

# Running Forward: A qualitative study on diagnosing and redesigning the Zevenheuvelenloop

*Master Thesis*



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## **Word of gratitude**

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Sincerely,

Mathijs van Doorn

## **Abstract**

Given external pressure and an urge for innovation, Stichting Zevenheuvelenloop has expressed its concerns whether the current organisational structure is adequate to allow for optimal innovation to occur. To this end, a qualitative study was conducted in two stages. Firstly, a diagnosis on the current organisational structure from a sociotechnical perspective and its influence on innovative behaviour was made, based on semi-structured interviews. This diagnosis indicated high values on the two structural parameters of functional concentration and differentiation of operational activities. These high values partly limit the extent to which opportunity exploration and idea realisation by voluntary members outside of their own coordination area occur. Secondly, these structural aspects cause issues with the implementation and realisation of innovations to some extent. Lastly, the limited involvement of voluntary layers in early preparatory activities results in low amounts of radical innovation initiated by these voluntary members. To decrease these structure-related problems, a redesign is proposed based on input from a focus group, during which the sociotechnical theory on redesigning organisations served as a compass. The proposed redesign includes the recommendation to segment certain supportive coordination areas into output-based areas, to involve sub-coordinators and coordinators earlier on in the organisational process and to improve the evaluation process.

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## **1. Introduction**

### *1.1 Background*

Over the course of recent years, an increasing societal interest in sports events has occurred. The sports industry is growing and accordingly, the amount of sport-related events that is organised is growing as well (Greenwell, Danzey-Bussel & Shonk, 2014). In Central- and Western Europe, the amount of participants for sports events is expected to grow with 7% annually for the upcoming five years. In the Netherlands, the revenues of sports events increased with 12% in 2018 (Statistica, 2020). Due to the industry growth in recent years, sports events in general have gained increasing academic attention, as researchers have been studying the impact of sports events on tourism (Fourie & Santana-Gallego, 2011), national wellbeing (Kavetsos & Szymanski (2008), and economy (Gratton, Dobson & Shibli, 2000; Késenne, 2005; Mules & Faulkner, 1996; Walo, Bull & Breen, 1996). Not only do scholars find it important to study the societal impact of sports events, researchers also recognise the importance of studying how these sports events can be organised best (Masterman, 2014; Parent & Smith-Swan, 2013). This trend can also be distinguished within one type of sports events: running events. More and more people have started running and attending running events, resulting in an increase of running events in the Netherlands (Mulier Instituut, 2016). RTLNieuws (2019) reports that over 1.300 running events took place in the Netherlands in 2019, varying from monthly recreational runs to entire marathons.

One of the organisations that organises running events is Stichting Zevenheuvelenloop. According to their website, they are an organisation that strives to promote the running sport (NN Zevenheuvelenloop, 2020). They aim to do so by annually organising three independent running events: Zevenheuvelenloop (November), Alfa Laval Stevensloop (March) and Marikenloop (May). The foundation consists of a team of seven permanent employees and four overarching board members. Additionally, as each event has thousands of runners participating, the foundation is highly reliant on volunteers for various organisational activities. For example, approximately 1.500 volunteers are required to perform varying tasks during the NN Zevenheuvelenloop, which is the biggest event of the foundation (NN Zevenheuvelenloop, 2020).

Looking outwards, Stichting Zevenheuvelenloop faces a dynamic external environment. On one hand, the organisation has to deal with an increase of competing running events. At the

same time, Stichting Zevenhevelenloop sees a decline in 'fixed' participants of their events. This is in line with global trends. Runrepeat (2020) indicates that the motives for participating in running events is moving from being focused on achievements to focus on social and health-related aspects. Stichting Zevenhevelenloop perceives this shift as the amount of so-called fun-runners in their events is increasing. This group is not bound to certain events or competitive achievements, but flexibly enrolls to various types of running events.

In order to keep up with these developments and to attract and maintain customers, the organisation has to find ways to continuously innovate by improving current activities and creating new events. In addition, the organisation has to be able to adapt to varying demands from important stakeholders, with the municipality being one of the essential stakeholders. To adapt to varying demands, continuous innovation is also required. Meanwhile, recent articles show that several societal instances urge running event organisations to focus on sustainability (The Guardian, 2013; Happy Planet Running; Runner's World 2019). On their website, Stichting Zevenhevelenloop expresses their concern with the environment and explains that they strive to make their events as sustainable as possible. In this quest, they examine their current events and invest in sustainability (Stichting Zevenhevelenloop, 2020). In 2010, Stichting Zevenhevelenloop was awarded with a sustainability prize by the European Athletic Association (Omroep Gelderland, 2010). Furthermore, to continuously decrease the environmental impact of their events and to increase sustainability, Stichting Zevenhevelenloop needs to find ways to continuously innovate their current activities (Leach et al., 2012; Seebode, Jeanrenaud & Bessant, 2012; Truffer & Coenen, 2012). Although the organisation is already implementing several innovations within its events, the management has expressed its concerns whether the current structure is adequate to keep up with the dynamic environment and the required innovations.

Finding ways to allow continuous innovation within the events to occur thus seems essential for Stichting Zevenhevelenloop. In order to do so, several researches suggest that innovative initiatives from employees are a key element (Fischer & Montalbano, 2014; Nijhof, Krabbendam, & Looise, 2002; Tonnessen, 2005). This conclusion is also found by Van de Ven (1986), who argues that the foundation of innovation is ideas that are developed by people. As Stichting Zevenhevelenloop heavily relies on the efforts of volunteers in various activities, it can be argued that these volunteers are a major source of innovative potential in this research



case. As volunteers often also work at other organisations, they can serve as a boundary spanner as they introduce ideas and practices of other organisations to the organisation they work at (Newell & Swan, 1995). This way, volunteers can provide a big impact in the innovation process of organisations (Goldman & Kahnweller, 2000).

Oldham and Cummings (1996) found that innovative behaviour severely impacts the performance and competitiveness of organisations. De Jong and Den Hartog (2007) define innovative behaviour as “*behaviour directed towards the initiation and application (within a work role, group or organisation) of new and useful ideas, processes, products or procedures*” (p. 43). This follows the ideas of Farr and Ford (1990), who argue that innovative behaviour captures both the initiation and implementation of ideas. This definition of innovative behaviour will be used in this thesis, as it captures the two phases of innovation. For innovation to be successful, Burgelman and Maidique (1988) explain that an adequate business structure is required. Maira and Thomas (1998) add that innovative behaviour can be stimulated by breaking down organisational barriers that separate functions and product groups. This relation between organisational structure and opportunities for innovative behaviour to occur was also found in the research of Ashkenas (1998). In their paper, Lawson and Samson (2001) explain that “*the more permeable and organic the [organisational] structure, the greater the potential for innovative ideas to spring*” (p. 393). For innovative behaviour to occur, it seems that an adequate organisational structure is required.

It can thus be assumed that organisational structure has a certain influence on innovative behaviour. Achterbergh and Vriens (2010; 2019) define organisational structure as the way tasks are defined, related, and divided within an organisation. To address the relationship between organisational structure and innovative behaviour, an in-depth study using an organisation design perspective is required. Burton, Erikson, and Håkansson (2008) explain that organisations can use insights and techniques of this organisation design perspective to assess whether the organisational structure is adequate to reach organisational goals. In this case, the design perspective could be used to focus on innovative behaviour. Within design literature, the sociotechnical theory as developed by De Sitter (2000) provides an explicit and systematic set of principles to diagnosing organisational structures and regards what structures ideally would look like. Additionally, the sociotechnical theory entails a structured step-by-step approach to redesigning organisations (Achterbergh & Vriens, 2010). This theory is useful to

assess organisational structures as it seems a systematic and well-developed theory in comparison to other organisation design theories. In his book on sociotechnical design, De Sitter (2000) explains that an organisational structure influences the ability of the organisation to innovate.

