STRUCTURAL NETWORK CHARACTERISTICS AND NETWORK EFFECTIVENESS
A case study into the housing network of Twenterand

Abstract

The Netherlands has a housing shortage. The entry of the Strengthening Public Housing Management Act at the end of 2022, should ensure that the government, together with other parties, takes control of housing. The thesis researched how this collaboration is expressed and how these parties achieve output together. The research is conducted based on a case study, in which interviews and document analysis were used as method to answer the research question *how do structural network characteristics influence network effectiveness of the housing provision of the municipality of Twenterand to achieve goals?* Seven actors in the Twenterand network were interviewed for this thesis. The most important results relate to the structural network characteristics, 'formalization' and 'integration mechanism and tools'. These two structural network characteristics have not completely been implemented in the network, which means that network effectiveness is not optimally achieved in various layers in the network. The formalization and structure that facilitate interactions between the municipality and the housing association show what the network could be capable of when the formalization and structure are further developed in the network. Formalizing the distinct roles of the municipality in the network appears to be a key factor for the further development of other structural network characteristics.

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1. Housing in the Netherlands

The Netherlands has a growing shortage of housing. The housing problem has arisen in recent decades because the government left it to the principle of the market, instead of providing sufficient suitable housing itself (Rajagopal, 2024). Housing is a fundamental right in the Netherlands, where the government has the effort obligation to provide enough housing (Article 22 of the Dutch constitution) (Rijksoverheid, 2024). The tightness of the housing market affects young people who are looking for their first place to live, owner-occupied homes are not affordable, the rental price of private rental properties are extremely high and the queue for social rental properties can be up to 10 years (de Jong & Kraniotis, 2021). The consequence of the shortage is that young people continue to live in their parental homes for longer, in rooms or in shared homes. Young people experience a lot of uncertainty surrounding their living situation and therefore postpone important decisions in their lives, such as the choice to try to have children. In 2022, 42% of young people (16 to 34 years) indicated that their psychological health is negatively affected by the housing crisis (van der Heyden, 2022).

There are various causes for the current housing crisis in the Netherlands. An important driver of the housing crisis is the credit crisis of 2008. The credit crisis caused the housing market to stagnate and no new homes were built, there was no demand, which caused many construction companies to stop. A landlord levy has been introduced to fill budget deficits caused by the credit crisis. This resulted in housing cooperatives being driven to excessive costs, which resulted in a 50% decrease in the number of social housing units built. In addition, stricter regulations have been introduced for issuing building permits, such as rules regarding nitrogen emissions and the presence of PFAS at construction sites. Another cause is that investing in homes has become attractive, because of the low mortgage interest rates. These causes for exacerbating the housing crisis were facilitated by the abolition of the Ministry of Housing in 2010. Since then, there has been no dedicated ministry anymore that is committed to facilitating sufficient houses, with the thought that the market could solve the housing shortage itself. This thought was a misconception, which has ensured that the government is currently trying to take control of housing construction. The Strengthening Public Housing Management Act ensures that governments can again control how much, where and for whom they will build. This law provides a framework for the government actions that have been taken in recent years to make the housing crisis manageable. The aim of the law is to build 981,000 houses in the period from 2022 to 2030, two-thirds of which must be affordable. This law makes it explicit that governments must jointly provide sufficient housing together with other parties like housing associations. The development of this law shows that the government is moving away from market principles and is switching to a different form of governance to deal with the housing crisis.

The science of public administration shows that there are several governance models. Nowadays, network governance is on the rise, because it is a form of governance that is associated with wicked problems (unstructured, unsolvable, problems). Network governance would be more suitable to deal with wicked problems, rather than the hierarchic model and the market model (Kenis & Provan, 2008). '*Network governance is connecting or sharing information, resources, activities and competencies of at least three organizations to jointly achieve outcomes*' (Kenis & Provan, 2008, p.296). The new legislation regarding housing appears to be based on network governance, because of the cooperation between different parties, an attempt is made to jointly create outcomes. The general view among many service providers, policymakers and researchers is that integrating services through networks, will lead to benefits for customers by reduced fragmentation and better coordination of services, this will lead to a more effective system and therefore to more positive results (Turrini et al., 2010). To determine the network effectiveness, Turrini et al., (2010) have created a framework with determinants that determine the effectiveness of a network. This framework is based on the studies of Provan and Milward (1995) and Provan and Sebastian (1998), these studies are seen as the basis for network effectiveness (Turrini et al., 2010).

1.1 Problem statement

The Netherlands is currently in a housing crisis, young people cannot or hardly find an affordable house, with all kinds of negative consequences, which are already mentioned above. The Dutch government is trying to intervene in this crisis by applying a different form of governance. This thesis attempts to research from a case study whether network governance will be effective in making the housing crisis manageable. For this thesis, the framework of Turrini et al., (2010) is applied to research whether the housing network is effective in solving the housing problem. In which the housing network of the municipality of Twenterand is examined in the form of a case study. The choice to research the network of the municipality of Twenterand as a case study was made because the municipality of Twenterand has proactively drawn up policy on the new legislation regarding housing, which resulted in a housing vision of 2022-2026. This housing vision contains the goals of the municipality and how and with whom they can be achieved. In addition, there is an informant in the network who contributes positively to the speed in which the research can be conducted. This ensures that the research can be conducted in an effective and efficient manner while also keeping costs limited. The municipality of Twenterand is characterized by a population of just over 33,000, which means that Twenterand is a small municipality in the rural area. In addition, the municipality of Twenterand is characterized by its proximity to the major cities in Twente, Almelo, Hengelo, and Enschede.

1.2 The aim and research questions

The aim of this thesis is to discover how network governance influences the effectiveness of network governance of housing provision in the municipality of Twenterand. The following research question is formulated:

How do structural network characteristics influence the network effectiveness of the housing provision of the municipality of Twenterand to achieve goals?

To answer the research question the following sub-questions have been formulated:

1. *how to define the structural network characteristics in housing provision in Twenterand?*
2. *What are the internal and external challenges of housing provision in Twenterand?*
3. *How do structural network characteristics influence the challenges of housing provision in Twenterand?*
4. *How do the challenges influence the network effectiveness of the housing provision of the municipality of Twenterand?*

The independent variables in this research question are the structural network characteristics and the dependent variable is the effectiveness of the housing provision of the municipality of Twenterand to achieve stated goals. The intermediate variables are the challenges. The structural network characteristics consist of six determinants/variables: external control, integration mechanisms and tools, size and composition, formalization, accountability and network inner stability (Turrini et al., 2010). These structural characteristics and the other concepts will be described in depth in the theory section.

1.3 Relevance

This research is relevant for the science of public administration because the shifting of the governance model may pose challenges deriving from the network itself and may pose challenges deriving from contextual factors. These challenges may become known by examining the effectiveness of the network, where this network is ineffective, challenges of shifting the governance model may become known, which could contribute to the literature regarding this subject. In addition, Turrini et al.'s paper states that future studies should look at the potential interaction effects between the determinants of the identified clusters of variables. This research focuses on the cluster structural network characteristics, whereby the interaction between these variables will also emerge during the interviews. The social value of this research is characterized by the fact that this research may provide insights into how a housing network within a rural municipality can be made more efficient for better outcomes. In this study, better outcomes refer to improving housing in the

municipality of Twenterand. This research is a case study, the results can therefore be generalized to a certain extent. However, this case is comparable to many rural municipalities, which may be able to learn from the recommendations arising from this research.

1.4 Outline

This thesis continues with the theoretical framework, where the existing literature will be analyzed, and concepts will be presented. This is followed by the methodology, which describes which methods are used to conduct the research. Followed by empirical findings and analysis, where the sub-questions are answered and the data is analyzed. Then the conclusion is presented, where the answer to the research question is given. Followed by chapter discussion and chapter recommendations.

2. Theoretical Framework

This chapter presents the findings from the literature about the concepts that are used in this research. The concepts that will be discussed and defined are network governance, network structural characteristics and network effectiveness, in addition, challenges are defined.

2.1 Network governance

There are different models that governments can apply to govern, like traditional models based on the principles of market and hierarchy. The way in which governance is done and which governance model is leading is changing over time. In 1990 a trend was already visible in which businesses, as well as organizations in the not-for-profit and public sectors, are increasingly turning to various forms of cooperative alliances (Powell, 1990). Traditional models like market or hierarchy have no mechanisms to be a suitable form of government with these characteristics, network governance has these mechanisms. The reason for turning into various forms of cooperative alliances is to make use of each other's, for example, expertise and resources, to achieve outcomes that could not be achieved by one actor/organization. This form of cooperative governance is often associated with wicked problems (problems that are unsolvable, because of incomplete, contractionary and changing requirements) (Provan & Kenis, 2008).

To provide better insight into network governance, it is important to clearly define the concept of a network. Academics have produced many findings regarding networks. For this research, the definition of Turrini et al. (2010) is applied. Where a network is '*a set of organizations (and not individuals or parts of organizations) that coordinate their joint activities through different types of peer-to-peer relations'* (Turrini et al., 2010, p.529).

The definition of networks leads to the definition of network governance as described by Provan and Kenis (2008): *'Network governance is connecting, or sharing information, resources, activities and competencies of at least three organizations to jointly achieve an outcome'* (Provan & Kenis, 2008, p.296). Another additional definition of network governance is given by Koppenjan and Klijn (2004): '*more or less stable patterns of social relations between mutually dependent actors, which form around public issues, and which are formed, maintained, and changed through interactions between involved actors'.* So, this concerns situations where services or products are the result of a collaboration of different organizations.

2.1.1 Forms of network governance

Provan & Kenis (2008) describe three different forms of network governance: shared governance, leader organization network and administrative organization network. The shared governance is the simplest form of governance. This form consists of different organizations that govern together in a

collective way but without an administrative unit. The decision-making and managing of the activities in the network are up to all the network members, there is no administrative entity. The general advantage of shared governance is a high degree of participation, a disadvantage of this form is inefficiency, caused by everyone within the network interfering with each other (due to the lack of a separate administrative entity). The leader organization network is a common form of network governance, which is based on vertical relationships between actors. All members in a leader organization network share to a certain extent common goals, based on interaction and cooperation. However, all activities and important decisions are coordinated by one member of the network who acts like an organizational leader. The organizational leader supports and/or facilitates the activities of participating organizations to achieve network goals. A disadvantage of this form of network governance is that the organizational leader could follow his own agenda/interest and could dominate other members in the network. In addition, an organizational leader could take tasks over from other members, this could lead to a decrease in importance in achieving common network goals, as a result, these members start to focus on their own agenda/goals. The last form of network governance which is discussed by Provan and Kenis (2008) is the network administrative organization (NAO), this is a form of network governance in which a separate entity is set up with the sole tasks of managing the network and coordinating its activities. This form is similar to leader organizational network. The difference is that NAO is not actively involved in the primary process of the network, NAO has network management as its sole and exclusive task.

