

Decipher me or I'll devour you: the dialogue of knowledge such as resistance and survival of small communities of artisanal fishermen on the north coast of Paraná

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Abstract

The coast of Paraná has more than 35 traditional fishing communities that have undergone several transformations in recent decades, however the exodus of younger people from the profession puts the perpetuation of this knowledge at risk. Therefore, given this context, this study aimed to investigate whether the dialogue of knowledge between generations has been a factor in cultural preservation in small communities of artisanal fishermen on the north coast of Paraná. Descriptive exploratory research was carried out between April and October 2024 by receptivity with 32 families. The study revealed that artisanal fishing on the coast of Paraná presents itself in a similar way to past decades and in terms of labor, few changes were reported. The main and worrying change reported among the families interviewed is that 65.63% of young people from these communities in recent decades have moved to other cities, for other economic activities or have rejected the profession. It was possible to observe that the young people who remain in the communities have perpetuated traditional knowledge, and can help build a bridge between the past and the future by revealing possible paths for the survival of small fishing communities. The possible reversal of the situation lies in the construction of new dialogues between science, public authorities and fishing communities in the search for specific public policy formulations for fishing with future investments in professional development and verticalization of the production chain so that, in addition to fish, and shrimps, the transformation of production in excess of the winter period for subsequent sale in the summer season occurs, however, apparently in a short space of time, fishing communities are unable to promote these advances on their own and need help to reverse this situation or the The exodus will continue to occur and weaken fishing communities.

Keywords: Sea fishing, Transmission of knowledge, Identity, traditional knowledge.

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1. Introduction

Fishing is considered one of the fundamental activities for the development of humanity, being almost as old as the beginning of civilization, the existence of traces of fishing since the Paleolithic period, around 50 thousand years ago, leaves no doubt about this statement. Regarding Brazilian colonization, according to Diegues (1999), when the Europeans arrived, subsistence fishing was already recorded by the original people, consuming fish, crustaceans and molluscs.

Still in the colonial period, fishing gained momentum for commercial purposes with the capture of whales,

which was characterized by the chase in small boats and the use of manual harpoons, and this practice was often carried out with the main workforce being composed of by African slaves (LANGSDORF, 1996).

The fishing activity promoted by the Portuguese crown gave rise to many fishing communities on the Brazilian coast, however specifically in what concerns the State of Paraná, according to Anacleto et al (2007) the population of these communities originated from the racial mix of Europeans and blacks with existing indigenous tribes, and thus the “caiçara communities” emerged. The term caiçara, according to Diegues (1999), derives from the Tupi Guarani word caá-içara, which was used to name a type of fence used in indigenous villages and, over time, the term came to be used to name individuals and communities on the coast. from the States of Paraná, São Paulo and Rio de Janeiro arising from miscegenation and these colonization processes.

The coast of Paraná, according to Anacleto et al (2007), has more than 35 traditional communities whose existence is intrinsically linked to fishing activities, according to Michaliszyn Filho (2024) in this region, over the last few decades, several transformations have occurred, however three factors had a more profound impact on these communities, namely: the growth of summer tourism, the reduction in fishing stocks and the exodus of younger people from the profession or from their places of employment. origin.

The doubts surrounding the reasons for the phenomenon of fishing evasion are partially known, but the impacts of this flow on the knowledge and traditional knowledge of these places are still unknown in a deeper way.

Traditional knowledge in a community Anacleto and Michaliszyn Filho (2024) results from practical and repetitive forms of oral communication of facts, histories, stories, legends, rites, uses, customs, acts and actions of a group of people who inhabit the same region , situations that survive time and in themselves transverse several generations.

Thus, considering that the coast of Paraná is a region that transfers traditions from generation to generation, where the experience is the result of the deep intertwining of the culture and identity of the communities with the forms of survival adopted by them and that Anacleto et al. (2007) and later Anacleto and Michaliszyn Filho (2024) report that the way of life in these communities has changed intensely, and there is a need to evaluate how the relationship between the changing world and the tradition of these locations is perceived, as well as the values or their significance for people living in traditional communities.

Given the unexplained or unexplained gaps regarding the erosion of secular knowledge, similar to the enigma that the sphinx referred to regarding the bridge between the past and the future, it is urgent that relevant questions be investigated so that the complexities surrounding the themes are understood and from this time and movement better solidified paths are built in the search for solutions in the interest of communities.

Therefore, given this context, this study aimed to investigate whether the dialogue of knowledge between generations has been a factor in cultural preservation in small communities of artisanal fishermen on the north coast of Paraná.