The researches that regard the relation between organisational structure and innovation, as introduced above, focus primarily on classic, permanent organisational forms. Stichting Zevenhevelenloop differs from these organisations as they organise three annual events. The organisation of events differs from organisations with more standardised products or services. Modig (2007) made a continuum on temporary and stationary organisation forms, highlighting that event management tends to be a more temporary form of organisation. The characteristics of Stichting Zevenhevelenloop - organising events and using volunteers instead of long-term employees - seem to fit the temporary organisation side of the continuum in some ways. As Miterev, Mancini, and Turner (2017) argue, insights regarding the organisational structure characteristics of these temporary organisational forms seem underdeveloped. The design concepts as for example derived from sociotechnical insights thus require adaptation and application to this degree of temporary context. As Miterev, Mancini and Turner (2017) argue, the organisation design perspective could be a valuable contribution as it provides a new perspective on event management.

This thesis thus focuses on the relation between organisational structure and innovative behaviour within Stichting Zevenhevelenloop. As mentioned before, the foundation organises three annual events. These events have a similar process and similar clusters of activities. This research will mainly focus on the structure of the Zevenhevelenloop. Although this research specifically focuses on only one of the three annual events organised by the foundation, the similarity between the three events with regards to the process of organising allows for the results of this research to be transferable to the other events to some extent.

To adequately research the relation between organisational structure and innovative behaviour and to research how innovative behaviour can be improved, a clear research outline is required. When aiming to improve, some degree of change is necessary. As a relationship between organisational structure and innovative behaviour is assumed, changes in the organisational structure could allow for better innovative behaviour in the Zevenhevelenloop. The research

outline should thus comprise of both an assessment of the current relationship between organisational structure and innovative behaviour, as well as a proposal on changes in the organisational structure that could allow for improved innovative behaviour. The 3-D model of Achterbergh and Vriens (2019) on interventions in organisations serves as an useful research outline, as the use of the model in its entirety allows for a well-designed structure, based on a diagnosis, to be designed, implemented, and evaluated. For this research, diagnosing the current state of organisational structure and its influence on innovative behaviour as well as designing a structure that allows diagnosed issues to be attenuated or solved are the two central phases of the 3-D model.

### *1.2 Research objective and research question*

The goal of this research is to conduct a diagnosis and make a redesign of the organisational structure of the Zevenheuvelenloop to improve innovative behaviour, based on insights derived from sociotechnical theories. Firstly, the current processes are mapped and relevant literature regarding innovative behaviour and organisational structure is discussed. The insights obtained conducting this diagnosis will be the input of the redesign. Combining and applying the diagnosis with sociotechnical theories on redesigning organisations results in a redesign of the Zevenheuvelenloop. This twofold goal is captured in the following research question:

*What is the relation between organisational structure and innovative behaviour within the Zevenheuvelenloop, and how can the structure be redesigned to improve innovative behaviour?*

To properly answer this research question, the following sub-questions are formulated:

- 1. What does the current innovative behaviour within the Zevenheuvelenloop look like?*
- 2. What is the relationship between organisational structure and innovative behaviour within the Zevenheuvelenloop?*
- 3. How can the organisational structure of the Zevenheuvelenloop be redesigned to increase innovative behaviour?*

### *1.3 Practical and academic relevance*

The existing literature on innovative behaviour, in particular the model derived from Messmann and Mulder (2012) that will be introduced in the next chapter, is solely focused on employees in organisations. When comparing employees to volunteers in organisations, distinct characteristics can be found due to the voluntary nature of volunteers. This nature distinguishes volunteers and employees regarding, among others things, motivation, loyalty, commitment, and expectation of potential rewards and sanctions (Cnaan & Cascio, 1998). Although several academic researchers address financial benefits as well as organisational disadvantages of volunteers (Gratton, Shibli & Taylor, 1996; Karn, 1982; 1983), the impact of the voluntary characteristics on other organisational aspects is perceived as underexposed in literature (Hoeber & Hoeber, 2012). As was previously argued, there is an increase in the amount of sports events. Many of these events rely heavily on volunteers. Additionally, there is an urge for event organisations to innovate continuously. To allow for organisations to effectively benefit from volunteers and deploy this asset to allow for better organisational innovation, a more in-depth understanding of innovative behaviour of volunteers is required. As the organisation of events gains increasing academic attention, the characteristics of volunteers and their role in organisations require a similar degree of academic attention as deploying volunteers effectively can allow for increased organisational performance. This thesis strives to contribute to closing this academic gap by studying innovative behaviour of volunteers in an event organisation and the impact of organisational structure on innovative behaviour.

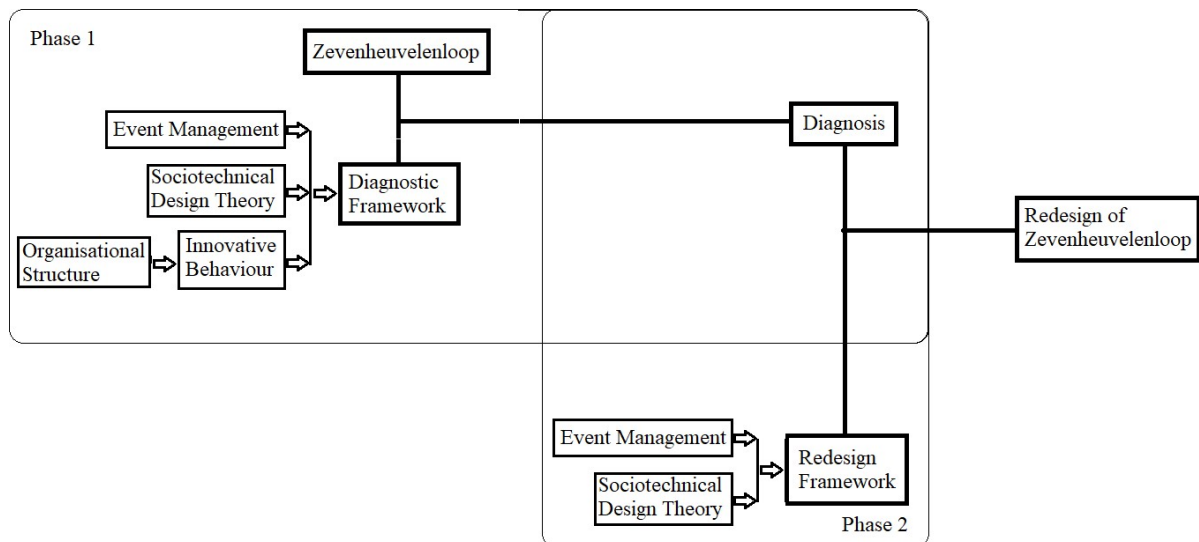
In their work, Achterbergh and Vriens (2010;2019) explain that the sociotechnical perspective on designing organisations differs from other design literature, in the sense that it takes an integral view of the organisation. In addition, the sociotechnical theory suggests that organisations are dynamic entities and consist of interactions and interaction premises among the organisational members. This research is academically relevant as it gives insights into the way sociotechnical insights can be put to practice. Additionally, Kuipers, Van Amelsvoort and Kramer (2018) mention that the sociotechnical theories are usually applicable to classic, functional organisational forms. As mentioned before, the sociotechnical theory and organisation design literature in general are usually applied to stationary, often hierarchical organisations. This research applies the sociotechnical theory on an organisation on the more temporary side of the continuum as developed by Modig (2007). Miterev, Mancini and Turner

(2017) explain that more research on organisation design within these temporary organisations is required to improve the way these organisations perform. Regarding event venues, Hassanien and Dale (2012) argue that the generally well-developed literature on product innovation is under-researched with regards to its application to these types of organisations. This research contributes academically as it explores innovative behaviour in an event-based organisation and regards the influence of organisational structure on this innovation. Stichting Zevenheuvelenloop also differs from general organisations as it is largely dependent on volunteers and has a small number of employees. This thesis thus extends the understanding on how sociotechnical insights can be put to practice, as it is the first research to apply the sociotechnical theories to volunteers in an organisation.

On a practical level, this research contributes in several ways. Firstly, Stichting Zevenheuvelenloop can use the outcomes of the diagnosis to get a better understanding of their current structure and the structure-based problems that occur, specifically with regards to its influence on the innovative behaviour of their volunteers. This understanding can help the foundation to continuously search for improvements in the way they interact with- and involve their volunteers, for now and in the future. Additionally, Stichting Zevenheuvelenloop can use the redesign as proposed in this research to improve the previously mentioned innovative behaviour of their volunteers. Although this research specifically focuses on only one of the three annual events organised by the foundation, the similarity between the three events with regards to its process of organising allows for the results of this research to be transferable to the other events to a certain extent.