2.2 Network effectiveness

The rise of network governance is described above, many different academics have written about network governance and its network effectiveness. A broad landscape of findings has emerged that often determine from different angles the extent to which a network is efficient or not. There is a continuing sense of concern about whether networks in the public sector are efficient (Provan & Milward, 2001). Where a comprehensive theory about network efficiency and its determinants has not yet been conceived, until Turrini et al. (2010) developed a framework. The framework of Turrini et al. (2010) is based on an earlier produced framework by Provan and Milward (1995) and Provan and Sebastian (1998). Through an extensive literature study, findings from other studies were examined and incorporated into the framework of Turrini et al. (2010). Which resulted in 13 specified determinants that relate to specific forms of network effectiveness. The different forms of networks effectiveness are: *client level effectiveness, community effectiveness and network level performance.* Where network level performance consists of three components: *network capacity of achieving stated goals, innovation and change and sustainability and viability.* Where client level effectiveness and community level effectiveness relate to the external effects generated by the network

structures, network level performance relate to the lifespan of a network. Provan and Milward state that: 'while a network can benefit the community in which it is embedded, and specially its group customers it servers, it must become a viable interorganizational entity if it is to survive' (Provan & Milward, 2001, p. 417).
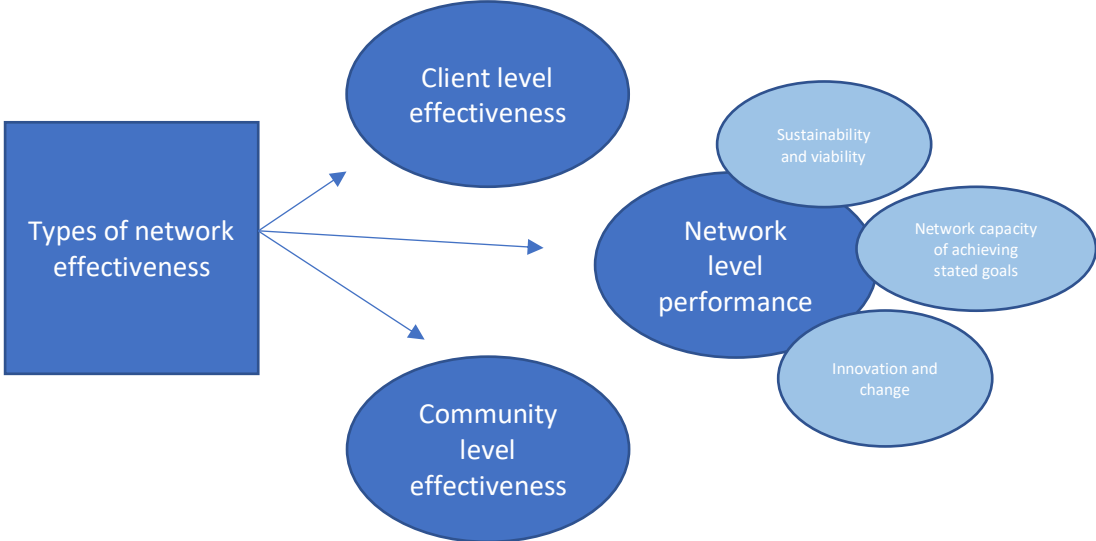
2.2.1 Client level effectiveness

Client level effectiveness is defined by Provan & Milward (1995) and is used by Turrini et al. (2010). For this research, the same definition is applied. Client level effectiveness is the improvement of the well-being of clients and the overall quality of service delivery. At client level, evaluation of network activities might therefore be developed by assessing the aggregate outcomes for the population of clients being served by the network (Turrini et al., 2010). For this research, the degree of client level effectiveness is determined by the number of homes created by the network, whereby the distribution of the type of home created, is in proportion to the demand for the type of home of the clients.

2.2.2 Community effectiveness

Community effectiveness is defined by Provan & Milward (2001) and is also applied by Turrini et al. (2010). Community effectiveness is defined as follows: '*from a community-level perspective, network effectiveness can best be evaluated first by assessing aggregate outcomes for the population of clients being served by the network, and second, by examining the overall costs of treatment and service for that client group within a given community*' (Provan & Milward, 2001).

2.2.3 Network level performance

Network level performance is determined by three components: 'sustainability and viability,' 'network innovation and change' and 'network capacity of achieving stated goals.' Where network level performance focuses on the lifespan and viability of the network.

Sustainability and viability refer to the network itself and not to the output of the network. Turrini et al. (2010) indicate that little research has been done into this form of network level performance.

The ability of a network to innovate and change is also a measure of network level performance. Where innovation and change can arise from one individual organization, but also from the network as a whole. Working within a network that can innovate and change is better able to bring about policy change than networks that have less capacity for innovation and change (Howlett, 2002).

Finally, network capacity of achieving stated goals also determines the effectiveness of networks. Several academics have expressed findings about the capacity of achieving stated goals. Turrini et al. (2010) does not provide a tightly defined definition of network capacity of achieving stated goals. Turrini et al. (2010) give some examples of other studies in which capacity of achieving stated goals is described through practical examples. These practical examples show that the network capacity of achieving stated goals depends on the stated goals within a network and the actual achieved outcomes of the network. The capacity of the network refers to the capacity that the network has to achieve the stated goals, like the breath and heterogeneity of the network and the degree of trust, reciprocity and norms of cooperation in the network. The stated goals for the housing network in the municipality of Twenterand are: build 550 homes before 2032, build faster, sufficient affordable housing and attention to target groups who have difficulty finding suitable housing (Twenterand, 2022). These stated goals are derived from the housing vision 2022-2026 of the municipality of Twenterand and are based on housing needs research that the municipality had conducted.

2.3 Structural network characteristics Turrini et al. (2010)

The research question contains the concept of structural network characteristics. This concept derives from the framework of Turrini et al. (2010) and consists of several determinants that can contribute to the effectiveness of a network. The structural network characteristics are: external control, integration mechanisms and tools, size and composition, formalization, accountability and network inner stability.

2.3.1 External control

The definition of external control is presented as follows: *'External control refers to the network dependence on constituencies, variously identified in the different context where the network operates'* (Turrini et al. 2010. P.540). In other words, network dependence on constitutions influences network effectiveness. Where research has shown that external control has a moderating effect on the network structure, on network clients' wellbeing or directly and positively influence the network outcomes (O'Toole and Meier, 2004) (Provan & Milward, 1995). External control lowers the probability of network shirking and free riding in using funds (Alchian & Demsetz, 1972).

2.3.2 Integration mechanisms and tools

Integration mechanisms and tools is another structural network characteristic. Integration emerges as a major determinant of network effectiveness. Integration which occurs through a central core agency, aiming at coordinating other members of the network is more effective than integration defined through multi-lateral interactions (Turrini et al. 2010). Besides, *'integration that supports effectiveness is defined by the presence of one coordinated agency and different sub-sets that are highly cohesive and strongly linked to each other'* (Turrini et al. 2010. P.541) (Provan & Sebastian, 1998). The coexistence of these different forms of integration has positive impact on the network effectiveness, especially in the network's ability to achieve stated goals.

2.3.3 Size and composition

Turrini et al. (2010) states that the literature cannot explain nor determine the direction of influence of the size and composition of the network, on network performance level. These influences seem to vary, depending on the networking phase of growth. What can be said with certainty is that the larger the network, the lower the degree of its perceived effectiveness (Hasnain-Wynia et al. 2003). From further research into the effect of size and composition on network level performance, Brown et al. (2002) recommend to cap the number of members to achieve a higher performance level or creating a governance mechanism that can carefully attract or reject new members in the network. The extent to which this recommendation is applicable depends on the networking phase of growth as well.

2.3.4 Formalization and accountability

Formalization and accountability are two structural network characteristics that influence the network effectiveness. By which formalization refers to formalized rules, organized meetings, written agenda and decision-making procedures. The formalization characteristics in a network and its effects are dependent on the level of network integration (Hasnain-Wynia et al. 2003). The

formalization of network outcomes is a driver to internal and external effectiveness. The importance of accountability to external stakeholders, ensures that adoption of explicit and shared measures and techniques for evaluating networks progress. Furthermore, external communication could ensure greater interest and participation from a broader community, which is an important contextual factor towards network effectiveness.

2.3.5 Network inner stability

Network inner stability refers to the stability of personnel working in the network (Turrini et al. 2010). An indicator of network inner stability is the length of time managers spend in the network, where trust and reciprocity can arise when there is stable management.

A stable long during management facilitates trust building, knowledge diffusion in the network, and continuity in relationships, these factors are all likely to be conducive to a higher level of integration and therefore network effectiveness (Turrini et al. 2010).

2.4 Framework Turrini et al. (2010)

Figure 1 framework Turrini et al.
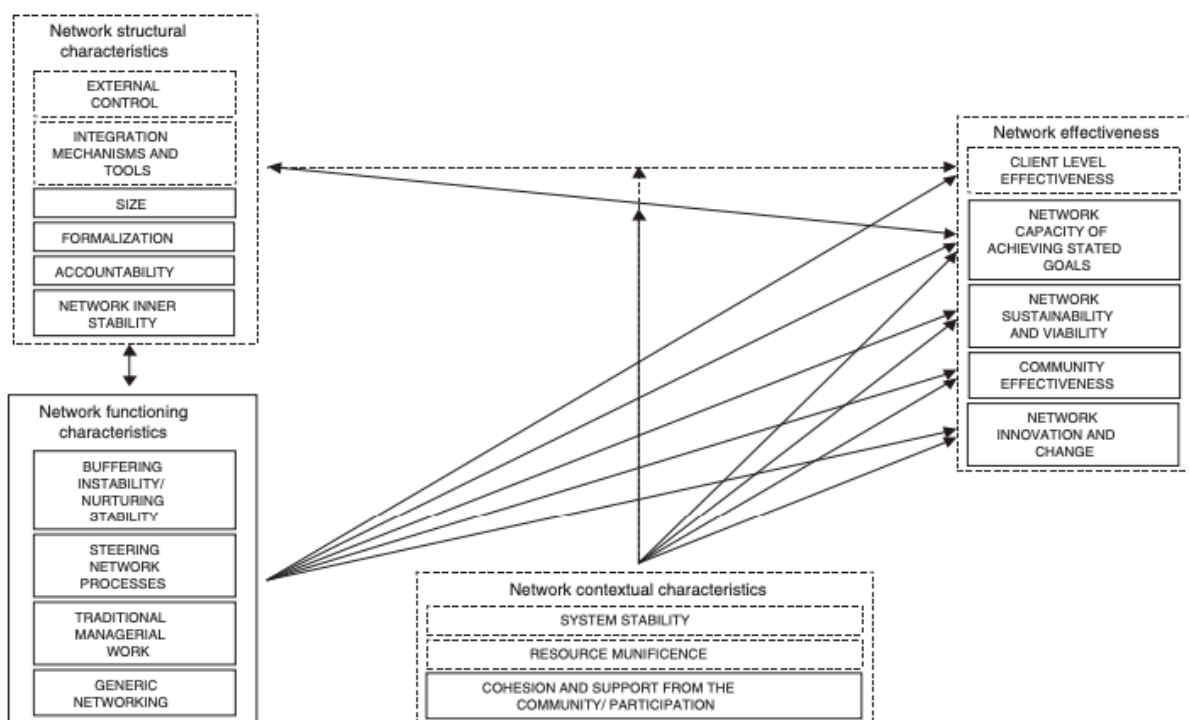
Figure 1 presents the framework of Turrini et al. (2010). This framework arose from the literature research of Turrini et al., with the findings of Provan and Milward (1995) forming the basis of this framework. This research focuses on how the structural network characteristics influence the network effectiveness of the housing network of the municipality of Twenterand. So, the bottom two

