



UNIVERSIDADE D
COIMBRA

Cíntia Raquel Martins Fachada

TAKING PEOPLE'S VOICES INTO ACCOUNT:
social networks, communities, and forest fires

Master thesis submitted to the Social Dynamics, Natural and
Technological Risks master program, supervised by Professor José
Manuel Mendes and Professor Miguel Almeida and presented at the
Faculty of Economics of the University of Coimbra

September 2023



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“These were the rightless, the stateless, and the socially excluded who existed on the wrong side of deeply entrenched internal borders – borders not at the edges of nation-states design to keep out noncitizens, but boundaries deep within the heartland of the nation, where those who are well served by the market are protected from those who aren’t.” (Somers 2008:102).

“Local communities and the people most affected by disasters need to be part of the conversation. While decisions should be based on science, they can be complemented by rich sources of information, such as indigenous and traditional knowledge, which can add a deeper understanding of specific challenges.”

António Guterres, Secretary-General of the United Nations (UN Office for Disaster Risk Reduction 2022).

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*Your hours of application,
The hopes of your parents,
And the labor of your instructors
Have all brought this moment
Into your hands.*

Angelou, Maya. 2012. *Letter to my Daughter*. London: Virago Press

This journey started five years ago when I was not admitted to the International Relations bachelor's degree, setting out to get a degree in Sociology instead. Over the course of time, however, I started to feel enthusiastic, and it turned out to be the right choice, after all. How that happened is perhaps a difficult question to answer. What I do know is that the professors who accompanied me throughout the three years of my bachelor's degree enabled the background conditions that led me here. They taught me how to be a critical thinker and sparked a genuine curiosity about what is happening in the world and why. I shall remain forever grateful for the impact of their lessons and advice as a student and as an individual. A special thanks to Dr. Rahul Kumar, who marked my academic journey, for always inspiring his students with his admirable work excellence and endless dedication.

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ABSTRACT

This work aims to understand the role played by social capital in forest fires, given the recent revival of the concept in many disciplines, including the field of disasters. The objective is to explain how individuals, groups, and even communities cope with hazards.

Portugal's natural and environmental characteristics, other social and political aspects, and the urgency of the climate crisis are increasing the risk of the occurrence of megafires such as those witnessed in 2017.

In this dissertation, we analysed how and under what conditions social capital operates in two different communities of Centre Portugal in terms of wildfire preparedness, prevention, and recovery.

Drawn on the social network theory framework, the concept of social capital was defined as the resources embedded in different ego-centric networks. Their configurations were based on empirical research undertaken, having as the main data collection techniques in-depth interviews and participant observation.

Research findings show the importance of community networks and their interaction rituals in shaping wildfire resilience, and how ties are crucial when the State shirks its incumbent responsibility for fire risk management. Top-down solutions not only fail to respond to the problematic of fires in Portugal but also remove people's voices in the discussion of their own safety.

We conclude, grounded on Margaret Sommers' insights on citizenship and market fundamentalism, that social networks are a form of resistance towards democracy's survival.

Keywords: Social capital, social networks, wildfires, interaction ritual chains, community resilience, citizenship.

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INTRODUCTION

In the last few years, there has been a substantial increase in the number of fires globally. Each year, wildfires result in higher mortality rates, significant property losses, and a growing impact on the environment and ecosystems (UN Office for Disaster Risk Reduction 2019).

The prospects of the *Global Assessment Report on Disaster Risk Reduction* (2019) are not optimistic, stressing that it is very likely that extreme events will be more frequent and intense in the future as a consequence of the climate crisis.

Some countries in the world are prone to fires, and one of them is Portugal. Not only is the Mediterranean climate a contributing factor, but also how society is organized, (i.e., historical over-intensive cultivation, the phenomenon of the rural exodus, and, an entrenched smallholder culture that impacts land management) (Camargo & De Castro 2018:33).

Since 1974, Portugal has experienced a greater number of fires and a growing burned area (Pyne 2021). As Stephen Pyne succinctly put it, “Perhaps no country in the world had suffered proportionately with so many bad fires.” (2021:164). What is more, despite being a small-sized territory, Portugal has repeatedly been the European country with the highest number of fires and with the largest burned area annually, especially in comparison with southern European countries such as Spain, France, Italy, and Greece (whose climate conditions are similar) (Camargo & De Castro 2018; Mira & Lourenço, 2019; San-Miguel-Ayanz et al. 2020).

In the fateful year of 2017, Portugal was hit by deadly fires, also known as megafires, for the first time during an extreme fire season. The Pedrógão fire in June and the fire in October ripped through areas like Pinhal de Leiria, Coimbra, and Tondela, breaking records in the number of victims (116 deaths), forest damage (more than 500,000 ha burned), and property and economic losses (500 industry sector companies, 4500 jobs lost, thousands of houses and infrastructures destroyed, among others). Just months after that devastation in Pedrógão Grande, the October megafire, which had started in

Vilarinho (Lousã) and Côja (Arganil), became the first fire of that order of magnitude to happen in Portugal and Southern Europe (Guerreiro et al. 2018).

Reportedly, those catastrophic outcomes were associated with the fire's unprecedented conditions and incredible speed of propagation (Guerreiro et al. 2017, 2018; Viegas et al. 2017, 2019). Both June and October fires were the worst in living memory, which meant a rupture of previously established paradigms that once prevailed in the explanation of wildfires in Portugal (Viegas et al. 2017).

In a detailed spatial and temporal study of wildfires' evolution in Portugal, Luciano Lourenço and Fernando Félix (2019) defined four generations of fires based on available data on the number of occurrences, the total burned area, the dimension of fires, damages, deaths, and the geographic distribution of the affected areas. Indeed, Lourenço and Félix found that the fourth generation is, until now, the severest, which has exactly begun in 2017, "(...) a year that surpassed all that was expected and, in terms of burnt area, broke all the records, which allows clearly to say that is a new generation and not just a fortuitous and punctual circumstance." (Félix e Lourenço 2019:43). In a shorter period, the authors concluded that fires became more intense, and the tendency is to witness bigger wildfires in the future (Félix & Lourenço 2019:43–46).

For a long time, disaster literature has been clinging to the idea that investment in physical infrastructures was the best strategy to build resilience and foster adaptation. An emergent group of authors, however, have been arguing that investment should also focus on improving the social structures¹ to deal with risks. A substantial body of works has demonstrated that communities, and their type and structure of social networks, can cope with risks and recover from extreme events (Adger 2003; Aldrich 2012; Aldrich & Meyer 2015; Bihari & Ryan 2012; Brunie 2010; Dynes 1969, 2005, 2006; Hawkins & Maurer 2010; Kirschenbaum 2004; Levac et al. 2012; MacGillivray 2018; Pelling & High 2005). As Francis Fukuyama (2001) claimed, individuals and societies can hold potential or dormant social capital that in the right social conditions, or by dealing with a certain challenge or shock, could be brought forward and used to mitigate collective risk.

¹ The last *Global Assessment Report on Disaster Risk Reduction* has already stressed the importance of social connections in building resilience communities. Amongst the examples are the 2006 mudflow in East Java, Indonesia, and 2019 post-pandemic, wherein India, intracommunity relationships "acted as *stress sponges* for psychological and financial stresses."(UN Office for Disaster Risk Reduction 2022:90).

Furthermore, when it comes to adaptation to climate change, and its consequent impacts, W. Adger (2003) says that social capital theory offers a deep understanding of how individuals use their relationships to act collectively so as to withstand the long-term threats posed by the climate crisis. In line with this, “social capital captures the nature of social relations and uses it to explain outcomes in society.” (2003:390).

The concept of social capital is by no means new and has deep roots. As noted by Frane Adam and Borut Rončević (2003), the term has recently experienced a revival in literature. In effect, not only did it not remain in the social sciences field but also entered the public sphere, becoming a hotly debated topic (Adam & Rončević 2003; Meyer 2018; Portes 1998; Portes & Landolt 2000).

The sociologist Alejandro Portes, for instance, sees social capital as “one of the most popular exports from sociological theory into everyday language” (1998: 2). The positive effects and consequences of sociability, being commonly viewed as a nonmonetary source of power and influence while ignoring the “less attractive features”, feed into social capital’s rampant popularity.

Hence, given the present gap in Portuguese scientific works that address the social dimensions of wildfires, it is pertinent to understand how social capital influences communities’ resilience towards disasters, especially when projections say that Portugal will face worsening fire conditions in the future (Camargo e De Castro 2018).

Therefore, the overall aim of this dissertation is to study how social capital influences wildfire resilience, having as two case study communities in Central Portugal, the Ferraria de S.João village and the parish Figueiró dos Vinhos and Bairradas. In terms of the specific objectives, we seek a) to enrich disaster studies by incorporating the social dimensions of wildfire resilience in Portugal; b) to rethink the concept of social capital and apply it in the context of fire hazards; and, finally, c) to add new insights about the measurement and operationalisation of social capital in the context of wildfire at-risk communities.

Besides those goals, we also envisage that research findings will shed some light on the key factors that explain the differences between a mobilised community and a non-active one when affected by forest fires. As “Community support for wildfire planning and management is central to the success of long-range landscape planning initiatives to increase ecosystem health and mitigate the risk (...).” (Bihari & Ryan 2012:259), and as João Camargo and Paulo Castro pointed out, forests and rural inhabitants can have a

pivotal role in preventing and mitigating the consequences of climate change unless they are included along with concrete measures and politics of land management (2018:130–31).

This dissertation is divided into four main chapters, and they will unfold as follows. The first one begins with a deep dive into the state of the literature about the main definitions, arguments, and controversies about the concept of social capital and its connection with social network theory. Further, a reflection on community organisation and action during a disaster was advanced to introduce the link between social networks and wildfire resilience.

In the subsequent chapter, research questions and hypotheses were defined as well as the research methodology to be implemented. Key concepts, such as social capital and social network, were operationalised accordingly.

The third section concentrates on the overall results of the fieldwork of two communities in Penela and in Figueiró dos Vinhos. Given the nature of the topics and variables, seven sub-chapters were created. Firstly, the sample was characterised, following the descriptions and level of individuals' attachment to the community and to the place; the third unveils the main norms and shared beliefs of the communities; the fourth, individual engagement in the community is evaluated; the fifth discusses the fire risk perceptions and people's previous experiences with fires and, lastly, on the final sub-chapters, it is explained how social networks operate in the wildfire scenarios in the studied communities towards resilience.

Finally, the conclusion elaborates on the empirical testing of the research hypotheses, the summary of the main findings, and their interpretation and reflection catering to the dissertation's aims, while adding new insights to future works on the same topic.

CHAPTER 1 – UNDERSTANDING WILDFIRE RESILIENCE THROUGH SOCIAL CAPITAL

1.1 Introduction

The study of community behaviour and social organisation during a disaster can be traced back to the early 1960s. Accordingly, it is considered that a disruption wrought by catastrophes can create or reinforce social systems within communities (Dynes 1969; Quarantelli & Dynes 1977). From that point on, the concept of social capital started to emerge in disaster research, as it inasmuch captures “the relationships and personnel networks between and among social actors” within a community in a disaster scenario (Dynes 2005: 2). As a result, a significant number of works have been published applying the concept to different kinds of events such as earthquakes, hurricanes, heat waves, floods, volcanic eruptions, and wildfires (Meyer 2018).

Thus, to understand the centrality of social capital in disasters and then in wildfires, one must be taken into consideration the concept's origins, definitions, limitations, and controversies. Also, given the importance of interactions in the social capital theory, it is valuable for the analysis to present an alternative school of thought, namely the interaction ritual chains, which examines how interactions play out in building collective solidarity and action (Collins 2005).

As a source of social capital, networks must be at the center of the analysis. With that in mind, the contribution of the *network analysis theory* will be explored in this work, further linked to the community's ability to prevent, prepare, respond, and recover from a wildfire event.

1.2. Definitions of Social Capital

Social capital as a concept has grown significantly in recent years and it has been highly diffused in scientific literature. The term has been used in diverse disciplines as well as it has been applied in different contexts (Portes 1998: 2–9). Social capital is not something new to sociologists though. Since Marx's theory about “class-in-itself” and “class-for-itself” and Émile Durkheim's essay on the role of group life in anomie and self-destruction, the involvement and participation in groups had already been analysed and studied in classic sociological theory (Lin 2001b; Portes 1998:2). Georg Simmel (1950)

also made a brilliant contribution to theorising societies through social relations (which will be discussed further).

The first contemporary and systematic analysis was conceived, however, by Pierre Bourdieu in his oeuvre about social stratification² (Adam & Rončević 2003:159; Portes 1998:2; Portugal 2007:17). A year after the publication of *La Distinction*, Bourdieu refined his notion of social capital in a seminal paper: “the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition;” (1980:2). For the French sociologist, the relationships established within a group are circumscribed in a physical and geographical space and are determined by the position of the individual in the social and economic space (1980:2). Hence, the volume of social capital detained by social actors “relies on the extension of the network of connections that he could mobilise, and the volume of capital (economic, cultural, or symbolic) possessed by each of those to whom it is linked.” (Bourdieu 1980:2).

According to the French sociologist, social networks are not a “natural given”, are instead “(...) the result of the work of instauration and maintenance which is needed to produce and reproduce durable and useful connections, likely to yield material or symbolic profits.” (1980:2). In other words, networks are built as strategies of investment to be utilised as a source of benefits (Bourdieu 1980:2).

Bourdieu's definition of social capital, which is instrumental, has two pivotal elements: the social relation itself that gives the individual direct access to resources and the quantity and quality of those resources (Portes 1998:3).

Another central and very known perspective of social capital is from a rational-choice theorist, James Coleman (1990). His ideas have some resemblance with those developed in Bourdieu's theory (Portes 1998:5). In *Foundations of Social Theory*, Coleman defines social capital by its function, and as he argued, “Like other forms of capital, social capital is productive, making possible the achievement of certain ends that would not be

² It should be noted that Bourdieu's concern was to develop a theory of social stratification that explained how social distinction takes place. Therefore, through the volume and composition of the different forms of capitals (economic, cultural, symbolic) detained by individuals, mechanisms such as the preservation of social positions in the social space could be understood (Adam & Rončević 2003:159; Bourdieu 1987). Bourdieu's conception distanced himself from dominant utilitarian approaches. Grounded in his master concept of *habitus*, he acknowledges social actors as individuals who act and are acted upon, by their unconscious and their practice driven habits.” (Somers 2008:226).

attainable in its absence.” (1990:302). Nonetheless, a certain form of social capital that facilitates determined actions “may be useless or even harmful for others.” (1990:302) Essentially, for Coleman, while human capital “is created by changing persons so as to give them skills and capabilities that make them able to act in new ways”, social capital “is created when the relations among persons change in ways that facilitate action.” (1990:304). Coleman’s definition has a “cautious shift” to the outcomes for groups whereas Bourdieu’s focuses more on individual outcomes (Adam & Rončević 2003:159). Social capital lies in the structure where relations are established among persons instead of being an attribute of individuals or in physical implements of production (Coleman 1990:302). Seeing social capital as an attribute of the social structure instead of a property of individuals approximates Coleman to authors such as Robert Putnam's reasoning, which will be discussed below.

Accompanied by examples, forms of social capital (the elements of social relations that constitute helpful capital resources) are distinguished by Coleman: obligations and expectations, information, norms, sanctions, authority, and types of social organisation (Portugal 2006:304–313, 2007:18).

On the other hand, to the American Sociologist, what creates, maintains, or destroys social capital, depends mainly on the closure of social networks, stability of the social structure, ideology, and others like official sources of support (Government’s aid, i.e.) (1990:318–321).

Some critiques, however, have been made of this conceptualisation of social capital. One of them is from Alejandro Portes (1998) who views James Coleman’s definition as rather vague and tautological. Primarily because James Coleman put “under the term some of the mechanisms that generated social capital (such as reciprocity expectations and group enforcement norms); the consequences of its possession (such as privileged access to information); and the *appropriable* social organisation that provided the context for both sources and effects to materialise” (Portes 1998:5). In this sense, Portes pointed out that resources obtained through social capital are seen as a gift. Hence, we must be distinguished “the resources themselves from the ability to obtain them by virtue of membership in different social structures, a distinction explicit in Bourdieu but obscured in Coleman.” (1998:5).

The sociologist Nan Lin also criticizes Coleman’s “functional view” because social capital is identified when and if it works. Therefore, “the potential causal explanation of

social capital can be captured only by its effect.”(2001:11). As Lin puts it, the concepts must be treated as two separate entities with independent measures (e.g., “social capital is the investment in social relations and better jobs are represented by occupational status or supervisory position.”) (2001:11).

Even with its limitations, it is undeniable the contribution of Coleman's essays in giving visibility to the concept of social capital in American sociology. And coupled with Bourdieu, they emphasized the intangible character of social capital in comparison to other types of capital. “Whereas economic capital is in people's bank accounts and human capital is inside their heads, social capital inheres in the structure of their relationships.” (Portes 1998:7). In short, to possess social capital, individuals must have relationships with others, and others are the real source of an individual's advantages (Portes 1998:7). In contrast to the sociological analyses of social capital, political scientists have introduced a conceptual twist by seeking to understand the impacts of social capital at a broader level, such as in towns, cities, or even countries. Therefore, the concept is interpreted in a collective dimension and not at an individual level (Portes, 1998:18; Portugal 2007:19). Robert Putnam's ideas were the most prominent in that approach. Some even have called him the “patron saint of contemporary social capitalists” (Adam & Rončević 2003:156). In his famous book, *Bowling Alone. The Collapse and Revival of American Community*, Putnam argues that “social capital refers to connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them.” (2000: 20). If social capital is present (in the form of networks, norms, and social trust) coordination and cooperation will be facilitated for mutual benefit (Putnam, 1995:224).

From the author's perspective, social capital comes in a myriad of different shapes and sizes with diverse uses. For instance, the extended family, a school class, the regulars who play poker, college roommates, civic organisations, and Internet chat group, all represent a form of social capital (Putnam 2000:19–23). However, like James Coleman, Putnam conceives networks as being simultaneously the source and the form of social capital, which hinders the concept's operationalisation (Portes 1998:19; Portugal 2007:19).

According to Putnam (1995), civic engagement in American society had registered a significant collapse over the past several decades by virtue of the erosion of social capital in the form of American civic associations and social connectedness. Therefore, the thrust

of Putnam's argument is that the extension of social capital in any given society is intrinsically linked to the level of association and participation of individuals in society. In addition, the collective dimension of Putnam's insights is clear when he states: "(...) life is easier in a community blessed with a substantial stock of social capital." (1995:225). Social capital is then perceived by Putnam as being simultaneously a private and a public good (2000:21).

Briefly, if the basic question for social capital analysts such as Pierre Bourdieu and James Coleman is, "What my network of connections could do for me?", to Putnam is "How can we all benefit from a large social network with norms and trust associated?" (Portugal 2007:19).

In spite of the different approaches, there is a consensus "that social capital stands for the ability of actors to secure benefits by virtue of membership in social networks or other social structures" (Portes 1998: 6).

1.3. Limitations of Social Capital

The definitions of social capital are not exempt from problems. The most common and adopted interpretation of the concept, which has a strong inspiration from "Putnamian" line of thinking, is that social capital represents some kind of "causal force able to transform communities and nations" (Portes & Landolt 2000:529)³. Consequently, there is a tendency to "emphasize the positive consequences of social ties, to the exclusion of their less desirable consequences", and to state that social capital is the cure for all the maladies of our societies (Adam & Rončević 2003:178; Portes 1998:15; Portes & Landolt 2000:532). Alejandro Portes and Patricia Landolt expressed concerns with those assumptions. Firstly, the fact that through social networks the agent can mobilise key resources, not only does not necessarily guarantee a positive outcome but also can result in a negative one in its absence⁴ (2000:532). In fact, given how wealth and resources are

³ This idea is essentially drawn from Putnam's thesis on how the norms and networks of civic engagement powerfully affect the government's performance. The voter turnout, newspaper readership, membership in social groups, i.e., choral societies and football clubs, etc, all together (norms and civic engagement) could lead to faster economic development, lower crime, and more effective government (Putnam 2000:224).

⁴ Francis Fukuyama (2001) pointed out how negative externalities of social capital also abound, by giving the examples of groups such as Ku Klux Klan and the Mafia.

unevenly distributed in societies, having trustworthy and solidary ties could provide instead limited or poor-quality resources too (Portes & Landolt 2000:532).

Secondly, the same ties that enable group members to have privileged access to resources will mean that the outsiders would be banned and restricted from securing those same assets (Portes & Landolt 2000:533). For instance, community closure may undermine the success of business initiatives “by enforcing excessive claims on entrepreneurs” (Portes & Landolt 2000:533). Another example is how ethnic and racial discrimination is amplified by the logic of social isolation of groups. Supported by Bourdieu's ideas, James Elliott, Timothy Haney, and Petrice Sams-Abiodun explained that hardly ever is social capital uniquely summarised by the connections, it also reflects unfailingly the asymmetric distribution of status and power in the society (2010:610–12).

Thirdly, community or group membership generally relies on conformity. In a small-town setting, for instance, where everyone knows each other, social control is implicit.

Another constraint is how group solidarity is cemented by a common and shared experience of opposition to mainstream society. Hence, individual experiences are impeded to succeed in maintaining group cohesion (Portes 1998:16).

In addition to those weaknesses, the divergence of viewpoints on whether social capital is a community or private attribute has prompted theoretical and measurement confusion (Lin 2001b:27; Portes & Landolt 2000:535; Portugal 2007:20). The conceptual stretch introduced by Robert Putnam provoked “a state of confusion” by virtue of not being properly theorised. Thus, problems started to emerge, such as interpreting social capital as synonymous with all positive things in social life; circular reasoning which does not allow the extrication of causes and effects of social capital⁵; leaving less room to comprehend other possible causes to certain phenomena. The famous assumption that some cities are richer and better governed than others owing to the “blessed” stock of social capital, actually overlooks other possible extraneous causes that “account for *both* the altruistic behaviour of the population and the effective character of its government.”(Portes & Landolt 2000:535–536). As Margaret Somers mentioned later in her book, Putnam's assumptions in *Bowling Alone* dismiss other significant causes for social decline, in particular the substantial impacts of neoliberal policies (2008:234).

⁵ Bourdieu's and his successor's conscientious viewpoint in seeing social capital as a personal trait, prevent those confusions. In that case, while people's networks are the sources of social capital, the material and informational resources are the effects, albeit purposefully constructed or not (Portes & Landolt 2000:535).

Lastly, due to the unprecedented acceptance of the concept, social capital is thought to be a 'genotype' (most authors agree with Coleman's formulation) with many phenotypic applications (diverse social-scientific research since social capital is "highly context-specific") (Adam & Rončević, 2003, pp. 158–160). As a result, it lacks a coherent and consistent methodological framework. Therefore, problems concerning definitions, operationalisation, measurement, and the distinction between sources, forms, consequences of social capital, and the question of whether social capital is a dependent, independent, or intermediary variable remain unsolved until a unified approach and coherent research program are put forward (Adam & Rončević 2003: 157).

