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Searching for Social Sustainability: The Case of the Shrinking City of Heerlen, The Netherlands

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Abstract: Shrinkage is a relevant phenomenon for many cities and this trend is predicted to continue in the future. Although urban shrinkage is well recognized in academic discourse, little research has been undertaken on its social aspects. This paper explores the concept of social capital in the context of urban shrinkage and elaborates on how it contributes to social sustainability in shrinking cities. After defining the concepts, we identify resources, empowerment, and participation as key indicators of social capital in the context of urban shrinkage. The paper analyzes these indicators in the shrinking, old industrial city of Heerlen, the Netherlands, based on 24 in-depth interviews with citizens, policy-makers, and entrepreneurs, as well as secondary data. The findings reveal the prominence of three interrelated issues: the importance of local culture, subjective experiences of shrinkage, and a lack of trust between citizens and politicians. We conclude that social capital can facilitate social sustainability in the context of urban shrinkage. However, trust and empowerment are not guaranteed in a shrinking context. In shrinking cities more investments should be made to foster cooperation between civil society and politics and the development of mutual trust.

Keywords: shrinking cities; social capital; social sustainability

1. Introduction

Urban shrinkage is a reality for many cities in the world [1]. This phenomenon, which is expected to continue in the future, is a challenge for sustainable urban development because it implies that cities need to adapt to social and economic transformation [2]. In the present debate on shrinking cities there is an emphasis on spatial and ecological aspects. In this paper, we argue that social aspects are crucial if we are to understand the sustainability of shrinking cities. We explore the social sustainability of shrinking cities, making use of the concept of social capital. We define social sustainability in an urban shrinkage context as a resilient outcome of the interaction of civil society and other stakeholders in society enabling quality of life and the social transformation of shrinking cities [3]. For the purpose of this study, we use Putnam's classic definition of social capital: "features of social organization such as networks, norms and trust that facilitate coordination and co-operation for mutual benefit" [4], (p. 35).

Over the years the topic of shrinking cities has gained considerable academic and policy attention. Several disciplines have analyzed shrinking cities, particularly spatial planning, human geography, and public administration [5–9]. The topics of vacancy levels, infrastructure, financial implications, and governance are being examined in this context. Alongside spatial planning, sustainability has been

a study domain of shrinking cities. So far, it has been explored mostly from an ecological perspective (for example: Gross [10], Mulligan [11], and Deng and Ma [12]).

However, it is relevant to acknowledge that not only the physical infrastructure and ecological and economical aspects change in shrinking cities, but also the social aspects. These aspects [13] contribute to sustainability in shrinking cities, but so far have received limited attention [14–16]. Some studies on the social aspects of urban shrinkage focus on the importance of social capital as a resource for maintaining quality of life in an area [17,18] but most of the literature focuses on examples of good practice in civic action [19,20]. Policy-makers and academics view citizens as important actors in maintaining quality of life in an area, thereby contributing to the social sustainability of shrinking cities. It is commonly recognized that when discussing shrinking cities, citizens' views, resources, networks, and activities matter. Nevertheless, empirically based knowledge on these issues lags behind.

In the light of the challenges posed by shrinkage [21], shrinking cities have more difficulty in achieving sustainability than other types of cities. In order to understand sustainability in this context we need to understand the relevance of civil society and how citizens experience the changes in their physical environment. In this paper "social" is referred to in terms of social capital. We believe that social capital is a good starting point for exploring social sustainability from a social sciences perspective [22–24] as the literature on social capital provides some clarity about social sustainability and the indicators of both frequently overlap [25,26].

This paper explores the concept of social capital in the context of urban shrinkage in order to determine on how it contributes to social sustainability. The main questions examined in this paper are: (1) How do inhabitants of shrinking cities experience shrinkage and how is this connected to their social capital? and (2) How does social capital in shrinking cities influence social sustainability? In order to answer these questions we analyze the existing academic and policy literature and combine it with a case study undertaken in the Dutch shrinking city of Heerlen in 2015.

This paper is structured as follows. Drawing on a wide range of literature on urban shrinkage, social sustainability, and social capital, we first develop a theoretical framework (Section 2). Then, the methodological approach of this study is introduced and the case of the Dutch shrinking city of Heerlen is presented (Section 3). We subsequently focus on the results and a discussion (Section 4).

2. The Theoretical Framework of Shrinking Cities, Social Capital, and Social Sustainability

2.1. Shrinking Cities

Worldwide, the number of people living in cities is increasing daily and the importance of urban areas is growing [27]. At the same time, a reverse trend of shrinking cities can be observed [28]. This phenomenon is becoming more common, in particular in affluent countries in the western world [29,30]. Likewise, forecasts for Europe are characterized by growing and shrinking cities and an ageing population, as well as a geographical division between less and more successful cities and regions [6,31,32].

Urban shrinkage is a phenomenon whereby an urban area experiences population decline combined with economic transformation [14,33]. By nature, it is a multidimensional process with multidimensional effects on the economy, demography, geography, and the social and physical aspects of a city [34]. There is no agreement among the academic community about the most appropriate terminology and definition with which to describe this phenomenon [7,35]. While the demographic component is essential in defining shrinking cities, many other characteristics are used to define it. For example: economic reasons [36], deindustrialization [37], social problems [38], employment decline [39], the interplay of different macro-processes at the local scale [7,40], *etc.* This variety indicates the wider acknowledgment of the concept and the interest in exploring various aspects related to urban shrinkage.

The causes and outcomes of shrinkage have been studied extensively (see, for example: Hospers [41]; Pallagst, *et.al* [38]; Hoekveld [42]). The causes of shrinkage are multidimensional

and interconnected in the context of globalization [43]. In particular, deindustrialization triggered economic transformation and population decline and since the middle of the 20th century an increasing number of cities has been shrinking. Economic downsizing impacts employment opportunities and also social aspects such as increased poverty and the reliance of a part of the workforce on welfare support. Furthermore, shrinkage causes selective out-migration: young people leave the area, thus weakening the socio-demographic and socioeconomic structure [44].