parts of the framework are not specified in this theoretical framework. The framework shows a relationship between cohesion and support from the community/participation towards the integration mechanisms and tools. This relationship is mentioned in the above paragraph and will be considered this further research. The reason for investigating a limited part of Turrini's et al. (2010) framework in this study is twofold. Firstly, Turrini et al.'s paper states that future studies should look at the potential interaction effects between the determinants of the identified clusters of variables. This research focuses on the cluster structural network characteristics, whereby the interaction between these variables will emerge during the data collection. Secondly, the law that must ensure that the housing shortage becomes manageable by making use of the principles of network governance, recently came into effect in 2022. This means that a strong management structure has probably not yet emerged, which indicates that it is expected that no or hardly reliable findings can emerge when the network functioning characteristics are being researched, as these characteristics relates to the actual management and control of the network.

2.5 Challenges

The sub-questions and the conceptual model contain the concept challenges. To research whether structural network characteristics influence the effectiveness of the housing provision of the municipality of Twenterand to achieve goals, it is important to analyze which challenges underlie this. This research distinguishes between two types of challenges. The first type of challenge is a direct result of activities and/or structure of the Twenterand network. These challenges therefore arise from the network and can be regarded as internal challenges. The second type of challenge arise in the context of the Twenterand network and can be regarded as external challenges. These external challenges are characterized by the fact that they largely apply to other housing networks in the Netherlands, where the activities and/or structure of the Twenterand network has no influence on the emergence of these challenges. These external challenges could be considered as contextual factors.

2.6 Conceptual model

This thesis aims to research how structural network characteristics influence the effectiveness of the housing provision of the municipality of Twenterand to achieve goals. The conceptualization above has defined the different relevant concepts of this research. To clearly represent the relationships between the given concepts, a conceptual model has been drawn up that visually illustrates the relationships, see figure 2.
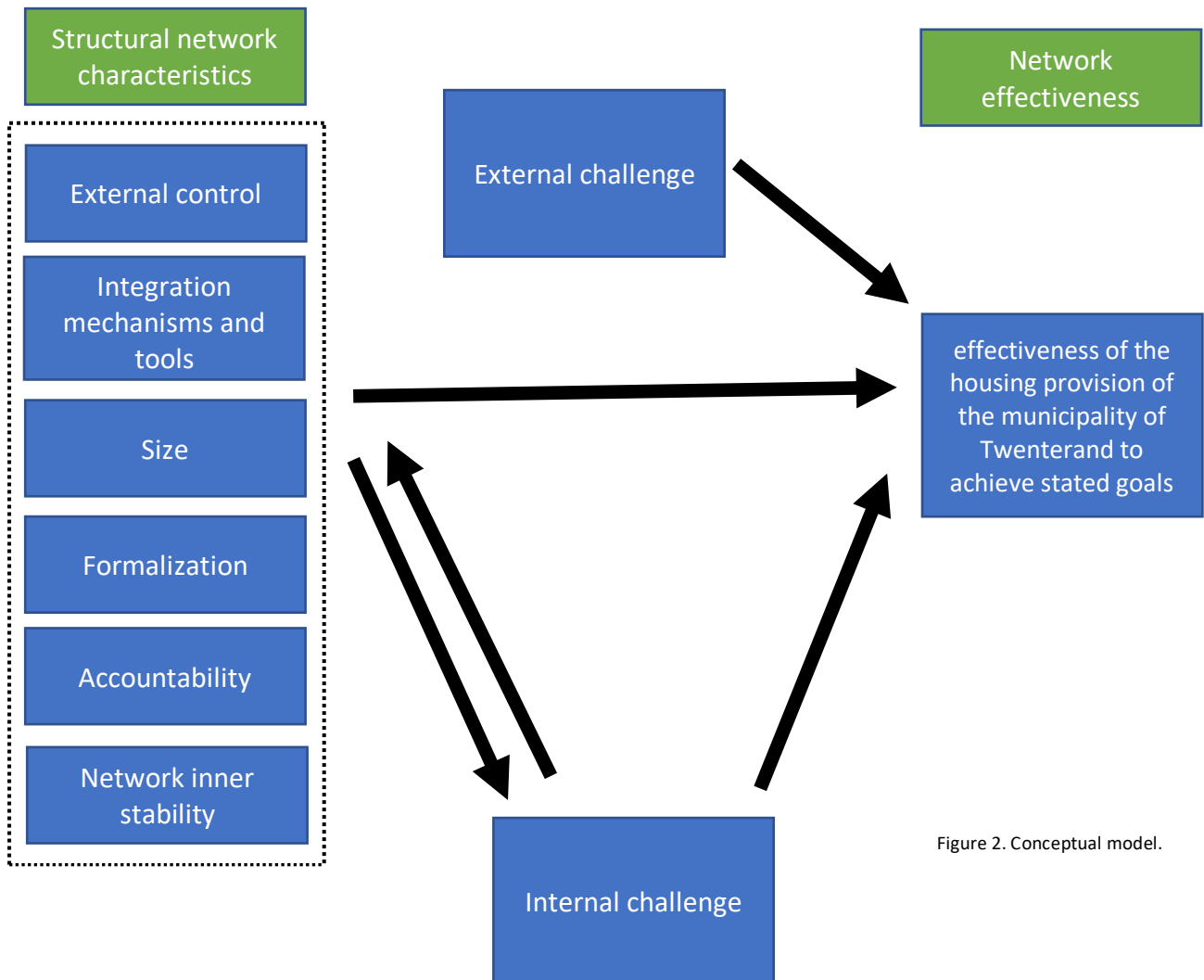

Figure 2. Conceptual model.

3. Methodology

The methodology of this research consists of different steps, which are described in this chapter. First, the design and research methods will be discussed. Secondly, an explanation of the case and sample strategy will follow. Thereafter data collection, operationalization of variables and analysis will follow. Finally, the reliability and validity of this research are discussed.

3.1 Research Design

This study has a qualitative basis, since relationships within a network are being researched. Qualitative research contributes providing in-depth knowledge on how relationships are settled among actors and how and by what these relationships are influenced. For this research a qualitative design is created because of the subject of the research. The focus of this study is network effectiveness of the housing provision of the municipality of Twenterand, whereby the focus lies on gaining insight in the perceptions and opinions of the actors in the network. In addition, the housing provision network of Twenterand consists of approximately eight different actors/organizations, these are too few respondents to conduct a quantitative study.

3.2 Case selection

This research, which aims to discover how structural network characteristics influence the effectiveness of the housing provision of Twenterand to achieve goals, takes place within the municipality of Twenterand. This specific case is chosen to research as a case study because of several reasons. The municipality of Twenterand responded proactively to the change in the law on housing, by responding quickly with a report describing how they deal with this change of law. The report was comprehensive and showed how and with whom they intend to achieve the goals of the law change. In addition, an informant is available for this case who is willing to suggest suitable respondents and share essential documents. For this type of research, it is important to have an informant, for example to be introduced to different actors and ensure that interviews can be conducted in a fast time.

3.3 Sample strategy

This study is conducted in a situation that does not permit the kinds of probability samples used in large-scale social surveys. This study is a case study in which a select group of respondents is available. The case in Twenterand consists of eight different organizations, where some organizations may consist of multiple actors with different actions and goals. The number of possible respondents for this study is therefore not large. To conduct a proper sample for this study, nonprobability

sampling will be used. '*Nonprobability sampling requires any technique in which samples are selected in some way not suggested by probability theory*' (Babbie, 2016, p.186).

To provide a well-considered comprehensive sample, the strategy of purposive sampling is being used, *'a type of nonprobability sampling in which the units to be observed are selected based on the researcher's judgement about which ones will be the most useful or representative.* The expertise as a researcher to make a choice as to which respondents will and will not be investigated comes from literature research and document analysis. In addition, the expertise of an informant is used to provide insight into which respondents are important to research and which are of less importance.

3.4 Data collection

The data collection of this study is based on a mixed method approach. The mixed method approach consists of two approaches: semi-structured interviews and document-analysis. Interviews are helpful to discover insights into the perspectives and opinions of the people involved, based on a set of topics to be discussed in depth. The method interviewing is characterized by the semi-structured design of the interviews. The semi-structured design is applied to provide the possibility to ask more in-depth follow-up questions. The possibility for in-depth follow up questions is needed for this study, to examine the possible underlying tensions and actions in the relationships among the actors. In addition, different actors with different characteristics and interest are examined, the semi-structure in the interviews provides the opportunity to discuss per interview the structural network characteristics that are most important for that specific actor.

In addition, a document analysis is being applied in this research. This document analysis is helpful to provide insights in the sub questions. Besides, the document analysis is helpful to provide insights in the elaboration of various structural network characteristics. These two research methods jointly contribute to answering the research question, where the interviews reveal underlying relationships and the document analysis provides insights into the written findings, goals, rules, etc. of the housing network in Twenterand. The document analysis is conducted first. Then the interviews, where some findings from the document analysis are discussed during the interviews, this will be further explained in the operationalization 3.5.

