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Long-Term Development Perspectives in the Slow Crisis of Shrinkage: Strategies of Coping and Exiting

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Abstract: As a slow crisis, shrinkage is a situation where if actions are not taken to change things, a downward spiral or a long-term decline could happen. The complex, long-term nature of this crisis underlines the importance and potential of strategic approach. However, the conceptualisation of development strategy remains abstract, attributive, or focused on sectorial policies, lacking a view of their roles in the overall development. Against this context, this research investigates (1) how cities that have acknowledged shrinkage strategically organise degrowth, non-growth, and growth-promoting instruments in dealing with shrinkage, (2) what long-term development perspectives emerge out of their policies, and (3) what factors in the local context constrain their strategies. The empirical basis is a cross-national comparative case study between Den Helder and Zwickau, a Dutch and German midsize city, with a cross-sectorial view and a focus on the long-term aspects to reveal the conceptual structures of their strategies. This approach captures how and explains why the cities, as regional centres with similar attitudes towards shrinkage and comparable economic levels, adopt many similar policies but lean towards contrasting long-term perspectives—one strives to exit the crisis, the other has routinised coping with shrinkage and lacks the vision of a different future. Their differences stimulate reflection on the context and parameters for revitalisation, and their shared challenges underlines the need for theory development based on situated policymaking challenges and a more strategic approach in the development of shrinking cities.

Keywords: urban shrinkage; shrinking cities; strategic approach; urban development; urban renewal; sustainable development



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1. Introduction

Shrinking cities have become a persisting phenomenon in many world regions, driven by global and regional trends such as demographic change, global economic processes, political change, and suburbanisation [1–3]. Substantial loss of population can negatively affect various urban systems, including socio-technical infrastructure, the residential environment, and public finance, causing decline in liveability and reinforcing outmigration [4–8]. The selective nature of outmigration can also lead to concentrated social vulnerability and economic disadvantage for the city [9–11]. Thus, shrinkage can trigger widespread problems in the city through feedback loops and interdependencies [12]. It poses challenges for urban sustainability, through lower resource efficiency as a result of underutilisation of infrastructure [4,13–15] as well as the loss of social cohesion through economic impact [16]. Although the problems of shrinkage develop slow compared to pandemics and natural disasters, it constitutes a crisis, nonetheless, where if actions are not taken to change things, a downward spiral or a long-term decline could happen. There is no quick cure because growth-seeking policies that ignore larger-scale drivers and local structural conditions can exacerbate problems (e.g., [17–20]). In short, neither shrinking uncontrolled nor a quick return to growth is a reliable option; therefore, strategic approach is needed to address this crisis as a complex, long-term challenge.

It has been proposed that paths of development under shrinkage offer opportunities to enhance social and ecological sustainability [21–25]. However, further than that, the ‘paths’ becomes unclear. On one hand, there are a growing number of policy practices that achieved the restoration of liveability with social and ecological innovations (e.g., converting vacant lands into green amenities and ecological infrastructure [26–28], citizen co-produced public services [29,30], and social economy [31,32]). On the other hand, sober critique have pointed out contradictions between growth-oriented instruments and the aim of development under shrinkage, and the limited impact of bottom-up tactics on the overall, long-term development of cities, given that the larger capitalistic economic context remains unchanged (e.g., [33–38]). The centre of the issue is a long-term perspective beyond maintaining liveability: if the path of shrinkage is supposed to lead eventually out of the crisis, so that the city becomes stable and self-sustainable, then are shrinkage-managing instruments enough to achieve this goal? Meanwhile, some cities engage in mixed strategies of going for growth and managing decline [39]. Certain policies associated with growth strategies and negative perception, such as gentrification, may be leveraged by local development in a bigger framework to revitalise neighbourhoods and benefit local communities [40,41]. This indicates that degrowth, non-growth, and growth-promoting instruments might all play a part in the long-term development of shrinking cities, where the question is how they are strategically organised. Strategy is about long-term orientation, navigating local conditions, mobilising actors and resources, driving actions, and accumulating incremental transformation into development and qualitative change [42–46]. Therefore, to understand the challenges and potentials in steering the long-term development of shrinking cities and possibly to devise better strategies, the existing strategies, especially the long-term perspectives for the crisis of shrinkage, need to be studied.

However, existing research on shrinking city development is often focused either on the overarching values or on the specific policies. The conceptualisation of the middle layer, strategy, remains as yet abstract and attributive, such as ‘pro-growth’ or ‘managing decline’ [39,47], ‘integrative’ [1,48], and planning culture typology [19]. These abstract features are not fine-grained enough to be related to the variation in physical and institutional local conditions. This has resulted in disproportional emphasis on changing growth-oriented mindset, overshadowing the agency through strategy-making. Empirically, research needs to go beyond sampling specific sectors and explicit strategies. The focus on separate dimensions and sectors limits the understanding of how population interact with other issues of urban development and how policies are (not) strategically organised holistically to achieve development of the whole (cf. [48,49]). The focus on explicit strategies omits the strategic patterns that emerge out of an array of physical dependencies, habits, and institutional conditioning to shape the course of development [46,50,51].

This research aims to contribute to practice and theorisation in shrinking city development by investigating (1) how cities that have acknowledged shrinkage strategically organise degrowth, non-growth, and growth-promoting instruments in dealing with shrinkage, (2) what long-term development perspectives regarding the crisis of shrinkage emerge out of their policies, and (3) what factors in the local context constrain their strategies. The case study is set up as a cross-national comparison between Den Helder and Zwickau, a Dutch and German midsize city, with a holistic approach to reveal implicit strategic patterns stemming from institutional and physical dependencies. It is found that the cities, as regional centres with similar acknowledging attitudes towards shrinkage and comparable economic levels, adopt many similar policies, but lean towards contrasting development goals and long-term perspectives—one strives to exit the crisis in the future with comprehensive urban transformation policies, the other has routinised coping with shrinkage and lacks the vision of a different future. Main contributing factors are found in their different shrinkage dynamics, material legacies, and institutional conditions. The study leads to a conceptual framework of urban development strategy with relation to factors in the local context.

This article is structured as follows: Section 2 provides a literature review on two strands of knowledge: development strategies in shrinking cities and strategy-making in urban development. Section 3 explains the methodology and process of the research. Section 4 presents the comparative case study of Den Helder and Zwickau, focusing on the policies, the long-term perspectives behind, and the factors causing the differences between the cases. The conceptual structure behind their comparison is summarised into a preliminary model. Finally, Section 5 discusses the theoretical and policy implications of the findings and future directions for research on this topic.

2. Literature Review

2.1. Development Strategies in Shrinking Cities

The research on shrinking city development in the last two decades made an essential distinction for development policies in shrinking cities, organised into two opposing, value-laden concepts: going for growth and adapting to shrinkage. Through these concepts, the development policies in shrinking cities were examined, exposing the ineffectiveness of strategies based on growth assumptions and highlighting the need for managing and accepting shrinkage [19,21,52–54]. In particular, cities seeking to reverse shrinkage with extravagant ‘flagship projects’ rather than maintaining social support and improving urban environment can end up wasting resources and even greater outmigration due to deteriorating local liveability [17,55,56]. How cities adjust their strategy in times of shrinkage also has implications for sustainability. The fiscal and land offer competition among cities for residents and businesses can create unsustainable land use patterns and increase the over-dimensionality for a region with population decline [57–59]. Pursuing short-term growth with speculative housing developments in long-term shrinking regions can lead to future costs and wasteful boom-and-bust cycles [14,18,60]. Responses to financial problems with austerity policies and neighbourhood triage, or uneven development, can have severe impact on social sustainability [9,61–63].

Nevertheless, the dichotomy between ‘shrinkage accepting’ and ‘growth-oriented’ is insufficient for understanding and planning the complex long-term development in shrinking cities. To begin with, shrinkage-managing policies are not enough to steer the overall urban development. Some policies deal with specific areas of urban development and are based on specific conditions, and need to be combined to address holistic issues. For example, ecological measures can provide amenities and help with stormwater management [27]. Green infrastructure as a shrinkage-managing tool has more impact on spatially contracting cities [26]. Civic action for liveability solutions requires a vital and supported civil society and cannot replace public actions [64]. Others, implemented alone, could lead to unbalanced outcomes. Downsizing alone without accompanying policies can have implications for social justice [61,65] and is insufficient for broader development goals [66,67]. Green regeneration, intended as a tool for better quality of life and reusing vacant land, could trigger green gentrification under the influence of market forces [68]. Grass-root empowerment such as the temporary use of vacant land may be deployed as a staging for growth, ‘without a real influence on spaces and society’ [36]. Mallach [33] thus criticised the over-simplified understanding of the economic context behind the hope of revitalisation through bottom-up movement. Hackworth [35] and Kreichauf [34] concluded that meaningful development under shrinkage still has to take the political and economic forces of capitalist urbanisation into consideration. In this politico-economic climate, shrinking cities are faced with contradicting needs for more residents to maintain local amenities and for managing shrinkage, thus resorting to mixed strategies [39]. Meanwhile, some researchers find potential in traditional development instruments, such as residential attractiveness, gentrification, place marketing, for halting the population haemorrhage and brain drain, strengthening the financing of local infrastructure, countering suburban sprawl, etc., given proper policy design, such as employment integration, social housing, public transport, and pedestrian and cycling accessibility [40,41,69–72].

In other words, the long-term nature and complexity of structural transformation in shrinking cities make development more than a question of values and applying best practices. It is a question of strategy, which combines knowledge of the situation, available resources, instruments, and diverse actors to address complex and long-term issues with a cross-sectorial view. This is supported by recent theories in urban sustainability, which argues for a holistic approach [73,74]. As Brugmann [75] points out, the development of sustainability as a concept has revolved around contradictions between normative views, while the sectorial approach to policymaking and the failure to view the city as a system in its own right, with local crisis and inertia as well as unique competences, make sustainability policy fall short of addressing complex local challenges and opportunities. Thus, he argues that policymaking needs to view the city as steerable, re-engineerable systems towards socio-ecological conditions for global sustainability, i.e., ‘a domain of strategy’. With shrinking cities becoming a widespread phenomenon, the complex challenges for sustainability in the shrinkage context deserve more attention, considering that the sustainability concept evolved out of a growth context [53].

