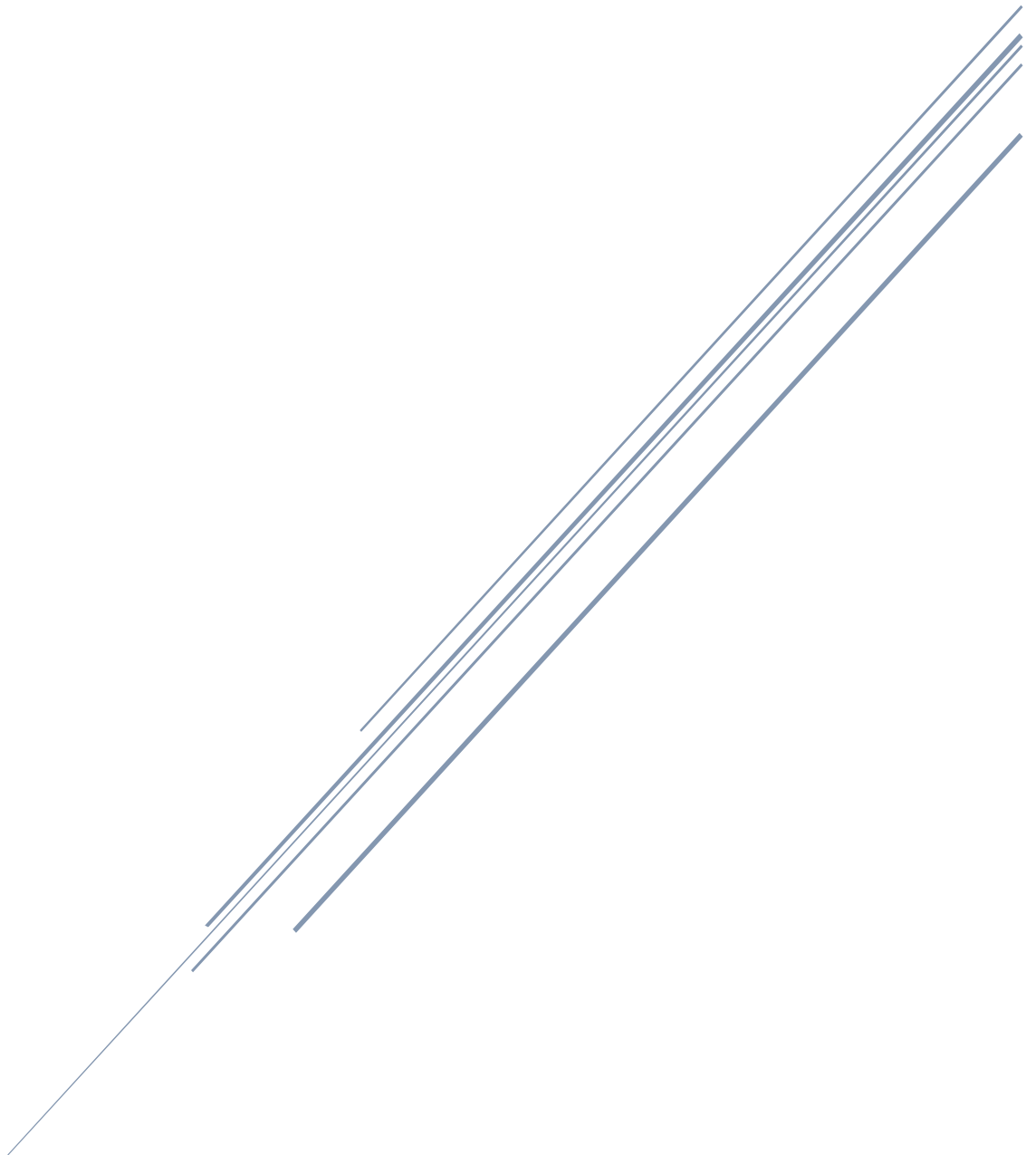# EFFECTIVE NETWORK GOVERNANCE: AN ANALYSIS OF A DUTCH HEALTH CARE NETWORK

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Abstract

The effectiveness of network governance is a topic that was lacking perspectives before 2000. However, focus has shifted towards the cooperation between the participants in the network, not just the individual working relationships between members. From this theoretical perspective, using existing literature, this case study tries to find out how this theory applies in real life situations, specifically in healthcare networks in the Netherlands. It does this by constructing its own theoretical framework from existing theory and case studies on the topic of network effectiveness, and judging healthcare network ZorgNetOost according to its form of network governance and how that form relates to the state of effectiveness conditions, to answer the question of *how effective the network structure used by ZorgNetOost is for its digitalisation strategy*. Data is collected through interviews with key members of the healthcare network ZorgNetOost.