3.5 Operationalization variables

The described variables in the theoretical framework and the conceptual model are operationalized in this section. The operationalization of variables ensures that the research can be conducted systematically. The table below presents the operationalization of structural network characteristics, the variable consists of six dimensions which are specified by the topics. The topics were then

translated into practical indicators. These practical indicators ensure that the dimensions of the variable can be recognized in empirical context derived from document analysis and interview transcripts. The operationalization of the structural network characteristics is aimed at answering the sub-question 1 *how to define the structural network characteristics in Twenterand?* and sub-question 3 *How do structural network characteristics influence the challenges of the housing provision Twenterand?* The operationalization of the structural network characteristics forms the basis for answering the research question: *How do structural network characteristics influence the network effectiveness of the housing provision of the municipality of Twenterand to achieve goals?*

Concept	Dimension	Variables	Indicators
Structural network characteristics	External control	- agency control - Information and communication systems	- Existence of a state regulatory agency control - usage of the same info and communication systems
	Integration mechanisms and tools	- steering committee - Joint staff activities - Partnership synergy	- existence of a steering committee - existence of joint staff activities (marketing, funding and planning) - combined perspectives, knowledge and skills among actors
	Size	- Growth - Breath and heterogeneity of membership	- Cap to growth by selecting participants that are new - number of actors - differences among actors, goals, perspectives
	Formalization	- measurement - structure	- usage of explicit ongoing outcome measurement - formalized rules, meeting organization, written agenda, decision making procedures

	Accountability	- diversity among partnerships	- Incorporate diverse community voices in partnerships
	Network inner stability	- Trust - Reciprocity - Norms of cooperation	- perceived trust among actors - reciprocity between actors - willingness to cooperate between actors

Table 1. operationalization structural network characteristics

To answer the research question, it is necessary to operationalize the variable network effectiveness. In addition, the operationalization of network effectiveness contributes to the answer to sub-question 4 *How do the challenges influence the network effectiveness of the housing provision of the municipality of Twenterand?* As already mentioned in the theoretical framework the variable network effectiveness consists of three perspectives, client-level effectiveness, community-level effectiveness and network performance level.

From the community-level perspective, network effectiveness can be measured by assessing aggregate outcomes for the population of clients being served by the network, and second, by examining the overall costs of treatment and service for that client group within a given community (Provan & Milward, 2001). The specific network characteristics that have an impact on community-level effectiveness are also analyzed and the impact they exert is determined. (see table 2). Examining the overall costs of treatment and service for that client group within a given community, is difficult to measure in this study. The Public Housing Reinforcement Act states that 70% of the new homes to be built are intended for the normal market, so profits are made here and the costs for realization are borne by the buyer. The community therefore does not incur any costs on 70% of the built homes. The other 30% of the homes are initiated by the housing association and are intended for people who are entitled to social housing. Costs for the community may arise here when subsidies are issued to housing associations to build additional houses. However, this part, which looks at the overall costs of treatment and service for a client group within a given community, is not included in measuring community-level effectives. The share of total costs for the community is difficult to research since housing associations are financed by low-interest loans. Housing associations can therefore be financed on favorable turns, residents of these homes also pay rent to the housing association, so the tenants themselves also contribute to the total financing of the social rent housing. This makes it difficult to express the costs incurred for the community. In addition, the measuring method used by Provan & Milward (2001) is based on healthcare research, where

extreme costs may arise for the community when some clients receive expensive treatments. However, this is not the case with housing.

To operationalize client-level effectiveness, it is necessary to determine when effectiveness at the client-level can be considered as effective, to determine whether there is network effectiveness. From the theoretical framework it emerged that client-level effectiveness can be measured by assessing the aggregate outcomes for the population of clients being served by the network, where specific clients get the houses they want/need (Turrini et al. 2010). For this research, the degree of client-level effectiveness is determined by the extent to which clients get the houses they want/need.

To research network level performance, the three components must be operationalized, the three components are sustainability and viability, innovation and change and network capacity to achieve stated goals. Sustainability and viability and innovation and change will be measured by analyzing the structural network characteristics that relate to these parts of network level performance and determine what impact these structural network characteristics have on network level performance. In addition, capacity to achieve stated goals is researched in the same way as the other two subsections of network level performance, so the structural network characteristics related to capacity to achieve stated goals are analyzed and then the impact on network level performance is determined (see table 2). Also, when measuring capacity to achieve stated goals, the stated goals of the network has to be compared with the output that the network has achieved. This comparison provides insight into the network's capacity to achieve stated goals, and so network level performance.

The network effectiveness in the research question is determined based on community-level effectiveness. This means that the network effectiveness of the Twenterand housing network is expressed by the aggregate outcomes for the population of clients being served by the network. The influence of the structural network characteristics on network effectiveness can be expressed based on the impact that design of the structural network characteristics has (see table 2).

Structural network characteristic	Variable	impact	Type of network effectiveness
External control	- agency control	- positive	- Client-level
	- Information and communication systems	- mildly positive	- Client-level - Network level perf. (capacity to achieve stated goals; sustainability and viability)

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Integration mechanisms and tools	- steering committee	- Positive	- Community-level
	- Joint staff activities	- Mildly positive - Positive	- Client-level - Network level perf. (Capacity to achieve stated goals)
	- Partnership synergy	- Positive	- Network level perf. (Capacity to achieve stated goals)
Size	- Growth	- Positive	- Network level perf. (capacity to achieve stated goals; sustainability and viability)
	- Breath and heterogeneity of membership	- Some effects/positive	- Client-level -network level perf. (capacity to achieve stated goals)
Formalization	- measurement	- Positive	- All types of network effectiveness
	- structure	- Some effects/ positive	- Client level
Accountability	- diversity among partnerships	- Positive	- Network level perf. (capacity of achieving stated goals; sustainability and viability)
Network inner stability	- Trust - Reciprocity - Norms of cooperation	- Positive	- community level -client level - network level Perf. (capacity to achieve stated goals; sustainability and viability)

Table 2. Impact structural network characteristics on types of network effectiveness

The operationalization of sub-question 1 *how to define the structural network characteristics in Twenterand?* is aimed at providing a description of the design of structural network characteristics in the housing network of Twenterand. The operationalization of the structural network characteristics in table 1 are translated into semi-structured interview questions. The data that arises from the interviews and document-analysis are jointly analyzed to define how the structural network characteristics are expressed in the Twenterand network. With these findings sub-question 1 can be answered, these findings are shown in chapter 4.

To research sub-question 2 *What are the internal and external challenges of housing provision of Twenterand?* it is needed to operationalize the concepts internal challenges and external challenges. Challenges that are a direct result of activities and/or structure of the network are considered as internal challenges. The document analysis will probably not reveal suitable data regarding internal challenges. The internal challenges are experienced (or not) by actors in the network. This experience will probably not be documented, so the internal challenges arise from the semi-structured interviews, in which questions regarding internal challenges are asked (see Appendix 1).

The challenges which arise outside the interactions and/or influences of the network can be regarded as external challenges. These external challenges influence network outcomes and are therefore documented in policy. Document analysis is therefore suitable for finding external challenges. The data resulting from the document analysis and semi-structured interviews are applied to answer sub-question 3 and 4.

To research sub-question 3 *how do structural network characteristics influence the internal and external challenges of housing provision in Twenterand?* and 4 *How do the internal and external challenges influence the network effectiveness of the housing provision of the municipality of Twenterand?* there is no more operationalization of concepts needed. The concepts in these sub-questions have already been operationalized above. Sub-questions 3 and 4 are researched by asking these questions to the respondents during the interviews. The questions are abstract to ask respondents. Therefore, the semi-structured interviews will first address all aspects included in these sub-questions. So, when the structural network characteristics and the internal and external challenges have been discussed in the interview, sub-question 3 and 4 can be asked to the respondents. The semi-structured design allows to answer these sub-questions in parts. (See Appendix 1).

3.6 Analysis

This thesis consists of a mixed method approach to gather data. The extensive literature study that has been conducted in the theoretical framework provides answering the sub-questions and has strongly contributed to the operationalization of the variables in section 3.5. Furthermore, the extensive literature study has shown what is already known about the correlations between the studied concepts. The strategy for analyzing the document analysis and the interviews are described below.

3.6.1   Document-analysis

The document analysis has provided useful information in defining network governance in the housing provision in Twenterand, which forms the base of this thesis. Besides, the document-analysis contributed to the recognition of challenges which occurs in the housing provision of Twenterand. The document-analysis also provided information about stakeholders and their specific roles in the network. The documents that have been analyzed are public accessible documents, originative from government institutions and websites from other actors.

3.6.2   Interviews

This thesis collected data from seven actors in the housing network through interviews. The conducted interviews will be transcribed based on the audio recording and processed in the ATLAS.ti program. Thereafter, the answers are coded into the categories of the variable structure that is developed in the operationalization section (3.5). By linking the data to codes, it can be analyzed how the given concepts in the operationalization are designed/implemented in the network. The codes work as a framework in which various data that refer to a certain concept can be housed. This allows a structured analysis of how all the data obtained regarding a concept relate to each other.

3.7 Validity and reliability

Research methods have advantages and disadvantages that can influence the reliability and validity of a research, including this research that falls under the qualitative research method. Well-known criticism with this type of research comes from that the data is obtained in a single context and the possibility that researcher's bias could interpreted the data. Because of these characteristics, it is important to ensure the reliability and validity of this study.

3.7.1   Reliability

Reliability in research suggests that the same data would have been collected each time in repeated observations of the same phenomenon (Babbie, 2016). To achieve reliability in research, accuracy and consistency of the measurements are important. To claim reliability in this research this research was conducted in a manner that was as transparent as possible, with also taking the repeatability of the research into account. Steps have been taken to guarantee transparency and repeatability to create reliable research. The coding scheme brings transparency to the researcher's theoretical considerations. In addition, the coding scheme shows how the semi-structured interview questions emerged from the theory applied and explored in this study and the coding scheme shows how the data is being analyzed. Finally, to prevent the possible influence of the researcher's bias, the

interviews are recorded and transcribed. This gives the researcher himself the opportunity to identify bias, and to act upon it if necessary. In addition, this contributes to transparency of the research, and other people can also check whether there was any bias in this research presented.

3.7.2 Validity

Validity in research *'refers to the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration'* (Babbie, 2016, p.148). Validity in research can be expressed in two ways, internal validity and external validity. Internal validity refers to that the researcher measures what he is intended to measure. External validity refers to the way in which the research outcomes could be generalized towards other situations, with different actors and different circumstances.

The internal validity of this research is high because of the usage of a structured coding scheme, which is based on the list of variables in section 3.5. The coding scheme forms the basis for data collection and is based on well-founded studies. In addition, all actors of interest in the research are examined through semi-structured interviews, which should provide a comprehensive picture of the case in which all interests are considered. The document-analysis also contributes to the internal validity of this research. The document-analysis shows which external influences may have influenced the effectiveness of the network and thus can be differentiated from the concepts which are being studied in this research.

