way: they enjoy using social media, have a satisfactory feeling of providing useful information for others, and hope that this activity online may pay off in the future. The latter point implies that "aspirational labour" (Duffy 2017) is also a phenomenon in the field of migration and education. Antônia, Joana, and Mariele use online presences as a means to showcase their skills and occasionally generate some income. However, unlike content creators who strive for celebrity status or seek to make online presence their primary source of income, they focus on sharing information deemed valuable for their audience. Still, they follow similar logics of content creators who advertise branded products or services: they build a sense of authenticity by presenting their struggles and daily lives (Duffy, 2017; Hund, 2023). Hence, they perform "aspirational labour" (Duffy, 2017) associated to educational opportunities while circulating valuable information for aspiring migrants.

This study highlights a still rather unexplored role that migrants can play in transnational education environments. Serving as nodes for latent tie networks, these migrants provide information and inspiration to individuals pursuing migratory and educational aspirations under similar conditions. Further research could look into the composition of their audiences and the impacts of their activity.

8.9. References

Abidin, Crystal. 2018. *Internet Celebrity: Understanding Fame Online*. First edition. SocietyNow. United Kingdom ; North America: Emerald Publishing.

Adick, Christel. 2018. 'Transnational Education in Schools, Universities, and beyond: Definitions and Research Areas'. *Transnational Social Review* 8 (2): 124–38. https://doi.org/10.1080/21931674.2018.1463057.

Arriagada, Arturo, and Francisco Ibáñez. 2020. '"You Need At Least One Picture Daily, If Not, You're Dead": Content Creators and Platform Evolution in the Social Media Ecology'. *Social Media + Society* 6 (3): 2056305120944624. https://doi.org/10.1177/2056305120944624.

Basch, Linda G., Nina Glick Schiller, and Cristina Szanton Blanc. 1994. *Nations Unbound: Transnational Projects, Postcolonial Predicaments, and Deterritorialized Nation-States*. London: Routledge.

Bilecen, Başak, and Christof Van Mol. 2017. 'Introduction: International Academic Mobility and Inequalities'. *Journal of Ethnic and Migration Studies* 43 (8): 1241–55. https://doi.org/10.1080/1369183X.2017.1300225.

Boyd, Monica, and Joanne Nowak. 2013. 'Social Networks and International Migration'. In *An Introduction to International Migration Studies*, edited by Marco Martiniello and Jan Rath, 79–106. Amsterdam University Press. https://doi.org/10.1515/9789048517350-004.

Brooks, Rachel, and Johanna Waters. 2010. 'Social Networks and Educational Mobility: The Experiences of UK Students'. *Globalisation, Societies and Education* 8 (1): 143–57. https://doi.org/10.1080/14767720903574132.

Bucholtz, Ianis. 2019. 'Bridging Bonds: Latvian Migrants' Interpersonal Ties on Social Networking Sites'. *Media, Culture & Society* 41 (1): 104–19. https://doi.org/10.1177/0163443718764576.

Dekker, Rianne, Godfried Engbersen, and Marije Faber. 2016. 'The Use of Online Media in Migration Networks: The Use of Online Media in Migration Networks'. *Population, Space and Place* 22 (6): 539–51. https://doi.org/10.1002/psp.1938.

Duffy, Brooke Erin. 2017. *(Not) Getting Paid to Do What You Love: Gender, Social Media, and Aspirational Work*. New Haven: Yale University Press.

Haythornthwaite, Caroline. 2002. 'Strong, Weak, and Latent Ties and the Impact of New Media'. *The Information Society* 18 (5): 385–401. https://doi.org/10.1080/01972240290108195.

Hine, Christine. 2015. *Ethnography for the Internet: Embedded, Embodied and Everyday*. London: Routledge, Taylor & Francis Group.

Hund, Emily. 2023. *The Influencer Industry: The Quest for Authenticity on Social Media*. Princeton University Press. https://doi.org/10.1515/9780691234076.

Jayadeva, Sazana. 2020. 'Keep Calm and Apply to Germany: How Online Communities Mediate Transnational Student Mobility from India to Germany'. *Journal of Ethnic and Migration Studies* 46 (11): 2240–57. https://doi.org/10.1080/1369183X.2019.1643230.

Kesper-Biermann, Sylvia. 2016. 'Putting the Nation in Perspective: Educational Spaces – a Concept for the Historiography of Education'. *Bildungsgeschichte* 6 (1): 92–95.

King, Russell, and Parvati Raghuram. 2013. 'International Student Migration: Mapping the Field and New Research Agendas: Mapping the Field and New Research Agenda in ISM'. *Population, Space and Place* 19 (2): 127–37. https://doi.org/10.1002/psp.1746.

Oosterbaan, Martijn. 2013. 'Orkontros: Brazilian Migrants, Social Network Sites and the European City'. In *Contemporary Culture*, edited by Judith Thissen, Robert Zwijnenberg, and Kitty Zijlmans, 37–50. Amsterdam University Press. https://doi.org/10.1515/9789048517954-003.

Pfeiffer, Dietmar K. 2015. 'Das Bildungssystem Brasiliens Unter Besonderer Berücksichtigung Des Hochschulwesens'. In *Bildung in Lateinamerika. Strukturen, Entwicklungen, Herausforderungen*, edited by Verónica Oelsner and Claudia Richter, 78–97. Historisch-Vergleichende Sozialisations- Und Bildungsforschung 15. Münster: Waxmann.

Pochmann, Marcio. 2012. *Nova Classe Média? O Trabalho Na Base Da Pirâmide Social Brasileira*. 1a edição. Coleção Mundo Do Trabalho. São Paulo, SP: Boitempo Editorial.

Pries, Ludger, ed. 2001. *New Transnational Social Spaces: International Migration and Transnational Companies in the Early Twenty-First Century*. Transnationalism 1. London ; New York: Routledge.

Schrooten, Mieke. 2012. 'Moving Ethnography Online: Researching Brazilian Migrants' Online Togetherness'. *Ethnic and Racial Studies* 35 (10): 1794–1809. https://doi.org/10.1080/01419870.2012.659271.

Trevisol, Joviles Vitório, and Rosileia Lucia Nierotka. 2016. 'Os Jovens Das Camadas Populares Na Universidade Pública: Acesso e Permanência'. *Revista Katálysis* 19 (1): 22–32. https://doi.org/10.1590/1414-49802016.00100003.

UNESCO and Council of Europe. 2001. 'Code of Good Practice in the Provision of Transnational Education (Adopted by the Lisbon Recognition Convention Committee at Its Second Meeting, Riga,

6 June 2001)'. https://www.coe.int/en/web/higher-education-and-research/lisbon-recognition-convention.

Zanten, Agnès van, Stephen J. Ball, and Brigitte Darchy-Koechlin, eds. 2015. *Elites, Privilege and Excellence: The National and Global Redefinition of Educational Advantage*. World Yearbook of Education 2015. London ; New York: Routledge, Taylor & Francis Group.

9. Overarching Discussion: Uses, Inequalities, and Institutionalisation of Digital Networks in Migration Pathways Associated with Educational Opportunities

In this chapter, I interpret the findings based on three main elements that compose transnational social spaces: material artefacts, social practices, and symbols (Pries, 2001). I describe how these elements circulate in the digital networks I investigated and discuss how that can contribute to the establishment of "transnational educational spaces" (Kesper-Biermann, 2016). First, I also show socio-economic inequalities that emerge in these digital networks in relation to material artefacts, social practices, and symbols (Sections 9.1. to 9.3). I then highlight other meanings and functions of migrants' use of digital media to collect information about education (Section 9.4). To do so, I draw on the role of trust, reciprocity, and solidarity among migrants (Agustín & Jørgensen, 2019; Bilecen, 2022) and on the concept of trustworthiness (Luhmann, 1968). I contend that using transnational digital networks to collect information about educational opportunities and, eventually, to seek social and emotional support among latent ties (Haythornthwaite, 2002) becomes an informally institutionalised social practice (cf. Faist & Özveren, 2017) among some migrants and aspiring migrants. This way, migrant networks of latent ties can contribute to migrants' access to education abroad and to the establishment of transnational educational spaces. Despite their potential to expand migrants' social resources (cf. Jayadeva, 2020), I point out some aspects that suggest that latent tie networks, like non-digital networks (cf. Carnicer & Fürstenau, 2021), tend to reproduce socio-economic inequalities.

9.1. Material Artefacts

Material artefacts are objects and infrastructures that enable the transnational circulation of social practices and symbols through migrants' networks (cf. Pries, 2001). In the case of networks composed of latent ties, central material artefacts are infrastructures that allow internet connection (e.g. cables, energy infrastructures) and digital devices that allow access to social media (e.g. smartphones, computers). This is because latent ties must first be activated through interaction to form a connection (Haythornthwaite, 2005). In the case I presented here, for that interaction to happen, migrants and aspiring migrants need to have access to such material artefacts through which they can participate in digital transnational networks.

These material artefacts (internet connection and devices to access social media) are widely available in Brazil. However, socio-economic inequalities also shape the access to them. In 2022, approximately 74% of the Brazilian population had a Facebook account (Statista, 2022a), and 84% used social media daily (Statista, 2024). However, given the immense inequality in the country, it is likely that there are unequal access conditions to material artefacts among the thousands of participants in the Facebook groups I analysed. For example, one person can access those Facebook groups using her computer in a gated community. In contrast, another will access them in a *Favela* using limited mobile data from her smartphone.

Despite these differences, access to some material artefacts that allow participation in latent ties is available to migrants and aspiring migrants both from lower and middle or upper-class backgrounds. However, the usefulness of that access is different between classes. For some, it may be the only way to access first-hand information and personal experiences of those who have already migrated. This was the case for Antônia, Joana, and Mariele, the three content creators described in Paper 4. Latent

ties were central to their migration and, having identified a similar demand from other aspiring migrants, they began to use social media to share information about educational opportunities and strategies for migration and access to education in Germany. In these cases, transnational latent ties are useful, or even central, in expanding the social resources of aspiring migrants, thus enabling them to access information. For aspiring migrants from wealthier backgrounds, their social capital associated with economic resources and institutional support puts the relevance of latent ties in the background. Access to internet connections and devices for establishing latent ties may be an asset for these strata. However, it is unlikely to be as important to their migration path as it was for Antônia, Joana, and Mariele. This was also the case for Marcus, the upper-middle-class content creator, for whom social media was eventually useful but not a central resource in his migration pathway (see section 4.5.3.1). In other words, access to material artefacts can facilitate migration and access to education across classes. However, this is probably more relevant for those without prior social resources, institutional support or financial means.

Material artefacts are only one component of transnational social spaces. What gives meaning to these material artefacts are the social practices circulating through them (Pries, 2001). In the next section, I describe the social practices that circulate through the networks of latent ties I investigated and how they reveal some economic and gender inequalities within these networks.

9.2. Social Practices

Social practices in transnational networks are routine actions and activities shaped by relations, interpersonal communication, shared perceptions and strategies, unspoken norms, beliefs and values (cf. Faist & Özveren, 2017; Kesper-Biermann, 2016; Pries, 2001). Grouping some of these aspects together, I look at inequalities revealed through social practices circulating among latent ties in terms of interactions and relations (section 9.2.1.) and strategies and perceptions (section 9.2.2.).

9.2.1. Interactions and Relations

On the social media platforms I researched, interactions occur in written form through public posts on Facebook groups or direct messages sent to content creators. The content of these interactions demonstrates mostly friendly and supporting interactions (see Paper 3). This can be interpreted as a tendency of latent ties to bond (cf. Bourdieu, 1986; Lášticová, 2014; Putnam, 1995) migrants and aspiring migrants with similar socio-economic backgrounds. This pattern becomes apparent when comparing the Facebook groups of Brazilian IT professionals with those of Brazilian nurses in Germany and the interactions with content creators. I contrast these cases in the next paragraphs.

In the IT professionals' group, participants tend to treat each other in a friendly manner. It is common that they write "bro" to each other and support the plans of both those concerned about migrating with children and of those uncertain about finding a job without a degree or language knowledge. Financial resources and income do not seem to be a frequent problem for participants in this group, as they exchange information about high salary expectations and what they can afford with it. The group is used rather to collect perceptions and advice and eventually announce job opportunities, than to collect concrete information about migratory procedures or access to education. Group participants are, apparently, mostly male, and the interactions reveal some similar expectations (e.g.

maintaining socio-economic status, having their children access university education in Germany) as well as a supportive attitude toward each other.

The nurses' group appears to be predominantly female and also predominantly supportive of each other. This is particularly evident when participants express concerns about income expectations and frustrations about the "difficulties of migrating with children" or about not having their formal education and experience recognised in Germany. To address these concerns and frustrations, other participants respond with supportive messages and positive examples from their own experiences, pointing out to aspiring migrants that salaries and educational opportunities for children in Germany are better than what they know from Brazil.

The content creators Antônia, Mariele, and Joana are aware of the existence of a demand for information about migrating to Germany and accessing education there. They know this not only based on their social media metrics but also because of interactions with their audience and because they once also used information collected from social media to plan their migration. For their audience, composed especially of young women from lower socio-economic backgrounds, the content creators may serve as an important source of information both about migration and education. The three content creators feel that they are fulfilling an important role, as they see themselves as sources of information for this audience. Marcus also has the impression that the information he shares is relevant and useful for his audience with a similar background as himself. However, the audience he has in mind is composed of people who can afford the costs involved in migrating after completing high school in Brazil and directly accessing university education in Germany. These four content creators function as nodes of networks of latent ties, serving as sources of information for audiences with similar backgrounds as theirs.

A comparison between the Facebook groups of IT professionals and nurses, as well as between content creators, suggests that both networks of latent ties (Facebook groups) and nodes of such networks (content creators) tend to attract people with similar socio-economic backgrounds. Gender also tends to play a role in aspiring migrants' decisions to seek information through these networks. Aspiring migrants use digital networks to collect information that corresponds to their existing socio-economic position: they interact with latent ties who can offer useful information to fulfil their plans and, eventually, they also find support among those who come from a similar situation and have similar aspirations and options to access education abroad. In this sense, this further supports that networks of latent ties can function by bonding people with similar backgrounds and aspirations rather than bridging them with migrants or aspiring migrants who could function as sources of social capital – instead of social resources (cf. Anthias, 2007; Bourdieu, 1986). On the other hand, latent ties can be seen as social resources that *bridge* those who have information (Facebook group participants and content creators) with aspiring migrants seeking information that otherwise would be harder to find.

Although these networks contribute to circulating tailored information for specific audiences because of their mostly bonding character, they may reproduce socio-economic inequalities, similarly to networks composed of stronger ties (cf. Beech, 2015; Brooks & Waters, 2011). People from lower socio-economic backgrounds might be able to accomplish their migratory and educational projects using information collected in digital networks and thus experience upward mobility in relation to their situation pre-migration. At the same time, people from wealthier

backgrounds have more chances to mobilise their pre-existing resources to migrate and access education abroad. IT professionals seem to maintain their higher salaries. However, they might have more resources to afford expensive consumer goods and services after migration, and they envision their children accumulating cultural capital by studying at a German university. Similarly, Marcus, who wants to return to Brazil in the future, can increase his already existing cultural capital and social connections by accessing a university education abroad. In Brazil, these resources will serve him as a distinctive social aspect. In this sense, those migrants with pre-existing resources are more likely to be able to reproduce or even increase their resources by migrating and accessing education abroad. Their upward mobility from an already privileged position maintains the gap between them and migrants from lower socio-economic backgrounds.

9.2.2. Strategies and Perceptions

The advice, experiences, and detailed information about migration procedures and opportunities found in the digital networks I investigated can contribute to migratory strategies associated with education. However, this advice and the experiences shared online also reflect perceptions rooted in the context and interpretations of those providing that information. Comparing the strategies and perceptions shared among Brazilian nurses and IT professionals, along with those shared by content creators, helps to further understand some class and gender inequalities that can shape the transnational circulation of social practices in the digital spaces I investigated.

In the group of IT professionals, education in the field is perceived as "good to have, but not unconditionally necessary". Still, in those Facebook groups, migrating to Germany and pursuing VET in IT is supported as a good strategy for those not yet in the labour market or those considering a career change motivated by the prospect of better salaries. Conversely, for those already established in the labour market, demonstrating work experience is perceived as a more effective strategy for employment in Germany than acquiring educational certificates. In the groups, professionals with work experience in IT are often advised to start applying for jobs while still in Brazil or to migrate to Germany and then seek employment there – both ways may function to get a job. Among these professionals, obtaining a German degree is also not perceived as crucial for maintaining or enhancing their standard of living and consumption habits. However, acquiring a German university degree is eventually regarded as a strategy for their children to gain or increase cultural capital, given a perception shared in the IT Facebook group that German universities are "internationally prestigious".

In the nurses' group, pursuing education in Germany is often perceived as a viable migration strategy. Some group participants express frustration due to their Brazilian BA degrees and work experience not being recognised in the German labour market. This is also perceived as an obstacle, given that graduates are required to undergo training in Germany again. However, that does not deter migrants from encouraging others to pursue their migration plans. The main factors fuelling this encouragement include the perception of more and better job opportunities after completing VET in Germany, higher salaries, improved quality of life, and better educational opportunities for their children, including access to higher education. In this group, accessing education in Germany is perceived as a strategy for upward mobility for themselves and their families. Moreover, migration is also perceived as a strategy to secure quality education for their children. Their concerns primarily focus on understanding the workings of the German school system and the attitudes of teachers

rather than on gaining access to "prestigious institutions" that would confer their children with distinctive degrees. Therefore, while the acquisition of cultural capital among nurses is also linked to a perception of upward mobility, it is not perceived as a marker of social distinction, unlike for some IT professionals.

Among the four content creators, Marcus advocates strategies such as "start learning German during high school" and "begin your financial planning with your parents early". Conversely, Antônia, Mariele, and Joana offer different strategies, focusing on educational opportunities, including applying for scholarships, enrolling in paid VET programs, or finding work-study options. All four content creators tailor their advice to audiences with similar socio-economic backgrounds, who are, therefore, more likely to be interested in pursuing similar strategies for migration and education in Germany. In their case, socio-economic class shapes their perceptions about migration and education as well as the strategies they are acquainted with. However, in this case, gender differences or inequalities are not as pervasive as class aspects. Although Antônia, Mariele, and Joana primarily engage a female audience and mention Au Pairing as a viable migratory strategy for women, their content is mostly about how to migrate to Germany and pursue education without financial support. Similarly, Marcus's content is not specifically targeted at men but at young Brazilians from families with enough economic resources to be able to support their children's studies at German universities without a scholarship.

Among nurses, IT professionals, and content creators, socio-economic class is the most evident aspect in strategies and perceptions circulating in the migrant networks of latent ties I researched. Migration is perceived as opening possibilities to access education across socio-economic levels. For those from lower socio-economic backgrounds, it is additionally perceived as a strategy for upward mobility or achieving financial stability. This group also perceives migration as a way to improve their children's chances of accessing "quality education" and higher educational levels. Conversely, those with more economic resources are more likely to perceive migration primarily as a strategy to maintain their middle-class standards while also enhancing their children's cultural capital through obtaining university degrees in the Global North.

Gender differences and inequalities are also present in information exchanges about education on the digital networks I investigated. Looking at the case of the highly gendered professional fields of IT and care work, the majority of education-related posts I collected also point out a gendered division of opportunities and interests. Of course, some women also wrote posts conveying an interest in working in IT in Germany and maintaining their socioeconomic position and some men were also frustrated that their Brazilian BA in nursing care is not recognised as a university degree in Germany. Still, these cases were exceptional, which points out that gender differences and inequalities are present and deserve further investigation.

Summing up this section, the circulation of interactions, relations, strategies, and perceptions within these transnational networks of latent ties can reinforce social practices that tend to bond individuals from similar socio-economic backgrounds rather than bridging individuals with different resources. Consequently, these digital networks have limited capacity to alter pre-existing socio-economic conditions. Overall, transnational social practices of asking and providing information, supporting migratory plans from others, and creating content about educational opportunities in Germany demonstrate both the aspirations and limitations experienced by migrants, underscoring the

influence of socio-economic factors and gender in shaping migration experiences and opportunities for upward mobility.

9.3. Symbols

Symbols are signs similarly interpreted by people within a specific context. Symbols imbue social practices with meaning (Adick, 2018; Pries, 2001) and represent values and aspirations (Faist & Özveren, 2017). The symbols circulating in the digital networks I investigated represent both the attribution of cultural capital to education as well as expectations for upward mobility.

The symbolic cultural value of a university degree is reinforced in information exchanges in the digital networks I investigated. This is particularly evident in the frustrations expressed by some nurses over the non-recognition of their Brazilian BA degrees in Germany. According to German regulations, these degrees must either be acknowledged as equivalent to VET or require experienced nurses to undergo VET. While enabling them to fulfil their migration aspirations, this process also forces them to contend with a perceived devaluation of their academic qualifications. Similarly, in the IT professionals' Facebook group, the wish among some to have their children attend "prestigious" and "internationally recognised" German universities further underscores university education as a symbol of cultural distinction, particularly when the degree is pursued abroad. In summary, these exchanges within digital networks can reinforce the perception of university education as a sign of distinction.

The symbol of German school education, particularly the *Gymnasium*, as a source of cultural capital also circulates within these digital networks. This is seen when some migrants warn aspiring migrants about the "tendency of teachers not recommending migrant children for the Gymnasium" (Dedecek Gertz, 2023, p. 7). Despite such warnings, the overall information shared reinforces the German school system as a symbol of "quality education" compared to the Brazilian system. This perception is particularly significant for parents, especially mothers in the nurses' group, who see German schools as offering their children better opportunities for upward mobility (Dedecek Gertz, 2023). Thus, the notion of "Germany's schools" as "quality education" becomes a symbol linked with more opportunities for learning, developing skills, and eventually achieving upward mobility.

Content creators further contribute to the consolidation of education-related symbols. By circulating pictures of the material goods, elegant meals at restaurants, and holiday trips to the Mediterranean, for instance, they help solidify a symbol of upward mobility associated with migrating and accessing education abroad. Nevertheless, these symbols can also reveal some aspects of class distinction.

In Marcus' case, these symbols circulating as images, particularly on Instagram, serve as distinction markers achieved after migrating and accessing a German university. He showcases his distinction through photos of his university's wide, green campus featuring modern buildings, a large auditorium with wooden panelling and a chandelier, and the library's broad windows overlooking the city. How he showcases his daily life also symbolises distinction: driving to university, purchasing expensive electronics, spending the whole day on campus and studying at the library with friends, as well as participating in business events.

Catering to their audience, Antônia, Joana, and Mariele also display their lifestyle changes post-migration as symbols of upward mobility. They circulate images of clothing purchases from global retailers, best-seller books in German, and their spending on groceries, restaurants, and leisure activities. Their posts also show their daily routines, such as studying at home for VET assignments and learning while commuting to offices or classes by bus and train. Through pictures of restaurant meals, beaches, landscapes, and historical sites from Europe to Asia, they also highlight the travel opportunities they can afford, showcasing these experiences as symbols of their attained upward mobility through studying and working in Germany.

In summary, within the transnational digital networks I investigated, symbols associated with migration and access to education abroad emphasise material successes post-migration and reinforce "German education" as a symbol of cultural capital or resource. Particularly among content creators, the circulation of different symbols reveals how education abroad can be perceived as a pathway to upward mobility for some and as a source of distinction for others.

9.4. Digital Networks and Transnational Educational Spaces

Educational spaces can be transnationalised through the circulation of education-related social practices and symbols through networks that expand beyond the borders of nation-states (cf. Kesper-Biermann, 2016). Migrants contribute to establishing and maintaining transnational educational spaces by circulating social practices and symbols related to education among their networks. As I have shown here, those elements also circulate through digital networks. Hence, these networks, in general, and the latent ties that compose them in particular, can contribute to migrants' active participation in the transnationalisation of educational spaces.

In the previous sections, I analysed class and gender inequalities in the digital networks I investigated. In this final section, I focus on trust, trustworthiness, and reciprocity as central characteristics to understand how these networks function. I discuss how these characteristics help to consolidate the use of latent ties to collect information about education as an institutionalised social practice (cf. Faist & Özveren, 2017) among migrants and aspiring migrants. Moreover, based on the inequalities discussed in the previous chapter and underscoring the complex impacts of these networks, I argue that networks of latent ties might not be sufficient to help migrants' upward mobility in a manner that reduces socio-economic inequality. This is visible when comparing people who already have access to various resources and those who do not. However, latent ties can still be helpful for migrating and accessing education abroad. That, in turn, can lead to upward mobility for those from underprivileged positions who, through migrating and accessing education abroad, experienced a socio-economic ascension compared to their previous situation.

9.4.1. Institutionalising Information Collecting through Networks of Latent Ties: The Role of Trustworthiness and Trust

Within transnational networks, the repetition of social practices over time turns these practices into informally institutionalised processes (cf. Faist & Özveren, 2017). An example of this is seen in the frequent communication among young women about the strategy of migrating to Germany via Au Pair programs, followed by pursuing VET in care work – a strategy that became institutionalised within a transnational network of young Brazilian women in Germany (cf. Fürstenau, 2019). Using transnational digital networks to collect information is a strategy that has been employed by many Brazilian migrants and aspiring migrants for over a decade (cf. Dedecek Gertz, 2023; Oosterbaan, 2010; Schrooten, 2012). Hence, this practice is consistently repeated over time by many Brazilian migrants and aspiring migrants, a characteristic of an informally institutionalised process (cf. Faist & Özveren, 2017). My research supports the idea that using transnational digital networks to collect information and perceptions about education abroad has become an informally institutionalised social practice among Brazilian migrants and aspiring migrants. Such "institutionalisation" is only possible due to the trust and reciprocity among network participants, reinforcing the trustworthiness of the information and perceptions about education circulating in these digital networks.

Trust, defined as "confidence in one's expectations" (Luhmann, 1968, p. 1), is an important factor in establishing latent ties (cf. Graf, 2018; Jayadeva, 2020; Wall et al., 2017). If migrants and aspiring migrants did not expect the information and experiences shared by others in Facebook groups to be relevant and accurate, the relevance and usefulness of these ties, and by extension, of the digital networks I investigated, would be limited – if not altogether irrelevant. In this sense, trust is not

necessarily associated only with strong ties with family and close friends or with an expectation of transforming weaker ties with acquaintances into stronger ones (cf. Bourdieu, 1986; Granovetter, 1983; Ryan, 2022). Rather, trust concerns the trustworthiness of the context and the information being communicated.

Trustworthiness is a perception that serves as a prerequisite of trust. This perception is only partly articulated through words; more often, it is established through one's evaluation of the *context* (attitudes, behaviours, and appearances) and of what is conveyed through the *content* (the information and perceptions being exchanged) (cf. Luhmann, 1968). Accordingly, migrant's participation in digital networks (the *context*), along with the *content* exchanged in those digital networks, shapes the trustworthiness of these spaces. A sense of generalised reciprocity and solidarity (cf. Agustín & Jørgensen, 2019; Bilecen, 2022) also contributes to that perception of trustworthiness. In the next subsections, I look closer at contextual and content elements of trustworthiness.

9.4.1.1. Contextual Elements of Trustworthiness in Information about Education Circulating in Digital Networks

The trustworthiness ascribed to the *context* of digital networks I investigated can be linked to four aspects: social practices regarding social media, common characteristics or goals, administrators' moderation, and visibility and accountability.

In Brazil, social media are frequently and widely used across regions and classes (IBGE, 2022; cf. Spyer, 2018; see also the Introduction and section 3.2). Using these platforms is also commonly accepted in various circumstances: for work, leisure, and private communication. Among migrants and aspiring migrants, it is also common to collect information about opportunities abroad. Also, using social media to collect information can be considered an informally institutionalised social practice among Brazilian migrants and aspiring migrants (cf. Faist & Özveren, 2017; Oosterbaan, 2013; Schrooten, 2012). The ubiquity of social media use in Brazil and its frequent and sustained use among migrants and aspiring migrants from that country contributes to the attribution of trustworthiness to the education-related information circulating within these digital networks.

Likewise, the common characteristics or goals of participants of Facebook groups contribute to that attribution of trustworthiness. Migrants and aspiring migrants join Facebook groups of "Brazilians in Hamburg" (a similar location) or "Nurses in Germany" (a similar profession) with expectations of finding people with similar situations as themselves who can also have similar questions or answers to those questions. Similarly, aspiring migrants are likely to follow migrants and content creators because of a similarity in socio-economic background and the expectation that these content creators can provide realistic educational opportunities that consider their material possibilities and aspirations.

The role of administrators in moderating migrant Facebook groups can also contribute to the attribution of trustworthiness to these groups. These unpaid group participants ensure adherence to the group's norms, erasing posts that do not comply with these norms and eventually moderating discussions. Furthermore, the administrators of some private Facebook groups request that those

interested in joining them fill out a questionnaire to participate. That can also be an important component in the perception that someone is taking care of the information circulating in the group.

In those Facebook groups, the public visibility of those replying to aspiring migrants' questions raises their accountability for the replies. That can also enhance the perception of trustworthiness. These public replies to questions from aspiring migrants are liable to scrutiny by other group members, which can encourage behaviours that align with the group's norms and, most importantly, make replies as accurate as possible – or expose them to contradiction and critique from others. In contrast to the perception of digital networks as a breeding ground for misinformation, posts' visibility can contribute to dissuading that because other participants often correct others' posts. That has happened in the case of a nurse who claimed that there is a BA degree in the area in Germany, going against the knowledge and experience of other group participants, which motivated the person to "show proof" for their claim (Dedecek Gertz, 2023b, p. 9). Positive reactions and "likes" in a public reply to an aspiring migrants' question also give more visibility to such replies supported by other group members.

In summary, in Brazil, the widespread use of social media across various contexts and activities can drive migrants and aspiring migrants to turn to these digital spaces to gather information about educational opportunities abroad. In addition, contextual elements of trustworthiness also include a sense of generalised reciprocity or, eventually, solidarity among migrants and aspiring migrants (Agustín & Jørgensen, 2019; Bilecen, 2022). For some of them, information collected from social media might have been important in their migratory pathway (cf. Dedecek Gertz et al, forthcoming). Because of that, these migrants can be motivated to "give back" what was once useful for themselves, as in the case of the content creators I interviewed. Migrants try to provide accurate information and advice to aspiring migrants with similar characteristics or goals. In the case of Facebook groups, such information and advice are also scrutinised by administrators and other group participants.

9.4.1.2. Content Elements of Trustworthiness in Information about Education in Digital Transnational Networks

The trustworthiness of the content found in those digital transnational networks derives from the level of detail in some answers, the sharing of supportive messages, and the symbols circulated in those digital networks, particularly by content creators.

