

DIGITAL LITERACY AND SOCIOECONOMIC AUTONOMY OF ARTISANAL FISHERWOMEN: AN ANALYSIS OF THE DIGITAL LITERACY WORKSHOPS OF THE PESCARTE PROJECT IN CAMPOS DOS GOYTACAZES¹

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Abstract

This article analyzes the role of digital literacy in the socioeconomic autonomy of artisanal fisherwomen affiliated with the Pescarte Project, an environmental education program established as part of the federal environmental licensing process for the oil and gas industry in the Campos Basin, in the state of Rio de Janeiro. This is a case study using qualitative and quantitative approaches. Its objective is to examine how the project's Digital Literacy Workshops contribute to the social agency and strengthening of the identity of fisherwomen in Campos dos Goytacazes. The research combined a literature review, documentary analysis of reports on workshops held between 2021 and 2023, and semi-structured interviews with five fisherwomen who participated in the workshops and lived in Farol de São Tomé and Barra do Furado. The results show that the use of mobile phones, Pix, social media, and public-service applications expanded opportunities for direct sales, financial management, and access to social benefits, thereby

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reducing dependence on middlemen. The interviews also reveal persistent barriers, including the cost of transportation, devices, and internet access, the lack of continuing education, and the limited visibility of women's work in fishing. The study concludes that, in this context, digital literacy goes beyond the technical use of devices and becomes part of a process of social transformation and affirmation among fisherwomen, a process that depends on public policies for digital inclusion and the formal recognition of their work.

Keywords: Artisanal fisherwomen, Digital literacy, Environmental education, Gender, Pescarte Project.

INTRODUCTION

The Pescarte Project is an environmental education program associated with the federal environmental licensing process for the oil and gas industry. It is implemented through a partnership between Petrobras and Universidade Estadual do Norte Fluminense Darcy Ribeiro (UENF), under the supervision of the Brazilian Institute of the Environment and Renewable Natural Resources (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis – IBAMA), as a measure to mitigate impacts on fishing communities in the Campos Basin (Pescarte, 2018). Structured around successive phases of mobilization, organization, planning, and implementation of work and income generation projects, the program covers ten municipalities in the Norte Fluminense and Baixada Litorânea regions of Rio de Janeiro and employs a dialogical pedagogical methodology inspired by Freire (Pescarte, 2018).

Among Pescarte's initiatives are the Digital Literacy Workshops, intended for artisanal fishers and their families. The focus on women is justified by the fact that fishing has historically been associated with men, while women's work, particularly that of shellfish gatherers engaged in fish processing and related activities, remains socially and economically invisible (Machado, 2009). This invisibility is exacerbated by the gap between the realities of women's work in fishing and formal recognition mechanisms such as the General Fishing Registry (Registro Geral da Pesca – RGP) (Brasil, 2009), which

historically has not fully encompassed the pre-capture and post-capture stages performed predominantly by women.

Digital literacy can expand these women's social and economic participation. Understood here as a set of social practices involving multiple languages, media, and purposes, rather than merely the technical ability to read and write on screens (Ribeiro et al., 2008), it gives rise to the question guiding this study: How do the Pescarte Project's Digital Literacy Workshops foster the social agency and appreciation of the cultural identity of artisanal fisherwomen in Campos dos Goytacazes?

The general objective of this article is to examine how the Digital Literacy Workshops contribute to the social agency and strengthening of identity among artisanal fisherwomen affiliated with the Pescarte Project. More specifically, it seeks to: a) situate digital literacy within the broader framework of the formal, non-formal, and informal educational processes that permeate artisanal fishing; b) connect the concepts of information and communication technologies, literacy, and digital literacy; and c) describe the methodological trajectory of the Pescarte Project and discuss the findings obtained from the fisherwomen who participated in the workshops.

This is a case study employing qualitative and quantitative approaches and combining a literature review, documentary research, and fieldwork. The fieldwork consisted of semi-structured interviews with fisherwomen who participated in the Digital Literacy Workshops offered by the Pescarte Project in Campos dos Goytacazes, the municipality with the highest number of women participants between 2021 and 2023. The procedures are detailed in Section 4.

In addition to this introduction, the article contains five further sections. Section 2 situates artisanal fishing within formal, non-formal, and informal educational processes, rural education, environmental education, and issues of gender and occupational health in fishing. Section 3 brings together the concepts of information and communication technologies, literacy, and digital literacy that underpin the analysis of the workshops. Section 4 describes the Pescarte Project, the workshops, and the methodological procedures, while Section 5 presents and discusses the interview results. Finally, the

conclusion revisits the principal findings and identifies implications for public policies on digital inclusion in the fishing sector.