2. Methodology

The research site covered the northern coast of Paraná, which involves the municipalities of Antonina, Guaraqueçaba, Pontal do Paraná and Paranaguá, and the region was chosen due to reports by Anacleto et al. (2019) that this is one of the fishing regions that has been most impacted in recent decades.

The present study was carried out following the proposition of Negrelle et al. (2012), and initially a visit was made to the municipal fisheries departments of the municipalities that make up the north coast, on this occasion the aim was to identify the communities that had records of the exodus of young people in traditional communities.

The descriptive exploratory research was carried out between April and October 2024 in accordance with what was proposed by Negrelle et al. (2012) and Vuarant (2020) initially, contact was made with the fishermen's leaders, and they were asked to indicate other families that could participate in the study, as they were able to identify some elements of the population object of the study, they indicated others in the process of self-generated sampling.

In total, thirty-two families voluntarily agreed to participate in the research, so a semi-structured question guide was previously prepared for field data collection and before the beginning of each interview in accordance with what was proposed by Anacleto et al. (2019), the purpose of the study was duly explained to the interviewees, and only after that the data collection process began, with the interviews being carried out in the fishermen's workplaces.

Initially, interviewees answered questions about their socioeconomic profile in terms of age, gender, education, marital status and length of experience in fishing. Subsequently, the fishermen answered questions about the types of vessels, forms of commercialization, positive and negative points of working with fishing, as well as what activity represents in their lives and how the transmission of knowledge has been carried out.

The analysis of the main positive and negative factors that are still present since past decades was carried out as proposed by Negrelle et al. (2012), through a cross-impact matrix, with all reports being cross-referenced. The matrix as proposed by Negrelle et al. (2012) employs percentage values from 0 to 100 for each opinion expressed by the interviewees collectively in relation to the other opinions expressed. Each item is analyzed in relation to the influence exerted on different types of activities related to fishing, so the higher the index, the greater the relevance of the item.

The impact matrix generates a relevance index that can be obtained using the equation:

$$IR = \frac{Fa \times Fb \times 100}{SF}$$

Being;

IR= Relevance Index of the situation evaluated;

Fa = Indices of received influence;

Fb = Indices of provoked influence;

SF= Sum of the indices (Fa x Fb) of all questions analyzed.

After completing the primary data collection, interpretative analysis was adopted using the data triangulation technique between the researchers' observation and similar responses obtained from the fishermen.

The research was designed using a qualitative approach of a social and historical nature and in the end similar to that proposed by Anacleto et al. (2019) after completing data collection, interpretative analysis was adopted using the data triangulation technique between specialized literature, researchers' observations and similar responses obtained from fishermen, promoting an in-depth analysis of how it has occurred the transmission of traditional knowledge in these locations.

3. Results

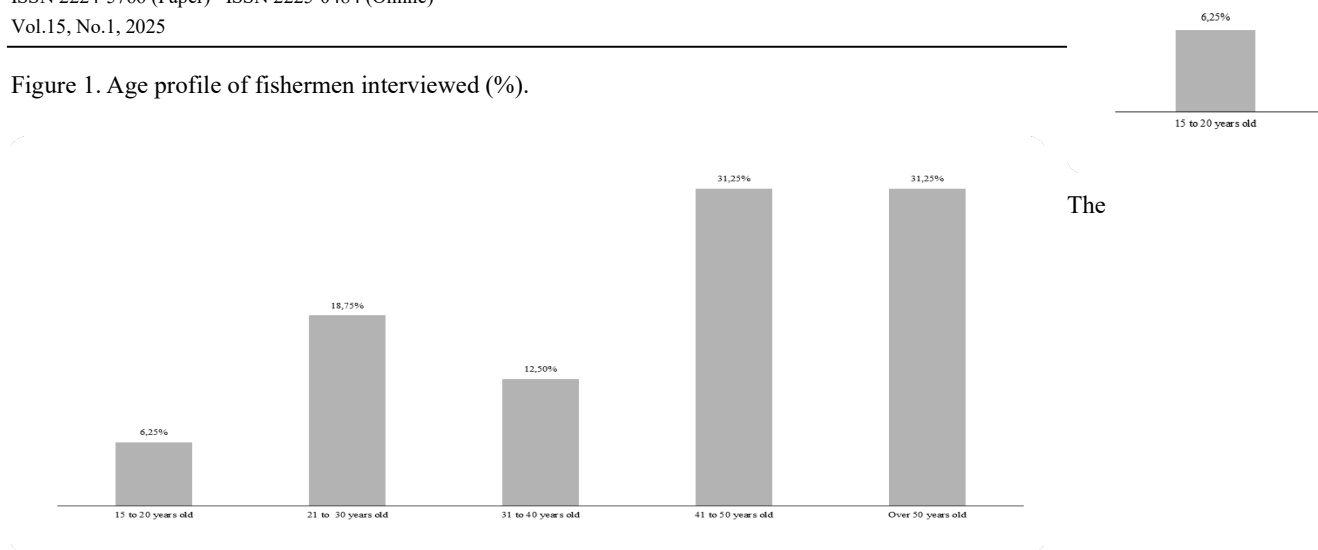
Artisanal fishing on the coast of Paraná presents itself in a similar way to the 1980s and few changes were reported by the interviewees, the method of capture among the interviewees is characterized by the "from sunrise to sunset" system, a typology in which fishermen leave at sunrise At sunset, choose the capture location, launch the nets and return in the afternoon or at the end of the day at sunset, with the preferred species for capture being fish and shrimp.