#### *1.4 Outline*

To provide a clear understanding of the design of this research, figure 1 is included below as an overview of how this research is structured, based on the design of research as proposed by Verschuren and Doorewaard (2015). The first phase regards the diagnosis, the second phase regards the redesign.



*Figure 1: Research design*

To answer the research question, firstly the main concepts will further be introduced and relevant theories regarding these concepts will be discussed in the next chapter, starting with innovative behaviour in organisations. Afterwards, the sociotechnical theory on organisational structures will be elaborated on and applied to the more temporary form of organisation. Once these two central concepts are discussed, a further literature-based elaboration on their relation is proposed. In addition, further elaboration on the sociotechnical theory regarding redesigning organisation will be provided. The third chapter will further specify the research strategy, providing detailed information on the research design, chosen methods of research and data collection, methodological choices and their impact on the validity and reliability of the research. This includes the operationalisation of the concepts, measuring instruments, and data analysis strategy. Additionally, research ethics will be discussed. As this research consists of two phases, chapter 3 will discuss methodology of both phases. Chapter 4 then discusses the outcomes of the diagnosis which, as introduced previously, is phase 1 of the research. Chapter 5 builds on these outcomes as it elaborates on the redesign, which is phase 2. Ultimately, chapter 6 will provide the reader with a conclusion, discussion of limitations, and theoretical and managerial implications.

## **2. Theoretical framework**

As previously explained, this chapter will further deepen the theoretical framework around the central concepts of the thesis. Firstly, relevant literature with regards to innovative behaviour of volunteers will be elaborated on. Secondly, insights on organisational structure are discussed with regards to diagnosing the current organisational structure. Then, the relation between the two will be further discussed, and the conceptual model will be presented. Lastly in this chapter, theory on redesigning organisational structures will be discussed, as this is required for the redesign phase of the research.

### *2.1 Innovative behaviour*

As Katz (1964) suggests, organisations should think beyond standardised procedures in order to have employees performing effective work behaviour. Especially regarding innovation in organisations. For innovation in organisations to occur, several researches suggest that employees on an individual level play an essential role (Fischer & Montalbano, 2014; Nijhof, Krabbendam, & Looise, 2002; Tonnessen, 2005). Amabile (1988) suggests innovative initiatives of employees lead to organisational effectiveness. Within literature, innovation and innovative behaviour are often linked to creativity (Amabile, 1988; Mumford & Gustafson, 1988; Wang & Tsaj, 2014). As Anderson, Potočnik, and Zhou (2014) explain, the essential difference between the two is that creativity regards the generation of ideas, while innovation also focuses on implementation of ideas. Creativity is thus often regarded to be the first step in an innovation process. West and Farr (1990) explain that the generation of ideas and their implementation into practice within organisations can either occur by employees or people outside of the organisation. They state that employees are engaged in innovation if they intentionally introduce and apply a new idea. Yuan and Woodman (2010) state that the term innovative behaviour refers to the process of idea implementation occurring on an individual level. It thus regards the behaviour of one employee. As proposed in the introduction, this thesis follows the definition for innovative behaviour developed by De Jong and Den Hartog (2007), as derived from Farr and Ford (1990). This definition states that innovative behaviour is “*behaviour directed towards the initiation and application (within a work role, group or organisation) of new and useful ideas, processes, products or procedures*” (p. 43). This

definition grasps the notion of the two phases as introduced above, which are the initiation and application of new ideas.

Studying and combining existing literature on the subject, De Jong and Den Hartog (2008) distinguished four dimensions of innovative behaviour (or innovative work behaviour, as they refer to it), which are opportunity exploration, idea generation, championing, and application. These four dimensions are also found by Messmann and Mulder (2012), who refer to championing as idea promotion and application as idea realisation. Additionally, they argue that reflection is required as a fifth dimension. These five dimensions are discussed below.

Opportunity exploration is of importance for innovative behaviour, as research found that in order to create something new, new opportunities first are identified (Amabile, 1988). As Leonard and Swap (2005) mention in their work, the process of identifying and ‘finding’ new opportunities is not based on luck, but shows that some employees perform exploration behaviour regarding opportunities. Farr and Ford (1990) explain that opportunity exploration is about looking out and trying to find ways to improve current activities or trying to think about ongoing work processes and outputs in new ways. Messmann and Mulder (2012) also state that exploration requires that a person is attentive to his work environment and has an understanding of current trends and developments.

Once opportunities or gaps are identified, it is required that employees have the ability to think of new ways to approach the need that is identified (Kanter, 1988). As Amabile (1988) explains, generating ideas can relate to various outcomes, including products, services, processes, entering new markets or improving processes. Idea generating often involves finding a new way of arranging existing pieces of knowledge into a new combination (De Jong & Den Hartog, 2008). Messmann and Mulder (2012) refer to idea generation as a process that *“includes publicly addressing substantial work-related problems, critically examining predominant beliefs, as well as expressing and discussing ideas for necessary changes regarding these problems.”* (p. 46).

Idea promotion – or championing - is the third dimension of innovative behaviour, which involves issue selling. For others to accept the new idea and to overcome resistance, Shane (1994) explains that the employee has to build coalitions and push the idea beyond barriers in the organisation. The process of promotion includes skills such as persuasion and negotiation



to ensure acceptance of the new idea (Van de Ven, 1986). For innovative behaviour to occur in the organisation, the person with the innovative idea has to win support of colleagues and supervisors and spread the idea across relevant parts of the organisation (Messmann & Mulder, 2012).

Fourthly, the idea has to be put to practice to truly count as innovation. Idea realisation involves transforming the idea to make it practically applicable. To do so, a detailed planning of the implementation, including examined outcomes and possible side-effects, has to be made (Messmann & Mulder, 2012). For this implementation to succeed, employees often have to perform behaviour including development, testing, and modification to ensure that the idea is incorporated in the organisation (Van de Ven, 1986).

Lastly, reflection is required to assess the progress of the innovation and to evaluate its success based on set criteria (Messmann & Mulder, 2012).

The theories on innovative behaviour as mentioned previously are all focusing on employees. As Stichting Zevenhevelenloop relies largely on the work of volunteers, the innovative behaviour of volunteers is crucial in this research. Although Hoeber and Hoeber (2012) stress that the role of volunteers in the innovation process has been researched too little, several researchers found that volunteers are drivers of organisational innovation as they introduce experience and knowledge obtained via activities at other organisations to the organisation they volunteer at (Goldman & Kahnweller, 2000; Newell & Swan, 1995; Widmar, 1993). Given this impact of volunteers on the innovation process of organisations, it can be argued that the theory on innovative behaviour to a certain extent also applies to volunteers. As volunteers in this case are involved in varying degrees of organisational activities, they can be expected to have a degree of organisational involvement. This sense of involvement is of importance for innovative behaviour to occur (Van de Ven, 1986). For example, involvement allows for volunteers to be attentive for their work and be open for opportunity exploration. On the other hand, as the involvement of volunteers with the organisation can be limited, the degree to which they are willing to actively perform innovative behaviour might be limited accordingly. It is expected that within Stichting Zevenhevelenloop, some volunteers are more involved in the organisation and their role in it than others.

## *2.2 Organisational structure*

Organisations usually are created in order to achieve certain goals. To achieve these organisational goals, interactions between individuals and groups are required to divide tasks and responsibilities within the organisation (Lorsch, 1987). The way these tasks are defined, related, and divided is called the organisational structure (Achterbergh & Vriens, 2019). Pugh (1990) states that the structure entails how the division of tasks, coordination, and responsibilities within an organisation can be used to achieve organisational goals. Nelson and Quick (2011) note that the structure gives the organisations the form to fulfil the function it has within the environment. In his work, Galbraith (1987) uses the concept of organisational structure to refer to the way individuals and groups are configured with regards to tasks, responsibilities and authorities.