Shrinking cities face many challenges and at the same time have fewer resources because of structural deficits and financial austerity [45]. Here, resources should be seen not only in the physical sense (for example: finances and infrastructure), but also in social terms. Social aspects have a fundamental impact on an area [4,14,15,46–48] and as such are equally relevant in the urban shrinkage discussion. Some attention has been paid to the social aspects of urban shrinkage [15,41,45]. For example, Cortese, Haase, Grossmann, and Ticha [45] point to two major problems confronting shrinking cities in their social development: ageing and the brain drain, on the one hand, and socio-spatial differentiation (a concentration of disadvantaged people in certain areas), on the other. However, some studies recognize that social resources can be used as an asset in a shrinking city. In her study on social capital in relation to shrinking city development, Hanneman [17] concludes that the mapping of social capital in shrinking territories can be useful when it comes to the development of these territories. This approach contributes to the identification and exploitation of local resources [17,49]. However, it is important to note that shrinkage can weaken, or even dissolve, social networks in an area [15] due, for example, to out-migration.

Despite these scarce studies, it can be argued that the social aspects of shrinkage have not been explored in detail [14]. When the social aspects of this phenomenon are referred to in academic and policy debates, they are often defined as social capital. Social capital can be seen as a resource facilitating quality of life in shrinking cities [38,50] as it contributes to the economic and political performance of the area [4]. It is therefore relevant to study this aspect further.

2.2. Social Capital and Social Sustainability

A considerable number of studies has been published on the significance of social capital [51]. Many actors (for example: academics, politicians, and professionals) and academic disciplines (for example: sociology, economics, politics and health) refer to it [52]. It can be argued that the modern development of the concept of social capital has been marked by three main authors: Bourdieu, Coleman, and Putnam [53,54].

Bourdieu [55] is often called the father of social capital. He recognizes economic, social, cultural, and symbolic capital and argues that they are transformed by individuals and groups to ensure the reproduction of capital. Social capital presents a resource for an individual that is based on membership of a certain group. Through social capital individuals can gain access to economic resources, increase their cultural capital, or increase their institutionalized cultural capital. For Coleman [56,57], social capital is “a variety of different entities which have two things in common: they all consist of some aspect of social structure and they facilitate certain actions of individuals within that structure” [57] (p. 302). He emphasizes rational choice, meaning that people act intentionally to maximize their individual utility. Putnam [4,58] is associated with communitarian approach [59]. He used social capital to describe how basic features of civic life (such as trust and membership of groups) provide the basis for people to engage in collective action. It consists of social structures that facilitate the action of actors within structures.

Even though the concept of social capital is not new to social sciences [54], it was popularized by Putnam's [4] book *Making Democracy Work*. He demonstrated the relationship between the developed civil society and the enhanced economic and political performance in Northern Italy, stating that successful outcomes are more likely in civically engaged communities [58]. In this paper we focus on the perspective represented in particular by the work of Putnam because it resembles social capital discussions as presented in studies on urban shrinkage and social capital, focusing in particular on

cooperation and collective action for mutual benefit [14,19]. Nowadays social capital is often seen as complementary to other forms of capital [60] and social sustainability [23,25]. The popularity of the concept has led to overuse and imprecision, while there is no consensus about its content and measurement.

It is relevant to acknowledge that social capital is not always positive. Portes [54] and Putnam [58], for instance, also mention the “downside of social capital”, in which associational activity can be divisive and exclusionary, excessive claims can be made on group members, and there is restriction of individual freedom and downward leveling norms. In this respect, Putnam refers to bonding and bridging social capital. Bonding social capital, where individuals with the same background are brought together and outsiders are not welcome, can lead to the negative aspects mentioned above [58].

Although many studies have addressed social capital, less attention has been paid to this concept in the situation of urban shrinkage. However, the concept of social capital is used by many scholars in the social sustainability debate [22,25,26,61–64]. In this study social capital, as operationalized in Section 2.3, is seen as a contributory factor to the social sustainability and urban shrinkage debate. It is not a *solution* for sustainable development issues [23,25], yet it can offer a method of assessing the social aspects of sustainability.

Sustainability is a concept popular across many academic fields. Three sustainability factors are often identified: economic, environmental, and social [11]. They are interrelated and depend upon each other [25]. So far, sustainability literature has been dominated by ecological perspectives, complemented by economic issues [23,65,66]. The social component has been the least studied and described aspect [55], although it seems that interest in the social aspects of sustainability [26,66] is growing.

Social sustainability has been defined in different ways [66]. Frequently, social sustainability discussions combine traditional social policy areas with social conditions such as sense of place, trust, participation and resources, empowerment, cultural identity, and quality of life [22,23,65,67]. These are the key components of social sustainability, often found in social capital discussions, yet they are frequently overlooked because of ambiguity and measurement problems [23,61]. Interpretations are context dependent and closely interconnected with each other [26]. Drawing on academic and policy literature, we argue that the following aspects are likely to be significant in helping to sustain communities, particularly in shrinking cities: interaction with other residents or social networks, participation in collective community activities, and pride or sense of place [62].

In this paper we are particularly interested in social capital for two main reasons: first, in sporadic publications on urban shrinkage social capital has been mentioned as a resource which can facilitate quality of life in shrinking cities [17,18,68]. Second, it can be argued that social capital supports the sustainable development of shrinking cities [2]. Therefore, we see social capital literature as a base for exploring the social sustainability of shrinking cities [23–26]. However, we agree with Partridge [24] and Koning [23] that social capital indicators cannot simply be used as a synonym for social sustainability. In this paper we recognize social sustainability as being facilitated by social capital.

The social aspects of sustainability in shrinking cities have received limited attention. Hara [30] defines social sustainability in the context of shrinkage primarily as social policy issues, such as the maintenance of services and a viable potential support rate. In this paper we move away from defining social sustainability solely as a social policy issue and argue that social capital should be considered when talking about social sustainability in the context of urban shrinkage.

2.3. Social Capital Measurement and Indicators in the Context of Urban Shrinkage

Social capital has been measured in many ways and, due to the complexity of the concept, it is not possible to obtain a single “true” measure [69]. Most research on social capital to date has involved the use of existing survey data. However, in the early stages of theory development quantitative research methods might lead to inconclusive results [70]. Due to the newness of this topic we believe that a qualitative approach is more appropriate. Data collected from interviews offer a more detailed

understanding of social capital by exploring the meanings people give to their environment in the context of urban shrinkage.