In Facebook groups, some participants pose simple questions, such as "What is VET?", as well as more specific or demanding ones, such as "How do I find a VET placement in IT in Berlin?". Some answers to these kinds of questions are detailed: they explain the importance of VET in the German labour market, how that system functions in Germany, the requirements to access it, average salaries for VET, etc. Some also provide links to official websites where the information can be found. Also, group participants usually complement what others have already written by providing their own experiences or perspectives on the same issue. Similarly, content creators elaborate on these issues, especially in videos they upload to their Instagram or YouTube channels or blog posts. Apart from detailed answers, answers on Facebook groups can also be short and supportive. In some cases, group participants reply along the lines of "I did it, you can do it too," followed by a description of their own experiences. Such detailed and supportive messages can also contribute to aspiring

migrants attributing trustworthiness to information, strategies, and perceptions circulating in those spaces.

Similarly, symbols circulating in these digital networks can contribute to attributing trustworthiness to the content being shared together with the symbols. That is the case of symbols of upward mobility shared by content creators (e.g. travels, consumer goods and services they can afford in Germany). These symbols convey success in migrating, accomplishing a degree abroad, and achieving upward mobility or distinction. These content creators also share information about their migratory experiences, their daily lives in Germany, and their backgrounds in Brazil, aiming at creating a sense of authenticity to their online presence, that is, trying to publish posts that appear genuine of their regular lives and that are relatable to their followers (cf. Duffy, 2017). By circulating these symbols targeting audiences with similar socio-economic backgrounds as themselves, these migrants and content creators depict themselves as examples of success, conveying a similar supportive message to that of migrants who post replies such as "I did it, you can do it too" on Facebook groups. This supportive or motivational position, conveyed through symbols and associated with striving for authenticity, may also enhance the trustworthiness of the content created by these creators.

In summary, a perception of trustworthiness about the content circulating in transnational digital networks can contribute to the trust in the usefulness of the education-related information circulating in those networks. Such perception of trustworthiness can be partially explained as a consequence of a sense of generalised reciprocity or solidarity among migrants and aspiring migrants (Agustín & Jørgensen, 2019; Bilecen, 2022). It might be far-fetched to claim that group participants "trust" each other to provide accurate information about education in Germany. Still, the trustworthiness attributed to the context and content of these interactions can shape decisions to resort to these networks to collect information. This perception of trustworthiness and trust in that information contributes to maintaining these transnational digital networks over time.

9.4.2. Latent Ties: Bridging and Bonding Social Resources to Access Education Abroad

Networks of latent ties can have characteristics of both strong and weak ties. These relate to the bonding characteristic of strong ties and the bridging characteristic of weak ties (cf. Bourdieu, 1986; Putnam, 1995). Bonding social resources relates to the strength and intimacy of connections among strong ties, such as family or close friends. Strong social connections are more likely to provide emotional support. However, strong ties offer limited access to people who can provide other resources that are unavailable within someone's close network. Bridging social capital instead may offer that kind of access. Instead, weak ties typically offer less or no emotional, social or financial support, such as work colleagues or participants of other kinds of groups outside one's social milieu. Yet, they may be more useful in facilitating access to other resources, indications or information, such as an investment to start a business, a job promotion or concrete information that would otherwise be unavailable or difficult to find. Following these characteristics, latent ties are more similar to weak ties and, therefore, more likely to offer bridging social resources. That is so particularly because of their weak character, with little or no emotional connection. However, the latent ties I found in the digital networks I investigated may also be assuming a bonding characteristic – even though the emotional support they offer is still weak. Aspects of solidarity or reciprocity present in some

information exchanges on Facebook groups, as well as the cases of Antônia, Joana, and Mariele, the three content creators from Paper 4, can illustrate that.

The Facebook groups connect Brazilian migrants and aspiring migrants with similar situations (e.g. living in Hamburg) or interests (e.g. pursuing VET in Germany). Other commonalities are a shared language and nationality. We cannot be completely sure about the socio-economic background of the people participating in the Facebook groups. However, many of those who request information about educational opportunities and possibilities share details of their socio-economic situation so that those answering them can take that into account. Similarly, those replying to such questions give answers based on their own experience, also providing insights into their situation. Some group participants also add supportive and motivational messages in their replies. Of course, these messages are not comparable to the emotional support provided by strong ties. However, taking one's time to share experiences and information and write supportive messages reveals some level of reciprocity and the attribution of trustworthiness to the information being shared (if one does not believe the question and the information connected to it to be genuine, they would unlikely take the time to reply to it). Those characteristics are rather present in social resources based on an in-group bonding characteristic. Still, these social connections established online are weak in intensity, and their activation rather bridges those seeking information with unknown people who can provide useful advice.

Antônia, Joana, and Mariele, the content creators from Paper 4, target their content to an audience with similar socio-economic backgrounds as themselves. Given their high number of followers and interactions, their content resonates with a specific audience. Furthermore, an important motivation for them to share information about migration and education is a sense of reciprocity with this audience (Dedecek Gertz et al., forthcoming). To some extent, the type of tie they offer has some characteristics of bonding (support and reciprocity towards young women from lower socio-economic backgrounds), and, at the same time, they are closer to weak connections due to some bridging characteristics (offering information and personal experiences that might be of difficult access elsewhere and low intimacy).

In summary, latent ties can have some characteristics of both weak and strong ties and can be placed within migrants' continuum of social connections (Ryan, 2022). Latent ties can serve to bridge an aspiring migrant who seeks information about education with people outside that migrant's network who have that kind of information and can also share their personal experiences in that realm, a characteristic closer to those of weak ties. Eventually, these weaker ties may also offer some kind of emotional support in the form of motivation. However, establishing latent ties is unlikely to happen among people from different social strata. In the case I investigated here, people who try to activate latent ties are more likely to be someone asking about information tailored to their possibilities, and those taking their time to reply are more likely to be close enough to the circumstances of the one asking and be able to provide an accurate answer. This support is similarly seen in strong ties networks in which reciprocity, or solidarity, plays a role and, eventually, contributes to migrants' access to education (cf. Fürstenau, 2019; Carnicer, 2019). In other words, latent ties can increase aspiring migrants' access to social connections outside their existing networks, and what circulates among these ties can help them access education abroad (cf. Jayadeva, 2020). Still, people participating in these networks of latent ties are likely to have similar socio-economic backgrounds,

and people seeking information from migrant content creators would likely resort to those who present realistic possibilities considering their socio-economic situation.

Latent ties offer the advantage of bridging people outside one's close social networks of family and friends. Despite that, on the one hand, these connections seem unlikely to serve as a resource bridging people from different social strata. On the other hand, latent ties can bridge people seeking information with those who can provide that, thereby expanding migrants' information sources to facilitate their access to educational opportunities abroad. In turn, that access to education can lead to migrants' upward mobility, which has been observed among those from way below the middle classes (cf. Carnicer & Fürstenau, 2021). In this sense, latent ties can be useful informational resources towards upward mobility. However, the resources they offer cannot compensate for other pre-existing circumstances, particularly economic ones or access to other formal support. In this sense, even if latent ties can facilitate access to education abroad (cf. Jayadeva, 2020, p. 2255), this is limited to the material possibilities already available.

10. Concluding Remarks

In this thesis, I analysed the transnational circulation of information, social practices, and symbols related to education through digital networks composed of connections that are technically available but that must be first activated through interaction ("late ties", Haythornthwaite, 2002). As a main outcome, these networks may facilitate migrants' access to relevant information and advice, thereby enhancing their possibilities of accessing education abroad. However, similarly to their non-digital counterparts (cf. Beech, 2015; Brooks & Waters, 2011), these transnational digital networks can be seen as bridging and, to some extent, bonding migrants and aspiring migrants from similar socioeconomic backgrounds. Aspiring migrants from lower and upper classes connect with migrants from similar backgrounds who share information about education that can be useful for upward mobility for the former and can be a source of distinction for the latter.

The outcomes of this thesis raise further research questions involving education, migration, and media use. Adapting from the call for investigating "how migration and digital technologies mutually shape and co-constitute one another" (Leurs, 2023, p. 165), we can broadly ask, "How migration and digital technologies mutually shape and co-constitute transnational educational spaces?". A critical point here also lies in the indirect role of the big tech industry in the transnationalisation of educational spaces: If networks of latent ties are important in the pathways of some migrants who want to access education abroad and if these networks are primarily made available by big tech companies that collect data from their users' for-profit interests, then can these companies also be considered as having an impact in the transnationalisation of education? If so, what are their roles, and what are the consequences of their actions?

A long-term and comparative study with other countries of origin and destination can be useful in identifying other patterns of media use and their meanings. After stopping the data collection, I sometimes accessed the Facebook and Instagram profiles I created for this project. On Facebook, I discovered some new location groups that would fit my threshold for "active groups" (thousand participants and three posts published in one week), as well as some niche groups such as two "Brazilians who work in ice cream parlours in Germany" (one with 13.5 thousand participants, the other with 3 thousand) and "Brazilians cooking in Germany" (12.5 thousand participants). Interestingly, two Facebook groups of Brazilians who wanted to study at a German university now had enough participants to be considered "active groups", which was not the case three years ago. However, they still did not meet my threshold regarding the number of interactions: one of these groups had only two interactions in the past 30 days at the time of writing, and the other had none. Both the frequency of interactions and the number of group participants contrast with what Jayadeva (2020) describes about similar Facebook groups of Indians who want to study in German universities. Such a comparative study could be fruitful in many directions, such as in understanding the reasons for those contrasting differences, what other networks Brazilians who want to study at German or European universities might be using, whether aspiring migrants from India also use these networks to collect information about educational opportunities other than universities, and what are differences and similarities among these cases.

Content creators about migration and education seem to be a growing phenomenon. After I stopped my data collection, there were some developments in that area. Four of the five content creators I interviewed (Antônia, Mariele, Joana, and Marcus) invested in further professionalising their work,

creating a consistent visual identity for their Instagram posts and offering paid online consultancy services. Antônia is now pursuing VET in Germany and is producing content about that experience added to the content about language learning, which was her focus during my data collection. Mariele returned to Denmark, where she initially wanted to live instead of Germany, and stopped updating her social media accounts for a while. At the time of writing, she started producing content again, focusing on finding work and professional development in Germany. Joana started recording longer videos for YouTube, commenting on her daily life experiences in Germany. Now, her content is balanced between educational opportunities, travel experiences, and daily life in Germany. Marcus still produces content about university education in Germany. Now, he was joined by four other young Brazilian migrants who study at German universities and they have been sharing information, experiences, and perceptions about that. They created a logo, and now they also offer online consultations, manage a WhatsApp group for those interested in studying at a German university, offer to pair aspiring migrants and students with professional German teachers, and have partnerships with insurance and a finance company targeted to young migrants in Germany as well as with a psychotherapist who sees patients online.

Other content creators emerged after I stopped looking for new interviewees. These are two young Brazilian IT professionals in their 30s living in a German metropole who produce content together. Their content is mostly about daily life and comparisons between Brazil and Germany. Yet, some of their posts and videos were recently sponsored by a German private higher educational institution. The emergence of such sponsorship by educational institutions might indicate a development in this field towards marketisation. The presence of private companies that also use migrant Facebook groups (particularly that of nurses) to attract aspiring migrants to their migration programmes that promise language courses and VET in Germany could also be investigated from that perspective. This is another venue to research migrants' use of digital networks associated with educational opportunities.

References

Adick, C. (2018). Transnational education in schools, universities, and beyond: Definitions and research areas. *Transnational Social Review*, *8*(2), 124–138. https://doi.org/10.1080/21931674.2018.1463057

Agustín, Ó. G., & Jørgensen, M. B. (2019). Conceptualizing Solidarity. An Analytical Framework. In Ó. G. Agustín & M. B. Jørgensen, *Solidarity and the 'Refugee Crisis' in Europe* (pp. 23–47). Springer International Publishing. https://doi.org/10.1007/978-3-319-91848-8_2

Alencar, A. (2018). Refugee integration and social media: A local and experiential perspective. *Information, Communication & Society*, *21*(11), 1588–1603. https://doi.org/10.1080/1369118X.2017.1340500

Almeida, A. M. (2015). The changing strategies of social closure in elite education in Brazil. In A. van Zanten, S. J. Ball, & B. Darchy-Koechlin (Eds.), *Elites, privilege and excellence: The national and global redefinition of educational advantage* (pp. 71–81). Routledge.

Amâncio, T. (2022). Influencers brasileiros fazem sucesso contando 'vida real' de imigrante nos EUA: Trabalhadores da construção civil e limpeza somam centenas de milhares de seguidores nas redes sociais. *Folha de São Paulo*. https://www1.folha.uol.com.br/mercado/2022/09/influencers-brasileiros-fazem-sucesso-contando-vida-real-de-imigrante-nos-eua.shtml

Anthias, F. (2007). Ethnic Ties: Social Capital and the Question of Mobilisability. *The Sociological Review*, *55*(4), 788–805. https://doi.org/10.1111/j.1467-954X.2007.00752.x

Assis, G. de O. (2007). Mulheres migrantes no passado e no presente: Gênero, redes sociais e migração internacional. *Revista Estudos Feministas*, *15*(3), 745–772. https://doi.org/10.1590/S0104-026X2007000300015

Badan Ribeiro, M. C. (2020). "Através de Becas Salvar Vidas": A Obra Ecumênica de Estudos (ÖSW-Bochum-Alemanha). *Revista Paginas*, *12*(29). https://doi.org/10.35305/rp.v12i29.404

Bahia, J. (2015). E o preto-velho fala alemão: Espíritos transnacionais e o campo religioso na Alemanha. *Revista Del CESLA*, *18*, 181–212.

BAMF, B. für M. und F. (2023). *Visum zum Studieren [Visa for study purposes]*. Make-It-in-Germany.Com. https://www.make-it-in-germany.com/de/visum-aufenthalt/arten/studieren#:~:text=11.208%20Euro%20pro%20Jahr%3B%20Betrag,Botschaft%20beziehungsweise%20dem%20Konsulat%20nachweisen.

Barbosa, A. F., BR, N. de I. e C. do P., & Velloso, P. (2022). *Redes comunitárias de Internet no Brasil: Experiências de implantação e desafios para a inclusão digital* (C. G. da I. no Brasil & O. E. Ltda, Eds.). Núcleo de Informação e Coordenação do Ponto BR.

Basch, L. G., Schiller, N. G., & Szanton Blanc, C. (1994). *Nations unbound: Transnational projects, postcolonial predicaments, and deterritorialized nation-states*. Routledge.

Beech, S. E. (2015). International student mobility: The role of social networks. *Social & Cultural Geography*, *16*(3), 332–350. https://doi.org/10.1080/14649365.2014.983961

Bilecen, B. (2022). Reciprocity Within Migrant Networks: The Role of Social Support for Employment. In E. Keskiner, M. Eve, & L. Ryan (Eds.), *Revisiting Migrant Networks* (pp. 159–178). Springer International Publishing. https://doi.org/10.1007/978-3-030-94972-3_8

Blei, D. M. (2012). Probabilistic topic models. *Communications of the ACM*, *55*(4), 77–84. https://doi.org/10.1145/2133806.2133826

Blei, D. M., Ng, A. Y., & Jordan, M. I. (2003). Latent Dirichlet Allocation. *Journal of Machine Learning Research*, *3*, 993–1022.

Bourdieu, P. (1984). *Distinction: A social critique of the judgement of taste* (11. print). Harvard Univ. Press.

Bourdieu, P. (1986). The Forms of Capital. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 15–29). Greenwood Press.

boyd, danah. (2014). *It's complicated: The social lives of networked teens*. Yale University Press.

Breidenstein, G., Hirschauer, S., Kalthoff, H., & Nieswand, B. (2020). *Ethnografie: Die Praxis der Feldforschung* (3., überarbeitete Auflage). UVK Verlag.

Breuer, F., Muckel, P., & Dieris, B. (2019). *Reflexive Grounded Theory: Eine Einführung für die Forschungspraxis*. Springer Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-658-22219-2

Brooks, R., & Waters, J. (2010). Social networks and educational mobility: The experiences of UK students. *Globalisation, Societies and Education*, *8*(1), 143–157. https://doi.org/10.1080/14767720903574132

Brown, G., & Michinov, N. (2019). Measuring latent ties on Facebook: A novel approach to studying their prevalence and relationship with bridging social capital. *Technology in Society*, *59*, 101176. https://doi.org/10.1016/j.techsoc.2019.101176

Bundesamt für Justiz. (2005, March 23). *Berufsbildungsgesetz (BBiG): § 17 Vergütungsanspruch und Mindestvergütung*. Gesetze Im Internet. https://www.gesetze-im-internet.de/bbig_2005/BJNR093110005.html#BJNR093110005BJNG000101128

Burrell, J. (2009). The Field Site as a Network: A Strategy for Locating Ethnographic Research. *Field Methods*, *21*(2), 181–199. https://doi.org/10.1177/1525822X08329699

Cabalquinto, E. C. (2020). 'They could picture me, or I could picture them': 'Displaying' family life beyond borders through mobile photography. *Information, Communication & Society*, *23*(11), 1608–1624. https://doi.org/10.1080/1369118X.2019.1602663

Câmara, A. C. M., & Almeida, A. M. F. (2012). Classe Social na Creche. *Educação & Linguagem*, *15*(26), 35–64. https://doi.org/10.15603/2176-1043/el.v15n26p35-64

Carnicer, J. A. (2018). Transnational family and educational trajectories. *Transnational Social Review*, *8*(2), 170–184. https://doi.org/10.1080/21931674.2018.1463056

Carnicer, J. A. (2019). Transnational migration and educational opportunities: A case study of migration from Brazil to Germany. *London Review of Education*. https://doi.org/10.18546/LRE.17.1.02

Carnicer, J. A., & Fürstenau, S. (2021). Transnational Mobility, Education and Social Positioning between Brazil and Germany. In D. Cairns (Ed.), *The Palgrave Handbook of Youth Mobility and Educational Migration* (pp. 107–117). Springer International Publishing. https://doi.org/10.1007/978-3-030-64235-8_11

Cedefop, E. C. for the D. of V. T. (2011). *Glossary: Quality in education and training.* Publications Office. https://data.europa.eu/doi/10.2801/94487

Couldry, N. (2012). *Media, society, world: Social theory and digital media practice*. Polity.

Dedecek Gertz, H. (2023a). Collecting migrants' Facebook posts: Accounting for ethical measures in a text-as-data approach. *Frontiers in Sociology*, *7*, 932908. https://doi.org/10.3389/fsoc.2022.932908

Dedecek Gertz, H. (2023b). Migration and education on social media: What migrants discuss about education in Facebook groups. *Frontiers in Sociology*, *8*, 1177411. https://doi.org/10.3389/fsoc.2023.1177411

Dedecek Gertz, H., Cabalquinto, E. C., & Leurs, K. (2024). Making sense of digital traces in migration contexts. In W. Allen & C. Vargas-Silva (Eds.), *Handbook of Research Methods in Migration* (2nd Edition).

Dedecek Gertz, H., Carnicer, J., & Fürstenau, S. (forthcoming). *Migrant content creators as social media actors of transnational education*.

Dedecek Gertz, H., & Süßer, F. (2022). Migration and educational projects online: A topic modelling approach of discussions on social media groups. *Mediální Studia*, *16*(2), 236–256.

Dekker, R., & Engbersen, G. (2014). How social media transform migrant networks and facilitate migration. *Global Networks*, *14*(4), 401–418. https://doi.org/10.1111/glob.12040

Dekker, R., Engbersen, G., & Faber, M. (2016). The Use of Online Media in Migration Networks: The Use of Online Media in Migration Networks. *Population, Space and Place*, *22*(6), 539–551. https://doi.org/10.1002/psp.1938

Dekker, R., Engbersen, G., Klaver, J., & Vonk, H. (2018). Smart Refugees: How Syrian Asylum Migrants Use Social Media Information in Migration Decision-Making. *Social Media + Society*, *4*(1), 205630511876443. https://doi.org/10.1177/2056305118764439

Deutsche Welle. (2024). *Wie Social-Media hilft, Migranten zu Sklaven zu machen*. https://www.dw.com/de/wie-social-media-hilft-migranten-zu-sklaven-zu-machen/video-67962530

Dias, G., & Martins Júnior, A. (2018). The second Brazilian migration wave: The impact of Brazil's economic and social changes on current migration to the UK. *Século XXI – Revista de Ciências Sociais*, *8*(1), 112. https://doi.org/10.5902/2236672535669

Dias Lopes, A. (2020). International mobility and education inequality among Brazilian undergraduate students. *Higher Education*, *80*(4), 779–796. https://doi.org/10.1007/s10734-020-00514-5

Duffy, B. E. (2017). *(Not) getting paid to do what you love: Gender, social media, and aspirational work*. Yale University Press.

Dumont, H., Maaz, K., Neumann, M., & Becker, M. (2014). Soziale Ungleichheiten beim Übergang von der Grundschule in die Sekundarstufe I: Theorie, Forschungsstand, Interventions- und Fördermöglichkeiten. *Zeitschrift für Erziehungswissenschaft*, *17*(S2), 141–165. https://doi.org/10.1007/s11618-013-0466-1

Escudero, C. (2022). Brasileiros no Chile: O funcionamento do 'mercado da saudade' via redes sociais virtuais transnacionais. *Revista Extraprensa*, *15*(2), 146–165. https://doi.org/10.11606/extraprensa2022.199885

Evans, Y. (2020). *Brasileiros no Reino Unido, 2020*. https://doi.org/10.13140/RG.2.2.30903.75685

Evans, Y., & Souza, A. (2013). *Imigrantes Brasileiras Pelo Mundo, 2013*. https://doi.org/10.13140/RG.2.1.2507.9761

Faist, T. (2019). *The transnationalized social question: Migration and the politics of social inequalities in the twenty-first century* (First edition). Oxford University press.

Faist, T., Bilecen, B., Barglowski, K., & Sienkiewicz, J. J. (2015). Transnational Social Protection: Migrants' Strategies and Patterns of Inequalities. *Population, Space and Place*, *21*(3), 193–202. https://doi.org/10.1002/psp.1903

Faist, T., Fauser, M., & Reisenauer, E. (2013). *Transnational migration* (1. publ). Polity.

Faist, T., & Özveren, E. (2017). *Transnational Social Spaces* (0 ed.). Routledge. https://doi.org/10.4324/9781315235707

Falcão, R., Cruz, E., Costa Filho, M., & Elo, M. (2024). Researching hard-to-reach populations: Lessons learned from dispersed migrant communities. *International Journal of Sociology and Social Policy*, *44*(1/2), 76–95. https://doi.org/10.1108/IJSSP-06-2023-0134

Fernandes, D., Peixoto, J., & Oltramari, A. P. (2020). A quarta onda da imigração brasileira em Portugal: Uma história breve. *Revista Latinoamericana de Población*, *15*(29), 34–63. https://doi.org/10.31406/relap2021.v15.i2.n29.2

Foletto, L. (2018). Usos sociais do Facebook por migrantes brasileiros na Suécia: Os grupos na construção identitária. *Mediação*, *20*(26), 93–112.

Fürstenau, S. (2019). Educational aspirations of underprivileged female migrants. An ethnographic case study of a transnational network of care workers between Brazil and Germany. *Zeitschrift Für Erziehungswissenschaft*, *22*(S1), 185–202. https://doi.org/10.1007/s11618-019-00882-4

Geertz, C. (1973). *The Interpretation of Cultures* (3rd ed). Basic Books.

Gerber, M. (2023). 'Their only lifeline' for migrants at the U.S. border: Smartphones and TikTok: How TikTok changed the way people migrate in the Title 42 era. *Los Angeles Times*, *May 17, 2023*. https://www.latimes.com/business/story/2023-05-17/how-tiktok-and-other-social-media-changed-the-way-people-migrate-to-the-u-s-in-the-title-42-era

Goethe-Institut. (2023). *Goethe-Zertifikat B1*. Goethe-Institut. https://www.goethe.de/ins/br/de/sta/poa/prf/gzb1.html

Góis, P., Marques, J. C., Padilla, B., & Peixoto, J. (2009). Segunda ou terceira vaga? As características da imigração brasileira recente em Portugal. *RevistaMigrações*, *5*, 111–133.

Graf, H. (2018). Media Practices and Forced Migration: Trust Online and Offline. *Media and Communication*, *6*(2), 149–157. https://doi.org/10.17645/mac.v6i2.1281

Granovetter, M. (1983). The Strength of Weak Ties: A Network Theory Revisited. *Sociological Theory*, *1*, 201. https://doi.org/10.2307/202051

Greschke, H. M. (2010). Mediated cultures of mobility: The art of positioning ethnography in global landscapes. In T. Faist (Ed.), *COMCAD Working Papers*. https://nbn-resolving.org/urn:nbn:de:0168-ssoar-377768

Greschke, H. M. (2021). Idioms of polymediated practices and the techno-social accomplishment of co-presence in transnational families. *Pragmatics and Society*, *12*(5), 828–849. https://doi.org/10.1075/ps.20053.gre

Grimmer, J., Roberts, M. E., & Stewart, B. M. (2022). *Text as data: A new framework for machine learning and the social sciences*. Princeton University Press.

Haas, H. de, Castles, S., & Miller, M. J. (2022). *The age of migration: International population movements in the modern world* (Sixth edition, reprinted by Bloomsbury Academic). Bloomsbury Academic.

Hasebrink, U., & Domeyer, H. (2012). Media Repertoires as Patterns of Behaviour and as Meaningful Practices. A Multimethod Approach to Media Use in Converging Media Environments. *Participations. Journal of Audience & Reception Studies*, *9*(2), 757–779.

Haythornthwaite, C. (2002). Strong, Weak, and Latent Ties and the Impact of New Media. *The Information Society*, *18*(5), 385–401. https://doi.org/10.1080/01972240290108195

Haythornthwaite, C. (2005). Social networks and Internet connectivity effects. *Information, Communication & Society*, *8*(2), 125–147. https://doi.org/10.1080/13691180500146185

Hepp, A. (2020). *Deep mediatization*. Routledge.

Hepp, A., Bozdag, C., & Sūna, L. (2011). *Mediale Migranten: Mediatisierung und die kommunikative Vernetzung der Diaspora* (1. Aufl). VS, Verl. für Sozialwiss.

Hewson, C., Vogel, C., & Laurent, D. (2016). Internet-Mediated Research: State of the Art. In *Internet Research Methods*. SAGE Publications Ltd. https://doi.org/10.4135/9781473920804

Hine, C. (2008). Virtual Ethnography. In L. Given (Ed.), *The SAGE Encyclopedia of Qualitative Research Methods*. SAGE. https://doi.org/10.4135/9781412963909

Hine, C. (2015). *Ethnography for the internet: Embedded, embodied and everyday*. Routledge, Taylor & Francis Group.

Hine, C. (2016). From virtual ethnography to the embedded, embodied, everyday internet. In Hjorth, Larissa, H. A. Horst, A. Galloway, & G. Bell (Eds.), *The Routledge companion to digital ethnography* (pp. 21–28). Routledge.

Hunkler, C. (2016). Ethnische Unterschiede beim Zugang zu beruflicher Ausbildung. In C. Diehl, C. Hunkler, & C. Kristen (Eds.), *Ethnische Ungleichheiten im Bildungsverlauf* (pp. 597–641). Springer Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-658-04322-3_14

IBGE. (2020). *'Educação 2019, PNAD Contínua'. Pesquisa Nacional Por Amostra de Domicílios Contínua 2019*. https://biblioteca.ibge.gov.br/visualizacao/livros/liv101736_informativo.pdf

IBGE. (2022). *Acesso à Internet e à televisão e posse de telefone móvel celular para uso pessoal 2021*. Instituto Brasileiro de Geografia e Estatística. https://biblioteca.ibge.gov.br/visualizacao/livros/liv101963_informativo.pdf

IBGE. (2023). *'Educação 2022, PNAD Contínua'. Pesquisa Nacional Por Amostra de Domicílios Contínua 2022*. https://biblioteca.ibge.gov.br/visualizacao/livros/liv102002_informativo.pdf

Iorio, J. C. (2019). A importância das redes sociais, da internet e das redes sociais online na mobilidade dos estudantes brasileiros do ensino superior para Portugal. *Cadernos de Estudos Sociais*, *33*(2). https://doi.org/10.33148/CES2595-4091v.33n.220181753

Iorio, J., & De Albuquerque Ferreira, S. (2013). Fluxos migratórios de brasileiros em Portugal: O retorno e a 'nova vaga dos em vias de qualificação'. *Leopoldianum*, *39*(107), 31–48.

Iorio, J., & Pereira, S. (2018). Social class inequalities and international student mobility: The case of Brazilian students in the Portuguese higher education system. *Belgeo*, *3*. https://doi.org/10.4000/belgeo.24193

Jayadeva, S. (2020). Keep calm and apply to Germany: How online communities mediate transnational student mobility from India to Germany. *Journal of Ethnic and Migration Studies*, *46*(11), 2240–2257. https://doi.org/10.1080/1369183X.2019.1643230

Jayadeva, S. (2023). 'Study-abroad influencers' and insider knowledge: How new forms of study-abroad expertise on social media mediate student mobility from India to Germany. *Mobilities*, 1–17. https://doi.org/10.1080/17450101.2023.2220944

Kesper-Biermann, S. (2016). Putting the Nation in Perspective: Educational Spaces – a Concept for the Historiography of Education. *Bildungsgeschichte*, *6*(1), 92–95.

Klein, J., Walter, M., & Schimank, U. (2018). Researching Individuals' Media Repertoires: Challenges of Qualitative Interviews on Cross-Media Practices. In A. Hepp, A. Breiter, & U. Hasebrink (Eds.), *Communicative Figurations* (pp. 363–386). Springer International Publishing. https://doi.org/10.1007/978-3-319-65584-0_15

Knight, J. (2016). Transnational Education Remodeled: Toward a Common TNE Framework and Definitions. *Journal of Studies in International Education*, *20*(1), 34–47. https://doi.org/10.1177/1028315315602927

Lareau, A. (2011). *Unequal childhoods: Class, race, and family life* (2nd ed., with an update a decade later). University of California Press.

Lášticová, B. (2014). New media, social capital and transnational migration: Slovaks in the UK. *Human Affairs*, *24*(4), 406–422. https://doi.org/10.2478/s13374-014-0237-6

Leurs, K. (2023). *Digital migration* (First). SAGE Publishing.

Levitt, P., & Schiller, N. G. (2004). Conceptualizing Simultaneity: A Transnational Social Field Perspective on Society. *International Migration Review*, *38*(3), 1002–1039. https://doi.org/10.1111/j.1747-7379.2004.tb00227.x

Lidola, M. (2014). Negotiating Integration in Berlin's Waxing Studios: Brazilian Migrants' Gendered Appropriation of Urban Consumer Spaces and 'Ethnic' Entrepreneurship. *Journal of Contemporary History*, *49*(1), 228–251. https://doi.org/10.1177/0022009413505664

Luhmann, N. (1968). *Vertrauen: Ein Mechanismus der Reduktion sozialer Komplexität* (5. Aufl). UTB GmbH UVK.