As mentioned in the introduction, this research will use sociotechnical theory as a framework to measure organisational structure. However, the sociotechnical theory as developed by De Sitter (2000) is mainly applicable to standardised, hierarchical organisations. As previously introduced, Stichting Zevenheuvelenloop differs from this in the sense that their output does not consist of products or services, but events. Miterev, Mancini, and Turner (2017) argue that there is a gap in current literature regarding the use of an organisation design perspective on event management. From an organisation design perspective, the process of organising events has some similarities with the production process of products or services. To better understand these similarities, first the sociotechnical perspective on organisational design is further elaborated on.

De Sitter (2000) defines sociotechnical theory as an applied theory that relates to the integral (re)design of production processes in organisations. The reason for choosing the sociotechnical theory to measure organisational structure is that sociotechnical theory provides a clear and detailed approach on diagnosing and redesigning organisational structures. Additionally, Achterbergh and Vriens (2019) argue that this theory focuses both on technical as well as social aspects of structure and takes an integral view on organisations.

De Sitter (2000), as one of the founders of the modern sociotechnical theory, has developed theory regarding the way organisational structures should be designed. In his theory, he developed seven design parameters regarding the division of work. The values of the parameters

indicate how well employees in an organisation are able to respond to disturbances that they encounter in their work. Low values indicate that employees have a lot of potential to deal with problems and disturbances themselves. These parameters will be further introduced in upcoming paragraphs. This theory applies not necessarily to the level of an individual employee, but regards the work-related activities that are performed by one unit within the organisation. This could be an individual, a team, or even an entire business unit. To avoid confusion, this will be referred to as workplace, of which the size is dependent on what work activities are included in the workplace. A distinction is made between operational- and regulatory activities. Operational activities relate to the activities that are required to produce a product or deliver a service, it is the basic transformation process within the organisation. Regulatory activities are required to ensure that the operational activities can be performed unhindered. Regulation is thus largely about dealing with problems that occur in the operational process. Operational activities are captured in the production structure of organisations, while regulatory activities are captured in the control structure (De Sitter, 2000).

In their book, that builds on the work of De Sitter (2000), Achterbergh and Vriens (2010) explain that having low parameter values in an organisation means that there is little structural complexity. In this case, workplaces have a lot of potential to perform operational activities and their required regulations themselves, without needing to interact with other workplaces. As there is little interaction between workplaces required, the structure has little complexity. As parameter values increase, workplaces have less autonomy and regulatory power over their operational activities, and they are more dependent on other workplaces. Thus, more interactions between workplaces occur, increasing the interaction network and increasing the chance that errors occur due to these interactions. So, if a workplace has a big interaction network, a lot of coordination is required. This slows down the rate in which operational activities are performed. In his work, De Sitter (2000) pleads for organisations to strive to lower the parameter values as much as possible. His research shows that having low structural complexity and high regulatory capacity at local workplaces also forms a support base at which challenging and meaningful jobs can exist, in which employees are able to deal with work-related stress and are encouraged to be involved, to learn and to develop themselves (Achterbergh & Vriens, 2010). De Sitter (2000) explains in his work that the organisational structure influences three categories of functional requirements of organisations:

1. Quality of organisation: this is defined as the potential of an organisation to effectively and efficiently achieve organisational goals and the ability of the organisation to adapt these goals. Quality of organisations is divided into flexibility, control over order realisation, and potential for innovation.
2. Quality of work: this functional requirement regards to what extent jobs in an organisation are meaningful and employees can deal with work-related stress. This functional requirement is divided into a level of absenteeism and a level of personnel turnover.
3. Quality of working relations: regards the effectiveness of communication. Quality of working relations is divided into the degree of shared responsibility and participation in work consultation.

In this research, mainly the quality of organisation is of importance, as it regards the potential for innovation within the organisation. However, quality of work also is important as innovative behaviour, as distinguished in this thesis, is a character trait that is partly based on the degree to which an individual is intrinsically motivated (De Jong & Den Hartog, 2008). To capture characteristics of organisational structures and relate them to the abovementioned functional requirements, De Sitter (2000) developed seven design parameters. These parameters are divided into three groups. Firstly, the production structure. This is defined as the network of activities in which the product is made or the service is delivered. This process is crucial to reach organisational goals and is the central reason for existence of organisations. In this case, these are the activities required to organise and perform the three annual running events. Secondly, the control structure. This structure is defined as the allocation and coupling of control functions. The way the control structure is organised influences the ability of the organisation to deal with disturbances in the primary process (Achterbergh & Vriens, 2010;2019). The third type of parameter is the division between the production- and control activities. Below, the seven parameters will be further introduced.

#### Production structure parameters

The first parameter is the degree of functional concentration. According to De Sitter (2000), functional concentration regards the way operational tasks are grouped with respect to orders. The functional concentration thus is about the way operational tasks are divided among workplaces. A high degree of functional concentration means that all operational tasks of the

same type are concentrated into specialised workplaces. In this case, one workplace performs one very specific type of activity for all different orders. In event management, this would be the case if one workplace is for example occupied with delivering electricity for all parts of the events. In an organisation with a high degree of functional concentration, workplaces are highly dependent on the work of other workplaces and a lot of interaction and coordination between workplaces is required. A low parameter value of functional concentration means that one workplace is responsible for all operational activities for one type of order. This would be the case in event management if one workplace performs all required activities for one of the sub-events.

The second parameter regards the differentiation of operational activities. Operational tasks can be divided into three types, being executive-, preparatory-, and supporting activities. A high value on this parameter suggests that one workplace is solely responsible for one of the three types of activities. For example, a workplace is responsible for the planning of the activities of another workplace. In an organisation with a high degree of differentiation of operational activities, a lot of interaction and coordination between workplaces is required, as workplaces can only manage a small part of activities. A low value on this parameter indicates that workplaces are responsible for all three types of operational activities themselves. For example, a workplace is able to make their own planning and preparations.

The third parameter in this category is the degree of specialisation of operational activities. This parameter regards the degree to which operational activities are divided into a series of sub-activities. Comparable to functional concentration, this parameter is about the extent to which the process of organising the event is separated into chronological parts. For example, in event management a high degree of specialisation of operational activities would occur if one workplace is responsible for the preparatory phase of all three events. Based on this preparation, another workplace would continue with the middle phase of the process, and a third workplace would then be responsible for the final activities before the event takes place. Put in other words, a high degree on this parameter means the output of one workplace is the input of another workplace.

### Division between the production- and control activities

The fourth parameter regards the division between production- and control activities. This parameter thus assesses whether a workplace that is performing operational activities can also perform control activities to deal with disturbances in the operational activities by itself. A high degree would indicate that certain workplaces are responsible for dealing with disturbances encountered by another workplace. In an organisation with a low degree of division between operational- and control activities, workplaces can regulate themselves (De Sitter, 2000).

### Control structure parameters

With regards to the control structure, three parameters are distinguished by De Sitter (2000). The first is the division of regulatory capacity to process parts. De Sitter (2000) explains that regulatory capacity can be decomposed into monitoring, assessing, and acting. Monitoring regards measuring values of essential variables of the organisation. These are the variables that measure whether organisational goals are being achieved. Assessing is the act of comparing the values of the essential variables to the norm value that the organisation has set for these variables. Acting is about taking action to decrease the gap between the actual value and norm value of the essential variables. The parameter of division of regulatory capacity to process parts thus regards whether these three control activities are divided or concentrated in workplaces.

A second parameter regards the division of regulatory capacity to aspects. In his research, De Sitter (2000) distinguishes three levels in which regulatory capacity occurs. Firstly, regulation of operational activities. This means dealing with disturbances in the production process. These usually are disturbances on a day-to-day, routine basis. The second is design regulation, which deals with changing the design of the production process to attenuate the chance of disturbances occurring or amplifying regulatory capacity. Thirdly, De Sitter (2000) mentions strategic regulation, in which the goals of the organisation can be changed to better deal with disturbances. The parameter on division of regulatory capacity to aspects focuses on the degree to which a workplace is able to regulate on all three levels of regulation. A high degree of division to aspects means that workplaces can regulate on only one of the three levels.