For the purpose of this study we identified relevant studies offering social capital and social sustainability indicators that can be applied to an urban shrinkage context. Against this background a suitable framework was developed. Forrest and Kearns [71] offer aspects of social capital that are relevant to the urban context: resources (such as trust and belonging) as well as empowerment and participation (in formal and informal activities). Based on these indicators, and Colantonio and Dixon's [65] and Bramley and Power's [62] indicators of social sustainability [72] as well as studies looking at social capital in the context of shrinking, [15,17,18,46] we identify three social capital indicators in the context of shrinking: resources, empowerment, and participation (Figure 1). Obviously, in real life, these indicators overlap and impact each other.

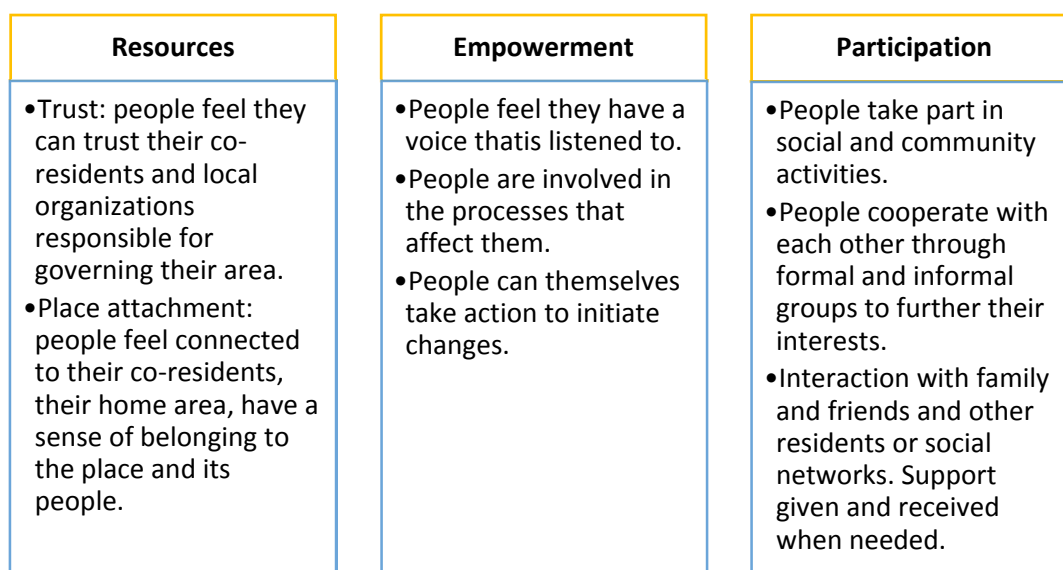


Figure 1. Social capital indicators in the context of urban shrinkage (based on: Bramley and Power [62], Colantonio and Dixon [65] and Forrest and Kearns [71]).

Social capital can only be understood when the background indicators of urban shrinkage [73] and the local context [74] are taken into consideration. In both shrinkage and social sustainability debates, increasing importance is given to the local perspective [7,8,65,75–78]. These aspects and social capital indicators have been included in the conceptual model below (Figure 2).

When studying resources in the context of urban shrinkage, we refer to the following social capital aspects: place attachment and trust. Place attachment, *i.e.*, bonding that occurs between individuals and their environment [79], plays an important role in social capital [62,71] and social sustainability [65,80]. In other words, the more people feel attached to a place, the more likely they will participate in activities for a common goal [81]. The extent to which social capital becomes mobilized is dependent on trustworthiness in a society, which means that obligations will be repaid [57]. Trust is a factor impacting social sustainability [82] and refers to the extent to which people feel they can rely on other people (from family to strangers).

We can speak of empowerment if individuals are empowered to the extent that they have a measure of control over the institutions and processes that directly affect their wellbeing [69]. Empowerment implies the widespread participation of citizens not only in electoral procedures but also in other areas of political activity. In the context of shrinkage, quality of life is changing or is threatened. In this respect citizens are expected to become active [14] but at the same time the laws and policies regulating the area are inflexible. This makes it difficult for citizens to improvise and become creative [20]. What kind of power do citizens have to initiate and conduct their activities? Arnstein [83]

argues that citizens can participate on different levels from non-participation to full participation. In this spectrum activity is judged by the amount of power given to citizens to participate: from tokenism (low power) to decision-making (high power).



Figure 2. Conceptual model of social capital in the context of urban shrinkage.

Finally, participation in this study refers to people's involvement in formal and informal [84] networks [62]. Participation is seen as a factor that can enable and facilitate sustainability [82]. The premise is that if people participate [85], they will have a stronger connection with the community [62].

2.4. Shrinking Cities and Social Sustainability: Linking the Debates

Urban shrinkage and social sustainability are relevant topics for the future development of many cities. The debates on shrinkage and sustainability show some parallels. For example, urban shrinkage and social sustainability can be called concepts in the making: there is no commonly accepted definition or consensus on what they are exactly and how they should be measured. Besides, both concepts are still undertheorized. Moreover, urban shrinkage and sustainability both indicate the need for a holistic perspective where not only physical but also relational and psychological aspects are important.

The social aspects of sustainability have been discussed as a solution for ecological sustainability [66]. Similarly, in the urban shrinkage discussion the social aspects have been proposed as being relevant to enabling quality of life in a shrinking city. Where government policies do not work, social features are called upon to enable quality of life. This is especially true for initiatives at the local level. In both discussions, where quality of life is under pressure, attention turns to civil society. Activities in civil society have appeared to address the needs, challenges, and opportunities of urban communities. They are often framed in terms of the sustainability of a community, with an emphasis on livability and quality of life [86].

And finally, both the discussions on urban shrinkage and social sustainability pay special attention to exploring conditions for future scenarios. Social sustainability is not only about societal qualities in the present, but also creating social structures that can guarantee these qualities for the coming generations [24]. Likewise, in the shrinking cities debate a sustainable future is sought for the remaining residents in the city [11,15].

3. Methods and Study Setting

In this section we first explore the methods used, followed by an introduction to the study setting.