The external validity of this research is low, this thesis is a case study which is strongly focused on a specific case to which the entire research is tailored. However, there are many municipalities in the Netherlands that have the same problematics and have similar demographic and geographical characteristics as Twenterand, therefore the external validity does not have to be underestimated.

4. Empirical findings & analysis

The obtained data from the interviews and document-analysis is interpreted and analyzed in this chapter, where the findings of the sub-questions are analyzed and answered. The findings and answers are presented per sub-question.

4.1 How to define the structural network characteristics in housing provision of Twenterand?

Size: the data from the interviews showed unanimity regarding the members and the size of the network. The respondents indicate that the members of the network consist of the municipality, market parties, Mijande (housing association), and the province. Where market parties consist of real estate agents, construction contractors, project developers, notaries and financial advisors, these market parties are united in the housing network of Twenterand as the VST (Volkshuisvesting Sociëteit Twenterand, Public housing Society Twenterand). The composition of the VST is not fixed, members can join and/or leave the VST without any barriers. In addition, involvement in the VST as a market party is not an obligation to participate in the Twenterand network, the VST acts as a sounding board in which interest and ideas of market parties can be united and information can be shared in a structured manner between other actors. The data of the document-analysis states that there are two additional members to the network, central government and neighboring municipalities. However, these parties did not appear as relevant actors according to the obtained data from the interviews. The interviews show that the goals set by the central government do influence the network, but those goals are formed by the province into regional goals on which the province monitors. The central government is therefore not considered as a partner in the network. Interviews do not reveal that neighboring municipalities are part of the network in Twenterand. However, one respondent indicated that he/she saw added value in actively involving neighboring municipalities in the Twenterand network. This view is supported by the following quote from the document analysis:

'Collaboration with partners within and outside the municipality in the spatial domain is indispensable. We therefore actively participate in existing networks and seek coordination and cooperation with the surrounding municipalities. In 2024, it will be explored how joint efforts can be made with the surrounding municipalities on the spatial file towards the national government, the province and the surrounding municipalities.'

The data shows that this collaboration has not yet been achieved in July 2024. It will be difficult to achieve this collaboration in 2024, the challenges given in Chapter 5 underlie this and will provide

further depth to this. Finally, two respondents indicate that the network could be supplemented with expertise from knowledge institutes such as the University of Twente and Saxion University of Applied Sciences.

External control: the obtained data shows that external control is present in the network in two ways. Where external control does not directly apply to every actor in the network. However, the exercise of external control over parties could influence parties that are not directly involved in the external control, every actor could therefore feel the influences of external control. The external control has been conducted by the province, which monitors that goals and targets are being pursued by the municipality and fit within the further policy of the province. The external control therefore does not directly apply to all actors in the network. The external control in this network is intended to continue to push the municipality in the right direction to achieve set goals, in which the housing association is also involved, but there are no influential consequences when the province exercises external control. Moreover, the province is also involved as a partner in the network itself, so the province has two distinct roles in this network, as a partner and as external controller. The other external control is conducted by the authority housing association, this authority controls the housing association. Due to the reciprocity relationship between the corporation and the municipality, this external control also influences the municipality, which is why this authority is included as an institution that conducts external control, like the province. The nature of external control exercised by the housing association authority is described by the following quote:

'We are very closely monitored by the housing association authority, so we have to account for everything we do.'

In addition, it has emerged that actors in the network do not use the same information and communication systems. The data shows that the municipality and the housing association do have the same communication system however, the information system differs from each other. Besides, the municipality and the province do use the same information and communication systems, which shapes the structure for external control. However, the other actors in the network make use of other information and communication systems, which do not work and communicate with those of other actors. This lack of uniformity between information and communication systems can cause tensions within the network, this will be discussed further in the analysis.

Formalization: The obtained data shows that there is formalization present in the network, in terms of structure and usage of explicit ongoing outcome measurement. However, the formalization in terms of structure is fragmented and does not apply to every actor in the network. Formalization in terms of structure is strongly presented by interactions between the municipality and the housing association. These actors establish periodic performance agreements with each other, which are considered twice a year and, if necessary, renegotiated with each other. A standardized procedure is used to structure these performance agreements. Formalization in terms of structure also emerges between the municipality and the province, this is reflected in the housing Twente deal in which the goal is set to build 550 homes in the period 2022 to 2030 in Twenterand. Formalization in terms of usage of explicit ongoing outcome measurement is reflected by the 'Dashboard Wonen,' in which all network output is monitored. The data shows that there is a lack of formalization in the definition of the network roles, this is particularly evident in the roles of the municipality. The roles that the municipality has in the network are not defined and structured through formalization, causing confusion among network members about who does what at the municipality and from what interests. Moreover, in certain situation, network members do not know who to contact at the municipality, which means that information could not end up in the right places in the municipality and further interaction stops.

Accountability: The formalization of the network forms the basis for the elaboration of accountability in the network. The data shows that there is not much formalization present, actors can be held accountable for their actions/output if those actions are specified in the present formalization in the network. The data shows that the only form of formalization lies between municipality and province and between municipality and housing association. So, the municipality and the housing association are accountable to each other based on the performance agreements. The municipality can be held accountable for the goals set by the province, based on the housing deal Twente. Furthermore, based on the existing formalization, no other parties in the network can be held accountable for certain matters. This is also supported by the data from the interviews, in which the market parties indicated that they were not officially accountable for any matters in the network.

Network inner stability: the obtained data shows how the network inner stability is being expressed to a certain extent in the network in terms of trust, reciprocity and norms of cooperation. The data shows that the degree of trust between actors differs in the network. The degree of trust between the municipality and the housing association is high, respondents indicate that good cooperation in recent years and the performance agreements that the municipality and the housing association

make with each other are the basis for this perceived trust. Furthermore, the data shows that the province does not or does not want to monitor the municipality for every action, because there is a basis of trust. On the other hand, the trust of some market parties in the municipality has been damaged in recent years, because they state that the municipality has shared incorrect or insufficient information in some processes, resulting in unnecessary delays and costs. However, this damaged trust has no consequences on the willingness of actors to cooperate in the network. The data shows that the norms of cooperation are high among all respondents, this is because all respondents have an interest in building houses and see the need for this for society. To some extent there is also reciprocity in the network, this is expressed between the municipality and the housing association. This reciprocity arises from the performance agreements, in which the municipality expects certain things from the housing association and vice versa. Further reciprocity could not be obtained from the data. A market party states that it expects something in return from the municipality in terms of action and how the municipality positions itself in the network. This respondent states that he has given a lot to the network in terms of time, research and sharing of information, but that this market party has received little or nothing in return. There is therefore a lack of reciprocity between this market party and the municipality, which is supported by the following quote:

'Look, if you want to do something together, you really must do it together. We now have the feeling that a lot is being collected, but nothing is being done in return by the municipality.'

Integration mechanisms and tools: the obtained data shows how the integration mechanisms and tools are being expressed or not in the network in terms of steering committee, joint staff activities and partnership synergy. The network has no steering committee, which aims to coordinate other members of the network. This role suits the municipality well, because the municipality can be considered a central core agency, with strong relations in the network. The network also has no joint staff activities. Activities are organized in the network, but these are not joint staff activities. The activities that are currently being organized have little coherence and not all actors are invited, the presence of the municipality is frequently represented by different people with distinct functions. Where sometimes the councilor is present and other times someone from the civil service. The activities are therefore characterized by little structuring, a high turnover of different actors present and the absence of certain actors, these activities are therefore not considered as joint staff activities. The data does show that partnership synergy is present in the network, which is evident from the synergy that has arisen between the municipality and the housing association.

4.2 What are the internal and external challenges of housing provision in Twenterand?

The data obtained from the interviews and document-analysis showed several findings regarding the sub-question *What are the internal and external challenges of housing provision in Twenterand?* The findings are given below.

4.2.1 External challenges

The data from the document analysis and interviews show various external challenges. The document analysis reveals one external challenge, which is also identified as a challenge by several respondents. This challenge is that new-build homes cannot directly be connected to utilities such as drinking water and electricity, which causes delays in the delivery of the new-build homes. To have new-build homes connected on time, an application must be submitted to the utility companies, often before the zoning plan has been changed. Changing a zoning plan frequently causes delays, regardless of the utilities, so in practice this is not a workable situation and the limited connection options cause delays.

A second external challenge emerged from the interviews, with all respondents citing it as a major delaying factor in housing. This external challenge is notice of objections. Citizens can appeal against government decisions that relate to that person, for example when there are plans to build a residential area next to a person's house, that owner can submit a notice of objection. In practice, this means that one person could significantly delay the construction of hundreds of homes and, moreover, construction could also be completely abandoned. The current design of the system allows people to object to the government, moreover, the possibility to submit a notice of objections is a democratic good. However, respondents indicate different strategies that could make these challenges regarding objections more manageable, where delays can be prevented or limited to a certain extent. (See analysis)

The third and final external challenge that emerges from the data is capacity issues. All respondents indicated that the capacity problems are palpable and are causing delays at various points in the housing process. The capacity problem arises, for example, among utility companies, these companies face a major challenge in which houses are being built at an accelerated pace and where the existing power grid is in a sustainability transition. Currently, utility companies cannot meet the demand, which means waiting times are rapidly increasing.

The capacity challenge is given as an external challenge because it arises outside the influence of the Twenterand network, but the capacity challenge can also regard as an internal

challenge, because it is a consequence of activities and/or structure of the network itself. This is discussed further in section internal challenges in this Chapter.

Three external challenges emerged from the document analysis and the interviews: connection to utilities, notice of objections and capacity problems. The impact of these challenges is discussed further in the analysis.

4.2.2 Internal challenges

The data revealed several internal challenges that originate from the Twenterand network itself. The influence of the internal challenges on the Twenterand network is discussed in the analysis. The first internal challenge which arise from the Twenterand network is the sharing of information, which was pointed out by market parties. Market parties argue that information sharing within the network is not proceeding properly, with the information being outdated, incomplete and unfair. One respondent indicates that the municipality bases itself on outdated reports, whereby the practical experience of the market parties is not included in the studies, which is supported by the next quote:

'And then they come up with reports and we say: Hello! You brought that out of the old shoebox, and we are a bit annoyed by that too, because those reports cost a lot of money, a lot of time is invested in them. Those who make the report do not talk to us, and it is written that the market has been researched and that discussions have been held with… Well, then we ask our colleagues who has been there or who has told what, but eventually nobody did.'