The last parameter regards the degree of specialisation of regulatory activities. This parameter is comparable to the third parameter, but instead of production structure it focuses on the

regulatory structure. A high parameter value means regulating activities are specialised into certain topics. For example, a workplace would only be responsible for making decisions with regards to recruitment, while another workplace deals with marketing (De Sitter, 2000).

Applying this theory to Stichting Zevenhevelenloop, similarities between the organisation of events and production- and control activities as distinguished by the sociotechnical design perspective can be addressed. The design perspective focuses on the way tasks are divided within an organisation and argues that workplaces on a local level should have to deal with as little structural complexity as possible, while having as much autonomy as possible to deal with disturbances. These conceptions are applicable to Stichting Zevenhevelenloop and its activities. Additionally, as Stichting Zevenhevelenloop has three events that reoccur annually, they strive to use the evaluation of previous events to improve upcoming events. This recurrence gives the events of Stichting Zevenhevelenloop a more stationary character. The organisation can use roughly the same process steps per event and has opportunities to learn from their previous experiences.

### *2.3 Relation between organisational structure and innovative behaviour*

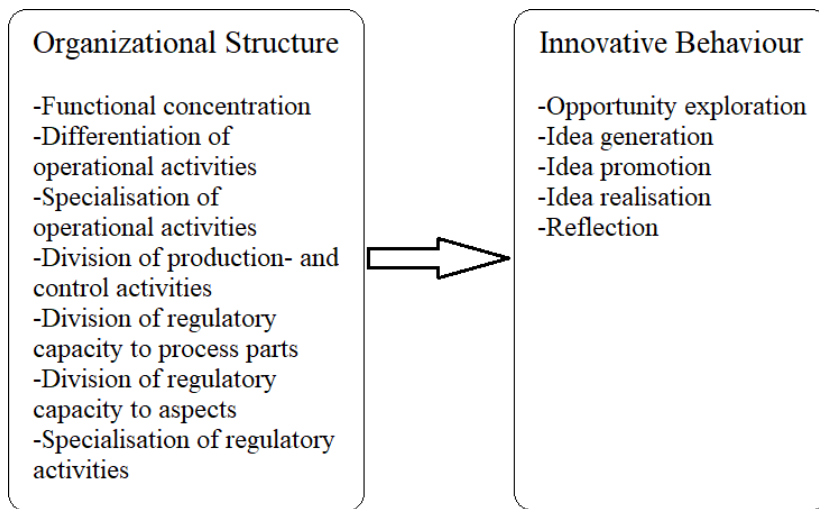
As the concepts of innovative behaviour and organisational structure and their relevant literature are introduced, a general sense of direction on the relation between the two central concepts can be discussed. As briefly mentioned, De Sitter (2000) argues that organisational structure influences innovation in organisations. In his work, he explains that the parameters indicate how adequate the structure of an organisation is. He argues that an organisation should aim to have the lowest parameter values as possible, as this increases autonomy and regulatory capacity for individual workplaces. This way, employees are enabled to deal directly with problems that occur, as complexity is low within the organisations and employees have more responsibilities. De Sitter (2000) argues that this way, employees have more room to focus on innovation, as they need less time to deal with occurring disturbances. This notion of local autonomy is also supported by the findings of Amabile (1988) and De Jong and Den Hartog (2008), who argue that the allowance of employees to influence organisational decision-making and have autonomy over their own work results in stimulated intrinsic motivation, which contributes to innovative behaviour. As mentioned in the introduction, a link between innovation in organisations and organisational structure was also found by several other

academics (Ashkenas, 1998; Burgelman & Maidique, 1988; Lawson & Samson, 2001; Maira & Thomas, 1998). In addition to the importance of autonomy, researchers also found that structures should aim at breaking down organisational barriers and be more permeable (Lawson & Samson, 2001; Maira & Thomas, 1998). This is in line with the ideas of De Sitter (2000) that organisations should strive to lower functional concentration, differentiation, and specialisation. Having an adequate organisational structure thus seems highly important for innovative behaviour to occur.

The relations as found by these researches are primarily based on employees in organisations. However, in this research, volunteers and their innovative behaviour in the organisations are the object of research. As Cnaan and Cascio (1998) found in their research, volunteers and employees tend to have different characteristics with regards to motivation, loyalty, organisational commitment, and potential rewards or sanctions. However, similarities between the two groups are also found as both employees and volunteers can play a major role in organisational innovations. Both groups are valuable for organisational innovation as they introduce new ideas, improve processes, and ask critical questions (Birkinshaw & Duke, 2013; Cerinsek & Dolinsek, 2009; Goldman & Kahnweller, 2000; Hoerber & Hoerber, 2012; Newell & Swan, 1995; Widmar, 1993). Within the Zevenheuvelenloop, many of the volunteers are involved in the organisation for several years. This sense of continuity and long-term involvement is similar to employees, who often are also long-term involved in the organisation they work for. Given these similarities, it can be assumed that some similarities between volunteers and employees with regards to innovative behaviour exist. Additionally, it can be assumed that some similarities between these groups with regards to the relationship between organisational structure and innovative behaviour can be found. However, given the lack of academic research on this topic, the extent of these similarities is not evident.

An overview of the relationship between organisational structure and innovative behaviour including the dimensions of both concepts is provided in the conceptual model as provided in figure 2.





*Figure 2: Conceptual model*

#### *2.4 Redesign theory*

As theories on diagnosing the current organisational structure using a sociotechnical approach have been discussed, the second phase of the research will now be discussed. In line with the diagnosis, in this research, sociotechnical ideas are used as a guideline for redesigning the organisation.

In recent history, redesigning and organisational change have gained increasing attention in academic literature. As Achterbergh and Vriens (2019) suggest, change in organisations can be difficult to achieve. They argue it requires a well thought-out plan and due to the fact that organisations consist of interactions and interaction premises, achieving change requires an integral understanding of all aspects of the organisation. Additionally, they argue that in organisations, change will always encounter resistance of organisational members. Therefore, they advocate that organisational members should participate in the change process, to increase understanding and decrease organisational resistance. As explained in the previous sections, De Sitter (2000) claims that structure should be designed in such a way that parameter values are as low as possible, given the organisational context. In practice, organisational and contextual factors often inhibit organisations to have absolute minimum values and certain concessions with respect to this have to be made.

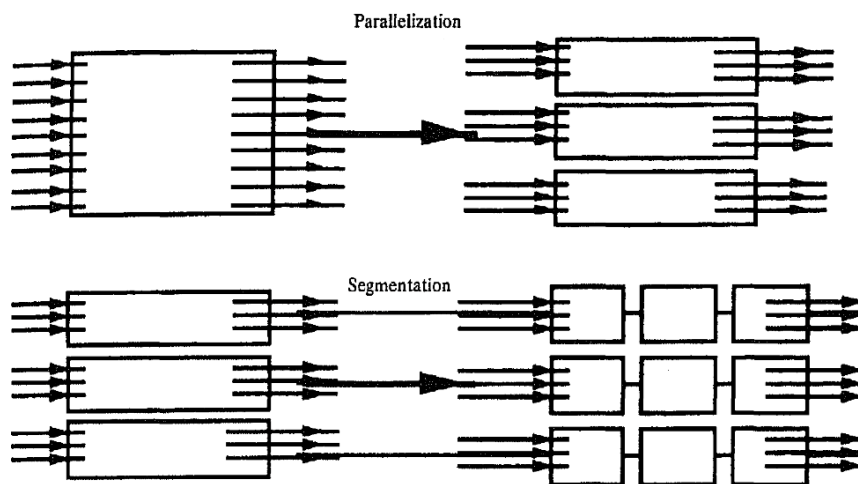
De Sitter, Den Hertog and Dankbaar (1997) suggest a good design improves both efficiency and effectiveness. To do so, they distinguish six steps in a particular order in redesigning organisations. The first three steps are focused on redesigning the production structure, as this structure is the reason for the organisation to exist in the first place. In addition, starting with designing production structure allows for reduction of variation and interaction between workplaces. The design of the production structure is done in three steps as it starts at macro level, then meso level and lastly micro level. This way, a lot of complexity can be avoided from the start. Once the production structure is designed, the control structure can be designed to deal with the remaining complexity and disturbances. As the sociotechnical theory suggests that local workplaces should have as much regulatory capacity as possible, the steps to design the regulatory structure starts at micro level. As in practice not all control activities can be placed on the level of local workplaces, remaining control activities will then be designed on meso level and ultimately, on macro level (Kuipers, Van Amelsvoort & Kramer, 2018).