3.1. Methods

The main method of this research is a case study. The case study method was chosen because it facilitates the in-depth analysis of complex and relatively new phenomena such as urban shrinkage. The case study approach is also useful because of the multidimensional and complex nature of urban shrinkage. The phenomenon is a result of multiple causes and can have different effects in every single case [87], asking for a broad research perspective.

The city [88] of Heerlen was chosen as a study area because it is the best-known shrinking city in the country. Heerlen has been shrinking since 1999 and is expected to continue to shrink in the future (Table 1). In addition, we are particularly interested in the area's deindustrialization history. This trajectory of quick industrial and population growth followed by deindustrialization and urban shrinkage at the end of the 20th century is representative of many shrinking cities [87]. Finally, a medium-sized [89–91] city was chosen. Detroit, with around seven million inhabitants, is possibly the best-known shrinking city in the world. However, shrinkage occurs in many more cities, most of which are medium-sized [49]. Such cities, or more precisely "towns", are neglected in academic discourse on urban shrinkage although they form the majority of shrinking urban areas [49].

Generally speaking, case study findings are more likely to be accurate if they are based on different sources of information [92,93]. Therefore, a data collection approach was employed, including a documentation study and interviews. A secondary analysis of official statistics [94] as well as available local data were used to identify the case [94–99]. Furthermore, information on local context and urban shrinkage indicators was collected through statistical reports [94,96,98,99], historical documents [100,101], and local policy documentation [95,97]. As this research examines an emerging topic and the perspective of people, the perceptions of shrinkage and social capital; interviews were chosen as a data collection method.

In order to understand social capital, we looked at different stakeholders involved in social life [2,14,15] by using the theoretical framework for analyzing society in terms of state, market, and civil society [102,103].

Over the course of five months (from February to September 2015) 24 semi-structured interviews were conducted with citizens, policy-makers, and entrepreneurs in Heerlen to capture their experience of urban shrinking and social capital. We focused on civil society [104] in particular, expressed as citizens in this study. In other words, it is crucial to understand citizens' perceptions to be able to answer the questions in this study and make statements about social capital in the context of shrinkage. As stated earlier, studies focusing on citizens in shrinking cities are quite rare. Moreover, citizens are directly involved in the shrinking city environment because this is where their everyday life takes place. They are thus the most significant stakeholders when it comes to exploring social capital. In addition, policy-makers and entrepreneurs were also interviewed. In other words, civic engagement occurs in the context of a city in which policy-makers and entrepreneurs play an important role, especially in shrinking cities due to the challenges they are confronted with [14]. Empowerment, participation, and resources stand in relation to different stakeholders in society.

The research participants were identified using different approaches. We held interviews with purposively selected community members. Initially, we interviewed citizens with prominent roles in the city. We met with citizens who are described as community leaders in different fields (social security, entrepreneurs, politicians, and involved citizens) to obtain their views of the city, participation, and shrinkage issues. They are citizens active in various associations, followed by leaders of private enterprises and representatives from the municipality and political parties. Moreover, less active individuals were also included in the sample, thereby providing a comprehensive picture of the different stakeholders in the case study. Furthermore, by interviewing these groups, we aim to reflect the demographic [105,106] make-up of the city [107]. As a result, we reached a variety of stakeholders with different roles, which enabled us to gain explorative insight.

All interviews were performed as informal conversations with pre-determined discussion themes, which were developed on the basis of the theoretical background of our study (see Section 2). These include demographic data (such as gender, age, education, and work experience), the stakeholders' views on shrinkage; their experience of local problems; their views on the community; their associations in the community; their motives for engagement; cooperation, trust, and accountability; power relations in the community; informal social networks and support. Although ideas to be explored in the interviews had been formulated during previous stages of the research, we wanted to avoid the pitfall of selecting field data to fit a preconception of the phenomena [108]. Therefore, the interviews were semi-structured with an explorative character. This offered the opportunity to explore the theoretical concepts and delve more deeply into an individual's answers [109] ensuring both structure and space for individual experiences. The interviews lasted one to one and a half hours and took place in a suitable public place or at the interviewee's home. All interviews were conducted by the same researcher [110].

The interviews provided information that can be used to help explore the relationship between social capital and social sustainability in the context of urban shrinkage. The analysis, conducted with Atlas.ti software (ATLAS.ti Scientific Software Development GmbH, Berlin, Germany), followed four distinct steps: open coding, theoretical coding [111], selective coding, and integration with theory [112]. The deductive and inductive nature of the analysis enabled the theoretical concepts to be studied as well as additional concepts to be found during data analysis [113]. The analytical framework, comprising five main concepts (as presented in Section 2.3)—urban shrinkage, local context, resources, empowerment, and participation—was used for theoretical coding and integration with theory. During the analysis it became clear that some concepts, more specifically operationalized indicators of these concepts, are related to each other and as such are presented in Section 4, "Results and Discussion."

Several steps were taken to ensure the validity and reliability of the analysis and the results. First, all interviews were recorded and transcribed as rich text files. Second, two researchers were asked to validate the steps in coding and data analysis. Special attention was given to the codes that emerged from the open coding approach. Finally, the first author re-examined all the codes. The external researcher was consulted in case of doubt.

3.2. Study Setting—Heerlen, The Netherlands

The setting of this study is the shrinking city of Heerlen, located in the south-east of the Netherlands (see Figure 3). Heerlen has 87,796 inhabitants [114]. It is located in the south of the Limburg region, far from the national centers of power. Moreover, it is close to the border with Germany and Belgium, which implies different policy systems and a diverse socio-cultural environment.

Heerlen is well known by city planners and demographic researchers because of its explosive growth at the beginning of the 20th century and shrinkage at the end of the same century. Generally, shrinkage in the Netherlands is a rural rather than an urban phenomenon, with Heerlen, the center of Parkstad Limburg, forming an exception in the southeast of the country [115]. Between 1999 and 2009, Heerlen lost 6% of its inhabitants. This development meant that Heerlen faced challenges related to rapid growth and is currently facing challenges related to shrinkage. These circumstances also imply social change: how social institutions are defined and how people form society. Moreover, the mines played a major role in the economic and social lives of the inhabitants of Heerlen. Closing the mines triggered shrinkage and has impacted the socioeconomic status of the city. This makes Heerlen an interesting place in which to explore social capital.