Lutz, H., & Palenga-Möllenbeck, E. (2011). Care, Gender and Migration: Towards a Theory of Transnational Domestic Work Migration in Europe. *Journal of Contemporary European Studies*, *19*(3), 349–364. https://doi.org/10.1080/14782804.2011.610605

Madianou, M., & Miller, D. (2012). *Migration and new media: Transnational families and polymedia*. Routledge.

Mafaalani, A. el-. (2021). *Mythos Bildung: Die ungerechte Gesellschaft, ihr Bildungssystem und seine Zukunft: mit einem Zusatzkapitel zur Coronakrise* (2. Auflage 2021). Kiepenheuer & Witsch.

Make it in Germany. (n/d). *Gefragte Berufe*. Make It in Germany - Das Portal Der Bundesregierung Für Fachkräfte aus Dem Ausland. https://www.make-it-in-germany.com/de/arbeiten-in-deutschland/gefragte-berufe

Marcus, G. E. (1995). Ethnography in/of the World System: The Emergence of Multi-Sited Ethnography. *Annual Review of Anthropology*, *24*(1), 95–117. https://doi.org/10.1146/annurev.an.24.100195.000523

Marino, S. (2021). Multi-Sited Ethnography and Digital Migration Research: Methods and challenges. In K. Schuster & S. E. Dunn (Eds.), *Routledge international handbook of research methods in digital humanities*. Routledge, Taylor & Francis Group.

Mazzucato, V. (2009). Bridging boundaries with a transnational research approach: A simultaneous matched sample methodology. *Multi-Sited Ethnography: Theory, Praxis and Locality in Contemporary Research*, 215–232.

Medina Macaya, J. F., & Jereissati, T. (2021). Continuidade do ensino na pandemia COVID-19: O uso de TIC em escolas públicas brasileiras. In Comitê Gestor da Internet no (Ed.), *Educação e tecnologias digitais: Desafios e estratégias para a continuidade da aprendizagem em tempos de COVID-19* (pp. 175–220). Núcleo de Informação e Coordenação do Ponto BR.

Ministério das Relações Exteriores. (2021, June 29). *Comunidade Brasileira no Exterior—Estimativas Referentes ao ano de 2020*. Brazilian Ministry of International Relations. https://www.gov.br/mre/pt-br/assuntos/portal-consular/arquivos/ComunidadeBrasileira2020.pdf

Nedelcu, M., & Wyss, M. (2016). 'Doing family' through ICT-mediated *ordinary co-presence*: Transnational communication practices of Romanian migrants in Switzerland. *Global Networks*, *16*(2), 202–218. https://doi.org/10.1111/glob.12110

Nissenbaum, H. (2010). *Privacy in context: Technology, policy, and the integrity of social life*. Stanford Law Books, an imprit of Standford University Press.

O'Malley, J. (2015). Surprised that Syrian refugees have smartphones? Sorry to break this to you, but you're an idiot. You don't need to be a white westerner to own a relatively cheap piece of technology. *The Independent*. https://www.independent.co.uk/voices/comment/surprised-that-syrian-refugees-have-smartphones-well-sorry-to-break-this-to-you-but-you-re-an-idiot-10489719.html

Oosterbaan, M. (2010). Virtual Migration. Brazilian Diasporic Media and the Reconfigurations of Place and Space. *Revue Européenne Des Migrations Internationales*, *26*(1), 81–102. https://doi.org/10.4000/remi.5037

Oosterbaan, M. (2013). Orkontros: Brazilian Migrants, Social Network Sites and the European City. In J. Thissen, R. Zwijnenberg, & K. Zijlmans (Eds.), *Contemporary Culture* (pp. 37–50). Amsterdam University Press. https://doi.org/10.1515/9789048517954-003

Padilla, B. (2006). Redes sociales de los brasileros recién llegados a Portugal: ¿Solidaridad étnica o empaía étnica? *Alternativas. Cuadernos de Trabajo Social*, *14*, 49–61.

Pereira, T. I., & Reis, K. C. D. (2020). Estudo da Evasão Universitária em Contextos Emergentes: Desafios à Permanência Estudantil. *Revista Da Faculdade de Educação*, *33*(1), 209–225. https://doi.org/10.30681/21787476.2020.33.209225

Picanço Cruz, E., Pessoa de Queiroz Falcão, R., & dos Santos, A. J. (2022). Brasileiros na Alemanha: Motivações, perfil dos imigrantes e questões para debate. *População e Sociedade*, *38*, 118–141. https://doi.org/10.52224/21845263/rev38v2

Pink, S., Horst, H. A., Postill, J., Hjorth, L., Lewis, T., & Tacchi, J. (Eds.). (2016). *Digital ethnography: Principles and practice*. SAGE.

Portugueis, D. (2016). "Lá e cá" histórias e projetos de vida de sorveteiros ítalo-brasileiros na Alemanha: Ensaio e apontamentos de pesquisa. *Cadernos OBMigra*, *2*(1), 38–59.

Pries, L. (Ed.). (2001). *New transnational social spaces: International migration and transnational companies in the early twenty-first century*. Routledge.

Putnam, R. D. (1995). *Bowling alone: The collapse and revival of American community* (Revised and updated). Simon & Schuster Paperbacks.

Quadros, J. E. (2022). Perfil e estratégias de famílias de escolas privadas de Belo Horizonte durante a pandemia de COVID-19 . *Revista Entreideias: Educação, Cultura e Sociedade*, *11*(2). https://doi.org/10.9771/re.v11i2.49282

Raghuram, P. (2004). Migration, gender, and the it sector: Intersecting debates. *Women's Studies International Forum*, *27*(2), 163–176. https://doi.org/10.1016/j.wsif.2004.06.006

Ryan, L. (2011). Migrants' Social Networks and Weak Ties: Accessing Resources and Constructing Relationships Post-Migration. *The Sociological Review*, *59*(4), 707–724. https://doi.org/10.1111/j.1467-954X.2011.02030.x

Ryan, L. (2022). The Direct and Indirect Role of Migrants' Networks in Accessing Diverse Labour Market Sectors: An Analysis of the Weak/Strong Ties Continuum. In E. Keskiner, M. Eve, & L. Ryan (Eds.), *Revisiting Migrant Networks* (pp. 23–40). Springer International Publishing. https://doi.org/10.1007/978-3-030-94972-3_2

Ryan, L. (2023). *Social networks and migration: Relocations, relationships and resources*. Bristol University Press.

Sampaio, G. T. C., & Oliveira, R. L. P. de. (2016). Dimensões da desigualdade educacional no Brasil. *Revista Brasileira de Política e Administração Da Educação - Periódico Científico Editado Pela ANPAE*, *31*(3), 511. https://doi.org/10.21573/vol31n32015.60121

Schiller, N. G., Basch, L., & Blanc-Szanton, C. (1992). Transnationalism: A New Analytic Framework for Understanding Migration. *Annals of the New York Academy of Sciences*, *645*(1 Towards a Tra), 1–24. https://doi.org/10.1111/j.1749-6632.1992.tb33484.x

Schreier, M. (2012). *Qualitative content analysis in practice*. SAGE.

Schrøder, K. C. (2018). Communicative Figurations and Cross-Media Research. In A. Hepp, A. Breiter, & U. Hasebrink (Eds.), *Communicative Figurations* (pp. 407–424). Springer International Publishing. https://doi.org/10.1007/978-3-319-65584-0_17

Schrooten, M. (2012). Moving ethnography online: Researching Brazilian migrants' online togetherness. *Ethnic and Racial Studies*, *35*(10), 1794–1809. https://doi.org/10.1080/01419870.2012.659271

Seeber, S., Busse, R., Michaelis, C., & Baethge, M. (2019). Migration in der beruflichen Bildung: Herausforderungen für die Integration von zugewanderten schutz- und asylsuchenden Jugendlichen. *Zeitschrift für Erziehungswissenschaft*, *22*(S1), 71–99. https://doi.org/10.1007/s11618-019-00890-4

Silva, H. S. D., Mota, C. F. M. B. D., Falcão, R. P. D. Q., & Cruz, E. P. (2022). Aspects of brazilian immigrant entrepreneurship in Porto, Portugal. *E-Journal of Intercultural Studies*, N.º 10 (2022). https://doi.org/10.34630/EREI.VI10.4768

Sin, I. L. (2009). The aspiration for social distinction: Malaysian students in a British university. *Studies in Higher Education*, *34*(3), 285–299. https://doi.org/10.1080/03075070802597093

Smets, K., Leurs, K., Georgiou, M., Witteborn, S., & Gajjala, R. (2020). *The SAGE Handbook of Media and Migration*. SAGE Publications Ltd. https://doi.org/10.4135/9781526476982

Spyer, J. (2018). *Mídias sociais no Brasil emergente: Como a internet afeta a mobilidade social*. EDUC ; Editora Armazém da Cultura ; UCL Press.

Statista. (2022a, June 15). *Number of Facebook users in Brazil from 2018 to 2027*. Statista. https://www.statista.com/statistics/244936/number-of-facebook-users-in-brazil/

Statista. (2022b, June 15). *Social network user penetration in Brazil from 2018 to 2027*. https://www.statista.com/statistics/244933/social-network-penetration-in-brazil/

Statista. (2024). *Social network usage by frequency in Brazil as of December 2023*. https://www.statista.com/forecasts/1226649/social-network-usage-by-frequency-in-brazil

Statistisches Bundesamt. (2022, December 31). *Ausländer: Deutschland, Stichtag, Geschlecht/Staatsangehörigkeit*.

Statistisches Bundesamt. (2023, May 16). *Armutsgefährdungsschwelle und Armutsgefährdung (monetäre Armut)*. DEStatis. https://www.destatis.de/DE/Themen/Gesellschaft-

Umwelt/Einkommen-Konsum-Lebensbedingungen/Lebensbedingungen-Armutsgefaehrdung/Tabellen/armutsschwelle-gefaehrdung-mz-silc.html#fussnote-1-576078

Stelzig-Willutzki, S. (2012). *Soziale Beziehungen im Migrationsverlauf*. VS Verlag für Sozialwissenschaften. https://doi.org/10.1007/978-3-531-19117-1

Taylor, C. (2021). Metaphors of migration over time. *Discourse & Society*, *32*(4), 463–481. https://doi.org/10.1177/0957926521992156

Trebbels, M. (2015). Educational aspirations, expectations and choices of migrants. In M. Trebbels, *The transition at the end of compulsory full-time education* (pp. 65–78). Springer Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-658-06241-5_5

Trevisol, J. V., & Nierotka, R. L. (2016). Os jovens das camadas populares na universidade pública: Acesso e permanência. *Revista Katálysis*, *19*(1), 22–32. https://doi.org/10.1590/1414-49802016.00100003

Turkewitz, J. (2023). Live from the Jungle: Migrants Become Influencers on Social Media: TikTok, Facebook and YouTube are transforming global migration, becoming tools of migrants and smugglers alike. *The New York Times*. https://www.nytimes.com/2023/12/20/world/americas/migrants-tiktok-darien-gap.html

UNESCO & Council of Europe. (2001). *Code of Good Practice in the Provision of Transnational Education (adopted by the Lisbon Recognition Convention Committee at its second meeting, Riga, 6 June 2001)*. https://www.coe.int/en/web/higher-education-and-research/lisbon-recognition-convention

Vertovec, S. (2009). *Transnationalism*. Routledge.

Wall, M., Otis Campbell, M., & Janbek, D. (2017). Syrian refugees and information precarity. *New Media & Society*, *19*(2), 240–254. https://doi.org/10.1177/1461444815591967

Waters, J. (2015). Educational imperatives and the compulsion for credentials: Family migration and children's education in East Asia. *Children's Geographies*, *13*(3), 280–293. https://doi.org/10.1080/14733285.2015.972646

Weller, W., & Reis, J. (2022). Mobilidade estudantil de universitários oriundos do ensino médio público: Experiências com o programa Ciência sem Fronteiras 1, 2, 3. *Pro-Posições*, *33*, e20210062. https://doi.org/10.1590/1980-6248-2021-0062

Wimmer, A., & Schiller, N. G. (2003). Methodological Nationalism, the Social Sciences, and the Study of Migration: An Essay in Historical Epistemology. *International Migration Review*, *37*(3), 576–610. https://doi.org/10.1111/j.1747-7379.2003.tb00151.x

Windle, J. (2022). School segregation in Rio de Janeiro: Geographical, racial and historical dimensions of a centre-periphery dynamic. *Comparative Education*, *58*(1), 91–105. https://doi.org/10.1080/03050068.2021.1894868

Zanten, A. van, Ball, S. J., & Darchy-Koechlin, B. (Eds.). (2015). *Elites, privilege and excellence: The national and global redefinition of educational advantage*. Routledge, Taylor & Francis Group.

Zimmer, M. (2010). "But the data is already public": On the ethics of research in Facebook. *Ethics and Information Technology*, *12*(4), 313–325. https://doi.org/10.1007/s10676-010-9227-5

Kurzfassung der Ergebnisse

In dieser kumulativen Dissertation analysiere ich die Verbindung zwischen den von Migrant:innen online genutzten Netzwerken und den Informationen über Bildungschancen, die durch diese Netzwerke zirkulieren. Ich betrachte dieses Phänomen aus einer transnationalen Perspektive der Migration und greife dabei auf Pierre Bourdieus Konzepte von Kapital sowie auf die Konzepte von Vertrauen und Reziprozität zurück. Zu diesem Zweck stehen die Rollen und Bedeutungen der online etablierten und über Nationalstaaten hinausgehenden Verbindungen sowie die sozialen Praktiken und Symbole, die durch diese Netzwerke zirkulieren, und die materiellen Infrastrukturen, die sie unterstützen, im Zentrum der Analyse. Konkret stelle ich die Frage: Wie nutzen Migrant:innen und angehende Migrant:innen digitale Netzwerke in ihren transnationalen Bildungsverläufen zwischen Brasilien und Deutschland?

Um diese Frage zu beantworten, habe ich verschiedene Methoden zur Sammlung und Analyse von Informationen über Bildung herangezogen, die in sozialen Medien, insbesondere in Facebook-Gruppen von Migrant:innen, zirkulieren. Dazu gehören quantitative und qualitative Textanalysen von Beiträgen, schriftliche Interaktionen in diesen Facebook-Gruppen, nicht-teilnehmende Beobachtungen in diesen Gruppen, sowie Interviews mit einigen Teilnehmern derselben.

Die quantitative Textanalyse zeigt, dass es einen beträchtlichen Bedarf nach Informationen über berufliche Bildung und Sprachkurse gibt. Facebook-Gruppen können als Quellen für diese Art von Informationen dienen.

Die qualitative Textanalyse offenbart, dass einige angehende Migrant:innen Facebook-Gruppen nach konkreten Informationen suchen, wie sie Zugang zu Bildung im Ausland erhalten können, sowie nach persönlichen Erfahrungen und Wahrnehmungen anderer Migrant:innen über Bildung. Diese Informationsaustausche offenbaren auch einige Klassen- und Geschlechterungleichheiten, die durch diese Netzwerke zirkulieren. Schließlich zeigt sie auch, dass einige Migrant:innen Informationen, die sie anderswo erfahren haben, mit den Teilnehmenden der Facebook-Gruppen teilen, was ein gewisses Vertrauensniveau in diesen digitalen Verbindungen demonstriert.

Die nicht-teilnehmenden Beobachtungen und Interviews dienten dazu, die Existenz von Migrant:innen zu identifizieren, die auch *Content Creators* sind: Sie sammeln systematisch Informationen über Bildung, nehmen Videos darüber auf, teilen sie in ihren inhaltlich und visuell konsistent gepflegten Social-Media-Feeds, und bieten detaillierte Antworten auf Fragen zur Bildung in Facebook-Gruppen sowie Beratungsdienste für angehende (im Sinne von *aspiring*) Migrant:innen an. Sie werden durch drei Hauptgründe motiviert: eine Vorliebe für die Nutzung sozialer Medien, ein Gefühl der Reziprozität mit anderen Migrant:innen und die Erwartung, dass ihre Aktivitäten als Inhaltsersteller lukrativ werden oder als Portfolio bei Vorstellungsgesprächen dienen könnten.

Betrachtet man diese Ergebnisse insgesamt, werden bestimmte Ungleichheiten deutlich. Diese zeigen sich im ungleichen Zugang zu den materiellen Infrastrukturen, die transnationale digitale Netzwerke unterstützen; in der Zirkulation verschiedener sozialer Praktiken, wie Beziehungen, Strategien und Wahrnehmungen über Bildung; und in der Nutzung von Bildungserfolgen als Symbol für sozialen Aufstieg. Angesichts der häufigen Nutzung transnationaler digitaler Netzwerke durch brasilianische Migrant:innen und der damit einhergehenden häufigen Zirkulation dieser bildungsbezogenen sozialen Praktiken und Symbole durch diese Netzwerke kann die Nutzung dieser

Netzwerke zur Informationsbeschaffung über Bildung als institutionalisierte Praxis betrachtet werden. Damit dies geschehen kann, müssen die Teilnehmer dieser Netzwerke ein gewisses Maß an Vertrauen zueinander haben. Ich zeige auf, wie kontextuelle Elemente und die Inhalte über Bildung, die in diesen Netzwerken zirkulieren, dazu beitragen können, diesen Verbindungen Vertrauenswürdigkeit zuzuschreiben. Schließlich argumentiere ich, dass digitale Verbindungen den Zugang von Migrant:innen zur Bildung im Ausland erleichtern, und letztlich zu ihrem sozialen Aufstieg und zur Transnationalisierung der Bildung beitragen können. Dieser soziale Aufstieg kann sowohl bei denjenigen erfolgen, die bereits in höheren sozioökonomischen Positionen sind, als auch bei denjenigen in niedrigeren sozioökonomischen Positionen. Für Erstere kann dieser Informationsaustausch den Zugang zu internationalen Universitätsabschlüssen erleichtern, und ihre Qualifikationen verbessern. Für Letztere kann der Informationsaustausch durch digitale Verbindungen ihren Zugang zu Bildungsmöglichkeiten insgesamt erleichtern, und ihre Chancen auf dem deutschen Arbeitsmarkt verbessern. In diesem Sinne kann die Rolle dieser digitalen Verbindungen bei der Erleichterung des Zugangs zu Bildung im Ausland und des eventuellen sozialen Aufstiegs als ambivalent angesehen werden.

Summary of Results

In this thesis by compendium of publications, I analyse the connection between migrants' networks of connections established online and the information about educational opportunities that circulate through these networks. I look at that phenomenon from a transnational perspective on migration, also drawing from Bourdieu's forms of capital and the concepts of trust and reciprocity. To this effect, at the centre of the analysis are the roles and meanings of connections established online and expanding beyond nation-states, as well as the social practices and symbols circulating through these networks and the material infrastructures supporting them. Concretely, I ask: How do migrants and aspiring migrants use digital networks in their transnational trajectories associated with education between Brazil and Germany?

To answer that, I used different methods to collect and analyse information about education circulating on social media platforms, particularly migrant Facebook groups. These included quantitative and qualitative text analyses of posts, written interactions in those Facebook groups, non-participant observations in these groups, and interviews with some Facebook group participants.

The quantitative textual analysis points out that there is a considerable demand for information about vocational education and training (VET) and language learning. Facebook groups can serve as sources for that kind of information.

The qualitative textual analysis reveals that some aspiring migrants turn to Facebook groups in search of concrete information on how to access education abroad, as well as for personal experiences and perceptions about education from other migrants. These information exchanges also highlight some class and gender inequalities that circulate through these networks. Finally, it also shows that some migrants cross-check information they learned from elsewhere with Facebook group participants, demonstrating some level of trust in these digital connections.

The non-participant observations and interviews served to identify the existence of migrants who are also content creators: they systematically compile information about education, record videos about that and share it in their curated social media feeds, and also provide detailed answers to questions about education on Facebook groups and offer consultancy services for aspiring migrants. They are motivated by three main reasons: a fondness for using social media, a sense of reciprocity with other migrants, and an expectation that their activities as content creators may become lucrative or serve as a portfolio to present in job interviews.

When we consider these results collectively, certain inequalities come to light. These are evident in the unequal access to the material infrastructures that support transnational digital networks, in the circulation of different social practices, such as relations, strategies, and perceptions about education, and in the use of educational attainment as a symbol of upward mobility. Given the frequent use of transnational digital networks by Brazilian migrants and the consequent frequent circulation of these education-related social practices and symbols through them, using these networks to gather information about education can be viewed as an institutionalised practice. For this to occur, participants of these networks must have a certain level of trust in each other. I demonstrate how contextual elements and the content about education circulating in these networks

can contribute to attributing trustworthiness to these connections. Finally, I argue that digital connections can facilitate migrants' access to education abroad and, ultimately, contribute to their upward mobility and to the transnationalisation of education. However, this upward mobility can happen both for those already in upper socioeconomic positions and for those in lower socioeconomic positions. For the former, these online information exchanges can facilitate access to international university certificates and enhance their credentials. For the latter, information exchanges among digital connections can facilitate their access to educational opportunities altogether and enhance their chances in the German labour market. In this sense, the role of these digital connections in facilitating access to education abroad and eventual upward mobility can be seen as ambiguous.

List of Publications Related to this Thesis

Dedecek Gertz, H., Carnicer, J., & Fürstenau, S. (forthcoming). Migrant content creators as social media actors of transnational education.

Dedecek Gertz, H., Cabalquinto, E. C., & Leurs, K. (2024). Making sense of digital traces in migration contexts. In W. Allen & C. Vargas-Silva (Eds.), Handbook of Research Methods in Migration (2nd Edition).

Dedecek Gertz, H. (2023a). Collecting migrants' Facebook posts: Accounting for ethical measures in a text-as-data approach. Frontiers in Sociology, 7, 932908. https://doi.org/10.3389/fsoc.2022.932908

Dedecek Gertz, H. (2023b). Migration and education on social media: What migrants discuss about education in Facebook groups. Frontiers in Sociology, 8, 1177411. https://doi.org/10.3389/fsoc.2023.1177411

Dedecek Gertz, H., & Süßer, F. (2022). Migration and educational projects online: A topic modelling approach of discussions on social media groups. Media Studies, 16(2), 236–256.

Appendix: Published Papers

MEDIÁLNÍ STUDIA
MEDIA STUDIES
JOURNAL FOR CRITICAL MEDIA INQUIRY

Migration and educational projects online:
A topic modelling approach of discussions on social media groups
Helena Dedecek Gertz & Florian Süßer

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MIGRATION AND EDUCATIONAL PROJECTS ONLINE: A TOPIC MODELLING APPROACH OF DISCUSSIONS ON SOCIAL MEDIA GROUPS

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ABSTRACT

This paper discusses the prevalence of topics relating to education in information exchanges on Facebook groups of Brazilians who live in – or wish to migrate to – Germany. Against the background of mediatisation theory, social networks and transnational education research, we conducted an explorative quantitative study based on a text-as-data approach. Concretely, we collected posts from 14 migrant groups and analysed them using topic modelling. Our results reveal that vocational education and training (VET) are prevalent in these debates and topics associated with language learning and certification. We contend that latent ties (Haythornthwaite, 2002) on migrants' social networks are relevant in migratory pathways involving education – regardless of educational level.

Keywords: Brazilian migration ▪ latent ties ▪ migrant's online communication ▪ migrant's media use ▪ transnational education

1. INTRODUCTION

Since the 1990s, social inequality and poverty have been important drivers of Brazilian migration, but specialists and students seeking higher education also make up for Brazilians who decide to leave the country. Migration for educational reasons has been mostly related to high and middle-class contexts since it requires a considerable amount of economic resources and academic certificates. However, studies about Brazilian migration to Germany have described how educational aspirations drive the migration of young people also in underprivileged socioeconomic contexts. For these migrants, transnational social networks are decisive, as they provide valuable resources for their pursuit of educational opportunities through migration (Carnicer, 2019, 2018; Fürstenau, 2019). As in other migratory contexts, these social networks are constituted mainly by rather strong ties between relatives and friends who usually maintain long personal relationships (Boyd & Nowak, 2012). In this

paper, we explore the role of online social networking sites (SNS). These networks can usually be accessed without a prior personal relationship. In this way, they offer not yet 'weak' but rather latent ties: technically available connections that have not yet been activated by social interaction but can be activated online at any time (Haythornthwaite, 2002, p. 385). An example of those ties is migrant Facebook groups: participants of such groups do not necessarily know each other but they gather online around a common nationality (implying a common language and similar bureaucratic procedures required to migrate, for instance) and interests (e.g. aspirations to migrate to Germany to pursue a degree). By posting a question in such online groups, participants activate connections with unknown people who can help solve doubts and provide valuable information about the migratory process (Jayadeva, 2020). As a first approach to evaluate the influence of SNS in migration and transnational educational pathways, we assess in this paper the relevance of education in communication through SNS. Concretely, we address the research question, what is the prevalence of education-related topics in Facebook groups of 'Brazilians in Germany'? In a second step, we look at the ways how these topics are clustered in particular migrant Facebook groups. This allows a first characterization of the main topics addressed in the education-related discussions on SNS. This research aims to assess if SNSs provide latent ties that support migration pathways associated with educational projects. To do that, we resort to a topic modelling approach of posts written on those groups.

The next section places this paper within transnational migration, mediatisation and social network theory, with a focus on latent ties and Brazilian migrants' SNS use, followed by an overview of studies relating education to migration. To contextualise the empirical data and justify the choice to analyse Brazilians in Germany, the fourth section provides information about the educational system in Brazil and the German educational system. After that, our decisions in regards to the topic modelling approach are explained and the results are presented. In the discussion, we contend that education is among the most prevalent topics debated in these groups, in particular vocational education and training (VET).

2. TRANSNATIONAL MIGRATION, ONLINE SOCIAL NETWORKS AND THEIR LATENT TIES

Transnational migration theory relies on evidence from migrants' activities, patterns of behaviour and network connections to claim that migrants build social fields spanning beyond national borders and thereby securing "cultural, social and economic bases" (Glick-Schiller et al., 1992, p. 9). Here we set the focus on transnational migrant networks, particularly those established in online environments, understanding networks as "a set of socially relevant nodes connected by one or more relations" (Marin & Wellman, 2014, p.11). These nodes represent members of a network – for the case of this paper, participants of Facebook groups. The connections

among these nodes are our patterns of interest, namely connections established by exchanging information about educational opportunities in Germany. Following, this section highlights the roles of online media within migrants' social networks, focusing on its uses among Brazilian migrants, and on the concept of "latent ties" (Haythornthwaite, 2002) found in such networks. The next section then draws the connection between education and migration.

Information exchange is a core aspect of the establishment and maintenance of transnational social networks. In migratory contexts, constantly developing media platforms and information and communication technologies (ICTs) are a means for parenting from a distance, providing financial and emotional support, and forming identity (Cabalquinto, 2019; Gomes & Yeoh, 2018; Leurs, 2019; Madianou & Miller, 2012). Among Brazilian migrants, the uses of SNS have been shown to serve as a source of "a variety of social capital … which assists in the migration transition" (Schrooten, 2012, p. 1801). Analysing Brazilian migrants in Europe who participated in groups on the now deactivated SNS "Orkut", Mieke Schrooten (2012) and Martijn Oosterbaan (2010; 2013) report about mutual aid in regards to bureaucratic procedures and job-seeking, revealing the uses of such online connections for newcomers to establish themselves in the new settings. These groups are also used to arrange in-person gatherings (Oosterbaan, 2013; Schrooten, 2012), evidencing an interest in establishing or reinforcing ties with acquaintances made in SNS groups. After Orkut was shut down in 2014, new groups of Brazilian migrants were created on Facebook with the same purposes. Recent reports show that these groups are highly active, with a mean of 66.8 monthly posts in one group only (Foletto, 2018, p. 99) and some with more than 24 thousand participants (Dedecek Gertz, forthcoming). Those findings from different points in time (first Orkut, now Facebook) demonstrate the relevance of online networking in transnational migratory contexts regardless of the platform: when Orkut was no longer available, migrants gathered on Facebook and kept using the platforms for similar purposes. If Facebook was to be no longer active, migrants would likely re-organise on other digital platforms.

As of February 2022, 174 million Brazilians had a Facebook account and, of that total, almost 30 per cent are between the ages of 25 and 34 (NapoleonCat, 2022) – when people are more likely to migrate through and for educational opportunities (Kandel & Massey, 2002). With such a large number of users, these migrant groups are likely to be heterogeneous in terms of socioeconomic background and educational attainment. While the aforementioned studies provide an overall impression of what is discussed and of the uses of Brazilian migrant online groups, analysing information exchanges specifically about education helps map the roles of SNS in transnational educational projects across socioeconomic backgrounds.

2.1. Migrants' latent ties and mediatisation of transnational education

Departing from an attempt to measure media effects on migration, the sensitising

concept of mediatisation serves to explain societal changes in connection to developments in media and technology. Mediatisation can be understood as the experience that "technological communication media saturate more and more social domains which are drastically transforming at the same time" (Hepp, 2020, p. 3). By putting human practice at the centre through the analysis of information exchange on SNSs, we produce empirical evidence that can build up arguments about how mediated connections may result in broader social transformations and consequences (Hepp, 2020; Couldry & Hepp, 2017). In other words, we are rather interested in how media use by humans transforms social practices than in how media developments provoke transformations in human behaviour and social practices. In that sense, an analysis of the prevalence of education-related topics in migrant Facebook groups provides insights into how mediated communication transforms migration pathways and contributes to the transnationalisation of education. In our analysis, we consider mediated communication as a process (Hepp, 2020) and focus on individuals' interaction through media. Other analyses about the mediatisation of education focus on aspects of pedagogy (Friesen & Hug, 2009), policy (Rawolle & Lingard, 2014), or institutional perspective (Breiter, 2014). Here, we propose an analysis of the mediatisation of education that focuses on the implications of media use for migration and transnational educational pathways.

Brazilian migrants were already using SNSs in the early 2000s and their use of transnational latent ties has already been described a decade ago (Schrooten 2012, Oosterbaan 2013). What is new in the case of Facebook groups in comparison with participants of Orkut groups in the past relates to particular quantitative trends (Hepp, 2020, p. 40). The groups of Brazilian migrants on Orkut described by Oosterbaan (2013) and Schrooten (2012) were mostly general groups, gathering Brazilians in a given city or country. Nowadays on Facebook, those groups are still popular yet there is a differentiation process happening that gives way to the creation of niche groups with similar high amounts of participants and levels of interaction. Medias' omnipresence is another quantitative aspect of mediatisation that shapes media use of migrants. To access Orkut, one had to be (media) literate and have to access a personal computer, internet connection, and free time to browse that SNS sitting in front of a computer. With the increase in digitalisation and the accessibility of gadgets with an internet connection, Facebook groups can be accessed from a smartphone on a bus on the way to work, for instance. Formally illiterate people are also able to use SNS on their smartphones, as described in an ethnography study in a rural area in Brazil (Spyer, 2017).