1.3.1. Controversies about social capital's genesis

In less than a decade, social capital has skyrocketed and become one of the most reigning ideas of all time. In her outstanding oeuvre entitled *Genealogies of Citizenship*, Margaret Sommers attributed the social capital phenomenon to "a perfect storm", though caused by the collision of multiple storms (2008:214–15). The first and more impactful of them was the publication of Robert Putnam's books. Secondly, the other *storm* was caused by neoliberalists' urge to find a quick solution to market externalities and transaction costs, to avoid the "handouts" of the Welfare State, the search for how to deal with the consequences of post-Washington Consensus, social scientist's ambition of coming up with reasonings that included social relations in prevailing economic models, etc. These events had coalesced in a "new theory and vocabulary that would name, explain, and 'make true' for political knowledge a source of value that would serve as an alternative to the power of the state." (Somers 2008:216). In fact, the desirable goal was to create a social mechanism that implied independence from the state to reassure economic growth and solve social problems was, ultimately, the main goal (Somers 2008:216).

Against what sociologists thought, social capital had been appropriated by economists to justify the neoliberal project as a "Trojan horse" (Somers 2008:218).

The problems with the concept had already been raised in the proper etymology of social capital though (the sum of social + capital). For the sociologist, coupling the two terms only leads to an *evacuation of the social*, owing to the incompatibility between the inherent utilitarian value in which the term capital is entangled (resource with economic

value over time)⁶ and how “social” is *performatively relational* (Somers 2008:219–222). That is to say, the utilitarian point of view sees civil society as a “fully self-regulating social entity independent of the state and functioning as a countervailing source of power and social organization” (Somers 2008:222). In this sense, social capital could not be less relational because people are, in that perspective, constitutively autonomous, becoming isolated and separated individuals from each other (Somers 2008:221–22). As a result, sociality is evacuated from social capital in line with the utilitarian view of interpreting the concept “as an aggregate of contractually interacting individual agents.” Such postulates distance themselves from a sociological approach to society (Somers 2008:223–24).

1.3.2. From social capital to privatised citizenship

By looking at social capital's trajectory, Margaret Somers identified the emergence of, as she calls it, “a *deus ex machina*” in the form of a new vocabulary of social capital to legitimise a market-driven model of governance. A perfect excuse was then found “to explain, justify, and obfuscate the political project of shifting the burdens of social risk and market externalities from market and state to the personal responsibility of individual families and communities.” (Somers 2008:239–241). According to the author, what lay behind *the political project of marketizing the social* (i.e. commodifying social relations) is a series of aims such as the provision of nonstate solutions to problems the market was and is incapable of responding; the shift of citizens' expectations from rights claims to obligations and duties; the reconfiguration of citizenship “through the cultural sphere of moral regulation, self-help, and personal responsibility”; and, finally, a replacement of civil society by the term “community”, where social capital is supposedly confined (Somers 2008:242). That word is intentionally employed to warrant a much-desired removal of the State's presence. By valuing the community as a self-sufficient system where traditional norms are based on a certain “disdain for dependency on the State”, a dislocation of the responsibilities and social risks from the public to a personal and

⁶ As Somers wisely claimed, what distinguishes the capital from the commodity is the intention in our minds. In other words, there is nothing inherently present in the objects that makes them capital. Thus, it is a mental state of the agents who decide whether “to defer the immediate gratification of consumption, enjoyment, utility, and exploitation in expectation of greater future rewards.”(2008:221).

community level can be fully attained (Somers 2008:242–243). Subsequently, self-reliance culture is deeply encouraged.

The disbelief of the State as a source of support, rights, and entitlements and the rejection of “the State as the locus of social action” accounts for the very essence of social capital, in Somers’s point of view. Moreover, “[s]ocial capital requires that people in their churches, their communities, their city councils, their voluntary associations, their Rotary clubs, their women’s societies, and their bowling leagues assume local civic duties and personal responsibilities.”(Somers 2008:244).

Consequently, there is a shift from rights to duties and the public sphere is transformed into a privatised community, “as the essential act of citizenship” (Somers 2008:245). Hence, citizenship was redefined in such a way that makes us believe that social capital (*that is us, by the way*) is the true culprit of the market’s problems such as unemployment, low-wage jobs, loss of benefits, etc. (Somers 2008:245–247). “In the paradoxical new message of privatized citizenship, the social has been evacuated by an aggregate of purely instrumental connections ‘owned’ by each individual, and funneled into the market.” (Somers 2008:247).

1.3.3. “Interaction Ritual Chains” – an alternative theory

Interaction is at the core of the social capital theory. However, there are other schools of thought in contemporary Sociology that theorised social interactions. One of them is Randall Collins contribution (1980:2). The author proposed an alternative model of interactional situations, grounded in canonised works within classic sociological theory. Indeed, Collins conceptualised the social world through a “radical microsociology”, in which concepts and ideas were drawn from Émile Durkheim and Erving Goffman’s contributions. Hence, to Collins,

society is held together to just the extent that rituals are effectively carried out and during those periods of time when the effects of those rituals are still fresh in people’s minds and reverberating in their emotions. (...) And the “society” that is held together is no abstract unity of social system, but is just those groups of people assembled in particular places who feel solidarity with each other through the effects of ritual participation and ritually charged symbolism (2005:41).

Accordingly, what holds society together as stratified or conflicting groups is social rituals. The rituals, in turn, create and sustain solidarity among those groups (Collins 2005:41).

As Durkheim and Goffman proposed, rituals are rule-following guides that dictate how an individual should behave or act in the presence of an object that has special value for him (or “sacred objects”, as Durkheim called them). In other words, the “sacred objects” constrain individuals’ behaviours in a symbolically laden fashion. For instance, salutations, compliments, and stereotyped verbal interchanges are examples of rituals. Thus, everyday life is full of minor conversational routines that define various kinds of personal relationships, once “they are reminders of how persons stand toward each other, with what degree of friendship (i.e., solidarity), intimacy, or respect.” (Collins 2005:17–18).

For that reason, Collins’s theoretical model of interaction rituals is “a theory of momentary encounters among human bodies charged up with emotions and consciousness because they have gone through chains of previous encounters.” (Collins 2005:3). To prolong social sentiments, those that emerged if “collective effervescence/consciousness” (an intensification of shared experience propelled by the closeness of bodies) is attained, symbols become imperative. Hardly ever are sentiments preserved without a representation of an embodied object (Collins 2005:34–38). Durkheim had already underlined how society is patterned by symbols or, more specifically, by respect for symbols. However, that is only accomplished provided that the symbols “are charged up with sentiments by participation in rituals”. Unless sentiments are renewed periodically through rituals, they do not run the risk of fading away (Collins 2005:37).

In Randall Collins’s view, “[e]veryday life is the experience of moving through a chain of interaction rituals⁷, charging up some symbols with emotional significance and leaving

⁷ Interaction rituals are depicted in “a set of processes with causal connections and feedback loops among them.” In these processes, there are the main ingredients or initiating conditions: group assembly (bodily co-presence), barrier to outsiders (participants have a sense of who is taking part and excluded), mutual focus of attention (upon a common object or activity), and shared mood or emotional experience.”

When the “ingredients successfully combine and build up to high levels of mutually focused and emotionally shared attention”, participants may experience four outcomes: group solidarity (feeling of membership), emotional energy in individual (i.e., feelings of confidence, enthusiasm, initiative in taking action), symbols that represent the group (such as emblems, words, gestures, etc. – “sacred objects”) and finally, standards of morality (“the sense of rightness in adhering to the group, respecting its symbols, and defending both against transgressors.”) (Collins 2005: 47–50).

others to fade.” (Collins 2005:44). Therefore, interaction ritual theory has at its core “the process in which participants develop a mutual focus of attention and become entrained in each other’s bodily micro-rhythms and emotions.” (Collins 2005:47). Ultimately, the variations in interaction rituals (IRs) explain the myriad varieties of human social life. One of those varieties is social capital. Attributed to network ties, social capital is a type of interaction ritual chain, albeit repetitive. In this case, individuals make use of interactional situations in terms of getting the highest payoff in emotional energy or other kinds of goods. Hence, “individuals’ behaviour in regard to interaction rituals is rational behaviour.” (Collins 2005:158–165).

1.4. The social networks as social capital

1.4.1. Contributions of the Network Analysis

Regardless of the dilemmas around the most suited theoretical and methodological approach, the contribution of the *network analysis theory* may well be the answer to overcoming the drawbacks related to the measurement and operationalisation of social capital’s concept (Adam & Rončević 2003:167–168; Portugal 2007:20). Because of the insights offered by the network theory, tautological assumptions are avoided as well as the transition between macro and micro perspectives will be simpler, as it is understood the processes in which social capital is constructed and employed (Portugal 2007:20).

Social capital is inextricably linked to the concept of network because the former is produced through social interactions and relations (Portugal 2006:121). As social network theorist Nan Lin claimed, “social capital is captured from embedded resources in social networks.” (Lin 2001b:17–18). Nonetheless, the origin and the conceptualisation of the term network date back to the 18th century. Since then, the concept has migrated to other disciplines (Mercklé 2004; Portugal 2007; Watts 2003). In sociology, it became arguably recognisable after the second half of the 20th century with Georg Simmel's theory, whom some claim as being the founder of the sociology of networks (Mercklé 2004:14–15; Portugal 2007:3).

To Simmel, society is the product of the interaction among individuals. Consequently, the process that describes how interactions aggregate isolated individuals in their path to satisfying their needs and interests is coined *sociation* by the German sociologist (1950:40–41). Indeed, those interests whatever their nature, “form the basis of human

societies” (Simmel 1950:41). Therefore, the social can only be understood through social interactions (Mercklé 2004:17)

The social network analysis has two broad principles: “to account for the behaviours of individuals through the networks in which they are situated, and to perceive the structuring of these networks from the analysis of interactions between individuals and their motivations.” (Mercklé 2004:94). As a result, this approach reveals to be a fruitful bridge between micro and macro social perspectives by virtue of making intelligible “how individual behaviour aggregate to collective behaviour.” (Granovetter 1973:1360; Watts 2003:24).

In fact, this school of thought has decisively helped to reach a better understanding of social capital as a concept and contributed to its operationalisation (Portugal 2007:20–21). One contemporary well-known source is the work of Nan Lin (2001a, 2001b) According to Lin, social capital, “as an investment in social relations with an expected return in the marketplace⁸, should be defined as *resources embedded in a social structure that are accessed and/or mobilized in purposive actions.*”⁹ (2001b:29). Therefore, “individuals engage in interactions and networking in order to produce profits.” (Lin 2001b:19). Whether social capital is accrued for the collective or for the individual, Lin states that the focus is on individuals, but the aggregation of personal returns can also benefit the collective (Lin 2001b:21).

Lin’s approach presents four reasons “why embedded resources in social networks enhance the outcomes of actions”. Firstly, the facilitation of the flow of information. The location of strategic social ties can provide personal benefits and opportunities by giving access to specific information. Secondly, those social ties may exert a powerful influence on agents or in decisions. Thirdly, social ties can be conceived as *social credentials* which might guarantee accessibility to resources. Finally, through social networks and relations, the individual’s identity and recognition are reinforced¹⁰. As a result, being recognised provides not only emotional support but also public acknowledgment (Lin 2001b:19).

⁸ To Lin, the term market “may be economic, political, labor or community.” (Lin 2001b:19).

⁹ In addition, as the author states, deviations from this understanding, will lead to “confusion in analysing causal mechanisms in the macro- and microprocesses” (Lin 2001b:20).

¹⁰ By criticising the idealism of Ludwig Feuerbach, Karl Marx (1845) had grasped the importance of social relations in shaping individuals’ paths through life. In his own words, “The human essence is the ensemble of the social relations.”

It is generally believed that the utility of social capital lies in network density or closure (Lin 2001b:27). But that assumption can be promptly abandoned due to Mark Granovetter's explanation about the value of the "weak ties"¹¹ in the access to different types of information, ideas, and influences that otherwise would not be available without them. Indeed, weak ties represent "bridges" in an individual's network since they "create more, and shorter, paths". For instance, agent A has connections as well as agent B. Given the existent link between A and B, B will have access to A's connections (Granovetter 1973:1361–1364). Therefore, more people can be reached through that bridge and a greater social distance will be attained (Granovetter 1973:1366). Indeed, the thrust of Granovetter's argument is that "those to whom we are weakly tied are more likely to move in circles different from our own and will thus have access to information different from that which we receive." (1973:1371).

It was from Mark Granovetter that one of the three types of social capital surged, namely the "bridging social capital". To measure social capital in their study, Christian Grootaert, Deepa Narayan, Veronica Nyhan Jones and Michael Woolcok defined three main typologies (2004:4). The first one is "bonding social capital", which had been discussed earlier by Robert Putnam, and refers to the ties established between individuals who have similar socio-demographic characteristics (or social identity) such as age, ethnic group, class, etc (2000:30; Szreter & Woolcock 2004:654–655). On the other hand, the ties which connect individuals with dissimilar characteristics account for the "bridging social capital". And finally, the third type was only advanced in recent years, the "linking social capital". It is built up from relations with people in positions of authority, i.e., representatives of public and private institutions. Bridging is horizontal because it links actors with similar social positions, whereas linking social capital is vertical, connecting individuals based on power differentials (Grootaert et al. 2004:4).

¹¹ For Granovetter (1973), what defines the strength of a tie "is a (probably linear) combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the tie." If the tie is strong between two individuals, it is highly likely that they are both similar in various ways.

1.5. Social capital and disaster resilience

1.5.1. The role of social capital in disasters

In disaster literature, the concept of social capital has had a burgeoning presence (Meyer, 2018:263)¹². As reported by W. Neil Adger, “It has long been recognised that social capital is central to the lived experience of coping with risk.” (2003:389). The remarkable work produced by the American sociologist Russell Dynes (1969, 2005, 2006) certainly contributed to that recognition. He spent much of his career exploring community’s behaviour in different stages of disasters. According to Dynes, “[w]hen new threats appear (...) we often miss the effectiveness of individual communities in addressing these threats.” (2005:1). Hence, contrary to a widespread belief, “disasters create unity rather than disorganisation.” (Dynes 1969:83).

In that sense, social capital is thought to be an overlooked variable that helps explain why some communities effectively withstand disasters (Dynes 1969, 2005, 2006). In emergencies, not only could social capital emerge from an already-existent form, but also it could be created (Dynes 2006:4). To illustrate the argument, the author explained that the reason why 87% of people were successfully evacuated during the collapse of the World Trade Towers in New York, was to do with the individuals' initiative to collectively organise. Nevertheless, the 9/11 event is not the only case that demonstrated the implicit social nature of emergencies. In fact, how social capital is created and mobilised, has a direct impact on survival rates in disasters (Dynes 1969, 2005, 2006).

Drawing on James Coleman’s reasoning, Russell Dynes applied the dimensions of social capital to the context of disasters. To begin with, within a community, trust is developed since our obligations will be repaid when we need help (Dynes, 2006:2). This is especially important in the search and rescue phase. The rescue team depends on the community's knowledge of neighbours to identify victims, and the rescue operation significantly counts on the help of community members. In turn, “[s]ocially isolated individuals are

¹² Whether social capital is a private or collective asset in disaster studies is something that needs some clarification. Michelle Meyer in her review showed that most works interpret the concept in terms of collective outcomes, whereas few studies used social capital to understand individual outcomes (2020:268). The two approaches are not only possible, but both have accumulated sustained empirical research. In fact, what differentiate them is simply the unit of analysis (Meyer 2018:268–275).

less likely to be rescued, seek medical help, take preventive action (such as evacuating), or receive assistance from others in the form of shelter.” (Dynes 2005:7)¹³.

In several aspects of disaster behaviour, social capital as information flows within a community is fundamental. It is well-documented how social networks pave the way for the dissemination of specific information sets, thereby developing specific risk perceptions, which ultimately spurs preventive actions (Brunie 2010:63; Dynes 2005:8). Consequently, relationships act as “a conduit for disaster-related knowledge” (Kirschenbaum 2004:9).

In general, as Aurélie Brunie demonstrated, “[s]ocial networks and connections have been found to be an important channel for confirming, correcting, and supplementing warning messages (...).” (2010:61). In the light of empirical research, those information channels are of considerable importance before and after disasters (Brunie 2010:62), especially when there is little effectiveness of official campaigns in risk awareness and what to do during a disaster (Brunie 2010:76).

Norms and sanctions constitute a powerful form of social capital in disasters. And that is because norms can both facilitate or constrain actions. For the sociologist Russell Dynes “(...) many disasters produce the optimum conditions for the development of altruistic norms.” (2005:10), and helping efforts become a part of a community norm (2005:2). But obligations and expectations can be also stated as negative when socially isolated individuals are deprived of rescue and medical help, preventative actions, and receive assistance (Dynes 2005:15).

Another dimension of social capital is relative to the performance of authority roles in disaster. Creating authority for certain situations is something hardly seen (Dynes 2005:25). Therefore, the actual pre-disaster patterns of authority structures within families, within community organisations, and in the community as a whole, are the ones that operate “as the base for the community effort in the emergency period.” (Dynes 2006:15).

¹³ For example, in the 1995 Chicago heatwave, elderly population were very likely to die and not being identified for days. Moreover, among the deaths, the Afro-American community were represented disproportionately due to their lack of social capital and public organisational space (Aldrich & Meyer, 2015:259).

When it comes to disaster research, it is overestimated how disasters destroy physical and human capital. Nevertheless, as Dynes pointed out, of all forms of capital, social capital is the only one that is renewed and enhanced in an emergency (Dynes 2005:7).

Similarly, in the response phase a wealth of data has proven the positive influence of social capital in the implementation of mitigation and adaptation strategies (Pelling & High 2005; Meyer 2018) as well as in preparedness and evacuation (Brunie 2010; Meyer 2018). In terms of recovery, for instance, Daniel Aldrich (2012) sought to understand why some regions have more chances to recover faster than others. Having as a case study the 1923 earthquake in Kanto, Japan, the author verified a strong correlation between high levels of social capital and rapid recovery. The author measured social capital through Putnam's lens, and concluded that the likelihood of rebuilding is low when communities exhibit low civic participation (i.e., voter turnout and political gatherings). In Tokyo neighbourhoods, informal and formal networks and relationships were built through repeated local meetings, activities, and protests. Consequently, expectations of reciprocity and assistance had been established among residents (Aldrich, 2012, p. 411). Astonishingly, those ties were not only maintained after the displacements following the earthquake, but they also assured the return of residents. Over the course of time, they worked collectively to rebuild the place they had once lived in (Aldrich 2012:411). It is then explained why the rate of population growth post-earthquake was slightly negative in the less mobilized precincts (lower-than-average numbers of rallies, marches, and protests) compared to the more mobilized precincts. In fact, the latter had experienced a growth rate of 4 percent (higher than both national and urban levels) (Aldrich 2012:410–411).

The same pattern happened in the aftermath of Hurricane Katrina in 2005. The members of the community Village de l'Est in New Orleans “did everything they could do to maintain their connections”, in contrast to other affected neighbourhoods. When they were allowed to return, residents did so *en masse*. The community overcame barriers due to their collective action heavily drawn on informal insurance (parish help in providing food supplies, e.g.) and became an “emblem of resilience in a still struggling New Orleans.” (Aldrich 2012:412–413). What Aldrich's study showed was the fact that “(...)

in recovery period, social capital remains the most important variable for growth”¹⁴ (2012:411).

Overall, a strong body of evidence has concluded for prominence of social capital's influence on facing threats such as catastrophes. Namely, in providing financial (e.g., loans and gifts for property repair) and nonfinancial resources (e.g., search and rescue, debris removal, child care during recovery, emotional support, sheltering, and information).” (Aldrich & Meyer 2015:259). Looking into the creation of social resources in a disaster context has the advantage of seeing beyond the destruction of physical capital (Dynes 2005:23). Although a rigorous sociological perspective has to consider the inequalities of the distribution of *bads*¹⁵ and the vulnerabilities of those exposed to risks and catastrophes, Russell Dynes proposes that there is a human capability within social systems worth analysing and studying (2006:23).

Even if there are other forms of capital (i.e., economic, and physical) implied, social capital can indeed exert an influence on community resilience before, during, and after disasters (Aldrich & Meyer 2015:256; Meyer 2018: 274).

1.5.2. Shaping resilience: towards a scale-sensitive social capital theory

In recent decades, a consensus emerged in the literature that the strength and density of ties between individuals, as well as trust, reciprocity, and the content of shared norms within a network have a direct impact on disaster resilience (MacGillivray, 2018, p. 117). Brian McGillivray observed, however, “that social capital may in some contexts actually *undermine* resilience.” (2018:117). The aspects of the “dark side” of social capital were already aforementioned: the exclusionary nature of bonding social, the nature of reciprocity, unresponsive linking capital (when political rebuilding aims are disconnected from the conditions and needs of local communities) and the conservative nature of social capital (MacGillivray 2018: 119).

¹⁴ Some scholars introduced in their research on social capital and recovery the dimensions of social vulnerability. Indeed, findings suggest that “class, race, gender, and disability affect how individuals access and use social capital during disaster.” (Meyer 2018:270). Other work from Hawkins and Maurer (2010) noted that lower income and racial minorities were less able to access bridging networks, which are particularly essential for long-term recovery outcomes, making them more reliant on bonding social capital during disaster recovery.

¹⁵ (Curran 2013).

Despite being widely acknowledged that context matters when it comes to resilience, for the same author, it remains poorly synthesised which background variables of context can influence social capital and through which mechanisms¹⁶ (2018:116).

Consequently, the author's critical analysis of social capital applied to resilience to climate and geophysical hazards suggest that not only does structure count, but the content of networks offers a greater value in theorising and analysing the social dimensions of resilience. Among the network's embedded resources (network node attributes) that dictate resilience, there is: the content of social norms (such as conventions and customs). Secondly, the mental models of risk, that is, shared beliefs (related to hazards), experiences, and social memories (MacGillivray 2018:122); and, shared expectations for collective action. While the community accrues resources within social networks, they still might lie dormant. Thus, seldom is social capital mobilised for collective action without shared beliefs in a community's capacity to act in pursuit of a given end (MacGillivray 2018:122).

Networks fulfil different types of functions in a community. The ensemble of generic (e.g., information sharing) and specific (e.g., land sharing networks) networks help to build resilience. As opposed to what is often alleged, social networks are not task-independent structures with "a stock of generic sources to be deployed". Rather, each network requires tasks, resources, and forms of collective action (MacGillivray 2018: 122).

In conclusion, resilience is not merely shaped by the strength and density of network ties. Norms, perceptions, stories, and beliefs that are propagated through those networks should also be considered. The overall thrust of McGillivray analysis has been to emphasise how social capital is a "fundamentally *placed* phenomenon" where "the nature and operation of social capital varies by culture, scale, and the geographic extent of social networks." (2018: 123).

¹⁶ The measurement of social capital on hazards resilience is highly debated. Although social capital is linked to the theory of social networks, empirical work has deviated from the standardized measure of social network analysis. In addition, social network analysis researchers do not make the same normative assumptions that social capital theorists adopt.