EDUCATION, WORK, AND GENDER IN ARTISANAL FISHING: THEORETICAL FOUNDATIONS

Debates on education are frequently organized around the distinction among formal, non-formal, and informal processes, a classification dating back to the pioneering studies of Coombs, Prosser, and Manzoor (1973), for whom education is a continuous, lifelong process not limited to schooling. La Belle (1976) proposed a model of concentric circles to represent the interpenetration of these three modalities, an idea subsequently revisited and problematized by Brazilian authors. Libâneo (2005) situates education as a universal social phenomenon, assigns schools the role of mediating critical thought, and proposes intentionality as a distinguishing criterion: formal education is planned and systematic; non-formal education is intentional but less structured; and informal education is unintentional, unplanned, and diffuse within social interaction. Gadotti (2005) reinforces this distinction by arguing that formal education has clearly defined objectives and methodologies, whereas non-formal education, although less bureaucratic, remains intentional, which distinguishes it from purely informal education. Gohn (2005, 2006), in turn, associates non-formal education with citizenship education and the democratization of knowledge, focusing on human beings as a whole and connecting this form of education to associational life and participation in collective decision-making bodies.

Authors such as Brandão (1985) and Gandin (1995) emphasize that education is not confined to schools. For Brandão (1985), education exists everywhere as a result of the influence of the entire sociocultural environment, while Gandin (1995) places formal schooling on three pillars: human development, scientific development, and technical proficiency. With respect to discipline and coexistence in schools, Tiba (1998) observes that schools have progressively assumed roles once assigned to families, particularly when limits are not taught in the home environment. This variety of educational

arrangements helps explain artisanal fishing communities, where fishing know-how, including capture techniques, knowledge of tides and fish shoals, and fish preparation, is learned primarily through family and community life by non-formal and informal means rather than at school.

Rural education adds a territorial and political dimension to this discussion. Arroyo, Caldart, and Molina (2004) denounce the historical hierarchy between urban and rural schools, showing that rural populations, including artisanal fishing communities, have historically been served by educational policies that receive less investment and are less suited to their sociocultural specificities. Molina (2006) argues that overcoming this inequality requires knowledge to be reframed through a two-way process that incorporates non-academic knowledge into education, enabling rural schools to help form individuals committed to social justice. Along the same lines, Caldart (2004) advocates the construction of a distinct political-pedagogical project for Rural Education, capable of breaking with hegemonic paradigms and recognizing rural people as agents of their own education. Degrande (2020) and Degrande and Torres (2022), in turn, describe the burden placed on rural teachers by standardized educational policies that do not always engage with the realities of traditional communities such as fishing communities.

Environmental education, a foundational dimension of the Pescarte Project, must also be added to this framework. Reigota (1991) warns that environmental issues cannot be reduced exclusively to biological aspects or solely to social or economic ones and therefore require integrated approaches. Loureiro (2005) associates environmental education with the promotion of sustainability, social justice, and the preservation of life, while Layrargues (2012) draws attention to the role of the media in reproducing or transforming environmental values. Deperon (2004) underscores the need for a sense of belonging that brings society and nature closer together, while Barbosa (2017) situates social pedagogy on three pillars: the social dimension, emancipatory education, and empowering action. Bruno (2014) emphasizes that educational settings are invariably shaped by nationality, locality, gender, and ethnicity, dimensions inseparable from the experiences of artisanal fisherwomen. Finally, Osinski (2002) identifies the family as an institution of informal education, in contrast to the school as a mediator of formal

education, a distinction of particular significance in communities where the fishing occupation is learned, first and foremost, at home.

Artisanal fishing itself must also be situated historically. In Brazil, it has undergone a lengthy process of state regulation, landmarks of which include Decree-Law No. 221 of 1967 (Brasil, 1967), which provided for the protection and promotion of fishing, and successive development and technical-assistance policies over the following decades (Hellebrandt; Abdallah; Hellebrandt, 2012). Diegues (1983) characterizes artisanal fishing as an activity organized around family and neighborhood units, aimed primarily at subsistence rather than capital accumulation, and employing small-scale technologies with limited predatory capacity. Oliveira and Silva (2012) supplement this characterization by observing that the use of rudimentary equipment restricts artisanal fishers' operating range to coastal waters, which in practice establishes an implicitly conservation-oriented relationship with marine ecosystems, in contrast to the industrialization of fishing that became established in the country following the 1967 Fishing Code.