In addition, there is a respondent who indicates that the municipality organizes information and consultation sessions for the public image, while the plans for a relevant project are already ready and almost finalized, which is supported by the following quote:

'That is actually because I know they have information but don't share it with us. And I hear that through other channels, that it is sometimes difficult. We also had a meeting about the city center, which was about the Aldi that has been moved, and we had a whole session to redesign the center. While the municipality knew that a building application had been submitted, had been approved, would be approved by the municipality, about which nothing was said to us, and that we were even invited to a lawsuit in Zwolle, that we were there as a board of retailers' association. And that us was told, that the building application has been with the municipality for a long time. Where I am again like, wait a minute, we are asked to think about how we can renovate the center, and in the end, we are here while everything has already been thought out and agreed upon and not a word has been said about it. I got really angry about that then.'

A respondent from the municipality also indicated that information sharing could be improved in the network, where better information from the market parties could be useful for the municipality. This respondent did not raise this comment as a challenge but presented it as an opportunity for the municipality and the network itself. The difference in view between whether information sharing is a challenge or an opportunity for the network makes it clear that actors have different perspectives and interests in the network. This is discussed in more detail in the analysis. The following quote is about the opportunity that the respondent of the municipality sees to obtain information from market parties.

'I am convinced that the market parties still have a lot of information that can be useful to us as a municipality. And so, let's say one thing is to get wind out of the air and secondly, to receive information from market parties and be fed to see what is really happening in the outside world.'

Another internal challenge is the relationship between actors. The data shows that relationships between actors can cause problems in the network, which leads to less or no output from the network. The current relationship between actors is stable, however, the previous director of the housing association did not have a good relationship with the Alderman of the municipality of Twenterand. All actors involved between the municipality and the housing association indicate that this poor relationship led to a construction freeze, during which nothing was conducted or built for a period. Respondents could not identify an apparent reason why this relationship was so bad, the respondents state that these persons were not each other's 'bloodline' or 'type.' Troubled relationship between directors is currently not an issue, but respondents convincingly referred to the time when the troubled relationship was present, implying that the troubled relationship has had an impact and should be prevented to prevent network problems. These findings are supported by the following quotes:

'The challenge you have with the housing association is that if you don't have good administrative relations, nothing will happen and no house will be built.'

'I happen to know that our director did not get along very well with the director of the housing association and then things immediately become complicated.'

The third internal challenges, which is also an external challenge, is the capacity challenge. The activities and structure of the Twenterand network cause capacity problems in the network, especially in the municipality. The capacity problems are, for example, visible in the SP-department (spatial planning) of the municipality. This department of the municipality supervises changes to the zoning plan of projects and the issuing of (building) permits, which are essential steps to realize housing. The growing task for the Twenterand network to realize homes, with a capacity that does not grow with the increasing demand is causing delay in housing. To make this challenge manageable, the activities and structure of the Twenterand network must be reorganized, to achieve more output with the same capacity. The following quote shows in which layers of the municipality the housing capacity problem is presented:

'The capacity problem exists at several layers in the organization, it lies with the housing policy officer, it lies with the project leaders, who operationalize and implement the projects, and it also lies with the SP-department, and that is also a movement that I see nationally, is that many people who are in it retire.'

The last internal challenge that emerges from the data is the tension between the civil servants and political representatives of the municipality of Twenterand. Several respondents indicate this tension, which is expressed in diverse ways in the network. Respondents from the municipality indicate that tensions between civil servants and political representatives arise from differences in interest. Where the political representatives have more interest in achieving short-term goals and success during the period in which the Board of Mayor and Aldermen has been appointed. While the civil servants of the municipality have more interest in achieving long-term goals. the following quote has endorsed this tension:

'Officially we are focused on the long term, but how do we keep our councilors on their toes, or alert, so that they too are committed to this, and not that after three or four times a project developer has been approached and the civil servants want something that does not fit within the program, they then say we are not going to do that. That is a difference between long-term and short-term, between administrative part and the political part.'

The tension between these parties is also reflected in the type of motions submitted by political representatives. Where respondents state that certain motions overshoot their target and have slowing effect within the municipality, and therefore housing. Respondents indicate that councilors

and aldermen sometimes do not understand the consequences of their motions, which could cause significant delays. The following quote shows the tension between the parties, which is reflected in the type of motions that are submitted.

'My view in many Councils, they have the level of detail about what color the paving tile should be, and they do not always have an overview when they start discussing how that perimeter road should run, which means that the entire plan is at a standstill, that housing construction will not go ahead. And then you will have a next council meeting in which is stated that housing constructions is not making progress, and then I think yes, you are murmuring whether that ring road should have an S-bend or an L-bend or whether it should run like this or run like that, and then there have been all kinds of studies that show that, that is the best place, and then you are asked to do additional research, and then you are just a few months further along and that is really a lot of delay, and that is one case here, but I am sure that this is also the case in many other municipalities'

This tension takes place within the municipality, but it is also reflected in other parts of the network. This is caused by the fact that representatives of the municipality in the network may differ in person and role. At meetings, actors sometimes speak to the political representatives and at other times to a civil servant. With the tensions between these parties, actors are presented with different views and ideas from these different representatives of the municipality. This means that the information sharing from the municipality is not coherent and can be contradictory towards other network members.

Four internal challenges emerged from the document analysis and the interviews: the sharing of information, the relationship between actors, tensions between political representatives and civil servants and capacity problems. The impact of these internal challenges is discussed further in this chapter in the analysis.

4.3 How do structural network characteristics influence the challenges of housing provision in Twenterand?

The influence of structural network characteristics on the internal and external challenge is given per challenge. First the influence on external challenges are presented, then the influence on the internal challenges are presented.

4.3.1 External challenges
Connection to utilities

The data shows that none of the structural network characteristics influence the challenge regarding connection to utilities. The challenge regarding connection to utilities arises from the high demand on grid companies, energy transition and the acceleration of housing construction placing greater pressure on the capacity of these companies, causing increased waiting times to be connected. Therefore, the structural network characteristics do not influence the external challenge connection to utilities. According to respondents, the only way to manage this challenge in the network is to apply to grid companies in an exceedingly early stage of the development phase of a construction plan.

Notice of objections

The data shows that none of the structural characteristics has an impact on the challenge notice of objections. Two respondents stated that when citizens participate in the process of developing housing, citizens will become more aware of the importance of expanding housing construction. As a result, respondents state that citizens become less likely to submit notice of objections to proposed plans. These views are confirmed by the framework of Turrini et al. (2010), in which cohesion and support from the community / participation has a moderating effect between the structural network characteristics and the network effectiveness. Where cohesion and support from the community / participation is a network contextual characteristic in the framework of Turrini et al. (2010). However, the structural network characteristics have no influence on the challenge notice of objections.

Capacity

The data shows that none of the structural network characteristics influence the (external) capacity challenge. The capacity problem occurs in various industries and currently appears to be a fact of the labor market. Therefore, the structural network characteristics have no influence on the external challenge capacity problems.

4.3.2 Internal challenges

The internal challenge relationship between actors is described in the findings. Several actors indicated that poor relationships between actors can lead to little or no output. This was reflected by the relationship between de councilor and the director of the housing association. However, the director of the housing association has been replaced, the relationship between these actors has now been restored, and the municipality and the housing association are producing output again. The data could not reflect findings that indicate a current deteriorating relationship between actors.

Therefore, this challenge is currently not important when analyzing and answering sub-question 3. In addition, according to the respondents, the deteriorated relationship between these actors was caused by the fact that these actors did not fit each other's type and did not click on a personal level. This shows that the structural network characteristics probably had no influence on this.

Sharing of information

The data reveals that two structural network characteristics have influence on the internal challenge sharing of information. First, external control has a positive influence on the challenge sharing of information. The external control in the network, which is conducted by the province to a certain extent, uses the same information and communication systems as the municipality and the housing association. The data shows that the use of this same system facilitates rapid interactions between these actors. However, the market parties do not use these systems. This causes interactions between market parties and government institutions to be more difficult to establish. In addition, the lack of formalization ensures that the roles of the municipality are not properly defined, which means that information from the municipality can incorrectly be interpreted. Network members are not aware of why certain information is shared by certain people in the municipality and how that information should be interpreted. The lack of formalization also has a positive influence on the challenge sharing of information.

Tensions between political representatives and civil servants

The data reveals that the lack of formalization facilitates tensions between political representatives and civil servants of Twenterand. Due to the lack of formalization of the structure of the network, no roles are defined in the network. This does not seem to lead to challenges for various actors, for these actors, their role within the network seems to be self-evident and no formalization of the structure to define roles is necessary. The formalization is needed for the municipality. The data collection shows that market parties often see the municipality as one actor, with the expectation that the municipality provides clear information and operates from one interest. In practice, there is a difference in the municipality between political representatives and civil servants (which is discussed in the findings, short-term vs. long-term). When the roles within the network are formalized, it becomes clear who does what and from what interest. This ensures that actors are better able to distinguish which information comes from where and why. Instead of the current appearance of information coming from a black box, where actors could have no idea why certain

information comes through the network and by who. Defining the roles by formalization is also important for the municipality itself because sometimes the people in the municipality are not aware of what role the municipality has in certain situations.

Capacity

The data reveals that none of the structural network characteristics have influence on the internal challenge capacity problems. The capacity problems of the network are mainly reflected in the spatial planning department of the municipality. Several administrative steps are required to change permits and zoning plans. The growing task for municipalities to realize homes, resulting in more workload, and a capacity that does not grow with the increasing demand is causing delay in housing. The delay caused by capacity problems, occurs outside the influence of the structural network characteristics. The following quote shows how the capacity problem is expressed within the municipality.

'The capacity problem exists at several layers in the organization, it lies with the housing policy officer, it lies with the project leaders, who operationalize and implement the projects, and it also lies with the SP-department, and that is also a movement that I see nationally, is that many people who are in it retire.'

4.4 How do the challenges influence the network effectiveness of the housing provision of the municipality of Twenterand?

To answer this sub-question, the influence of the challenges on the client-level effectiveness, community-level effectiveness and network performance level is analyzed per challenge based on the data. First the external challenges are analyzed and then the internal challenges.

4.4.1 External challenges

Connection utilities have a negative influence on community-level effectiveness and client-level effectiveness, it has no influence on network performance level. The challenge regarding connection to utilities causes delays in the output of the network. The capacity to achieve stated goals of the Twenterand network on the other hand is not affected. Whether the capacity of the network to achieve stated goals is influenced depends on which actors you consider to be network members and which not. Grid companies are considered non-members, therefore connection to utilities has no influence on the capacity of the network to achieve stated goals. The respondents were unanimous

about the size of the network and its members, where grid companies are not considered as network members (see findings *size*).

Notice of objections has a negative influence on all levels of network effectiveness. The output of the network is delayed and/or output is not realized due to notice of objections. In addition, the handling of notice of objections takes up network capacity to achieve stated goals, which negatively influences network level performance.