As a result, there is a tendency of social network analysis scholars to confine their research aims on "describing patterns in network relations", putting aside the trust and norm-sharing variables in their studies. A notable exception is Burt and Lin's works (MacGillivray 2018: 117).

1.6. Social networks' contribution to wildfire resilience

As it has been discussed so far, social networks as a source of social capital, provide a “fertile ground for understanding both individual and collective processes that affect all phases of disaster, as well as developing research-grounded programs that improve disaster resilience¹⁷.” (Meyer 2018:278).

Some disaster scholars have focused on searching how social capital shapes community resilience to wildfires. For instance, Yoko Akama, Susan Chaplin e Peter Fairbrother (2014) had as case studies four Australian fire-prone communities, where they examined how bonding, bridging, and linking relations influence collective action to build adaptative capacity. The authors examined how those frameworks of social capital were created, what kinds of communication and knowledge exchanges were present, who was involved in those networks, how trust and reciprocity were expressed or demonstrated, etc.

Among the ensemble of networks identified, one bonding type was found through an elderly person who lacked social connections due to his isolation. Bonding social capital has helped many families to survive disasters. However, individuals who lacked them or whose bridging and linking relations were frail ran the risk of being more exposed and unable to access community resources (Akama et al. 2014:3). This low level of connectivity not only can happen to the eldest but also to the new residents. Accordingly, for Akama, Chaplin, and Fairbrother, wildfire research has paid little attention to these individuals (2014: 4).

The findings revealed how social integration happens through networks. For instance, a female resident network showed a critical role as a *catalyst* (or *gatekeeper*) in bringing people together (Akama et al. 2014:4).

Bridging ties in a community facilitates “the exchange of information between distinct groups and help to expedite the flow of ideas among groups. As such, they are important

¹⁷ Resilience can be defined as “the ability of individuals, households, communities, cities, institutions, systems and societies to prevent, resist, absorb, adapt, respond and recover positively, efficiently and effectively when faced with a wide range of risks, while maintaining as acceptable level of functioning without compromising long-term prospects for sustainable development, peace and security, human rights and well-being for all.” (United Nations Sustainable Development Group 2020:3).

to the process of educating the community as a whole, and in organising or mobilizing for collective action”¹⁸ (Akama et al. 2014:5).

Hannah Brenkert-Smith's study grasped the importance of those ties too. In wildland-urban interface communities, the bridging ties not only did promote a flow of wildfire information from full-time to part-time residents but also, fostered relationships that “galvanised small-scale mitigation efforts to combat shared risk.” (2010:696). That is because the findings suggested that “(...) residential status was the most important factor shaping the amount of time owners spent on in their communities and played a vital role in shaping informal interactions. (...)”. Full-time residents are bound to engage actively in formal community activities as well as in informal social activities (Brenkert-Smith 2010:694–695).

Another example is from an even more dynamic female resident network (bridging and social activities are displayed). She is linked to several residents who have both bridging and linking roles because of their integration into more powerful social groups in terms of power differentials in a community (e.g., Community Fireguard groups). To the authors' astonishment, this resident apparently plays a leadership role¹⁹(Akama et al., 2014:7). Jakes et. al defined this type of resident as “key citizen leader” (2007:191).

Formal ties or linking relations are indeed indispensable when it comes to wildfire preparedness. For instance, the involvement of government and agency representatives is linked to a great level of effectiveness, once they hold financial and physical capital (Akama et al. 2014; Jakes et al. 2007).

In an on-coming fire, there was a range of informal and formal ties that “foster information flows and can become a repository of local knowledge, creating and maintaining interdependent connections among different sources within and beyond the community provides a way to gain access to advice, services, support and resources.” (Akama et al. 2014:9). In this regard, adaptation and mitigation strategies are unfolded

¹⁸ Hannah Brenkert-Smith (2010) also grasped the importance of bridging capital in Colorado wildland-urban interface communities. More precisely, her findings showed the impact of interactions amongst part- and full-time residents on wildfire risk decision-making and behavioural outcomes (mitigation efforts to combat shared risk).

¹⁹ The two female residents are “the critical hubs” in the network whose performance and operability will define network outcomes (Watts 2003:160).

when it is possible to achieve a “balance between bridging, bonding and linking social capital in a social system (...).”(Pelling & High 2005: 310).

Another qualitative study was led by Tara McGee and Stefanie Russel (2003) in a high-fire-risk rural community in Victoria, Australia. In the wake of understanding how wildfire emergency preparedness (prevention actions plus knowing how to respond) is performed, the results confirm the importance of social networks. This research was undertaken based on the idea that wildfire preparedness relies on variables such as the stock of social capital (networks and mobilization of resources).

In Victoria's community, it was found that social cohesion was particularly noticeable when participants told they seek other residents who belong to the fire brigade to obtain information. The resulting connectedness followed a willingness to work together in a wildfire event, and on top of that few mentioned assisting the elderly and other residents (McGee & Russell 2003:9). Besides that, the community had extensive and active networks not only for fire-related issues but also for non-fire-related issues.

It is worth mentioning that as an agricultural-based rural community, the population is aging and decreasing in number. This has a direct impact on the community's ability to respond effectively to wildfires. Residents who had lived in the area for an extended period demonstrated to be better prepared because of their involvement with the local fire brigade, previous experience with fires, and engagement in the network's community (McGee & Russell 2003:10). Even though demographic and economic issues may prevail, it was proven that a set of different formal and informal settings in the community strengthen wildfire preparedness (McGee & Russell 2003:10).

Those findings were also echoed across studies by authors such as Jakes *et al.* (2007) and Bihari and Ryan (2012). Social capital might well be a contributing factor in facilitating wildfire risk reduction (Bihari & Ryan 2012; Brenkert-Smith, 2010). Menka Bihari and Robert Ryan studied six different communities in Montana, Colorado, New Mexico, California, Florida, and New Jersey (2012:255). On the one hand, the results indicated that “residents who perceived higher social capital (i.e., community cohesion) engaged in several proactive planning measures such as developing an evacuation or emergency plan as well as collaborating with neighbours/agency personnel on planning and management projects.” (Bihari & Ryan 2012:259). Furthermore, they also were more likely to develop

wildfire preparedness²⁰ activities (i.e., forest thinning, fuel reduction, etc) and share information. In other words, at a community level, higher social capital smooths the path for creating better measures and acting for wildfire preparedness and mitigation (Bihari & Ryan 2012:259).

Also, a significant correlation was found between place attachment²¹ and cohesion in the community. In fact, as equally claimed in Jakes et al. essay, place attachment entails “great personal significance” and residents are driven to foster relations among neighbours and incentivise the resident’s involvement in addressing problems (Bihari & Ryan 2012:259; Jakes et al. 2007:194). “People with greater attachment seemed to be more involved in local associations/activities and were cognizant of the wildfire risk.” (Bihari & Ryan 2012:259).

After disasters, it is also well-documented the primary role of social networks in recovery, particularly when there is less or none state-intervention (Meyer 2018:270). In the case of wildfires, Sharp et. al. (2013) outlined the centrality of community-agency interactions and cooperation. Indeed, trusting relationships built after a fire spurs public support for future management strategies as well as collective planning between agencies and communities (Sharp et al. 2013:11). Thus, the flows of communication, “how individuals determine trustworthiness of others based on their beliefs in the trustee’s ability (i.e. knowledge, skills and competencies), benevolence (i.e. the extent to which the trustor believes that a trustee will act in best interest of the trustor) and integrity” (how the trustor perceives the attitudes in accordance with a set of values and norms shared with or acceptable to the trustor), and timing of recovery plans (in the aftermath people may felt overwhelmed and exhausted) affect the outcomes of the post-wildfire stage (Sharp et al. 2013:18). In addition, institutional structures are presented as crucial in providing a base for trusting the agencies in the response stage. Once “(...) reliable institutions, such as policies and procedures, create a more trustworthy environment at all levels (...)” (Sharp et al. 2013:18).

²⁰ United Nations Office for Disaster Risk Reduction describes preparedness as “the knowledge and capacities developed by governments, response and recovery organizations, communities and individuals to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters.” Definition accessed in <https://www.undrr.org/terminology/preparedness> .

²¹ Or *topophilia*, term coined by the geographer Yi-Fu Tuan who defined as “all of the humans being’s affective ties with the material environment.” Those ties “differ greatly in intensity, subtlety, and mode of expression.” (1990:93).

Having set the link between social networks, community interconnectedness and their effect on disasters, particularly in all stages of a wildfire, the following question is thus raised: is it possible to find the same community dynamics in the Portuguese context wherein social capital contributes to wildfire resilience?

CHAPTER 2 – BEYOND THEORY: DEVELOPING A CRITICAL SOCIAL CAPITAL RESEARCH PROGRAM

2.1. Research Questions and Hypotheses

As we delved into the contemporary literature that explains how social capital operates in disaster preparedness and recovery, especially regarding wildfires, and given the dearth of research in Portugal on the topic, we should ask the following questions: how social capital affects a community's wildfire preparedness and recovery? What are the necessary conditions in which social capital shapes wildfire resilience? To what extent does social capital contribute to communities' sustainability²² towards wildfires?

Based on the literature review, a system of hypotheses was then proposed. The hypotheses are thought to be provisional answers to the research questions that will orientate the data collection and subsequent treatment and analysis. Subsequently, they will be tested, corrected, and deepened (Campenhoudt & Quivy 2013).

A central hypothesis, that emerged straightforwardly from growing evidence, indicates that the more positive a community's social capital²³, the greater is its resilience to wildfires (Akama et al. 2014; Bihari & Ryan 2012; Brenkert-Smith 2010; Jakes et al. 2007; McGee & Russell 2003). Fundamentally, through social networks, resources such as information, advice, warnings, aid, financial and emotional support, etc., can be accessed.

The next hypothesis weighs the impact of different types of social capital on community preparedness and recovery efforts and initiatives. As mentioned in the previous chapter, bonding, bridging, and linking social capital constitute the three dimensions of social capital. Having that in mind, we propose that collective action within the community increases when close bonding ties are weak. As Pelling and High (2005), Jakes, Kruger, Monroe, Nelson, and Sturtevant (2007), and Akama, Chaplin, and Fairbrother (2014)

²² Sustainability is understood here as United Nations defined it: "(...) meeting the needs of the present without compromising the ability of future generations to meet their own needs." The definition is available here <https://www.un.org/en/academic-impact/sustainability>.

²³ Stephen Borgatti, Candace Jones and Martin Everett (1998) presented a set of measures of social networks that is related to social capital. For instance, the more connections people have, the greater the chance of a person getting the resources needed. Therefore, social capital is positive.

demonstrated, a balance between bonding, bridging, and linking social capital is associated with better mitigation and adaptation to wildfires. Reportedly, dissimilar ties are bound to build the “capacity to change collective direction”, once the scope of information flows, advice, services, support, and resources are amplified. That is, bridging and linking ties create paths far from the individual's immediate social circle, going beyond them.

The third hypothesis refers to Brian MacGillivray's thesis which states that the background variables (concerning the macrostructure of the networks) that lead to resilience are usually bound up with the strength and the density of social networks. Given the fact that social networks are situated in macro-level structures, “social capital's contribution to resilience is likely to be scale-sensitive”. As a result, by including spatial dimensions of social relations, cultural-specific frameworks appear as well (McGillivray 2018: 121).

Furthermore, social capital is more likely to impact resilience when there is: a) a high density of culture-normative practices (beliefs, prior experiences, and collective memories); b) a high level of trustworthiness of specific risk management institutions (when it comes to conveying information and warnings, for instance); and c) a high intensity of networks functions [each network fulfil different functions like the generic (e.g., information sharing) and specific (e.g., fuel management networks)].

Finally, the last hypothesis refers to place attachment, which some geographers call *topophilia* (Bihari & Ryan 2012; Jakes et al. 2007). It can be argued that the individual's attachment to the place influences positively the community's initiatives in wildfire preparedness and recovery. As some authors have found, the attachment to place is the reason why “local and seasonal residents were moved to take individual and collective action to improve wildfire preparedness, to be stewards of a place that holds great personal significance.” (Jakes et al. 2007:194). Besides, sociological studies show that places are imperative in creating shared meaning and group identity. Which, in turn, leads to making strong and cohesive communities – “an invaluable aspect of social capital.” (Bihari & Ryan 2012:259).

2.2. The operationalisation of the research hypothesis

Social capital's definition, its composing elements, and measurement are subjected to different approaches and proposals. Some of the issues raised are: whether social capital is a collective or individual asset; the tautological assumptions that define social capital through its function, which in turn means that "social capital is identified when and it works"; the utility of social capital being only linked to a network's density and closure, etc. (Adam & Rončević 2003; Lin 2001b; Portes, 1998). On the other hand, scholars have been dealing with the issue of social capital measurement for quite some time, since it is a concept that has stayed as a theoretical one (Borgatti et al. 1998).

As we explained above, the social network theory provides a way to overcome those problems concerning social capital's traditional research framework. Actually, it does seem that all the debates stem from the same proposition: "social capital, as a concept, is rooted in social networks and social relations, and must be measured relative to its root." (Lin 2001a:12). Consequently, scholars of the *network analysis* tradition such as Nan Lin (2001a, 2001b), have advocated the focus on social relations and networks when studying social capital.

Therefore, social capital will be then defined and measured in this research accordingly to Nan Lin's conceptual references, having social network as the unit of analysis. Regarding the question if social capital is a private or public good, this work will also take Lin's view on this matter, putting the focus on individuals, but knowing that the aggregation of personal returns can also benefit the collective (Lin 2001b:21). So, the concept is viewed as a relational good, which means involving both the individual and the social structure where he/she is situated.

As formerly stated, the analysis of processes in interpersonal networks constitutes "the most fruitful micro-macro bridge" (Granovetter 1973:1360). Reportedly, this meso-level framework entails a clearer measure of social capital (Adam & Rončević 2003; Portugal 2007).

We shall remark, however, that the primary focus of interactions is not on access to resources. On the contrary, the shared interests among persons drive them to interact. As it follows, to Lin, "(...) interactions should be analysed and understood not only as relationship patterns among individual actors or nodes but, much more importantly, as resource patterns linked in interaction patterns." (2001b:38) .

Lin's model of social capital theory has three critical components: the resources, the social structures, and the action (2001b:29). Moreover, Lin proposes three tasks that must be accomplished to build a comprehensive social capital model: investment in social capital, access to and mobilization of social capital, and returns on social capital. The first is contingent on the preconditions of social capital: structural factors and the individual position in the structure ("both of which facilitate or constrain the investment of social capital"); the second relates to the social capital elements: localization of the individual in the network and the use of their contacts; and, lastly, the third is about the social capital returns: instrumental (e.g., wealth, power, reputation) and expressive compensations (life satisfaction, mental and physical health, for instance) (Lin 2001b: 243–249).

Furthermore, Lin's theory results in a sequential scheme of causality that reflects the unequal formation of social capital since "structural elements and positional elements in the structure affect opportunities to construct and maintain social capital."(2001b:246). Preconditions and the returns of social capital are thus included.

In addition to Lin's model, MacGillivray's (2018) thesis on social networks that shape resilience was further added. Because he proposes that wildfire resilience is only accomplished if social norms (the content of conventions and habits), mental models of risk (shared beliefs and experiences about risks), shared expectations for collective action (community's ability to act), and network functions (different set of networks within a community) take part in those macro context elements and structure. Subsequently, we propose the following analytic scheme.

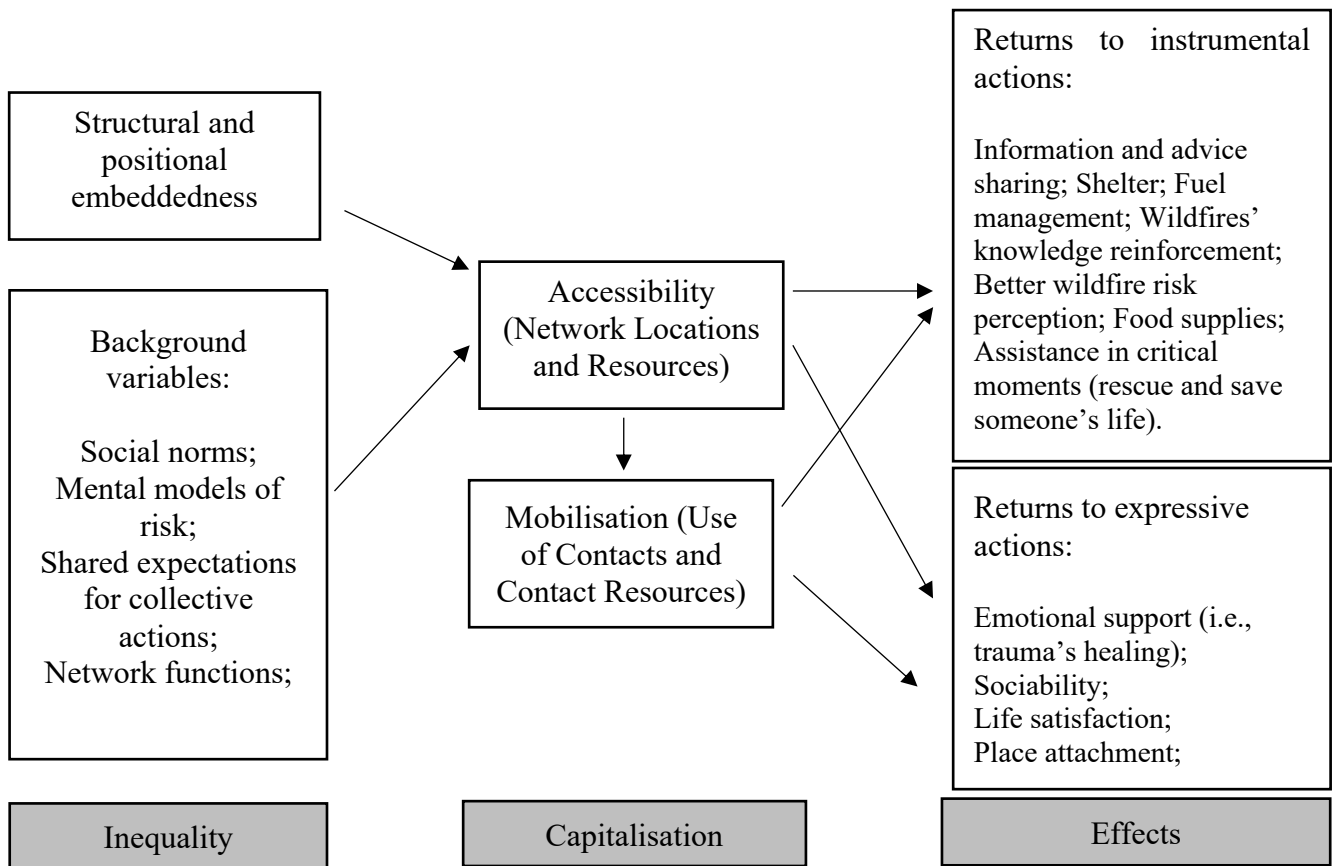


Figure 1: Modelling Social Capital. Adapted from Nan Lin (2001a, 2001b).

The first dimension represents the preconditions of social capital: factors and background variables that “facilitate or constrain the investment of social capital”. The second dimension indicates the social capital elements and the third gathers the possible outcomes and returns for social capital (Lin 2001b:245).

The transition between the first and the second dimensions accounts for the inequalities of social capital's formation. The social structure or the “geography of social capital” as well as the content of social networks impacts the opportunities to construct and maintain social capital (Lin 2001b:245; MacGillivray 2018:123). This helps to understand “patterns of differential distributions for social resources that are embedded, accessed, or mobilised.

The second dimension includes a process, named by Lin as mobilisation, that leads to the access to social capital and its use. This allows for the inclusion of choice of action, taking into account structural factors and impacts.

These elements are closely related by the fact that the better the accessible embedded resources, the greater the likelihood of being mobilised in purposive actions by an individual.

Finally, what links the second with the third dimension is a process whereby social capital turns into returns and yields. Here, we can ascertain and understand how social capital produces gains. In the case of this dissertation, the specific gains are bound up with how wildfire resilience in a community is achieved through the individual's social capital. In other words, on condition that the individual has access to key resources (such as shelter, food assistance, help in land clearing tasks, emotional support, etc.) through connections, the more prepared and recovered he will be for wildfires.

Another central concept to be operationalised is social network. A network is defined by Pierre Mercklé as “a set of social units and relationships, direct or indirect, amid these social units, through chains of variable dimensions.” The relationships established between social units designate different forms of social interaction. On that account, monetary transactions, information sharing, exchange of goods and services, are possible elements that could be traded in the relationships between the social units. They can also involve face-to-face interaction, physical contact, or not, as well as being permanent or occasional (Mercklé 2004:4).

In terms of operationalisation, the concept can be measured through the following classic questions: Who? What? How? – Firstly, the structure and the form of the network, that is, what kind of people are involved. Secondly, what kind of content or resources are exchanged? And, thirdly, which norms regulate their functioning (Portugal 2006:140).

The nodes, the network's elements whose relationship with the ego, are identified. The ties, which are the relationships established among the nodes, could have plenty of features (Portugal 2007:24). Although kinship relations are one criterion to differentiate ties, other characteristics are equally important in the classification of ties. For instance, the distinction between positive and negative ties, weak or strong (Granovetter 1973), passive or active (Milardo 1988).

The strength of a tie is measured by virtue of a “combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which

characterise the tie.” (Granovetter 1973:1361). Another possible criterion is the scope of exchanged content in a tie (Degenne & Forsé 1994).

The definition of positive or negative ties was derived from Simmel's thesis on group affiliations. While positive ties result from identification, negative ties are marked by differentiation. The first ones involve association through the common sharing of interests and, for that reason, individuals are viewed as members of a group. Conversely, negative ties exclude individuals from other groups (Portugal 2007:24; Simmel 1955). Yet, it is still possible that both positive and negative elements are present in a tie, which constitutes the so-called “mixed ties”. Or they can also be neutral or indifferent ties (Lemieux 1999).

Lastly, depending on the interaction patterns, the ties could be passive or active. An active tie implies daily interactions as well as a direct exchange of aid, advice, criticism, support, and interference, is an active tie. On the other hand, ties are passive on the condition that the interaction is more infrequent (Milardo 1988: 23). Still, those ties are no less significant. Passive ties might be equally important or influential since the ego could count on those network members whenever needed (Milardo 1988:23; Portugal 2007:25).

A distinct advantage of network analysis lies in its ability to account for both the network's form and content (Milardo 1988:18; Portugal 2006:144). Further, the second dimension of the concept is the resources accessed through networks, especially, in our case, those important to wildfire resilience. They were divided into two main types: instrumental (such as support, shelter, increased risk perception, advice, warnings, etc) and expressive (emotional support, affection, sociability).

The last question on “how” refers to the social norms that regulate networks. How they function and what norms are implicit, are important to ascribe what is needed in the creation and maintenance of ties (Portugal 2006:145). Substantial contributions have already been made in that regard, thereby pointing out norms such as reciprocity, expectations, obligation, collective memories, beliefs, and authority.