Introduction

Public sector organizations have complex tasks that require careful administration to conduct. Organizations can not do all these tasks by themselves, so they make agreements with other organizations to do tasks for them, especially in the public sector (Provan and Milward, 2002). The numerous individual relationships an organization has with other organizations are bundled in a network. It is important to the operation of an organization that these networks function properly, and thus research is conducted on this topic. Provan and Milward argued that relatively little research had been done on the cooperation between the numerous organizations in a network, and too much focus was laid on the individual relationship between each organization (Provan, Brinton Milward, 2002). Thus they conducted a study on the effectiveness of networks, at different levels of analysis. Provan, together with Kenis, wrote another article on network effectiveness, outlining the theoretical aspects of networks, and the factors that influence effectiveness (Provan, Kenis, 2007). These two papers are the basis for the questions of this paper. The field of interest of this paper is network effectiveness in the health sector, specifically at the Medisch Spectrum Twente (MST). Many organizations try to improve their networks, the MST is no different. They are currently in the process of restructuring the relationships with their partners. This matter is a major motivation for this research. Provan and Milward reference a work by O'Toole (O'Toole, 1997), arguing that "If we are to treat networks seriously, we must understand how they work." However, according to Provan and Kenis (Provan, Kenis, 2007), there is very little agreement among public administrators on how the community based networks of health service organizations should be evaluated. This provides further motivation for this research, and why it is valuable to have another look at network theory and to apply it. The goal is to gain more knowledge about network effectiveness at a more specific level of analysis, to gain knowledge on the specific network structures used by the MST, and to identify their strengths and weaknesses based on collected theory. Another objective is to provide the public health sector in Enschede with an analysis of their networks and what could be improved. The research field shall be provided with an analysis of networks in the Dutch healthcare system, and with new data on the existing networks. It will be done as part of a bachelor thesis in the study department of Management Society & Technology at the University of Twente.

In order to properly discuss and learn more about theory and practical application of networks within the scale of this research, the research must be specified. Together with the MST, a specific topic was suggested, the analysis of the network "ZorgNetOost" on the topic of digitalisation. The research question is: **How effective is the network structure used by the 'ZorgNetOost' network for its digitalisation strategy?**

Sub-questions include:

- What are the conditions and tensions for the effectiveness of the network?
- What are the views of the members of this network on the contribution of each factor and tension?
- How does the network score on the different conditions affecting the effectiveness of the network?

Theory

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The three sources used to define the framework for this study are 3 works by Keith Provan, in collaboration with other researchers. The first paper from 2002 (Provan, Brinton Milward, 2002) specifically dives into the question of possible indicators for network effectiveness, at different levels of analysis. These levels are the community level, the network level, and the organisation level. The second paper (Provan, Kenis, 2007) describes three different forms of network governance, how it is carried out. There is the participant governed network, lead-organization covered network, and a Network Administrative Organization (NAO). The paper also discusses 4 factors that, in combination with a specific form, determine the effectiveness of a network. These include trust, number of participants, goal consensus, and the need for network-level competencies. Judging from the form of network governance, one can decipher whether the network is effective depending on whether the state of the conditions matches the ideal conditions for this particular form of network governance. Lastly, the paper discusses typical tensions within a network that may affect effectiveness: Efficiency vs inclusiveness, Internal vs external legitimacy, Flexibility vs stability. The third paper defines (Provan, Lemaire, 2012) more concepts related to network effectiveness: Involvement at multiple levels, Network design, Appropriate governance, Legitimacy, and Stability. In this regard the third paper is similar to the first paper. The first paper has a broader approach, with its focus on the scale of the network.

'ZorgNetOost' is a regional health care network in the region of Twente. Its main activities are: Network health care, diagnostics, and data driven health care (Werkplan ZorgnetOost, 2020). Previous studies have been done on the use of network governance in healthcare and its effectivity. This paper uses two of these studies. The first study (Marafioti, E. Mariani, L. Martini, M. 2014) already argues that the relevant level of analysis for a healthcare network is the network level. This network level was mentioned before in the work of Provan and Milward (Provan, K. Brinton Milward, H. 2002). More factors related to network structure are mentioned: Network Dimension, internal cohesion, and how similar it is to a hub and spoke model. Lastly, they argue that the complexity of the network also has impact on its effectiveness. The second paper emphasizes obstacles a healthcare network can face (De Pourcq, De Regge, Van den Heede, Van de Voorde, Gemmel, Eeckloo, 2018). These include the different goals of organisations, the degree of centralization, national level legal and financial structures, the distribution of worker payments, and competition within the network.