Shrinking city literature sheds light on the question of strategy in several aspects. Firstly, the perception of shrinkage largely determines whether shrinkage can be constructively tackled. Typologies of strategies has been developed, linking ‘ignoring’ and ‘not accepting’ shrinkage to a lack of measures or even counter-productive measures, and used to argue that acceptance is the precondition to confronting the problems and stabilising the population [19,64]. Among the shrinkage-accepting strategies, ‘shrinking smart’ is a concept for proactively and comprehensively restructuring the city while improving socio-economic conditions [76,77]. Secondly, the style with which measures are deployed is identified as another crucial element for effectively dealing with shrinking, including integrativeness and consistency [1,48], flexibility for the uncertainty in migration trends [54], and spatial coordination [78]. Besides these strategic qualities, research has also made progress in relating strategies to locally specific conditions. The policy models vary according to different national economic context and the local material legacies [50]. The material legacies—housing stock structure, urban spatial structure, transport infrastructure, etc—are both the target and constraint of development (ibid.). Finally, institutional dependency is a strong factor when one looks at the long-term development. For example, Bernt [67] discerned how the selective nature of urban regeneration policies in east Germany stemmed from the institutional conditions, cautioning that the grant coalitions shaped by the state-subsidised downsizing programme lack the capacity to ‘implement any meaningful urban development strategy’. Liebmann and Kuder [51] investigated the institutional path dependency in shrinking cities’ economy-led development, revealing a pattern of contradiction and a lack of strategic focus. In summary, strategy is a significant component of shrinking cities’ development because of the course changing effect they can have, but actors might be limited by local conditions and unawareness to make most of its potential.

2.2. Strategy-Making in Urban Development

Given the importance of strategic approach to shrinking city development, the study of strategy as well as policy(making) evaluation in shrinkage context could greatly benefit from the theoretical concepts and research approaches in strategic planning literature, without taking strategic planning as a norm for policymaking. The re-emergence of strategic planning in Europe in the late 1990s was motivated by a need to coordinate policies, integrating investment for sustainable development, and actively steer the distribution of opportunities [79,80]. Traditional planning tools serve technical planning and passive regulating, but strategic spatial planning enables strategic thinking and co-production of urban transformation [42,81], which enhances the effectiveness and legitimacy of spatial planning [82]. Strategic thinking looks beyond day-to-day concerns, updates knowledge of external trends and internal conditions, so as to fundamentally reassess the course of development, most ideally resulting in a ‘deliberative paradigm change’ [83,84]. A long-

term frame can integrate agendas to promote efficient land use, provide a context for to identify and organise short-term, mid-term, and long-term actions [42], and help actors to position their activities in the overall development [44]. Integrativeness is inseparable from a holistic view stemming from the relational view of geography, in which an urban area is not just the sum of physical features in a bounded space, but processes of uses and experiences of different temporalities and scales, and socially constructed identities based on these processes. Relational conceptions of socio-spatial phenomena make a more potent basis to absorb the mental images and material realities of people and businesses, and channel their imagination into the qualities of the area [80,85]. Finally, the co-production of strategies mobilises the social imagination, knowledge, and creativity, contributes to social equity by providing a channel for citizens to shape the future of their community, and builds up a governance structure and toolset needed for long-term tasks [43,44,86,87].

However, strategic planning as semi-structured procedures to create strategic concepts and/or actions endowed by participants within a limited time frame is only one of many avenues to strategy-forming. In recent organisational science and thereby inspired works in planning, there have been many reconceptualisations of strategy and efforts to design processes to facilitate its formation. In some situations, predesigned strategies can be closely followed and result in desired changes, but in complex situations, the classical linear model of strategy-making is often impractical for its reliance on knowing and controlling all variables, and can be detrimental because it excludes feedback-adaptation iterations [46,88–90]. It is impossible to plan in complex situations with traditional rationality, and the course of change often results from incremental steps of ‘muddling through’ or satisficing [91]. Here, the circumvented plan is less of a strategy than the tactics on the ground. There might also be no fundamental changes at all, if actions are fragmented, react only to symptoms, contradict each other, and lead in circles [92], in which case, the tactics are ineffective as strategy. Many approaches to strategy-making are aimed to combine merits of deliberate, predetermined orientations with flexible, adaptive, and/or distributed actions so as to accumulate distributed changes into a desired course, such as ‘mixed-scanning’ [92], ‘bricolage’ [93] and ‘perspective incrementalism’ [45]. To sum up, both the making and studying of practical strategies need to mind the gap between plans and realisation, and the criterion that strategy should provide movement towards the goal. Broadly, it can be said that strategy is an emergent course towards a fundamental goal of the acting organisation [46], although qualities to focus on, emerging over how large a scale, and on what dimensions can differ according to intention of the observer. Eventually, the point of a more accurate description of strategies can serve better the purpose of reflexive learning, retrospective sense-making, and adaptation [90].

In strategic spatial planning literature, the increasing attention to framework and orientations, and the building of ‘collective actor’ [80] resonates with the above emergence-inspired strategic planning approaches. However, strategic planning for cities cannot be equalled to organisational strategic planning for at least two reasons. First, the limited spatial resources do not allow too much autonomous actions or evolutionary emergence of a dominant course; to avoid fragmented development, a centrally formulated, long-term spatial logic is needed [79,81]. Second, urban governance structure, unlike organisations held together by legal statute and running operations, does not automatically exist. It is planning processes that bring actors together and keep them together through consensus- and trust-building, face-to-face interaction, co-production, and institutional design [43,83,94].

3. Methodology

3.1. Objectives and Methods

This research aims to shed light on the questions ‘what is the emergent development strategy of shrinking cities’ and ‘what factors give rise to the different strategic patterns’. As indicated in the literature review, strategy as a pattern is a complex emergent phenomenon. They can be described as strategic systems with elements of different levels of abstraction, ranging from goals to measures, as well as some level-free elements, such as ‘approach’

and ‘principle’ [53]. For shrinking city development, the variables and qualitative concepts are not fully identified and systematically related in order to capture this phenomenon. Therefore, the main method of this research is an in-depth and comparative case study, because a case-based method allows a holistic approach to understand the multiple dimensions of the phenomenon in the context of urban shrinkage, and comparison highlights the variation and suggests causal factors. The study is not about statistically assessing the prevalence of a phenomenon with a sampling logic; rather, it follows a replication logic for testing or developing theories based on selectively differentiating conditions and observing the outcome [95]. In other words, the case study here is an explorative first step to identify the concepts for describing ‘emergent strategy’ in the context of urban shrinkage, in order to provide a descriptive model for further studies. As such, the case study tasks itself to draw conclusions that satisfy describing the variation between two cases and give insight to the research questions.

The ‘case’ here is defined as the current development policies and policy ideas in response to shrinkage—the ideas are justification of or opposition to policies, or proposed policies without realisation. Firstly, development is understood here as qualitative change resulting from a series of socio-spatial transformations of the urban environment. Secondly, the focus is not any strategies for development that take shrinkage as a condition, but development strategies intended to respond to the current or anticipated effects of shrinkage, namely, strategies for (dealing with) shrinkage. Finally, this study focuses on public actors’ and their partners’ actions and does not directly involve private actors’ actions, because (1) given the definition of strategy as ‘a course towards a fundamental goal of the organisation’ [46], and that dealing with the whole city’s shrinkage can be seen as a fundamental goal of the former group but not necessarily the private actors’, it makes more sense to seek in their actions strategies towards this goal, and (2) the private actors’ activities are considered results of public actors’ regulation (or the lack thereof).

The selection of cases follows a logic similar to the ‘most-similar’ setup in [96]: cases are ‘similar in all respects except the variables of theoretical interest’ so as to isolate the causal effects of these variables on the outcome. In this case study, development strategies are considered as the outcome, and the aligned variables are three: the experience and willingness (municipalities have acknowledged and been since long dealing with shrinkage), comparable development tasks (the cities are midsize regional centres), and financial capability (the cities have a stable economy and receive state subsidies). Past research indicates that acknowledging shrinkage is a precondition to addressing it in development [19], and that stability of public finance is essential to local determination of responses to shrinkage [97,98]. Small, peripheral cities have fewer extra-local functions (employment, facilities, and infrastructure) than regional centres, and often shrink in a more passive way than the latter (cf. [99,100]). The assumption of this comparative set-up is that with all these three fundamental constraints absent, the local actors can engage in more strategic thinking and actions, and if these turn out to be different, the factors lie in local conditions and perception.

The process of analysis is based on the grounded theory method, but with some key differences. Grounded theory procedures focus on developing concepts based on systematically interpreting and categorising data, and data collection guided by working theories [101]. The concepts are increasingly developed in that they become more defined and interrelated, with abstract concepts identifying their common dimensions, so as to form a conceptual system that can account for all the incidents observed in the data, becoming a theory of explanatory power (ibid.). The data collection proceeds alongside analysis to drive the developing of the conceptual system so that the concepts are representative of the incidents collected and the theory is consistent with the data (ibid.). Existing literature can provide ‘sensitizing concepts’ to orient initial data collection and analysis [102]. The development of concepts in this study does not rely solely on the researcher labelling ‘facts’, but leverages the sense-making of situated subjects as ‘knowledgeable agents’ [103] to interpret facts and propose working theories. This method allows the researcher to

approach the data without preconceived categories and is suited for this research topic. Gioia et al. [103] demonstrated a procedure of developing concepts through first- and second-order coding, and identifying aggregated dimensions: first-order coding uses informant-centric concepts and second-order coding theory/researcher-centric concepts, in order to develop increasingly generalised, theory-relevant concepts and dimensions. This study applied this logic and structured the analysis in three stages: the policy level, the emergent/long-term level, and the model level.

The comparative perspective here is combined with the grounded theory generation. In the process of analysis, the significance of concepts was judged from (aside from being evidenced by key incidents across sectors, as described in following sections) how well the concept/relation help to account for the differences between the cases, in order to generate ‘inference to the best explanation’ [104]. For example, in lieu of a theory about how much pre-existing vacancy constrains a city’s strategy, the contrast between the two cases—hundreds of vacant units against thousands—the local argument that there lack fundamental transformation because policy making is occupied with downsizing is plausible.

Contextual factors giving rise to the variation in strategies are of interest in this research. Because multiple variables are investigated with a small number of cases and cannot be one by one tested over a larger pool of cases, accurately understanding them depends on the holistic approach to the case study. Therefore, this case comparison sought to retain ‘the integrity of the entire case’ as precondition to comparing ‘within-case patterns across the cases’ [95]. According to grounded theory methodology, the generalisability of a grounded theory is not in its applicability to the wider population, but in that specifying the conditions giving rise to variations are specified by the theory [101], which means here, the theorisation seeks to understand the contrast between two cases but is not for direct application to other cases.