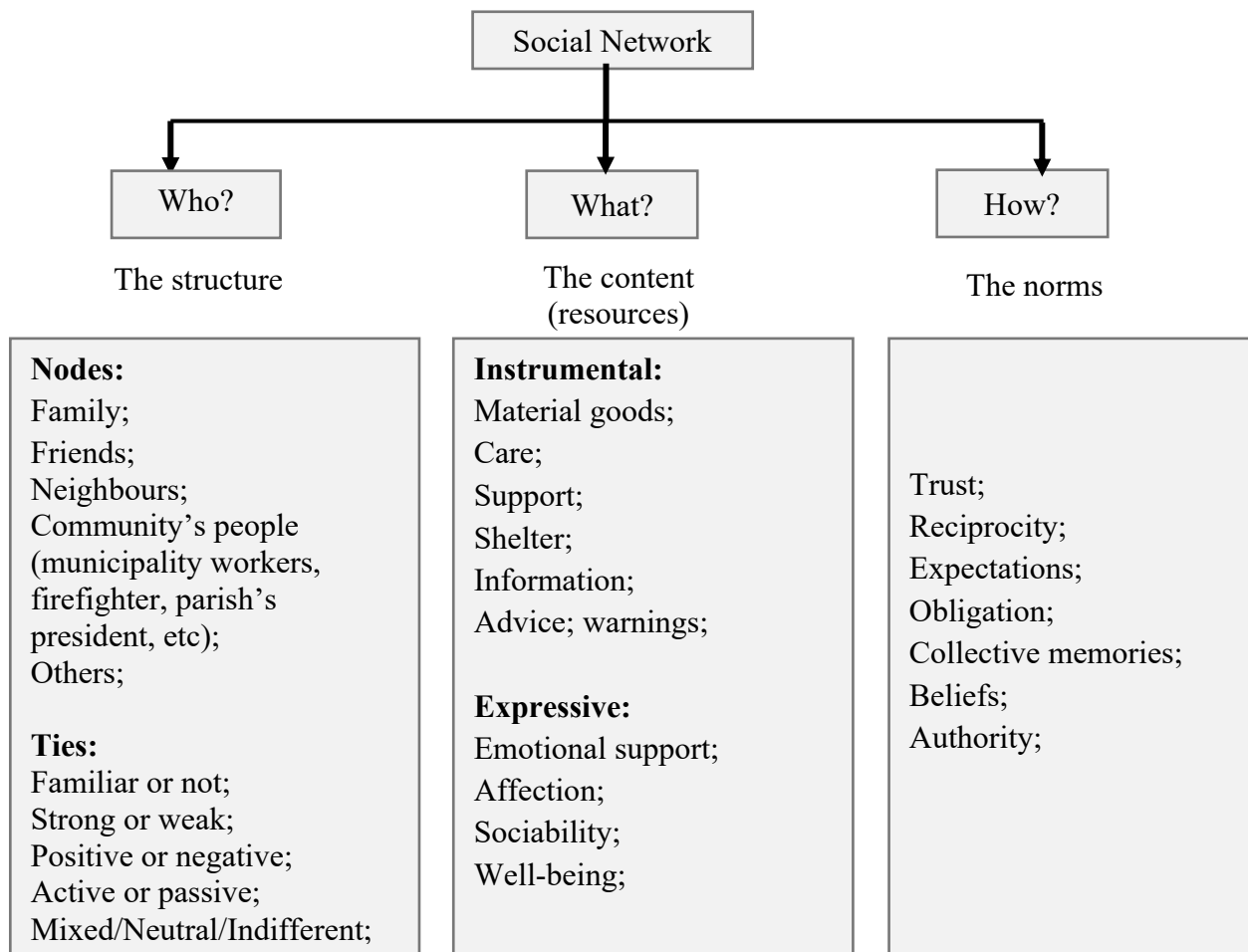


Figure 2. Social Network's operationalisation. Adapted from (Portugal 2007).

As our central hypothesis suggests that when social capital is positive, the community's wildfire resilience is improved, it is important to specify the characteristics/morphology of social networks (ego-networks) that represent positive social capital. Positive social capital involves "*knows or likes*", whereas negative relations as "*hates or is not speaking to*" (Borgatti et al. 1998:30).

Borgatti et. al (1998) proposed measures concerning the size/degree, density, heterogeneity, composition quality, effective size, closeness, constraint and betweenness of the ego network have a relation to social capital, albeit negative or positive. It may be important to clarify, though, that these network measures do not include norms, procedures, and other cultural or social aspects of social capital.

Name	Description	Relation to Social Capital
Size/degree	“Number of alters that an ego is directly connected to, possibly weighted by strength of tie.”	Positive. More connections mean a high chance of getting the needed resources, in order to be more prepared or recovered faster from wildfires.
Density	“The proportion of pairs of alters that are connected.”	Negative. If the alters are tied to each other, the richness of accessible resources is rather limited. Dense networks are more constraining (Burt 1997).
Heterogeneity	Diversity of alters regarding sex, age, race, occupation, talents, etc.	Positive (if only there is no conflict with compositional quality).
Compositional quality	“The number of alters with high levels of needed characteristics (e.g., total wealth or power or expertise or generosity of alters)”	Positive. The more useful contacts that ego can access, the more social capital.
Effective Size	“The number of alters, weighted by strength of tie, that an ego is directly connected to, minus a “redundancy” factor.”	Positive. If the individual has ties with different positions of the network, the potential information and control benefits is higher.
Constraint	Amount of ego's investment in a single node/alter.	Negative. The more constrained the actor, the fewer opportunities to be wildfire's resilient.

Closeness	The distance between the ego and all others in network.	Negative. “Cohesive contacts – contacts strongly connected to each other – are likely to have similar information and therefore provide redundant information benefits (access, timing, and referrals).” (Burt 1997:340).
Betweenness	The number of times that ego creates a bridge between otherwise disconnected actors. Or the extent of individual's control and coordination of the network.	Positive. If an individual has high betweenness, he links actors who were unconnected, paving the way to information and control benefits.

Table 1. Standard Ego-Network Measures, adapted from (Borgatti et al. 1998:30–31).

2.3. Methodology

As Adam and Rončević asserted “(...) in order to maintain and develop this concept as scientifically relevant, all research should focus on social capital defined as a resource embedded in social relations within various types of egocentric networks.” (2003:168). This measuring procedure is the most used in network analysis methodology (Portugal, 2006:153–154). As well as it is applied in the case of larger and less definable networks. Robert Milardo defined *egocentric networks* as “a collection of individuals who know and interact with a particular target (...)” (Individual or couple) (1988:20). Therefore, this technique elicits a list of ties from the ego, and the relationships between them are identified (Lin 2001a:16).

The utility of the “name-generated” procedure is the identification of content areas, as naming items, and “the mapping of ego-network locations and characteristics as well as social resources embedded in the ego-network.” (Lin 2001a).

Fundamentally, the network approach enables the focus on the individual's ability “to secure benefits by virtue of membership and position in a social nexus.” (Adam &

Rončević 2003). It does follow that, as Lin stated, “[w]ithout anchoring the concept in social networks and embedded resources, chances are that social capital would fade away as an intellectual enterprise (...) and almost utopian expectations of its practical applications.” (2001a: 23)

As a result, the research methodology that will be undertaken is based on the egocentric approach. The relevant literature mentions three types of egocentric networks: close associates, interactive networks, and exchange networks (Milardo 1988:22). The latter ones are likely to better fit in this research for providing information concerning the alters with whom the individual exchanges interactions, services, material, emotional support, etc in a wildfire context. And this is bound up with the fact that this type of network entails “network members with whom the likelihood of exchange reward is higher” (Portugal 2007:27–28). From this methodological point of view, to build this kind of network, the participants were confronted with scenarios, related to wildfires. This procedure, using specific name-eliciting questions, is deemed to produce “a more representative sample of a network constituency (...).” (Milardo 1988: 27).

To implement this methodological approach, semi-structured interviews were implemented as the main data collection technique, since the subject has not been explored in Portugal (Blanchet 1985:86; Lemieux e Ouimet 2012:45–48).

The interview guide was divided into eleven sections²⁴: i) collecting sociodemographic data; ii) questions referring to place attachment; iii) understanding norms of trust and reciprocity; iv) regards the involvement in the community; v) dedicated to the experiences/opinions about wildfires; vi) concerns the mapping of ego-centric networks; vii) relates to the sources of information about wildfires; viii) preparation initiatives; ix) preventive initiatives; x) recovery initiatives; and xi) devoted to knowing the level of trust in institutions of wildfire risk management.

In-depth interviews are of common use in social sciences, including sociology, and is widely associated by giving to the interviewee a great level of freedom to express his ideas and beliefs, contrasting with surveys whose settings (questions and answers) are pre-established by the researcher and indeed more limited in finding new concepts and ideas that may come with the fieldwork. In addition, the interview provides a shortcut to “the norms and values system, frames of reference, and interpretations of situations and

²⁴ Appendix one.

experiences”, thereby capturing the meaning that actors give to their practices and events (Portugal 2006:160–161). It is worth noting, though, that a field interview is a “joint production of a researcher and one or more members” as well as the gathered data (Blanchet 1985:100; Neuman 2014:461).

The fact that social network analysis is deep-rooted and marked by quantitative methods of collecting data (Mercklé 2004:22), does not mean that the qualitative techniques should be left behind at any cost. In line with Sílvia Portugal's view, there is a myriad of advantages to a more intensive kind of approach once it produces “relational data” which is not static but dynamic. Thus, the analysis of relations between the units of the social system traveling in space and time is possible, apprehending at the same time “dynamics of interaction, social system movements and change mechanisms” (Portugal 2006:151–153).

Besides in-depth interviewing, the participant observation technique was also combined for collecting data, following Randall Collins' framework (2005, 2020), inasmuch as the core of social life is observable through the ordinary, trivial, mundane aspects of everyday life and interactions.

2.4. The communities included in the study

Howard Becker and Charles Regin (1992) defined a case study as either an extensive study of various cases or a unique extensive analysis of one single case. In their own words, “[v]irtually every social scientific study is a case study or can be conceived as a case study, often from a variety of viewpoints. At a minimum, every study is a case study because it is an analysis of social phenomena specific to time and place.”. In this sense, “much of what is considered large-N research also must be seen as case-study research (...)” (Ragin & Becker 1992:2–4).

Following that perspective, the current research was conducted in two localities in Central Portugal: the parish “União de Freguesias de Figueiró dos Vinhos e Bairradas” and “Ferraria de S. João” village. The study had to be comparative to comprehend the full extent of social capital’s influence on a community’s wildfire preparedness and recovery. The communities were chosen based on predefined criteria - susceptibility to wildfires, having experienced 2017 wildfires, participating in prevention and mitigation programs such as “Aldeia Segura, Pessoas Seguras”²⁵ or “Condomínio de Aldeia”²⁶ or displaying social dynamics towards wildfire resilience. Two informants²⁷ helped to select the communities, based on their long experience of the thematic.

It was established that ten interviews per case study would be sufficient and the participants were selected based on gender (five men and five women), age (a dispersed range), and according with dissimilar types of involvement/position in the community (Akama et al. 2014). In addition, other essential criteria were to include the vulnerable persons in the sample. For instance, the elderly, people with physical/mental health issues, people with children, people who are living on their own, those who live in remote areas, people without means of private transport, people living in ‘unsound buildings’, those who deny the risks they face and finally, new residents to the area (Akama et al. 2014).

Due to the exploratory nature of this research, the type of sampling is snowball procedure (a nonprobability type of sample, that “begins with one or a few people or cases and

²⁵ Government’s programs that promote structural measures in order to protect people and their belongings, as well as the wildland-urban interface by managing strategic areas, identifying critical points and safe places. More information at <https://aldeiasseguras.pt/programa/>.

²⁶ This program was created with the aim of giving support to the regions exposed to wildfires. Measures such as change of land use and occupation, fuels management and local communities’ involvement are promoted. See in <https://www.dgterritorio.gov.pt/paisagem/ptp/condominio-aldeia>.

²⁷ An informant is a person that is “familiar with the culture and is in position to witness significant events (...)” He or she is someone “who tells about, or informs on the field” (Neuman 2014:466).

spreads out based on links to the initial cases.”) (Neuman 2014). The selection of the ten participants at Figueiró dos Vinhos also counted on the help of one informant who holds a local institutional position and knows very well the region and its residents.

Similarly, in Ferraria de S. João village, a gatekeeper²⁸ eased the entrance into the field by introducing me to the residents.

2.4.1. The geographical context

a) “Figueiró dos Vinhos e Bairradas” parish

Figueiró dos Vinhos e Bairradas has an area of 53,51 km² and a total of 3460 inhabitants²⁹. The parish belongs to Figueiró dos Vinhos municipality (5281 inhabitants⁷ and 173,46 km²), in Leiria District. The region was also inflicted by the 2017 wildfires in June.

Figueiró dos Vinhos lies in the Intermunicipal Community of the Region of Leiria (NUT III) and the sub-region of Pinhal Interior Norte. It is bordered to the north by the municipality of Lousã, to the east by Castanheira de Pera and Pedrógão Grande, to the southeast by Sertã, to the south by Ferreira do Zêzere, and to the west by Alvaiázere, Ansião and Penela and to the northwest by Miranda do Corvo³⁰.

b) “Ferraria de S. João” village

The village has approximately 40 inhabitants³¹ and is situated in the parish of Cumeeira (with an area of 19,29 km² and a total of 857 inhabitants⁷), in Penela municipality (134,80 km² and 5437 inhabitants⁷). Ferraria de S. João experienced the 2017 wildfires in June.

²⁸ A person who has “formal or informal authority to control access to a site.”(Neuman 2014: 441).

²⁹ Some data of Portuguese Census 2021 are available in here: https://censos.ine.pt/xportal/xmain?xpgid=censos21_populacao&xpid=CENSOS21

³⁰ Figueiró dos Vinhos Municipality. (2021). *Municipal Fire Defense Plan for the Figueiró dos Vinhos Forest 2021- 2030*, Retrieved from <https://www.cm-figueirodosvinhos.pt/index.php/gabinete-tecnico-florestal> .

³¹ Manuel Leiria. ‘Ferraria de São João: Da tragédia do fogo a exemplo nacional, a história amarga de um “não sucesso”, *Jornal de Leiria*, 10 de janeiro de 2023, <https://www.regiaodeleiria.pt/2023/01/ferraria-de-sao-joao-da-tragedia-do-fogo-a-exemplo-nacional-a-historia-amarga-de-um-nao-sucesso/>, accessed on 17 march 2023.

Penela municipality is delimited to the north by the municipalities of Condeixa-a-Nova and Miranda do Corvo, to the east by Figueiró dos Vinhos, to the south by Ansião, and the west by Soure³².



Image 1. Ferraria de S. João village. Picture taken by Cíntia Fachada (15/02/2023).

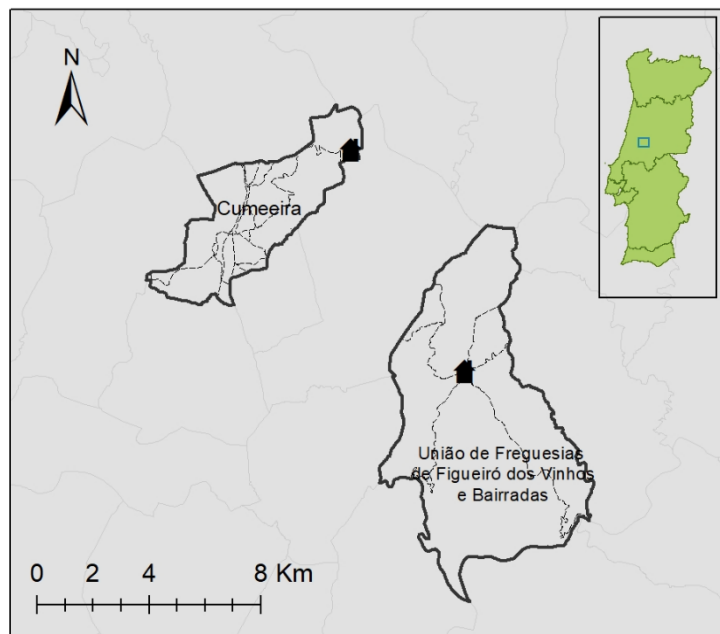


Figure 3. Representation of the areas of study.

³² Penela Municipality. (2020). *Municipal Fire Defense Plan for the Forest 2020-2029*, Retrieved from <https://www.cm-penela.pt/artigo-232-0>.

CHAPTER 3 – FIELD RESEARCH: GETTING TO KNOW THE COMMUNITIES

The fieldwork was of two-month duration – January and February of 2023. The first month was dedicated to Figueiró dos Vinhos, where the contacts were made through phone calls in advance. The participants had already been contacted by the gatekeeper, who helped in the selection of the interviewees. They were informed that I would call to know their availability and to schedule the interview. One person refused to participate by virtue of having lost two family members in the 2017 wildfires.

Five of the ten interviews took place at participants' homes, whereas the other five participants suggested a coffee shop, a natural park, and their workplaces – a convent and a private local company - where interviews could be conducted.

Some difficulties emerged during the interviews, especially in terms of noise, mainly in public spaces wherein adjustments had to be made, like moving to another site of the coffee shop in order to not be interrupted. Which, in turn, meant a slight disturbance in the interviewee's train of thought and discourse. Likewise, in February 2023, at Ferraria de S. João village, the same problem occurred.

As a matter of fact, in Ferraria the main constraint was to find man willing to be interviewed. Although a gatekeeper introduced me the field and possible interviewees, I encountered more freeze-outs³³ than I initially thought, especially from men. Known as a dynamic and cohesive village, I was surprised by the low adherence to the study. Indeed, trust issues hindered access to the field. Also, on working days, the village becomes emptier insofar as only the eldest or people who work at the place are present. Yet this specific village had already been in the spotlight owing to their forest restructuring project which perhaps undermined research volunteering³⁴.

³³ People who are not willing to become involved in the research (Neuman 2014:451).

³⁴ Ferraria de S. João has indeed rose to prominence owing to the community's willingness to save their village from another tragic wildfire. That initiative plus others meanwhile implemented gave the village's recent title of one of the best in the world for tourism proposes, if not the best.

Marta Reis. 'Ferraria de S. João. A aldeia salva pelos sobreiros', *Jornal Expresso*, 24th July 2017, <https://sol.sapo.pt/artigo/573471/ferraria-de-sao-joao-a-aldeia-salva-pelos-sobreiros> , accessed on 10th May 2023; Fugas & Lusa. 'Ferraria de São João a caminho de ser "Melhor Aldeia Turística" pela Organização Mundial do Turismo', *Jornal Público*, 21th December 2022, <https://www.publico.pt/2022/12/21/fugas/noticia/ferraria-sao-joao-caminho-melhor-aldeia-turistica-2032270> , accessed 10th May 2023.

In the end, eight interviews were carried out with the help of the gatekeeper, and the sample evolved further by chain referrals.

Most interviews had to take place at residents' houses due to the lack of another alternative. This was advantageous in terms of privacy. Two interviews were made in the middle of the street in the village. Which, in turn, meant that there were disturbances and interruptions by neighbours, animals, and weather conditions, such as wind. It affected the audio recording process as well.

Many times, I found myself feeling as if I were an outsider and not very welcomed by the residents. It was necessary to gain their confidence so as to get to know them better. I was often told to not lay bare what they had said to me. Even when it was previously ensured that the interview would be confidential. Likewise, one participant in Figueiró dos Vinhos asked me to not record some aspects as a way of not being identified.

Far from not impacting the direction of the research, it was possible to go beyond the gatekeeper's channelled networks of friendship, inasmuch as it was attempted to include different viewpoints in both case studies (Neuman 2014: 442). For example, in Figueiró dos Vinhos, one participant was recommended by another interviewee. The selected one replaced one person that would not be available to do the interview at a proper time.

The average length of the 18 interviews was one hour and twelve minutes, varying between 37 minutes (the shortest) and 1h43 minutes (the longest).

In every social research, ethical principles are required, such as informed consent (Neuman 2014: 151). Thus, it was presented to all participants a written agreement ensuring confidentiality and anonymity, as well as an explanation of the research procedure. Therefore, the names that appear in this dissertation are fictitious.

In a few cases, interviewees were accompanied by family members. For instance, two participants belonged to the same household. When they were interviewed as it was a Saturday, the house was particularly full, and a few answers were completed by the other members present in the room. On the one hand, this fact made the interviewing situation somewhat disconcerting, due to the fact of having "an audience". On the other hand, there were moments when the participants were reminded of some important facts that were useful to complete the discourse. Additionally, a close neighbour suddenly came for a visit to the family, which slightly interfered with the interview.

After finishing fieldwork, interviews were transcribed and further analysed using the code system within the software MAXQDA. The code system was deductively constructed³⁵, following the conceptual framework, research questions, hypotheses, and key variables that emerged during analysis.

It should be noted that the process of data condensation (or data reduction) is a component of the analysis itself (Miles et al. 2014:12).

3.1. Who lives in the vulnerable territories?

Eighteen people were interviewed, of which nine were women and the other nine were men, ensuring equal representation by gender.

Manuel Nazareth's essay on the evolution of the Portuguese population found that a demographic shift has taken place since the 20th century, where the older age groups have outgrown in number the younger population (2009:29). This unbalance is not geographically homogeneous in Portugal, due to the pronounced and "deep regional asymmetries.". While littoral zones concentrate the younger people (with 14 years old or below), in the country's interior the aging of the population has seen an upward trend since the 1970s (Nazareth, 2009:39; Rodrigues, 2018:12). Additionally, Penela and Figueiró dos Vinhos municipalities are among the most aged ones (Nazareth 2009:50). The last population census of 2021 confirms precisely that steady dichotomy³⁶.

Further, there is no wonder that 44% of the interviewees have at least 60 years, even if efforts were made to include a wide range of age groups in our sample.

In Ferraria de S. João, men were fewer in number and not very approachable, leading to a low participation rate. For that reason, some men participants shared the same household as the other interviewees.

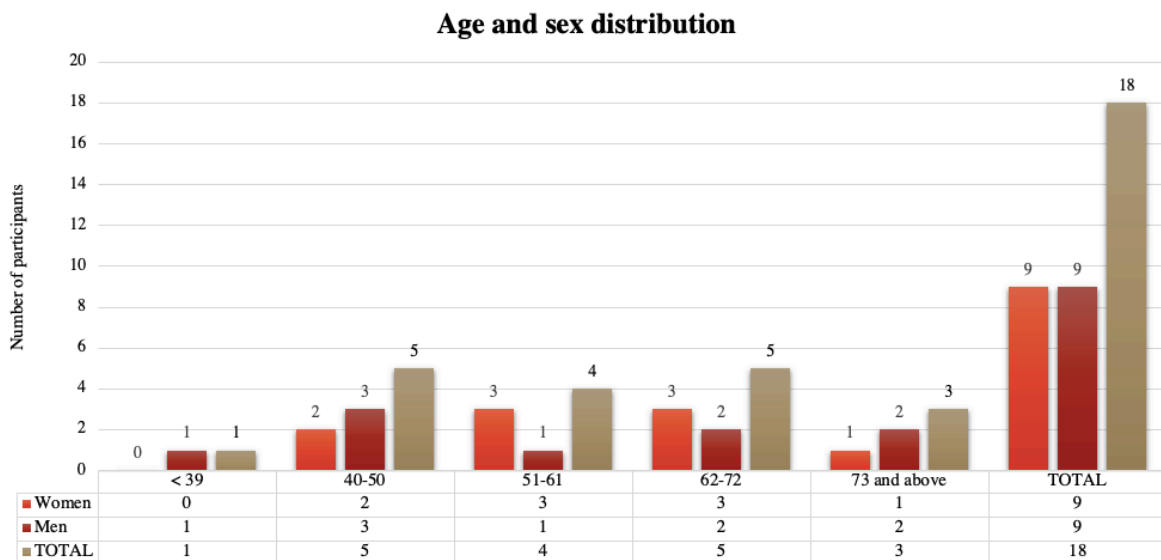
Some patterns can be readily advanced. Female respondents were far more comfortable than men talking about their social relationships and networks, their mental health, and whenever they needed and received help from other persons. Therefore, exposing vulnerability is more frequent in women's discourse. Also, men tend to be more socially isolated relative to women.