The capture of these species in the Bays of Paranaguá, Baía das Laranjeiras and Antonina is often carried out by fishermen with a set of simple equipment that consists of a canoe built with trees native to the region, powered by oars or a small motor, a cloth net for fishing fish in a cage or cast net made by the fishermen themselves, this type of equipment is circular in shape with a radius of 3 to 4 meters, the end is equipped with a weight lead, which is woven in such a way as to leave a small bag (cap) in the center of the net, where, after capture, the shrimp are deposited until harvesting.

Prawns on the coast are caught with small vessels, but equipped with trawl nets with wooden planks or doors, made up of hollow boards with meshes in the bagger varying from 1 to 6 cm between opposite nodes; pulled by the stern or side, always with a bottom similar to that already reported by Anacleto et al. (2019).

The study revealed that the vast majority of interviewees were men, and that with regard to the age profile, a marked trend was observed, and as the age group increases and the percentage of interviewees increases (Figure 1), it is worth highlighting that the inclusion of young people in fishing activity had the lowest percentage rate (6.25%), a situation that confirms the reduction in the regional fishing population.

Figure 1. Age profile of fishermen interviewed (%).



majority of interviewees (n=56.25%) had not completed primary education, which added to the rate of non-literate teachers (n=3.13) reveals a low level of education in professional training.

The fishing family has a traditional organization of work activities, with men being responsible for catching or fishing and women and children for cleaning and marketing is most often the responsibility of women.

The average income of families involved in fishing varies greatly due to the summer season when there are a large number of tourists visiting the region, however the monthly average considering seasonality is approximately USD 491.80 per month.

Still according to the smallest part of the interviewees (n=31.25%), there were no significant changes in the life of the fishing communities, however for the other part, despite the work activities having undergone few changes, with regard to commercial issues the changes occurred of in an accentuated way, as in the case of payment methods, and sales through applications such as WhatsApp and dissemination of production on social networks. However, for a smaller part of the interviewees (n= 15.63%), the intermediary trader in the sales chain, also called middleman, is still an important figure given that, especially in the winter period, when there are no tourists, they still absorb the production. directly from the fisherman to later resell on the market.

Learning the craft of fishing is a family inheritance, given that 96.87% of those interviewed learned the art of fishing from their family members (parents, grandparents, uncles and brothers). Teaching always occurred first on land through orality and later in the practice of work at sea. All interviewees stated that in the case of the coast of Paraná, the family plays a crucial role in transmitting traditional knowledge related to fishing, relating culture to the way of life and highlighted that there are no other ways of learning the craft.

All interviewees reported that although the work activity is still being practiced in a similar way to past decades, there have been many changes that impact the lives of fishing communities, with the main and worrying change reported among the families interviewed being that 65.63% of young people from these communities in recent decades have moved to other cities, for other economic activities or have rejected the profession.

Despite the exodus of young people reducing the population of fishermen in the region, no planned actions were reported to reverse this situation, according to those interviewed, children from a very young age unconsciously observe labor practices, being the most common and possibly most effective way of transmission of knowledge between fishermen. The practice itself allowed children and young people to learn about the techniques and methods used, encouraging practical and contextualized learning.

Playful learning was also reported making references to stories, stories and cultural information about the activity, as well as reports of games, games or interactive activities related to fishing, which help to emotionally involve the new generations, reinforcing learning.

When asked about changes in the work activity itself, fishermen reported that many factors, both positive and negative, remained unchanged (Table 3).