For women, whether fishers or shellfish gatherers, work continues to be marked by precarity and invisibility. Based on an integrative literature review, Nascimento (2022) describes shellfish gatherers' working environments, including mangroves, sandbanks, and backyards, as well as the activity's physical demands, the double burden of paid and domestic work, and exposure to gender-based violence. Mendes and Dias (1991) discuss the historical transition from occupational medicine to workers' health, a conceptual milestone revisited by Pena, Freitas, and Cardim (2011) in a case study of repetitive strain injuries among shellfish gatherers on Ilha de Maré, Bahia, and by Rêgo et al. (2018), who discuss occupational health surveillance among artisanal fishers in the Bay of All Saints and describe the transition from invisibility to the proposal of public policies directed toward the Unified Health System (Sistema Único de Saúde – SUS). In a dissertation addressing the meanings of health among Brazilian artisanal fisherwomen, Mota (2021) extends this debate to the subjective dimensions of illness and gaps in social security and welfare coverage. At the regional level, Mesquita (2021) outlines the profile of

artisanal fishing in the Campos Basin, while Torres (2016), in research conducted within UENF's Graduate Program in Social Policies, discusses illness and mortality among artisanal fishers in the same basin. Lopes, Freitas, and Begossi (2020) summarize this situation by noting that Brazilian fishing policies continue to fail to consistently integrate the social and health dimensions of women's work in fishing.

Gender relations lie at the heart of this issue. Leitão (2013) discusses the relationship among gender, fishing, and citizenship, showing the obstacles women face in obtaining full access to public policies aimed at the sector. In a study of the everyday lives of fisherwomen in Pernambuco, Leitão and Veras (2011) describe what they call the labor of the tides, an expression that encapsulates the interrelationship between the productive and reproductive work performed by these women. Amaral and Neto (2021) and Amaral, Neto, Neto, and Manhães (2021), in articles published in an international scientific journal, document fisherwomen's struggle for recognition and their limited access to public policies, while exposing the historical invisibility of women's productive work in the fish supply chain. Manesky (2000), in turn, describes the multiple roles played by women in building responsible fisheries, roles that extend beyond fish processing to include repairing nets and lines, serving as crew members, and diversifying household income through handicrafts. Raimundo and Gehlen (2008) directly challenge the assumption that fishing is an exclusively male activity and point to the multiplicity of women's roles that have historically been underestimated in the sector's official statistics.

This invisibility can be interpreted through the decolonial framework proposed by Quijano (2005), for whom the coloniality of power organizes control over labor around capital and the global market, creating hierarchies that outlast the formal end of political colonialism. Lugones (2008) adds the notion of the coloniality of gender, according to which European modernity imposed racialized and gendered subjectivities, distinguishing a white femininity associated with domesticity from racialized women whose bodies were historically made available for arduous labor. For Lugones, the coloniality of gender cannot be dissociated from the colonialities of race and class. Together, these perspectives help explain

why the work of artisanal fisherwomen remains marginalized in fishing policies and the activity's formal registries, including the General Fishing Registry (Brasil, 2009), which historically has shown limited sensitivity to stages of work performed predominantly by women.

INFORMATION TECHNOLOGIES AND DIGITAL LITERACY: CONCEPTS AND CONNECTIONS

According to Castells (1999), the transformations associated with information and communication technologies (ICTs) date back to a historical process of successive macro-inventions capable of generating chains of micro-inventions that redefine society's material foundations, a process that reached its apex in the information revolution of the late twentieth century. Corrêa (2016) discusses how digital information and communication technologies (DICTs) affect even disciplinary fields traditionally distant from computing, such as Archival Science, reconfiguring concepts such as information territoriality. Lévy (1993, 2010) describes this movement through the notions of cyberspace and cyberculture, the latter understood as the set of material and intellectual techniques, practices, attitudes, modes of thought, and values that develop alongside the growth of cyberspace. Lemos and Lévy (2014) expand this definition by characterizing cyberculture as the technocultural complex resulting from the convergence of postmodern sociability, microcomputing, and global telematic networks, with direct repercussions for contemporary forms of work, leisure, and social interaction.

These transformations reach different groups and territories unevenly, depending on access to infrastructure, devices, and training processes that enable critical uses of technology. It is at this point that ICTs intersect with the debate on literacy and digital literacy in particular, a central issue for understanding the reach and limitations of the Digital Literacy Workshops offered by the Pescarte Project to artisanal fisherwomen in Campos dos Goytacazes.