³⁵ (Bryman 2012:18–27).

³⁶ Instituto Nacional de Estatística - Censos 2021. XVI Recenseamento Geral da População. VI Recenseamento Geral da Habitação : Resultados definitivos. Lisboa : INE, 2022. Disponível na [www: <url:https://www.ine.pt/xurl/pub/65586079>](https://www.ine.pt/xurl/pub/65586079). ISSN 0872-6493. ISBN 978-989-25-0619-7.

When it comes to speaking time, men and women are very close. Men talked nine minutes more than women did (the average interview length of men is one hour and 19 minutes whereas women's average is one hour and 10 minutes). Men, however, were more likely to ramble and distance themselves from the questions. While women were more approachable and direct in answering all the posed questions.

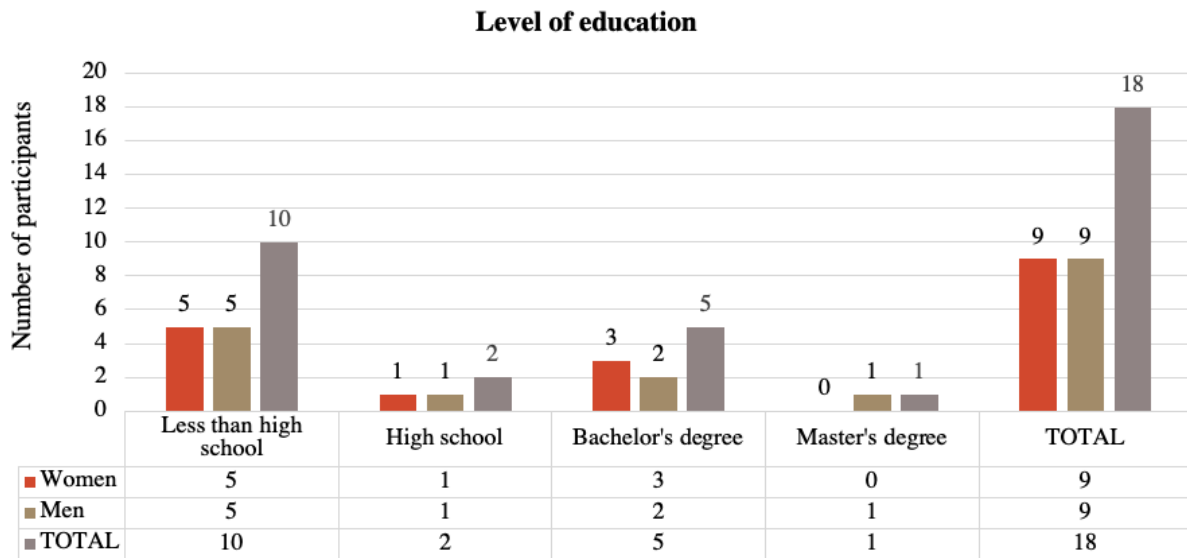
We are inclined to believe that masculinity stereotypes might explain that discrepancy. Men were far more comfortable talking about general topics about wildfires, by contrast to the most personal and intimate aspects, which were avoided in the possibility of demonstrating vulnerability or being seen as a victim. That was confirmed in men's attempts of using indirect speech in their personal narratives.



Graphic 1. Sample's characterisation regarding age and sex.

The mean age of the sample is 56,8 years, where the age minimum is 28 years and the maximum 74 years. The standard deviation is 13,03 which suggests that values are widely spread.

Moreover, women's age average is situated in 58,4 years whereas men's is 55,2 years.



Graphic 2. The sample education completed levels.

Undoubtedly, there is a sharp contrast in the participants' education levels. "Less than high school" makes up close to 56% of the sample. As graphic 2 shows, both men and women share the same weight at that level. But one may argue that the lowest levels of education are possessed by the oldest participants. Therefore, interviewees whose age is between 28 and 65 years have at least a high school degree. That trend is echoed in the Portuguese Census of 2021.

Standard Classification of Occupations	Women	Men	TOTAL
2- Professionals	2	1	3
7- Craft and related trade workers	-	3	3
8- Plant and machine operators and assemblers	-	2	2
9- Elementary occupations	6	1	7
TOTAL	9	9	18

Table 3. The distribution of job occupations by sex.

In accordance with the International Labour Organisation's classification of Occupations (ISCO-08)³⁷ as well as the coding system used in Portugal, published by INE (2011), table number 3 was created. Although 39% more or less of the sample is currently retired, past occupations were taken into consideration. The number of women who works as housekeepers and manufacturing labourers outpaces men's. This is not new, as men statistically hold better positions than women, and also, women's occupations are typically considered "feminine" reflecting the sexual segregation of labour as explained in (Coelho & Ferreira 2018). Besides that, women tend to have simultaneously two jobs, even when retired. For instance, household responsibilities and farming activities.

3.2. Living in the Rural: the sense of belonging

Interviewees' narratives disclosed the reasons behind their migration to rural areas. Most of them attributed their dislocation and establishment to a better standard of living in comparison with the urban lifestyle (the notion of rural idyll³⁸) as well as the closeness to nature. Those motives can be qualified as counterurbanisation movements (Döner et al. 2020).

On the other hand, some of the interviewees were born in the place and stayed there ever since. Others justified their moving to rural areas due to family property and networks of relatives. Marriage also came up as another reason to relocate. These motivations could also be found in Fatma Döner, Elisabete Figueiredo and María Rivera's research (2020:134).

When asked about living somewhere else if having the opportunity, more than half of interviewees answered it was not in their plans to move out, as the following statements illustrate:

I don't know. I'm used to this for so many years and I am very attached to here. For example, in another place... apartments, the hassle, is out of the question. To me, going to

³⁷ For more information in <https://www.ilo.org/public/english/bureau/stat/isco/isco88/major.htm> .

³⁸ This notion became well-known especially after the economic crisis, as an opponent view of city life. Where the rural is celebrated by providing a more pleasant living conditions (Döner et al. 2020).

an apartment, where the neighbour is really close, I think I wouldn't adapt to something like that... I'm so used to freedom, rambling here (...). I think it would be very difficult.
Cristina Pereira, 48 years, manufacturer worker.

Here you can get time which is not a thing you can have in the cities. (...) At my age, the time to be with me, to be free, to not have society's pressure, you do not realise it, but in a city, we are always feeling inputs of anything and everything, even inside a building (...). In Lisbon, where I lived, in Carcavelos, to get to Lisbon, I had to face congested roads, since Carcavelo's highway tolls until Lisbon. So, I worked in Casquilho Street, where there is the Hotel Ritz... that commuting was made many times, from Carcavelos to the office, it was 12 km (...). So, one person living like that for 20, 30 years, or in that case, it was more than thirty years. I worked in more places in Lisbon. Living like this, completely conditioned by traffic gridlock, having people on top of people, on top of us.... Now, I live here in a very different situation. I am with nature, with the world that goes beyond human beings.

Rui Gonçalves, 65 years, retired lawyer.

I live in a village because I like living in villages. I have lived here for 52 years, and I'm fond of villages, of nature... I don't envisage myself living in another place without being in a village.

Alice Rodrigues, 52 years, primary school teacher.

Another important factor that determines place attachment is the length of time in residency. Thus, ten interviewees live for more than twenty years in their communities whereas six count between ten and twenty years of residency. Aside from those cases, two men were recently in the region and both from Figueiró dos Vinhos (four and six years). It may well be argued that, based on the collected data, the time of residency has effects on an individual's social capital. Once, it will be demonstrated that newcomers' networks are rather limited in contrast to those who are at least ten years in the territory.

3.3. Community Solidarity: implicit norms in relationships

One would argue that in both localities, Figueiró dos Vinhos and Ferraria de S. João, social and cultural norms, general beliefs and ideas are essentially the same. For example, the interviewees portrayed very often the residents as unified, and the existence of mutual help and assistance whenever needed:

Yes, yes, yes. It is a very good relationship with the neighbours. If anything happens, everyone is at the door. If anything happens at any neighbour's door, everyone is there. No, the truth is that it is great. We, as a community, are very, very, very united. (...) We are a family, that is true. It is a family. Well, there are ups and downs, with this one or that one once in a while, but no, we are very... of the few we are, we are good (laughs), that is true³⁹.

Carlos Santos, 74 years, retired pastry baker.

This population, which I was talking about, is very united, they help each other a lot. You can see arguments between them but do not mind. In the hard times, they appear all united. And if anyone comes to mess with them, they come together against the intruder. Do you understand? It is the same thing as a family.

Rui Gonçalves, 65 years, retired lawyer.

Four participants even regarded their neighbours as “family”:

Ah, we're all friends. As if it were a family. We're very good friends. That is true, we're very good friends.

Dalila Antunes, 70 years, housekeeper.

We can trust, even when I leave the house, there is always someone who is ready. They don't leave the house due to their age, and because they're retired. It is such a humble place as if it were family.

Penélope Alves, 51 years, maintenance laborer at Civil Protection.

³⁹ The translation of the interviews extractions from Portuguese to English is of my responsibility.

Moreover, the existence of conflicts or disagreements does not impede mutual support in both communities. Especially at Ferraria de S. João, where I was told about some residents' divergences stemmed after the 2017 wildfires.

There were more critical moments when people... I don't know, they mistrust people who are at the association (Resident's Association of Ferraria de S. João) because they thought that those who were in were taking some personal advantage of the work that was been done. So, that created big problems (...) I was hurt and stopped to get along with some people. And I recalled that my daughter was ill, the youngest, one day she was ill and had a crisis, and the INEM had to come. And I didn't notice that when I leave the house with her, the entire village was there, asking if I needed help. And that is it! (...) That is to say, I know that if I need, despite all...

Lia Silva, 41 years, primary school teacher.

That kind of support is commonplace within interviewees' descriptions. One can reasonably argue that in small communities everyone knows each other and reciprocity norms still prevail, which explains the strong sense of community support (Bello et al. 2021:27; Bernard 2019).

Nonetheless, described as typically characteristic of these rural/countryside places, interviewees came up with another local feature – the existence of cultural cleavages. Those who migrate to rural areas to start a new life are often unacknowledged and eyed with wariness. Their lifestyles and values can be objected to by some resistance from long-established inhabitants. Simply, those who have been living forever in the rural, do not confer legitimacy on the newcomers as well as their initiatives or innovative ideas.

So, how would you describe the people who live here?

There are sensible, humble, what I can say about people... All of this is an ensemble of good sense. But there's a downside, they don't let us grow. Who came from the outside, they don't let us grow. Because if we've any idea, it couldn't be a good one, but they could listen to us to improve. To be heard, to make this or that, they cut us off straightway.

Penélope Alves, 51 years.

But the reality... I was always very welcomed here in the village. Okay, people treat me and my kids, and I do not have reasons to comply. Sometimes, I feel... it is like... How I can say this (pause). Despite being very welcomed, people like me have been here for 14

years, right? Who have not always lived here... and there are people who were born here, and their grandparents had lived here, it is a very familiar issue. That is to say, everyone who lived here is like family, you know? All of them have some kind of kinship level. So, they end up seeing other people, even if they have lived here for 13 or 14 years, like foreigners. There is always...

...mistrust?

Yes! There is always some suspicion, I think. Despite not being expressed in front of us. But not everyone is like this. However, people end up influencing others. There is always some level of mistrust. (...) I do not know why. Maybe because historically, there are reasons that can be attributed to that mistrust...

Lia Silva, 41 years.

Other participants went in line with Lia Silva's perspective. Most are from Ferraria de S. João village, but this opinion was found in one female narrative in Figueiró dos Vinhos as well. The next statement is from a man living in Ferraria's village for 14 years.

It's not only the age. It's the age and the cultural differences. That does not mean it's better or worse. People who come to live here, we're not many... perhaps, six people from the outside who came to live here, have tastes, and cultural levels, but levels not in a pejorative way, but in terms of experiences that they had... are different from those who lived permanently here (...). And that leads to a cultural gap, that is, contributes to a cultural difference that does not facilitates a community's spirit and it's an aspect that has not been very worked. Neither is it here nor in many villages that I think have the same problem.

Miguel Marques, 52 years, tourism entrepreneur.

In fact, four interviewees share the same opinion. Fatma Döner, Elisabete Figueiredo, and María Rivera stressed the idea of a hostile countryside in their study, wherein newcomers struggled to come to terms with "the social and institutional dynamics encountered in the villages." (2020:133–136). Accordingly, Paula Reis and Bello et al. works argued that cultural tensions are liable to arise on the condition that neo-rural population worldviews and practices often clash with those of the local inhabitants (2014: 9; 2021:32). Which definitely leads to new territorial dynamics induced by the new rural actors (Reis 2014:8). As far as the other participants are concerned, residents are "good people", "humble" and "simple". By contrast, one male interviewee, Fernando Costa, 73 years, retired private

driver, said that he will not be able to describe his neighbours or residents because of not interacting much with them daily. This, in turn, means that Fernando is disinterested and disconnected from the community wherein he lives.

The same is true for Afonso Cruz, 49 years, a carpenter, who is recent to the area (four years) and has brief interactions with his neighbours wherever they come across.

Another new resident, Frederico Teles, 45 years and a business owner, moved to Figueiró dos Vinhos due to marrying someone who was from there. Through his discourse, it was possible to understand that contact with the neighbours is minimal and ad-hoc. He knows some of them but gave little information about them, even forgetting their ages. Therefore, newcomers often “lack connectivity” from the community (Akama et al. 2014:4) and they tend to hold a tight circle of people whom they trust.

To some extent, the expressed opinions about residents are entwined with the level of trustworthiness and how people define a trustworthy person. Because, as the scientific literature indicates, trust⁴⁰ and reciprocity are both building blocks of social relationships and, consequently, enable the access and mobilisation of resources.

For instance, on condition that Fernando Costa does not interact with his neighbours, he does not rely on them:

No, I haven't so much trust (in neighbours) ... Well, let's see, I have none because like I was telling you, I don't hang out (...). If I don't go out with people, I cannot say... look, I trust in A, B, or C.

Fernando Costa, 73 years, retired private driver.

On the contrary, residents who have a positive opinion about their community are bound to trust in their neighbours. Especially in Figueiró dos Vinhos. But in Ferraria de S. João, since trust issues started to occur, people have relied more upon one small group whom they trust more in comparison with the rest of the community.

What is the level of trustworthiness that you feel here related to the people who live in the village?

⁴⁰ Marissa King stated in her book *Social Chemistry* that trust is not only essential for social relationships but also enables us to “operate in the world.” If we do not trust in people, our lives become rather impossible (2022:72-73).

I think that normally people get *along* with each other. It might be a person or other, but they are few...

But you trust them?

(silence) There are some that are not at all, they cannot be trusted anymore.

So, do you have a group that you trust more?

Yes, yes.

Manuela Martins, 63 years, retired housekeeper, and cheesemaker.

Among the definitions of a reliable person, the most common one is honest and truthful, whose behaviour is unchangeable behind someone's back (i.e., loyal). It was also claimed that a trustworthy person is a woman/man of her/his word as well as capable of keeping closely guarded secrets.

Related to the act of helping, the narratives are quite similar in terms of the underlying values. This is to say that most of the interviewees claimed that they help simply because they like to do so.

I'm like this, really, I like to help. I like helping people, I'm keen on helping the neighbours whenever it's needed, I feel bad sometimes when someone has a serious problem, I really must help. Whatever I may do, I do. What I could make, even sometimes "Oh, I'm worn out and don't have time... but poor women, she needs... I help when I'd do so. Whatever I can do, I always help. Even when it was the assemblies in the association, sometimes, I arrived so tired... God knows. I've never denied anything.

Cristina Pereira, 48 years, manufacturing worker.

That is, I like helping people because of what I was, that I was born in poverty too, so I cannot see somebody who has famine. No. And that is why I say that if the world was more thoughtful if it were more humane, there wouldn't be such greed, so much war, so much famine...

Carlos Santos, 65 years, retired pastry baker.

What are the reasons that drive you to help someone?

Being God's daughter. I help for love, and I don't help more because I can't because If I could, I'd helped even more.

Dalila Antunes, 70 years, housekeeper.

A few narratives alluded that relationships are based upon a trade-off as it is hoped that in the future the giving will be repaid. For instance, when João Abreu, 28 years, said that what drives him to help someone is in his own words, “because one day they can also help me.” The same goes in hand with his father, who was born and raised in the village, and it may impart his values to his son:

This village was always... I don't know if you know... but back in the day, they sowed so much corn. You had your corn farm, and it was big, if you had worked there all by yourself, you would have drained. Here, from my house, were going three people, from another house other three, they arrived there, instead of working for 15 days, fifteen people arrived there, it would take half an hour (...). We always worked in groups (the spouse adds). We always worked in groups, that is it. Today is for me, tomorrow for you, and on another day, it was for that one. And for the people that had helped. But it was all the village...

Alfredo Guimarães, 63 years, farmer.

Afonso Cruz also agrees with that opinion by stating, “It's simple, the simple fact of helping. I don't go there to get rewarded. Eventually, one day when I need it, they will repay me in the same way. That's it! I don't expect... No.” However, a few participants do not hope for any kind of return at all.

With respect to the nature of those aids, several were invoked. Food assistance, help in gardening and cleaning the fields, giving lifts, companionship, psychological support, carpenter tasks, pieces of advice, and material help, account for the ensemble of the participant's helping initiatives. The receiver is often someone from the community such as a neighbour. By way of illustration, helping a neighbour who lives nearby, and is vulnerable:

Companionship.... That psychological support that sometimes we need... when we're sad and need to hear a kind word. Making us open to... it is the way. (...) Look, I have a neighbour who is the mother of my godson (91 years), sometimes I bring her to her food because... it's not like she really needs it on a daily basis, but she has a son that got a mistress, and as a result, the money all goes away. And I have sometimes the feeling that she doesn't live well, therefore I bring her something once in a while (...).

Dalila Antunes, 70 years⁴¹.

Sometimes... as a retired lawyer, they knock on my door, "Hey Sir, can you help me with this and that...", okay, I give a little help in the simplest things... and I still worked on one case or two whose people were closer...

Rui Gonçalves, 65 years.

For example, in the little things. I have a car and a great number of people who live in the village haven't, where I'm nearby. If I'm seeing someone walking on foot, I stop and ask if they want to get a lift. For instance, I gave my phone number to the neighbours and said "If you need anything, call me. If I can help, call. If you need a car, or even buying your groceries, anything, I'll do."

Anouk Halls, 56 years, entrepreneur.

Assisting and supporting vulnerable people such as the elderly is indeed one of the main features of these small communities. For instance, Dalila Antunes, is active in the community by helping the older neighbours, accompanying them, and being a close friend to them. And the same happens in Ferraria de S. João village:

Those people who are still of working age and living here end up helping and supporting the others who are more vulnerable. For example, this lady who became a widow (before the interview we had come across her. Her husband committed suicide), all the neighbours, the people who stay here during the day, I don't... By the way, I wish that I could have stopped and talked to her because whenever there is an opportunity to talk to her, we do. But I know that the neighbours, like Luísa Correia (50 years old), that lady who was there in the tractor... in fact, I even say that she could be the nurse of the village. Really! Because she worked in an elderly care centre, and she has that competence of caring for people who are sick. Sometimes, the sons asked her, and she visits the parent's houses and gives them the medication. So, she helps a lot (...). Those who are more vulnerable eventually are helped by their neighbours.

Lia Silva, 41 years.

⁴¹ She helps many people in her community. One more example is a newly arrived priest who did not know the region and Dalila assisted him with food during the pandemic.

Luísa Correia, 57 years and a housekeeper, is Alfredo Guimarães' spouse and is taking care of her mother at home as well. Through interviews and participant observation, it was witnessed that informal care is heavily performed by women. To illustrate, Manuela Martins' husband has health issues, and she provides him with the help he needs. Manuela Martins' niece, who also lives in the village, looks after his father, making meals. Both Manuela Martins' and her niece are dairy farmers. Not only did they manage their livestock, but also, they are cheesemakers and contributed to dynamising the village with workshops, wherein they shared their knowledge with tourists and journalists.

Insights offered by Sílvia Portugal (2006:456–457) not only did confirm the leading role played by the family network in elderly care but also how unpaid work is predominantly done by women. As a matter of fact, Lina Coelho and Virgínia Ferreira (2018) in a more recent study highlighted the fact that the care work has been unequally resting on women's shoulders throughout time. Also, mental health support is more likely to be given by women than men.

Speaking of gender roles, men tend to claim that they do not receive much help (the same pattern is exhibited in the context of wildfires). Their narratives did express far more reluctance than women to admit help-seeking attitudes, and not getting help is viewed as a sign of not wanting to be reliant on someone or the loss of autonomy. Similarly, emotional support is the kind of assistance only reported by women.

I don't have many situations in which I'm helped. But, for example, if I need something more workforce, more people to do something that I won't be able to do, I can always count on three or four friends to help me (it was later said that the type of help required hard physical labour).

António Cruz, 49 years, carpenter.

And in which situations have you been supported?

Look, fortunately, until today... I've never been in that situation.

But in the simplest helps that you had?

No, no, no... (I was told about his struggle to get a decent job, and how he provided for his family through his work). I have been helped... only by my brother-in-law who arranged a vacancy at a bus company. Despite that, this house and my apartment were a result of my efforts and my wife's.

Fernando Costa, 73 years, retired private driver.

Some authors set out to understand the impact of rurality on help-seeking attitudes and found a gap between females and males. One can be argued that the rural is still riddled with notions of masculinity influenced by traditional socialisation, rooted in self-sufficiency and autonomy values, in comparison with urban areas. This translates into a hindrance to help-seeking whether in a traumatic event or in daily life (Labra et al. 2019:4–9; Kaukiainen & Kõlves 2020:1–4).

Either way, on a regularly basis, the types of assistance were typically obtained through close⁴² neighbours, following family, and then friends. They vary between giving a hand in agriculture practices, food aid (such as fruits and vegetables from the farm holders, or homemade fruit jams), emotional and social support, advice and giving specific information, help on getting a job, sociability, and companionship.