3.2. Data Collection and Analysis

Data collection took place between March 2020 and December 2021. The primary data sources were official documents, statistics, and interviews of those who are directly involved in (formal and informal) policymaking and implementation. Because strategies written in the documents are not always realised, interviews were especially used to find out about the reality, explanations, and different opinions. Official statistics were used to understand the case setting, such as demographic, social, and economic conditions. The cases—the body of development policies and ideas for dealing with shrinkage—needed to be identified first. A set of preliminary sources informed by existing literature was selected: the current integrative planning documents, policy documents in housing, economy, and social aspects, and actors involved in making or implementing these policies. The documents were searched for development policies/ideas dealing with the social and demographic conditions (fewer residents, change in demographic or social groups, etc.) produced by shrinkage and the interviewees were asked about the same topic. In this way, the identification of policies did not rely on local understanding of ‘shrinkage’. Based on what was found in these documents, the sectorial and temporal scopes extended for data collection to understand directly relevant measures (e.g., on road infrastructure) or the context leading to the current ones (e.g., policy lessons). Furthermore, the comparative approach means when certain policies were accentuated in one case but not in the other, the under-accentuation would be investigated as a policy. Finally, the primary data sources were: 30 official documents and 24 semi-structured interviews (in average 90 min long except for 2 written interviews) with municipal policymakers in planning, economy, and social departments, superordinate-level policymakers, representatives of housing corporations, and civic actors in key policy processes. Secondary sources, such as media coverage, policy research, and industrial reports were used to ascertain claimed implementation and effects, and to find out policies that are not officially mentioned because, e.g., they have become routines. Finally, although desk research is useful for systematic analysis of data, it

has certain limitations for urban and planning research, especially for understanding the material context in each city, such as the scale of places and implementation of policies, as well as local atmospheres reflecting the synergy of social elements and physical assets. This is why on-site observation was also conducted for each case.

The data analysis followed an iterative, three-level structure with cross-case comparison at each level (Figure 1). Firstly, the data was coded within each case to identify relevant policies and highlight local sense-making. Sense-making included actors' framing of shrinkage, justification of policies, overarching rationales about policies, etc., and provided focuses in the identification of main policies. Then, the main policy points were compared between two cases to redefine the codes to that policies could be categorised with the same fewest codes, which were used to recode the relevant policies of both cases. This led to the first-level concepts that name the main policies. Secondly, the policies were further analysed and coded within each case, informed by the local sense-making (e.g., 'making small changes but no substantial transformation' from an interview) to develop concepts that describe emergent features of strategy. Follow-up correspondences and desk research supplied more information to help develop these characterisations. Then, the concepts were compared across cases to align and simplify the set of codes and recode the involved segments. This led to the second-level concepts that characterise emergent features in the policies, which are grouped into 'long-term perspectives', 'transformation approach', etc. To connect these characteristics to contextual factors, explanations were searched in local sense-making, and new data was sought to corroborate those. These factors were also compared across cases, in order to create aligned categories and grouping. Finally, the aggregated dimensions of strategy-describing concepts and the factor-identifying concepts were related to one another in one model, organised with the level of abstraction and differentiation between strategy and constraints. Their inter-relations were examined in the codes and coded segments to make adjustments for consistency. It should also be pointed out that the observed 'lack' of certain policies or thinking in the following sections is not meant as absolute absence, but to reflect their less rigorous implementation or emphasis in comparison to the other case. The analysis led to 83 codes, 1587 coded segments in total (see Appendix A).

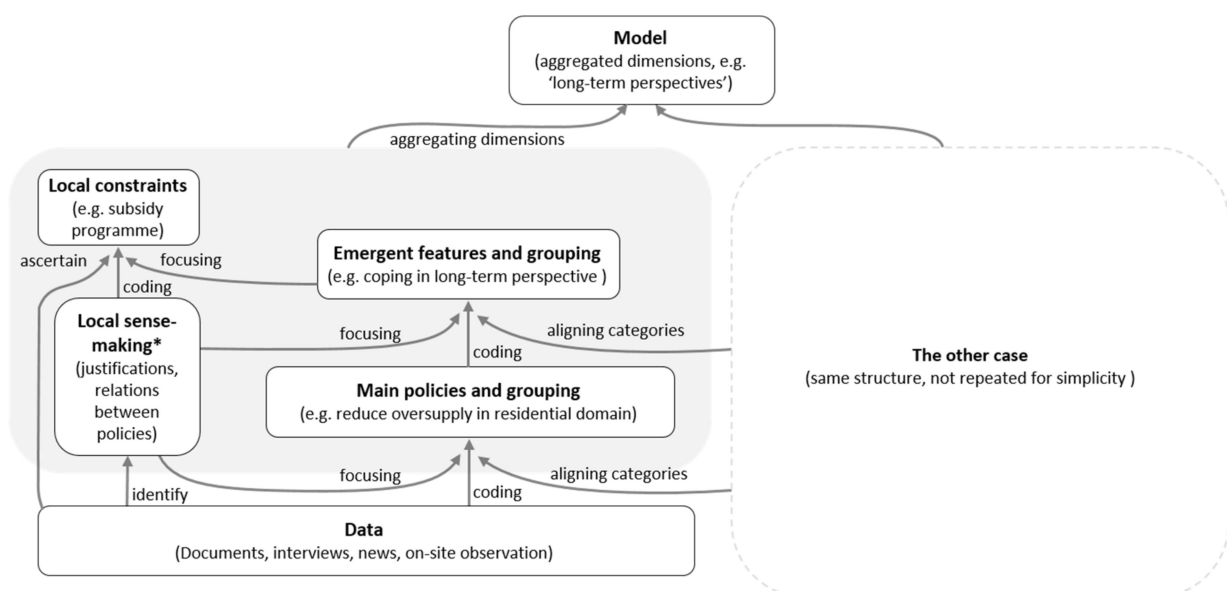


Figure 1. Structure of data and analysis. * The sense-making is saved with temporary codes to inform analysis about the context of policies and is later selectively categorised in relation to emergent features.

4. Case Study

This section first introduces basic situations of the two cities, and then summarises their current shrinkage-responding development policies/ideas, with cross-case comparison and

pointing out the factors causing the contrast. Then, the emergent features (the rationales, objectives, and approaches) are examined, compared between the cases, and the factors behind the contrast are identified. Finally, the structure of the findings is summarised into a conceptual model to make explicit the strategic patterns of the two cases and the contributing factors.

4.1. Case Settings

- Geographic Background

Den Helder is a Dutch port city with a population of 55,600, 65 km north to the nearest growth pole Amsterdam (See Figures 2 and 3). It is known for its maritime culture, coastal tourism, offshore industry, and the base of the Dutch royal navy. Zwickau is a German city with a population of 89,540, 70 km south to the growth pole Leipzig (See Figures 4 and 5). Formerly part of the GDR and a coal-mining city, it is now known for its car manufacturing industry, with Volkswagen Sachsen GmbH as the key global player. As the centres of their regions (NUTS 3), both cities are the engines of economy, research, and education, and host to the central administrative, healthcare and leisure facilities.



Figure 2. The recently renewed city centre of Den Helder (by author).



Figure 3. The outskirt neighbourhood with recent ‘tiny house’ redevelopment in Nieuw Den Helder, Den Helder (by author).



Figure 4. The city centre of Zwickau, renewed in the 2000s (by author).



Figure 5. Site of a de-densified outskirts neighbourhood in Eckersbach, Zwickau (by author).

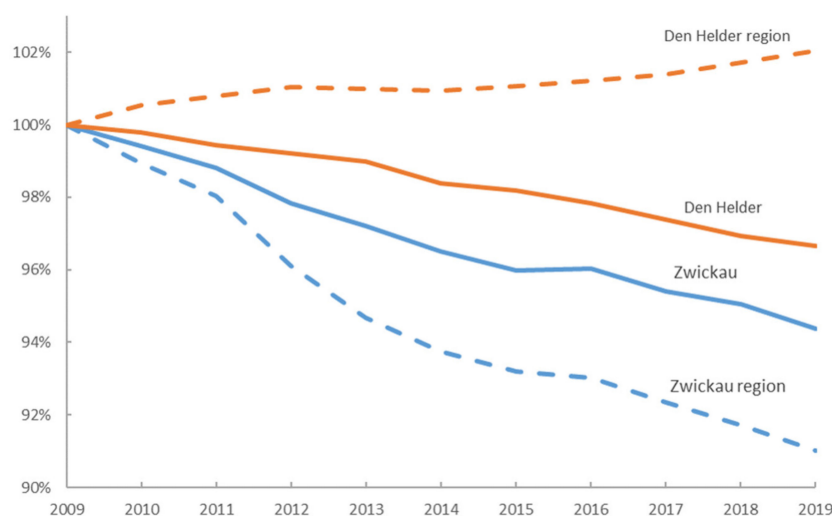
- Duration of shrinkage (See Table 1 and Figure 6)

Den Helder shrinks at a relatively steady and slow pace of 0.33% per year, driven by the outmigration of young groups, while the household number increases. Its region displays a contrasting growth in both indicators, but is projected to start shrinking in the next decade [105]. Zwickau's population shrank drastically in the years following the German Reunification, but the pace has stabilised at an average -0.58% per year, driven by negative natural balance—due to the unbalanced demographic structure shaped by the earlier mass outmigration—and ameliorated by recent refugee intake [106]. It is predicted to become more severe in the next decade [107]. Even households have recently started to shrink. Although Den Helder shrinks more slowly, its demographic structure is changing more dramatically than Zwickau's.

Table 1. Statistics of two cities ¹.