#### Production structure:

As previously mentioned, the sociotechnical theory argues that reduction of complexity is the point of departure in designing an organisational structure. Kuipers, Van Amelsvoort and Kramer (2018) explain that one important way of achieving structure simplification is to parallelise varying order flows into more homogeneous sub-flows. Each sub-flow can then be assigned to a relatively independent organisational unit. If possible, each order type should have its own separate sub-flow. To prevent an increase in parameter value on the differentiation of operational activities, all operational activities should be placed within the sub-flows. This entails that one sub-flow contains the executive-, preparatory-, and supporting activities needed within that order type.

Within the sub-flows on macro level, often it is required to create clusters of activities on meso level that are manageable. This process is called segmentation and entails the allocation of tasks to groups within the sub-flow. Cutting the sub-flow into segments is required if the sub-flow is too complex to be assigned to one workplace. If possible, segmentation should be avoided as it increases the amount of interactions and thus complexity between workplaces. However, in practice it often cannot be avoided. If segmentation is required it should result in groups of tasks that are clustered in a logical way. This could for example be done by allocating tasks into modules, or sub-components of products. A visualisation of parallelisation and segmentation is

provided in figure 3. Lastly, the way teams are allocated tasks on a local level has to be designed. This happens on the micro level. From a sociotechnical perspective, one should strive to allocate as much regulatory capacity on this micro level (Kuipers, Van Amelsvoort, Kramer, 2018).



*Figure 3: Visualisation of parallelisation and segmentation as derived from De Sitter, Den Hartog, & Dankbaar (1997, p. 511).*

#### Control structure:

As previously discussed, in opposition to the design of the production structure, the control structure should be designed starting on a micro level. By designing the production structure following the previous steps and with a focus on decreasing structural complexity, a lot of need for regulatory potential can be prevented in advance. Starting the allocation of regulatory capacity on micro level, as much regulatory capacity can be allocated to local teams and a lot of structural complexity can be avoided. On this level, one should assess how much regulatory capacity regarding operational-, design-, and strategic activities can be allocated. On meso level, the same question will be assessed but this time regarding segments on meso level. Lastly, the remaining regulatory capacity should be allocated on a macro level, regarding regulatory subjects on the level of the whole organisation (Kuipers, Van Amelsvoort, Kramer, 2018).

### **3. Methodology**

This chapter will further explain the research methodology on how the required data is collected and analysed to conduct this research. As introduced before, the research consists of two phases. These phases are diagnosis and design, as distinguished by Achterbergh and Vriens (2019) regarding the functional dimension of their 3-D model of interventions. The chapter starts with clarifying the methodological approach, which is taken for both phases. The part that follows which focuses on research design and data collection is divided in two sections, as these methods differ for the diagnosis and design phase. After that, the consequences of the methodological choices made are elaborated on, regarding the quality of the research. Lastly, insights on research ethics and the role of the researcher in this thesis are discussed.

#### *3.1 Methodological approach*

In order to properly answer the research question, firstly a diagnosis is conducted. As Doorewaard and Kil (2015) explain, a diagnosis in research is used to find out what problems there are or what can be improved. Additionally, diagnosis is used to disclose the causes of these suboptimal situations. To get a clear insight on this, in-depth understanding of the situation is required. As Doorewaard and Kil (2015) explain, a qualitative research approach can be used best to attain this insight. Sofaer (1999) explains that qualitative research methods are “valuable in providing rich descriptions of complex phenomena; ... illuminating the experience and interpretation of events by actors with widely differing stakes and roles...” (p. 1101). Bleijenbergh (2015) explains that qualitative research is used to collect and interpret linguistic material to make statements regarding an occurring phenomenon in reality. Cresswell (1994) mentions that the usage of qualitative methods allows the researcher to get highly detailed insights due to involvement in the actual experience. In this case, for the diagnosis, the aim is to acquire an in-depth understanding of innovative behaviour of volunteers and the relation between innovative behaviour and organisational structure within the Zevenheuvelenloop. To do so, the experiences and interpretations of organisational members regarding these central concepts should be collected. Using a qualitative approach, the researcher is allowed to collect and analyse this material and thus, a qualitative approach suits this research. Due to the rich nature of data collected using qualitative research, the researcher is allowed to potentially have findings that extend the initial operationalisation, yet are relevant

to the case. These additional findings could enable the researcher to gain even better understanding of the phenomenon in its context. For the second research phase, the redesign, a qualitative research approach also seems fitting. As Achterbergh and Vriens (2019) argue, redesigning an organisation requires input of organisational members. The use of a qualitative research approach allows the researcher to collect rich material on the experiences and insights of organisational actors (Sofaer, 1999). This rich input of organisational members can thus be used to propose a redesign that fits the organisation.

Within this qualitative research strategy, a deductive research approach is chosen. Bleijenbergh (2015) explains that in deductive research, a research object is approached using a well-defined theoretical framework. Based on the theoretical framework, certain empirical material is analysed. As Doorewaard and Kil (2015) mention in their work, the deductive approach enables the researcher to clearly define dimensions and aspects of the concepts that are central to the research. This operationalisation allows the researcher to effectively gain insight in the complex phenomenon, as the researcher understands different aspects of the concepts in advance of collecting data. This research approach fits both phases of this research. To assess the current innovative behaviour and structure in the diagnosis phase, existing literature on both concepts and their relation provides the researcher with a clear approach on how to collect and analyse data on both concepts and their relation. Although it was previously argued that both theory on innovative behaviour and organisational structure have not yet been applied to volunteers, a deductive approach based on these theories is still applicable as the theories still provide a solid framework for measuring both concepts in this case. Regarding the redesign phase, the outputs of the diagnosis phase can be combined with a clear theoretical framework on redesigning organisations to provide a way to guide and structure the redesign. Thus, the deductive research approach allows the researcher to research the phenomenon while guided by a theoretical framework. This way all aspects of the central concepts and their relation can be studied.

### *3.2 Diagnosis*

In the diagnostic phase of this research, the current degree of innovative behaviour and organisational structure are mapped. Innovative behaviour will be measured using the model as developed by Messmann and Mulder (2012). As a sociotechnical perspective on organisational

design is taken, the organisational structure is measured using the parameters as distinguished by De Sitter (2000).

### 3.2.1 Research design & selection

According to Verschuren, Doorewaard and Mellion (2010), diagnosis is used to study the origin and background of occurring problems. As Stichting Zevenheuvelenloop expressed the wish to be more able to innovate their events and activities, in this research it is chosen to focus on innovative behaviour of their volunteers. As explained in chapter 2, this research uses the scale for innovative behaviour as derived from Messmann and Mulder (2012). As will be discussed in the next section, innovative behaviour will be measured using semi-structured interviews. The items to measure innovative behaviour as developed by Messmann and Mulder (2012) are partially survey-based questions. Rewriting these into open questions is required, as Bleijenbergh (2015) argues that open questions are better suited when conducting interviews. The model for innovative behaviour was tested for reliability and several forms of variability by Messmann and Mulder (2012) themselves, who found the items they developed to be both reliable and valid. Additionally, as an applicable operationalisation of the parameters of De Sitter (2000) into semi-structured interview questions is missing in academic literature, this operationalisation was made specifically for this thesis. The interview format can be found in Appendix A. As innovative behaviour of volunteers is central in this research, the interviews with the three voluntary layers focus on innovative behaviour, organisational structure and the relation between the two. The interviews with office members are mainly targeting organisational structure, as office members have a clear view over the structure of the whole organisation. Lastly, the interviews with board members are more exploratory-based.