3.4. Being bodily present: involvement in the community

Participants claimed that they managed to talk to residents/neighbours whom they come across routinely. Apart from some cases, wherein people isolate themselves from the community, such as Fernando Costa. For interviewees whose jobs are outside the village, lengthy interactions are not so frequent as well.

Nonetheless, cordial, and superficial contacts account for a normal daily life of a small community⁴³. Even the negative ones, as Teresa Domingues, 71 years, retired housekeeper, and cheesemaker, described me when a bad-tempered neighbour did not greet her as a sign of being mad with her.

Moreover, if neighbours do not see each other for a while, there is an immediate concern to reach the person. Rosa Costa, 74 years, retired and a smallholder, told me that her neighbours are very caring about her and her husband. “Hardly ever are they relieved, when they do not see me, they will call me straightway. If they do not call in the morning, call in the afternoon, they always are... *ring ring*, the telephone is always ringing.” This couple is old and has health and economic issues. Rosa’s husband has Parkinson's, mobility problems as well as chronic asthmatic bronchitis.

⁴² Neighbours who are important as well as their opinion to the target individual (King 2022:72–73) or a person with whom the ego has a strong positive link (Lemieux 2000).

⁴³ Those irregular interactions must not be underestimated. Once solidarity is built upon interaction rituals such as sociable conversation (Collins 2005:78). The same has been outlined in Robert Milardo’s definition of passive ties (1988:23).

As it was said earlier, people do sympathise more with a group of people and have a habit of exchanging more interactions and experiences together⁴⁴. “We interact more with neighbours who recently moved in. Like Lia, David (Lia’s husband), with those who have houses here and come at the weekends, Tiago Neves... and then we make (...) dinners, promenades...” - Miguel Marques, 52 years. In Figueiró dos Vinhos, Rui Gonçalves has de habit of running with friends and neighbours.

Membership in groups or associations, however, it is not very significant among all the participants. Except for Ferraria de S. João village whose Residents’ Association is still alive, albeit on the wane. But in the past, the Association was remarkably active, especially after the 2017 wildfires. In fact, five of eight interviews are still linked to the Residents’ Association.

Two women and one man have links to trans-local associations, namely in Vila Facaia, Pedrogão Grande municipality. Anouk Halls has connections with the former leader of the Victims’ Association of Pedrógão Grande’s Fire as well as Miguel Marques, and Alice Rodrigues is the president of a cultural group of Vila Facaia. Anouk Halls is also a member of the Friends’ Association of Vale do Rio whose ambition resides in improving older people’s well-being in the region.

Other female active resident is Lia Silva who has recently assumed a more prominent position locally⁴⁵. Her ideas and initiatives paved the way to set up a project whose aim was to make the village known and celebrated by its local culture:

We thought it important the maintenance of the Association, especially due to its initial functions. We ended up, when I arrived, developing a project, because I am a teacher and at that time I was connected with that, I thought... this village has so much potential and is spectacular, why do not make here a project, creating... valuing for example, people who make cheese, bread... Smallholders, creating activities (...), to maintain people active, bringing schools. For instance, children came here to learn things about agriculture, cheese production... So, we created a project, in collaboration with the city hall (...).

⁴⁴ Randall Collins remarked how ritual chains are of paramount importance in the continuity of ties and connections. In his own words, “(...) positions in networks are created and sustained on the micro-level by the degree of success of IRs (Interactional Rituals).” (2005:166).

⁴⁵ Miguel Marques still holds an important position at the Association. However, he is also a hub and an informal leader. Not only does he detain a high and diversified social capital, but also his connections have been proven to be beneficial to the village.

Other projects and activities were also commented on by Lia (i.e., cheese and bread workshops, a village's book, cinema sessions, etc) as well as by Miguel Marques whom we consider a *hub* in terms of his social capital. Once his connections hastened the access to financial resources to materialise those initiatives to revitalise their village.

In effect, some scholars claimed that new entrants altered the rural's notion, putting forward their knowledge and competencies into the territory wherein creative solutions and opportunities can culminate into innovative projects (Reis 2014; Bello et al. 2021:32–33).

As far as vulnerable and isolated residents are concerned, long-time residents readily identified some in their neighbourhoods as opposed to the recent ones that do not know them.

The vulnerable population was indeed included in the sample which, in turn, resulted in interesting data. Apparently, it was found that those who live in high-risk locations, live alone, are elderly, or have mental health issues, were strikingly engaged in their community and socially active. That often applies more to women than man though.

By way of illustration, Dalila Antunes's house is quite distant from her neighbours' houses, being alone on a slope wherein the forest is in the surroundings. Nevertheless, she is not socially isolated. Anouk Halls's situation is no different from Dalila's. Despite being both geographically limited, the social life of these women has not been jeopardised by that.

On the other hand, social integration occurs by means of social networks. Rosa Costa's house lies in a hidden and risky place (i.e., riddled with forest) nearby the heart of her neighbourhood⁴⁶. Up to a point, her community's ties prevent her from being in a life-threatening situation, especially in a wildfire scenario. Once her neighbours make themselves present daily, to check out her and her husband – “Our most close neighbour whom we get along with, when he does not see my husband: *Heitor, what's happened? I did not see you today. Yesterday I did not see you.*”

Vitória Guedes, around 60 years, who was widowed recently and lives alone in Ferraria de S. João village is greatly supported by her neighbours such as Teresa Domingues.

⁴⁶ During the field research, discovering Rosa Costa's house was tough. I end up being in a forest full of eucalyptuses. I got lost and then found a man that showed me the exit. Although Rosa's daughter gave me the instructions by phone call, the place was tricky to notice. Afterward, I thought of asking a resident, which was also apparently difficult to find on that given afternoon. The village seems to be desert. Suddenly, I envisaged an old man who readily helped me and knew Rosa's house. When I had already got there, it dawned on me how vulnerable her house is situated (an extract of the field notes).

Teresa is a social companion and a supporter of Vitória whenever she needs it: “I have been helping her in everything she asks me to. I put her up in my house and I am always with her.”

What is more, the elderly are not the only ones being supported, but also the new residents. In Ferraria, an Egyptian couple has recently moved in, and the residents have been welcoming them by giving them pieces of advice about bureaucratic issues and buying a suitable car. Despite the language barrier, Cristina Pereira told me that every 15 days they get together to dine.

Lastly, the degree of village cohesion is also defined by relationships forged with temporary residents, that is, those who come at the weekends, holidays, and the like.

Interviewees described the second-home owners as emigrants who inherited the house in the family lineage or urban residents who bought a property and decided to rebuild it⁴⁷. The second description is more commonplace in Ferraria's village than Figueiró dos Vinhos parish. Nazaré, Coimbra, Lisboa, Torres Vedras, Caldas da Rainha, France, Netherlands, are some of the current places where those residents are living.

Arguably, participants do actively engage and befriend non-permanent neighbours on the condition that the first have different ties in the community. The reason is that recent and isolated male residents are not very aware of them. Besides, Ferraria's village has been largely known in the media for its historical and cultural features thereby having a large influx of second-home tourists, as Dieter Müller (2007) termed it.

Interviewees know second-home owners very well and some close bonds were surprisingly found between them and permanent residents. For illustration, Alfredo Guimarães interacted with a doctor, Belmiro Bettencourt⁴⁸, who is a temporary resident, almost every weekend and they work in agriculture together. Their families are also proximate. The same is true for Cristina Pereira and a recent couple, aged 40, who has been restoring a newly purchased property in Ferraria de São João. They are city dwellers, highly educated, and have a professional type of occupation. Almost once every two weeks, they use to dine at Cristina's and spent time together doing diverse activities in agriculture.

⁴⁷ Portugal has effectively undergone an important transformation with respect to second home market expansion, with expression in rural areas. Second-home owner's characteristics found in Ferraria de S. João and Figueiró dos Vinhos parish resonate with Maria Roca, Nuno Leitão and Zoran Roca's findings (2013).

⁴⁸ We were told that Belmiro is a member at Resident's Association of Ferraria de São João.

“And we made the soup as we used to do here, very consistent, a typical Portuguese soup, we also baked bread and for them, they said that it was a five-star lunch (...). Very good people have moved in here, of those who have come here to live, they are impeccable (...). They are the most peaceful people there can be. I reckon I am very fond of the newcomers.”
Cristina Pereira, 48 years.

Manuela Martins has a lasting friendship with a female temporary resident, and has the key to her house if anything happens – “She gained such affinity with us (Manuela and her husband) and we as well with her... She is very fond; besides she has helped me a lot, she is already a close friend of mine and someone I can trust. More than some people in my own family. She is a very good person, indeed.”

3.5. Facing the inevitable threat: communities' perceptions and experiences of wildfires

The 2017 wildfires disrupted and affected people's lives in such a way that their memories are still present in them. As much as seven years have passed, people are still reeling from trauma, albeit differently expressed by the interviewees. Carlos Santos, for instance, said that in the next wildfire, he does not want to stay in the community and will leave not to hear again the desperate screams that he remembers until this day.

It was horrible, there is no explanation. There is no description to describe those things. We saw ourselves in a sea of fire, surrounded. (...) Oh, dear, we were all here together. We were here, speaking, screaming... we were sawing the death in front of our eyes.

In the case of Dalila Antunes, PTSD (Post-Traumatic Disorder) prevents her from sleeping well once every ray of light triggers her as being a wildfire. Not only her sleep but also Dalila's outlook on life has changed: “I was very traumatised. (...) It was very complicated. My state of mind... I was shattered. Today is not so intense. But even today... I will never forget it. Never. It was profound.” After that hellish night in 2017, Dalila Antunes sought psychiatric assistance provided by the municipality.

Another long-term impact mentioned by Penélope Alves was the inability of seeing news about fires without being distressed. She joined the front line in 2017 as a firefighter, as

she had had that occupation before, looking after burnt people and checking out her neighbours and other residents.

Cristina Pereira also talked about how the wildfires inflicted her mental's health,

For so long my head was not handling well with all, I was going to see documentaries... because what we had been through, I could not imagine what is being in a car and seeing other person being burned, to be on fire, dying, right in front of you.

As long as Lia Silva can remember that night was the hardest experience that she had to deal with. She got particularly emotional when commenting on the number of deaths and told me that her friends from Vila Facaia's parish had lost their loved ones, at EN 236-1 road, and Lia has been supportive of their struggle. Alice Rodrigues also lost eleven people whom she knew and went to four funerals in a single day.

Participants are keenly aware of wildfire risk, which is cognisant to their prevention and preparation initiatives, whether individual or collective. That results in activities such as land-clearing and the acquisition of fire protection materials, i.e., sprinklers, fire extinguishers, fire hoses, water storage containers, and power generators in case of power outages. Also, Ferraria de S. João hosted *fire-prevention training sessions*.

In fact, some of the participants coped with wildfires for years. Their trajectories revealed how acclimatised they are to rural places and their risks, even when they were born somewhere else. Alberto Sousa and Afonso Cruz are examples of that.

It was noticed how participants' concerns were intrinsically linked to the reported misconduct of risk management agents in the wildland-urban interface since the 2017 tragedy.

At this moment? If another wildfire occurs, it will be worse than 2017.

Why do you say that?

Because everything is... the pine trees that burnt, those who burnt completely, reduced into ashes, those who stayed in the air, because the fire, the heat, temperatures... the fire does not stop. The fire flies up. Then, the pine trees end up being straight and burnt. But those pine trees have rotted... the roots... Everything is laid down on the floor. Therefore, the loggers, cut and leave all in the forest. There is nobody who cleans, who cares. Because it

is very good when the Government speaks about precautions and cleaning the roadsides, the sufficient meters, but afterward you do not see anything done.

Penélope Alves, 51 years.

There is nobody who does not say that this is worse, and it is. Look, sometimes I walk with my dog into the woods, and it is worse, very much worse than it used to be. Because now, what burnt, what did not burn the last time, stayed such as trunks and sticks. (...) If another wildfire rages... 2017 was bad, and in 2023 or 2024 will be much worse (...) Because there is a lot of material, a lot of fuel...

Carlos Santos, 74 years.

Wildfires are the biggest menace that we have to deal with living here. This region and all the country, almost the entire country... I think that because of politics and money, the danger will never be over. After the 2017 wildfires, nothing has changed and that is grave. I reckon that it is a very bad situation.

Why do you think so?

Many people died and more eucalyptuses are found than in 2017. There are new rules, but nobody does anything. Nothing altered. On paper and in words, yes. But the reality, living here, watching here every day the area, the village, our valley where I live, nothing changed, or even got worse.

Anouk Hals, 56 years.

Reportedly, Miguel Marques, Lia Silva, and Cristina Pereira affirmed that the village's project, elaborated with the community alongside national and international partners/experts by means of the municipality and State funds, have contributed to their current sense of some protection, although they share the same views of the above statements of how the *status quo* has persevered since the 2017 wildfires.

Ferraria de S. João village's project consisted in creating a safe and enclosing area, also known as "Village's Protection Zone"⁴⁹ (VPZ), wherein hundreds of eucalyptuses were massively rooted off and other tree species (resilient to fires) were planted instead. That mission was preconised by the Residents' Association, with Miguel Marques leading initially the way, but simultaneously counting on the community's willingness to make

⁴⁹ The Village's Protection Zone representation could be seen on the appendix two.

that possible by identifying the owners of parcels of land and selling/abdicating their properties.

If we had not successfully uprooted those eucalyptuses, I would have been gone, that is for sure. Because I know that a wildfire will come again. It is a matter of time. If I did not feel safe, I would not be a masochist and have here my 10-year-old children with the possibility of dying here. So, fortunately, we succeed... many things were made.

Miguel Marques, 52 years.

It really worries me a lot because this in here is nothing. This is what we made (VPZ) it is nothing when compared with the dimension... when we went up there (me and Lia before the interview) eucalyptuses are everywhere. Up there, we encounter valleys and hills full of eucalyptus without any land-clearing that if a fire broke out again, it will be worse than in 2017.

Lia Silva, 41 years.

When all the stories and descriptions of the 2017 fires are pieced together, some common aspects are found: how the phenomena were beyond memory, the terrifying explosions heard, the intense heat, and the sudden changes of direction and speed of the flames. Some of the statements were: "That was a catastrophe." "We had already seen this burn, but like that is something that we have never seen." "This last one was the worse." "That was ghastly!" Afonso Cruz, who had experienced wildfires since his infancy, eloquently depicted the event:

I have never seen something alike. I have witnessed wildfires since I was a kid. (...) Look, that was indescribable, the speed that he spread (...). When he reached the mountain peak, (...), it was an authentic explosion. But an explosion that I will not be able to explain (...). I used to describe it as a giant rising. It was a giant running upwards and when he got up, he was on his knees and tired, and when he got there, he got up and when he did that, he exploded. That is exactly what happened.

At both localities, Figueiró dos Vinhos and Ferraria de S. João, interviewees grappled with the exact same fire extreme behaviour. Wherein the eucalyptuses and every possible fuel nearby were ripped through at an extreme rate of speed. Rosa Costa had her house completely damaged, and Carlos Santos lost 60 thousand euros and his love for forests.

More than fearing for their life and struggling to save their houses and personal belongings, residents had to buckle under the smoke that lingered for days as well as standing at a burnt black landscape that served as a constant reminder of the tragedy.

Wildfire risk perception is indeed reinforced by whether improvements were or not made and thus witnessed. Furthermore, a substantial part of the participants complained that almost nothing had changed since June and October of 2017, whereas the other part asserted that changes resided in people's initiatives to tackle future wildfires or better fuel management in properties or next to the roads. Nevertheless, by all accounts, no progress has been made, adding new fears over what the future holds for residents living in vulnerable territories.

At Ferraria de S. João village, however, the wildfire aftermath paved the way for the creation of a *collective effervescence* among residents (also driven by the valorisation of the local cork oak trees that had stopped the fire from ravaging the village) that resulted in *group solidarity* materialized in a pioneering project at a national level to prevent the repetition of such traumatic event⁵⁰. What is more, the Residents' Association (RA) ventures to get formal recognition so as to receive institutional support⁵¹, which can be interpreted to some extent, as a way of accessing citizenship or the right to have rights (Somers 2008), as explained by José Manuel Mendes (2020) in the case of victims' association in France and Portugal⁵², or as a means of achieving "worth" or *grandeur* (Boltanski & Thévenot 2006).

3.6. When it comes to survival, do ties matter?

Nobody was prepared for such unprecedented blazes in 2017, although the two regions were no strangers to wildfires. But even so, residents have shown solidarity and mutual assistance amid the described chaos.

⁵⁰ The terms in italic are from Randall Collins' thesis on interaction ritual chains (2005:48).

⁵¹ Inclusively, Residents' Association, in 2019, sent a letter to the head office of Government and respective Ministers, wherein is exposed their pioneer project and the following difficulties in managing private properties that in Association's view it is a state's task as well as responsibility. That letter was supported by some organisations such as the Victims' Association of Pedrógão Grande's Wildfire.

⁵² A more direct and illustrative example of José Mendes's argument is the Victims' Association of Pedrógão Grande's wildfire (2020).

Residents of Ferraria de S. João village relentlessly fought the wildfire together. Undoubtedly, they managed to save their village by virtue of their collective effort, with massive help from their cork oak trees that had stopped the eucalyptus projections.

JA - Then, we had to be worried about the elderly, who do not have so much mobility.

CF- For example, could you tell me which persons needed assistance?

JA - Like my grandmother, when she lived alone, her house was (and still is) underneath the cork oak trees. (...) She has breathing problems; we took her, and she came to our house. Then it was an attempt to look after people and their belongings. After, it reached a point where we could not leave once the village was encircled by the fire.

If we left the village, the fire... it burnt a house right here, in the middle of the village.

AG (João Abreu's dad) - Because we, my wife and my son were in her mother's house and I went up where the miss saw me yesterday, guarding that small barn, suppressing the projections, and there is no problem. But if we abandon... like one neighbour did and his belongings were burned.

JA- Or it could be a tragedy, we could die, could not we?

João Abreu, 28 years.

The emergency did urge people to act fast, almost intuitively, in Lia Silva's own words: "Naturally the residents are more or less, like... they communicate with each other. People here rapidly communicate, this is a small place too, right? So, people quickly organise themselves." She even added that on that night, everyone was looking for each other in case someone needed help. "As a matter of fact, we coordinated very well, really. It was impressive." This illustrates that the 2017 wildfires paved the way for the activation of social capital in Ferraria de S. João village (Dynes 2006: 4).

It was indeed the existence of the mutual support network that saved the village as Teresa Domingues argued, "This was what saved us (...) The residents.", and especially the oldest residents, as Cristina Pereira, Teresa's daughter said:

We were all here, nobody left the town... no, this was on a Saturday afternoon. This fire started on a Saturday! (...) The young folks were all here, all of them were here. Because it could be the case that during the week only the retired were at the village, and then if we wanted to pass, we could not make it, right? Like it happened. On the one hand, it happened where everyone was here because if it was not, it might have been much worse... the men who do the jobs, who have more strength...

Another aspect worth considering is that Ferraria de S. João's inhabitants felt under an obligation to protect the second-home owners' properties on the day of the fire.

It was a commotion, each of us defending our things as well as guarding other people's stuff who were not here, those who have here their (second) homes. We had to look, to stay vigilant to not let them be burned, right? Any house... because it would be upsetting.

Teresa Domingues, 71 years.

Apparently, in Figueiró dos Vinhos, mutual support existed prior to the 2017 wildfires. Mr. Mateus Santos, former firefighters' president and who works currently at the municipality, did recount the entrenched solidarity norms among residents. The cooperation between local bakeries, grocery shops, institutions such as "Santa Casa da Misericórdia", and the scouts, during the fires, is indeed a community trait.

Consequently, Dalila Antunes's village was preserved by its residents as it happened in Ferraria de S. João: "If my neighbours had left, Lavadeira's village would have burned!" And Dalila's network did save her life. Celestino Sousa, her neighbour and friend, 68 years who works with tractors, impeded her to go to her house which was surrounded by flames. Moreover, Celestino's friend lent a power generator to save Dalila's brother's house and Celestino's house as well.

Her brother – Sebastião Reis, 80 years, retired builder – and her sister-in-law - Anabela Reis, 75 years and retired dressmaker – both gave her shelter and emotional support after containing the fire together. Dalila Antunes is very fond of them.

Apart from the formal aid received (i.e., city hall assistance in food, material provision, mental health care, etc.), Dalila leaned on family members and neighbours in the post-wildfire phase. One of those neighbours was Elísio Ferreira, a retired builder, that went to Dalila's home to clear the road and the surroundings the day after the disaster.

On top of what Dalila had to face, she succeeded in assisting an older lady, her neighbour, who was being threatened by the approaching flames.

What stood out from Dalila's story was the motive behind her determined decision to stay living in Figueiró dos Vinhos – the social relations that she has happily maintained with her neighbours and friends throughout the years.

Dalila Antunes' network is heterogeneous and has compositional diversity despite the concentration of strong connections (where the homophily principle operates⁵³). In other terms, Dalila's social graph displays a balance between bonding, bridging, and linking ties. Which is why she holds a high level of wildfire resilience.

Likewise, Rosa Costa's ties helped her and her husband once the fire was loose. She was warned to evacuate the house by one male neighbour and received shelter from a close couple of neighbours - Madalena, a domestic worker, and her husband, Ernesto, a logger. Both have nearly 40 years. Ernesto also put out the blazes in Rosa's house. As a matter of fact, Rosa's ties with those neighbours and others prevent her and her husband (Heitor) from being completely isolated from the community. This is the social integration role played by social networks that Yoko Akama, Peter Fairbrother and Susan Chaplin (2014) found out in their study.

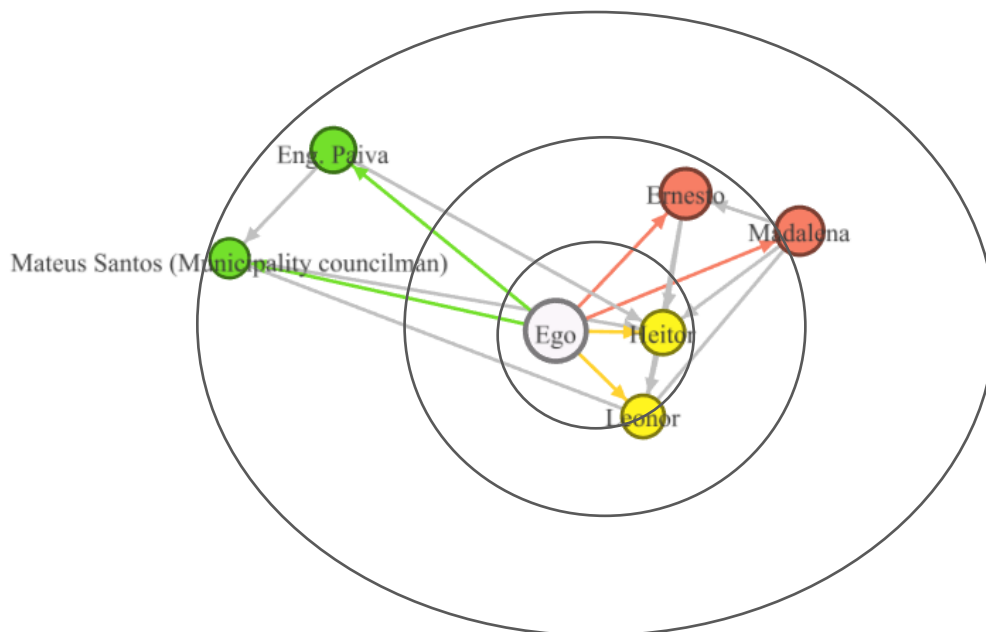


Figure 5. Rosa Costa's social graph⁵⁴. Nodes with yellow colour are family members; green are acquaintances and coral ones are the neighbours.