Table 3 – Implications and potential of artisanal fishing in the perception of fishermen on the coast of Paraná. (n= 32)

Implications (Threats)		IR	Opportunities (strengths)		IR
1	Seasonality of fish catch	24,32	1	Abundant production at different times of the year	15,12
2	Financial instability	24,32	2	Increase in sales due to the summer season	14,98
	Competition with fishermen better structured in fishing technology	17,73	3	Product quality	13,09
4	Low price outside the summer season	8,93	4	Family Activity	12,67
5	Waiting time for capture	6,99	5	Connection with nature, especially the sea	11,77
6	Physical effort	5,76	6	Freedom of work	10,64
7	Lack of incentive from public authorities	4,51	7	Company of friends	10,64
8	Cost of new equipment	3,84	8	Using surplus labor in the family	5,31
9	Difficulty feeding the family during the off-season	2,12	9	The culture of the profession	2,89
10	Climate instability	1,48	10	Eat fresh fish	2,89

4. Discussion

Fishing on the coast of Paraná presents itself in an ambiguous scenario, on the one hand many factors have remained unchanged for decades and on the other hand traditional communities are greatly influenced by modernity.

The characteristics relating to the types of fishing practiced on the coast of Paraná have remained unchanged in recent decades, as reported by Chaves and Robert (2003), Clauzet et al. (2005), Silva et al. (2007) and Anacleto et al. (2019), and with regard to fishing effort, the vast majority of open-mouth canoes (without protection from the elements) are still evident in the modality known as “fishing from sunrise to sunset with trawl nets with boards , gillnets and hunting.

The lack of modernization of the fishing fleet when compared to the States of São Paulo and Santa Catarina, as well as the commercial passivity reported by Silva et al. (2007), these are situations that have remained unchanged for decades, however the transformation of the world in recent decades reveals the severity of the situation. Fishermen from other regions modernized fishing resources and innovated ways of offering production for commercialization, an adaptation process to increase profitability levels and guarantee family income.

Nakagawa (1991) and Silva et al. (2007) warned of the need to change the behavior of fishing communities on the coast of Paraná, where the fisherman should, in a more attentive way, given the excellent quality of the fish, promote the transformation of this fish into longer-lasting products through the use of micro-industrialization, and also improve the efficiency of customer service services, they also highlighted the need for professionalization related to fishing administration similar to that practiced in small enterprises, and reported that planning actions, and the application of part of the profitability obtained in the periods seasonal structures in order to preserve the production obtained in the winter period were a priority. The constant changes in the environment, which have demanded more attention from fishermen for decades, in simple but necessary actions with a sequence of organized, planned, guided and production controlled work activities in an efficient way products that satisfy the needs of consumers , also carrying out follow-ups so that if any divergence occurs, it is detected as quickly as possible for correction and thus avoiding new and future problems.

Thus, an alternative to change the current scenario among fishermen would be the careful adoption in which fishermen would gradually change this passive production framework, migrating to another, more entrepreneurial model of behavior that provides for continuous improvement. productivity only exceeds the fishing limit, and causes immediate impacts on the results, impacting the increase in income and consequently reducing the impacts of social issues that remain similar to past decades reported, such as the seasonality of capture, financial instability, competition with fishermen better structured fishing technology that combines with

the difficulty of feeding the family during off-season periods.

The proposition by Nakagawa (1991) and Silva et al. (2007) and endorsed by Anacleto et al. (2019) in the context of changing long-term scenarios are significant, valid and already efficiently tested in other more developed fishing regions in Brazil, but it is urgent that two questions be analyzed in more depth, the first is whether the transformation of models secular labor to more effective models with the adoption of scientific management changes traditional knowledge, putting the survival of these communities at risk?, and the second question is whether this change puts the dialogue of knowledge at risk and, consequently, the erosion of traditional knowledge?.

Deciphering these questions can help build a bridge between the past and the future, especially among the new generations. It is important to highlight that traditional knowledge has its origins in traditional knowledge, and specifically for the new generations, the desire to know and know how to learn, thus new concepts must be inserted in the discussion of what is traditional, given that learning is an endless source of knowledge and knowledge, and that the transmission of knowledge is continuous, practices, values and beliefs, perpetuated from an older generation to a younger generation patterns of behavior do not remain intact or immutable over time, and new generations, based on their own experiences, build new knowledge and acquire new knowledge that adds to that inherited, but which nevertheless provide elements that are essential in the decision between following established models or avoiding what is considered negative for future generations.

The proposition is corroborated by Garcia et. al (2007) who states that each generation is shaped by a unique set of economic, social and environmental circumstances, and especially in recent decades the technological issue that has a high power of modification, the set of events in this new scenario and trends in youth affect how individuals interpret and adapt to the new reality, classifying as significant or unfavorable the knowledge transmitted by their predecessors and which resulted in knowledge considered traditional. Thus, the process of changing knowledge becomes dynamic, reflecting continuous changes in society and the environment, and new dialogues between younger generations and their predecessors and with the current established scenarios combine with new knowledge.