The distinction between initial literacy and literacy as social practice is one of the most firmly established debates in Brazilian applied linguistics. Soares (1998a, 1998b, 2002) distinguishes initial

literacy, the individual and technical process of acquiring the writing system, from literacy as a social and historical phenomenon concerning the uses and social practices of reading and writing in a given cultural context. Kleiman (1995, 1998) adopts a similar perspective by defining literacy as a set of social practices involving writing and emphasizing that these practices vary according to their institutional contexts, such as school, work, and community life. Tfouni (1988, 1995) was among the first Brazilian authors to conceptually distinguish literacy as social practice from initial literacy, placing the latter at the individual level and the former at the sociohistorical level. This distinction explains why people who have not acquired basic reading and writing skills may nevertheless participate to varying degrees in literacy practices mediated by orality and social interaction.

Goulart (2014) situates the expansion of literacy studies in the mid-1980s, when the concept gained prominence in debates on initial literacy and social inclusion in Brazil. Tavares (2004) argues that literate individuals develop interpretation and comparison skills extending beyond the mere decoding of graphic signs, while Mortatti (2004) discusses the centrality of writing in societies shaped by graphocentric culture. When transposed to the digital environment, these discussions acquire particular contours: women such as the fisherwomen interviewed in this study can appropriate literacy practices mediated by digital devices, including payment applications, social media, and instant messaging, even when their engagement with formal written language in school is limited. This reinforces the understanding of digital literacy as a social phenomenon in its own right, rather than as something reducible to traditional alphabetic literacy.

Digital literacy is specifically defined by different authors along complementary lines. Aquino (2005) argues that the critical appropriation of digital learning environments requires the construction of meaning through hypertexts and multimodal texts, together with the ability to critically assess information made available online. Buzato (2006) describes digital literacies as a collective social construction that is unstable and continuously changing, which distinguishes them from fixed technical skills that can be measured once and for all. Ribeiro (2009) and Ribeiro et al. (2008) discuss digital literacy through

ephemeral textual genres and the reading of digital newspapers, demonstrating the plurality of media and practices characterizing this form of literacy. Ribeiro and Freitas (2011), in turn, warn that a lack of proficiency in digital language constitutes a new form of exclusion, namely digital exclusion. Coscarelli (2007) and Coscarelli and Ribeiro (2005) further argue that schools' inability to integrate computing into pedagogical processes deepens the exclusion of disadvantaged social groups, restricting their participation in the labor market and exercise of citizenship. Pereira and Ribeiro (2014) summarize this debate by asserting that contemporary education cannot dispense with engagement with technological advances.

For the artisanal fisherwomen of Campos dos Goytacazes, digital literacy therefore extends beyond technical proficiency in using smartphones and computers. It is connected to direct commercial negotiations, household financial management, access to social benefits, and participation in support and representative networks, aspects discussed in the following sections through a description of the Pescarte Project and the accounts of the fisherwomen interviewed.

METHODOLOGY

RESEARCH CONTEXT: THE PESCARTE PROJECT AND THE DIGITAL LITERACY WORKSHOPS

The Pescarte Project is a socioenvironmental mitigation measure arising from the federal environmental licensing of oil and gas exploration and production projects in the Campos Basin. It is implemented through a partnership between Petrobras and Universidade Estadual do Norte Fluminense Darcy Ribeiro (UENF), under IBAMA's supervision (Pescarte, 2018). Its activities cover ten municipalities in the state of Rio de Janeiro, distributed between Norte Fluminense (Macaé, Carapebus, Quissamã, Campos dos Goytacazes, São João da Barra, and São Francisco de Itabapoana) and Baixada Litorânea (Rio das Ostras, Armação dos Búzios, Cabo Frio, and Arraial do Cabo), and are organized into successive phases: the first phase, from 2014 to 2016, focused on mobilizing and organizing the Educational Action Participants (Sujeitos da Ação Educativa – SAE); the second phase, from 2017 to 2019, was devoted to selecting and planning the Work and Income Generation Projects (Projetos de

Geração de Trabalho e Renda – PGTR); the third phase, which began in 2021, focused on implementing these projects and commencing productive activities; and subsequent phases were devoted to developing socio-democratic and administrative competencies and consolidating the organization of the communities served (Pescarte, 2018). The program's pedagogical methodology is guided by dialogical assumptions rooted in Freirean thought, which connects Pescarte to the discussions of non-formal and popular education presented in Section 2.