Southern Limburg has featured in several academic publications on the topic of urban shrinkage [115–118]. Most of these publications focus on strictly demographic developments in the region, spatial differentiation, and the policy implications of shrinkage. Urban shrinkage (in this case Heerlen), and in particular the social aspects have not yet received considerable academic attention.



Figure 3. Location of Heerlen in The Netherlands.

Until the 1900s, when the exploitation of the local mines began, Heerlen was an agricultural village. Due to the development of the mining industry the whole region underwent rapid transformation. The main characteristics of this regional transition were economic prosperity and population growth [118]. Heerlen grew in population from round 7000 inhabitants at the beginning of the 20th century to almost 75,000 in 1970 [116]. The mines influenced the socio-cultural and economic context of the city significantly through, for example, the organization of health care and social activities [100]. Mines provided for most of the needs of the workers and their families (ibid). Obviously, the economic development of Heerlen had an impact on the spatial organization of the city: urbanization and infrastructure were closely knit to the location of the mines [101]. Residential areas were constructed by the mining companies leading to a strong socio-spatial dependency between the labor population and the mines [100]. During this period, the Roman Catholic Church built strong ties with the mining companies and as such played an important role. The church and the mines shared the same interest: strong communities with obedient workers and social peace was very important [100,118].

The mining industry in Heerlen was terminated in 1965 by a decision of the Dutch government. This had serious consequences for Heerlen's population development and socioeconomic situation [115,117]. In their heyday the mines employed 45,000 people directly and many more indirectly. Closures happened fast, but the mines' socioeconomic impact was underestimated as unemployment rates became twice the national average. Heerlen attempted to develop other industries to replace the employment generated by the mines but these attempts failed to match the skills of the population.

The first signs of population decline and selective out-migration began to be noticed around the 1990s and this trend is likely to continue in the future (Table 1). The factors influencing this development are not only economic and demographic, but also political and socio-cultural [115]. Shrinking has a selective character because of the brain drain of prosperous young people. Nevertheless, big differences within Heerlen can be observed: while some neighborhoods are growing, other neighborhoods are seriously shrinking [118,119].

Currently, Heerlen is a city with a low socioeconomic status, which means there are a large number of recipients of welfare provisions. In the annual Dutch statistics book, which compares the largest municipalities, Heerlen was compared with 49 other large municipalities in the Netherlands [120]. It shows that unemployment and poverty are higher than the national average. Additionally, Heerlen

scores low on residential attractiveness (45th place out of 50) and in socioeconomic terms (44th place out of 50). It has a less highly educated labor force and a more deprived population, with more one-parent families and more people who are unable to work. Its poverty rate is higher than the national average [120].

Table 1. Population prognosis for Heerlen (2000–2040). Source: Etil [114].

Age	Year		
	2000	2015	2040
0–19	20,318	15,862	11,784
20–64	58,860	53,304	37,121
65 +	15,969	18,631	24,318
Total	95,147	87,796	73,222

To enable a smooth transition from the mining era, to improve quality of life, and find a new identity for the city, many regeneration projects were and still are being conducted [95]. After the closure of the mines the region wanted to start with a clean slate and transform from a black (mining) region to a green (park) city region *Parkstad* [100] with Heerlen as its center. Mines were demolished to make way for abundant green areas. Heerlen is currently investing in different regeneration strategies aimed at maintaining or improving quality of life, economic performance, and socio-cultural development [95].

4. Results and Discussion

This study identifies three relevant indicators of social capital in shrinking cities, giving special attention to the experiences of citizens, analyzed in the context of the Dutch shrinking city of Heerlen. The results reveal the prominence of three interrelated issues: the role of the local culture in all three social capital indicators; the lack of trust between citizens and politicians, and subjective experiences of urban shrinkage.

In the following paragraphs we describe the main results of this study and compare them with the literature. If necessary, relevant quotes [121] from respondents are used to illustrate the results. To guarantee anonymity, names have been changed.

4.1. Shrinking City: A Place Called Home with a Bad Image

Shrinking cities have limited economic, spatial, and natural resources [122]. In this situation resources in the community or social resources, such as place attachment and trust, are deemed valuable for maintaining quality of life in the area. The idea is that it has a positive impact on social sustainability.

Our interviewees, all of whom are inhabitants of Heerlen, experience strong place attachment with Heerlen. This is primarily based on family relations and familiarity with the environment.

Jenny (22) describes it as follows: “I think Heerlen is a nice city to live in, but that’s maybe also because my whole family lives here. So I have a strong bond with Heerlen.”

The immediate living environment of the informants is often characterized as pleasant despite signs of shrinkage in (other) parts of the city.

Place attachment can be seen as a resource of the shrinking city of Heerlen: citizens feel attached to their city and do not question this attachment. However, Heerlen’s negative image may be a threat to place attachment. All interviewees recognize that Heerlen has a bad image in the rest of the country. They understand where this bad image comes from but do not necessarily agree with it, pointing out things that are nice about Heerlen.

Ingrid (37) describes this very well when she says: “[In Heerlen] you have to look through the ugly façade. (. . .) It has a bad image, I do understand that. If you look around there are rarely nice things”.

Negative image plays a role in how people experience a city. Molotch *et al.* [123], argue that shrinking cities have to deal with mental and psychological consequences. Similarly, Hospers [124] refers to this with the term *mindware*: an image of a shrinking area. He argues that it can impact the willingness of people to settle in the area, but also people might be more inclined to leave an area with a bad image [16]. Although the interviewees are satisfied with living in Heerlen, they are all aware of the problematic image outsiders have of Heerlen, and can name the reasons. Hospers [16] points out that people might start to feel inferior to people living in thriving areas, which can discourage local empowerment.