	Den Helder	Zwickau
Population	55,600; peak 64,000 (1985) [108] −0.33% p.a. in the last decade Households: 26,770, +0.11% p.a.	89,540; peak: 138,880 (1950) [109] −0.58% p.a. in the last decade Households [110]: 49,329, +0.19% p.a., but in the last five years −0.22% p.a.
Regional population	Population 375,659, +0.2 % p.a. Households 165,902, +0.6 % p.a.	Population 317,531, −0.9% p.a. Households 166,300, −0.77% p.a.
Demographical structure	Structural changes: Over 65 from 15.8% to 23% 25–45 from 26.1% to 22.5% Under 25 from 28% to 25% Ten-year natural demographic balance: −235; 12% of shrinkage	Structural changes: Over 65 from 25.8% to 28.8% 25–45 from 24.4% to 22.7% Under 25 from 20.5% to 19.7% Ten-year natural demographic balance: −5500; 103.4% of shrinkage
Economy	Local jobs: 63 % in Branches O–U ² , incl. c.a. 36.7% in the navy [111] Regional (average of last five years): GDP per capita €29,070; spendable income of households per capita €18,800 ³	Local jobs: 29% in Branches O–U, 33% in Branch B–F Regional (average of last five years): GDP per capita €30,000 [112]; spendable income of households per capita €20,300

¹ By default, numbers stand at 2019 and changes are calculated for the last decade and sources are CBS (the Dutch Central Bureau of Statistics) [113] and Statistisches Landesamt Sachsen [114]. ² Based on NACE Rev. 2 of the European Commission, Branches O–U are mainly public services and B–F are industries, including manufacturing and utilities. ³ This entry only exists for the German database ('Absolut verfügbares Einkommen der privaten Haushalte je Einwohner' [absolute spendable income of private households per capita]); for Den Helder, it is calculated by dividing average private household spendable income (from <https://cijfers.noord-holland.nl>, accessed on 2 March 2021) with average household size (from CBS).

**Figure 6.** Relative population change of the two cities and their regions (2009–2019).

- Experience in tackling shrinkage

Den Helder was experiencing neighbourhood depopulation and social problems from the late 1980s and eventually demolished an area of 372 apartments [115]. The city's single-minded pursuit of quick regrowth during the 1990s and early 2000s, combined with a series of economic, social, and political struggles, led to the Deetman–Mans report [116] commissioned by the state, which admonishes: either 'continue on the current path' to end up with 'further decline', 'destruction of capital' and upholding liveability with extra investments, or focus on the real economic potential—the port—and the improvement of the city to regain stabilisation (quotes translated by author). This shifted the economic focus from theme park tourism to the port industry and consolidated a policy framework that comprehensively addresses urban environment quality. Nowadays, the explanation of shrinkage focuses less on the navy budget cut than the lack of attractiveness of the city, while the previous aim of regrowing to pre-2000 level was given up as a starting point of policymaking. In Zwickau, the wave of outmigration after the German Reunification

reduced 16.5% of the population during the 1990s [114]. In this period, private lower density developments and commercial facilities followed a sprawl tendency. However, the vacancy reached 40% by 2002 in the large industrial housing estates on the outskirts and had to be countered with area-wide demolitions as part of the state subsidised Stadtumbau Ost programme [117]. Meanwhile, substantial measures were taken to restore the inner-city building stock to make up for the lack of building maintenance during the socialist regime and achieved liveable quality in most parts of the inner city. Investments in the tram system established the backbone for urban public transport, securing the connectivity between the outlying shrinking districts to central facilities.

- Economic and financial situation

The cities have comparable economic development. Den Helder experienced economic decline due to the navy budget cut after the end of Cold War, and after losing two thirds of navy jobs, what remains nowadays still accounts for more than a quarter of total local jobs [111]. The city has been searching for replacement economic pillar and in recent years the offshore renewable energy sector has become the main target of policies. Currently, the state-supported Regional Deal for maritime economy and the increase in national defence budget create further hopes for economic growth. In Zwickau, the shrinkage started with the decline of coal industry since the 1980s, and the decade after the Reunification saw many local manufacturing factories go under, leaving vast vacant industrial areas behind. The settlement of Volkswagen Sachsen and the related supply industry following the Reunification was a critical lifeline, since the corporate tax is a big part of local revenue. Currently, the Volkswagen's electric car new production line and the growing international education at the local university bring further (albeit cautious) hope for economic opportunities. Currently, both cities have similar levels of regional GDP per capita, spendable household income per capita (See Table 1), and improvement in welfare—decrease in the unemployment rate and low-income households, and increase in labour participation (according to CBS [113] and Bertelsmann Stiftung [112]). Public finance in both cities has a positive annual balance, although Den Helder clearly has more extra resources—per capita positive balance 110 Euros, compared to 33 Euros of Zwickau [112,118].

4.2. Development Policies

The shrinkage-relevant policies are identified and grouped into four categories based on their themes: residential infrastructure, social infrastructure and amenities, economic infrastructure, and transport and green infrastructure. In each category, the policies are described for each city and then compared to reveal factors behind their differences.

- Residential domain

Both cities hope to achieve a better fit with market demand by expanding higher-value and affordable higher-quality segments, and systematic downsizing lower-quality ones. However, in Den Helder, the downsizing is a precondition to expansion, because the latter must stay under the province-imposed and regionally negotiated quantitative limits, introduced to prevent vacancy [105,119]. The forms of expansion range from acupuncture redevelopments to reconstruction on vacant site and construction of whole new neighbourhoods. The oversupply of social housing is estimated at 3,300 [120]. This pool of housing is to be sold or replaced with demolition to meet new demand for qualities such as senior accessibility and larger room size. Among the replacement is also new social housing, which provides higher quality and adjust spatial distribution of social housing. With this approach, the city has managed to keep residential vacancy at 2% in a stock of 28,060 units [121]. Spatially, the inner city is being comprehensively redeveloped and densified; the outskirt receives lower-density units, including the less luxurious off-the-grid tiny houses, to replace the demolished apartments by a ratio of 1:3; and the nature-near periphery continues a controlled, single-family house expansion. In Zwickau, downsizing is an end in itself, and regeneration a de facto secondary objective. The objective of downsizing lower-quality rental apartments in the industrial housing estates on the outskirt has

stayed the same since the state-subsidised demolition programme Stadtumbau Ost started in 2002. Actors pointed out that due to the negative natural balance behind depopulation, the spatial pattern of vacancy is quite distributed and hard to steer. Despite the continued efforts, vacancy out of the total 57,383 units was still at 11.5% by the latest survey [106]. New products are generated in very limited amounts through small developments and refurbishment in the downsizing neighbourhoods. The lack of single-family housing is emphasised by public and private actors alike, but expansions are against the ‘inner development before outer development’ principle. Seeking more effective measures to catch up with the market demand, public planners hope to create a new neighbourhood at the occasion of the university’s expansion on the outskirts. The differences also include Den Helder’s accentuation on unique residential setting, which includes atmosphere, social environment, public services, and neighbourhood identity, essentially developing the neighbourhood itself as a marketable product. One of the strived-for residential settings is the vibrant and convenient central locations, and actors in Den Helder rigorously promote urban housing types in conjunction with the city centre renewal. In contrast, actors in Zwickau focus resources on the outskirts.

These differences can be attributed to shrinkage dynamics, regional housing market, inherited housing stock structure, local governance, and long-term planning. The still growing household number in Den Helder’s region along with the housing shortage and rising income allows for the increase of the total value to finance the downsizing. In Zwickau, the existing vacancy, the scale of the vulnerable stock (one third of the total housing stock), and their near-half senior resident population proportion together make downsizing an ongoing priority. In Den Helder, the agreement between the public and the housing corporation, envisioning how many units are needed in the future and where what types could be located seems to facilitate the converging efforts to renew housing and residential environments, while a collaboratively produced vision is missing in Zwickau. The lack of ideal inner-city locations for redevelopment goes hand in hand with the hampered ambition of inner-city renewal—the obstacles include, for example, the prefabricated high-rise apartments in the city centre from GDR times are well-occupied by lower-income groups due to their convenient location, and housing corporations continue to draw good revenue from them. Lastly, there lacked planning in earlier demolition to create suitable spatial conditions for the redevelopment of lower-density types, as public actors observed.

- **Public services**

Both cities strive to maintain their position as the regional centre with city- and region-level facilities, by (re)building the city library, the theatre, and the new town hall. However, Zwickau has inherited a larger cultural and sport infrastructure—including several concert halls, stadiums, swimming pools, and gymnasiums for regional and district levels, which are subsidised for operation and facility renewal—and is still making new, professional-standard addition. Some question such a policy, in view of other tasks that require resources. Both cities also work on consolidating neighbourhood-level services, but public planning in Den Helder appears to steer service infrastructure development more effectively. Den Helder’s strategic plan outlined the idea of a ‘service package’ tailored to each area’s social and demographic profile. Its effectiveness remains unclear, because firstly, it came as part of a larger public spending reduction process under the concept of ‘self-help capacity’ (as opposed to state-dependence) and is viewed critically by civic actors; secondly, the rationale of ‘tailoring’ is challenged, as even in senior-dominant neighbourhoods, wishes for more amenity for the youth are voiced in participatory process. Still, the accentuation on not spreading all the envied facilities evenly [122] contrasts with Zwickau’s unconscious approach, where, for example, large sports facilities are evenly distributed since the past. In Den Helder, institutional and commercial services are systematically tackled: daily facilities are clustered around subcentres; integrated school is introduced to deal with the decrease of pupils; and community centres for all districts are explicitly a strategy, which is shared among social organisations and act as neighbourhood governance contact points. Social and ecological solutions for service supply are increasingly emphasised: the use of public

and green space is promoted for sport to improve citizen health as well as reduce facility costs, and civic organisations are involved especially in providing daily care services. In Zwickau, the neighbourhood planning emphasis is on securing service supply nodes, which mainly speaks of supermarkets, then again, lacking planning instruments to regulate retail development (see next subsection). To bridge the gap of service, innovations were explored, such as e-scooter stations to enhance seniors' mobility and access of facilities (project 'Zwickauer Engergiewende Demonstrieren') and converting ground-floor apartments to business space and converting vacant plots into playgrounds and parks. However, there still lacks systematic approach to liveability and service provision in neighbourhoods. Social facilities and green spaces are planned by corresponding departments and there lacks neighbourhood contact points for residents to reach the government on governance matters.

These differences are related to material legacy, political culture, planning approach, and institutional structure. Although Zwickau's inherited sport and cultural infrastructure is under pressure for decreasing users, there is fear for loss of image if existing facilities are given up [123], discouraging any ideas of merging, sharing, substituting, etc. The stakeholder-engaging strategic processes are key to Den Helder's neighbourhood-level adaptations, but in comparison, Zwickau lacks the personnel resources for neighbourhood-level governance.