The goal of the literature discussion was to identify generally accepted factors contributing to effectiveness of a health care network. The effectivity of the 'ZorgNetOost' network will be assessed according to the following framework:

The network will be analysed at the network level. The focus of the study will thus lie at the operations of member organisations within the NAO, as well as its leading organ and regulators (Provan, K. Brinton Milward, H. 2002). The Directors Council of 'ZorgNetOost' (Werkplan ZorgnetOost, 2020) functions as the NAO, as described in the NAO form of network governance (Provan, Kenis, 2007). A **Network Administrative Organization** is a separate administrative entity designed to govern the activities of the network. It is not a member of the network, nor does it carry out services within the network. Instead, it's pure purpose is to govern.

The first condition is **Trust.** Whether organizations are willing to be vulnerable or not in a network has effect on its effectiveness. A practical application of this is in the internal cohesion of a network (Marafioti, E. Mariani, L. Martini, M. 2014). A higher level of trust can lead to a higher intensity of relations within the network, and improve its internal cohesion. Provan and Milward state the strength of relationships is one of the effectiveness criteria at the network level of analysis (Provan, K. Brinton Milward, H. 2002).

The second condition is **Number of participants.** The number of participants in a network affect the amount of connections and relationships in the network, which means a higher risk of internal turmoil. However, a greater number of participants also means the tasks of the network can be more easily distributed. The network membership growth is also stated as one of the influencing conditions for effectiveness at the network level of analysis (Provan, K. Brinton Milward, H. 2002).

The third condition is **Goal consensus.** The argument is that goal consensus benefits action, and the efficiency of the duties of network members. It enhances the ability of network members to work together. The study on health care networks in Belgium showed that differences in goals can be an obstacle for network operation. The member commitment to network goals is described as a criteria for effectiveness at the network level of analysis (Provan, K. Brinton Milward, H. 2002).

The fourth condition is the **Need for Network level competencies.** Why do members of the network join it in the first place? What is the nature of their operations? Does the network have the proper resources, skills, and funding to conduct its operations? Specific competencies, such as worker pay distribution, legal and financial structures are mentioned as important in studies on healthcare networks (De Pourcq, K. De Regge, M. Van den Heede, K. Van de Voorde, C. Gemmel, P. Eeckloo, K. 2018). Provan and Milward emphasize the need for network competencies in the range of services a network can provide and the cost of network maintenance (Provan, K. Brinton Milward, H. 2002).

Key tensions to be discussed include **efficiency vs inclusiveness** and **flexibility vs stability**. It is important to assess whether 'ZorgNetOost' is efficient in its governance, and what kind of effect that may have on the inclusion of members. Secondly, it is important to assess whether its management structure, especially in regards to its NAO, strikes the right balance between flexibility of relations and operations and sustainable governance (Provan, K. Kenis, P. 2007).

Judging from the form of network governance, involving the NAO, hypotheses can be made based on discussed literature (Provan, K. Kenis, P. 2007): **If in this NAO governed network:**

- Trust levels are moderate
- The number of participants is moderate
- Goal consensus is moderate to high
- Available Network level competencies is high
- The efficiency/inclusiveness scale leans towards efficiency
- The flexibility/stability scale leans towards stability

The network is expected to be functioning effectively.

Methodology

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The chosen type of research design for this bachelor thesis is a case study on the healthcare network ZorgNetOost. It aims to gain new insights into the theoretical framework of network effectiveness, checks the existing views of the field in a new, relevant context, and aims to provide both solutions to potential hinderances to effectiveness and give the field more knowledge on network management, effectiveness, and problem solving within a Dutch healthcare context. The research design attempts to answer the research question via a theoretical framework based on existing literature, which forms the basis for an interview protocol. The interview data on the factors and tensions mentioned in the theoretical framework is then analysed. Part of the research design is textual analysis. Existing literature is reviewed, in order to identify the common concepts and themes in the field. Interview data is textually analysed and connected back to the theoretical framework. This research design can provide the in-depth knowledge needed to learn more about network effectivity in general, network effectivity in the context of healthcare, and concrete data in order to solve potential issues affecting the effectivity of healthcare network 'ZorgNetOost'. ´ZorgNetOost´ was chosen as a case because the network in question was looking for ways of improving its operations in context of its digitalisation strategy. It would provide interesting ground to gain more knowledge about network effectiveness in a public sector organization. It was selected because participants of the network were interested in cooperating with research. The scope of the study was determined based on communication with the organisation in question, both with consideration for the timeframe and possible participants.