Culture and image can play a central role in regeneration policy [43]. To improve the image and vitality of Heerlen, many cultural events are organized that can contribute to the sustainable development of a shrinking city [125]. However, a large number of people have mixed feelings about such projects, especially when they are long-lasting and expensive. They simultaneously mention the desirable and undesirable effects of this approach: it is good that something is being done to improve the image and quality of life in the city, but they are not quite sure whether it will work. At the same time, many big government-run projects are criticized because of a lack of information, a top-down approach, and a lack of transparency. Often, the connection to “common people” is overlooked, as Melanie (24, entrepreneur) describes:

“I see IBA [126,127] (Internationale Bau Ausstellung) as another party for the already accomplished people. They often are men over 40 who have already reached a certain position. There is little scope for a citizens’ initiative. I know from experience that if a citizen has a good idea, it is dismissed. So what they’re doing to solve problems is working with large companies, as a result of which employment might be created. But that means that citizens have no ownership in this IBA project and I think this is really bad. But if we wouldn’t have such projects, I think we would be completely lost as a city.”

This was also expressed by Geert (68): “I notice also with the municipality and policy that every time it is a challenge how you connect those two. People just couldn’t care less about the macro-level of growth or development directions. Instead, people are bothered about the social category of people living in their street and their acquaintances in the neighborhood. So not with the big blah blah stories. That’s something for the hotshots.”

Major cultural projects such as IBA are often used to attract media attention and tourism. Yet, as noted by our interviewees, their use could be improved by raising community involvement and empowerment. This is in line with Safford [59], who, in his study on civic infrastructure and mobilization in economic crisis, emphasizes the importance of organizations and projects connecting the actors that are not otherwise connected. Big projects should not be about creating a flagship infrastructure or attracting the creative class, but about creating support networks to encourage entrepreneurialism and risk, to build trust and reinforce local identity [2,128]. Only in this way can these projects really contribute to the social sustainability of a city. Otherwise there is a danger that people do not feel involved, as recognized by our interviewees. This result is in line with the findings reported by Sniekers and Ročak [128] and Aber and Yahagi [2], who stress the importance of involving all types of citizens in big projects. It is important to understand and recognize the value of the involvement of diverse stakeholders, primarily citizens.

4.2. Trust in People but Not in Power

Trust between different societal groups is seen as the cement of society. It refers to the extent to which people feel they can rely on other people. The citizens in Heerlen we interviewed stated that many projects and much of the work of the municipality seem far removed from their daily lives.

Using such examples to illustrate a general feeling they have, many interviewees stated that they have low trust in institutions of power.

According to a study by Schmeets and Arts [129], trust in Limburg, the province in which Heerlen is located, is lower than in other regions in the Netherlands. More specifically, Limburg scores lower on all types of trust: both trust between citizens and trust in institutions of power [129].

Interviewees often named the municipal administration as an institution that should not be trusted. The complexity of the relationship between citizens and the municipality of Heerlen is reflected in the following quotations:

“And at the same time you can notice citizens are not trusted (. . .) They are forgotten.” (Geert, 68)

“People are not proactive. They primarily react to the actions of the government or municipality, housing corporation, or police. People are inclined to pass the bill to the municipality (. . .) exceptions excluded (. . .). That is something that we want, citizens who take responsibility.” (Thijs, 47, public servant)

Another aspect impacting on trust among the actors in this case study is the fact that citizens are disturbed by the many rules imposed by the municipality on citizens’ initiatives.

Geert and Frank, for example, mention how they struggle to find ways of coping with all these rules:

“(. . .) If my neighbor asks me if I can take her to hospital because she fell down the stairs, I can ask my other neighbor to take care of my children briefly, right? But my neighbor first has to undergo a criminal records check.” (Geert, 68)

“(. . .) Neighborhood residents have organized a cooking club in which clients of Radar [130] and locals take part. They cook and eat together on the premises. But then you see how many rules there are like hygiene and safety. When an initiative has been developed, you would think it should be stimulated, but then there are so many rules.” (Frank, 60, social worker)

People are very distrustful of the system as a whole, but they have a better opinion of the individual public servants, as Geert (68) describes:

“ . . . if I need to do something with an individual public servant, I always see hard-working, well-meaning people. I get along well with them.”

Trust among co-residents appears to be strong. In general, all interviewees stated that they trust their co-residents unless there is proof to the contrary. This view is limited to the immediate living area: the neighborhood or even just the street.

Results related to trust, as mentioned above, have a direct link with empowerment. Most of the interviewees feel that the municipality cannot be trusted as it does not do much with their input. In other words, they do not have a voice that is listened to and therefore cannot initiate changes in their immediate environment.

One interviewee states: “I think that you may try to signal things, but I don’t believe that you really have a say in it.” (Amber, 68)

Informants have the feeling that decisions have been made for them and that they are not properly informed. At the same time, a large majority of the interviewees indicated that the municipality is the first party responsible for responding to the main problems in the city. Most of the professionals we spoke to see this as a fact: citizens turn to the municipality quickly, therefore their own initiative is low. Furthermore, the municipality cannot do anything right: it is the scapegoat, no matter what it undertakes. This is well expressed in the following quote:

“If you want to activate people, get them to think along with you, get them to do something. Now it’s just a game of wait and see: will you come up with a plan? Preferably they want to get the plan and then nag and complain.” (Koen, 55, public servant)

Low trust in institutions of power and low empowerment in this case can be linked to the traditional culture in this particular local context. Tradition is a central theme based on the results related to empowerment and trust. The interviewees regard the city’s tradition as an important factor in the development of Heerlen. According to many of our interviewees, the current situation in the city relates directly to its mining history: miners were expected to obey the rules and these attitudes of disempowerment and low entrepreneurship are still present.

“People were always supported by the church and the mines, everything was organized for them, neighborhoods were built for them, weekends were filled in, their whole cultural life, everything was done, and suddenly the church and the mines were gone. (. . .) In the past we had a triangle of government, the church and the mines that organized everything. In particular the church and the mines as the biggest employers determined most things and the government (municipality) followed, because it was good anyway.” (Koen, 55, public servant)

Tradition plays a big role in how local society is organized and how responsibilities are divided. The identity of Heerlen’s inhabitants is rooted in the church and the mines [100]. In Heerlen, rapid industrialization meant that people’s lives were organized around the mines, which, for example, organized economic support, social activities, and housing. The mines worked together with the Catholic Church and encouraged well-behaved citizens who would not complain too much. The credo was “as long as you work in the mines, don’t worry about other things, you will be taken care of” [100]. Such an attitude, it can be argued, caused dependency and lower entrepreneurship among people. Hence, it is not very likely that individuals are or feel empowered enough to actively participate. Considering the fact that shrinkage is occurring in many old industrial cities in Northern Europe with a generally low socioeconomic status, and at the same time a lot is demanded from citizens in these cities, there may be a discrepancy between policy-makers’ expectations and people’s level of empowerment. In this respect, Hospers and Reverda [15] make a distinction between traditional and modern regions. They claim that shrinking areas are traditional and the modernization of society is a solution for quality of life. Here, a focus on the future is crucial, while the main question is how to use social capital to transform an area from a traditional into a modern place, *i.e.*, from a shrinking city into a socially sustainable city.