⁵³ "(...) also known as the *like-me hypothesis*, is that *social interactions tend to take place among individuals with similar lifestyles and socioeconomic characteristics*." (Lin 2001b:39).

⁵⁴ Social networks were conceived "(...) as a series of concentric circles that decrease in emotional intensity as you move outward. (...) Our innermost circle, the people we turn to in times of severe emotional and financial distress (...)." (King 2022:36). The graphs were produced with the support of Gephi software.

Another striking case is Fernando Costa's social isolation from the community being somewhat overcome by his tie with a geographically close male neighbour. Moreover, on the day of the wildfire, Fernando's daughters called a female neighbour to know about their parents once they could not reach their father's phone owing to a power outage.

In line with Nan Lin's thought, while the weakest ties provide access to a wide scope of resources, the strong ones are grounded in commitment, trust, and obligation to help. Those might well be critical, especially "under institutional uncertainties or constraints (...)." (Lin 2001b:94).

In this research, bonding social capital proves to be equally important in emergencies inasmuch as neighbours or family are likely to be actual first responders, providing immediate lifesaving assistance (Aldrich & Meyer 2012:55–256).

On the other hand, Dalila's network clearly exemplifies Lin's argument when, for instance, her daughter's friend who works at the criminal police went to see Dalila's home to assess the damages. In this regard, an indirect tie was activated which was outside of immediate Dalila's social circle⁵⁵ (Lin 2001b:193). Indeed, the extension and the number of bridging ties enable Dalila Antunes to reach many people whose social position is different from hers, that means attaining a greater social distance (Granovetter 1973).

⁵⁵ In Lin's own words, "being in a node of a network directly and indirectly provides access to other nodes (actors) in the social network (2001b:38).

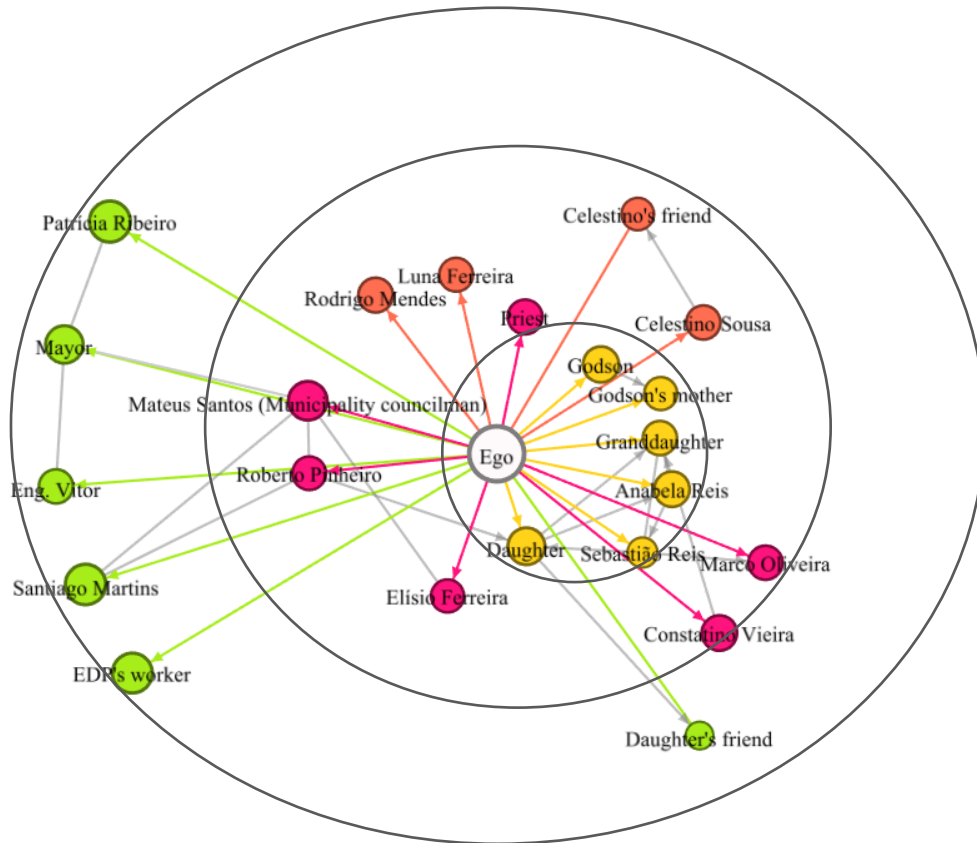


Figure 6. Dalila Antunes's network. Nodes and ties with yellow colour are family members, pink represents friends, coral ones are neighbours and green are acquaintances.

The informal relationships also played a leading role in Ervideira village (Figueiró dos Vinhos), wherein Carlos Santos and other neighbours helped an old couple to evacuate their house which was threatened by flames. He told us that it was a struggle to make the couple leave the house and to persuade them that life is more important than material possessions.

By the time the fires broke out, those who were at risk had not been notified of any kind of official warning. Or, as Penélope Alves referred, climate conditions were underestimated and not taken seriously enough by risk management agents to disseminate the proper warnings.

Interviewees had learned about the Pedrógão Grande's wildfire, but they thought that it would not be possible to impact their homes and villages.

“We were not warned, so we were surprised by the fire's arrival at the top of the mountain (...).”

Miguel Marques, 52 years.

“That started so far away. It started and when I was listening to the siren, one or third times, I had a vent turned on and I was cooking some stuff in the kitchen, and I had all closed. It was so hot. Then I went outside and saw that mushroom... that was an authentic and gigantic mushroom of smoke. But it seemed it stood still, accumulated, and did not leave, very far. And I called my sister-in-law, “Do you know where the fire is?” And she said, “Oh it is far away from here, darling. It's in Pedrógão Grande, it is up there, I don't know where.” And then I say “Yes, it's in Pedrógão, I'm seeing where it is, but...”

Dalila Antunes, 70 years.

We learned from the news that it was a fire in Pedrógão, and I have family in other villages, and they said, “The wildfire is getting closer”. And we remain vigilant, we went up there at 2 pm, and 3 pm, and saw that the fire was dozens of kilometres away. It took like two or three hours, and the fire was getting close to the village. At 10 pm, my dad and Sebastião went to see on top of the mountain. At 12 am it had arrived (...).

We were getting the message crossed to this one, the other one, “Attention, we must be prepared.”

João Abreu, 28 years.

What help people getting the information circulated across villages was indeed ties and connections. Interviewees whose networks were less dense, or whose connections were advantageous due to their knowledge or expertise on wildfires, sooner became more conscient about blazes' arrival. Therefore, it has to be stressed that communities might hold informal warning systems, and they may operate as a reinforcement or as an alternative to official warnings.

By way of illustrating this argument, Rosa Costa was alerted by her neighbours; Manuela Martins was awakened by her niece who was, in turn, warned by Lia Silva (since the fire began during the night in Ferraria de S. João); Carlos Santos's daughter, who is a firefighter in Pedrógão Grande and was with him at home, alarmed him about what they were sawing on the window was a fire and not airplanes; Frederico Teles knew about his company being affected through a phone call made by the fire brigade's president in Figueiró dos Vinhos as well as by a friend; a small group of residents of Ferraria de S. João dislocated themselves to accompany the fire's evolution in order to update the other

residents; Alice Rodrigues uses to call a female friend who has a firefighter daughter to learn about the fire in real-time, “Look, the siren went off, but where is it?”.

Russell Dynes (2005, 2006) had already grasped the importance of social networks in the effectiveness of warnings. The message gets across and the informal ties corroborate and confirm the expert information/knowledge through a social psychological process.

From a network structure stand of point, Rui Gonçalves, a retired lawyer⁵⁶, has diverse ties with a high level of relevant characteristics (i.e., forestry experts). As Robert Milardo (1988) contended, the reason why some individuals are more socially active is related to factors such as the level of education, occupation, income, personal attributes, etc. That is their position in the social structure.

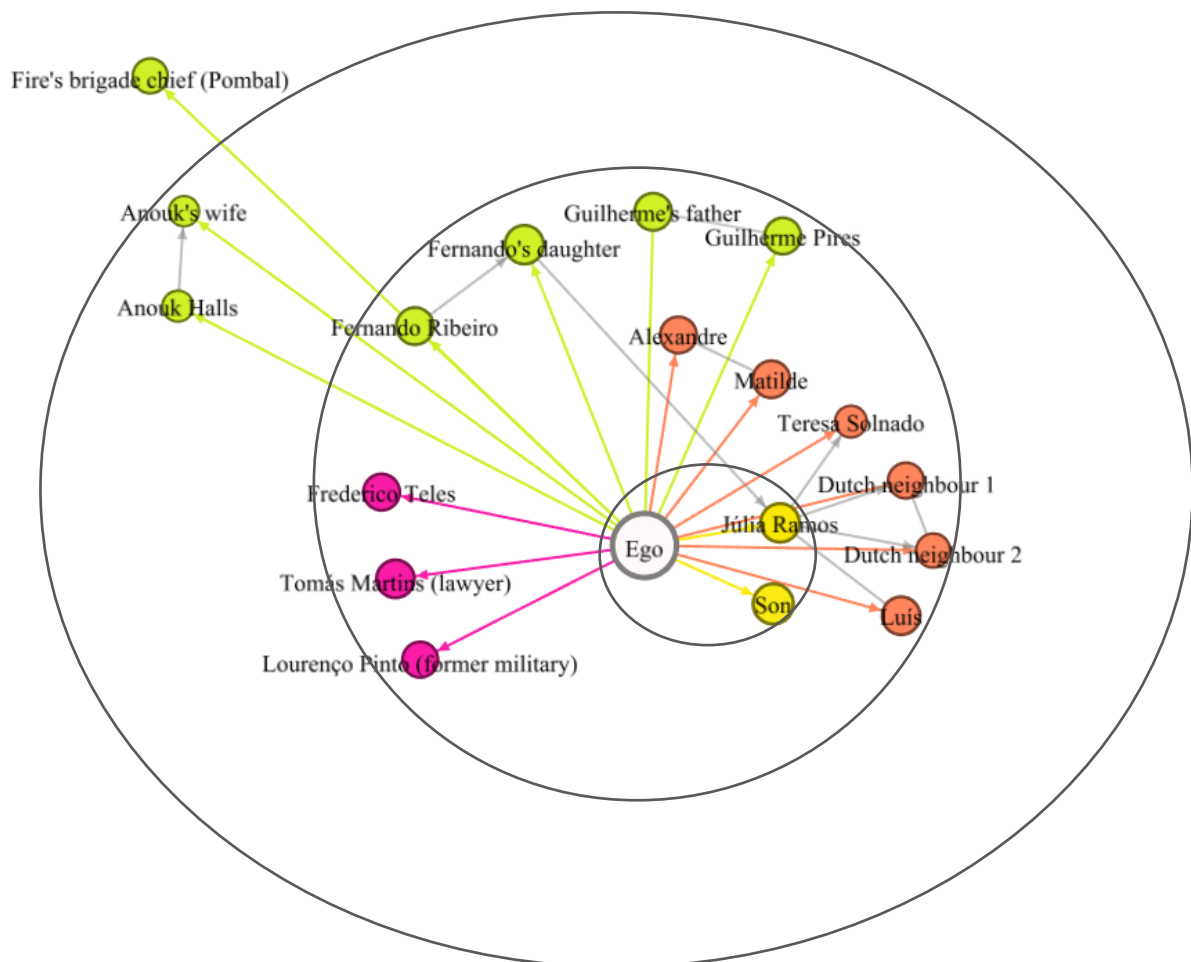


Figure 7. Rui Gonçalves' social graph. His network has fewer family members and more neighbourhood and friendship ties. The firefighter was regarded by the

⁵⁶ The interviewee also creates bridges between neighbours and other people. For example, if anyone needs a hand in land-clearing, Rui Gonçalves recommends his contacts.

interviewee as a negative acquaintance; therefore, he is placed more distant.

Connections at the outermost edge are less emotionally close to the ego.

Rui Gonçalves count on a friend, Fernando Ribeiro, 80 years, and owner of a local guesthouse, on the day of the wildfire. The interviewee asked him for shelter for his girlfriend, Júlia Alves. Even though the facility was fully occupied by evacuees of the town, Fernando suggested his daughter's house to accommodate Rui's girlfriend.

To Rui, this type of solidarity is "of great beauty", making him emotional when reminisces about past episodes. "It is one of the things that I learned to like about the people of this land. People that when things got tough... you could believe that always will come up someone to help you out.", he added.

Having his loved one in a safe shelter, Rui stayed to defend his house, albeit not alone. Lourenço Pinto, his friend and local resident, had to go to his mother's funeral but gave useful indications on how to deal with the fire. Lourenço was a retired officer in Republican National Guard (GNR) and worked in the armed forces being a parachutist. Thus, in Rui's own words, "He is very used to dealing with emergency and stress".

In fact, that support contributed to keeping cool Rui's head when facing the flames, as he described: "When Mr. Lourenço arrived there, which is very curious, he is very good making hoses' adjustments, in this and that...and in the taps, and one broke down, or maybe stopped working at that moment, he is a man who reacts very well in this kind of situations. And Júlia said to me, *since he has arrived, you look much calmer*. So, the importance of having trust in these people... In people's capacity to help us out... And I am aware of being more tranquilised because they know. Because their help is more effective."

Another essential node in Rui Gonçalves's network was his lawyer and college friend, Tomás Martins, 65 years, who was coincidentally spending the holidays at Rui's place. Tomás has a broad knowledge of fires and supported Rui in weathering the hard conditions until 5 am in the morning of 18th June 2017. When they were defending the property and surroundings, a fire chief of another town's section criticised Rui and Tomás endeavours to predict the wind's direction, a comment that was wrong. In Rui's network, that tie can be viewed as weak and negative.

Regarding preparedness and recovery efforts, Rui acknowledged that his economic situation facilitates access to people who can help him out, such as employing someone to do the land-clearing task or to restore any material in his small farm.

A clear demonstration of the power of linking social capital is particularly embodied in Miguel Marques's case.

By Saturday night, Miguel's residency was completely engulfed in flames. He was alone and called the city's mayor for assisting him. As it happens, minutes later, the mayor and the deputy mayor appeared in a fire truck. Miguel's connection with the mayor prevented his house from being burnt down and ultimately losing his life saving it. Additionally, the mayor had already been sought by Cristina Pereira (they know each other since primary school) to bring resources to help the village and Miguel Marques' house.

In Figueiró dos Vinhos, although Afonso Cruz's network can be considered an "insular bonding network"⁵⁷, because of being isolated from the community social life in his village (few ties with neighbours), Afonso protected his father-in-law on his own (Henrique Fonseca). His children and wife had been evacuated. Drawn on his past experiences with wildfires and his level of preparedness, Afonso Cruz said he was confident to fight the fire, despite the unpredictable extreme conditions that he grappled with on his farm. Despite that fact, he still called his brother-in-law for help.

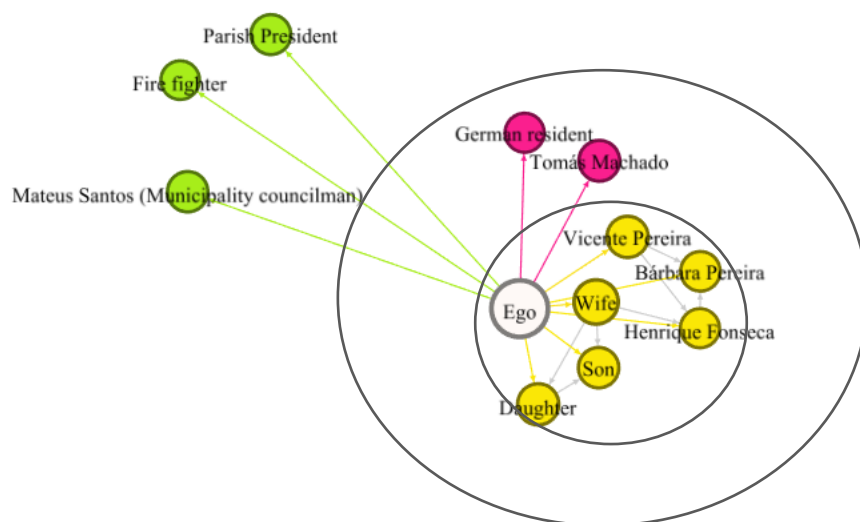


Figure 8. Afonso Cruz's network. Kinship ties (yellow ones) are the most abundant. The green nodes (acquaintances) are more distant due to the fact of being negative ties and Afonso's untrustworthiness in them. Tomás Machado and a German resident are the only friends mentioned by the ego.

⁵⁷ (Akama et al. 2014).

At first glance, we could argue that social capital does not have any influence on Afonso Cruz's wildfire preparedness and recovery. Nevertheless, his recovery could have been enhanced on the condition that the interviewee had linking and positive social capital. Once linking social capital means an advantage of getting resources that otherwise are hardest to obtain.

Briefly, we have seen in this chapter how wildfires set into motion "certain processes which make these localities into communities." When facing a common threat or a disaster event, bonds of mutual understating are activated forming the basis on which community organisation can develop (Dynes 1969:84). In Ferraria de S. João's the wildfire created favourable conditions where people become more closely knit than it was before, whereas, in Figueiró dos Vinhos, solidarity norms were reproduced in the wildfire's day.

3.7. Being left behind: social network's role in moving forward and preparing the future

Shortly thereafter the deadliest fires in Portugal's history, disaster relief teams started to reach communities. Mateus Santos, a city council member, commented in an informal interview that the massive support they received in Figueiró dos Vinhos proved to be a way of compensating for political inaction to prevent the tragedy. In effect, the financial resources were such that managing them was far overwhelming for the municipality. Therefore, it is not surprising that a significant part of the interviewees assesses national and local responses as disorganised and unequal.

I don't see any kind of support, no. Everyone must do it for themselves and that's it. If you have food, if you don't have food. If you can walk, if you can't walk, you can't walk. (...) Look, my concern (silence) was seeing so many people with nothing, hearing so many screams, (...). And two weeks went by, and assistance started to come, and the big eaters ate everything, and the poor did not eat anything.

Carlos Santos, 74 years.

The helpers only assisted those they wanted and were closer. (...) Trucks and trucks that I helped to unload, Mr. Mateus Santos who was also present at that time, and I wonder where those things arrived. It reached everyone unless those who were in most need.

Penélope Alves, 51 years⁵⁸.

What I do know is that a lot of people didn't live here and were lucky to have things rebuilt. The whole mess of Pedrógão, who is to blame for... I don't even dare to get into that. My wife was on the Commission to report if the house burned down, and I know the questions were asked, like, "In two days, you must have everything." It was impossible to have...a full assessment in 2 or 3 days. Things were done hastily...

Frederico Teles, 45 years.

As much material support, food assistance, and mental health services have been provided after the disaster, interviewees felt that they needed more for all the suffered damages. For instance, Rosa Costa had her house reconstructed, but her husband's agriculture equipment which was lost in the fire has not been replaced so far as promised. As well as the money derived from hard-working journeys that he kept inside a safe deposit box that burned.

In view of paperwork issues, Dalila's material losses did not meet the conditions for receiving the local funds for recovery even if her shack settlement at her brother's house was destroyed by the fire. Even though she is grateful for all the efforts done especially by the municipality and its workers, in accordance with other participants' views, she argued that there were people who did not comply with the requirements but received monetary relief anyway.

The same goes for Carlos Santos's case wherein his massive losses were not covered (around 60 thousand euros). The only thing he received was fertiliser for his eucalyptuses which would not be otherwise given, if his tie with a female forest engineer who works at the local agricultural cooperative, had not put effort into it.

⁵⁸ We were told about a negative tie established between Penélope Alves and a person (it is likely to be a man) who holds a power position when she tried to denounce a dubious attitude among the resources management after the wildfire. She did not reveal more details about that connection due to the distress that the situation inflicted on her.

Subsequently, these opinions do reveal how participants feel about risk management institutions and risk relief procedures. Which, in turn, can be inferred as a measure of trustworthiness in those institutions.

On what concerns people's trust in risk management entities, firefighters are the ones with whom participants feel closer, and their work is thought to be more than enough as they put their lives at risk to save others. For some interviewees, a firefighter's job is extremely difficult and can be life-threatening when a fire evolves into a mega-fire.

On the other hand, Civil Protection is perceived as not serving no practical purpose because residents of both localities have not witnessed any major effort from them in the field. In fact, their exact role in wildfire risk management is regarded as unclear.

The State's ad-hoc solutions are becoming unsustainable for those who live in perilous territories. Political inaction, a history of poor land management, and the State's abandonment of rural and ultimately, its population, may feed into a losing battle for the interviewees.

Nobody is looking after us. Everyone complains that things are bad, they are bad, but I think people... The Government and our State do not have the willingness. Because if they did have, there were a lot of things that could be done... To improve the chances of things going well.

Afonso Cruz, 49 years.

The exemplary response to the disaster in Ferraria de S.João is undoubtedly rooted in the community's cohesion and successful inter-organisational relationships following the wildfire. Residents' recovery and prevention efforts were indeed a result of successful interactional ritual chains (Collins 2005), which began with weekly meetings.

People hanged around. They met up at night, after the wildfire, there were meetings, snacks... It was like a family, you know? It was a tight-knit community... we were there as a whole.

Alberto Sousa, 48 years, carpenter.

The residents' overall agreement on building a resilient community led to obtaining national and European funds which rendered the Village's Protection Zone possible.

As a matter of fact, Miguel Marques's network was key in that process. His bridging and linking social capital prompted the essential institutional contacts and technical advice to improve Ferraria de S. João's village adaptative capacities.

To exemplify, one person whose opinion is highly valued by Miguel is a friend who was the former manager of Integrated Action of the Territorial Base, of CCDR⁵⁹, at the Pinhal Interior region. Another specialist in Miguel's list of connections is André Couceiro, a forest engineer at the Agency for Integrated Management of Rural Fire (*AGIF*), whose expertise helped the village to integrate a safe community project. Regarding the land management issues, Miguel Marques has a link with a friend who was the former president of MONTIS – Nature Conservation Association, whose job is followed by the interviewee.

Ana Ribeiro, an already mentioned Miguel's tie, who was the former leader of the Victims' Association of Pedrógão Grande's Wildfire, gave support to the community's shelter project in Ferraria (which has been delayed), provided combat fire equipment to the Resident's Association of Ferraria de S. João and lastly, prevention sessions at the village were dynamised by the same association.

Miguel Marques' social ties upholds Nan Lin's (2001) principle of structural opportunities and constraints when the interviewee's position in the social structure, determined by his master's degree and job occupation, enabled the tourism entrepreneur the access and the consequent mobilisation of privileged resources.