In this paper, we offer a snapshot of online information exchange on a specific topic: migratory projects involving transnational education. In that sense, this study contributes to analysing the mediatisation processes of transnational education by describing the relevance of education-related topics in migrants' activation of latent ties on online forums.

3. MIGRATION AND EDUCATIONAL PROJECTS

Transnational education (TNE) is often associated with international private schools or university education. That association often results in analyses that highlight the role of TNE among socioeconomic strata that hold resources to access a global educational market (Adick, 2018). On the one hand, the transnational mobility of students within that socioeconomic context tends to be regarded as a strategy to gather social and cultural capital (Brooks & Waters, 2010). On the other hand, the transnational mobility of people from lower socioeconomic backgrounds pursuing educational pathways tends to be disregarded as TNE and associated with issues of "migration" and "integration" (Carnicer & Fürstenau, 2019). Nevertheless, recent qualitative data have highlighted that students from disadvantaged backgrounds also migrate to pursue educational aspirations and thereby contribute to the transnationalisation of education (Carnicer, 2019; Fürstenau, 2018).

Educational opportunities abroad and own educational aspirations are relevant factors in migration decisions. Both the lack of access to formal education in the country of origin and the possibility of securing a stable migratory status and a job by accomplishing a degree in the country of destination are both reasons and means to migrate (Carnicer, 2019; Fürstenau, 2019). Migrants from these backgrounds are likely to see in TNE "an educational strategy that is not directed towards a symbolic capital that legitimates an inherited social position, but towards overcoming social exclusion" (Carnicer, 2019, p. 22). Differently than trajectories of migrants from socioeconomic strata who can migrate autonomously (e.g. those accepted at universities and who thus have access to institutional infrastructures that provide information and assistance), migrants who may feel excluded from educational opportunities in their countries of origin and seek such opportunities abroad, are likely to rely on interpersonal social networks composed by strong and weak ties (Carnicer, 2019; Fürstenau, 2018). In this paper, we argue that SNS provide aspiring migrants with information and resources comparable to those of personal networks.

Within information exchanges among migrants in SNS, educational opportunities are present as topics for discussion, as seen in Facebook groups gathering migrants who wish to pursue university degrees abroad (Jayadeva, 2020). Even in groups in which the focus is not on education, but rather on specific cities, jobs, and other opportunities, such as Au Pair work, educational aspects are also mentioned, such as what aspects one has to to be aware of when looking for a school for children, what options for vocational education and training (VET) are there, and what certificates are needed to navigate the job market (Dedecek Gertz, forthcoming). The centrality of education is clear within groups that gather migrants who aspire to pursue degrees abroad. Nevertheless, discussions about issues relating to education within other groups might be present as well and are likely to be more diverse, encompassing migrants interested in educational levels other than university degrees, such as VET. Putting in perspective how relevant educational issues are within these diverse

groups can help to map the role of SNS in migratory movements involving transnational education "from below" (Smith & Guarnizo, 1998).

4. EDUCATIONAL PATHWAYS: INEQUALITY IN BRAZIL, DISCRIMINATION AND OPPORTUNITY IN GERMANY

The Brazilian educational system faces inequalities across all its levels, from children's education to access and permanence at universities (Windle, 2021; Sampaio & Oliveira, 2016; Câmara & Almeida, 2012). In Germany, migrants who manage to access the educational system are likely to suffer discrimination. A central factor that shapes the access and successful conclusion of degrees in both countries is socioeconomic class.

With a Gini Coefficient of 53.4 as of 2019, it is not surprising that poverty has been the main driver of Brazilian migration since the 1980s, although labour migration of skilled professionals is also prevalent (Evans et al., 2013) and some young people from low-income backgrounds also migrate following educational aspirations (Carnicer, 2019; Fürstenau, 2018). One of the main reasons for Brazilians to quit formal education is the need to find gainful employment (IBGE, 2020). That is particularly the case for 'Black' and 'Brown' people who compose only 31% of university graduates in the country, while 'white' people comprise over 66% of that total (Silva, 2020, p. 23). Despite affirmative actions to facilitate the access of high school graduates to the public, tuition-free, and prestigious universities, access to tertiary education in Brazil is highly competitive and lectures schedules hardly allow students to accommodate studying with gainful employment – resulting in either a high drop-out rate or in the choice for less-prestigious, private universities (Pereira & dos Reis 2020; Trevisol & Nierotka 2016). Javier Carnicer (2019) and Sara Fürstenau (2019) describe how migrants who feel excluded from educational opportunities in Brazil and thus have fewer options for socioeconomic upward mobility, find ways to fulfil their educational and mobility aspirations in Germany, making use of social networks and some particularities of the educational systems.

In Germany, migrants, as well as non-migrants from low-income backgrounds, might have easier access to formal education in comparison to the Brazilian situation, however, these populations are still discriminated against within the German educational system (Dumont et al., 2014; El-Mafaalani, 2020). That is evidenced in German schools' selection pattern: at the age of 10, students are recommended to continue towards the prestigious Gymnasium, which allows direct access to university after completion of final exams, the *Abitur*, or to other school modalities that do not enjoy the same status as the *Gymnasium* (*Gesamtschule, Gemeinschaftsschule, Stadtteilschule, Realschule* or *Hauptschule*, depending on federal-state legislation). Students who complete their schooling within these other modalities can access VET (the *Ausbildung*) without constraints, however, their pathway toward university education is longer than that of *Gymnasium* graduates. Some areas of VET in Germany are

remunerated (e.g. hospital care work and children's nursing), however, university stipends are hardly available for non-German citizens with foreign school degrees and no residence permit. School students who migrated to Germany, or those born in Germany to migrant parents, are more likely not to be recommended to access the *Gymnasium*, which in turn results in a lower representation of this population in German universities (Hunkler, 2016).

In 2020, almost 31% of all Brazilian migrants lived in Europe (Ministério das Relações Exteriores, 2021, p.4) and, following a contemporary feature of the feminisation of migratory movements (Lutz, 2010), around 64% of Brazilians in Germany are women (Statistisches Bundesamt, 2022), what is likely due to the high labour demand in the care sector, which is still predominantly perceived as a female area. While the rate of women in Brazil who earn university degrees is higher than that of men, this does not reflect higher salaries for women (IBGE, 2021). In Germany, a pathway for some Brazilian women is to take advantage of the gendered perception of care-work and pursue paid VET degrees in that area, thus accomplishing a tertiary educational degree in the country leading to more chances of landing a job and a secure residence status (Carnicer, 2019; Fürstenau, 2019). These women rely first on Au Pair programmes and on personal connections to fulfil their educational and upward mobility projects (Carnicer, 2019; Fürstenau, 2019). Our focus on Germany as a destination country is due to the existence of such paid VET programmes and because German university fees are comparatively low, which attracts migrants who feel excluded from the Brazilian educational system (Carnicer, 2019).

Social networks based on personal ties are central to migration pathways associated with educational projects. As latent ties are also formative of social networks, they are likely to be relevant for such projects as well. While that is the case within SNS groups of migrants and aspiring migrants who wish to pursue university education abroad (Jayadeva, 2020), little is known about information exchanges surrounding educational aspirations and education-related migratory projects in SNS groups that gather migrants with more diverse backgrounds. To fill up that gap, we investigate the prevalence of topics relating to education in discussions within these diverse groups. A further question relates to the clustering of these topics: that provides indications about what professional areas, degrees or levels of education are more discussed and in which particular groups. To address these questions, we resort to a topic modelling approach, which is detailed in the next section.

5. TOPIC MODELLING

To select relevant groups for analysis, first, we searched Facebook for the terms “Brazilians” and “Germany” (in Portuguese). After that, all groups relating to migration were selected and these were once again filtered according to their level of interaction: using the information provided by Facebook itself, one of the authors joined 14 groups with at least a thousand participants and three selected made in one week.

Brazilian migrant groups are varied and highly active, ranging from the general "Brazilians in Germany", to the many "Brazilians in [German city]", and to niche groups, such as "Brazilian women in Germany", "Brazilian IT professionals in Germany", "Brazilian nurses in Germany", "Brazilian Au Pairs in Germany", "Brazilians seeking VET in Germany" – and even "Gardening for Brazilians in Germany". Brazilian migrants' fondness for SNS groups is not new, as its use has been reported already over a decade ago (Oosterbaan, 2010; Schrooten, 2012), nevertheless its use for educational projects has not been studied.

Our research design is based on a text-as-data approach (Grimmer & Stewart, 2013). Text-as-text approaches (as used in qualitative analyses) are organised according to the rules of language and are used for analysing the meanings of what is being communicated. Processing text-as-data involves imposing some abstraction and structure that summarises large amounts of text which can be used to uncover patterns (Benoit, 2020, p. 463-465). Based on this text-as-data logic, we follow a structural topic modelling (STM) approach (Roberts, Stewart & Tingley, 2019), which allows assigning metadata to the documents to be analysed. That way we can correlate posts with the groups where they were written.

The data we analyse is composed of posts and their comments written in the selected groups on Facebook. We collected posts written between December 2020 and January 2021 using the WebDriver API Selenium, which allows automatic control of a web browser. The software was programmed to copy and save what users wrote in the groups: because only visible data was collected, a human could do the same procedure, however with a more significant investment of time and effort. In other words, automation sped up the process of data collection.

In the data cleaning phase, we subsumed relevant multiple-word expressions, words, and acronyms that have the same meaning, so that the weight of the topic could be properly accessed (for instance, "Ausbildung" is sometimes misspelt like "Ausbilung" and the Portuguese expression "curso técnico" is also used in the groups to refer to the "Ausbildung", hence both the misspelling and the Portuguese translation were assigned as equal to the German word "Ausbildung"). We also removed diacritics (e.g. "ç" and "ã"), punctuation, numbers, hyperlinks, symbols (like emojis), and stopwords both in Portuguese, German, and English, as these languages are the most used ones in the groups. The first results revealed that our code included other irrelevant words for topic clustering such as greetings, pronouns, proper nouns, and expressions used in SNS communication such as "haha" or abbreviations. We manually included these in the list of words to be ignored. The remaining words were then stemmed so that words like the noun "escola" and the adjective "escolar" would be clustered together.

In topic modelling, a topic is "a mixture over words where each word has a probability of belonging to a topic" and a document is "a mixture over topics, meaning that a single document can be composed of multiple topics" (Roberts, Stewart & Tingley, 2019, p. 2). In our case, documents are each post and comment made on each group.

We have 7,389 documents. The content of these documents can be composed of one or more topics, a mixture of covariate words. For STM "the sum of the topic proportions across all topics for a document is one, and the sum of the word probabilities for a given topic is one" (Roberts, Stewart & Tingley, 2019, p. 2). In simplified terms, word clustering on STM occurs through a process similar to Latent Dirichlet Allocation (LDA) distribution, accounting for covariate words across documents which affect the "proportion of a document devoted to a topic … and the word rates used in discussing a topic" (Roberts, Stewart & Tingley, 2016, p. 989).

We defined relevant words to be selected to compose topics as those that appear at least 20 times and in 5 or more documents. That decision was useful also in cleaning the data given that texts from social media tend to be short, sometimes consisting of only one word, which can skew the results of topic modelling (Albalawi, Yeap, & Benyoucef, 2020). The number of topics must be established by the researcher and the appropriateness of that number depends on the interpretability of the outcome. A high number of topics gives a fine-grained insight into the data, but at the cost of being less precise. After running the code with a different number of topics, ranging from 5 to 25, we found that 7 topics resulted in a model with good interpretability. With fewer topics, the contents are condensed and the relevance of the topic is clearer. The assignment of words to topics is arbitrary: Topic 1 is not necessarily more relevant than Topic 7. In Figure 1 (p. 14), in the results section, we see the top 14 words that compose these seven topics.

Our data collection approach brought problems with it. First, since the human interface to Facebook, which we used, does not order groups' posts by time, we could not arbitrarily set the time frame of posts we wanted to have. For example, posts with high activity are promoted by Facebook and thus jump up in the timeline. Second, the human user interface to Facebook is limited in requests per time. Therefore, our data collection was inhibited, and as a result, we collected about 26,000 posts (by their ID), but could only retrieve the text body of 7,389, which are the ones that went into our analysis here. Nevertheless, that amount is still significant as posts with high activity are likely to be more representative of the interests of group participants.

6. RESULTS

In this section, we first describe which are the most prevalent topics found in our data, particularly those relating to education. Then we comment on the estimated proportion of these topics across all 14 groups.

Of the seven topics from all groups, two relate to education. One of these two is among the top three most prevalent. The three most discussed topics (Topics 5, 2, and 4) have no similarity among themselves. Topic 5, the most discussed one, contains words such as "need", "Brazil", "speak", "help", "to get/to reach", "health", "person", "father", "document", "payment", "receive" and "arrive". This topic is likely related to requests for information regarding bureaucratic procedures and family relations.

Topic 2, contains words such as "buy", "sell", "live", "friend", "know/meet", "to find", "pretty", "share", and "shop". This topic most likely relates to commerce, as it implies people offering products or services and recommendations by friends. The verb "to share" probably relates to those users who are offering their products or services inviting those interested in it to share the information, following a common logic of SNS.

The most relevant topic relating to education is the third most prevalent topic of all seven. Topic 4 contains words like "German", "class", "Portuguese", "English", "learn", "exam", "course", "teacher", "know", "Brazilian", "speak", "online", "book", and "information". This topic covers information exchanges about learning languages. It encompasses both people seeking information about language certificates needed to enrol in formal education courses or to request a residence permit and language teachers who offer their services on these migrant groups. Some language teachers who participate in the active groups offer online classes as well.

In the fourth position appears a topic relating to job and apartment search (Topic 1), which contains words like "search", "help", "message", "company", "apartment", "work", "job", "live", "rent", "pay", and "contract". The words clustered in this topic, and also on Topic 5, are aligned with Oosterbaan's (2013) and Schrooten's (2012) descriptions of newcomer migrants' using SNS to look for jobs and navigate bureaucratic procedures.

The fifth most prevalent topic is Topic 7, which contains words such as "Ausbildung" (VET), "school", "search/look for", "course", "experience", "vacancy", "need", "diploma", "begin", "company", "get", "work", "process", and "recognition". This topic encompasses questions regarding access to VET, as words are either explicitly related to educational levels ("VET"), institutions ("school"), studies area or teaching situation ("course" in Portuguese can relate both to "class" and to "subject"), or degree outcomes ("diploma"). Other words relate to educational requirements to access higher levels of education or to exercise certain professions, such as nursing. That is the case of nouns like "diploma" and "recognition": having certificates, diplomas, and school records that have to be recognised by German educational authorities is an issue, especially for nurses who obtained their training in Brazil. The connection between education and the interest in landing a job is also revealed through the relevance of words like "get", "work", "vacancy", "experience", or "company".

The last two topics relate again to commerce (Topic 3) and health issues (Topic 6). Topic 3 contains words like "deliver", "order [a product]", "send", "WhatsApp", "delicious", "food", "sweet", "Christmas", and "product". Similar to the other commerce-related topic (Topic 2), this one also points out the use of other SNS platforms for business (the mention of WhatsApp). Differently from Topic 5, this topic seems to relate to the commerce of food items, possibly connected to the Christmas season. The last relevant topic, Topic 6, contains words like "test", "psychologist", "father", "medic", "clinic", "airport", "secure", "quarantine", and "flight". This topic most

likely relates to the Coronavirus pandemic, its consequences on physical and mental health and travel requirements.

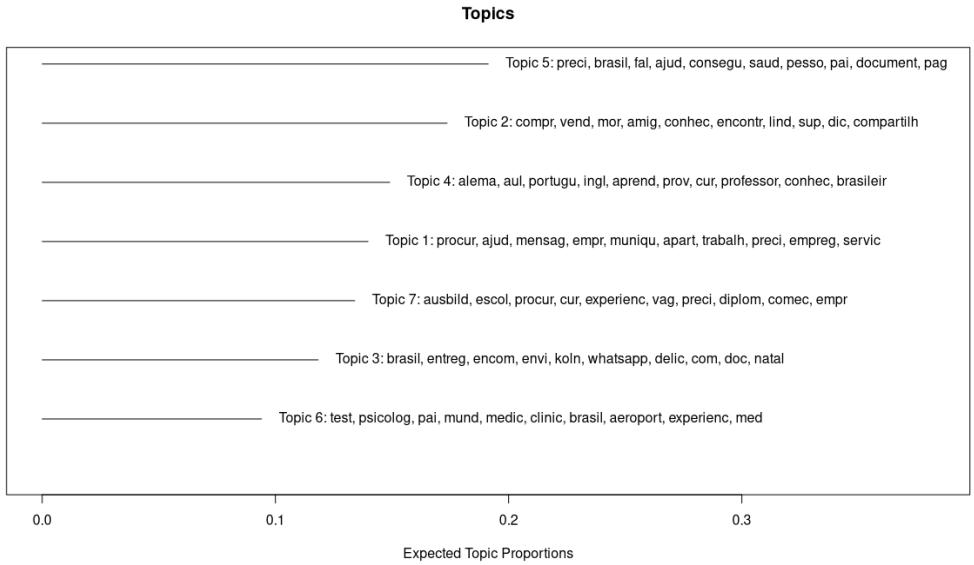

Figure 1. Two of the seven topics discussed in migrant groups relate to education (Topics 4 and 7). Topic 5 is the most present one and Topic 6 the least present among the seven most discussed topics.

After assessing the seven most relevant topics, we estimated these topics' proportions across all groups (see Figure 2). We comment on the results following the order of prevalence presented in Figure 1.

Topic 5, the most prevalent one and which relates to requests for information regarding documentation, is only not relevant in two groups, one about working in Germany and in one of the two groups gathering Brazilians living in Frankfurt. Interestingly, that is not the case for the second group of Brazilians in Frankfurt. Topic 5 is most relevant in a group gathering Brazilians who wish to participate in the German paid volunteer work programmes (the "voluntary social year", FSJ, or the "federal volunteer service", BFD[1]) and in a general group of Brazilians in Germany. Because it encompasses topics relating to documentation for applications, we can say this is a bureaucracy-related topic.

Topic 2, the second most prevalent one and which relates to commerce, has little relevance for the FSJ/BFD group, for groups of Brazilians seeking employment in Germany, for a group of Brazilian nurses in Germany, and for a group to exchange VET

1 FSJ/BFD participants receive a stipend and a residence permit to work up to one year in different areas, from environmental conservation to elderly care. Non-Europeans can also apply for those programmes provided they show a certificate of language knowledge and are accepted by the institution managing who offers FSJ or BFD. Usually, applicants must be under 30 years of age.

information. This topic is more popular In cities and general "Brazilians in Germany" groups. We could assume that people gathering in work, VET, and FJS/BFD groups are not as established in the country as most participants of city and general groups, hence the lack of interest to advertise and sell products in these former groups.

The third most relevant topic is also the first education-related topic: Topic 4 relates to language learning and certification. This topic is mostly present in two general groups of Brazilians in Germany. Surprisingly, even though language knowledge is a requirement for enrolling in formal education courses and pursuing FSJ/BFD, Topic 4 has low scores in these groups. We cannot say however that language learning is constantly relevant for all city and country groups, as it has a low score for instance in groups of Brazilians in Frankfurt and Hamburg, and in one of the general groups of Brazilians in Germany. Both high score results could be skewed by the activity of language teachers who intensely advertise their service in these groups. The fact that some group administrators ban advertising could also justify the low score on the topic.

Topic 1, related to job and housing search, is particularly relevant in a group of work in Germany, and two city groups. The high score in the work-group is given, as the topic relates to job search. The fact that these issues are more prevalent in city groups than in general "Brazilians in Germany" groups could be due to migrants' interest in settling in specific cities.

Topic 7, the second education-related topic, has the highest score of all topics but is concentrated in only four groups. The commonality among these four groups is that none is a city or a general "Brazilians in Germany" group. Unsurprisingly, Topic 7 has the highest score in the VET group, followed by a nurses' group, a "work in Germany" group, and an FSJ/BFD group. Although with a considerably lower score in comparison to these four groups, Topic 7 is also somewhat relevant in a group about "first steps" in Germany. This latter group is composed of aspiring migrants who are gathering their first pieces of information about their possibilities to migrate. Probably, once they find out about the VET or FSJ/BFD opportunities, they move on to those other groups. Topic 7 scores low in all other groups.

Topic 3, related to food commerce, has low scores in the VET, FSJ/BFD, nurses', and "Work in Germany" groups, and medium scores throughout the other groups. A similar outcome for the other commerce-related topic (Topic 2). Participants of the former four groups are probably focused on exchanging information only about education and work opportunities and/or administrators might moderate posts containing advertising – hence the low scores on these topics.

Topic 6, the Coronavirus-related topic, is probably present among the most relevant topics due to its urgency and implications. It was mostly present in a group of Brazilians in Frankfurt, a city where the German airport with most connection flights to Brazil is located. The topic is also mostly discussed in the most populated group of Brazilians in Germany. Probably, the high participant density and the fact that the Coronavirus affected people regardless of their cities and national regulations,

instead of local ones, were more important instead, contributed to the high score on the topic in that group. Although this topic was highly discussed, Topic 6 is not more important than commerce-related, bureaucracy-related, or education-related topics.

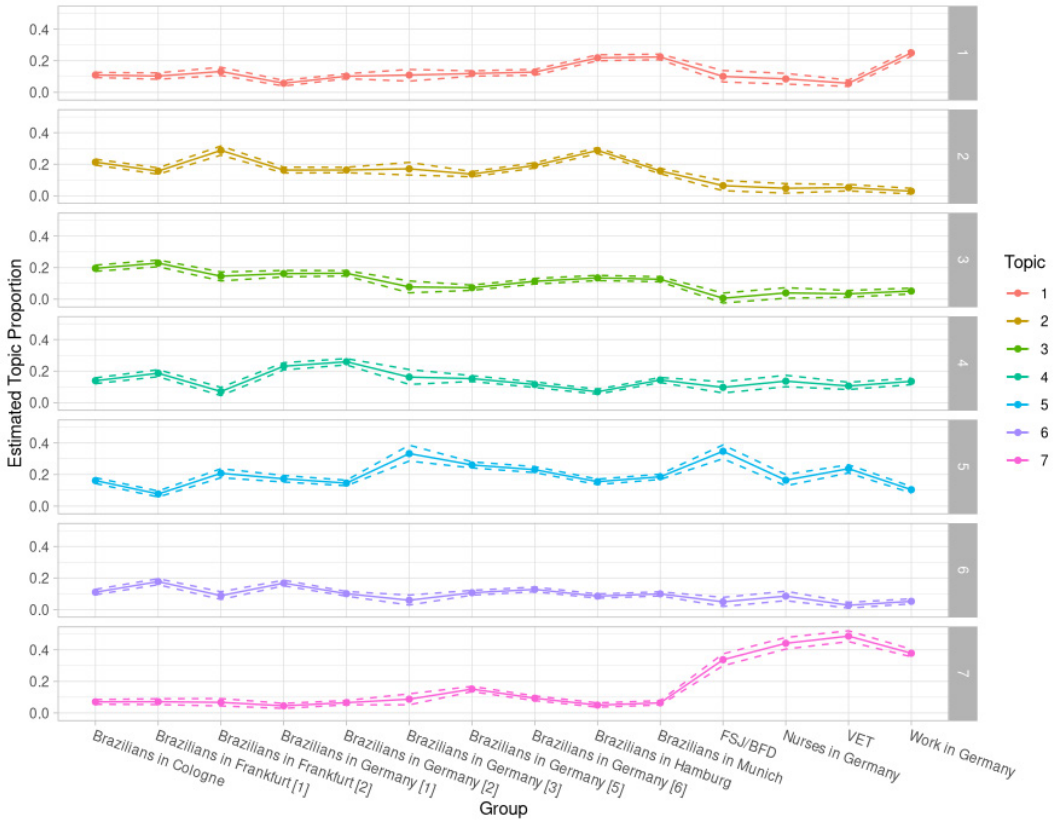

Figure 2. Estimated topic proportion across groups. Topics 4 and 7 are the education-related ones.

Interestingly, schools and university education are not prevalent terms in the topics, as Figure 1 shows. This does not mean that Brazilian migrants are not interested in accessing German universities or that children and teenage education are not relevant topics for them. Questions about language learning, for instance, might be posed in city groups by people who wish to achieve one of the requirements to be accepted at a German university or from parents concerned about the role of language in their children's school performance.

7. DISCUSSION

The fact that education-related topics figure among some of the most prevalent on migrant Facebook groups serves as evidence that a mediatisation process is probably

taking place on migration pathways involving educational projects. In this section, we first comment on what is the prevalence of education-related topics in "Brazilians in Germany" Facebook groups. Then we discuss the implications of these results for migration involving educational projects and for transnational education. We contend that the increase in the use of technology-mediated communication and the consequently increased access to latent ties has the potential to facilitate the migration of people who otherwise would possibly not have easy access to information about education abroad.

7.1. Latent Ties on Facebook Groups as Relevant for Migration Pathways Through Educational Projects

To find out what is the prevalence of education-related topics in "Brazilians in Germany" Facebook groups and how these topics are clustered, we resorted to an exploratory quantitative approach using topic modelling. While we cannot imply causality, our data provides insights into the relevance of latent ties in transnational migratory pathways associated with educational projects. The outcome reveals that education-related issues, clustered in language learning and vocational training and education (VET) topics, figure among the top seven most discussed issues in Brazilian migrant Facebook groups.

We cannot claim that those who asked for information about education in these groups indeed migrated and pursued degrees or language courses in Germany. However, such information exchange reveals that there is a relevant demand to pursue a degree and acquire language knowledge. Based on that observation we can claim that educational-related questions are core topics that lead to the activation of latent ties in migrant groups on Facebook. Consequently, those latent ties are potentially relevant for information-gathering to fulfil migration pathways associated with educational projects, also for those beyond university degrees.

Our results indicate a high score of the topic relating to VET and an absence of a topic relating to university education among those with high scores. Based on our data, we cannot state the reasons for that, the low prevalence of terms such as "university", "bachelor" or "school" in comparison with VET, reveals a potential quantitative preference for VET among those who resort to latent ties to gather information. What also serves as evidence for this quantitative preference is that the two groups of Brazilians who wish to study in Germany did not meet the threshold of the number of participants and posts to be selected for analysis.

Language learning is another educational-related topic revealed as relevant but not usually discussed in transnational education studies (TNE) and is traditionally associated with debates about migrants' "integration" rather than transnational education. The low score on the language-learning topic in the VET and FSJ/BFD groups might be due to an instrumental interest in learning German. Language learning might be present in FSJ/BFD groups embedded in references to "certificates" and

"courses" since migrants interested in these opportunities have to prove language knowledge, hence learning German appears as a means to reach a specific objective in these groups, i.e. migrants requesting information in VET and FSJ/BFD groups discuss language learning as another requirement in their check-list. This assumption is backed up by the high score on the topic related to VET, diploma, and certificates both in the VET and FSJ/BFD groups, and also in a "Work in Germany" group and a group of Brazilian nurses in Germany.

People who discussed education-related topics in these groups did not necessarily migrate to pursue educational aspirations. However, the high prevalence of education-related topics within these groups reveals trust and interest in the experiences of group participants in accessing the German educational system, particularly VET. Both education-related topics and other high-score topics from our sample (commercial activities, health, bureaucracy, and job and apartment seeking) are not particularly connected to social gatherings in person where latent ties might develop into stronger ones, as highlighted in earlier studies (Schrooten, 2012; Oosterbaan, 2013). The interest in activating latent ties through commerce and job-seeking topics is given. However, the activation of latent ties for education-related topics implied that there are migrants asking questions about it and other migrants answering those questions. This can be an indication that latent ties activated through education-related topics could be established for solidarity toward aspiring migrants.

7.2. Transnational Education and Mediatisation

By establishing that education-related topics are among one the most prevalent in information exchanges among migrants on Facebook groups, we can claim that latent ties have an important role in sharing information among migrants who wish to pursue educational projects abroad.

In the 2000s, Oosterban (2013) and Schrooten (2012) described the existence of SNS groups of Brazilians who lived in certain cities or countries outside Brazil. While we cannot claim that there was a quantitative increase in the participation of these SNS groups on Facebook, that is likely to have happened with the increase in internet access in Brazil. Hence, hypothetically, these quantitative developments of mediatisation might have led to an increase in participation in SNS by migrants and aspiring migrants, among which there are some who migrate to pursue educational projects.

Studies about transnational education have described how youth from the middle classes in the Global South see educational opportunities abroad as a means to improve cultural and social capital, particularly of their younger members (Adick, 2018; Brooks & Waters, 2010). Migrants from such backgrounds usually already have access to enough economic capital or strong network ties, hence they can either have information provided by the institutions where they are going to study or they can resort to family or friends' connections who are already in the country where they aim to study. As a qualitative aspect of mediatisation, the relevant position of information

exchanges about VET and language courses described in our paper points toward a migration of people who either cannot resort to institutions to gather information or rather trust best the experience of the latent ties available on SNS (Jayadeva, 2019). This also adds a mediatised aspect to the descriptions of migratory pathways of people from low-income families who successfully pursue tertiary education through VET in Germany (Carnicer, 2019; Fürstenau, 2019). In these previous descriptions, pioneer migrants who accomplished their education abroad serve as strong network ties for other family members or friends who also consider pursuing educational projects abroad. This outcome serves as the first evidence that qualitative and quantitative processes of mediatisation and the consequent establishment of latent ties through SNS are likely to contribute to the transnationalisation of education from below (Smith & Guarnizo 1998), reinforcing the argument that educational levels beyond university or private schools are also part of transnational education (Adick, 2018).

Agreeing with Justin Grimmer and Brandon M. Stewart's (2013) position about the wrongfulness and, at the same time, the usefulness of topic modelling approaches, on the one hand, we demonstrated that there is good evidence that education-related topics assume a relevant position in information exchanges on Facebook groups of Brazilian migrants and aspiring migrants in Germany. Latent ties from these groups have been activated to gather information about educational opportunities, processes, and enrollment requirements. More importantly, we have shown that mediatisation processes are also present in migration pathways involving educational projects. That occurs through latent ties and the potential increase in access to them due to processes of rapid digitalisation.

8. CONCLUSION

Using the case of migrant Facebook groups, we have discussed the connection of mediatisation for migration pathways involving education through the concept of latent ties (Haythornthwaite, 2002). We argued, along with other authors (Adick, 2018; Carnicer, 2018, 2019: Fürstenau, 2018), that transnational education goes beyond university degrees. Furthermore, we have shown that education-related topics beyond university degrees figure among the most discussed ones in migrant Facebook groups. Based on that outcome, we argued that education is a central motivation to activate latent ties in online migrant networks. For our empirical case, that high interest in finding out about education-related possibilities to migrate could be yet another consequence of blocked educational opportunities in Brazil.