We argue that empowerment and trust enable participation. In the case of the shrinking city of Heerlen both empowerment and trust are limited, which impacts the way people become organized. Feeling left out and not trusted impacts the motivation to do something in a formal manner. Empowering and involving citizens is not only desirable (for example, citizens taking over services maintaining quality of life or involvement as a key factor and obtaining acceptance of unpopular decisions) but also necessary (citizens have the required knowledge to make these decisions) [16].

Building mutual trust and looking for new ways to cooperate is even more essential in the situation of urban shrinkage. A workable model of community governance is needed to ensure the sustainability of shrinking cities. This means that community organizations need to be composed of a variety of stakeholders [2]. Therefore it is vital to share responsibilities, especially in the situation of shrinkage: politicians need to give power to citizens—empower them—but citizens equally need to claim that power. Citizen empowerment could therefore directly contribute to the social sustainability of the city. However, this is more difficult in Heerlen due to a local culture of obedience and a lack of entrepreneurship.

4.3. Active but Not Formal

In the situation of shrinkage, it is usually argued that participation is relevant for maintaining quality of life in an area. The idea is that participation can play an important role in supporting living functions [17,19,20]. However, the low socioeconomic status of inhabitants and demotivation caused by the many problems of shrinkage can have a negative impact on participation [14,16].

Feeling disempowered and distrustful towards institutions of power fails to facilitate citizen participation. People in Heerlen, exceptions excluded, feel they do not really have a voice, therefore they do not (want to) do anything. In other words, feeling left out impacts their formal participation by making it low. This is in line with the study by Schmeets and Arts [129] who found that Heerlen ranks tenth among the top 25 municipalities in the Netherlands with the least volunteers. Moreover, Heerlen shows the lowest voter turnout at national elections (67.4%) [129].

Many problems are experienced when it comes to formal participation (for example: complex rules and disinterest on the part of the municipality). At the same time, the laws and policies regulating the area are inflexible, which makes it difficult for citizens to improvise and become creative [20,131]. We looked at formal and informal participation. It should be noted that the definition of formal and informal was not so straightforward for the interviewees. Many people define their own activity as something you just do. Elle, for example, voluntarily coordinates a food distribution project but does not personally define this as being active.

“Because . . . someone has to help them. It also gives a good feeling when you help people, most of the time it’s a nice thing to do.” (Elle, 24)

Although, as mentioned above, our interviewees were not involved in large regeneration projects, at the same time people are (very) active in their own informal networks; this is driven by intrinsic motivation:

“It’s something in me, she needs someone who is nice to her, to see her and give a little guidance. She has a son and he’s very busy, so I thought it’s nice to do this, that’s why I do it. It’s not really a motivation, it’s more like something . . . that I feel.” (Amber, 68)

People are intrinsically motivated to do a lot in their immediate living environment because they feel they have to. Calling people inactive does not do justice to the amount they do in their community. Recognizing informal activities in daily life as useful could improve people’s general level of empowerment and activity [128].

Interviewees say they do not have time for organized participation activities. They are also concerned about the image of bureaucracy:

“I’m also not involved in the neighborhood council or anything like that. I think that all those things take up a lot of time. I’m just not open to anything like that right now, no. Perhaps one day, but . . . I’m also not that interested in political events, and the game of politics. When trying to visualize what it’s like, I see myself in never-ending meetings, where no one really listens to each other, and then I don’t know whether that’s where I would belong, if I would feel comfortable there.” (Ingrid, 37)

We observed that all informants are active in informal networks at the local level. At the same time one group was also actively involved in formal activities. This relates to a difference in socio economic status. People with a low socioeconomic status mostly participate informally. Even if their participation could be defined as formal, they do not define it as such themselves. On the other hand, people with a higher socioeconomic status are more capable of finding the resources: they are more familiar with the public administration vocabulary.

“I know what I’m doing, I can compose letters and I can make a phone call if something happened to the old policy that I would be completely against. I would definitely say something.” (Kees, 85)

A low socioeconomic status and demotivation can have a negative impact on people's level of participation. This can be observed in Heerlen, where citizens generally do not engage in formal activities. Moreover, if engaged in formal activities these individuals have a higher status (and thus stronger cultural capital [55]) and can circumvent the rules and know how to access key people and resources. Almost none of the citizens we interviewed connect their activity to urban shrinkage. For most people activity is triggered by immediate needs in their personal network. These activities are small in scale. Ročak, Hospers, and Reverda [14] offer scenarios of civic action in the context of urban shrinkage placed on a continuum ranging from increased civic action, decreased civic action, or no change in civic action. If placed on this continuum we could argue that the civic action in Heerlen is business as usual because people do not really experience shrinkage. Therefore, their participation is not triggered by shrinkage. It can thus be concluded that we cannot (only) rely on civic action if cities want to resolve their shrinkage problems. Maintaining quality of life and enabling social sustainability in shrinking cities is not necessarily a matter of civic action

4.4. Shrinkage: Between Concept and Reality

In this research we focused on citizens' experience of shrinkage. In the case of Heerlen, it can be observed that most do not see it as something that has a direct impact on their life. When specifically asked to define it, interviewees referred to ageing and vacancy [132]. Although they do notice shrinkage, they do not attach great importance to it.