The program's initiatives include the Digital Literacy Workshops, implemented in three successive modules. Module A, held remotely in 2021 under the title Digital Literacy in Times of Pandemic, focused on configuring videoconferencing tools, creating email accounts, and sharing documents. Module B, held in person in 2022 under the title Basic Digital Literacy, involved the use of tablets and computers, the creation of email and social media accounts (Facebook, Instagram, and YouTube), and basic instruction in office software suites. Module C, offered in 2023 under the title Intermediate Digital Literacy, revisited the previous modules and progressed to discussions of disinformation (fake news) and the creation of profiles on platforms such as Facebook, Instagram, X (formerly Twitter), Pinterest, and TikTok. Between 2021 and 2023, Campos dos Goytacazes recorded the largest number of women participants among the three municipalities served by the workshops, with 41 women, compared with 34 in São Francisco de Itabapoana and 29 in São João da Barra. This justified selecting the municipality as the empirical focus of the field research (Castro, 2025).

RESEARCH PROCEDURES

From a methodological standpoint, the study combined qualitative and quantitative approaches, bringing together bibliographic research, documentary research, and field research (Gil, 2002; Pádua, 1997). The documentary research was based on implementation reports from the Digital Literacy Workshops offered by Pescarte between 2021 and 2023 in the three municipalities mentioned above (Pescarte, 2021–2023). This made it possible to map the number of participants by module, year, and

gender and confirmed the greater participation of women in Campos dos Goytacazes. Based on this mapping, five artisanal fisherwomen living in the district of Farol de São Tomé and in Barra do Furado were selected, all of whom had effectively participated in the workshops: Helena, aged 53; Andrea, aged 44; Marcia, aged 47; Maria, aged 35; and Silvia, aged 39. They are identified by pseudonyms to protect their identities. Initial contact involved 41 telephone calls. Sixteen women answered, eight agreed to participate in the study, and five ultimately attended the interviews. The interviews were conducted over four visits to the district of Farol de São Tomé, in encounters with a strong ethnographic dimension that took place in living rooms, in backyards where groups of women peel shrimp for middlemen, and during meals shared with the interviewees.

The interviews followed a semi-structured guide addressing the women's family histories in fishing, how each woman entered the fishing occupation, the relationship between fishing work and household income, their perceptions of being fisherwomen, and, most centrally, their participation in the Digital Literacy Workshops and the practical ways in which they use digital technologies in everyday life.

RESULTS AND DISCUSSION

The interviews reveal diverse pathways into artisanal fishing (Castro, 2025). Helena reports that fishing runs throughout her family, with her brother, father, and husband all being fishers, and says that she began working in the activity approximately 15 years ago, following her divorce, because of the scarcity of other employment opportunities in a locality where, in her view, fishing has declined sharply and lost ground to the hotel industry and oil platforms. Andrea also states that she comes from a family composed entirely of fishers and recalls learning how to clean fish as a child alongside her mother. Marcia, by contrast, states that she did not inherit the activity from previous generations. According to her account, it was her mother who began fishing through her, while Marcia herself began working with blue land crabs alongside her sister. Maria describes herself as the first person in her family to work in fishing, an activity she encountered through friends from church whose families were involved in fishing.

Regarding income, the interviewees describe a situation of stagnation and insufficiency. Maria believes that fishing no longer provides sufficient income, has become outdated, and is moving toward exhaustion. She associates this decline with the shipment of unprocessed fish outside the region and the gradual disappearance of backyard-based work. Silvia and Helena mention the central importance of income-transfer programs such as Bolsa Família, the Goytaca Card, and the Citizen Check as indispensable supplements to the income obtained from catching blue land crabs and other shellfish, particularly given the absence of these programs in earlier periods (Castro, 2025).

Regarding the experience of being a woman in the fishing occupation, the responses express both pride and criticism. Helena describes the experience as wonderful, although she acknowledges the persistence of prejudice. Marcia is more emphatic, stating that being a woman in this environment is highly complex because women remain largely invisible: women perform the work, but men receive the recognition (Castro, 2025). Her testimony confirms the literature's description of the invisibility of women's productive work, discussed in Section 2 (Amaral; Neto, 2021; Amaral; Neto; Neto; Manhães, 2021). Maria summarizes the burden of women's double and triple workdays by defining fisherwomen as warriors precisely because they work both outside and inside the home while simultaneously fulfilling roles that she associates with those of mothers, doctors, and teachers (Castro, 2025).