It is important to consider that new knowledge does not discard traditional knowledge in its entirety, only new dialogues of knowledge are established and often transformed into new knowledge, in this context, even if the modernization of their practices occurs, the secular transmission process still occurs. Therefore, the modernization of processes does not imply the erosion of knowledge, the issue of the erosion of traditional knowledge is linked to the exodus of new generations from activities and also the displacement of new generations to urban centers in search of new alternatives for survival, especially due to the low average income observed in families during this study.

Practical fishing knowledge often comes in advance of theoretical knowledge and according to Andreolli and Silva (2008) and also Anacleto et al. (2019) this knowledge interacts naturally and new generations learn about the periods, forms of reproduction and habits of fish, molluscs and crustaceans. This form of transmission of knowledge is efficient and does not jeopardize the survival of small communities of artisanal fishermen in the north coast of Paraná, what is needed and evaluate the ways in which the resistance of these locations has been built.

The organization of these communities for decades requires the search for more complex answers to questions relating to the survival of these groups. Metri and Anacleto (2021) report that the dialogue of knowledge weakens as young people flee to other locations and young people seek exodus because they do not always envisage fishing with the possibility of changes in the short and medium term in factors such as the fact that families, the majority of whom are socially vulnerable, have difficulty accessing financing or interest-based promotion programs also subsidized due to lack of technicians to present feasibility projects, lack of guarantors and debt payment guarantees, linked to a decrease in fishing stocks, competitiveness with better-equipped fishermen from other regions and the historic lack of organization of fishermen in the fight for collective improvements, promotes a cycle of difficulties in which impoverished fishing communities are unable to access funding resources to improve production, and, as they do not access funding resources to improve production, they continue impoverished.

Finally, it is possible to consider that traditional knowledge is being adapted to the new times, is surviving social and environmental technological changes, it is also possible to consider that traditional knowledge is resistant because it originates in families and thus culture, tradition and knowledge built over the centuries and passed on orally among people from the same family.

The real risk of the extinction of traditional knowledge lies in the decline of fishing activity practiced by small

fishermen on the coast of Paraná, and in this context the survival of fishing communities is possible, as long as there is a combination of efforts in improvement measures in this context, it is pertinent to consider that dialogue between science, public power and fishing communities can strengthen collective actions in the search for specific public policy formulations for fishing at different levels of public power with future investments in the valorization of human resources, the respect for culture, traditions and regional specificities, in addition to traditionally fished fish and shrimp, other alternatives such as the collection of seafood (shellfish, bacucu, oysters and crabs), marine crops and especially the transformation of excess production of winter period for later sale in the summer season, as is the case with the use of Cambira (Smoked fish), fish burgers, fish sausages, and even frozen fish files packaged in a adequate, however, apparently in a short space of time, fishing communities are unable to promote these advances on their own and need help to reverse this situation, as also reported by Andreolli and Silva (2008) and Metri and Anacleto (2021).

5. Final considerations

Artisanal fishing on the coast of Paraná presents itself in a similar way to the 80s and 90s, and in work activities few changes were reported by the interviewees, the method of capture among the interviewees is characterized by the “from sun to sun” system, a typology in which Fishermen leave at sunrise, choose the location to capture, launch the nets and return in the afternoon or at the end of the day at sunset, with the preferred species for capture being fish and shrimp.

All interviewees reported that although the work activity is still being practiced in a similar way to past decades, there have been many changes that impact the lives of fishing communities, with the main and worrying change reported among the families interviewed being that 65.63% of young people from these communities in recent decades have moved to other cities, for other economic activities or have rejected the profession.

It was possible to observe that the young people who remain in the communities have perpetuated traditional knowledge, and can help build a bridge between the past and the future, revealing possible paths for the survival of small fishing communities, given that traditional knowledge is being adapted to the new time, is surviving social and environmental technological changes, it is also possible to consider that traditional knowledge is resistant because it originates in families and thus culture, tradition and knowledge built over the centuries and passed on through oral communication between people of the same family.

The real risk of the extinction of traditional knowledge lies in the decline of fishing activity and there is an urgent need for dialogue between science, public authorities and fishing communities to strengthen collective actions in the search for specific public policy formulations for fishing with future investments in the valorization of human resources, respect for culture, traditions and regional specificities. However, in a similar way as already reported in other studies, it is necessary that a process of verticalization of the production chain occurs and that, in addition to fish and shrimp, there is a transformation of excess production from the winter period for subsequent sale in the summer season, however apparently In a short space of time, fishing communities are unable to promote these advances on their own and need help to reverse this situation.

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