Comparisons with other groups of migrants and on other SNS could reveal other relevant aspects and provide new insights into transnational education movements. Although migrants most likely gather information across other media, following a manifold perspective of media use (Couldry & Hepp, 2017), our focus on one SNS only was relevant because of the forum-like structure of Facebook groups. That

structure was ideal to answer our research question which required measuring the prevalence of interactions about education among migrants. A structure like Twitter or Instagram would not suit our aim because of its focus on individual posts. A qualitative study that accounts for the media manifold can fill up this gap and add details to the use of media to pursue educational projects abroad. Such a study would provide context to how education is debated in migrant groups and shed light on social inequalities in migratory pathways involving educational projects by assessing the uses of media according to migrants' socioeconomic backgrounds.

Based on the tendency of increasing mediatisation (Hepp, 2020), the entanglements between migration involving education and digital media use will keep evolving. In that case, a pressing aspect that deserves further analysis is that big-tech companies like Facebook/Meta are possibly taking a relevant position in migratory pathways for people fleeing war and conflict or seeking educational opportunities abroad (Dekker et al., 2018; Jayadeva, 2020). The use of latent ties in migration pathways might be facilitating information gathering and decision-making processes, but thereby migrants are not only sharing information but also generating information about their interests and decisions that is stored by a company with profit interests and that can be used for purposes unknown to migrants and aspiring migrants.

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REFERENCES

Dedecek Gertz, H. (forthcoming). Migration and Education on Social Media: What migrants debate about education in Facebook groups in Germany

Adick, C. (2018). Transnational education in schools, universities, and beyond: Definitions and research areas. *Transnational Social Review, 8*(2), 124–138. https://doi.org/10.1080/21931674.2018.1463057

Albalawi, R., Yeap, T. H., & Benyoucef, M. (2020). Using Topic Modeling Methods for Short-Text Data: A Comparative Analysis. *Frontiers in Artificial Intelligence, 3*(42). https://doi.org/10.3389/frai.2020.00042

Benoit, K. (2020). Text as data: an overview. In *The SAGE handbook of research methods in political science and international relations* (Vol. 2, pp. 461-497). London: SAGE

Benoit, K., Watanabe, K., Wang, H., Nulty, P., Obeng, A., Müller, S., & Matsuo, A. (2018). quanteda: An R package for the quantitative analysis of textual data. *Journal of Open Source Software, 3*(30), 774. https://doi.org/10.21105/joss.00774

Blei, D. M. (2012). Probabilistic topic models. *Communications of the ACM, 55*(4), 77–84. https://doi.org/10.1145/2133806.2133826

Breiter, A. (2014). Schools as Mediatized Worlds from a Cross-cultural Perspective. In: Hepp, A., Krotz, F. (eds) *Mediatized Worlds*. Palgrave Macmillan, London.

Brooks, R. & Waters, J. (2010). 'Social Networks and Educational Mobility: The Experiences of UK Students'. *Globalisation, Societies and Education, 8*(1), 143–57. https://doi.org/10.1080/14767720903574132.

Boyd, M., & Nowak, J. (2012). Social networks and international migration. In M. Martiniello & J. Rath (Eds.), *An introduction to international migration studies: European perspectives* (S. 79–106). Amsterdam: Amsterdam University Press.

Cabalquinto, C. E. (2020). 'They could picture me, or I could picture them': 'Displaying' family life beyond borders through mobile photography. *Information, Communication & Society, 23*(11), 1608-1624, DOI: 10.1080/1369118X.2019.1602663

Câmara, A.C.M., & A.M.F. Almeida. (2012). 'Classe Social na Creche'. *Educação & Linguagem, 15*(26), 35–64. https://doi.org/10.15603/2176-1043/el.v15n26p35-64.

Carnicer, J. A. 2019. 'Transnational Migration and Educational Opportunities: A Case Study of Migration from Brazil to Germany'. *London Review of Education, 17*(1), 14–25. https://doi.org/10.18546/LRE.17.1.02.

_____ (2018). Transnational family and educational trajectories. *Transnational Social Review, 8*(2), 170–184

Carnicer, J. A., & Fürstenau, S. (2019). Transnational Education: a Concept for Institutional and Individual Perspectives (Editorial). Diskurs Kindheits- und Jugendforschung / Discourse. *Journal of Childhood and Adolescence Research, 14*(4), 385-389. https://doi.org/10.3224/diskurs.v14i4.01

Couldry, N. & Hepp, A. (2017). *The mediated construction of reality*. Polity Press, Cambridge.

Dekker, R., Engbersen, G., Klaver, J., & Vonk, H. (2018). Smart Refugees: How Syrian Asylum Migrants Use Social Media Information in Migration Decision-Making. *Social Media + Society, 4*. https://doi.org/10.1177/2056305118764439

Dumont, H; Maaz, K; Neumann, M. & Becker, M. (2014). 'Soziale Ungleichheiten Beim Übergang von Der Grundschule in Die Sekundarstufe I: Theorie, Forschungsstand, Interventions- Und Fördermöglichkeiten'. Zeitschrift für Erziehungswissenschaft 17 (SUPPL.2), 141–65. https://doi.org/10.1007/s11618-013-0466-1.

El-Mafaalani, A. (2020). *Mythos Bildung: die ungerechte Gesellschaft, ihr Bildungssystem und seine Zukunft*, Cologne: Kiepenheuer & Witsch

Evans, Y., Tonhati, T, & Souza, A. (2013). *Imigrantes Brasileiras Pelo Mundo*. London: Queen Mary - University of London.

Foletto, L. R. (2018). 'Usos Sociais Do Facebook Por Migrantes Brasileiros Na Suécia: Os Grupos Na Construção Identitária'. *Mediação, 20*(26), 92–112.

Friesen, N. & Hug, T. (2009). The Mediatic Turn: Exploring Consequences for Media Pedagogy. In K. Lundby (Ed.). *Mediatization: Concept, Changes, Consequences*. New York: Peter Lang. Pp. 64-81. Online version available at: http://learningspaces.org/papers/Media_Pedagogy_&_Mediatic_Turn.pdf

Fürstenau, S. (2019). Educational aspirations of underprivileged female migrants. An ethnographic case study of a transnational network of care workers between Brazil and Germany. Zeitschrift Für Erziehungswissenschaft

Glick-Schiller, N.; Basch, L. & Blanc-Szanton, C. (1992). Transnationalism: A New Analytic Framework for Understanding Migration, *Annals of the New York Academy of Sciences, 645*(1), ix-xiv

Gomes, C., & Yeoh, B. S. A. (Eds.). (2018). *Transnational migrations in the Asia-pacific: Transformative experiences in the age of digital media*. Rowman & Littlefield Publishers.

Grimmer, J. & Stewart, B. M. (2013). Text as Data: The Promise and Pitfalls of Automatic Content Analysis Methods for Political Texts. *Polit. anal., 21* (3), 267–297.

Haythornthwaite, C. (2002). Strong, weak, and latent ties and the impact of new media. *Information Society, 18*(5), 385–401

Hepp, A. (2020). *Deep Mediatisation*. London: Routledge.

Hunkler, C. (2016). Ethnische Unterschiede beim Zugang zu beruflicher Ausbildung. In: Diehl, C., Hunkler, C., Kristen, C. (eds.) *Ethnische Ungleichheiten im Bildungsverlauf*. Springer VS, Wiesbaden. https://doi.org/10.1007/978-3-658-04322-3_14

IBGE (2021). *Estatísticas de Gênero: Indicadores sociais das mulheres no Brasil*, nr. 38, 2nd ed.. https://biblioteca.ibge.gov.br/visualizacao/livros/liv101784_informativo.pdf

_____. (2020). 'Educação 2019, PNAD Contínua'. Pesquisa Nacional Por Amostra de Domicílios Contínua 2019 (2), 1–16. https://biblioteca.ibge.gov.br/visualizacao/livros/liv101736_informativo.pdf.

Jayadeva, S. (2020). Keep calm and apply to Germany: how online communities mediate transnational student mobility from India to Germany. *Journal of Ethnic and Migration Studies, 46*(11), 2240-2257

Kandel, W. & Massey, D. S. (2002). The Culture of Mexican Migration: A Theoretical and Empirical Analysis. Social Forces, 80(3), 981-1004. https://doi.org/10.1353/sof.2002.0009

Leurs, K. (2019). 'Transnational Connectivity and the Affective Paradoxes of Digital Care Labour: Exploring How Young Refugees Technologically Mediate

Co-Presence'. *European Journal of Communication, 34*(6), 641–49. https://doi.org/10.1177/0267323119886166.

Lutz, H. (2010): Gender in the migratory process. In: *Journal of Ethnic and Migration Studies 36*, S. 1647–1663

Madianou, M. & Miller, D. (2012). *Migration and New Media: Transnational families and Polymedia*. London: Routledge.

Marin, A. & Wellman, B. (2014). Social network analysis: an introduction. In *The SAGE handbook of social network analysis* (pp. 11-25). SAGE Publications Ltd, https://dx.doi.org/10.4135/9781446294413

Ministério das Relações Exteriores (2021). *Comunidade brasileira no exterior: Estimativas referentes ao ano de 2020*, available at: https://www.gov.br/mre/pt-br/assuntos/portal-consular/arquivos/ComunidadeBrasileira2020.pdf, access on 8.3.2022

NapoleonCat (2020). Facebook users in Brazil - February 2022. Available at https://napoleoncat.com/stats/facebook-users-in-brazil/2022/02/, access on March 9, 2022

Oosterbaan, M. (2013). Chapter Two. Orkontros: Brazilian Migrants, Social Network Sites and the European City. In J. Thissen, R. Zwijnenberg & K. Zijlmans (Ed.), *Contemporary Culture: New Directions in Art and Humanities Research* (pp. 37-50). Amsterdam: Amsterdam University Press

_____ (2010). Virtual Migration. Brazilian Diasporic Media and the Reconfigurations of Place and Space. *Revue Européenne Des Migrations Internationales, 26*(1), 81–102

Pereira, T. I. & dos Reis, K. C. (2020). 'Estudo Da Evasão Universitária Em Contextos Emergentes: Desafios À Permanência Estudantil'. *Revista Da Faculdade de Educação, 33*(1), 209–25. https://doi.org/10.30681/21787476.2020.33.209225.

Rawolle, S. & Lingard, B. (2014). 26. Mediatization and education: a sociological account. In K. Lundby (Ed.), *Mediatization of Communication* (pp. 595-616). Berlin, Boston: De Gruyter Mouton. https://doi.org/10.1515/9783110272215.595

Roberts, M. E.; Stewart, B. M. & Tingley, D. (2019). stm : An R Package for Structural Topic Models. *Journal of Statistical Software, 91*(2). DOI: 10.18637/jss.v091.i02.

Roberts, M. E., Stewart, B. M., & Airoldi, E. M. (2016). A Model of Text for Experimentation in the Social Sciences. *Journal of the American Statistical Association, 111*(515), 988–1003. https://doi.org/10.1080/01621459.2016.1141684

Sampaio, G. T. C. & de Oliveira, R. L. P. (2016). 'Dimensões Da Desigualdade Educacional No Brasil'. *Revista Brasileira de Política e Administração Da Educação - Periódico Científico Editado Pela ANPAE, 31*(3), 511. https://doi.org/10.21573/vol31n32015.60121.

Statistisches Bundesamt (2022). Ausländer: Deutschland, Stichtag, Geschlecht/Altersjahre/Familienstand, Ländergruppierungen/Staatsangehörigkeit, available at https://www-genesis.destatis.de/genesis/online, access on 8.3.2022

Schrooten, M. (2012). Moving ethnography online: Researching Brazilian migrants' online togetherness. *Ethnic and Racial Studies, 35*(10), 1794–1809

Smith, M. & Guarnizo, L. E. (Eds.) (1998). *Transnationalism from Below Comparative Urban and Community Research*. London: Routledge

Spyer, J. (2017). *Social Media in Emergent Brazil: How the Internet Affects Social Change*. UCL Press, London.

Trevisol, J. V. & Nierotka, R. L. (2016). 'Os Jovens Das Camadas Populares Na Universidade Pública: Acesso e Permanência'. *Revista Katálysis, 19*(1), 22–32. https://doi.org/10.1590/1414-49802016.00100003.

Silva, T. D. (2020). *'Ação Afirmativa e População Negra Na Educação Superior: Acesso e Perfil Discente'*, 1–54. https://www.ipea.gov.br/portal/images/stories/PDFs/TDs/td_2569.pdf.

Vertovec, S. (2009). *Transnationalism*. New York: Routledge

Windle, J. (2021). *'School Segregation in Rio de Janeiro: Geographical, Racial and Historical Dimensions of a Centre-Periphery Dynamic'*. Comparative Education. https://doi.org/10.1080/03050068.2021.1894868.

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Collecting migrants' Facebook posts: Accounting for ethical measures in a text-as-data approach

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Based on the heuristics proposed by Helen Nissenbaum to assess ethical issues surrounding research using new technologies, this paper discusses the ethics of the collection and analysis of migrants' digital traces for academic research purposes. Concretely, this paper is grounded on an empirical research that applies a topic modeling approach to a large dataset of migrants' posts written on Facebook groups. After discussing the nine aspects proposed by Nissenbaum, the paper contends that while researchers strive to comply with ethical measures by, for instance, asking adequate questions and protecting the collected data, the lack of transparency of social networking sites is harmful to critical social sciences and can hamper findings that contribute to understanding migratory patterns and decisions.

KEYWORDS

internet research ethics, migrants' online groups, migrants' Facebook groups, text as data, topic modeling, contextual integrity

Introduction

The analysis of migrants' media use can produce valuable knowledge about decision-making and networks in migratory context. Methodologically, the interest in researching migrants' media use has added to the complexity of carefully handling migrants' data, and obtaining informed consent for research purposes. Accordingly, the ethics of collecting migrants' digital traces has been gaining attention, particularly among qualitative researchers (Leurs, 2017; Siapera and Creta, 2020; Sandberg et al., 2022b). Most of these ethical reflections agree that, because of the vulnerability of certain migrant populations, researchers need to go beyond procedural ethics and care for the safety and well-being of researched subjects.

Quantitative studies based on migrants' digital traces generate different problems relating to "profiling, informed consent, data sharing processes and ethical approval and data management procedures" (Mahoney et al., 2022b, p. 230). As there are fewer studies about migration applying topic modeling to social media data created by migrants, there are correspondingly fewer analyses on the ethics of collecting and analyzing such quantitative data. Mahoney et al. (2022b, p. 232) analyzed large textual datasets from migrants on

Twitter, collecting only "explicitly public social media data". They contend that ethical issues of such data collection become more intricate the more social media develops and the identification of public and private spaces becomes more complex (Idem, p. 235). Elsewhere, they carefully commend that datasets coming from migrant Facebook groups require consent, while collecting migrants' Twitter data would be closer to observing public behavior and therefore less problematic (Mahoney et al., 2022a; p. 339–340). A similar recommendation comes from Sandberg et al. (2022a).

As detailed on the section "Comparative evaluation based on studies using Facebook posts and a topic modeling approach," studies using large amounts of Facebook texts tend to acknowledge that their methodological procedure can be liable to ethical critique, but do not analyze that ethical critique systematically. The most common solution for this dilemma tends to be to collect data that is interpreted as public or with fewer privacy constraints, such as posts from profiles with less privacy settings. By discussing the collection of large textual datasets posted by migrants on a social media platform, or Facebook more specifically, this paper systematically analyses the ethical decisions of an empirical research situation and argues in favor of research in digital humanities and social sciences. Against that background, this paper asks "how to justify the collection and analysis of migrants' digital traces for academic research purposes?" The discussion emerges from the procedures of collection and analysis of quantitative textual data from Facebook groups of migrants and aspiring migrants. Here, the outcomes of that empirical analysis are put in the background, giving way to a detailed reflection on the choices and consequences of the methodological decisions.

Following, first, the context and research design of the empirical base study is outlined. After that, the ethical issues and corrective measures are discussed guided by the heuristics of "contextual integrity" of information flow within new technologies proposed by Nissenbaum (2010) and as applied by Zimmer (2018). Although Nissenbaum presented her heuristics over a decade ago, they are based on broader concepts which make them comprehensive and abstract enough to be applied to different analytical situations. So much so that the heuristics are appropriate to discuss different empirical topics, such as data breaches from a dating app (Zimmer, 2018) and migrants' posts on Facebook groups. The paper summarizes the ethical boundaries of automated data collection, as encountered in the empirical base study conducted by Helena Dedecek Gertz and Florian Süßer (henceforth "we", "our" or "the authors") and presents our suggested measures to comply with migrants' data protection, adding up to the arguments for a reflexive and critical data collection based on ethics of care (Leurs, 2017). The central argument is that, although acknowledging that collecting textual data from social media users without their explicit consent is rightfully prone to critique, researchers, as a community, can care for migrants' anonymity throughout the process of research by making careful decisions to this end and by asking adequate research questions.

Context of the data collection

The data that motivates the discussion here derives from a research project that aimed at identifying the roles of media in migratory pathways relating to education. Empirically, the project focuses on media uses of Brazilians who live in Germany or who aspire to do so. The project was based on a mixed-methods approach, consisting of a qualitative content analysis of interactions in migrant Facebook groups, qualitative interviews with participants of these groups, and a topic modeling of posts made in the groups. The ethical discussion in this paper derives from the empirical paper that applied the topic modeling approach to establish the prevalence of topics relating to education in debates among Brazilian migrants in Facebook groups. The outcome reveals that vocational education and training (VET) and language learning for certification purposes are the most relevant education-related topics debated among these migrants.

The background of that project is based on research that shows that, in the context of migration, formal education can represent a means to secure residence status, access the job market, and acquire certificates that contribute to building migrants' cultural capital (Waters, 2015). People who migrate to pursue educational pathways contribute to the transnationalization of educational institutions in the country of destination. Transnational education (TNE) is more often approached in research about higher education; nevertheless, migrants from families with low income and low educational attainment are also actors in TNE. Fürstenau (2019) and Carnicer (2019) have described how Brazilian women from such backgrounds migrate to Germany first as Au Pairs, then complete VET (which is usually remunerated in Germany), and thereby secure both employment and stable residence status.

Based on that background, the topic modeling (the empirical analysis that motivates this paper) had two assumptions. Based on the findings presented in the previous paragraph, one is that access to education can be a motivator for migration across socioeconomic classes, i.e., not only among migrants who can afford the pursuit of a university degree or educational exchanges abroad. The other assumption is that information exchanges through social media platforms are important for migrants' decision-making (Dekker et al., 2018; Richter et al., 2018). Although studies in this direction are mostly conducted among migrants who fled war and conflict using their smartphones' to evaluate the safest options to reach their countries of destination, information and communication technologies (ICTs) and exchanges with latent

ties (Haythornthwaite, 2002) are relevant in other migratory contexts, such as those associated with educational aspirations (Jayadeva, 2020). Based on these two assumptions we contended that people cross borders, regardless of their socioeconomic background following educational projects, and that digitally mediated communication, particularly through social media, plays a role in decision-making for these projects.

Specifically for the Brazilian case, similar findings confirm the relevance of social media information exchange in contexts of migration. Brazilian migrants have been exchanging information on social media for at least a decade when the most used platform among them was Orkut (Schrooten, 2012; Oosterbaan, 2013). Nowadays, Brazilian migrant groups on Facebook groups have taken on that role in these online interactions (Foletto, 2018). Most of these studies on Brazilian migrants' on social media describe its uses for solving bureaucratic issues, job-seeking, and also for organizing social gatherings. Educational aspects remain under-commented, although education is a means to fulfilling migratory pathways and it can become part of migrants' life once they are established in the country and their children start attending school. While it is known that migrants who wish to pursue university degrees abroad use social media to facilitate that process (Jayadeva, 2020), the role of media use for achieving other educational levels, such as VET or schools for migrants' children, remains understudied.

Against that background, the quantitative textual analysis that motivated this ethical reflection reveals that topics relating to education, VET, and language-learning in particular, are among the most prevalent ones in information exchanges on Facebook groups of Brazilians in Germany. That conclusion was only possible through a topic modeling approach, which demanded the collection of quantitative textual data produced by migrants in the context of a social media platform. The following sections reflect on the ethics of collecting and analysing this data produced by individuals that are potentially vulnerable due to their legal status in Europe. Following, the methodological decisions that were ethically critical for this analysis are detailed; after that, we analyze our decisions based on the heuristics to guide ethical decision making in projects involving ICTs proposed by Nissenbaum (2010) and commented by Zimmer (2018). We conclude by arguing that, while researchers strive to comply with anonymization and data security, the lack of transparency from social media platforms can be harmful for critical, independent, and public-interest-oriented research, which in turn can impair the development of knowledge about social phenomena.

Methodological decisions

In this section, we first discuss the choice of Facebook as a data source followed by an overview of ethical discourses in research about migrants' social media use and digital data collection. After that, we present our rationale for choosing Facebook groups adequate to answer our research question, explain our procedure of textual data collection, and argue in favor of a topic modeling approach to analyze the data.

Creating a Facebook account for research

In migration research, Facebook has been mostly used as an empirical data source in qualitative approaches. Some accounts based on interviews about Facebook use among migrants (Leurs, 2014; Dekker et al., 2018) are exempt from a discussion such as the one we propose here, as informed consent can be acquired. As Leurs (2017) observes, however, researchers must still be careful with publishing digital traces of migrants, such as print screens or detailed information about certain media use patterns, even though interviewees themselves might have agreed to provide such data. That position is aligned with a way of arguing for a careful collection, management, and analysis also of quantitative textual data from Facebook, as "informed consent does little to protect participants" (Brown et al., 2016, p. 855) and researchers share the responsibility of caring for research participants' privacy and anonymity at all situations. Following such principles of care and transparency towards research participants, one of the authors created an account on Facebook.

The Facebook profile used for research was created using the researcher's real name, and with information identifying her as a researcher. Some friends and acquaintances added her and she joined five groups of her private interest (university and academic research related). She "liked" 76 public pages, most of them from organizations of Brazilians in Germany, but also some university profiles and a few of private interests. Finally, she joined 43 groups of Brazilians in Germany. Although she created this profile for research purposes, it is not a dummy account used simply to collect data, because she is clearly identified, with her name and picture, and with information signaling her as a researcher at Hamburg University. Her university e-mail and the website leading to the university's website, where she figures as a researcher, are also available on the page, as to make public other forms of contact with her (e-mail and telephone number on the faculty website) and to have some proof of her identity (the link to the website). Indeed, one person with whom the researcher got in touch through Facebook to ask for an interview for the qualitative part of the study, replied to her *via* email—and not through the Facebook chat where she sent out the message requesting the interview—to "be sure about the identity of the person who contacted me", as the potential interviewee explained. Also, Facebook allows users to add free

text to their profiles. In this space, she wrote her position at the university, the name of the project she works for, and informed that the profile was created for research purposes. This information was written in Portuguese, German, and English. Apart from this research-related information, there are traces of her personal interests (university groups and "likes" on pages) and information about her background (the town where she was born, where she currently lives, and her educational pathway).

Contextualizing migrant Facebook groups selected for research

This section contextualizes the space of our data collection, namely Facebook groups gathering Brazilian migrants in Germany. First, we define these groups. Afterward, we describe the rationale behind the choice to analyze groups of Brazilians in Germany and the data collection procedure. Finally, we argue in favor of our decision to work with quantitative textual data in this context accounting for the research quality and ethics of our decisions. This section is already part of the contextual integrity analysis. Nissenbaum (2010) proposes nine points for the decision heuristics (see section "Discussing ethical decisions of research with migrants' textual data"). The second point of the heuristics is to identify the prevailing context of the information flow. As this section does exactly that, namely giving background information about the source of the data, this section substitutes the section "Prevailing context".

Facebook groups of Brazilians in Germany gather registered users with similar interests, locations, jobs or professions, and aims. Some of these groups are public, meaning that their content can be seen by any other user logged on to Facebook. Other groups are private and might request users to fill up a form upon entry in order to be accepted by the administrators. Posts and comments on these groups are visible to all participants. These two types of groups can be found using Facebook's search tool and were included in this collection. There are "secret groups" for which one has to be invited to participate—there are none of these types in the dataset.

Although it has been argued (e.g., Naughton, 2022) that the use of Facebook has been declining, Brazilian migrant groups are still active and diverse, ranging from the general "Brazilians in Germany", to the location-based groups, like "Brazilians in [German city]", to specific groups like "Brazilian women in Germany", to work-related groups, such as "Brazilian IT professionals in Germany", "Brazilian Au Pairs in Germany", aim-related groups "Ausbildung in Germany from Brazil", and other interest groups "Gardening for Brazilians in Germany". Finally, Brazilian migrants' fondness for social media groups is not new, as it has been reported already over a decade ago (Oosterbaan, 2010; Schrooten, 2012), nevertheless its uses for educational projects have not been studied. The paid VET programmes in Germany have the potential to attract migrants who are excluded from tertiary education in their countries of origin, as is the case of some Brazilians (Carnicer, 2019; Fürstenau, 2019)—hence the choice to focus our research on Germany as a country of destination. As to the decision to focus on Brazilians, the best-described case of migrants from low-income backgrounds pursuing tertiary education in a European country seems to be that of Brazilians. Similarly, the well-described case of Brazilians using social media to establish migrant networks in Europe (Oosterbaan, 2010; Schrooten, 2012; Foletto, 2018) lays the grounds for the choice of that particular nationality.

To select relevant groups for the empirical research, first Facebook was searched for the terms "Brazilians" and "Germany" (in Portuguese). After that, groups relating to migration were selected and these were once again filtered according to their level of interaction: using the information provided by Facebook itself, the author joined 43 "active groups", i.e., groups with at least a thousand participants and three posts made in 1 week. From that total, 30 groups required participants to fill up a form upon entry to inform group managers about their interest in joining the group. We used the forms to inform the managers about our research interests, data collection, and anonymization measures. To perform the analysis, we used the structural topic modeling (STM) approach (Roberts et al., 2019), which allowed us to correlate the posts with the groups they came from. In this context, a topic is "a mixture over words where each word has a probability of belonging to a topic" (Roberts et al., 2019, p. 2). The outcome of the procedure reveals that among the seven most relevant topics, two are related to education, particularly to language learning and accessing vocational education and training in Germany. Across all groups, there is some mention of one of these topics, meaning that in a group gathering Brazilians in a specific city (but not explicitly related to education) or in a group gathering Brazilians who wish to pursue a degree in Germany, there is some mention of both education-related topics.

Automated textual data collection using a web-scraper

The empirical data for this analysis is textual and comes from posts and comments made by group participants. We solved the issue caused by the "APIcalypse" (Bruns, 2019) by automating our data collection using the WebDriver API *Selenium*, which allows us to automatically control a web browser. The scraper logs into the researcher's Facebook account and systematically goes through the groups that we could join. All posts, comments, and sub-comments were copied to a local file system. *Selenium* controls the web browser as if a human is sitting in front of it: all data obtained is exactly the same data available to the human Facebook user. No clicking behavior or friends list is collected, for instance. A human could do the same procedure,

however with a much bigger investment of time and effort. Although we could have set up a Facebook Developer account that would allow us to use Facebook's API, the process using *Selenium* is not subject to Facebook's Graph API which includes rate limits. Summing up, automation simply sped up the process of data collection.

Reliability, reproducibility, and ethics in migrants' textual data collection

For the automated data collection, we considered whether and to what extent we would be violating terms of use from a giant social media company and if that would make us liable to a legal process. In that regard, we argue with those who stand for critical research (Hargittai and Sandvig, 2016; Bruns, 2019) and we support that independent data collection for social science and digital humanities research is rules-based and can comply with user privacy. Still, that does not solve the issue of the impossibility of gaining consent from all users when conducting such large data collection.

There are central differences between big techs' data extractivism and our procedures for data collection, storage, and analysis. These differences are due to the scientific interest, access, and use of the data. Regarding our data gathering, we as researchers using a Facebook user's interface with *Selenium* only had access to what other individual Facebook users also have. In that sense, we could control what information was collected. As for the storage procedure, the textual data was saved on a file shared only between the two authors of the empirical paper and that could only be accessed through a closed network. The applied "text as data" approach (Grimmer and Stewart, 2013) follows a standardized and, theoretically, reproducible methodology while complying with measures for data protection and having no financial profit. Nevertheless, because data from Facebook groups can be erased, entire groups or Facebook itself can cease to exist, and the platform can change its access rights, a reproducibility test is unlikely to result in the same *corpus*, hence such a test is not feasible.

It could be argued that there are other ways to research media use for educational projects on migration that would not demand a large textual data collection, therefore sparing this paper's discussion. That critique can also be directed to the nature of such quantitative textual data from social media: these Facebook posts are not connected to traits that characterize social positionality (e.g., socioeconomic background, educational attainment), which does not allow for an analysis that accounts for inequality and discrimination. In that sense, we agree with Leurs' critique (Leurs, 2017) that such procedures assume a "detachment from a discrete, knowable world" and tend to "naturalize the politics of knowledge production" (p. 134). However, because our empirical research question could only be answered with quantitative textual data focused on the prevalence of interactions involving education in migrant Facebook groups, the lack of such background information about group participants is not critical. Our topic modeling study is part of a larger project that includes a qualitative content analysis of the posts made in these Facebook groups and a digital ethnography, for which 30 group participants were interviewed. Following the logic that "all quantitative models of language are wrong—but some are useful" and that topic models need validation (Grimmer and Stewart, 2013, p. 269–270), apart from providing new research outputs by themselves, these qualitative approaches were used to validate findings from the topic modeling.

Finally, we do not treat data as "public" (Zimmer, 2010): we did not reproduce posts word-by-word, both as an ethical measure and because that was not useful for answering our empirical question. As a final compliance measure to counterbalance the impossibility of getting consent from group users and to reassure that anonymity is preserved, the empirical paper was presented to group managers and opened to their critique.

Discussing ethical decisions of research with migrants' textual data

After contextualizing the study that generated this debate in the first section and describing methodological decisions in the previous section, we move on to discuss ethical decisions of our research design based on Nissenbaum's (2010) nine points for a contextual integrity analysis when using emerging media technologies for research. We also rely on ethical guidelines for internet research elaborated by the Association of Internet Researchers (AoIR) (franzke et al., 2020, p. 9-23).

Nissenbaum's nine points for contextual integrity are the following:

1. Describe the new practice in terms of its information flows (see our section Information flows).
2. Identify the prevailing context in which the practice takes place at a familiar level of generality, which should be suitably broad such that the impacts of any nested contexts might also be considered (section Prevailing context referring to section Contextualizing migrant Facebook groups selected for research).
3. Identify the information subjects, senders, and recipients (section Information subjects, senders, and recipients).
4. Identify the transmission principles: the conditions under which information ought (or ought not) to be shared between parties. These might be social or regulatory constraints, such as the expectation of reciprocity when friends share news, or the obligation for someone with a duty to report illegal activity (section Transmission principles and its subsections).