Data for this research was collected via interviews with participants of the network. These include predominantly managers of participating organisations that are on the board of the network as well as managers of participating organisations that are not on the management team of the network. The participants were interviewed based on an interview protocol with 6 sections, each corresponding to a condition or tension. These were asked in a semi-structured format, allowing for both structure and open-ended answers. Depending on the answers to each section of the interview, the state of each factor and tension within the network was determined. For example, if the participants were asked about the implications of the size of the network, and many participants gave a similar answer, this would be the indicator of the desired size of the network, the current size of the network, and how it compares to the level described in the hypothesis. Each participant received the same interview protocol. The interviews were recorded, and then transcribed for textual analysis. The used method of transcription is the intelligent verbatim transcription. The new Whisper tool, made by OpenAi, combined with Python, PyTorch, and Chocolatey, assisted with the transcription of the recordings. The interview transcripts were checked and corrected manually. The dataset consists of transcribed interviews based on interview recordings. The dataset contains the answers of each interview participant, in a word format. The answers of the participants were added to a coding table, designating which participant (A to E) said this quote, which condition it was about, what the state of the condition was according to the participant, what the desired condition was according to the participant, and what the implications were to the network.

The method of data analysis for this research was textual analysis, specifically content analysis. Content analysis was used in this research because the answers of the participants needed to be interpreted in order to figure out what they mean in the context of the research and its objective. Not everyone is going to use the same wording for every aspect of the interview, thus it is important to code the common words and concepts mentioned by participants, so they can be connected to the theoretical framework. This was done with help of Atlas.ti, by putting the different answers of the participants under codes relating to each of the 4 conditions and 2 tensions. These codes can be found in the appendix. The units of meaning were the words from the transcribed interview datasets. The set of categories included the 4 conditions and 2 tensions mentioned in the theory section. An example of

this is a participant answering that the organizations in the network follow up on made agreements. This was coded under 'Agreements are acted upon', which fell under the coding group 'Trust'. The data analysis will be used to determine which of the conditions match up to the desired values from the hypothesis, and what the desired level of the conditions is from the participants. If a significant number of participants argue that the member organizations follow up on made agreements, but are reluctant to share data, this is an indicator of moderate trust, as it is an indicator that member organizations can trust each other to carry out tasks, but that internal cohesion is low. If many participants indicate that the network has a preference of stability over flexibility, and they indicate that this is undesirable, it is an indicator of a mismatch between the state of the variable and the form of network governance. The full operationalization of the codes is as followed:

Trust

- Agreements are not acted upon
- Agreements are acted upon
- Internal cohesion is high
- Internal cohesion is low

Number of participants

- Network size is satisfactory
- Network size is too small
- Network size is too large

Goal consensus

- Goals of the participants are misaligned
- Goals of the participants were aligned

Level of network level competencies

- The network has enough skills
- The network lacks skills
- The network has enough resources
- The network lacks resources
- The network has enough funding
- The network lacks funding

Efficiency vs Inclusivity

- The network is sufficiently efficient
- The network has a problematic lack of efficiency
- The network has good inclusivity
- The network has unsatisfactory inclusivity
- The network balances towards efficiency
- The network balances towards inclusivity

Flexibility vs stability

- The network is sufficiently flexible
- The network has a problematic lack of flexibility
- The network has good stability
- The network has unsatisfactory stability
- The network balances towards flexibility
- The network balances towards stability

Analysis and Results

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This section of the paper will score the 6 conditions for effectiveness. This will be analysed via a description of the different opinions of the participants.

1. Trust

According to participant A, the organisations in the network are able to trust each other when it comes to acting upon made agreements and task division. Participant A also mentions that there is room to voice disagreement. Participant C had the same impression as participant A. Participant B on the other hand clarifies that depending on if agreements are made within the director's council or not affects whether the organizations act upon agreements. The agreements made within the director's council are acted upon. Outside the director's council they are not acted upon. Participant B argues that organisations sometimes avoid the network. Participant B argues that because agreements between organisations in the network are not acted upon, the digital infrastructure that the network is trying to build is lacking. According to participant B, this leads to a lack of a platform to build operations on. According to Participant D, the organizations generally hold up made agreements. However, participant D does mention that the individual interest sometimes goes above the organisations responsibilities to the network. Participant concludes that for organizations to carry out their tasks and responsibilities, the network needs a good director. This is relevant because the network is currently looking for a new director. Participant E mentions that the agreements made by the organisations are individually agreed upon, including the terms under which the organizations enter the agreement. Thus, according to participant E, whether or not organizations uphold their agreements differs on a case by case basis. Additionally, participant E argues that even though there is enough will to complete the networks tasks, there is not enough competency to do so. Participant E emphasizes the importance of trust, saying that in an organization as large as this network, organizations need to trust one another with their knowledge and data.