### 3.2.2 Data collection & analysis

As introduced in the previous paragraph, the collection of data in the diagnostic phase will be done using semi-structured interviews. Bleijenbergh (2015) argues that the usage of interviews allows for the researcher to create a clear view on the central concepts. As the questions of the interviews are based on the operationalisation of the central constructs and interview formats are used, all aspects of the central concepts can be discussed. However, as the interviews are

semi-structured, extra questions can optionally be asked to get clearer answers and a better understanding of the perspective of interviewees. In this research, a total of eleven interviews with members of Stichting Zevenhevelenloop were conducted. These interviews are conducted on different layers of the organisation, as a distinction is made between office, board, coordinators, sub-coordinators and daily volunteers.

When determining the amount of interviews that is required to get an adequate understanding of an organisation, saturation is a good indicator. Saturation is reached if the collection of additional data does not shed any further light on the issue under investigation (Mason, 2010). In total, eleven interviews were conducted. Within most organisational layers, saturation was perceived to be sufficient after two interviews. However, an additional third interview with a coordinator was conducted. This decision was made as the first two interviews were conducted with coordinators of output-based coordination areas. To gain a broader understanding of the organisation, a third interview was conducted with the coordinator of a supportive area (Logistics). The table below shows the organisational roles of the employees and their respective codes. To gain a full understanding of the relations between these organisational roles, appendix B provides the organogram of the Zevenhevelenloop in its entirety.

<b>Function</b>	<b>Coding Abbreviation</b>
Production Manager Office	PMO
Communication Manager Office	CMO
Chairman Board	CB
Innovator (Secretary) Board	IB
Coordinator Logistics	CL
Coordinator Start/Finish	CSF
Coordinator Parcours	CP
Sub-Coordinator Drinks Post	SCDP
Sub-Coordinator Drinks & Medals stand	SCDM
Daily Volunteer Logistics	DVL
Daily Volunteer Drinks & Medals stand	DVDM

Due to pandemic related measurements, the decision was made to conduct the interviews digitally, using a video-calling programme.

The interviews were recorded and a verbatim transcript was made, to ensure that everything the interviewees said is saved and can be used in the data analysis. The verbatim transcripts were then coded, using the theoretical insights as discussed in chapter 2 and the operationalisation of the constructs based on these theoretical insights. This operationalisation provides a good systematic framework to assess all indicators of the constructs. These indicators are clustered into dimensions, which are discussed in chapter 4. As previously explained, the interviews were conducted among members of all five organisational layers. To aim for an optimal understanding of the concepts and their relation within the Zevenhevelenloop, chapter 4 discusses the dimensions using gained from all organisational layers, if applicable. Aiming for an objective analysis, the analysis contains (translated) quotations of respondents.

In addition to conducting semi-structured interviews, a few internal documents of Stichting Zevenhevelenloop are analysed. To get a clear image of the current organisational structure, the organogram (appendix B) and a summarised overview of organisational layers (provided in chapter 4) were used.

### *3.3 Redesign methods*

This section focuses on the methods required to develop a redesign that better enables innovative behaviour to occur within the Zevenhevelenloop. As discussed in chapter 2, the sociotechnical theory on designing and redesigning organisational structures is used as the basis for the redesign.

#### 3.3.1 Research design & selection

As previously discussed, the redesign phase is used to answer the second part of the research question and the third sub-question: *How can the organisational structure of the Zevenhevelenloop be redesigned to increase innovative behaviour?*



To properly answer this question, this research phase uses input gained during a focus group. Beck et al. define a focus group as “an informal discussion among selected individuals about specific topics” (1986, p. 73). Wilkinson (1998) argues that the method of focus groups has proven to be a popular tool in participatory action research projects and is often used as a catalyst or agent of change. However, Drayton, Fahad and Tynan (1989) argue that focus groups have limited reliability and validity and result in various forms of moderator and respondent bias.

Although the selected participants are chosen among different organisational levels, the prerequisite was taken into account that participants should have sufficient involvement in organisational activities, to ensure the participants can provide substantial and qualitative input. As sub-coordinators and coordinators are involved in more organisational activities than daily volunteers, the decision was made not to include daily volunteers in the focus group. The list of participants can be found in appendix C. The topics of discussion of the focus group are based on the outcomes of the diagnostic phase. Additionally, participants will be provided with an introduction on general redesign theories.

### 3.3.2 Data collection & analysis

The redesign phase and thus the focus group are participative, meaning that the redesign occurs as a group, using the inputs and ideas of those involved. Achterbergh and Vriens (2019) argue that participation of employees in the design phase is required as they often have a better idea of the organisation and its problems and involving them in the process often results in a better understanding of them on why the change is occurring. A participative focus group in this case thus would lead to a redesign that better suits the organisation.

The research approach of the focus group is, in line with the entire research, deductive-based. This entails that the sociotechnical theory on designing and redesigning organisations was introduced to participants and the discussion during the focus group was guided based on theoretically distinguished steps, in which the researcher took a facilitative role to ensure that the discussions held followed the deductive-based approach. The participants could use the theoretical insights and assess to what extent they apply to their organisation and how they could be used to improve the organisational structure. As is implied by Kuipers, van

Amelsvoort, and Kramer (2018), a redesign based on the sociotechnical insights should be made given organisational circumstances. In practice, not all ideal design aspects can be incorporated in the vast majority of organisations due to practical constraints. Allowing for the participants to apply the theory themselves, it is strived to find the optimal structure based both on sociotechnical theory as well as the organisational context.

The researcher uses the outputs and conclusions of the focus group as a guideline and structures them to become a fully proposed redesign of the organisational structure. During the focus group, an audio recording was made. This audio recording is used to make a summary, in which the major arguments, considerations, and thoughts of the participants and facilitator are written down. This way, the loss of information is reduced. This transcript is used as guidance for the actual proposed redesign as introduced in chapter 5. The redesign follows the steps as distinguished by Kuipers, van Amelsvoort, and Kramer (2018). The transcription of the focus group was analysed by coding the discussions based on steps of the redesign process. All arguments and discussions per step were then combined, to assess what redesign options are useful for that step.

### *3.4 Quality of research*

For the results of any research to contribute and actually mean something, the quality of the research must be considered. Many scholars have addressed the subject of what criteria should be used to assess the quality of qualitative research (Hammersley, 2009; Kmet, Lee & Cook, 2004; Krefting, 1991; Murry & Hammons, 1995), though the specific criteria they propose seem to vary per research. To assess the quality of this research, the criteria as introduced by Lincoln and Guba (1985) are used. As Symon and Cassell (2012) argue, these criteria cover the key elements that are of importance to assess the trustworthiness of a research. The four criteria as distinguished by Lincoln and Guba are credibility, dependability, confirmability, and transferability. In the sections below, an assessment of these criteria for this research is provided.

Credibility regards the degree to which the results of the research are depicting the situation in reality (Symon & Cassell, 2012). In this research, credibility is tried to achieve in several ways.

Firstly, as several sources of data are used to construct the diagnosis. The inputs of both interviews and a few internal documents are used, to get an accurate picture on the situation. Additionally, some exploratory conversations with the organisation were held to get an adequate overview of the case. To increase credibility, the decision was made to conduct interviews with all five layers within the organisation. At the start of each interview, the participants were notified that their names will remain anonymous in the research report, to increase the honesty of answers provided. They were also notified that the interviews are recorded and these recordings would be used to make a verbatim transcript, in order to decrease loss of information. A member check was also conducted, as the interviewees got to read the verbatim transcript and were encouraged to make remarks on the interpretations, before they were used for analysis. For the focus group, the same process regarding transcription and member check applies. As the focus group consists of a group of people who were able to see and hear each other, anonymity within the group could not be guaranteed. However, participants were notified that their contributions would remain anonymous within the research report.

Dependability refers to the extent to which the study could be repeated by other researchers and to what degree they would find similar outcomes (Symon & Cassell, 2012). This research aims for dependability in two ways. Firstly, the theoretical, methodological, and analytical choices made in the research are substantiated as clearly as possible. This provides transparency for readers and allows them to assess whether the right choices were made. Secondly, this research relies on inquiry audits. This entails that fellow scholars examine the research process and analysis. In this research, a student writing a similar thesis and two professors of the Radboud University are involved in the assessment of the process of this research.