5. Detail the applicable entrenched informational norms within the context, and identify any points of departure the new practice introduces (section Detail the Entrenched Information Norms and its subsections).
6. Make a prima facie assessment: there may be a violation of contextual integrity if there are discrepancies in the above norms or practices, or if there are incomplete normative structures in the context to support the new practice (section Prima facie assessment).
7. Evaluation I: Consider the moral and political factors affected by the new practice. How might there be harms or threats to personal freedom or autonomy? Are there impacts on power structures, fairness, justice, or democracy? In some cases, the results might overwhelmingly favor accepting or rejecting the new practice, while in more controversial or difficult cases, further evaluation might be necessary (section Evaluation I).
8. Evaluation II: How does the new practice directly impinge on values, goals, and ends of the particular context? If there are harms or threats to freedom or autonomy, or fairness, justice, or democracy, what do these threats mean in relation to this context? (section Evaluation II).
9. Finally, on the basis of this evaluation, a determination can be made as to whether the new process violates contextual integrity in consideration of these wider factors (section Final determination). (Nissenbaum, 2010; p. 182–183).

In what follows, we address these items proposed by Nissenbaum thereby analyzing the ethical issues of collecting migrants' digital traces for academic research.

Information flows

There are at least nine information flows on Facebook:

1. The first one is from the users to the company "Facebook" (clicking patterns, location, cookies).
2. The second one is the flow of information about the author who created the profile from the Facebook service to search engines and other non-users (if the profile is indexed on Google, for instance).
3. The third one is non-textual information from the profile owner to other users registered on Facebook (such as "likes" on profile pages and participation in groups).
4. The fourth one is from the private posts and friends list on the personal profile of the author who created the profile to their friends.
5. The fifth one is composed of posts written on private groups (groups, for which the administrator has to grant access to the requester), which can only be read by other group participants.
6. The sixth one is composed of posts written on public groups (groups, whose content can be seen by people who are not participating in it), which can be read by anyone who opens the group link.
7. The seventh one are replies to questionnaires elaborated by group administrators, as a requirement to be accepted in certain private Facebook groups.
8. The eight one are direct messages exchanged through the Facebook chat (which was used to contact potential interview partners for the qualitative study), i.e., a two-way flow between the profile owner and another person.
9. The ninth one are multiple-way direct messages exchanged among a closed group through the Facebook chat.

From this list, only the flows described on numbers 4 and 9 were not part of the interactions of the author who owns the profile, as she did not post anything on her private profile and did not send direct messages to multiple people. We did not create a dummy profile. Although the profile was created for research purposes, the owner was clearly identified on it and she did not try to conceal her intentions to group administrators when filling in questionnaires requesting to join the groups. By running the web-scraper, we did introduce a tenth information flow from the groups to our closed database, however our data did not include users' personal information. Finally, as our database is not public, the raw information flow is kept within the circuit of Facebook users (including the author who has a Facebook profile) and will be destroyed as soon as the research is concluded. One could argue that, once the analysis based on this data is published, there would be the eleventh flow of information toward the general public, nevertheless, that information is anonymized, filtered, and analyzed based on a specific research question. That flow is not of raw data; thus, it is a new circuit of information flow (from the publisher to its readers, etc.).

Prevailing context

The prevailing context relates to the social context in which data is gathered (Nissenbaum, 2010, p. 149). For this paper, the prevailing context is that of Facebook groups of Brazilian migrants in Germany, as described particularly on section Contextualizing migrant Facebook Groups selected for research. This includes, among other aspects, the high level of use of Facebook among Brazilian migrants for networking and the opportunity of migrating to Germany to pursue tertiary education.

Information subjects, senders, and recipients

In the context of our data collection, "information subjects" are the Facebook users who interact by writing posts with a question or a piece of information or by commenting on those posts in groups of Brazilians in Germany. People who participate in the groups but never had any interaction on them are not our information subjects. Within these information subjects, the senders are those who pose questions or share other kinds of information on the groups and those who reply to such questions. The recipients are all group members who read the interactions (either group participants or not, in the case of public groups). Because our dataset is not publicly available, we did not expand the role of recipients to the general public.

Transmission principles

Transmission principles are rules that constrain the information flows (Nissenbaum, 2010, p. 145). In our case, there are three such sets of rules:

1. Because most of the information flows happen within a context controlled by a private company, Facebook's Terms of Service (ToS) are one of the regulators.
2. Because the data was collected in Germany, the General Data Protection Regulation (GDPR) from the European Union is a second regulator.
3. Because the collected data is part of an academic research, academic research ethics guidelines (e.g., franzke et al., 2020) apply.

Following, we comment on the central guidelines from these three sets of rules.

Facebook ToS

Facebook prohibits scrapping, but not manual data collection. We could have done the same procedure manually and acquired the same data however securing anonymity here would have been even worse because the person manually collecting the data would have seen what each group participant has written. The company's decision to prohibit scrapping after the Cambridge Analytica scandal is probably useful in constraining other companies to harvest and sell personal data that could be used for skewing public opinion on matters such as migration. However, that decision is harmful to social research (Sandvig, 2017; Bruns, 2019; Mancosu and Vegetti, 2020).

GDPR

GDPR recognizes that "by coupling information from registries, researchers can obtain new knowledge of great value … within social science, research on the basis of registries enables researchers to obtain essential knowledge about the long-term correlation of a number of social conditions such as unemployment and education with other life conditions". As GDPR defines personal data as "any information relating to an identified or identifiable natural person" and as Facebook posts always appear associated with a profile, these texts could be interpreted as personal data. However, GDPR highlights that "information that identifies an individual … may be personal data if you are processing it to learn something about that individual or if your processing of this information will have an impact on that individual". In this sense, the data we collected is in a gray zone: it is being used neither to learn something about an individual in particular nor to undertake actions that would have any foreseeable impact on an individual. In fact, we use these data to describe the social world, more specifically, digital information exchange relating to transnational education and migration.

Kotsios et al. (2019, p. 6–10) provide further instructions to assess the consequences of GDPR's seven principles relating to the processing of personal data in social media research. We present these seven principles and associate them with our case based on the comments by Kotsios et al. (2019) and on our experience with the empirical data described in the previous paragraphs:

1. Lawfulness, fairness, and transparency: Processing must be lawful, fair, and transparent to the data subject.

   > Because Facebook itself does not provide "transparent data access to critical, independent, public-interest research" (Bruns, 2019, p. 1561), we cannot fully comply with this point. Facebook managers are likely aware that, even after closing their API, private companies still use web scrapers as well as researchers. The issue is that now the procedure is made opaque both to researchers and, as a consequence, to research subjects as well. We have taken the measures in our power to secure fairness and transparency as to our research purposes and data management standards.

2. Purpose limitation: Data must be processed for the legitimate purposes specified explicitly to the data subject when collected.

   > Our data collection was conducted for public interest purposes, not for profit (Kotsios et al., 2019; p. 9-10), as is the case of private companies that also use web scrapers. The data we collected is going to be used solely for this research purpose and with our previously determined research question.

3. Data minimization: Only as much data as absolutely necessary for the purposes specified must be collected and processed.

We had a defined timeframe for data collection (from December 2020 to January 2021) and we collected strictly data that was needed to answer our previously determined research question.

4. Accuracy: Personal data must be kept accurate and up to date.

   Once the collection timeframe was closed, the texts of collected posts were not edited content-wise. For the topic modeling analysis, we deleted stop-words (e.g., pronouns and conjunctions), diacritics (e.g., the letter "ç" or "ã"), and converted typical internet shortcut words into their traditional format (e.g., in Portuguese "as well" means "também" and is often written in online interactions as "tb" or "tbm"). This manipulation does not change the accuracy of posts' content. Instead, it serves to raise the accuracy of our topic modeling results.

5. Storage limitation: Personally identifying data can only be stored for as long as necessary for the specified purpose.

   The data will be destroyed as soon as the research project is finished.

6. Integrity and confidentiality: Processing must be done in such a way as to ensure appropriate security, integrity, and confidentiality (e.g., by using encryption).

   We have complied with this as described in section Methodological decisions.

7. Accountability: The data controller is responsible for being able to demonstrate GDPR compliance with all of these principles.

   As data controllers, we can comply with this measure.

As demonstrated, research based on social media texts can strive to comply with GDPR measures. However, the fact that social media companies like Facebook do not provide transparent information about their algorithm functionality and no longer facilitate data collection for academic research purposes puts researchers in a gray zone in regards to GDPR.

AoIR guidelines

AoIR guidelines (franzke et al., 2020) are based on similar concerns as GDPR's, such as securing data privacy. However, AoIR guidelines are not laws, but rather stances for decision-making recommendations for scientific research. Instead of providing a panacea, AoIR guidelines emphasize researchers' ability to make sound judgments, which most importantly protect research subjects and researchers themselves (p. 23). These were the main guidelines we followed in our decision-making described at the beginning of the paper.

There is a clash: we are complying with AoIR, and we are in a gray zone of the ToS and GDPR. Our compliance rationale for these three constraints in information flow (ToS, GDPR, and AoIR) is aligned with the conclusions reached by Mancosu and Vegetti (2020), who claim that collecting textual data from Facebook pages can be "ethically and legally (GDPR) acceptable" (p. 9) but it might be in conflict with Facebook ToS.

Detail the entrenched information norms

Such norms "describe the existing practices that prevail in a given context, encompassing the flows of information, transmission principles, and expectations of the actors involved" (Zimmer, 2018, p. 8). In our context, there are three groups of actors involved: migrants and aspiring migrants who participate in the groups, the group administrator(s), and the researchers. Because the interests of a company are divergent from those of these actors, Facebook is not accounted for here. Its entrenched information norms-related expectations can be interpreted according to the ToS described in the section Facebook ToS.

Migrants and aspiring migrants' expectations

As highlighted in section Methodological decisions, migrants have different reasons to join social media platforms and exchange information on these platforms. The entrenched information norms they have, however, are likely to be similar, namely that other humans will read what they have posted on the groups. There is an expectation that these other humans probably share similarities with them: be Brazilian migrants or aspiring migrants in Germany, have some relationship with Brazil and/or with Germany. There is also an expectation that the questions and other shared information on these groups will be replied to by these other humans who are likely to hold valuable information that can help solve the issue being asked about. As these groups are formed by over a thousand participants, it is not expected that all participants see the messages and reply to them, as well as there is an understanding that there are participants who are lurking in these groups (i.e., group participants who read the interactions but do not write). As these groups are highly populated and administrators cannot guarantee the identity of those who access groups, participants are likely to be careful with sharing personal information, and it is not uncommon that migrants anonymize themselves by not using

their real names on social media. Finally, some public groups even accept the presence of company profiles that promote their services.

Group administrator(s)

Group administrators of public groups are likely to hold fewer entrenched information norms than administrators of private groups. The former is probably interested in having fewer moderation duties and possibly being recognized as the administrator of a large group highly relevant for the information exchange of a specific population (e.g., for the case of migrants in a specific town or migrants looking for education and employment in specific areas). For these administrators, which users participate in the group and for what purposes is probably irrelevant, as long as participants comply with their rules. The latter type of administrator is probably interested in having more control over who can access the group. Based on the questions from entry forms, their expectation is to filter participants who are likely to fuel disrupting discourses and those interested in using the groups to sell products and services. These administrators were informed about our interests as researchers.

Researchers

Our expectation was to observe migrants and aspiring migrants' textual interactions in a non-controlled situation. In doing so, we wanted to analyze the role of information exchanges in migratory projects related to education—or, how education projects relate to migration. More concretely, we expected to understand what migrants and aspiring migrants debate about education in these groups and to determine the relevance of education-related topics in these information exchanges. From the perspective of other group participants, as the researcher who owns the profile did not interact in the groups, she could be interpreted as a lurker.

As the author who created the profile is clearly identified on Facebook and as we did not harvest information such as location or other sensitive information that users may have made available on their personal Facebook profiles themselves, we did not disrupt users' expectation of being in a group with other people they do not know. In the eyes of these participants, we as researchers could be seen as any other lurker. As we did not expect to breach anonymity or to promote services or products, nor to do harm to participants, we complied with entrenched information norms of group administrators—and with ours as researchers. Furthermore, administrators of closed groups were explicitly informed about our expectations. Our results will also be shared with them in order to reassure them that we have secured that no group participant can be de-anonymized. Finally, as we are not making our data publicly available, we are not disrupting the informational norms of any actor.

Prima facie assessment

Nissenbaum (2010, p. 182) contends that "a breach of informational norms yields a prima facie judgment that contextual integrity has been violated because presumption favors the entrenched practice". Here, we land in a gray area. Considering that these groups are highly populated and therefore participants are careful with the information they publish in the group, that private groups' administrators were informed and allowed us to participate, and that we did not go against the expectations of public groups' administrators, we could argue that no informational norm was breached. Nevertheless, if we consider that the expectations of group participants were to exchange information, not to participate in a research project, then an informational norm was breached, particularly in relation to group participants and public groups' administrators. Still, our academic publication opens another information flow, because we have processed and analyzed the data, and therefore we are not sharing data that is part of the information flow described in part 4.1. In that sense, because there are two information circuits (the one among Facebook users only and the one derived from the publication of a paper based on the Facebook posts), and the data of one is not shared with the other, the situation is more complex and the entrenched information norms from the second circuit should also be assessed. Shortly, in that second circuit, peer-reviewers and the academic readership would probably like to have access to the data from the first circuit in order to assess the reliability of our analysis. However, if we do that, we would merge the two circuits of information and then doubtlessly breach contextual integrity by making our data public.

Evaluation I

Considering that gray zone in relation to migrants' privacy and the breach of Facebook's ToS, we assume there is potential for a violation of contextual integrity and therefore, proceed to the first evaluation step to assess the gravity of the potential violation (Nissenbaum, 2010, p. 182).

Based on previous studies investigating migrants' use of social media (e.g., Dekker et al., 2018; Jayadeva, 2020), there is no evidence that such a topic of investigation might have caused harm to migrants. Researchers in this field have followed ethical procedures of anonymization and their research questions do not put the groups researched by them under any particular doubt or surveillance from authorities or other actors of migration. In that sense, there is no evidence that academic research about migration and

digital media use has ever caused migrants to loose control over their information. Similarly, our proposal accounts for such security measures. In this sense, we are "doing no harm", a primary ethical imperative (Fuchs and Unterberger, 2021).

Evaluation II

The second evaluative step asks to assess how the new practice directly impinges on the values, goals, and ends of the particular context (Nissenbaum, 2010, p. 182). If we consider that, although one of us was participating in the groups not for the interest of exchanging information, but rather in analyzing it, then one could argue that we are not aligned with the goals of the context. However, as the person participating in the groups was completely identified, we treated the data carefully, we did not interfere in any discussions in the group, we did not collect private information, and users are not naive about participating in a group with over thousand unknown people, hence not sharing sensitive information and sometimes anonymizing themselves with aliases, one cannot say that we bluntly disrupted the values of the groups or of participants we have researched.

A model to assess factors affecting consent suggested by McKee and Porter (quoted in Elgesem, 2015, p. 15–16) and adapted to research with social media data by Elgesem (2015) helps to think about consent and anonymity within this gray area. What is helpful in that model is that it is based on scales, not on absolute statements. Assessing these scales can inform whether there is a requirement to obtain consent or if it is important to have consideration for consent (Elgesem, 2015; p. 18–19) and for the impossibility of obtaining it. The scales account for whether the data is rather private or rather public, and whether there are rather high or rather low issues involving topic sensitivity, degree of interaction of the researcher with subjects, and degree of vulnerability of subjects. For our case, the data collected are not personal communications between a small group of people, yet it was posted in a specific group of Brazilian migrants to which we had access, hence on this scale, we would still be in a gray area. Regarding topic sensitivity, we have a clear research question focused on transnational educational projects, which is not a topic of particular concern especially because we are not closely interacting with the researched subjects. Although remembrance of the experience of shattered educational aspirations and projects, for instance, can cause distress, our empirical research question focuses on what general topics are discussed in these groups. Furthermore, as we are not requesting group participants to access memories or share plans with us, i.e., we have a very low level of interaction with subjects, both our topic and our degree of interaction imply a comparatively low requirement of consent. Regarding the last factor, the subjects' vulnerability, we have to consider that we are researching migrants and aspiring migrants whose legal status is unknown to us. Again, we go back to our research question to judge whether there is a rather high or low requirement for consent. Differently from investigating migrants who use social media to inform their pathway to claim asylum and might have to resort to irregular practices for border crossing (Dekker et al., 2018; Fischer and Jørgensen, 2021), our research question relates to an issue that requires migrants to have a regularized status in the country, as without a residence permit, they cannot enroll in tertiary educational institutions. However, the situation is different for children and teenagers, who can access schools even though their parents might not have a regular migratory status in Germany. The possibility of inflicting direct psychological harm through our research topic is also low, as we did not interact with group participants. The possibility of inflicting indirect harm based on the outcomes of our research is also low, due to the focus of our research question in migratory projects involving education.

Comparative evaluation based on studies using Facebook posts and a topic modeling approach

This section comments upon other empirical research based on a topic modeling approach that also used data collected on Facebook. At the time of writing, to the best of our knowledge, there is no study using migrants' posts based on such an approach. The focus of this section is on other researchers' solutions and ethical justifications for data collection on Facebook regardless of the empirical topic of the studies. This overview reveals researchers' concern about the ethics of collecting such data but also an apparent avoidance to discuss these concerns in depth, perhaps either due to the earlier facilitated access to collecting Facebook posts (before the API's closure) or due to implicit perceptions of what public data is.

The discussion presented in this paper could have been spared if we had followed a less troublesome approach to data collection. An option could have been recruiting migrant Facebook users to participate in the research and requesting them to sign a consent form, as Verheijen and Stoop did for their linguistic analysis among Dutch speakers (Verheijen and Stoop, 2016, p. 249–258). They analyzed posts made only by these subjects who explicitly consented to have their posts collected. That would hardly be an option to research migrant Facebook groups. The reason for that is twofold: first, we could not force participants to post in the migrant Facebook groups, hence, if a participant did not post at all, we would have no data; and second, had we recruited participants with a high rate of posts, we would be cherry-picking the data since there is no evidence that most group participants have a high posting rate. Furthermore, even if we maximized or minimized demographic differences of such hypothetical participants, we would still have a non-representative sample because we do not know exactly what are the socio-economic characteristics of

regular participants of these migrant Facebook groups. Hence, Verheijen and Stoop's (2016) solution would not suit our research aim.

Although also not related to migrants' use of Facebook, other methodological solutions closer to the one described in this paper reveal similar ethical concerns and contend that they cannot guarantee anonymization despite measures taken by the researchers (Merrill and Åkerlund, 2018, p. 340), while others do not focus on discussing the data collection and storage procedures (Puschmann et al., 2020; Amara et al., 2021; Heft et al., 2022). Most of these analyses are based on "public posts" or "publicly available profiles", i.e., comments on Facebook pages of political parties and private organizations made by users who did not restrict who could view their posts. That decision seems to be implicitly presented as an ethical justification for collecting those posts. Furthermore, unlike ours, these other studies were conducted before Facebook closed its API, hence they do not mention the harms of that restriction to research.

The restriction posed by Facebook to social researchers is an obstacle in the analysis of social interactions, their causes, and consequences. Still, researchers keep using that platform and other platforms owned by the same company for their data collection, due to the social relevance it has reached. If earlier research, as described above, mentioned ethical concerns in a few sentences or left these concerns implicit, the closing of access to collect Facebook data has given impulse to reflect on ethics in practices of collecting digital traces (e.g., Bruns, 2019; Puschmann, 2019). That does not mean that the trade of "closing the access to relevant empirical data" for "elaborating on the ethics of collecting that data" was worth it: ethics of research using digital data had been already brought up before the closing of Facebook's API (e.g., Zimmer, 2010) and, as digitalization increases, there is no evidence that the ethical discussion in this field would have stopped. Nevertheless, this situation promotes advancements in the ethics' discussion at the same time that it sheds light on the power that a big-tech company has over academic research and researchers, as researchers might have to consider whether they make themselves liable for prosecution or decide to investigate topics through other methodological approaches even though using Facebook would be relevant.

Final determination

The last point proposed by Nissenbaum (2010, p. 182–183) is the final determination as to whether there was a violation of contextual integrity and, if so, how grave is this violation toward whom, whether and how these violations are defensible. This final point is similar to our research question about how to justify the collection and analysis of migrants' digital traces for academic research.

We could have hired someone to copy and paste all posts and comments from Facebook, thereby complying with the ToS of not using an automated web scraper. The person doing this, however, would have had much more insight into who wrote what than an automated procedure. Facebook's decision of prohibiting web scraper might be well-thought to avoid companies profiling users and tackling the criticism toward the company after the Cambridge Analytica scandal, nevertheless, these policies are harmful to researchers who care for ethics and anonymity—as they can make themselves liable even though they have the best interest of not exposing vulnerable populations.

In this paper, we made transparent our data collection procedure and analyzed it in the light of ethical and legal frameworks. Along with Bruns (2019) and other critical researchers of digital media, we have added up the argument that such social media platforms occupy nowadays an important role in social phenomena and thus must "provide transparent data access to critical, independent, public-interest research" (p. 1561). For researchers studying migration and social media use, the lack of transparency of social media platforms implies a forced lack of control over the collected data. In turn, that impacts also migrants who could profit from critical views about digital media: research in this area can provide insights into reasons to migrate and decision-making processes supported by information exchanges on social media which can inform policies and support arguments in favor of migrants and diversity in media educational institutions, public discourses, and political spheres.

Based on the heuristic described in the previous eight points, the measures we took for the data collection through a topic modeling approach and its subsequent analysis do care for the anonymity of potentially vulnerable group participants. On the one hand, our decision not to make the data collected from the groups freely available further secures anonymity. On another hand, that puts us in a criticisable situation regarding the reliability of our data, as it cannot be shared. However, as securing data protection and anonymity of migrants who participate in these Facebook groups is more important in order to avoid harm, we decided to put more weight on that aspect than on the quality assessment of the academic community. In that sense, to some extent, securing the anonymity and data protection of vulnerable populations in academic research is a group commitment.

The collection of large textual datasets of migrants' digital traces for academic research purposes can be justified when researchers are invested in securing the collected data from anonymity breaches—by not collecting certain profiling data and by not creating another information flow by making their dataset available. The fact that academic research is guided by methodological and ethical guidelines and tends to be detached from financial profit also speaks in favor of the possibility of securing such datasets collected from migrant or vulnerable populations. In the unlikely case researchers had interest in selling their dataset for target advertising or

political action against migration, for instance, the contextual integrity analysis described here would no longer be applicable and multiple contextual integrity violations would have been committed. Finally, although the procedures described here could be interpreted as in a legally gray zone, no involved parts were harmed in this data collection and analysis procedure. Therefore, such research is defensible when an appropriate research question is addressed and standards are followed, as researchers have already been doing (Mahoney et al., 2022a; Sandberg et al., 2022a).

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

Amara, A., Hadj Taieb, M. A., and Ben Aouicha, M. (2021). Multilingual topic modeling for tracking COVID-19 trends based on Facebook data analysis. *Appl. Intell.* 51, 3052–3073. doi: 10.1007/s10489-020-02033-3

Brown, B., Weilenmann, A.,MacMillan, D., and Lampinen, A. (2016). "Five provocations for ethical HCI research," in *Proceedings of ACM CHI, 7–12 May, San Jose, CA, USA*.

Bruns, A. (2019). After the 'APIcalypse': social media platforms and their fight against critical scholarly research. *Inf. Commun. Soc.* 22, 1544–1566. doi: 10.1080/1369118X.2019.1637447

Carnicer, J. (2019). Transnational Migration and Educational Opportunities: A Case Study of Migration from Brazil to Germany. *London Rev. Educ.* 17, 14–25. doi: 10.18546/LRE.17.1.02

Dekker, R., Engbersen, G., Klaver, J., and Vonk, H. (2018). *Smart* refugees: how syrian asylum migrants use social media information in migration decision-making. *Soc. Media + Soc.* 4, 2056305118764439. doi: 10.1177/2056305118764439

Elgesem, D. (2015). "Consent and information—ethical considerations when conducting research on social media," *in Internet Research Ethics, eds D. Elgesem, C. Ess, A. O. Larsson, M. Lüders, R. Prabhu, K. U. Segadal, et al. Cappelen Damm Akademisk/NOASP,* 14–34.

Fischer, L., and Jørgensen, M. B. (2021). "Impossible research? ethical challenges in the (digital) study of deportable populations within the European Border Regime," in *Research Methodologies and Ethical Challenges in Digital Migration Studies: Caring For (Big) Data?*, eds M. Sandberg, L. Rossi, V. Galis, and M. Bak Jørgensen, 141–166. London, UK: Palgrave Macmillan.

Foletto, L. (2018). Usos sociais do facebook por migrantes brasileiros na Suécia: os grupos na construção identitária. *Mediação* 20, 91–112.

franzke, A. S., Bechmann, A., Zimmer, M., Ess, C., and Association of Internet Researchers. (2020). Internet Research: Ethical Guidelines 3.0. Available online at: https://aoir.org/reports/ethics3.pdf

Fuchs, C., and Unterberger, K. (2021). *The Public Service Media and Public Service Internet Manifesto*. London: UK: University of Westminster Press. doi: 10.16997/book60

Fürstenau, S. (2019). *Educational Aspirations of Underprivileged Female Migrants. An Ethnographic Case Study of a Transnational Network of Care Workers between Brazil and Germany*. Germany: Zeitschrift Für Erziehungswissenschaft.

Grimmer, J., and Stewart, B. M. (2013). Text as data: the promise and pitfalls of automatic content analysis methods for political texts. *Pol Anal.* 21, 267–297. doi: 10.1093/pan/mps028

Hargittai, E., and Sandvig, C. (2016). "How to think about digital research," in *Digital research confidential: The secrets of studying behavior online*, eds E. Hargittai and C. Sandvig. Cambridge, MA: The MIT Press, 1–28

Haythornthwaite, C. (2002). Strong, weak, and latent ties and the impact of new media. *Inf. Soc.* 18, 385–401. doi: 10.1080/01972240290108195

Heft, A., Pfetsch, B., Voskresenskii, V., and Benert, V. (2022). Transnational issue agendas of the radical right? Parties' Facebook campaign communication in six countries during the 2019 European Parliament election. *Eur. J. Commun.* 026732312211001. doi: 10.1177/02673231221100146

Jayadeva, S. (2020). Keep calm and apply to Germany: how online communities mediate transnational student mobility from India to Germany. *J. Ethnic Migr. Stud.* 46, 2240–2257. doi: 10.1080/1369183X.2019.1643230

Kotsios, A., Magnani, M., Vega, D., Rossi, L., and Shklovski, I. (2019). An analysis of the consequences of the general data protection regulation on social network research. *ACM Transac. Soc. Comput.* 2, 1–22. doi: 10.1145/3365524

Leurs, K. (2014). Digital throwntogetherness: young londoners negotiating urban politics of difference and encounter on facebook. *Popular Commun.* 12, 251–265. doi: 10.1080/15405702.2014.960569

Leurs, K. (2017). Feminist data studies: using digital methods for ethical, reflexive and situated socio-cultural research. *Feminist Rev.* 115, 130–154. doi: 10.1057/s41305-017-0043-1

Mahoney, J., Le Louvier, K., and Lawson, S. (2022a). "The ethics of social media analytics in migration studies," in: *Information and Communications Technology in Support of Migration. Security Informatics and Law Enforcement*, eds B. Akhgar, K. L. Hough, Y. Abdel Samad, P. Saskia Bayerl, A. Karakostas. Berlin, Germany: Springer, Cham.

Mahoney, J., Le Louvier, K., Lawson, S., Bertel, D., and Ambrosetti, E. (2022b). Ethical considerations in social media analytics in the context of migration: lessons learned from a Horizon 2020 project. *Res. Ethics* 18, 226–240. doi: 10.1177/17470161221087542

Mancosu, M., and Vegetti, F. (2020). What you can scrape and what is right to scrape: a proposal for a tool to collect public facebook data. *Social Media + Soc.* 6, 205630512094070. doi: 10.1177/2056305120940703

Merrill, S., and Åkerlund, M. (2018). Standing up for Sweden? The racist discourses, architectures and affordances of an anti-immigration facebook group. *J. Comput. Med. Commun.* 23, 332–353. doi: 10.1093/jcmc/zmy018

Naughton, J. (2022). For the first time in its history, Facebook is in decline. Has the tech giant begun to crumble? *The Guardian*. Available online at: https://www.theguardian.com/commentisfree/2022/feb/06/first-time-history-facebook-decline-has-tech-giant-begun-crumble

Nissenbaum, H. F. (2010). *Privacy in Context: Technology, Policy, and the Integrity of Social Life*. Stanford Law Books.

Oosterbaan, M. (2010). 'Virtual Migration. Brazilian Diasporic Media and the Reconfigurations of Place and Space'. *Revue Européenne Des Migrations Internationales* 26, 81–102. doi: 10.4000/remi.5037

Oosterbaan, M. (2013). "Chapter two. orkontros: brazilian migrants, social network sites and the european city," in *Contemporary Culture: New Directions in Art and Humanities Research*, eds J. Thissen, R. Zwijnenberg and K. Zijlmans. Amsterdam: Amsterdam University Press, 37–50

Puschmann, C. (2019). An end to the wild west of social media research: a response to Axel Bruns. *Inf. Commun. Soc.* 22, 1582–1589. doi: 10.1080/1369118X.2019.1646300

Puschmann, C., Ausserhofer, J., and Šlerka, J. (2020). Converging on a nativist core? Comparing issues on the Facebook pages of the Pegida movement and the Alternative for Germany. *Eur. J. Commun.* 35, 230–248. doi: 10.1177/0267323120922068

Richter, C., Emmer, M., and Kunst, M. (2018). "Flucht 2.0. Was Geflüchtete wirklich mit ihren Smartphones machen," in *Social Transformations*, *Vol. 2*. Available online at: https://www.socialtrans.de/index.php/st/article/view/20

Roberts, M. E., Stewart, B. M., and Tingley, D. (2019). stm : An R Package for Structural Topic Models. *J. Stat. Soft.* 91. doi: 10.18637/jss.v091.i02

Sandberg, M., Mollerup, N. G., and Rossi, L. (2022a). "Contrapuntal connectedness: analysing relations between social media data and ethnography in digital migration studies," in *Research Methodologies and Ethical Challenges in Digital Migration Studies*, eds M. Sandberg, L. Rossi, V. Galis, M. Bak Jørgensen. London, UK: Palgrave Macmillan, Cham.

Sandberg, M., Rossi, L., Galis, V., and Bak Jørgensen, M. (2022b). *Research Methodologies and Ethical Challenges in Digital Migration Studies*. Berlin, Germany: Springer International Publishing.