The external challenge capacity has a negative influence on all levels of network effectiveness. Output from the network is delayed due to the capacity problem, and the capacity problem also affects the capacity of the network to achieve stated goals.

4.4.2 Internal challenges

The influence of capacity as external challenge is shown above and is the same for capacity as internal challenge. Sharing of information has little or no impact on client-level effectiveness and community-level effectiveness. The challenge of sharing information can lead to delays, but this delay is negligible compared to the outlined situation above. Currently, the sharing of information challenge only affects the network level performance on the sustainability and viability of the network. The data showed that sharing of information challenge leads to frustrations between actors, but the data does not show that this challenge has an influence on community-level and client-level effectiveness, the output of the network is therefore not affected. Information sharing refers to sharing information after decision-making, which is why plans are already being implemented and therefore do not cause delay in the network's output. Some market parties feel frustrated because they feel like they are missing out because things have been decided without their knowledge, which leads to feelings of frustration and effects the network level performance on the sustainability and viability of the network.

Tensions between political representatives and civil servants of the municipality has a negative influence on all levels of network effectiveness. This tension ensures that the municipality cannot operate in a structured manner in the network, which causes delays in the final output and affects client-level effectiveness and community-level effectiveness. In addition, network level performance is also negatively affected by these tensions. The lack of formalization of the roles of municipal actors within the housing network ensures that the capacity within the network is not optimally used.

4.5 Stated goals

The following findings about the stated goals of the network have emerged from the document-analysis. These findings show what output the network has created and contribute to determine the network effectiveness. The findings reflect the municipality's stated goals. In which the national government's stated goal led to the goal of realizing 550 homes in Twenterand by 2030. The municipality itself has conducted additional research into the housing needs in Twenterand and has expanded these goals to realize 1,200 homes from 2024 to 2030. Table 3 shows the number of realized homes in Twenterand from 2012 to the first quarter of 2024.

The Strengthening Public Housing Management Act, which is the basis for strengthening public housing, was reflected in the Housing deal Twente at the end of 2022. The effect of this law enforcement is presented by table 3. From 2012 to 2022, an average of 94 homes were built annually. After the change in the law, the annual average increased by 87 homes to 181 homes (based on 2023 and the first quarter of 2024), which is an increase of 192%. This annual average ensures that the national government's goals are achieved well before 2030. With the homes already completed in 2023 and the first quarter of 2024, the 550 homes will be reached by the end of 2025, with an expectation of 542 homes. The municipality's stated goals will be achieved in 2030 with this forecast. The goals are being achieved with current developments.

Number of houses	Year
45	2012
384	2013
102	2014
42	2015
21	2016
47	2017
40	2018
116	2019
37	2020
103	2021
97	2022
163	2023
63	First quarter 2024

Table 3. Annual completed homes in Twenterand (Dashboard Wonen ,2024)

Figure 3. ratio of types of homes in hard plans (Dashboard Wonen, 2024)
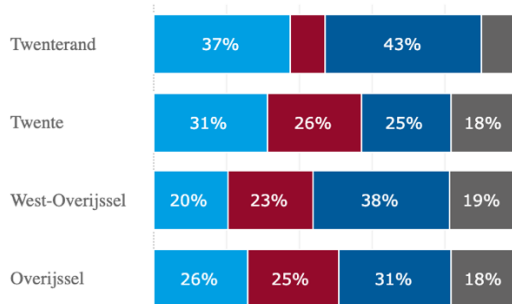
Figure 3 shows the ratio between the types of homes that will be built in Twenterand (hard plans). This figure shows that the share of social rental is quite strong in the output of the housing network of Twenterand.

Twenterand	37%		43%
Twente	31%	26%	25%	18%
West-Overijssel	20%	23%	38%	19%
Overijssel	26%	25%	31%	18%

	Social housing
	Affordable owner-occupied homes
	Owner occupied homes
	unknown
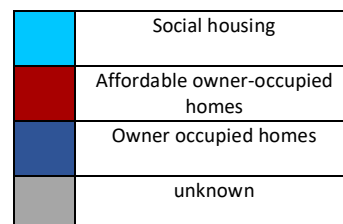
The strong share of social rent in the output of the network is caused by the interactions between the housing association and the municipality. These interactions are structured by formalization, which is created by the municipality together with the housing association. The output of Figure 3 and Table 3 show that the interactions between the municipality and the housing association are designed and structured so that it can achieve the intended output. The relationship between the municipality and the housing association stimulates the community-level effectiveness and the client-level effectiveness. The community-level effectiveness is stimulated by the number of houses that are built and the client-level effectiveness is stimulated by the share of social housing that has been created.

Now that the findings and intermediary relationships of the concepts in the theoretical framework and conceptual model have been presented and analyzed, the research question *how do the structural network characteristics influence the network effectiveness of the housing provision of the municipality of Twenterand to achieve goals?* can be answered, see conclusion.

5. Conclusion

The implementation of the Strengthening Public Housing Management Act is intended to accelerate housing construction in the Netherlands, based on principles of network governance, where actors work together in networks to achieve outcomes and operationalize policy. The effectiveness of networks is determined by several factors. This thesis research how the structural network characteristics influence the network effectiveness of the housing network of the municipality Twenterand to achieve goals, based on obtained data from document analysis and interviews, findings and relationships between concepts from the conceptual model are presented and analyzed. The associated sub-questions are answered in Chapter 4 Empirical findings and analysis. Based on the preceding steps, the conclusion can be drawn and the research question *how do structural network characteristics influence the network effectiveness of the housing provision of the municipality of Twenterand to achieve goals?* can be answered. The answer to the research question will be presented per structural network characteristic, followed by an overall conclusion.

Formalization

The existing formalization in the network has a positive influence on client-level effectiveness, which is caused by the formalization of processes between the municipality and the housing association. The formalization of processes has created a structure in which these parties cooperate effectively. This is reflected in the performance agreements that are made by these actors, which describe how the intended goals will be achieved together. These intended goals are aimed at creating social housing, which is why the client-level effectiveness is positively influenced. In addition, explicit ongoing outcome measurement is used in the network, which has a positive impact on all aspects of network effectiveness. However, there is no other form of formalization in the network, which ensures that the potential of the network is not optimally used. The missing formalization mainly concerns the municipality. Where various roles of the municipality are not formalized and there is no structure that describes how the actors within the municipality should fulfil their roles in the network. With defined roles in the municipality based on formalization, all actors know which actor in the municipality they should contact in each situation. Currently, this structure does not exist, which means that network actors frequently speak with different persons from the municipality, causing interactions and information sharing to end up in an unstructured manner in the municipality.

Moreover, this lack of formalization has consequences for the elaboration of the structural network characteristic integration mechanisms and tools and has a moderated effect on the internal challenges in sharing information and tensions between political representatives and civil servants in the municipality. Formalization of the roles of the municipality could reduce the internal challenges

of sharing information and tensions between political representatives and civil servants. Formalization leads to more structure being created in the network where actors know which channels they should use within the structure to share information and/or obtain certain information in the network. So, the potential of the formalization in the network is not yet optimally utilized.

Integration mechanisms and tools

Integration mechanisms and tools have a mildly positive impact on network level performance. This impact is caused by partnership synergy that exists between different actors, in particular between the municipality and the housing association. However, the positive effect of the integration and mechanisms tools could be more significant if there is a steering committee and if joint staff activities were organized. So, the full potential of integration mechanisms and tools for network effectiveness is not utilized. The municipality should take on the role of steering committee in the network. The municipality is a central actor in the network that has frequent interactions with all actors, this makes the municipality suitable to function as a steering committee and direct the network if necessary. Joint staff activities are not organized in the network, there are various meetings and gatherings, but due to lack of structure and formalization, these meetings have a highly informal character with no continuity among those present. The data showed that there is a certain degree of lack of trust from market parties to the municipality, which is partly caused by the formalization and integration mechanisms and tools in the network. For the municipality to act effectively as steering committee, it is necessary that the formalization and integration mechanisms and tools are better implemented in the network to improve trust towards market parties and thus be able to act effectively as steering committee.

The poor utilization of the potential of integration mechanisms and tools is reinforced by the lack of formalization. If there would be formalization that demarcates and specifies the distinct roles of the municipality, the municipality could function as a steering committee, and they could organize joint staff activities. Currently, this formalization does not exist and the municipality cannot fulfill this role. Integration mechanisms and tools are therefore not optimally implemented in the network, with the lack of formalization being a crucial factor. This structural network characteristic therefore has a mild positive effect on network effectiveness, where enormous potential is left unused.

Size

The data showed that actors are satisfied with the size and composition of the network. Furthermore, no indications emerged that imply that certain actors should be added and/or removed from the network.

External control

External control has a positive effect on client-level effectiveness and is exercised by the province. External control only concerns to the municipality and housing association in the network, but the exercise of external control ultimately influences all actors. The province's control ensures that policy goals continue to be pursued by the municipality and the housing association, other actors must eventually commit to this. External control could be better utilized in terms of network effectiveness when the same information and communication systems are used in the network, this is currently not the case.

Accountability

The municipality and housing association are accountable for the performance agreements they make with each other. The municipality is also accountable for other network results. Other network members have no accountability in the network. Accountability to external stakeholders ensures that the adoption of explicit and shared measures and techniques for evaluating network progress. The influence of accountability on the network effectiveness is positive and contributes to network level performance in the areas of capacity of achieving stated goals and sustainability and viability.

Network inner stability

The network inner stability has a positive influence on network effectiveness in all areas, except for innovation and change (no influence). Where the norms of cooperation are high across the entire network. In addition, there is also reciprocity present in the network, between housing association and municipality. Finally, there is division in the network regarding the degree of trust between actors. Trust therefore does not contribute to the positive influence of network inner stability on network effectiveness.

The difference in the degree of trust between network actors is partly caused by the lack of formalization. The lack of formalization makes it possible for the municipality to share different information in an unstructured manner through different actors with conflicting interest through the network. This way of interactions ensures that other actors receive different information from the municipality, which can damage the level of trust. So, the degree of formalization in the network also has consequences for the network inner stability.

The influence of the structural network characteristics on the network effectiveness to achieve goals is shown per characteristic. The overarching answer to the research question *how do structural network characteristics influence the network effectiveness of the housing provision of the municipality of Twenterand to achieve goals?* is presented here. The structural network

characteristics have a mildly positive influence on the network effectiveness of the housing provision of the municipality of Twenterand to achieve goals. Where the mildly positive influence is caused by some determinants that are represented in the network under the structural network characteristics. However, this mildly positive influence could have been significantly stronger if certain characteristics where have been better implemented in the network. The structural network characteristics formalization and integration mechanisms and tools underlie this. When the network introduces more formalization, especially in defining the roles of the municipality, a structure will be created on which other network characteristics can be better shaped in the network. The integration mechanisms and tools could be better designed with more formalization. So, features of the structural network characteristics have a mild positive influence on the network effectiveness. This effect could be significantly stronger if formalization and integration mechanisms and tools where have been implemented more complete. Formalization and integration mechanisms and tools forms the basis for the effects that other structural network characteristics can exert on the network effectiveness.