Regarding participation in the workshops, the interviewees report different experiences of technological appropriation (Castro, 2025). Maria considers her participation important because she already owned a laptop and was able to review previous knowledge and learn new content through the workshops. Silvia states that she joined upon a friend's recommendation and has continued participating for three years. Helena identifies the cost of traveling to Campos dos Goytacazes to attend in-person activities as the principal barrier. The learning experiences reported include the use of Pix, which Helena views very positively because it eliminated the need to leave home to make payments; Andrea's use of messaging applications and social media, which she compares to a new form of journalism and a kind of modern-day gossipmonger; and the use of mobile phones to access public services, such as registration

with the Social Assistance Reference Center (Centro de Referência de Assistência Social – CRAS), mentioned by Maria. Marcia describes the need to constantly manage her mobile phone's storage because of the number of applications she uses in everyday life, including games, banking applications, Bolsa Família, Caixa Tem, FGTS, the digital voter-registration application, Mercado Pago, Shopee, Uber, and Pix.

These accounts support the conclusion that, before participating in the workshops, the interviewees were not proficient in using digital technologies for administrative and financial management purposes, such as making payments through Pix, accessing information on social benefits, and selling directly to consumers. The appropriation of these technologies fostered by the Digital Literacy Workshops expands the fisherwomen's opportunities for economic autonomy by reducing their dependence on middlemen in the sale of fish and facilitating their participation in support networks and community forums, including local councils and collectives. Challenges nevertheless persist in relation to the available technological infrastructure, the cost of devices and internet access, and the need for continuing education, reinforcing the urgency of public digital-inclusion policies specifically directed toward the artisanal fishing sector.

CONCLUSION

The analysis shows that, for artisanal fisherwomen affiliated with the Pescarte Project, digital literacy is not limited to the technical competence required to operate devices. It is a socioeconomic and cultural process connected to the different forms of formal, non-formal, and informal education that form part of the history of artisanal fishing, as well as to issues of gender, occupational health, and social recognition that shape the trajectories of fisherwomen in Brazil.

The theoretical discussion in Section 2 showed that education in artisanal fishing communities combines school-based knowledge, non-formal practices promoted by programs such as Pescarte, and the informal transmission of knowledge within families and communities (Libâneo, 2005; Gohn, 2005, 2006;

Coombs; Prosser; Manzoor, 1973). The historical marginalization of rural education (Arroyo; Caldart; Molina, 2004; Molina, 2006) and the precarious working and health conditions experienced by fisherwomen (Nascimento, 2022; Mota, 2021; Pena; Freitas; Cardim, 2011) form the foundation on which the digital literacy initiative operates. This foundation is also shaped by the colonialities of gender, race, and class discussed by Quijano (2005) and Lugones (2008).

In Section 3, digital literacy was situated within the debate on initial literacy, literacy as social practice, and information and communication technologies. This debate makes it possible to understand that fisherwomen whose engagement with school-based writing is limited, as is the case for some of the interviewees, nonetheless participate in literacy practices because literacy is a social phenomenon rather than merely a technical one (Soares, 1998a, 1998b, 2002; Tfouni, 1988, 1995; Kleiman, 1995, 1998). In this context, digital exclusion (Ribeiro; Freitas, 2011) emerges as another form of inequality added to those already present in access to rights and public policies.

The results presented in Section 5, based on interviews with five fisherwomen from Campos dos Goytacazes, demonstrate in practical terms how the use of Pix, social media, and social-benefit applications expands these women's economic autonomy and social inclusion. At the same time, they reveal persistent barriers: internet access, the cost of devices, and the lack of continuing education. Beyond the workshop participation data, the accounts of Helena, Andrea, Marcia, Maria, and Silvia reveal the subjective and identity-related dimension of this process: confronting prejudice, recognizing the value of their own work, and claiming agency in a sector historically organized around the male figure of the fisherman.

It is concluded that digital literacy is an instrument of social transformation for the artisanal fisherwomen of the Pescarte Project because it reduces their dependence on middlemen in the sale of fish, expands access to rights and public policies, and strengthens their cultural and professional identity. This transformation, however, cannot be sustained without continued investment in connectivity and medium- and long-term education, nor without progress in the formal recognition of women's fishing work,

including through mechanisms such as the General Fishing Registry (Brasil, 2009), capable of converting the autonomy achieved in these women's everyday digital lives into tangible rights. Future studies could further investigate the relationship among digital literacy, environmental sustainability, and solidarity-based marketing networks in the artisanal fishing sector.

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