The biggest organisations in the network generally uphold their agreements, a high indicator towards trust. However, the fact that organisations sometimes put their individual interests above that of the network and the fact that they sometimes avoid the network is an indicator of lower trust, and low internal cohesion. Additionally, participants mention that lacking trust leads to problems on certain topics in the network, like the building of the digital infrastructure. Other findings include the potential positive relationship between trust and the number of participants, suggesting that a larger network needs more trust. More on this in the discussion. The level of trust in the network does not meet the required moderate level, outlined by insufficient level of trust the organisations put into the network itself and the propensity to put their own individual interests before the goals of the network. The level of trust in the network can be judged as low.

2. Number of participants

The number of participants in the network is 23, according to participant E. Participant A says that there is a desire for more organisations in the network, all healthcare organisations in the region ZNO operates in should be a member according to participant A. However, participant A also argues that the size of the network has negative effects on inclusivity of decision-making. According to participant B, the network has no need for more participants, as all organisations that should be a member are a member. Participant E voices the same opinion. Participant C argues that as many organisations as possible should be part of the network, and that the biggest organisations should be the driving forces. Participant D would want all healthcare organisations in the region to be a part of the network, arguing that this makes it possible for collective data infrastructure to be built and to have collective agreements with the participating organizations. According to participant E, with a

large amount of participants comes a high need for trust, noting a potential link between the size of the network and trust.

The size of the network is treated as crucial in developing the collective data infrastructure, which is why almost all health care organisations in the region are part of the network. The current size of the network is treated as desirable by all participants, and while one brings up potential trouble with inclusivity, another participant brings up the importance of bigger influence in the network, so a conclusion can not be drawn from this. The size of the network can be judged as moderate, as described in the hypothesis. There is no want for national expansion, at least not with this network specifically, and the general consensus is that the current size of the network is desirable. Interesting to note again is the potential relationship between the size of the network and trust, as mentioned in the previous paragraph. This will be brought up in the discussion.

3. Goal consensus

The goals of participant A's organization are in line with the goals of the network. Additionally, participant A did not notice a misalignment of goals in the RvC. Participant A has the impression that all organizations in the network want the same. Participant B argues that the goals of the network fit the goals of the members of the network. According to participant B, the network has no issues with organizations who have opposite goals to the goals of the network. According to participant C, there is a need for a general consensus on goal setting, surrounding themes like the vulnerabilities of the network, and the vision for the future. Participant C's organization has goals that align with those of the network. The emphasis on cooperation with the other organizations in the network to achieve the network's goals is also emphasized by participant C. The goals of participant D's organization are aligned with the network. Goal setting is done in collective agreement in the RvC, according to participant D. Participant D does not have the impression that there are organizations with misaligned goals compared to those of the network. Participant E argues that it is logical that the goals of the member organizations are in alignment, because accomplishing the goals of the network is part of accomplishing the goals of the individual organizations. If the organizations thought the goals of the network were detrimental to the achievement of their own goals, they would not agree with the collective goals of the network.

The goals of the organizations of the participants are aligned with the goals of the network, and collectively agreed upon. This is a positive indicator towards goal consensus. The organizations see the network as necessary to accomplish their own goals. This is another positive indicator towards goal consensus, as it shows high member commitment. The level of goal consensus in the network can be judged as high. This is in line with the hypothesis.

4. Level of network level competencies

According to participant A the network has enough competencies to carry out its tasks, with no need for additional competencies. Participant B on the other hand details a specific needs for a product and service catalogue, to make it clear to the member organizations that the network is the designated place to get their digital infrastructure services. Participant B also emphasizes the need for standardisation. According to participant B, these aforementioned network level competencies are missing due to a lack of knowledge and competency. It is currently unclear what the network is used for. Thus the organizations avoid the network in situations where the network is designed to help them. Participant C emphasizes that all parts of the network need to be equipped to deal with present circumstances and needs to have a collective vision on how to handle these present circumstances. Specific aspects named by participant C include executive power, time, money, resources, and forward thinking. According to participant C, these aspects do not have a strong presence in the network yet. Participant D emphasizes that the network should provide its member organizations with the necessary tools to adapt to national health care sector developments, and to the developments in individual health care organizations. The network is the platform on which the member organizations

should be able to cooperate effectively, according to participant D. Specifically, this means providing a stable vision, and direction where necessary. Participant D wonders whether the introduction of a new director will affect the state of the competencies, whether they can be maintained. The network needs to keep its project management type of role, according to participant D. Participant E details the need for a functioning information system, a willingness to sacrifice own interest, respect, and interestingly, trust. According to participant E, these competencies are currently present, but they depend on the individual relationships between the directors of the member organizations. Participant E has not only linked trust to the number of participants, but also called it a network level competency. I will elaborate on this in the discussion.