6. Discussion

This thesis aimed to research the influence of structural network characteristics on the network effectiveness of the housing network of Twenterand. This research examined a select part of Turrini et al.'s (2010) framework. The network functioning characteristics in the framework have not been researched, the reason for this is two folded. Firstly, Turrini et al. (2010) recommended that further research should research the potential interactions effects among the identified determinants of the clusters of variables. Secondly, the introduction of the Strengthening Public Housing Management Act in the end of 2022, has ensured that the government is pursuing an active policy regarding housing construction. In this brief period, it was expected that a stable management and management structure would not emerge. The data has indications that this is the case, regarding the example with the municipality. Moreover, this thesis succeeded in obtaining findings about these effects which are discussed in the conclusion, where the lack formalization and integration mechanisms and tools have a strong influence on the effects of other structural network characteristics.

The network contextual characteristics in Turrini et al.'s framework have also not been researched. The reason for this is less well-founded than with the networking functioning characteristics. This thesis followed the recommendation of Turrini et al. (2010) to research the clustered variables regarding network effectiveness. Therefore, the network contextual characteristics are not included in the theoretical framework and conceptual model. However, internal and external challenges have been included in the theoretical framework, which is to a certain extent comparable to the network contextual characteristics. In retrospect, it would have been more optimal from a scientific point of view to replace the challenges in the theoretical framework and conceptual model with the network contextual characteristics. Other studies regarding network governance and the framework of Turrini et al. (2010) could better be compared and structured towards this thesis. However, this thesis is a qualitative case study and the external validity can therefore be considered low and is not affected by this choice of applying challenges.

The theoretical conclusion regarding the challenges is twofold. The internal challenges have provided an in-depth insight into the elaboration of the structural network characteristics. The application of the internal challenges made it possible that the consequences of the implementation of the structural network characteristics in the network could be analyzed and underlying interactions between structural network characteristics could be explained. The application of the external challenges has contributed to clarifying the Twenterand case, where external challenges have clarified the context in which the housing network operates. However, it would have been

scientifically more optimal to apply the network contextual characteristics of the framework of Turrini et al. (2010) instead of external challenges. (See paragraph above).

The capacity challenge is a challenge that did not have to be presented as a challenge regarding the housing network of Twenterand. Capacity problems exist in many industries and influences all processes where employees are needed. Almost all respondents stated as first mentioned challenge capacity problems, with the comment being made that this particularly applies to the municipality and specifically to the spatial planning department, which has an important function in the housing network. Therefore, the choice is made to include this challenge in the data and analyze it within the sub-questions. This choice is justified by the framework of Turrini et al. (2010), which includes network contextual characteristics in which resource munificence is a factor. Resource munificence refers to capacity challenges in this study, because capacity is an essential resource in the housing network of Twenterand.

The semi-structured interviews were conducted based on the interview guideline. Where it was a challenge to ensure that the challenges were clearly reflected in the data. Many challenges related to the distinct roles that municipality plays in the network are caused by the lack of formalization and integration mechanisms and tools. To identify other challenges from the data in addition to this challenge, the interview guideline was applied less strictly in some of the interviews.

Finally, the network's set goals ranged from 550 houses to 1,200. 550 houses were set by the province and 1,200 houses by the municipality. For the thesis, this difference in set goals means that it is difficult to express in which goal the network effectiveness is achieved. The municipality and the province base their goals on different reports, so this thesis had to choose which set goal would be the determining factor for network effectiveness. This choice is difficult to make because community-level effectiveness and client-level effectiveness extend beyond the boundaries of the municipality of Twenterand. However, with the large housing shortage that currently exists in the Netherlands, the more output from the housing network the better, this is not scientifically sustained. Therefore, the network effectiveness is expressed in terms of positive and mildly positive. Due to the lack of formalization and integration mechanisms and tools and their consequences on the other structural network characteristics, it suited the research better to express the network effectiveness in these terms.

For further research into the effectiveness of the Twenterand housing network, it is recommended to visit and analyze the network's activities. The obtained data in this study showed various findings about network activities. As mentioned, these divergent views on network activities are strengthened by the lack of formalization and integration mechanisms and tools. Presence as a researcher at the network activities makes it possible to analyze how the network functions without a filter from a respondent. To enable a researcher's presence in the network activities of the housing

network of Twenterand, trust must be built up between the actors and the researcher. After conducting the interviews with the respondents, enough trust was created to be able to attend these networking activities, but this was not possible due the time of this research.

This research has limitations that must be presented and justified. To prevent researchers bias, the interviews were recorded and transcribed to create the possibility to identify the possible bias. However, there is always the possibility that there is an unintended bias in the research, the transparency of the conduct of the research aims to prevent this bias and/or make it transparent. The Twenterand housing network consists of eight organizations, where the organizations are represented in this study by one respondent of a organization. This is a limitation in the research because respondents can thrive their own interests, instead of the interests of their organization. However, the data did not reveal any implications for this limitation, but this may be a premature conclusion. Another limitation of the thesis is the position of the researcher himself. The researcher is connected to an informant who works from the municipality, this could cause respondents to adopt a certain attitude (or bias) towards the researcher, because the respondents know they are talking to someone from the municipality and not to a (neutral) researcher. During the research, an attempt was made to reduce this limitation as much as possible by informing respondents that the researcher is neutral and conducts the thesis from the university and not from the municipality.

This thesis concerns a case study and can be generalized to a certain extent. The application of Turrini's et al. framework can be generalized for other research, particularly the interaction effects between the determinants of the clustered variables structural network characteristics. Other aspects of this thesis are scientifically less generalizable. The thesis applied challenges that have strongly specified this case study, which reduces the generalizability of the study. The research would have been more generalizable if network contextual characteristics from Turrini et al. (2010) had been applied instead of internal and external challenges.

7. Recommendations

This thesis researched the beginning of the development of the housing network of Twenterand. A select part of the framework of Turrini et al. (2010) has been applied, the structural network characteristics. For further research, it is recommended to apply the entire framework of Turrini et al. (2010) to the housing network of Twenterand. Over time, when the network may have developed network functioning characteristics, the entire framework of Turrini et al. (2010) could be applied in this Twenterand case study. Applying the entire framework provides a complete representation of the operation and effectiveness of network governance in the housing network of Twenterand. A comparison with this thesis might reveal a strong influence of formalization and integration mechanisms and tools on various variables of the framework of Turrini et al. (2010). This recommendation concerns a case study in Twenterand, so it is strongly location specific.

There are few findings in the literature about the structural network characteristic of size, for further research it is recommended to research the influence of size on network effectiveness. This research could be done by comparing the size of housing networks of different municipalities based on the output. Therefore, it is important to set clear frameworks as to which actors are considered members of the network and which are not.

Based on the results of the thesis, recommendations can be given for the Twenterand network itself. The results of the interviews showed that all actors are willing to participate in the network, with these actors having a high degree of norms of cooperation. This forms a good basis for an effective network. In addition, the data shows that there is uncertainty about the role of the municipality, with various negative consequences for the network as mentioned. A direct recommendation for improving the effectiveness of the Twenterand housing network concerns the municipality. The municipality will have to appoint a person who specifies the roles of the municipality, for the municipality itself and for other actors in the network. This could ensure that there is more clarity in the network about what, why and by who certain processes happen in the network. This could reduce several of the challenges described, such as notice of objections, sharing of information and tensions between political representatives and civil servants of the municipality. However, these challenges can never be eliminated. Further recommendations for the network have not emerged from this thesis. The network is still in the preliminary stages in which various aspects still need to be further developed, such as the network functioning characteristics. After the municipality's roles have been formalized, further research into this case may provide other recommendations.

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9. Appendix 1

Topic 1. Structural network characteristics

Category	Question	Follow-up Question (if possible)
Size `	Can you describe the members that participate in the housing network in Twenterand? How do the members of the network differ from each other and how is this reflected in the network?	What do you think of the composition of the network, is it comprehensive or does the network still lack certain elements that can promote housing and/or the network? Is there something else on your mind about the size of this network?
Network inner stability	To what extent do you trust the network members? Have you built up reciprocity with other members of the network? Do you recognize a certain degree of willingness to cooperate between actors and how is this expressed or not in the network?	And how does this level of trust influence the network outcomes? And how is this reciprocity been expressed (or not) in the network? Would you like to say something more about stability of the network of Twenterand in general?
Formalization	Do you apply specific measurement method to measure outcomes? To what extent are procedures in the network formalized, like rules, meetings, decision making procedures etc.	Do other network members also apply this method? Do you think this degree of formalization is beneficial for network outcomes?.... and why?
Accountability	How would you describe the diversity between partnerships in the network?	How is this diversity (or uniformity) expressed in the network?

Integration mechanisms and tools	Is there a member in the network who can be considered as a steering committee in the network? Are joint activities organized in the network, like marketing activities, funding and/or planning activities? Is there partnership synergy in the network	How does this steering group fulfill its role (or not)? How is this synergy expressed or not? Are for example knowledge, skills and perspectives combined?
External control	Is external monitoring conducted on your network? Do the members use the same information and communication systems?	With yes: How is this control expressed in the network? What is the consequence of this?

Topic 2. Challenges

Category	Question	Follow-up Question
General challenges	What are the most important challenges to obtain housing in Twenterand?	Does the network or specific members of the network can solve these challenges? → Yes: who and how? No: How does the network deal with this?
Network challenges	Are there challenges that have arisen from the Twenterand housing network itself?	How did these challenges arise and why? Do you think these challenges will be solved and how?

Topic 3. Challenges, structural network characteristics and effectiveness

Category	Question	Follow-up Question
Structural network characteristics	Do the challenges you mentioned above relate to one or more structural network characteristics that we just discussed? Like external control, formalization, accountability, integration mechanisms and tools, size and network inner stability? This relation can be positive or negative	Do these characteristics ensure that the challenges remain manageable or do the characteristics ensure that the challenges arise? → How?
Effectiveness	What influence do the challenges related to structural network characteristics have on the effectiveness of the housing provision of Twenterand? What influence do the challenges not related to structural network characteristics have on the effectiveness of the housing provision of Twenterand?	How do you think these challenges can be managed? How do you think these challenges can be managed? Could the network play a role in this
Challenges, structural network characteristics and effectiveness	Is there anything else you would like to say regarding the stated characteristics, effectiveness and challenges that has not yet been addressed?	