Sandvig, C. (2017). *Heading to the Courthouse for Sandvig v. Sessions [web log]*. Available online from: https://socialmediacollective.org/2017/10/19/heading-to-the-courthouse-for-sandvig-v-sessions/ (retrieved April 27, 2022).

Schrooten, M. (2012). Moving ethnography online: researching brazilian migrants' online togetherness. *Ethnic Racial. Stud.* 35, 1794–1809. doi: 10.1080/01419870.2012.659271

Siapera, E., and Creta, S. (2020). "The ethics of media research with refugees," in S. Jeppesen, P. Sartoretto. *Media Activist Research Ethics. Global Transformations in Media and Communication Research—A Palgrave and IAMCR Series*. London, UK: Palgrave Macmillan, Cham.

Verheijen, L., and Stoop, W. (2016). "Collecting facebook posts and whatsapp chats," in *Text, Speech, and Dialogue. TSD 2016. Lecture Notes in Computer Science, vol. 9924*, eds P. Sojka, P, A. Horák, I. Kopeček, K. Pala. Berlin, Germany: Springer, Cham, 249–258.

Waters, J. (2015). Educational imperatives and the compulsion for credentials: family migration and children's education in East Asia. *Child Geogr.* 13, 280–293, doi: 10.1080/14733285.2015.972646

Zimmer, M. (2010). "But the data is already public": on the ethics of research in Facebook. *Ethics Inf. Technol.* 12, 313–325. doi: 10.1007/s10676-010-9227-5

Zimmer, M. (2018). Addressing conceptual gaps in big data research ethics: an application of contextual integrity. *Social Media + Soc.* 4, 205630511876830. doi: 10.1177/2056305118768300

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Migration and education on social media: what migrants discuss about education in Facebook groups

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Drawing from a networked perspective of migration and from the concept of "transnational education," this paper investigates the education-related topics discussed in Facebook groups among Brazilian migrants in Germany. The paper examines the "latent ties" activated in migrant Facebook groups as part of networks that can be used to collect information about migratory pathways involving educational opportunities. A qualitative content analysis was conducted with 2.297 posts retrieved from six Facebook groups divided into location, vocational education and training (VET), and professional groups. The outcomes point out that there is a demand for transnational education beyond university degrees. Additionally, the paper highlights that latent ties can be used to collect and cross-check information in migratory contexts involving education.

KEYWORDS

migrant online groups, latent ties, transnational education, Brazilian migration, Brazilians in Germany

1. Introduction

This paper investigates education-related information, opinions, and experiences shared by migrants and aspiring migrants on social media. While social media became an important part of migration journeys and education can be an important driver for some migrants, there has been relatively little investigation of the intersection of migration, social media, and education, except for a few studies (e.g., Chang et al., 2018; Jayadeva, 2020). Existing research on transnational education tends to focus on migrants pursuing university degrees abroad (Brooks and Waters, 2010; Beech, 2015) and the intersection of migration, media, and education also seems to go in that direction (Jayadeva, 2020). This paper broadens that scope to include other educational opportunities, such as vocational education and training (VET). Specifically, this paper aims to answer the research question: What education-related topics are discussed among migrants and aspiring migrants in social media groups? Empirically, it explores the case of Facebook groups of Brazilian migrants and aspiring migrants who wish to move to, or already live in, Germany. Henceforth, these groups are referred to as groups of Brazilians in Germany. The results illustrate how migrant networks of latent ties can be used to collect information about transnational education beyond university degrees.

In what follows, I provide contextual information to justify the focus on Brazilian migration to Germany. I also comment on the migratory conditions of nurses and information technology (IT) professionals to Germany, as these professional groups are relevantly present in the data. After that, I describe the concept of "transnational education" (UNESCO and Council of Europe, 2001) and how it is associated with social networks, particularly in migratory cases associated with educational levels beyond university studies (Carnicer, 2019; Fürstenau, 2019). I then present the concept of "latent ties" (Haythornthwaite, 2002) and describe how these are activated in migratory contexts, followed by a comment on Brazilian migrants' media use. In the research design section, I explain the sampling and data collection decisions and the procedures for conducting a

qualitative content analysis (Schreier, 2012). Finally, I present the findings in four sections: the demand for transnational education beyond university degrees, the potential association of education-related topics with economic and gender differences, the perception that university studies can be sometimes irrelevant or associated with frustration in this migratory context, and the trust in information shared by latent ties in education-related topics. While it is not possible to assert whether people who exchanged information in the groups of Brazilians in Germany migrated and fulfilled their educational aspirations, the outcomes support that demand for transnational education goes beyond university degrees and that information shared in these groups is potentially relevant for migratory pathways associated with education.

2. Contextual information

In this section, I justify the focus on the migration of Brazilians to Germany and I outline the German labor market conditions for migrant nurses and IT professionals.

2.1. Brazilians in Germany and education

Although the number of Brazilians in Germany is small compared to migrants from other nationalities (Statistisches Bundesamt, 2022), Germany figures among the top five European countries of destination for Brazilian migrants (Ministério das Relações Exteriores, 2021). Therefore, from a Brazilian perspective, studying this population in Germany is of quantitative interest. From a German perspective, focusing on Brazilian migration provides insights into the migration of a socioeconomically diverse population who primarily migrate for reasons other than fleeing war and conflict. While the findings here are not generalizable, they might be similar among other populations, as social media use is widespread. The diversity of the Brazilian population is potentially reflected in the composition of Facebook groups of Brazilians in Germany, as almost 77% of that population uses social media (Statista, 2022) and such high figures seem to be prevalent regardless of class and gender, and across rural or urban areas (Spyer, 2018; IBGE, 2022; NapoleonCat, 2022). All sampled Facebook groups of Brazilians in Germany have over two thousand participants, which increases the likelihood of a diverse socioeconomic composition.

The Brazilian education system has historically disadvantaged people from low-income backgrounds, despite recent improvements such as the implementation of quotas in public universities (Câmara and Almeida, 2012; Sampaio and Oliveira, 2016; Windle, 2022). While there have been improvements in national education measurements, as of 2019, the average formal education attendance among Brazilians was only 9.4 years, with only 17% of people aged 25 or over having completed tertiary education (IBGE, 2022, p. 1). The need to work is the most common reason for Brazilians to drop out formal education, regardless of race or sex (IBGE, 2022, p. 11–13), what highlights the deficient policies for promoting educational continuity. Furthermore, structural racism is evident in the Brazilian educational system with the imbalance in tertiary education achievements. In 2017, only 31% of university graduates were Black or Brown, while 66% were white (Dias Silva, 2020, p. 23). Some of the students who cannot enter or conclude university degrees in Brazil see migration as a way to both access tertiary education and have an opportunity for upward mobility (Carnicer, 2019; Fürstenau, 2019).

In Germany, VET programmes are paid, last around 3 years, and are offered in a dual system. That means the students must attend teaching units and undergo supervised practical experience, similar to an internship. The starting salary for those beginning a VET programme in 2023 is at least 620 Euros with yearly increases thereafter (Bundesamt für Justiz, 2005). For aspiring nurses, the starting VET salary is around 1,166 Euros and, for an IT specialist in data and process analysis, the starting VET salary is 1,011 Euros (AUBI-plus, 2023). This salary is one of the conditions that enable young migrants from lower socioeconomic backgrounds who are excluded from the educational system in Brazil to pursue VET in Germany (Carnicer, 2019; Fürstenau, 2019). As of 2022, around 4.2 thousand Brazilians were enrolled in German universities (Destatis, 2022).

In Germany, the educational system tends to discriminate against migrant students, non-migrants with a migration history in the family, as well as non-migrants from low-socioeconomic backgrounds (Dumont et al., 2014; Olczyk et al., 2016; Mafaalani, 2021). This issue has been improving, however, it is still observable in the traditional selection patterns of the school system. After 4 years of primary education, students (aged 10) can be recommended to continue toward the *Gymnasium* (higher secondary education) or to other modalities that also allow access to tertiary education, but are seen as 'less prestigious'. Pupils whose caretakers migrated to Germany tend to be discriminated against when it comes to recommendations to the *Gymnasium*, sometimes leading to a harder pathway in the access to tertiary education (Trebbels, 2015; Hunkler, 2016). For non-EU migrants, the path to VET in Germany is also a complex one: foreign school certificates are sometimes recognized as a lower level requiring migrants to repeat studies; apart from the formalities of the migration process, educational institutions require knowledge of German-language verified through expensive certificates which can make the way to VET no easier than the one to university.

2.2. Nurses and IT professionals

Two relevant professional groups in the dataset are nurses and IT professionals. In Brazil, nurses must hold a specific BA degree. IT professionals, on the other hand, do not need a mandatory higher education certificate to work in the field. In Germany, these two professions are listed as highly demanded on the official website dedicated to informing and attracting foreign professionals to the country (Make it in Germany, 2023).

Nurses' profession is regulated in Germany, hence, those who did not complete their training in the country are requested to have their certificates recognized, prove German knowledge through an officially recognized certificate, provide a certificate of mental and physical fitness signed by a German medical doctor, and show proof that they do not have a criminal record (Make it in Germany, 2022b). The costs of degree recognition vary according to federal

states. In Hamburg, for instance, this may reach up to 722 Euros (Freie und Hansestadt Hamburg, 2022). Apart from those costs, applicants must also count with costs for, for instance, publicly sworn translations of their diploma, and German language exams, which can cost around 194 Euros in Brazil (Goethe-Institut, 2023). Based on all job announcements for nurses on the job-seeking portal *Glassdoor*, the average salary of these professionals in the private sector in Brazil is around 639 Euros monthly (Glassdoor, 2023d). For IT professionals working in Brazil, the mean salary is of around 2.380 Euros monthly (Glassdoor, 2023b). If a migrant has a job offer in Germany in an IT area with a salary of at least 52.560 Euros yearly, they can apply for a Blue Card visa. For that, they must show proof of at least 3 years of professional experience in the area, some professional certificate or examination, and a German language certificate, which may be disregarded in case the working language in their future company is not German (Make it in Germany, 2022a). In the private sector in Germany, the salary of an IT consultant can reach around 5.000 Euros monthly (Glassdoor, 2023c). Nurses in Germany receive around 3.100 Euros monthly (Glassdoor, 2023a).

In the global labor market, some trained nurses might perform domestic work after migration (Parreñas, 2015). To describe this phenomenon, Rhacel Parreñas introduced the concept of "contradictory class mobility" which, among other factors, arises from the devaluation of degrees obtained in the Global South (Parreñas, 2015, p. 118). Parreñas' interviewees expressed frustration about not being able to work in positions they were trained for in the Philippines, but also acknowledged that their migration allowed them to afford living standards they would not have been able to achieve otherwise. In other words, while their financial conditions improved, their perceived social status decreased (Parreñas, 2015, p. 219). Unlike health-related labor areas, the relatively de-regulated nature of the IT profession poses one barrier less for migrants working in that area. Still, migrant women working in IT seem to be disadvantaged, as requirements to live flexible and hypermobile lives "sit uneasily with gender norms, which demand women's participation in and taking responsibility for the running of geographically fixed households" (Raghuram, 2004, p. 174).

3. Transnational education and social networks

The term "transnational education" was proposed by the UNESCO to refer to "all types of higher education study programmes, or sets of courses of study, or educational services (including those of distance education) in which the learners are located in a country different from the one where the awarding institution is based" (UNESCO and Council of Europe, 2001, p. 2). Research in that area tends to focus on university education and, sometimes on private international schools (Adick, 2018). Among transnational education studies, the focus on university degrees comes along with an interest in institutional aspects (Waters, 2018), and migrants' expectations of acquiring cultural capital abroad (Waters, 2015; Yu, 2021). This kind of international mobility associated with education is held for a strategy of the middle classes, however, migrants from lower socioeconomic backgrounds also follow migratory projects based on educational aspirations and opportunities (Carnicer, 2019; Fürstenau, 2019). For some of these migrants, particularly in the German case, accessing VET is a means to fulfill their migratory goals and educational aspirations, as well as to support their families and achieve upward mobility (Carnicer and Fürstenau, 2021).

The migration of these Brazilian who wish to pursue VET in Germany supports the notion that migration is a project seldom planned and achieved individually, as migrants are embedded in "multi-stranded social relations that link together their societies of origin and settlement" (Basch et al., 2005, p. 8). This highlights the networked aspect of migration, where interpersonal connections are crucial for its accomplishment. Migrant network analyses have focused on strong and weak ties established through personal connections to describe migratory pathways involving education (Brooks and Waters, 2010; Beech, 2015; Carnicer and Fürstenau, 2019). These network connections can also be established online, and be used both to navigate dangerous migration journeys as well as to access information about university education abroad (Dekker et al., 2018; Jayadeva, 2020). Following that premise, the next section explores the establishment and uses of such online ties in migratory contexts.

3.1. Latent ties connections and information precarity in migration contexts

Social media have the potential to bridge different social groups: aspiring with settled migrants, job-seekers with job-holders, individuals with experience in the foreign educational system and newcomers (Komito, 2011; Nedelcu, 2012; Jayadeva, 2020; Kotyrlo, 2020). Such online connections bridged through social media can be named "latent ties," i.e., connections "for which a connection is available technically but that has not yet been activated by social interaction" (Haythornthwaite, 2002, p. 385). On social media, latent ties can be the pool of users participating in an online forum: most of them do not know each other and a tie is established only when a user published something and receives replies from other users. These are at first rather instrumental connections that can serve to bridge people with experience in relevant matters for aspiring and newcomer migrants. For instance, latent ties can be activated in situations when official information is not available or when trustworthy information is hard to identify (Dekker et al., 2018). This situation has been described as "information precarity," a condition of instability, identified particularly among asylum seekers using media to collect information for decision-making and to access personal data, which leaves them potentially vulnerable to misinformation (Wall et al., 2017; Dekker et al., 2018). While the migratory context presented in this paper is different from that of asylum seekers. These migrants seem to prefer social media information based on personal experiences or shared by users with whom a stronger social connection is already established, as these is perceived as more trustworthy (Dekker et al., 2018). Along with other

platforms, Facebook groups are mentioned as convenient sources of information, however, the authenticity of such information is still cross-checked with personal acquaintances (Dekker et al., 2018, p. 8).

In migratory journeys related to education, Jayadeva (2020) has described the use of Facebook groups among Indian youth who wish to access universities in Germany. She suggests that information shared by latent ties can facilitate migrants' access to university education by expanding aspiring migrants' social capital (Jayadeva, 2020). In that context, Facebook groups are seen as a source of guidance in the process of applying to universities and even as a better alternative to paid education consultancy services. Although the migrant group studied by Jayadeva (2020) were in a different situation than the refugees studied by Wall et al. (2017) and Dekker et al. (2018), both groups of migrants rely on information shared on social media, evidencing the relevance of latent ties in migratory journeys, even in those in which information precarity is not necessarily the case (Jayadeva, 2020).

3.2. Brazilian migrants and latent ties

Brazilian migrants' fondness for social media is not new. Almost 10 years ago, Schrooten (2012) conducted a digital ethnography among Brazilian migrants living in Belgium who used Orkut (a platform deactivated in 2014). She pointed out that these groups "provide a variety of social capital … which assists in the migration transition" (Schrooten, 2012, p. 1,801). Schrooten reports political discussions, arrangements for in-person gatherings, and information exchanges about documentation and legal procedures and employment opportunities. Also researching Orkut, Oosterbaan (2010, 2013) reports that employment search was one of the most relevant topics in groups of Brazilians in Barcelona and Amsterdam. Oosterbaan (2013, p. 46) highlights that some groups support in-person meetings, which evidences a willingness to develop strong ties and trust in unknown people based on shared nationality, participation on an online forum, and possibly similar migratory situations. Latent ties are part of the networked aspects supporting migration aspirations and decision-making among Brazilian migrants (Dekker et al., 2016).

In the 2010s, both Oosterbaan (2010, 2013) and Schrooten (2012) reported similar levels of interaction in Brazilian Orkut groups in three European contexts, finding over a thousand communities with titles of "Brazilians in [location]" (Oosterbaan, 2010). Schrooten (2012) highlights that Orkut was embedded in migrants' daily life already before they migrated and, after migration, it became a relevant source of social, political, and cultural connection to Brazil. After Orkut was deactivated, migrants and aspiring migrants created new communities on Facebook—with no sign of diminished interest in social media networking. Researching Facebook groups of Brazilians in Sweden, Foletto (2018) reports groups with over 1.7 thousand participants and a mean of 66.8 monthly posts—similar amounts as among groups of Brazilians in Germany (see Table 1). The main feature of online migrant groups is, hence, information exchange and mutual support in the migration process. Latent ties established on social media are thus relevant among Brazilian migrants and aspiring migrants. It remains to be described the role of education-related topics in the activation of these ties.

4. Research design

Education-related topics figure among the most prevalent ones debated in groups of Brazilian migrants in Germany (Dedecek Gertz and Süßer, 2022), hence these topics are among the most important cues to activate latent ties (Haythornthwaite, 2002). These education-related topics are connected to levels beyond university education, such as language learning and accessing VET (Dedecek Gertz and Süßer, 2022). This paper looks from a qualitative perspective at a share of these posts used to determine the prevalence of education-related topics in groups of Brazilians in Germany.

To select relevant groups, I first used Facebook's search tool to look for groups containing "Brazilian" and "Germany" (in Portuguese) and gained access to 43 "active groups," i.e., groups with at least a thousand participants and three posts published in one week. Most groups required filling up a questionnaire upon entry, which I used to inform about my research interest. Also, on my Facebook profile, I am identified as a researcher and provide my contact information. These 43 active groups were divided into "location groups," "professional groups," "vocational education and training (VET) groups," and "other" (Brazilians who wish to work as Au Pairs or to do voluntary work, "gardening for Brazilians" etc.). Anyone with a Facebook account could join the groups, however, due to the titles containing variations of "Brazilians in Germany," the frequent discussion of topics related to regulations and requirements that apply to Brazilians in Germany, and the use of Brazilian Portuguese in the groups, the majority of participants are likely to be Brazilian.

After reading what was posted in these groups in 2020, some stood out due to the level of daily interactions: users engaged with posts commenting on their experiences, giving tips, or starting discussions based on their different experiences and opinions. Two groups from each relevant type were selected: two "location groups" and two "professional groups," both with the highest number of interactions and the only two "VET groups" available. "Other" groups had no relevant educational-related interactions and were therefore not selected. The amount of collected interactions (questions and answers), words per group, and participants at the time of the data collection were as follows:

TABLE 1 Interactions varied from over 800 words (in which concrete situations and doubts were explained, for instance) to 3 words (in short replies if someone asked for clarification to provide an accurate reply).

Groups	Interactions	Words	Participants
VET group 1	450	21.379	4.936
VET group 2	1,051	62.289	4.713
Location group 1	123	9.654	4.520
Location group 2	321	36.195	24.180
Nurses' group	153	13.909	3.944
IT group	199	11.789	2.480

In total, 2.297 interactions were collected. Although some groups had more interactions, the number of words is lower because the interactions (questions/answers) were shorter. For instance, Location group 2 had fewer interactions than VET group 1, but more words because interactions in Location group 2 were more detailed.

Posts made until the beginning of December 2020 were identified using Facebook's search tool and copied into a text editing document. Each group was screened for the following terms relating to formal education: learn, study, *Ausbildung* (the German word for VET), school, university, faculty, course, *Studienkolleg*,[1] classes, and course. All posts and their respective comments containing at least one of these terms were collected. Although this selection encompasses a timeframe in which migration was limited due to COVID-19 restrictions, the levels of interactions were still high. In the dataset, the only mention of COVID-19 in association with education is a reply by a group participant informing that "students with a valid registration at a German university can enter the country" (Location group 2). The content of the posts also reveals that, regardless of the restrictions, this period was still used for planning migratory journeys: "even though there's not much to do now, I'm already collecting information" (VET group 1), writes a group participant.

After the data collection, posts that contained sensitive information, posts in which terms were used out of context, and posts containing advertising were eliminated. The posts were coded using MAXQDA according to the following deductive/inductive categories (Schreier, 2012).

- Educational levels being discussed
  - Kindergarten
  - School (*Gymnasium/Gesamtschule/Realschule/Hautpschule*)
  - VET (divided by areas, e.g., care work, IT)
  - University (BA, MA, Ph.D.)
- What was being discussed about education
  - permanence in Germany (e.g., being enrolled in an educational institution to apply for a residence permit)
  - professional aspiration (e.g., fulfilling requirements to apply for certain jobs)
  - upward mobility (e.g., achieving a certain income)
  - cultural capital (e.g., value attributed to diplomas)
- Questions
  - recommendation or opportunity request (e.g., "I'm looking for a VET to work in a Kindergarten—if anyone knows about such an opportunity, let me know," VET group 1)
  - personal experiences (e.g., "has anyone undergone a certificate recognition lately and can tell me how it was?", VET group 1)
  - opinion request (e.g., "I'm having a hard time with the notary to have my high school certificate recognized—they claim a signature is missing but it is in fact there! What should I do?", VET group 2)
  - "information precarity" ["insecure, unstable, and undependable" information which could lead to potentially wrong, problematic or even dangerous decisions (Wall et al., 2017) such as "I heard say that having a university degree as a nurse is worthless. Is that true?", Nurses' group]
- Answers
  - based on "information precarity" (Wall et al., 2017) (wrong or incomplete information such as "people who cannot pay for VET can receive a public loan for that," VET group 1)
  - based on where to find official information (e.g., "you can find this information at the Job Center," VET group 1)
  - style or tone
    - e.g., detailed information (e.g., a 100-word answer about how to register in the city hall and the documents one has to present to start VET, including a comparison between Brazilian and German documents, as found in VET group 1)
    - e.g., frustrating, vague, or critical (e.g., "I'd also like more information about it but I could never find," VET group 1, or "if you have no experience in the area and have no degree, you can forget it!", IT group)
    - e.g., supportive (e.g., "if you're an engineer you have a great advantage! Just go have your diploma recognized," IT group)

A reliability test conducted by two trained coders resulted in a Cohen's Kappa value of 0.64, which can be considered "substantial" (McHugh, 2012, p. 279). To preserve users' anonymity, posts not will be reproduced word-by-word (Zimmer, 2010). As these groups can be found and accessed by anyone with a Facebook account, reproducing posts here would imply the possibility of de-anonymization. Thus, posts are paraphrased: names of places were substituted for similar ones, professions were substituted for other ones within the same field as the original, and the order of sentences was changed, as long as the sense of the content was not thereby lost. These paraphrased sentences serve as an illustration of patterns across the data.

5. Findings

Only two groups were bringing together Brazilians interested in pursuing higher education degrees in Germany: a group for Brazilian students and aspiring students of a university preparatory school (*Studienkolleg*) and one general group about studying in a German university. Although related to education, both groups did not reach the threshold to be considered "active groups," thus they were not part of the dataset. This relative inactivity of Facebook groups for Brazilians who wish to study at a German university is contrasting with findings by Jayadeva (2020) about Indian aspiring migrants with that same goal. Nevertheless, the comparative absence of active groups of Brazilians wishing to access

1 Public educational institutions that offer a one-year preparatory course for students who finished school outside Germany and wish to access a German university.

university education in Germany cannot be taken as evidence of lacking interest in that educational level. A hypothesis for that is that Brazilian students who wish to apply for university studies in Germany might rely on other sources of latent ties (such as existing specialized Instagram profiles or WhatsApp groups), on strong ties who already live in Germany, on paid consultancies, or ask questions directly to the institutions where they wish to study.

Although the active groups with the most participants is one of the location groups, the largest datasets came from the two VET groups. That is not surprising as VET groups are specific to those who are pursuing that educational level or who wish to do so, hence many interactions in these groups contained the words sampled in the data collection. Participants in location groups who ask questions relating to education are probably established in the city and are seeking educational options for their children, as school was a frequently used word in those groups. An explanation for the comparatively low educational-related topics in the IT group may be that these professionals can find jobs without a degree or without pursuing education in Germany. The number of interactions in the nurses' group is lower in comparison to the IT group, however, as the number of words in the nurses' groups is larger, interactions about education in the nurses' group are more extensive. This is probably due to the educational requirements for these professionals in Germany, which generates longer discussions.

As expected from forum-like online groups, interactions in the collected data follow a question-answers structure. Divergent personal experiences and opinions lead to debates but these were always replying to practical questions: no user posed divisive questions as a starting point, which suggests a common interest of participants to use the latent ties to exchange practical information and support each other (Jayadeva, 2020).

The findings indicate that there is a demand for educational levels beyond university degrees among migrants. Additionally, economic and gender differences become visible in discussions about expectations and frustrations related to education and migration. Also, university studies are discussed with frustration or are deemed irrelevant in the labor market, while it is associated with acquiring cultural capital for children. Finally, the detailed and supportive tone of some interactions, and the use of Facebook groups by some migrants to confirm information collected elsewhere point out that latent ties are trusted in education-related information exchanges.

5.1. Demand for transnational education beyond university degrees

Across groups, questions related to accessing university degrees are mostly associated with educational aspirations toward children or teenagers, as in:

> "My daughter is almost finished with high school. After she graduates, we intend to move to Germany. I am looking for information about the process so that she can enter a German university in the future. I would like to know what would be the step-by-step application process, please." (VET group 1)

> "I like to travel a lot and I want my children to study at an internationally recognized German university. Although I earned more money in Brazil, I don't regret coming to Germany also because of that [traveling and educational aspiration toward children]." (IT group)

Latent ties are thus activated to collect information and reinforce the cultural capital attributed to university education in migratory trajectories (Waters, 2015; Yu, 2021). Another circumstance in which university education was mentioned was when migrants or aspiring migrants provided background information about themselves with the expectation of having accurate replies according to their case, hence a rather instrumental mention of that level of education:

> "I already have a BA in Mathematics and Biology here in Brazil. Do you know if this could count toward diminishing the number of seminars I have to take for a VET?" (VET group 2)
>
> "Can people who studied in a private university in Brazil also work in Germany?" (Nurses' group)

In location groups, university education is mentioned by newcomer students. However, the information exchange encompasses rather peripheral aspects and education is mentioned as a self-introduction:

> "I'm a PhD student and I'm going to study in [city in Germany] in a few months from now. I'm trying to get to know the city from afar and learn how to find a place to stay. Which neighborhoods do you recommend?" (Location group 2)

The reasons why none of these groups seem to be used to collect information about accessing university education remains to be established, but the hypothesis I suggest for the lack of Facebook groups of Brazilians interested in accessing German universities might also apply to the lack of interactions about it.

VET requirements, experiences, and opportunities about that educational level, as well as school for children and teenagers, were main topics discussed across groups (cf. Dedecek Gertz and Süßer, 2022). In location groups, education inequalities in Brazil were also a topic of discussion. In one of these groups, when a newcomer migrant asked about which neighborhood would be recommended to live in, the availability of schools and Kindergarten was mentioned among other practical aspects, like transportation. Newly arrived parents also use the location groups to seek information about the educational system in Germany. Main concerns were the quality of educational institutions in Germany:

> "I've heard that public education in Germany is great, and there are even people who think that it is better to study there than in the most expensive private school in Brazil. Yet, I've heard parents complaining because they cannot find a place in schools. Is it also difficult in the private ones?" (Location group 2)

These discussions further reveal a rather instrumental discussion around education, which might inform broader migratory and settlement decisions. Other school-related posts

were about fees and experiences with children and teenagers' social and linguistic adaptation. Answers to such posts warned about the tendency of teachers not to recommend migrant children to the *Gymnasium*, consequently, leaving these children with a harder pathway to access universities (Trebbels, 2015; Hunkler, 2016):

> "Schools will try to push many things on your son, but be sure to tell them you want him to go to the *Gymnasium*! They always try to push foreigners away from there. They'll tell you that the other school types are easier for your son and that he can still enter university after he has done VET—don't fall for that!" (Location group 2)

Although VET groups are not exclusively for care work or education-related professions, these areas are the most mentioned ones. In general, questions and answers about VET encompassed elementary ones, such as what it is, entry requirements, class schedules, teaching style, where to find vacancies, as well as the labor market:

> "Could someone here explain to me what is *Ausbildung*?" (VET group 1)
>
> "I've started a BA to be a nurse [in Brazil] but I didn't finish. Does anybody know if I can skip some classes from VET courses? And is it paid? I'm learning German on the level A2." (Nurses' group)
>
> "Did anyone in this group manage to pursue VET in an area that they reeeeally wanted? I see most people choosing care work because of the labor market…" (VET group 2)
>
> "Can anyone tell me what are all the requirements to apply for VET. Documents and all? Thanks." (VET group 2)
>
> "Is the *Ausbildung* valid only in Germany?! Like, if I go back to Brazil this certificate is worth nothing?!" (VET group 2)
>
> "I've graduated in nutritional sciences, but I've decided to change areas and now I'm specializing in web development here in Brazil. After that, I'd like to do a specialization in Germany. Is it a good idea? Does anyone recommend a VET course?" (IT group)

Questions like "what is an *Ausbildung*?" might be due to a translation issue or limited German knowledge because, in the Facebook groups, VET is mostly referred to with the German word which is probably still unkown to newcomer or aspiring migrants. Such questions about elementary aspects reveal that latent ties might be a first source of information about such educational levels beyond university degrees.

Some answers to questions about VET were lengthy and mentioned the need to show certificates of language proficiency and school completion, and some users also indicated where specialized information could be sought:

> "You must have your documents and diplomas translated and recognized through the apostille convention, including high school, VET or higher education. After that, they will be forwarded to the Ministry of Education in the region where you live in Germany, where the equivalence will be done to determine whether or not you are eligible to pursue VET. In this process, the job center in your city can offer direct assistance. It is important to note that starting VET and learning the language are two separate things. To begin a VET course, you must have at least a B2 level of proficiency in the German language." (VET group 1)

Questions about the labor market after VET also generated more elaborated replies, mostly based on personal experience:

> "Much more important than having a VET certificate is to have experience. But even folks with less experience have proportionally higher salaries here because of the high demand for IT professionals, I know this because we're hiring a lot in the company I work for and I am participating in the selection processes." (IT group)

The discussion about educational levels beyond university degrees appears to be an important one across the sampled groups. Education seems to be mostly discussed on an instrumental level: as a means to fulfill migratory aspirations by being able to apply for a visa as well as to make decisions such as where to live based on access to schools for children. Accessing VET, in particular, is viewed as a way to fulfill both educational and migratory aspirations (Carnicer, 2019; Fürstenau, 2019), even if that might result in frustration for a perceived devaluation of skills or having to choose a profession based mostly on the labor market (Parreñas, 2015).

5.2. Economic and gender differences in education-related discussions

Economic and gender disparities are particularly visible in the groups of IT professionals and nurses. These professions are highly gendered, and although it cannot be generalized that mostly men participate in the IT group and mostly women participate in the nurses' group, in the dataset, most posts in the nurses' group were made by users with typical Brazilian female first names, who used adjectives and pronouns in the female form. In the IT group, posts were mostly made by users with typical male first names, who used adjectives and pronouns in the masculine form. Based on the composition of the dataset, it appears that education-related topics are mostly discussed by women in the nurses' group, and by men in the IT group, even though the overall gender balance in both groups cannot be determined with absolute certainty.