- Inner-city economy

Both cities face oversupply of manufacturing facilities from previous inner-city industrial era as well as retail facilities. In Den Helder, converting the decommissioned navy shipyard next to the city centre has been a priority since the first strategic plan. The availability of a large sum of state compensation combined with the lack of development know-how fuelled the failed attempt to develop it into a theme park as a quick economic solution to navy budget cut. This was learnt as a lesson and the current policy is to gradually absorb the vacant properties into leisure and office sectors with the precondition that no competition is posed to the city centre [124]. The retail facilities in the city centre had a vacancy of 13% (ibid.), which was seen as a serious image problem. This triggered a comprehensive city-wide restructuring process, especially aimed to consolidate the city centre and subcentres, where the absorption of oversupply and the preventive modernisation of facilities are combined. This includes facilitating businesses to modernise their facilities, upgrading public space, restricting the establishment of new locations, relocation business, and converting outlying shops in the centre to residences. In Zwickau inner city, the former coal mining site was developed into a shopping centre, which, along with several others that emerged on the outskirts around the 2000s, is seen to have weakened inner-city retail [125]. There the vacancy is around 25–30%, for which traffic pollution is another main driver (ibid.). The numerous car-friendly, large-scale shopping facilities around the outskirts have a higher economic efficiency and cater for regional consumers but has also exacted a cost on inner-city vitality and neighbourhood liveability. Based on the population trend, the viability of the already oversized retail infrastructure was pointed out as a top urgency in 2011, and spatial restriction, active steering, and urban design upgrade was recommended [126]. However, the public actor is yet to undertake systematic measures [125], while they observed that the permit-granting by the city council contradicts their own support of the 2011 recommended strategy.

The ineffective regulation of new locations in Zwickau is related to lack of legal instruments and inconsistent decision-making by the city council. The lack of regulation and collaboration appears to be a political culture, where the public should refrain from intervening in the market. However, the complex problems surrounding inner-city economic infrastructure call for comprehensive changes, which makes them a planning issue that public actors are uniquely in a position to tackle with spatial coordination, regulation, and stimulation of new forms of uses and use mix.

- Large-scale infrastructure

Large-scale infrastructure such as transport and green infrastructure are the basis of urban development activities due to their large-scale and distributed nature. Both cities have identified structural spatial issues that pose fundamental limitation on the inner-city attractiveness for residents and investors.

In Den Helder, the pollution from tourist car traffic was seen as a negative factor for the city centre residential environment and was addressed by relocating the ferry port. At the first stage of urban renewal, a city-axis park was created to connect the train station, the city centre, the seafront, and the adjacent neighbourhoods. Land uses were restructured to make room for this park. The transformation was aimed to fundamentally enhance the environmental quality and connectivity to the city centre for further development. The introduction of green space where there was little before also contributed to the microclimate and user experience of the area. This green-space-led approach was applied again to the redevelopment of a demolished outskirt neighbourhoods for lower-density housing types. In Zwickau, public actors are mainly concerned with road maintenance/renewal tasks but stalled with structural transformation. The size of road infrastructure per capita is twice of that in Den Helder [113,114], which poses continual maintenance challenges—and given the local car dependence, captures the political attention over topics like traffic pollution [127], even though the latter is a major driver of residential and retail vacancy in the inner city. The solution for the latter takes a second ring road to reroute car traffic but involves complex measures. This ring road, going past the train station, should be spearheaded by the train station forecourt restructuring, which reconstructs road and tramline connections to the station, bringing the benefits of better connectivity between the station and the city, and lower long-term costs of tram operation. To sum up, this strategic project could strengthen the city in many aspects, but since articulated in the 2013 integrative plan, it has not been implemented, not least due to political indecision [128]. Although green spaces have been added to the inner city, they are not mixed into the existing urban fabric, thus lacking impact on the spatial and environmental quality in the latter. So, the differences between the two cases also lie in approach: whether restructuring of these large-scale infrastructure drives land use or functional changes.

The active structural transformation in Den Helder is linked to the planning understanding that a mixing green into the inner city is not only for direct user experience but also for long-term economic and social benefit, and the implementation is based on extensive negotiation work in land acquisition. In contrast, Zwickau faces more challenges with its larger-size transport infrastructure and car-dependent lifestyle, paralleled with a lower prioritisation of structural spatial transformation for long-term benefits in the decision-making circle.

4.3. Long-Term Perspective and Approach

Based on the above-described policies and thoughts offered by actors and planning documents, the analysis found the following emergent, long-term qualities about the strategies:

Policies in Den Helder mainly aim to regenerate the demographic and social structure by attracting and retaining the (young) skilled labour force, the families, and the higher-income by creating their preferred housing products and place qualities (and to a smaller extent, image-building public facilities). Local actors emphasise that regeneration is aimed at structural adjustment, not quantitative growth. The aspired place qualities are based on local conditions and identities, so that development does not turn into wasteful growth tactics and go beyond local character. The policies may be aimed at hopes of attracting and retaining target groups, but the implementation, maintenance, and social benefits does not depend on the realisation of those ambitions. The pursuit of regeneration are linked to three things: firstly, the city is perceived to stand a realistic chance of regeneration with the upwards regional population and housing market, and economic prospects for its port infrastructure; secondly, the rapidly changing demographic structure has sounded the alarm of labour shortage for maintaining social infrastructure and economic development;

and finally, the politically authoritative Deetman–Mans report warned the city of the consequences of doing anything less than a comprehensive regeneration (Section 4.1).

Den Helder also makes preventive adaptation of urban assets to enhance their fit with the expected demand and reduce their economic vulnerability to future shrinkage. Policies are about adapting infrastructure for the ageing population, proactively reducing housing oversupply and limiting land intake, and shifting to less a resource-demanding service configuration. The last point includes restructuring institutional and commercial facilities spatially and organisationally, and increasing ecological and social solutions with green infrastructure, and co-production arrangements. These adaptations often depend on the effective regulation of spatial development, collaboration with the housing corporation and service providers, and area-oriented, integrated approach. Not everyone is happy with all the adaptations especially when it concerns reducing state dependence of neighbourhood organisations, but currently the city is directing more efforts at public-participatory development with the instruments of neighbourhood vision. This is supported by neighbourhood-level governance platforms, and a rotation system that focuses on a limited number of neighbourhood at a time [129]. Thus, planning instruments, governance, and planning approach are significant factors to this strategy.

Policies in Zwickau are characterised by ‘coping’ with the impacts of shrinkage, in that they focus on critical problems rather than chronic problems and struggle to keep up with long lists of tasks with no strategic for prioritising. The foremost critical problems are the oversupply of housing, unstable service supply in some depopulating neighbourhoods, and the renewal of non-commercial infrastructure (such as roads and sport facilities). Costly issues such as the inner-city road restructuring to reduce traffic pollution tend to be postponed, and complex problems such as retail vacancy and neighbourhood images are not concretely articulated in policy. The high negative natural balance and a substantially one-sided housing stock, as well as other oversized infrastructure, are certainly defining conditions in terms of resource allocation. Other urgent issues tend to be argued with political values, such as from car-dependent groups and civic organisations asking for support; however, as one actor admits, satisfying every need is not achievable with limited resources. This coping mechanism tends to concrete tasks but diverts resources and attention from more structural issues.

Still, there is much aspiration for regeneration. As described in previous sections, single-family houses are highly emphasised, albeit without substantial implementation, and the public planners are aiming for a strategic residential project in connection with the university expansion for higher-income families. However, neither substantially reshapes the housing stock structure or the qualities of urban spaces—without long-term policies driving development in certain directions. Meanwhile, the city’s political commitment to more, better, newer public facilities for social and leisure activities has preserved the local foundation of social fabric, achieved satisfaction among the citizens [127], and attracted in-migration from the hinterland. However, to some actors, this is not enough. Zwickau 2050, the expert-led, informal visioning process, asserts that the city centre is the most valuable asset for attractiveness, and needs to be re-shaped to secure a prosperous future. However, housing corporations are unenthusiastic about the idea of redeveloping their city-centre stock, with their own assets requiring constant downsizing and upgrade. Moreover, some policies ambivalently affect the striving for attractiveness, e.g., allowing large retail developments around the outskirts to cater for the hinterland consumption has a negative impact on inner-city retail and neighbourhood nodes, and the deprioritisation of inner-city road restructuring allows traffic pollution to drive residential and retail vacancy.

There are also some elements of a preventive strategy. The principle of ‘inner development before outer development’ has made it more difficult for sprawl developments, although land consumption is still relatively high. Responding to the ageing trend, housing corporations have turned to partial demolition to create buildings of fewer floors, so that even lacking the capital to outfit the buildings with elevators, these buildings can become more senior-friendly. However, in general, shrinkage-accommodating adaptations are

different from the preventive strategy in Den Helder: the upgrade in neighbourhoods is more for restoring/maintaining existing functions than reconfiguration and the consolidation of neighbourhood centres is hampered by the lack of regulative instrument. The wide application of participatory neighbourhood development seen in Den Helder is also difficult for Zwickau, due to the lack of personnel (the city has one official for gathering public input on development, compared to district teams and managers in Den Helder). To sum up, the adherence to, and the inability to depart from coping, is also related to the political culture, the economic context, and planning approach and resources.

It is found that policies in Den Helder are articulated with a strong spatial awareness, namely, policies from different sectors are often integrated through their area orientation. The planning stresses the unique identity of an area and its role in the whole city, so that areas complement each other to support a city-wide, diversifying development. For the areas, policies are organised around collaboratively produced, holistic visions of the physical forms, atmosphere, functions, social profile, etc., thus integrating sectorial policies and co-ordinating actors' measures. Zwickau's sectorial policies are not integrated around holistic concepts from what this study can identify—despite one area-oriented project integrating downsizing with comprehensive neighbourhood development, which is, however, not embedded in a city-wide development framework. Measures are aimed at 'improvement' with inexplicit criteria rather than at visions. The relations between urban areas, giving rise to the city as a whole, are also not reflected in official documents. Explicitly, sectorial labels which describe both the status quo and the aspiration, such as 'city of shopping', 'city of diverse forms of residence', 'culture, sport and tourism centre', etc., provide little 'movement' into the future.