Some mention an insufficient current level. Some participants indicate the uncertainty of the state of network level competencies, stating that this is dependent on strong directors who can work well with each other. What is apparent is a doubt in the competency of the network and a doubt in the competencies of the member organizations. The network is not utilized to its maximum by the member organizations. Most participants mention a high need for network level competencies. Judging from the uncertainty and criticisms the participants voice, I judge the level of network level competencies present in the network to be moderate. This does not meet the level stated in the hypothesis.

5. Efficiency vs Inclusiveness

Participant A says that the efficiency of the cooperation is adequate, but they do wonder if this efficiency has a negative effect on the inclusiveness of the network. Participant A's organization is happy with its influence in the network. They feel this is justified due to the resources they provide compared to other parties. Participant A speaks of a desire for more inclusion via a new cooperation structure. Participant B says the network is inefficient, because the member organizations do not follow the goals set by the network. Their desired scenario would be a contractual obligation to follow the goals of the network. Inclusiveness is high according to participant B, with the member organizations being well included in the RvC, the project portfolio, the commission of architecture and the directors council. Currently, efficiency is being sacrificed in favour of inclusiveness, according to participant B. Participant B argues that this balance is not problematic, inclusiveness should come above efficiency. Participant C noticed that some parties have more of a hand in certain topics. Participant C argues that the network has a need for a few big driving organisations. According to participant D collective decision-making in the network is efficient. Participant D describes the influence of the member organizations as dependent on the power and size of the organizations. The organizations in the directors council have the most power, the ones who are not part of the directors council have less power, but they also pay less. Participant D's organization has a lot of influence in the network, as they are in the RvC and on the directors council. However, the satisfaction about the influence of the organization of the participant differs within the organization, with disputes about the importance of the network. Participant E says that decision making can take a long while and at the same time is not always inclusive. However, participant E argues for a clear preference of inclusivity of decision-making over efficiency of decision-making.

The general view on the efficiency of governance is that it is satisfactory. Participants outline influence of decision-making depending on the amount of resources individual organisations provide to the network. The general consensus is that this is satisfactory, and some explain that this is even necessary. The participants have a clear preference of inclusivity over efficiency. The balance between efficiency and inclusivity in the network leans towards efficiency. This is in line with the desired balance as stated in the hypothesis. However, it is not the desired balance by the members of the network.

6. Flexibility vs Stability

According to participant A, the member organisations are open to changes in the network. They want to remain open to change while defending their individual stake of their organization in the network. Participant A wonders if this can lead to a conflict of interest between the individual stakes of the organizations and the flexibility of the network, like openness to change. Participant A thinks that the network is currently not sustainable, outlining the need for change in the division of power and the inclusivity of the network. According to participant A, the network is currently very stable. The desired condition is for the network to achieve the maximum flexibility when taking into account stability. According to participant B, the organizations in the network are currently not flexible, they lack the competencies and knowledge to be flexible. Participant B says the same about the structure of the network, stating that it is currently not sustainable. The required sustainability needs to be achieved via a new vision and a trajectory for change. According to participant B, the network is very rigid. Participant B argues that the network needs stability before it can become flexible. Participant C argues that a network is vulnerable if there are a lot of changes, there is a need for clarity because the member organizations rely on each other. Participant C stresses the need for a network to be flexible. Participant D describes the network as stable in its prolonged existence, but not as stable in its division of responsibilities. This has led to a lot of discussion according to participant D. Participant D stresses the importance of stability because of the long term nature of investments in the network. Participant D argues that this means there is a need for a collective long term vision. According to participant E, the member organizations are very flexible, with openness to change. Participant E argues that the high flexibility does not negatively affect the stability of the network. Participant E speaks of difficulties when choosing between stability and flexibility, arguing that it depends on the context and situation of the individual topics the network has to tackle. This means the need for more stability or flexibility changes on a case by case basis, according to participant E. Participant E argues that one needs to be flexible to be stable, to be able to adapt to change is to be a sustainable member organization.

The participants describe a rigid network, with members who are willing to be flexible. However, the sustainability of the network is seen as questionable, an indicator of lower stability. Yet, many participants cite this as a result of the network leaning too much towards stability as opposed to flexibility. Overall, the balance leans towards stability, the desired condition as described in the hypothesis. However, the participants desire less of a lean towards stability, with current focus on achieving more flexibility in the network. A lot of interesting talking are brought up that can be talked about in the discussion, such as the importance of flexibility for sustainability and thus stability, and the case by case nature of this tension as mentioned by participant E.