⁵⁹ *The Centre Portugal Regional Coordination and Development Commission (CCDR-C).*

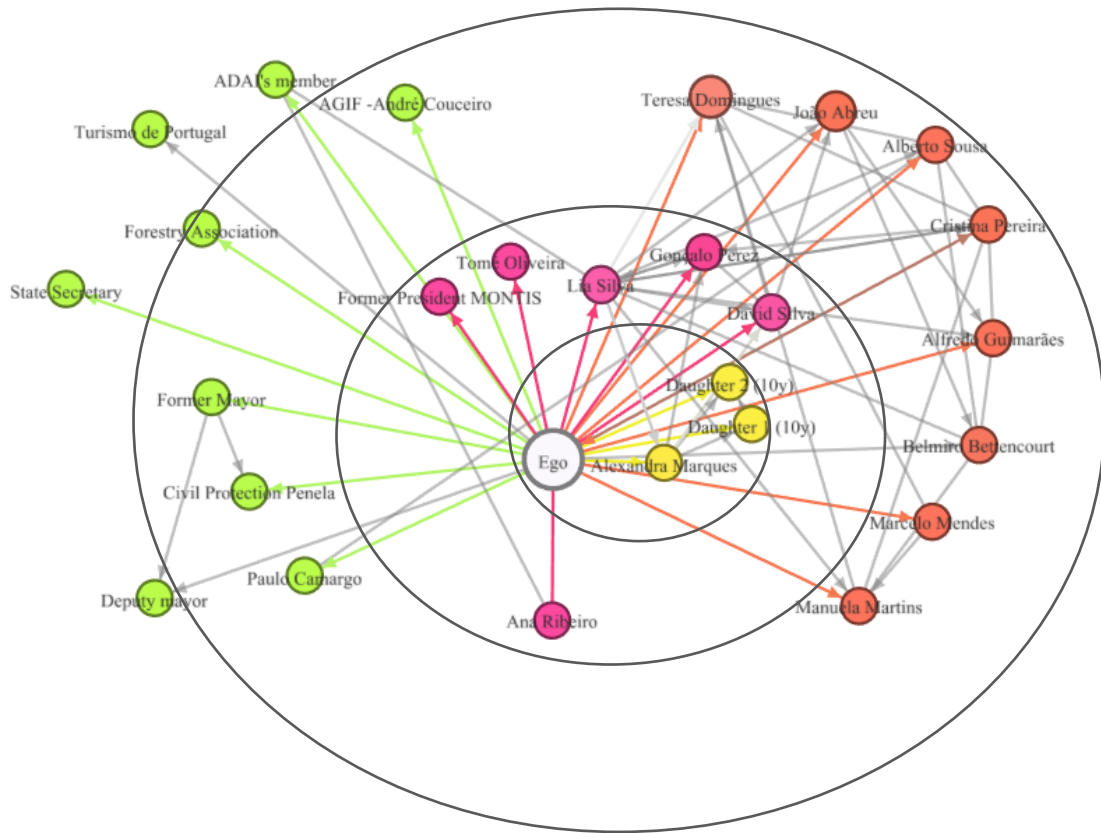


Figure 9. The social graph of Miguel Marques. Bonding, bridging, and linking social capital are balanced. As Marissa King argued, this type of network – expansionist – is associated with popularity, status and power (2022: 136).

Lacking linking social capital may well be a setback in building wildfire resilience. Miguel's and Afonso's networks enable the understanding of Nan Lin's argument on opportunity structure relative to resources (2001a, 2001b).

Afonso's social isolation and sense of abandonment are closely related to his negative ties and his untrustworthiness of local power. The negative tie with the parish president (it is his neighbour too) hinders Afonso's capacity of obtaining resources such as getting support to build a decent road on his farm⁶⁰ or some kind of leverage in buying power generators and specific tractors to land clearing practices.

If I had not bought this appliance and my house had burned, the State eventually would have to pay for my house, if I was looked by the same way that other people were... So, if

⁶⁰ To mitigate the effects of rapid floods following wildfires.

they exempt me from VAT, the benefit would be higher. Because they could have to pay 70 thousand euros for one house.

Community efforts were also encountered in Figueiró dos Vinhos. To Anouk Halls' astonishment, she was assisted by plenty of neighbours:

Following the fires, I found so many people who supported us, it was incredible. Incredible. I knew that we (Anouk and her wife) were well integrated here in the village, in the area, but I would never imagine that so many people liked us and wanted to help us. They offered animal feed, food for us, fruits and vegetables, and straw for the goats... without stopping. Every day. (...) Here I found... this genuine friendship and it is the reason why I am very fond of living here.

Following the 2005 wildfires, wherein Figueiró dos Vinhos was also devastated, Rui Gonçalves recalled that he got helped by a couple who lived nearby when floods were difficult to control at Rui's house. "I don't know how they guessed that I was in need. And they helped me without asking me anything. I didn't ask them anything... and they helped me a lot! There were no firefighters, Civil Protection or tv channels. It was the people without propaganda... And I like very much that way of living."

In some cases, family is a source of recovery too:

When you have zones where many people were affected, very often it is at the familiar level, the uncle, the aunt who belong to this region, who perhaps come from the city to help to recover something in a weekend. Others stay a few days, are retired and can be here for days. (...) I did not need that. I had other financial resources that others don't have. If they don't have a close-knit family, strong, very strong that they have for each other, maybe they would not be able to restore certain things.

Rui Gonçalves, 65 years.

In both our case studies, the importance of the "therapeutic community" facilitated the process of being back to normal life (Quarantelli & Dynes 1977). Likewise, Marissa King's (2022) argument on social relationships being vital in building resilience is also seen in these communities. Strong and cohesive ties "provide socioemotional support, a sense of belonging" wherein people share experiences and ideas with (King 2022:83).

CS - Look, it was tough, very tough. Now it is like I am saying, we moved on, just living and we don't talk much about it. It is the routine... when is the day of receiving retirement, "when will we go to the village?" It is in that way we go by.

CF- And the recovery is easier because of people?

CS- Yes, yes.

Carlos Santos, 74 years.

Here in the village, we ended up talking with everyone, there was a unity. We ended up talking... It was a little traumatising for all, wasn't it?

Lia Silva, 41 years.

Neighbours and family are pinpointed as a source of mental health enhancement after the harrowing days. Nevertheless, friends were included in some interviewees' support networks too.

Anouk Halls's connection with Ana Ribeiro, for instance, was found to be a relationship that eased the healing process for Anouk and her wife. "We stayed in touch. She was a friend and we spoke a lot." Regarding preparedness, Anouk also said to ask for advice from Ana as well⁶¹. Another important tie in Anouk's network is Camila, a friend from Fundão who works with nature-based solutions and gave a hand in Anouk's process of recovery after the wildfire, namely preventing floods in her property.

In Cristina's Pereira case, Ester Carvalho, her co-worker, was a helpful listener after the agonising days. "We are very close. We stand next to each other all day long... Let's say that we shared our sadness and fears, she is a dear friend." Moreover, Ester and her husband had seen Cristina and her family the day after the wildfire hit.

The level of preparedness has broadly increased in both communities in comparison with the period prior to the tragedy. People are more aware of the risk they face, and their communication with their neighbours improved. "They are more perceptive than they were (...). Now we are more prepared." Told Teresa Domingues, 71 years, Ferraria's resident.

In the two communities, prevention is thought to be crucial in coping with fires. Thus, nearly all interviewees, if not all of them, do their part in reducing forest fuel.

⁶¹Although the two communities are physically separated, the common node Ana Ribeiro in Miguel Marques's and Anouk Halls's network connect them together. Which, in turn, makes Ana a crucial hub.

It is widely recognised, however, that cleaning forests and surroundings can be an onerous task especially when the owners do not have the financial or physical capacity to do so. And it is exactly where the State must bear its responsibility and intervene, in the interviewees' opinion:

Look...people have no economic conditions, no reason to do what they do better. There had to be external help from outside, from entities, from organisations. Well... people can be resistant to it, but there must be... It is no wonder that paper industry's spaces are always immaculate. For economic reasons, because they justify it. An elderly person who has a pension of 300 euros or who does not have one... There are many farmers who do not have a pension, a person in that condition who must clean up, promote the cleanliness of the way... he couldn't. Okay, with the eucalyptus and pine trees go get it... If you have to spend more than 2000 euros a year, to earn 10,000 euros you have to wait 35 years, which is the time of the pine to grow... 30, 35 years times a thousand euros, that's 30. If you sell them for 10, there's a difference of 20, and money must come from outside.

Frederico Teles, 45 years, local business owner.

Imagine someone who has a lot to manage what she/he might spend. It's not possible. And then when people are getting some income (from the forest), the wildfires come, and all is wiped out. And people don't get any profit. So, if there was support, I don't know... if it was more affordable... I don't know, it's difficult.

Alice Rodrigues, 52 years, primary school teacher

Prevention tasks such as fuel management are rarely done alone. For example, Rui Gonçalves counts on neighbours to help him or hire a professional to do the job; Alice Rodrigues has a cousin who lives in the middle of the forest and lends a helping hand; Alfredo Guimarães is always ready to clear vegetation wherever needed with his tractor; Anouk Hals manages other people's lands when seasonal owners ask her to and when she has the chance she hires someone to do the job in her property; Cristina Pereira has her husband, Alberto Sousa, to do land-clearing task with her, and she benefits also from the community herd of sheep, like many other residents, since she is a member at Resident's Association; It was also known that Manuela Martins and her niece are being paid to look after a seasonal owner's home.

Another example where ties could reinforce preparedness is through firefighting tools and material exchange. For instance, a second-home owner, Belmiro Bettencourt, who is close to Alfredo Guimarães, is aware of the fire risk and bought fire hoses for him and for Alfredo without charging anything.

As we stressed above, during wildfires, networks can act as communication channels. Through bridging relationships established between permanent residents and newcomers or second-home neighbours, the information flows beyond fire season. That is, before and after the fires. Anouk Halls, for instance, who runs a small tourism business, does inform her clients whenever she can to protect them and raise awareness. She also maintains contact with second-home owners who live abroad, to keep them informed in case of the necessity of clearing their forest surroundings. Frederico Teles, who is recent to the area, has conversations with his neighbour, who works at the Civil Protection, to be more prepared.

Afonso Cruz knows some foreign residents who live in dangerous areas and warns them about the risk they incur, advising them to live somewhere safer. Manuela Martins also cares about sharing her experiences with the newcomers, as well as keeping her close friend, who lives outside the village, updated. João Abreu shares his experience with trans-local ties/friends who live in rural areas on the actions needed to prevent a wildfire by sharing his own experience. Alfredo Guimarães is also the key informant of the Belmiro Bettencourt, who is a part-time resident less experienced than Alfredo.

Ferraria's residents who work outside the village are kept informed if something comes up from those who stay at the village.

Considering the above, there is in both localities a bridging fire-related network wherein fire-related information and advice circulates through connections, namely between permanent and second-home neighbours.

CONCLUSION - FROM WILDFIRE RESILIENCE TO DEMOCRACY'S SURVIVAL

This dissertation has shown the fact that how people connect and with whom is a crucial variable regarding the community's processes of coping with fire risk. This is due to the fact that networks are activated and mobilised for multiple purposes, such as rescue, shelter, protecting material goods, acquiring specific knowledge, food assistance, among others. Nevertheless, the network's configuration and nodes' features impact the quality of social capital (i.e., positive or negative). As an example, Miguel Marques's network demonstrated that being highly and well-connected in terms of the compositional quality of his nodes for wildfire purposes is advantageous in comparison with those whose networks are homophilous (node's social positions/locations are much the same as the ego). In these, the types and amounts of the embedded resources are bound to be restricted. Rosa Costa's network, for instance, is mainly composed of strong ties which excludes her from getting more returns before and after the fire than other interviewees have.

The interviewees' structural position partially dictates their networks' morphology, and, consequently, the yield returns from which they can benefit in a wildfire scenario, ranging from knowledge, advice, fire prevention material, and mental health wellness, to services such as land-clearing.

Drawing on Pierre Bourdieu's concepts (1987), residents who have economic and/or cultural capital (holding better job occupations and a good level of education) are liable to have more bridging and linking ties available which provide them with a better scope of resources for wildfire preparedness and recovery. Here we can see the unequal formation of social capital which Nan Lin eloquently described.

Thus, we may assert that a community where individuals possess positive social capital concerning constraint, closeness, betweenness, effective size, compositional quality, and heterogeneity, is more resilient to fires than those communities where homophilous ego networks prevail. Ferraria de S.João is a perfect example of how individuals' social capital can accrue to collective good or welfare. Consequently, the findings confirm the central hypothesis - the more positive a community's social capital, the greater its resilience to wildfires.

A key observation stood out in this research. The interconnectedness between neighbours was crucial in both regions, especially during a wildfire wherein residents' friends and family were not present, as well as firefighters nor other civil protection agents. Data reveal that neighbours (permanent residents) are reportedly the ones who were in the community when fires broke out. Therefore, the emergency is clearly lived together, forming a collective, attesting to Russell Dynes's thesis on community organisation during a disaster (1969).

In both case study communities, the same social and cultural norms are broadly shared, which, in turn, regulate the networks. In our study, these are trust, reciprocity, collective expectations of help and assistance, common beliefs, and experiences about wildfires. In fact, past experiences made individuals build "adaptative techniques" which are inscribed in the community's structure, as Dynes highlighted (1969).

Unless the system of values and meanings is deeply ingrained, renewed, and maintained through interaction rituals (meetups, small talks, favours, assemblies), mutual support and collective action would not take place. This confirms the third hypothesis related to the culture-normative practices as a background variable that shape wildfire resilience.

On the other hand, the proposition that linked a high level of trustworthiness of risk management organisations to better resilience was not validated by the results. Apart from firefighters' work, seldom have we seen positive opinions related to local (i.e., the parish and municipality) and national (i.e., State) risk management⁶². Rather, abandonment and negligence are the terms most found in interviewees' risk management assessment over time. This was unsurprising, given that Alexandre Tavares, José Mendes and Eduardo Bastos (2011) study unveiled the same.

Civil Protection, however, is negatively perceived by the fire risk communities as well as its existence is largely contested.

Our results allow for the verification of another hypothesis about the high intensity of network functions tailored to fire risk. Interviewees tend to activate certain types of ties in order to mobilise specific resources, ranging from land-clearing and getting shelter, to receiving recovery financial support. Also, the kind of connection (even if it is negative)

⁶² When comparing both, national institutions are the most untrusted among the Portuguese population. "The citizen will be more inclined to trust local or regional institutions than national institutions because it is easier to see the "return on investment" of trust for the missions of protection and proximity at the level of municipalities or regions than at the national level." (F.Arrighi et al. 2022).

that rural residents have with the parish, or the municipality, differs from other relationships.

The analysis of the interviewees' network configuration turned out to confirm some of the major conclusions of the scientific literature. An equal combination of bonding, bridging, and linking social capital ensures the individual and, ultimately the community, more diverse assets to be deployed for fire purposes. The network nodes whose composition quality is socially diverse facilitate the transference of goods, information, public funds, up and down the social hierarchy.

Furthermore, having both formal and informal ties hold great value for the individual's preparedness and recovery, which will benefit the community where she/he lives and is engaged with. These results allow us to corroborate our second hypothesis.

This does not mean that bonding or strong ties are less important. In fact, it was proven that strong connections, based on trust and commitment, are more durable than exchanges stemming from weak ties, being also more reliable in times of crisis.

The last hypothesis to be corroborated focuses on the variable of place attachment in building a more resilient community to wildfires. Based on the data and considering the length of residency as the strongest indicator among the others, we verified that residents who lived at least 10 years in the community had more connections within the community, enjoyed living in the region, and promoted initiatives to withstand fire risk. This, in turn, means that those who are more place attached, are more likely to engage more in the community's dynamics toward wildfire prevention, preparedness, and recovery.

As with any scientific study, methodological limitations exist, especially when the research is of an exploratory character. The sample in our study and the case-study communities are not fully representative. Therefore, more research is needed to include more villages. Besides, interviewing second-home owners and trans-local hubs can add new insights into the understanding of how networks impact wildfire resilience.

The role of women played in social integration and in leadership in informal community networks rests to be fully analysed since some hints in this study have indicated that women are likely to be hubs or *catalysts*.

Even though some aspects can be improved, this study has, indeed, shed light on some ideas that are ripe for future research.

Political and economic attempts to appropriate social capital's concept to justify a doomed system as market fundamentalism was wisely put forward by Margaret Somers. Following the author's perspective, individuals are encouraged to use their social relationships when State shirks its incumbent responsibility in protecting citizen rights, feeding the antistatist myth at the expense of prioritising the success of the neoliberal project. In fact, individuals are forced to do so, on condition that the market has proved to repeatedly fail in addressing necessary human services in an egalitarian manner (2008:112)⁶³.

While the concept employed is social capital, in this dissertation we take the view that social relationships do not have some kind of economic value to be exchanged in the market as the neoliberals reckon. It is not about commodifying relations. It is rather about underlining the intrinsic social value, that is, "non-contractual relations" which Émile Durkheim had theorised about (Somers, 2008:219). The key reason why the term social capital was applied is that it offers a consistent research agenda through the contribution of the social network theory.

With that in mind, we believe that the ties and connections established between residents of risk communities function as "buffers" against the State's inaction, influenced by the dominant presence of the market in Portuguese society and politics. As Somers argued,

As remarkable as it might seem in today's culture of market fundamentalism, Polanyi truly believes that the noncontractual relations of reciprocity, solidarity, and redistribution are not only necessary characteristics of a robust and rights-centric civil society; he also stipulates that they are on the same existential plane as death and freedom. The implications are clear: civil society's ability to resist market fundamentalism and state coercion is not the optional fantasy of sociologists and socialists; it is necessary for the survival of democracy (2008:117).

Putting in another way, social networks arise as a communities' form of resistance to market fundamentalism effects on their right to have rights, i.e., citizenship. Being deprived of any kind of protection configure those communities' residents as second-class citizens. The following sequential scheme illustrates our argument.

⁶³ It should be noted that Portuguese rural communities, chiefly in the North, the Centre and Algarve's region, are highly affected by the State's non-regulation of the wood industry market which has been monopolised by two major economic groups for decades (Camargo & De Castro 2018:66–70).



Figure 10. Rethinking social capital: the role of non-contractual relations in democracy's maintenance.

In sequence of the 2017 unprecedented events, what some called the grim result of failing to address wildfire danger, State officials were deeply committed to changing the fires paradigm, pledging to move forward into a more prepared society. Meanwhile, six years have already passed, and people feel more isolated and abandoned than ever. In Mateus Santos's words, "There were many plans, but they ended very quickly. Perhaps, things are worse after the big fire." While laws and rules were tightened, the heavy load is still resting on small owners' shoulders, especially by the overwhelming quantity of legal procedures which are now demanded. Government programs such as "Aldeia Segura, Pessoas Seguras" or "Condomínio Aldeia" proved to be a debacle in the studied communities, even in Ferraria de S. João village which is acclaimed for being an example of wildfire prevention and mitigation.

Our findings enable us to question the inefficacy of those projects. The distance between local risk management institutions and residents is abysmal. Also, cultural and social norms are often overlooked when it comes to public policies and strategies for territory management. Top-down solutions not only fail to respond to an increasing problem but also constitute the removal of communities' voices in the discussion of their own safety. This dissertation explored people's experiences of living with risk through a social network lens. Interactions and the art of networking could be a different way to think of extreme events and their victims by means of comprehending at-risk communities' social structures, their entrenched dynamics, and how they mobilise resources toward hazard resilience. Also, those patterns at the micro level tell us how people deal with market externalities, i.e., ranging from social risks such as unemployment to environmental risks such as fires, and what are the outcomes for citizenship and rights in a society where democracy is endangered.

To conclude, the research demonstrated how the importance of social networks or people's social capital goes beyond a mere fight against wildfires. As our analysis suggests, the survival of the territories and their rights-bearing inhabitants critically depend on it.

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APPENDIX ONE

Interview Guide

1. Background variables

- Sex
- Age
- Place of residence;
- Highest level of education completed;
- Job occupation;
- Civil status;
- Household composition and characterisation;

Kinship	Sex	Age	Level of education (highest completed)	Place of birth	Job occupation

2. Place attachment

- Residency time;
- Type of residence (permanent/second-home owner);
- Motivations for living in the place;
- Place-related activities (agriculture, livestock, etc);
- Having trees for selling (eucalyptuses, pine trees, etc);
- Positive and negative aspects of living in the place;
- Another alternative to residence:
- Yes/No and Why;

3. Trust/reciprocity norms

- Resident's description;
- Definition of a trustworthy person;
- Level of trust of neighbours/community;
- Reasons that drive helping others;
- Examples of help received;

4. Community engagement

- Involvement in community activities;
- Membership in associations/organisations;
- Social gathers/meetups with neighbours:
 - a) context;
 - b) where;
 - c) when/frequency;
- Knowing and assisting isolated and vulnerable residents;
- Knowing temporary neighbours and people who are dynamic;
- Existence of proximity with geographically close neighbours;

5. Experiences/opinions about wildfires

- Concerns with wildfires;
- Memories/experiences related to fires:
 - a) when;
 - b) how;
 - c) feelings/emotions;
 - d) damages/losses;

6. Mapping ego-centric networks

- “Could you tell me, please, five people whom you contact during the wildfire?”

Name	Relationship	Age	Job occupation	Type of contact

- “Could you name, please, five people whom you sought help after the fire?”

Name	Relationship	Age	Job occupation	Type of contact

7. Information about wildfires

- “Could you tell me, please, five people to whom you usually ask for information/advice about wildfires (before, during, and after)?”

Name	Relationship	Age	Job occupation	Type of contact

- Other sources of information/warnings (organisations/institutions);
- Participation in fire awareness-raising actions;
- Sharing information with family, friends, neighbours (before, during and after);

8. Preparedness initiatives

In the last wildfire:

- Chain of actions;
- How prepared;
- Having or not a plan; Stay or go decision;
- Help and assist neighbours, family, and others;
- Collaboration with agents/authorities;
- Existence of any plan of emergency/evacuation; Collective shelter; Safety officer;
- Residents' level of preparedness;

In a future wildfire:

- Which is the plan;
- People's preparedness for a future fire;

9. Preventive initiatives

- Fuel management practices;
- Assistance in those practices;
- Receive assistance;
- Improvements in property safety (in and out);
- Opinion on who is responsible for preventive actions;

10. Recovery initiatives

- What has changed;
- State of people's and village's recovery;
- Participation in recovery activities/plans;
- Perspective on who is responsible for wildfire recovery;

11. Trustworthiness in risk management agents

- Assessment of Civil Protection and other agent's efforts related to facing wildfires in the place;
- Level of trust in local authorities (i.e., municipality, firefighters, parish council, etc);
- Level of proximity with those agents;
- Knowledge of someone who works in those positions;

APPENDIX TWO



Representation of the Village's Protection Zone with the steps of its development at the entrance of Ferraria de S. João village. Picture taken by Cíntia Fachada (15/02/2023).