Another finding is that the transformation approach contributed considerably to the different courses of development. Den Helder's approach is crucial for the aspired regeneration: the holistic, area-oriented approach allows it to (re)generate unique residential environments; there is strategic coordination in terms of temporal sequence, city-wide spatial framework, and collaboration among actors; and strategic projects are identified to spearhead transformation, where existing uses are proactively restructured. In contrast, Zwickau lacks a fully developed spatial structure strategy; temporally, follow-up uses are not envisioned during downsizing planning to prepare the right spatial conditions; and most actors identify a lack of exchange among them. Its current policies focus on transforming outskirt areas and designate inner-city areas for 'improvement without restructuring'. These differences have deeply shaped the extent to which the two cities have been able to transform their urban environments and create synergy between different urban assets. Den Helder's city-wide framework guides the development of 'complementary' places. Negotiating changes of existing land uses allows the city centre and subcentres to be reinvented with better mix of retail, cultural and green amenities. Arguing for such an approach, the city centre masterplan [130] contended: 'Den Helder will not recover economically with a strategy of perfunctory measures and ad hoc projects' (translated by author). Zwickau 2050 advocates similar transformative logic, involving restructuring the city centre to connect to the riverfront and to the largest urban park so as to improve environmental quality of the whole area. However, the ideas are yet to enter the policymaking scene.

It should be observed that in Den Helder there are essential institutional conditions that are missing in Zwickau. Knowledge-wise, Den Helder was supported with research commissioned by the state, and later since the centre renewal, the province plays the role of 'investment partner' and is constantly closely involved. This differs from Zwickau's relation to the state as a subsidy-receiver. Financially, Den Helder receives state subsidy in one stream and has a higher level of certainty, self-determinability, and flexibility, while Zwickau's state subsidies need to be applied per type of measures, are limited to delineated areas. The cities' own financial decision-making also differs, as Den Helder established a long-term strategic reserve for implementing urban renewal and Zwickau's city council makes budget decisions on a project-to-project basis. Implementation-wise, Den Helder has the effective instruments to regulate private developments and the organisational in-

strument, Zeestad, to operate the acquisition, negotiation, and contracting processes so that the implementation can be disentangled from politics [131]. In contrast, Zwickau's public planners lack the regulative power and struggle to unite opinions within governmental departments and with property owners. Finally, the strategic processes for establishing new orientations, concretising ideas into development logic, and mobilising actors are deemed too costly by public actors in Zwickau.

Figures 7 and 8 illustrate the above emergent qualities in connection to the policies and show how they content-wise and structurally differ between the two cities. The relations between the strategic elements are not represented in arrows because, taking the emergent nature of strategy as well as the learning-adaptation process into consideration, one cannot say that the abstract concepts direct the concrete measures (as in traditional strategy-making logic), or that the concrete measures spontaneously self-organise into coherent logic without any intentional design. Thus, this analysis views their relations in terms of consistency.

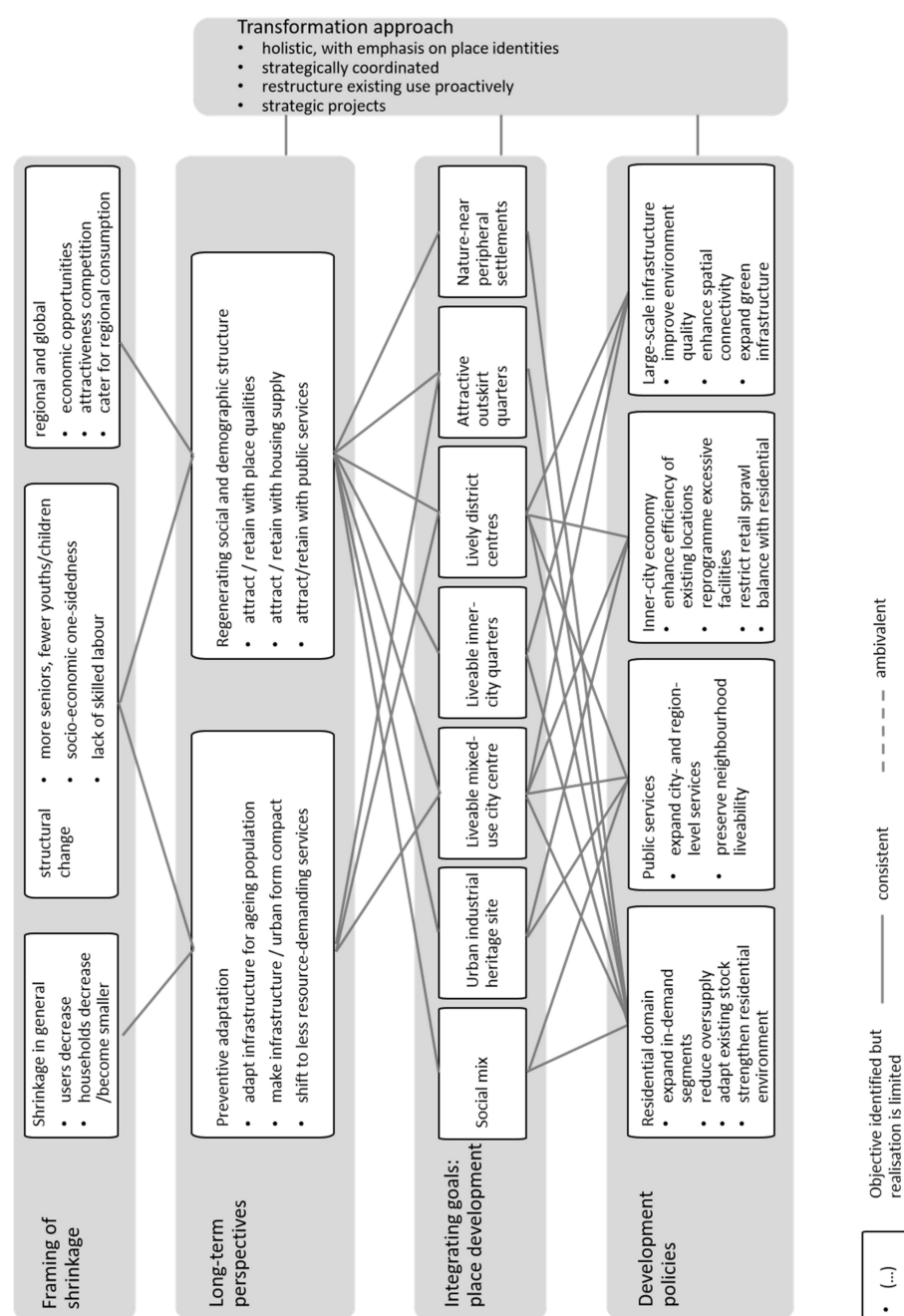


Figure 7. Structure of development strategy in Den Helder.

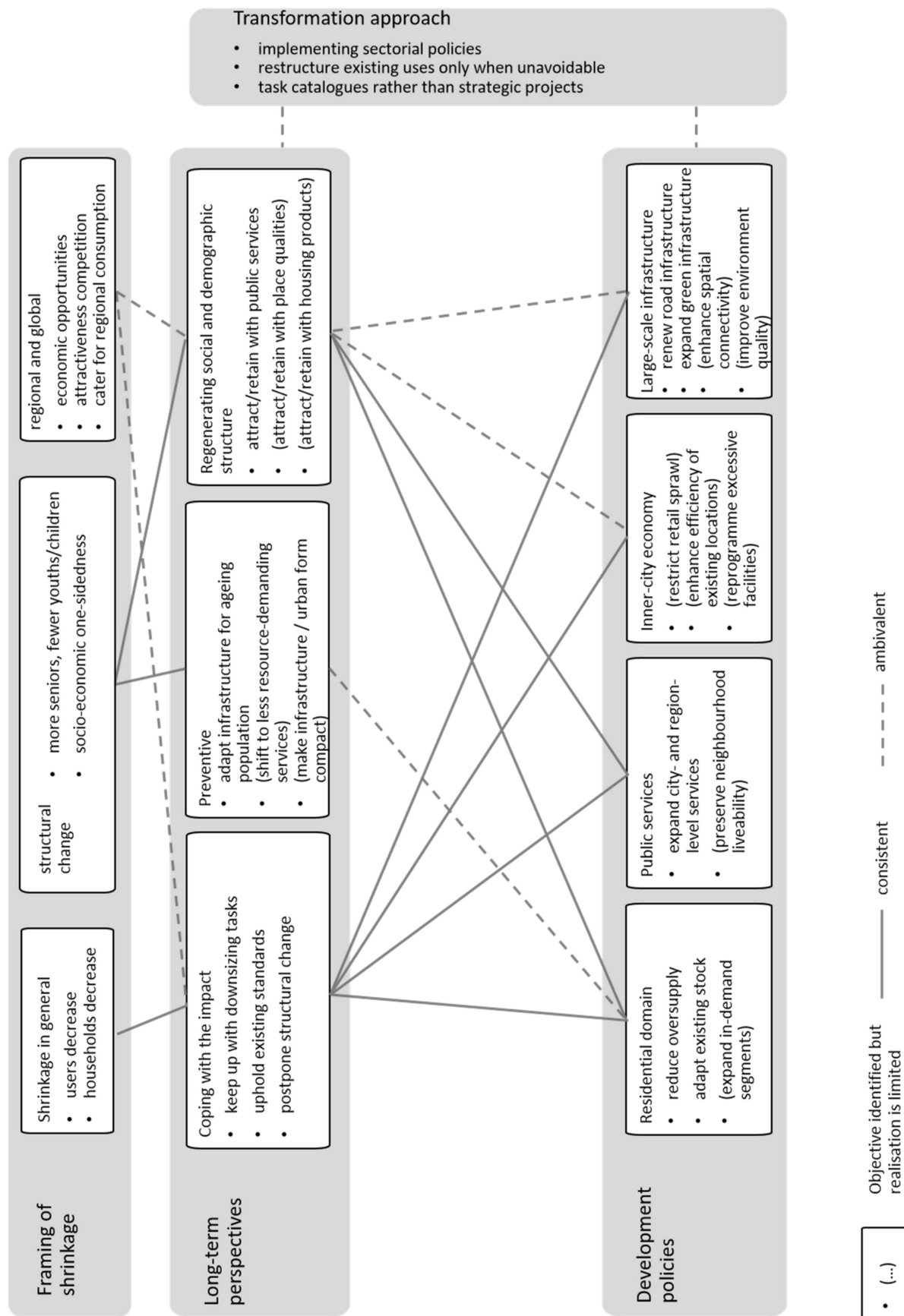


Figure 8. Structure of development strategy in Zwickau.

4.4. Summing-Up: Preliminary Model

The conceptual structure underlying the above analysis can be abstracted into a preliminary model for understanding development strategies for shrinkage (Figure 9). Five variables are used to capture the variation found in the two strategic courses, from measures up to long-term perspectives and to the socio-economic framing of shrinkage. The relations between strategic elements, as found in the case study, can contradict or support one another. On the constraint side, to limit the complexity of the model, only locally present constraints to strategy-making are represented, including shrinkage dynamics, institutional conditions, and material legacies. The regional and global economic trends are considered to influence strategies through perception and framing, whereas the locally present conditions influence strategies even without being perceived. These locally present conditions are also shaped by strategy itself, e.g., development measures can transform the local shrinkage patterns and material conditions, and the comprehensive renewal approach applied in Den Helder led to institutional changes for more effective implementation. The links between the variables reflect important relations found in this case study.