Effectiveness

The network structure used by ZNO is currently not effective in facilitating its digitalisation strategy. There is a need for more trust beyond just acting upon agreements made between member organisations. One could even argue that the moderate desired level for the condition as mentioned in the hypothesis should be higher for this network. Secondly, the network does not have the high level of network level competencies required to effectively perform tasks and govern the network. However, the network is effective in its recruitment and expansion of its membership. The members are aligned with the goals of the network. The balance between efficiency and inclusiveness is in line with the hypothesis. However, this is stated as undesired by the participants. The balance between flexibility and stability matches the hypothesis. This balance is also undesired by the participants. Both these tensions require further reflection in the discussion.

Table 1: Analysis of the interviews

Condition	Findings
Trust	-High commitment to made agreements -Low internal cohesion -Negative effect on the development of digital infrastructure
Number of Participants	-Current size of the network is satisfactory -Operations are on the regional level -Moderate number of participants
Goal consensus	-The goals of the network align with those of the members -The goals of the network are collectively agreed upon -The goals of the network serve those of the members
Network level competencies	-Level of competencies is uncertain and dependent on director -Lack of development of necessary competencies -Lack of competencies on the member organization side -Standardization of the digital infrastructure is negatively affected
Efficiency vs Inclusiveness	-Balances towards efficiency -Desire for more inclusivity -Preference for inclusivity
Flexibility vs Stability	-Balances towards stability -Desire for more flexibility -Preference for flexibility

Bar plot 1: Prevalence of the different codings (green = positive indicator red = negative indicator)
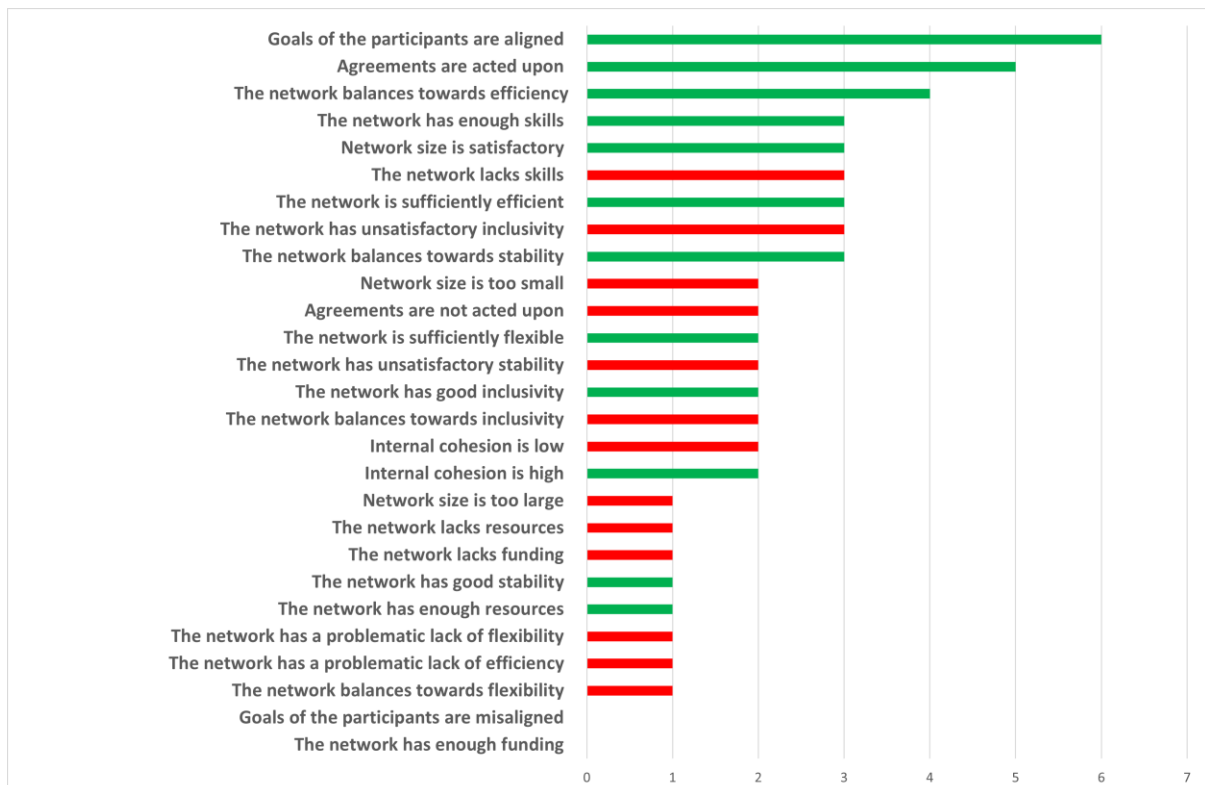
Discussion and Conclusion

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The analysis into ZNO has brought up questions about the way this research was constructed. Questions can be asked about the theoretical framework, and the choices in regards to the data collection. A point to be addressed is the aspects of the conditions that could have been valuable to look at, but were not. Secondly, a look at the way the conditions interact with each other is valuable to the research gap. Lastly, a look at the way the interview protocol was constructed is necessary for future use of a theoretical framework like this one. After this, I will discuss measures to improve the level of the insufficient conditions of trust and network level competencies, as well as suggesting ways to influence the balance between the efficiency/inclusivity tension and the balance between the flexibility/stability tension.