One of the interviewees put it simply: "You don't really notice it if you walk along the street, stones don't lie differently because of shrinkage. (In Heerlen) . . . if you go to the center, you do see a lot of vacant properties." (Jenny, 22)

This is in line with the study conducted by Sniekers and Ročak [128], who found that shrinkage does not make a difference in people's daily lives. Furthermore, in their study on experiences of rural shrinkage Elshof and Bailey [133] concluded that despite the losses experienced, people are happy to live in their shrinking village. The difference, we argue, with urban shrinkage is that people here do not notice the disappearance of services that much. In an urban area such as Heerlen, a relatively large number of services are still available. In this respect shrinkage is something abstract people are aware of, mostly from the newspapers and policy discussions, but it is not viewed as something that is close to their daily life.

Only one interviewee said she notices shrinkage in her daily life. She referred to shrinkage as directly affecting her family life:

"Indeed you notice shrinkage: everything here is organized for the elderly (. . .) a lot of schools are closing. (. . .) My daughter is going to school in two years. I hate to think about it." (Elle, 24)

Furthermore, public servants recognize shrinkage as a problem and feel obliged to develop strategies to tackle urban shrinkage.

"(Shrinkage) . . . we'll really have trouble with it. What we clearly see is that schools and associations are getting smaller. (. . .) In the past every small community had its own football club, brass band, community center, that is not possible any more. It's too expensive, but they're also not being used anymore, you can see that a lot of small football clubs are not there anymore. They are merging, those are all signals. Fewer people live here. What you also see is that the housing market is does not meet the applicable requirements." (Thijs, 47, public servant)

"Shrinkage (. . .) means that there is a chance to adjust the bad facilities and replace them with something better." (Kees, 55, public servant)

While citizens see their environment from the perspective of their daily lives, public servants view this from a municipal perspective. Therefore, the issues (shrinkage) are perceived differently. It can be argued that shrinkage is not really an issue for citizens; it is rather owned by public servants.

With regard to the experience of urban shrinkage, differences can be observed between neighborhoods. Hoekveld and Bontje [118] point out that in the South Limburg region (and therefore also in Heerlen) the local (village) identity still plays an important role. All interviewees mention this as very relevant: while some neighborhoods are well organized (and often have a rather high socioeconomic status), other neighborhoods are struggling, for example, with shrinkage problems and a low socioeconomic status [98]. Equally, the clustering of neighborhood problems can be observed. This is in line with studies that report segregation is a big issue for shrinking cities, leaving winners and losers between neighborhoods [134,135].

5. Concluding Remarks

While a lot of the world's cities are growing, many are facing urban shrinkage. According to demographic forecasts, this trend is likely to continue. To create sustainable shrinking cities, we need not only spatial and ecological knowledge, but also insight into the social aspects of the shrinking cities phenomenon in order to understand the complexity of urban shrinkage and improve suitable policy responses. This could lead to more social sustainability in shrinking cities.

In this paper we have explored social capital and social sustainability in the context of urban shrinkage. We have mapped out the development of social capital in the context of shrinkage and its implications for social sustainability. The literature review revealed that social capital is often called upon as a resource in shrinking cities. It was not perceived as a *solution* for sustainable development but rather as a contributing factor that can be used in the social sustainability discussion.

Using data from the case study in the shrinking city of Heerlen, we examined social capital indicators in the context of urban shrinkage: resources, empowerment, and participation. The explorative nature of this study does not provide generalizable statements. However, the findings shed light on the research questions: (1) How do inhabitants of shrinking cities experience shrinkage and how is this connected to their social capital? and (2) How does social capital in shrinking cities influence social sustainability? We found that social sustainability can be facilitated by social capital, but that internal and external drivers can make this challenging. In shrinking cities capital resources can be under pressure due to internal drivers (e.g., low socioeconomic status restricting formal participation) and external drivers such as shrinkage and the local context. For example, place attachment can be viewed as a resource but it is challenged by a negative image caused by shrinkage. In particular, too much traditionalism linked to the local context can be viewed as a threat to social sustainability. Moreover, the experience of shrinkage of the inhabitants in our case study area turned out to be limited. Obviously, these subjective experiences play a role in how citizens respond to the outcomes of shrinkage and become active. Experiences of urban shrinkage can trigger citizens' responses only if they are connected to their immediate living environment, *i.e.*, the place of their daily life. At the same time, shrinkage is recognized by policy-makers who feel responsible for dealing with it. This difference in perception is an important notion that should be taken into account in the shrinkage debate. Finally, the results show that we cannot talk about social sustainability in the context of shrinkage without including various stakeholders, in particular politics and civil society. Low trust between these stakeholders results in low citizen empowerment and low citizen participation in formal activities.

Urban shrinkage calls for new arrangements in society: new roles and new coalitions between societal stakeholders. Social capital, as a pillar of sustainable development, needs to be part of the programs and strategies for the renewal of shrinking cities, in partnership with local institutions [2,38]. However, in order for social capital to contribute to social sustainability some requirements must be met: building mutual trust and empowering citizens, as well as redefining participation (for example, acknowledging the value of informal participation).

The overall design of this study could serve as a starting point for instrument development aimed at other urban shrinking contexts. A main feature of our design is that it incorporates different concepts linked to social capital theory while leaving room for inductively finding other concepts. Yet, an additional literature search into specific local shrinkage aspects in other contexts is necessary, which means the design would need to be adjusted accordingly. It is clear that more work needs to be done on the measurement and analysis of social capital and its relationship with urban shrinkage. In short, this study provides some new insights but there are still many questions that remain unanswered. In particular, the mechanisms behind social capital in the context of urban shrinkage should be researched further. Developing the research agenda in this direction would be of great interest to the academic community as well as policy-makers who face the challenge of facilitating the socially sustainable future of shrinking cities.

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88. In this paper we refer to Heerlen as a shrinking city. Due to its size, in terms of population (see Table 1) one could argue that the concept of town would fit better to describe the scale of Heerlen. However, we mostly refer to it as a shrinking city to place it more appropriately in the international urban shrinkage debate.
89. Giffinger, *et al.* [90] defined “medium-sized” cities on a European scale as *city regions of less than 500,000 inhabitants*. However, the meaning of “medium-sized” depends on the scale one uses. In the Dutch context [91], as well as in the context of many European shrinking urban areas, cities with population of 50,000 to 100,000 inhabitants can be perceived as medium-sized.
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