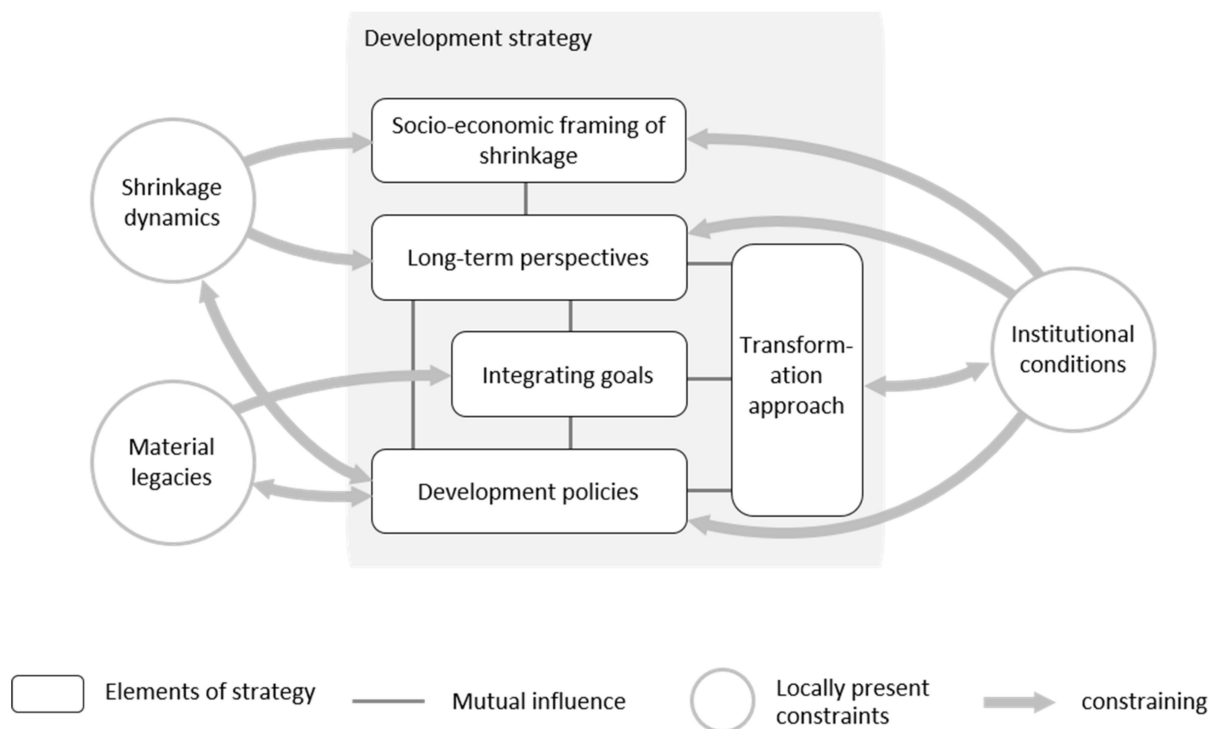


Figure 9. Model of development strategy for shrinkage.

5. Discussion

Shrinking city studies generated important knowledge on how population decrease impact the complex urban system, the implications for sustainability, treating and prevention of overdevelopment, etc. However, it still requires more research and theorisation regarding how population decrease translates into planning and how instruments are strategically organised to deliver urban transformations so that this knowledge can play a bigger role in the long-term development of cities. In this context, this research has investigated cases in two cities that have extensive experience in responding to shrinkage and that stand in contrast to the stereotypes of shrinking, declining cities reacting to dire crises. The two cases are interesting because their stories of handling slow crisis in balance of long-term goals for the city as a whole show a diverse range of possibilities and strategic rationales. Such complex pictures have the promise of addressing particularly two issues towards a ‘theory of shrinkage’ (cf. [21,132]).

Firstly, although researchers cautioned against a ‘one-size-fits-all’ approach to explain and respond to urban shrinkage [20,67,133], the approach is often implicit in the single-variable conceptualisation of shrinkage and empirical work on ‘shrinking cities’ that fall short of distinguishing the varieties and different needs of shrinking cities and linking them to policy implications [134,135]. In other words, shrinking city research still needs to clarify what shrinkage means and how to go about it. Typologies of shrinkage may help identifying research dimensions or policy themes (e.g., [77,136,137]) but knowing which type their own city belongs to is not enough for local policymakers entangled in the local context to make development strategies. This research supports this view, showing that when population shrinks, economy can grow, capital has not deserted the city, public infrastructure can expand, housing (or at least specific segments) can expand, etc., and all for good reasons from local points of view. Behind the development are the varied sense-making and action rationales of policymakers situated in different contexts and planning cultures. For example, Den Helder public actors said ‘we will be around 50,000, give or take, it won’t make much difference’ (to the real task of improving the one-sided social structure through attracting well-educated young people); and, putting it more entrepreneurially, ‘well ... there is shrinkage, and *shrinkage*’, explaining why *their* population shrinkage warrants well-targeted expansions, because the growth of economy and national housing shortage can help attract certain groups to regenerate the local demographic and social structure. Planning in Zwickau follows a forecast approach, systematically calculating need for prefabricated apartment demolition while omitting to talk about the size and types of future demand (except for single-family houses). While in Den Helder, the decreasing size of labour force translated into comprehensive policies to create vibrant environments and housing options for young people, in Zwickau it meant more attention to family friendliness and larger homes despite shrinking household size.

In both cases, the point of strategies is not (only) to reduce the sum of supply itself, but to create a content-wise and spatially different supply structure for changing societal needs and for self-sustainability. Den Helder displays a stronger tendency to exit the crisis of shrinkage with regenerative and preventive strategies and a holistic, transformative approach. Contrastingly, Zwickau has routinised coping with the impact of shrinkage, and opted for public-subsidised infrastructure for some degree of regeneration but lacks strategy towards a different future where the urban systems can be sustained by the local community and practises weaker spatial transformation and policy integration. However, the successful implementation of regeneration in Den Helder is critically related to its shrinkage and economic parameters. The half-committed regeneration in Zwickau may turn out to be a better option than rigorous investment, and a systematic preventive adaptation may require a slower pace of shrinkage and less social vulnerability (cf. [65]). So, the logic of coping might be waiting for the right circumstances. Thus, no conclusive evaluation can be formed on which strategy is eventually better within each city’s own situation. Tackling the conceptual complexity of ‘urban shrinkage’ can be advanced by examining complex planning situations, and research can also help practice make sense of shrinkage in connection with other variables and connect this sense-making to perspectives and alternatives that are more context-specific than accepting, downsizing, and maintenance.

The second issue is, if strategies cannot be evaluated simply with results due to different contexts of shrinking cities, how can their strategy-making then be improved? This concerns the role of public planning in shrinking cities. This research indicates that for public actors, doing what needs to be done is no longer sufficient strategy-making logic. Behind the coping tendency found in Zwickau are an overwhelming number of urgent tasks, planning objectives contradicted by trends in reality, and a lack of consensus among actors regarding the best course of action. One can hardly allow existing facilities to fail or ignore the call for equal treatment from struggling organisations and neighbourhoods, but ‘to satisfy every need all at once is not achievable’, to quote an interviewee. Similar struggle took place in Den Helder in the 2000s, with the city going from ‘one political crisis to another’ (interviewee) and numerous plans made but little implemented [131].

This could be a shared challenge for shrinking cities, not only because the adaptation to shrinkage has less financial leverage in the still growth-dominated economic context for development [35], but also because the municipalities can be overwhelmed by increasing tasks as rule maker, investor, and operator, as private capital dwindles and systemic infrastructure crisis unfolds.

While public actors are preoccupied bridging the gaps and fixing problems, they could lose sight on issues, to which they are uniquely in a position to attend. Such issues include: (1) City-wide coordination, because ‘you should not rely on one project to revive the whole city’ and it takes ‘a systematic approach’, according to a Den Helder interviewee. Coordination involves spatiality [78] and temporality (such as duration, tempo, sequence, and timing) [138]. Strategic projects such as the city centre renewal in Den Helder and the proposed ‘train station forecourt’ project in Zwickau belongs to such coordination as ‘short-term actions’ [66,79] embedded in a larger transformative framework. ‘A dynamic flow can only happen when it [effort] is channelled and bring the whole city forward, and not here and there a little bit better [but the whole is still not much different]’ (a Zwickau interviewee). (2) Sustainable use of land, because with changing societal needs and growing economy, new uses and programmes emerge, but without intensifying the uses of existing areas like the city centre and ‘recycling’ areas with unattractive image [139], there will be increasing pressure to expand despite shrinkage. However, spatial regulation and proactively channelling investments and use into existing locations by creating attractive conditions in these locations, including changing the image of an area, requires public-led efforts. (3) Changing mindset and organising new approaches, which is strategic planning work [83,86]. Rather than dwelling on traditional, infrastructure-intensive ways of life, areas with (predictable) decreasing population density can be approached with a shift to less resource-demanding infrastructure, namely nature-based amenities, citizen co-produced service supply, with digitally enhanced accessibility, as well as new forms of housing. Here public actors can create the conceptual, organisational, and institutional conditions. The self-sufficient ‘tiny house’ experiment in Den Helder and the senior mobility experiment in Zwickau both bear some signs in this direction. The approach of adapting user behaviour when urban-level infrastructure cannot be sustained by population density, in order to achieve a different, but not lower, quality of life, resonates with thinking in degrowth and social ecological sustainability [23,24,31,140]. To sum up, in addition to what should be done and what can be done (with accessible resources), public actors must act upon what they are uniquely in the position to do, as a strategy-maker, condition-shaper, mobiliser, and coordinator. This underlines that a ‘theory of shrinkage’ should address the holistic, strategic aspects of development to contribute to local development and shrinking city sustainability.