One of the concepts that was left out of the theoretical framework was legitimacy, both as a condition as described by Provan in 2012 (Provan, Lemaire, 2012) and as a tension between internal and external legitimacy in 2007 (Provan, Kenis, 2007). Provan defines it as "credibility to others or externally conferred status". A distinction is made between internal and external legitimacy: Internal legitimacy would be achieved by demonstrating the value of network participation to network members. External legitimacy would be achieved by focusing on the expansion of the network and gaining new members. Participant B specifically mentioned that member organizations avoid the network in critical situation where the network is designed to help them. To me, this is a sign of lacking internal legitimacy as described by Provan. The membership of most critical health care organizations in the region speaks of high external legitimacy. It would have been valuable to hear the opinions of the other participants on the topic of legitimacy, but because it was omitted from the theoretical framework, proper analysis on the legitimacy condition of the network cannot be performed, due to a lack of data. The 2007 paper by Provan (Provan, Kenis, 2007) describes the need for the tension between external and internal legitimacy to be sequentially addressed in an NAO governed network. The statement by participant B is a good motivation to conduct further studying on this, as in order to achieve standardization of the digitalisation structure, a critical part of the digitalisation strategy as described in the research question and brought up by most participants in one way or another, the network needs to have credibility with the member organizations. A second concept that was left out of the theoretical framework was multiplexity, as described by Provan (Provan, Brinton Milward, 2002): "The strength of ties between network agencies". Multiplexity is the case when two organizations have connections with each other in more than one way; They rely on each other for multiple services. This means that network cooperation between two parties will continue to exist even if one of the organizations stops providing one of the services to the other parties. It would have been interesting to assess how much the organizations of the participants get out of participating in the network and cooperating with the other organizations in the network. Depending on how many agencies were connected via the programs of the network (Provan, Brinton Milward, 2002) would have been another good indicator of the effectiveness and strength of the network.

Participant E brought up the role of trust many times, naming it as affected by the number of participants and naming as an important network level competency. In my opinion, the most important thing to take from this is that this may serve as motivation to conduct research into the way the conditions interact with each other. Many of the sources used for this paper included either the discussion and explanation of determinants of network effectiveness, or the practical application of these determinants on networks and testing their effectiveness. The required level of trust is only discussed by Provan (Provan, Kenis, 2007) in relation to the form of network governance. I would suggest research into the interaction between the different conditions that determine network effectiveness. A potential hierarchy of the most important conditions, or a theoretical model detailing

which condition affects which condition may lead to a different view of network effectiveness. Rather than judging whether the network is effective, researchers can judge how effective the network is on a spectrum is. The potential practical application of this knowledge may provide even more to the research gap.

Another thing to discuss is the desired balance of efficiency & inclusiveness and the balance of flexibility & stability as theoretically described in the hypothesis, which matches the desired balance between the aforementioned tensions as described in the 2007 paper by Kenis (Provan, Kenis, 2007). This desired balance of efficiency over inclusiveness and stability over flexibility is contradictory to that of the participants, who have a preference of inclusivity over efficiency and flexibility over stability. The balance of the two tensions as desired by the participants is in line with those of a shared governance network. The current form of network governance is not similar to a shared governance network, it has a administrative organ as described in a NAO. The state of the tensions also leans towards this.

The practical implications of the results signal a need for more detailed research into the interaction of the conditions affecting network effectiveness and detailed research into differences between different administrative organs of NAOs and how they function. This can be achieved by experimental research or field research into the interaction of conditions affecting effectiveness, and literature review and observational research into the functioning of administrative organs of NAOs, or NAOs in general.

The trust level of the network can be increased if members of ZNO show more vulnerability in sharing data with the other member organizations, and in turn, the network needs to make it clear to the member organizations that they are the provider of their digital infrastructure. It is then up to the member organisations to trust the network to provide critical services for them. Secondly, the network needs to support and facilitate the development of the network level competencies the member organizations lack. That is their task as an NAO governed network (Provan, Kenis 2007): "It is the job of network-level staff to develop the skills needed for network-level action." Alternatively, the network could consider a different form of network governance that is more suited to the desired balance of the tensions, however, this may raise other issues related to the number of participants. Judging from the state of the conditions as described in the results, I believe the current form of network governance is still the right form.

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