In the nurses' group, common debates were about whether the salary paid in Germany is enough to cover basic expenses, including children's education: they wish to know about costs and experiences with German schools, the chances migrant children have of being accepted at a German university or VET:

> "It was a very difficult period because I came first to Germany and my daughter and husband afterwards. But I see how much this pain was worth it, especially for my daughter. Here children can have the profession they want, independently of the family's financial situation." (Nurses' group)
>
> "Can I live in the city of Hildesheim and work as a nurse on a salary of 1.200 Euros during VET? I'm wondering about the cost of living for my family…" (Nurses' group)

> "Living in Germany will not make you rich, but you'll have a better life, better education for your children, more opportunities and safety! Here you can earn a good or a bad wage, but NEVER as bad as in Brazil." (Nurses' group)

Children are also mentioned in connection to hiring companies that offer services to mediate nurses' migration—such companies are one of the most discussed topics in the group. Some posts expose frustration and regrets, as a comment expressing concerns that such companies would not accept candidates with children. Some of these hiring companies pay for German courses and for VET in Germany, which is mentioned as an attractive offer, especially for aspiring migrants from low socioeconomic backgrounds, yet this process is not always transparent and reliable (CORRECTIV, 2020). Apart from being able to present the expected educational certificates, a central topic of concern regarding education and profession in the nurses' group is language knowledge. Aspiring migrants who are probably in their first steps of finding ways to migrate are mocked when asking about the need to have a good command of the German language: with sarcasm, other group participants tell the newcomer that it is "impossible" to acquire the needed certification and to work in Germany as a nurse without knowing German. Although participants show support and understanding for aspiring migrants, criticism is sometimes present in the nurses' group:

> "I came to Germany through that company. I am at the B2 level and these months have been very intense with German classes from Monday to Friday. Class attendance is very important, because not only the school evaluates your performance but also your future employer. The point is, you need to learn German, there is no magic, you need to dedicate yourself and make an effort to understand the language." (Nurses' group)
>
> "Do you even understand German? Have you read the whole explanation about degree validation on the website? Read it first and only then come discuss this with me." (Nurses' group).

In the IT group, there are mentions of salary expectations higher than in the nurses' group. However, these comments are contradicted by a few other group participants demanding aspiring migrants who are IT professionals to be careful not to assume that a five-digit income is a norm in the German job market:

> "A high salary for me is above 97k. I don't know any IT professional who has a hard time in Germany, even if they speak only English. I spent the first 10 years of my career in Brazil and nowadays I find it funny that I thought my salary was good there. Here I buy what I want and I can still save some money." (IT group)
>
> "At the beginning, you'll earn more than 40k but with some years of experience you'll earn up to 100k in some regions in Germany." (IT group)
>
> "I already earn over 5 thousand Euros in Brazil. I'm afraid my quality of life living with that amount in Germany would fall." (IT group)

Income expectations appear twice in relation to children's education: once in a discussion about the "advantages of public services in Germany" and another in a post by a user expressing the wish that their children will access "internationally prestigious German universities" (mentioned in Section 5.1). The state's financial support for parents is also positively associated with migrating with children. Learning German to access the job market and pursuing educational aspirations in Germany is associated with maintaining a middle-class status or with upward mobility.

> "With my Portuguese passport, will I be able to work and bring my wife with me? I'm thinking about waiting until my son is 6 and then go to Germany for a master's degree. Do you think it would be worth it?" (IT group)
>
> Answering the question above: "Bro, why would you miss years of child benefits?! Come soon, dude!" (IT group)

High salaries, no need to prove formal education or language knowledge, EU citizenship,[2] and migrating without having to rely on intermediary companies reveal a comfortable status that IT workers possibly already had in Brazil and are likely to maintain in Germany. Due to high salaries and the disregard for state-recognized degrees in hiring processes, migrants working in IT might have an easier migratory pathway if compared to nurses (cf. Raghuram, 2004). The shared interest in migrating and maintaining socioeconomic status working in IT seems to create room for fraternal conversations in this group, in which unknown people treat each other as "bro" and "dude". Whereas, in the nurses' group, the lack of German knowledge was sometimes mocked, in the IT professionals' group this was a neutral fact: if a person speaks German, good for her, if not, group participants tended to still encourage her to pursue their plans. Such supportive messages might contribute to building a community sense among people who serve as latent ties (Jayadeva, 2020) and contribute to ascribing trustworthiness to information shared by participants in these networks, as further discussed in Section 5.4 ("trust in latent ties in education-related topics"). The frustration expressed in the nurses' group might also serve as a way to build a sense of shared experience among group participants, which might fulfill a similar role as supportive answers among IT professionals. The economic and gendered differences in connection to education are evidenced in how group participants exchange information about children's education and how that connects with other migratory conditions, such as salary expectations and educational requirements for each profession. In both groups, migrating with children raises concerns about education and this is discussed rather in terms of maintaining or achieving a class status (Waters, 2015), however differences based on apparent previous socioeconomic conditions become visible in the ways how that is discussed: while IT professionals hope their children will access "prestigious universities," nurses hope for better education and opportunities for their children.

2 Some EU-countries allow double citizenship based on the principle of jus sanguinis, i.e., for the case in this paper, Brazilians who can prove they have ancestors from, for instance, Germany, Italy, Portugal or Spain (the most common EU-ancestries in Brazil) can apply for citizenship in those countries.

5.3. University studies: "irrelevance" and frustration

In Brazil, nurses need a bachelor's degree to exercise their profession. In Germany, they need a VET certificate, which must be recognized by the German state through a national exam. Particularly in the nurses' group, this classification of university degrees as VET is debated with frustration:

> "In Germany, our degrees are recognized as VET, which is not even considered higher education here." (Nurses' group)
>
> "I've been a nurse for 20 years in Brazil. I received a letter a few days ago informing me that I must do a training which lasts from 3 to 6 months to have my degree recognized. The more I learn about how things work here, the more confused I get." (Nurses' group)
>
> "My brother works at the university hospital here, even though he is very experienced, he can't do half of what he did in Brazil. Although he arrived here with a reasonable level of German, he had to do very simple work. He was frustrated when he saw the other nurses doing crap procedures and he couldn't say a word." (Nurses' group)
>
> "I have a BA in pedagogy but I was just informed that it won't be recognized here as such. Has anyone been through this as well? What should I do?" (VET group 1)
>
> Answering the question above: "If they told you that, that's it. You'll have to study again here and you can spare your energies fighting this system because in Germany it's like that." (VET group 1)

Having work experience disregarded and university degrees recognized as VET in Germany is met with remorse, particularly among nurses. The high value attributed to university degrees in the nurses' group is also visible in the comments of a group participant who challenged others by claiming to hold a bachelor's in the area from a German university. This participant felt offended by those who denied the existence of that degree. Such attitude illustrates the social value attributed to the degree among these professionals and the frustration of not having it recognized or compensated as that of a university graduate in Germany.

For IT professionals, due to the deregulated nature of this labor market, having a degree is discussed as being an asset but not particularly relevant:

> "I have friends who were also hired in Germany [for an IT position] and don't have any degree or certificate, but of course that makes it easier to find a job." (IT group)
>
> "I know several people without a degree who work with me, even earning more than me. Many started a degree, but didn't finish it. It's quite irrelevant." (IT group)

Unlike in the nurses' group, in the IT group, there were fewer group participants interested in pursuing VET. This might be because Brazilian degrees or VET certificates are accepted by companies in this profession without the need of having them officially recognized or because of the promises of finding such jobs by proving experience in the area, as mentioned in the group.

Facebook groups are also used by aspiring migrants with university degrees frustrated with salaries in Brazil and interested in VET as a means to migrate:

> "I need help. I have a MA degree in pedagogy and I earn way too little [in Brazil]. I want to try to go to Germany, so I think pursuing VET is the best way. I don't want to go to university in Germany! I want something that gives me a job." (VET group 2)
>
> "I have a BA in translation, does anyone know if with that I can work at a Kindergarten? I'm fine even to be an assistant or something like that." (Location group 2)

Within the group of IT professionals, having university degrees is described as beneficial, but not essential for finding a job in Germany. On the other hand, in the nurses' group, a topic associated with university studies is frustration due to the perceived devaluation of their degrees in Germany. Similarly, other aspiring migrants with university degrees in other areas display frustration, as they perceive their degrees as being undervalued in Germany. These two latter cases seem aligned with Parreñas (2015)' concept of "contradictory class mobility": migrants seem to perceive, or even aspire to, a decrease in social status associated with university degrees and accept jobs for which they may be overqualified, in exchange for an expected economic improvement and stability as well as gaining access to public services, such as schools for their children.

5.4. Trust in latent ties in education-related topics

Although not always the case, interactions across groups were mostly supportive and group participants provided suggestions and were willing to share their experiences. That is particularly the case of users searching for information about the requirements to pursue VET, which is also linked to the requirements to be granted a visa. Some participants mention that they have already searched for information in official sources, such as educational institutions and governmental websites, yet they claim to be confused and seek clarifications and ask for personal experiences on Facebook groups. Users who claim to have a good command of German also mention having difficulty finding information and thus resort to Facebook groups:

> "I've looked around in the websites and it looks like there is no English-taught BA in Engineering here. But maybe there are for other areas? Does anyone know of any degree like that?" (Location group 2)
>
> "To work in Germany in a Kindergarten, what should I do? I've graduated in Linguistics [in a Brazilian public university] and I already speak German." (VET group 1)

Even elementary questions, such as "what is an *Ausbildung*?", receive answers such as:

> "Unlike Brazil, where hairdressers and bricklayers learn their trade on the job, almost all professions in Germany require VET, which is called *Ausbildung*. It is a very good way to enter the job market because students are referred to work even during the course and most of the time they get a real job after they're done studying. It's also a good way to afford costs of living because you get paid to do an *Ausbildung*." (VET group 1)

The author of this last reply draws a comparison between Brazil and Germany, explains what is an *Ausbildung*, and what are its advantages, formulating an elaborated answer. Such an answer could have been found on other websites (the Goethe Institute in Brazil or blogs of Brazilians living in Germany, for instance), however, the user posing the question prefers to activate latent ties to find an answer. Some of these answers are accompanied by motivational messages along the lines of "I have done it, you can do it too" or "believe in yourself and go get it" (VET group 1). Asking elementary questions, and receiving elaborated and supportive answers for it points out both that some aspiring migrants might use Facebook groups as their first source of information about education beyond university levels in Germany and that group participants share a sense of empathy or solidarity, similarly as described by Jayadeva (2020).

Another use of these groups seems to confirm whether the information collected elsewhere is accurate. Such questions usually do not specify the source of the information the person holds:

> "I hear some people saying that [an institution] offers payment to pursue VET. I'd like to know whether that's true. Does anyone have experience with this?" (VET group 2)
>
> "I've heard that there is some system for migrants to complete high school here. Do you think I could do that with my elementary school certificate?" (VET group 2)

It appears that these individuals are seeking second opinions for their hearsay information by consulting with unknown participants of Facebook groups. Although they may also seek second opinions on official websites or by contacting institutions, relying on latent ties to clarify doubts demonstrates that the experiences and opinions of Facebook group members about education in Germany are considered valuable and trustworthy. Finally, some group members empathize with the position of these aspiring or newly arrived migrants who are seeking information on Facebook groups and provide detailed and supportive answers. This might reinforce a perception of reliability or trustworthiness among the group. Dekker et al. (2018) described a similar phenomenon, but in the other direction, with migrants checking information collected from latent ties against the knowledge and experience of personal acquaintances. However, in the case of migrants who are not fleeing war or conflict and who employ social media to search for education-related information, latent ties appear to be relied upon and utilized for verifying information.

6. Conclusion

Non-university education is a main topic of discussion in the analyzed migrant Facebook groups (Dedecek Gertz and Süßer, 2022). University studies were also present in the interactions, however other educational levels, VET in particular, were an important demand. This outcome is consistent with other studies which point out that transnational education goes beyond university degrees and extends to educational levels that may facilitate access to education abroad for students from lower socioeconomic backgrounds (Carnicer, 2019; Fürstenau, 2019). These other studies relied on network analyses of strong tie connections to describe how these migrants accessed education abroad. While it is not possible to establish whether the aspiring migrants whose interactions on Facebook groups were described here indeed migrated, it is possible to claim that latent ties (Haythornthwaite, 2002) are used to acquire and cross-check information about education abroad, particularly VET. Hence, such ties established online are also part of networks of transnational migratory pathways involving education (Jayadeva, 2020)—also beyond university levels.

Education is often discussed on an instrumental level among aspiring migrants in nurses' and VET groups, with a focus on migrating through such educational opportunities. In location and IT groups the interest in education may assume a character of cultural capital, especially when it comes to children's education. The interactions reveal concerns about fees in international schools, about the possibility of children not being able to reach the *Gymnasium* and proceed to a "prestigious German university," a similar concern of East Asian families of the middle and upper-middle classes who expect that their children would acquire cultural capital through transnational education (Waters, 2015). Other aspects of formal education, such as proof of language proficiency and degrees, are relevant for all groups, but not much to IT professionals, who comment on the possibilities of applying for jobs and visas without either knowing the language or holding tertiary education degrees. This is unthinkable for migrant nurses, who must master the language and either have their Brazilian bachelor's degree recognized in Germany or pursue VET in the country, which reveals the advantages of tech workers, who may face fewer hindrances and frustrations than care workers (cf. Raghuram, 2004). Hence, instead of using education as a means or a goal of migrating, migrants with more stable economic means seem to associate education with the maintenance of socioeconomic status. For aspiring migrants in other economic conditions, a contradictory class mobility (Parreñas, 2015) by pursuing VET seem to be desirable and sometimes recommended by other migrants in the groups, even if the devaluation of work experience and Brazilian university degrees is met with frustration.

Differently than in other migratory contexts, when information collected online is validated with strong or weak ties (Dekker et al., 2018), some of the interactions described here point out that latent ties are also used to confirm information collected elsewhere. This is most likely related to the different contexts of migrants—who are not fleeing war and requesting asylum,

as the ones researched by Wall et al. (2017) and Dekker et al. (2018)—and the sampling for education-related topics, as migration associated with education demands a preliminary personal organization, having documents translated, providing language certificates, among other requirements. The supportive tone, attentive answers, and descriptions of personal experiences provided by some group participants might also contribute to the apparent trust in information shared by latent ties. This interest in seeking information and support among migrants in similar situations aligns with what was observed a decade ago, on a social media platform which no longer exists, among Brazilian migrants (Schrooten, 2012; Oosterbaan, 2013), and also more recently, among Indian aspiring migrants on Facebook and WhatsApp groups (Jayadeva, 2020). Hence, this phenomenon might also be identified among migrants from other nationalities and it is likely to continue regardless if a certain social media platform ceases to exist.

Some of the information shared in these groups is not accurate and the snapshot of the experience of someone else might convey only a partial truth about migrating and accessing education abroad. Hence, the role of information precarity (Wall et al., 2017; Dekker et al., 2018) in the context of migration involving education can be further researched through interviews. Another aspect that demands further research is whether education generally and VET, more specifically, is also an important topic in other national contexts. Because in Germany VET studies are paid, education-related debates are likely to be different among migrants seeking to access education in other countries. The economic and gender differences identified particularly in groups of nurses and IT professionals raise the question of whether latent ties connections may reproduce inequalities in education-related migratory pathways similarly as identified in networks of strong and weak ties (Beech, 2015). Future research could further examine whether latent tie connections contribute to or challenge these inequalities.

Data availability statement

The dataset used for this article is not available for immediate access due to concerns about potential de-anonymization.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

Adick, C. (2018). Transnational education in schools, universities, and beyond: definitions and research areas. *Transnat. Soc. Rev.* 8, 124–138. doi: 10.1080/21931674.2018.1463057

AUBI-plus (2023). *Gehalt in Der Ausbildung [Salary during VET]*. AUBI-Plus. Available online at: https://www.aubi-plus.de/ausbildung/ausbildungsverguetung/ (accessed April 14, 2023).

Basch, L. G., Schiller, N. G., and Blanc, C. S. (2005). *Nations Unbound: Transnational Projects, Postcolonial Predicaments, and Deterritorialized Nation-States*. London: Routledge. doi: 10.4324/9780203347003

Beech, S. E. (2015). International student mobility: the role of social networks. *Soc. Cult. Geogr.* 16, 332–350. doi: 10.1080/14649365.2014.983961

Brooks, R., and Waters, J. (2010). Social networks and educational mobility: the experiences of UK students. *Glob. Soc. Educ.* 8, 143–157. doi: 10.1080/14767720903574132

Bundesamt für Justiz (2005). *Berufsbildungsgesetz (BBiG):§ 17 Vergütungsanspruch Und Mindestvergütung. Gesetze Im Internet*. Available online at: https://www.gesetze-im-internet.de/bbig_2005/BJNR093110005.html#BJNR093110005BJNG000101128 (accessed March 23, 2005).

Câmara, A. C. M., and Almeida, A. M. F. (2012). Classe social na creche. *Educ. Linguagem* 15, 35–64. doi: 10.15603/2176-1043/el.v15n26p35-64

Carnicer, J. A. (2019). Transnational migration and educational opportunities: A case study of migration from Brazil to Germany. *London Rev. Educ.* 17, 14–25. doi: 10.18546/LRE.17.1.02

Carnicer, J. A., and Fürstenau, S. (2019). Editorial. Diskurs Kindheits- und Jugendforschung. *Discourse J. Childh. Adolesc. Res.* 4, 385–89. doi: 10.3224/diskurs.v14i4.01

Carnicer, J. A., and Fürstenau, S. (2021). "Transnational mobility, education and social positioning between Brazil and Germany," in *The Palgrave Handbook of Youth Mobility and Educational Migration*, ed D. Cairns (Cham: Springer International Publishing), 107–117. doi: 10.1007/978-3-030-64235-8_11

Chang, S., Gomes, C., and Martin, F. (2018). "Transnational migrations in the Asia-Pacific: transformative experiences in the age of digital media," in *Transnational Migrations in the Asia-Pacific: Transformative Experiences in the Age of Digital Media*, ed C. Gomes and B. S. A. Yeoh (London; New York, NY: Rowman and Littlefield), 3–23.

CORRECTIV (2020). *An Unsettling Business: How Agents Are Commoditizing Foreign Nurses for German Healthcare*. Correctiv.Org. Available online at: https://correctiv.org/en/latest-stories/2020/11/25/nurses-for-sale/ (accessed November 25, 2020).

Dedecek Gertz, H., and Süßer, F. (2022). Migration and educational projects online: A topic modelling approach of discussions on social media groups. *Mediální studia*. 16, 236–256. Available online at: https://medialnistudia.fsv.cuni.cz/front.file/download?file=medialni_studia_2_2022_5%20(1).pdf

Dekker, R., Engbersen, G., and Faber, M. (2016). The use of online media in migration networks: the use of online media in migration networks. *Popul. Space Place* 22, 539–551. doi: 10.1002/psp.1938

Dekker, R., Engbersen, G., Klaver, J., and Vonk, H. (2018). Smart refugees: How syrian asylum migrants use social media information in migration decision-making. *Social Media. Soc.* 4, 1–11. doi: 10.1177/2056305118764439

Destatis (2022). *Anzahl Der Ausländischen Studierenden an Hochschulen in Deutschland Im Wintersemester 2021/2022 Nach Herkunftsländern [Number of Foreign Students at Universities in Germany in the Winter Semester 2021/2022 by Country of Origin]*. Statistisches Bundesamt. Available online at: https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bildung-Forschung-Kultur/Hochschulen/Publikationen/Downloads-Hochschulen/studierende-hochschulen-endg-2110410227004.pdf?__blob=publicationFile (accessed March 21, 2023).

Dias Silva, T. (2020). 'Ação Afirmativa e População Negra Na Educação Superior: Acesso e Perfil Discente'. Brazilian Institute of Applied Economic Research (IPEA). Available online at: https://www.ipea.gov.br/portal/images/stories/PDFs/TDs/td_2569.pdf (accessed May 31, 2023).

Dumont, H., Maaz, K., Neumann, M., and Becker, M. (2014). Soziale ungleichheiten beim übergang von der grundschule in die sekundarstufe i: theorie, forschungsstand, interventions- und fördermöglichkeiten. *Zeitschrift Erziehungswissenschaft* 17, 141–165. doi: 10.1007/s11618-013-0466-1

Foletto, L. (2018). Usos Sociais Do Facebook Por Migrantes Brasileiros Na Suécia: Os Grupos Na Construção Identitária. *Mediação* 20, 93–112.

Freie und Hansestadt Hamburg (2022). *Informationen Über Das Verfahren Zur Anerkennung Einer Im Ausland Abgeschlossenen Qualifikation in Einem Gesundheitsfachberuf*. Available online at: https://www.hamburg.de/contentblob/2914376/de36f733f87ca6144fdad5cff1da9d9d/data/anerkennung-ausbildung-gesundheitsfachberuf-dt.pdf (accessed April 17, 2023).

Fürstenau, S. (2019). Educational aspirations of underprivileged female migrants. An ethnographic case study of a transnational network of care workers between Brazil and Germany. *Zeitschrift Erziehungswissenschaft* 22, 185–202. doi: 10.1007/s11618-019-00882-4

Glassdoor (2023a). *Gehalt Als Krankenpfleger in Deutschland*. Glassdoor. Available online at: https://www.glassdoor.de/Geh%C3%A4lter/krankenpfleger-gehalt-SRCH_KO0,14.htm (accessed April 14, 2023).

Glassdoor (2023b). *Salários Do Cargo de Especialista Em TI - Brasil*. Glassdoor. Available online at: https://www.glassdoor.com.br/Sal%C3%A1rios/especialista-em-ti-sal%C3%A1rio-SRCH_KO0,18.htm (accessed April 14, 2023).

Glassdoor (2023c). *Gehalt Als IT Specialist in Deutschland*. Glassdoor. Available online at: https://www.glassdoor.de/Geh%C3%A4lter/it-specialist-gehalt-SRCH_KO0,13.htm (accessed April 15, 2023).

Glassdoor (2023d). *Salários Do Cargo de Enfermeiro – Brasil*. Glassdoor. Available online at: https://www.glassdoor.com.br/Sal%C3%A1rios/enfermeiro-sal%C3%A1rio-SRCH_KO0,10.htm (accessed April 15, 2023).

Goethe-Institut (2023). *Goethe-Zertifikat B1*. Goethe-Institut. Available online at: https://www.goethe.de/ins/br/de/sta/poa/prf/gzb1.html (accessed April 17, 2023).

Haythornthwaite, C. (2002). Strong, weak, and latent ties and the impact of new media. *Inform. Soc.* 18, 385–401. doi: 10.1080/01972240290108195

Hunkler, C. (2016). "Ethnische unterschiede beim zugang zu beruflicher ausbildung," in *Ethnische Ungleichheiten im Bildungsverlauf*, ed C. Diehl, C. Hunkler, and C. Kristen (Wiesbaden: Springer Fachmedien Wiesbaden), 597–641. doi: 10.1007/978-3-658-04322-3_14

IBGE (2022). *Acesso à Internet e à Televisão e Posse de Telefone Móvel Celular Para Uso Pessoal 2021*. Instituto Brasileiro de Geografia e Estatística. Available online at: https://biblioteca.ibge.gov.br/visualizacao/livros/liv101963_informativo.pdf (accessed March 21, 2023).

Jayadeva, S. (2020). Keep calm and apply to germany: how online communities mediate transnational student mobility from India to Germany. *J. Ethnic Migrat. Stud.* 46, 2240–2257. doi: 10.1080/1369183X.2019.1643230

Komito, L. (2011). Social media and migration: virtual community 2.0. *J. Am. Soc. Inform. Sci. Technol.* 62, 1075–1086. doi: 10.1002/asi.21517

Kotyrlo, E. (2020). Impact of modern information and communication tools on international migration. *Int. Migr.* 58, 195–213. doi: 10.1111/imig.12677

Mafaalani (2021). *Mythos Bildung: die ungerechte Gesellschaft, ihr Bildungssystem und seine Zukunft: mit einem Zusatzkapitel zur Coronakrise. 2. Auflage 2021 KiWi 1795*. Köln: Kiepenheuer and Witsch.

Make it in Germany (2022a). *Visum Für IT-Spezialisten. Make It in Germany - Das Portal Der Bundesregierung Für Fachkräfte Aus Dem Ausland*. Available online at: https://www.make-it-in-germany.com/de/visum-aufenthalt/arten/weitere/it-spezialisten (accessed March 08, 2022).

Make it in Germany (2022b). *Pflegekräfte. Make It in Germany - Das Portal Der Bundesregierung Für Fachkräfte Aus Dem Ausland*. Available online at: https://www.make-it-in-germany.com/de/arbeiten-in-deutschland/gefragte-berufe/pflegekraefte#:$\sim$:text=Anerkannter%20Abschluss%3A%20Ihr%20Abschluss%20als,gleichwertig%20zu%20deutschen%20Abschl%C3%BCssen%20ist (accessed April 04, 2022).

Make it in Germany (2023). *Gefragte Berufe. Make It in Germany - Das Portal Der Bundesregierung Für Fachkräfte Aus Dem Ausland*. Available online at: https://www.make-it-in-germany.com/de/arbeiten-in-deutschland/gefragte-berufe (accessed April 17, 2023).

McHugh, M. L. (2012). Interrater reliability: the kappa statistic. *Biochem. Medica* 22, 276–282. doi: 10.11613/BM.2012.031

Ministério das Relações Exteriores (2021). *Comunidade Brasileira No Exterior - Estimativas Referentes Ao Ano de 2020*. Brazilian Ministry of International Relations. Available online at: https://www.gov.br/mre/pt-br/assuntos/portal-consular/arquivos/ComunidadeBrasileira2020.pdf (accessed February 28, 2023).

NapoleonCat (2022). *Distribution of Facebook Users in Brazil as of April 2022by Gender [Graph]*. Available online at: https://www.statista.com/statistics/199239/distribution-of-users-on-facebook-brazil-gender/ (accessed April 01, 2022).

Nedelcu, M. (2012). Migrants new transnational habitus: rethinking migration through a cosmopolitan lens in the digital age. *J. Ethnic Migr. Stud.* 38, 1339–1356. doi: 10.1080/1369183X.2012.698203

Olczyk, M., Seuring, J., Will, G., and Zinn, S. (2016). "Migranten und ihre Nachkommen im deutschen Bildungssystem: Ein aktueller Überblick," in *Ethnische Ungleichheiten im Bildungsverlauf*, eds C. Diehl, C. Hunkler, and C. Kristen (Wiesbaden: Springer Fachmedien Wiesbaden), 33–70. doi: 10.1007/978-3-658-04322-3_2

Oosterbaan, M. (2010). Virtual migration. Brazilian diasporic media and the reconfigurations of place and space. *Revue Eur. Migr. Int.* 26, 81–102. doi: 10.4000/remi.5037

Oosterbaan, M. (2013). "Orkontros: Brazilian migrants, social network sites and the European city," in *Contemporary Culture*, eds J. Thissen, R. Zwijnenberg, and K. Zijlmans (Amsterdam: Amsterdam University Press), 37–50. doi: 10.1017/9789048517954.003

Parreñas, R. S. (2015). *Servants of Globalization: Migration and Domestic Work*. 2nd Edn. Stanford, CA: Stanford University Press. doi: 10.1515/9780804796187

Raghuram, P. (2004). Migration, gender, and the it sector: intersecting debates. *Womens Stud. Int. Forum* 27, 163–176. doi: 10.1016/j.wsif.2004.06.006

Sampaio, G. T. C., and Oliveira, R. L. P. (2016). Dimensões Da Desigualdade Educacional No Brasil. *Rev. Brasil. Polít. Adminis. Educação* 31, 511. doi: 10.21573/vol31n32015.60121

Schreier, M. (2012). *Qualitative Content Analysis in Practice*. Los Angeles, CA: SAGE.

Schrooten, M. (2012). moving ethnography online: researching brazilian migrants online togetherness. *Ethnic Rac. Stud.* 35, 1794–1809. doi: 10.1080/01419870.2012.659271

Spyer, J. (2018). *Mídias Sociais No Brasil Emergente: Como a Internet afeta a Mobilidade Social. Why We Post*. São Paulo : Fortaleza : London: EDUC; Editora Armazém da Cultura; UCL Press. doi: 10.2307/j.ctv550d07

Statista (2022). *Social Network User Penetration in Brazil from 2018 to 2027*. Available online at: https://www.statista.com/statistics/244933/social-network-penetration-in-brazil/ (accessed June 15, 2022).

Statistisches Bundesamt (2022). *Anzahl Der Ausländer in Deutschland Nach Herkunftsland von 2019*. Bis 2021. Statista. Available online at: https://de.statista.com/statistik/daten/studie/1221/umfrage/anzahl-der-auslaender-in-deutschland-nach-herkunftsland/ (accessed March 3, 2023).

Trebbels, M. (2015). "Educational aspirations, expectations and choices of migrants," in *The Transition at the End of Compulsory Full-Time Education*, ed M. Trebbels (Wiesbaden: Springer Fachmedien Wiesbaden), 65–78. doi: 10.1007/978-3-658-06241-5_5

UNESCO and Council of Europe (2001). *Code of Good Practice in the Provision of Transnational Education (Adopted by the Lisbon Recognition Convention Committee at Its Second Meeting, Riga)*. Available online at: https://www.coe.int/en/web/higher-education-and-research/lisbon-recognition-convention (accessed June 06, 2001).

Wall, M., Campbell, M. O., and Janbek, D. (2017). Syrian refugees and information precarity. *N. Media Soc.* 19, 240–254. doi: 10.1177/1461444815591967

Waters, J. (2015). Educational imperatives and the compulsion for credentials: family migration and childrens education in East Asia. *Child. Geogr.* 13, 280–293. doi: 10.1080/14733285.2015.972646

Waters, J. (2018). International education is political! Exploring the politics of international student mobilities. *J. Int. Students* 8, 1459–1478. doi: 10.32674/jis.v8i3.66

Windle, J. (2022). School segregation in Rio de Janeiro: geographical, racial and historical dimensions of a centre-periphery dynamic. *Comp. Educ.* 58, 91–105. doi: 10.1080/03050068.2021.1894868

Yu, J. (2021). Consuming UK transnational higher education in China: a bourdieusian approach to chinese students perceptions and experiences. *Sociol. Res. Online* 26, 222–239. doi: 10.1177/1360780420957040

Zimmer, M. (2010). "But the Data is already public": on the ethics of research in facebook. *Ethics Inform. Technol.* 12, 313–325. doi: 10.1007/s10676-010-9227-5