6. Conclusions

Urban shrinkage is a complex, long-term challenge for policymaking and planning for sustainable development. It requires a strategic approach in making sense of shrinkage in the local context, employing diverse instruments from degrowth to growth-promoting for holistic progress in urban development, and mobilising and coordinating actions. In argument for this, this research studied with a cross-sectorial view the emergent strategic elements and conceptual structure of development strategies in two cases. It is found that even cities with similar willingness, experience, and economic stability to address shrinkage, can have very contrasting long-term perspectives alongside many similar policies. While the merit of their perspectives—to exit the crisis with in-depth transformation or coping with the impact of shrinkage without a vision of a different future—cannot be assessed by the results of development, they stimulate us to reflect on social and economic parameters of revitalisation and the constraints for strategy-making in the local demographical, material, and institutional conditions.

This research can serve as a pilot project to test out the conceptual structure, the variables, and the methodology for extracting relevant concepts. Because of the limited

cases studied, and the reliance on contrast to make inferences, certain qualities (or the lack thereof) and their corresponding concepts in one case might have been more emphasised than they would have otherwise been, were the other case selected differently. Furthermore, the categories in model of shrinking city strategy could also be enriched by especially studies of more dissimilar cases. For example, in regions where population development is shaped by migration rather than demographic structure, perhaps a volatile shrinkage–regrowth trajectory influences development strategy less through ‘long-term perspectives’, than through something such as ‘contingency plans’ (cf. [54]).

Finally, the research shows that studying the strategic aspects of shrinking city development can make unique contribution to theory development and policymaking. Examining complex planning situations can help tackle the conceptual complexity of ‘urban shrinkage’, and conversely, research can help practice make sense of shrinkage in connection with other variables and connect this sense-making to perspectives and alternatives for formulating comprehensive strategies. Especially, for the sake of sustainable development, it is important that public actors engage in strategic issues that only they as the strategy-maker, condition-shaper, mobiliser, and coordinator can address.

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Den Helder

- Strategisch Plan Den Helder 2015; Gemeente Den Helder; provided by the municipality
- Strategische Visie 2020; Gemeente Den Helder; https://depot03.archiefweb.eu/archives/archiefweb/20100215134706/http://www.denhelder.nl/index.php?menu_id=400
- Krimp of Niet; Gemeente Den Helder; gemeenteraad.denhelder.nl
- Helder zicht op Zeestad; Gemeente Den Helder; gemeenteraad.denhelder.nl
- Structuurvisie Den Helder 2025; Gemeente Den Helder; denhelder.nl
- Nota Wonen Den Helder; Gemeente Den Helder; denhelder.nl
- Nota Wonen Den Helder 2010–2015; Gemeente Den Helder; denhelder.nl
- Woonvisie Den Helder 2016–2020; Gemeente Den Helder; denhelder.nl
- Prestatieafspraken gemeente Den Helder 2016–2021; Gemeente Den Helder; denhelder.nl
- Regionaal Actie Programma 2017–2020; the Region of Kop van Noord-Holland; noord-holland.nl
- Sociale Structuurvisie: Sociaal en Integraal—Perspectief en Kapstok; Gemeente Den Helder; denhelder.nl
- Uitvoeringsplan Helder’s perspectief; Gemeente Den Helder; gemeenteraad.denhelder.nl
- Helder’s Sociaal Beleid: Het sociale verhaal van Den Helder; Gemeente Den Helder; gemeenteraad.denhelder.nl
- Beleidskader sport ‘Den Helder beweegt vooruit’; Gemeente Den Helder; gemeenteraad.denhelder.nl
- Kadernota Detailhandel: Naar kwaliteit en dynamiek; Gemeente Den Helder; https://depot03.archiefweb.eu/archives/archiefweb/20100215134706/http://www.denhelder.nl/index.php?menu_id=429
- Uitwerkingsplan Stadshart; Zeestad; <https://zeestad.nl/>
- Omgevingsvisie Julianadorp; City of Den Helder; gemeenteraad.denhelder.nl
- Bestemmingsplan Nieuw Den Helder centrum 2013; Gemeente Den Helder; gemeenteraad.denhelder.nl/
- Prognose 2017–2040: Bevolking, huishouden en woningbehoefte; the Province of Noord-Holland; noord-holland.nl

Zwickau

- Landesentwicklungsplan 2013; Sächsisches Staatsministerium des Innern; landesentwicklung.sachsen.de
- Integriertes Stadtentwicklungskonzept (INSEK) Zwickau 2030; Stadt Zwickau; zwickau.de
- Zwickau 2050 Projektbericht; Initiative Zwickau 2050; zwickau2050.de
- Städtebauliches Entwicklungskonzept (SEKo) 2020; Stadt Zwickau; provided by the municipality
- Flächennutzungsplan 2025: Entwurf; Stadt Zwickau; zwickau.de
- Komplexmaßnahme: Innenstadtangente, Querspange Straßenbahn, Bahnhofsvorplatz; Stadt Zwickau; zwickau.de
- Wohnbedarfs- und Wohnbau- Flächenprognose (Wohnkonzept 2018); Stadt Zwickau; zwickau.de
- Wohnungsrückbau in Stadtumbaugebieten: Fortschreibung; Stadt Zwickau; zwickau.de
- Handlungskonzept Wirtschaft Zwickau 2025; Stadt Zwickau; zwickau.de
- Einzelhandels- und Zentrenkonzept Zwickau 2010; Stadt Zwickau; zwickau.de
- Schulentwicklungsplanung Landkreis Zwickau; Landratsamt Landkreis Zwickau; landkreis-zwickau.de

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Appendix A. Code System, Frequency and Relations

As is shown below, the codes are concepts that form the strategies of the two cities (Figures 7 and 8). The code frequencies give a rough idea of the differences between the cases, but they cannot be used numerically for ranking the significance of the concepts, because of the nature of the data and the limitation of the analytic tool. On one hand, heterogeneous data was selected to help understand or ascertain the different policies of urban development rather than provide statistical samples. For example, civic actors address restructuring in outskirt neighbourhoods more than the renewal of mixed-use city centre, not because the latter as an issue is less important but because the actors' involvement is more in the traditional neighbourhoods. Some policies are not explicitly articulated but coded from a series of measures, while codes of more concretely articulated policies are statistically 'disadvantaged'. On the other hand, because of the need for case comparison and limitation of the tools, the texts underlining the lack of a certain quality had to be coded under the code for that quality so as to limit the number of codes to an operable level. The coding was done in MAXQDA, and the statistics were exported and reformatted.

Code System	Coded Segments		Coded Segments %	Code Relations (Inter-Sections)
	Case Den Helder	Case Zwickau		
Case setting	0	0	0.0%	0
acceptance of shrinkage	11	11	1.4%	14
regional position	6	3	0.6%	16
experience in tackling shrinkage	8	3	0.7%	14
financial and economic	3	5	0.5%	7
driver of shrinkage	9	4	0.8%	13
Framing shrinkage	0	0	0.0%	0
Shrinkage in general	1	1	0.1%	3
users/consumers decrease	7	7	0.9%	16
households decrease/become smaller	5	7	0.7%	6
structural change	3	0	0.2%	10
more seniors, fewer youths/children	37	29	4.1%	119
socio-economic one-sidedness	33	3	2.2%	50
lack of skilled labour	28	6	2.1%	45
regional and global	3	2	0.3%	4
economic opportunities	15	8	1.4%	14
attractiveness competition	33	6	2.4%	48
cater for regional consumption	5	5	0.6%	25
Transformation approach	0	0	0.0%	0
holistic/ area-oriented approach/identity	15	7	1.4%	30
strategic coordination	7	16	1.4%	46
restructuring existing uses/space	4	8	0.7%	31
strategic projects	4	9	0.8%	17

Code System	Coded Segments		Coded Segments %	Code Relations (Inter-Sections)
	Case Den Helder	Case Zwickau		
Long-term perspectives	0	0	0.0%	0
Regenerating	16	9	1.6%	37
attract/retain with place qualities	24	12	2.2%	52
attract/retain with housing products	8	15	1.4%	45
attract/retain with public services	8	12	1.2%	36
Preventive	0	3	0.2%	2
adapt infrastructure for ageing population	6	10	1.0%	41
shift to less resource-demanding services	16	10	1.6%	42
make infrastructure/land use compact	7	5	0.7%	16
Coping	0	2	0.1%	4
keep up with downsizing tasks	0	9	0.6%	15
uphold existing standards	0	16	1.0%	29
postpone structural change	0	31	1.9%	65
Integrating goals	5	8	0.8%	22
Social mix	10	3	0.8%	12
Inner-city industrial heritage	8	0	0.5%	22
Mixed-use city centre	25	18	2.7%	80
Inner-city quarters	18	13	1.9%	55
District centres	11	11	1.4%	31
Outskirt quarters	4	7	0.7%	21
Periphery settlements	7	3	0.6%	15
Development policies	0	0	0.0%	0
Residential domain	10	2	0.7%	18
expand demanded segments	25	20	2.8%	59
owner-occupied	11	7	1.1%	38
medium-high segment	17	20	2.3%	64
affordable quality	17	1	1.1%	36
age-adapted housing	16	11	1.7%	60
innovative forms	5	4	0.6%	10
reduce oversupply	17	35	3.2%	85
adapt existing stock	9	18	1.7%	56
strengthen residential environment	40	22	3.9%	81
Public services	5	4	0.6%	14
expand city- and region-level services	2	1	0.2%	8
healthcare infrastructure	6	4	0.6%	23
admin, cultural facilities	10	14	1.5%	34
high-standard sport facilities	4	19	1.4%	29
preserve neighbourhood liveability	9	0	0.6%	4
service supply	11	11	1.4%	31
schools and daycare	2	18	1.2%	20
amenities	25	6	1.9%	40
co-production	14	7	1.3%	25
Inner-city economy	14	3	1.1%	11
balance with residential quality	2	2	0.2%	5
reprogramme excessive facilities	8	13	1.3%	28
enhance efficiency of existing locations	9	14	1.4%	22
restrict retail sprawl	8	21	1.8%	28
Large-scale infrastructure	0	0	0.0%	0
expand green infrastructure	7	6	0.8%	27
renew road infrastructure	0	17	1.1%	42
improve environment quality	5	25	1.9%	55
enhance spatial connectivity	1	15	1.0%	18
Context, constraints	0	0	0.0%	0
shrinkage dynamics	5	11	1.0%	24
institutional conditions	3	2	0.3%	10
neighbourhood interface	9	3	0.7%	18
superordinate level involvement	30	2	2.0%	38
decision-making and implementation	25	35	3.7%	86
financial instrument	25	19	2.7%	53
material legacies	5	31	2.2%	42
Sum	821	780		
		1587	100.0%	2412

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