Confirmability regards whether the findings are based on the responses of participants and do not involve any bias of the researcher (Symon & Cassell, 2012). In this research, confirmability was strived for using an audit trail. An audit trail entails that all steps made regarding data analysis are substantiated and based on the theoretical framework as provided, using a deductive research approach to ensure systematic coding. In the data collection phase, confirmability was strived for using member checks and transcripts of audio recordings.

Lastly, the concept of transferability regards the extent to which the findings of a research are applicable to similar contexts (Symon & Cassell, 2012). By providing thick descriptions as

much as possible, this research tries to enable others to apply the results of this research to their specific cases.

Due to pandemic-related concerns, the decision was made to conduct the interviews using a video-calling programme. This was beneficial as it allowed for the interviews to take place despite limiting circumstances. Making the use of video, the researcher and interviewee were enabled to see each other, albeit virtually. Although video-calling is a viable alternative for face-to-face interactions, academics argue that it does not allow for the same richness of data collection, considering that subtle non-verbal cues can be lost (Deakin & Wakefield, 2014; Lo Iocano, Symonds, & Brown, 2016). In this research, the audio of one of the interviews could not be recorded due to technical difficulties. Although the researcher made notes of the majority of the interview, some data was lost due to this issue.

The focus group was conducted using a video-calling programme as well. This was perceived to have little negative aspects compared to a face-to-face meeting. General issues of limited computer access or computer skills of participants, as mentioned by Kenny (2005), did not seem to apply and no technical issues were perceived. Participants were not observed to be hindered or bothered by the online setting.

In addition to the quality of data collection and analysis, the quality of the theoretical framework is of importance. Messmann and Mulder (2012) reviewed their scale on innovative work behaviour regarding validity and reliability themselves and found that several of the relations between the elements of the model as proposed were both valid and reliable. Additionally, the constructed items as proposed were both valid and reliable. However, there seems to be a lack of peer reviewing and academic testing of this model by other scholars. Additionally, as the items of Messmann and Mulder (2012) were survey-items, they had to be rewritten into open interview questions, which might have some quality related implications. Additionally, these questions are proposed in English. However, the interviewees are Dutch and therefore, the interviews were held in Dutch. A language translation thus was required as well. Regarding the sociotechnical design theory as developed by De Sitter (2000), an issue arises as there seems to be a lack of operationalisation of the organisational structure, based on the parameters. Accordingly, a peer reviewed and tested interview format was missing. Both operationalisation and construction of the interview format have been done for this research specifically, though

a test on the quality of both is absent. Lastly, both theories on innovative behaviour and organisational structure are developed regarding employees specifically. Application on volunteers seems to be lacking. As was previously argued, the characteristics of volunteers are not expected to inhibit the application of these theories to this case, although this application could affect the quality of research.

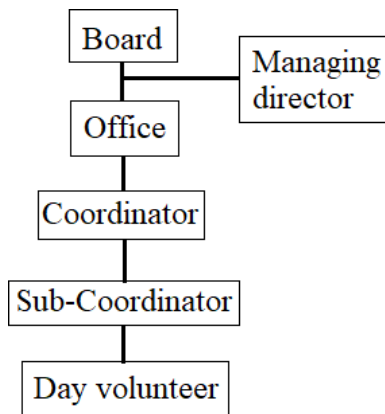
### *3.5 Ethics*

Every kind of research has to consider some ethical issues. By applying certain ethical principles, participants in the study can be protected (Orb, Eisenhauer & Wynaden, 2000). As Shaw (2003) elaborates, within qualitative research design, issues of informed consent, confidentiality, and privacy are of high ethical importance. To ensure this, participants in this research were fully informed on the subject of the research, as they were given a short summary of the purpose of the research before the interviews and focus group began. Additionally, before the start of both interviews and the focus group, the researcher made clear to participants that their name remains anonymous within the research paper and the information as provided in the interview is used for this research only. Before the start of both interviews and focus group, participants were informed that the session was recorded, as the audio was required to reconstruct the data. Once a transcript of the session was made, the audio file was destroyed. Before the start of both the interviews and focus group, the participants were asked whether they understand the above mentioned issues regarding ethics and whether they still agree to participate.

With regards to the focus group, the role of the researcher should be considered. During the focus group, the researcher took on the role of facilitator, to stimulate and guide the discussion. As Drayton, Fahad and Tynan (1989) argue, this facilitating role results in moderator bias, as the moderator is involved in- and thus influences- the discussion. Attempts were made by the researcher to minimise this bias by directing the discussion towards relevant topics and guiding the discussion by repeating statements of participants instead of proposing their own ideas. However, it can be argued that some degree of moderator bias is inherent to focus groups and is thus inevitable, especially given the deductive-based focus group as conducted in this research.

#### **4. Analysis of diagnosis**

This chapter discusses the analysis of the diagnostic data. The overview of the organisation can be found in the summarised organogram in figure 4.



*Figure 4: Organogram (simplified) of the Zevenhevelenloop*

In the upcoming paragraphs, firstly the analysis of the diagnosis regarding innovative behaviour within the varying organisational layers will be discussed. A division is made per dimension of innovative behaviour, as discussed in chapter 2. Secondly, the analysis of the diagnosis on organisational structure is discussed. The third paragraph provides insights on the relation between the two. The fourth paragraph discusses additional findings and lastly, a conclusion of the diagnosis is provided. The following paragraphs contain quotations of the interviewees, to substantiate the analysis. With each quotation, the code of the interviewee is provided. The overview of organisational roles and codes of the interviewees can be found in chapter 3.

##### *4.1 Innovative behaviour*

In earlier chapters, it was explained that innovative behaviour in this thesis is measured using an operationalisation based on the five dimensions as distinguished by Messmann and Mulder (2012). The sections below address the extent of innovative behaviour among the various organisational layers of Stichting Zevenhevelenloop, per dimension.

#### 4.1.1 Opportunity exploration

In chapter 2, opportunity exploration was introduced as looking out and trying to find ways to improve current activities or trying to think about ongoing work processes and outputs in new ways (Farr & Ford, 1990). Opportunity exploration is broadly divided in two categories: opportunity exploration within the organisation and outside of the organisation, for example within the industry, or at other organisations (Messmann & Mulder, 2012). Within Stichting Zevenheuvelenloop, the interviews showed a clear distinction regarding the degree to which volunteers and employees from different organisational layers were partaking in opportunity exploration. Daily volunteers, who are responsible for executing operational activities during the event, are hardly occupied with exploring opportunities for innovation, as substantiated in one of the interviews:

*“You are mainly occupied with your own workplace. You don’t know what other things are happening, or how many people are working in the organisation. You only focus on your job.”* (DVDM)

It is clear she was occupied with doing her work, and was not up to date on other aspects of the organisation. She also doesn’t look for innovative opportunities in other running-event organisations:

*“I’m not occupied with that. I’m purely focusing on the job on the day itself. Perhaps it happens for people who are higher in the organisation.”* (DVDM)

The daily volunteer is hardly involved in the organisation and thus doesn’t partake in opportunity exploration. The sub-coordinator of the Drinks and Medals stand explains that his interest in the organisation itself is limited to the Start/Finish coordination area, of which his sub-coordination area is a part. The sub-coordinator of the Drink Post explains he used to be more involved in the organisation, because he wanted to be more up to date back then. Nowadays, he wants his role to be more focused on his current function and be less involved in the organisation as a whole. This shows that the degree to which the sub-coordinators are exploring opportunities by staying up to date on developments within the organisation is limited to their own interests to do so. Additionally, the same line of thought applies for the degree to which they are up to date on developments outside of Stichting Zevenheuvelenloop. For example, respondent SCDM when asked about being up to date in the entire industry, said:

*“No not really. [...] I enjoy working for this organisation, they are good people. But I don't care about the running industry. I did notice that for example, the coordinator at Start/Finish is a runner himself. He has ideas, based on the marathon of Berlin or Rotterdam”* (SCDM)

The extent to which sub-coordinators are exploring opportunities thus seems to be dependent on their personal interests to do so. For coordinators, their involvement in opportunity exploration is also partly based on personal interest:

*“[...] I enjoy running a lot and participating in various events. So, when I join an event, I tend to look around “what does the dressing area look like?” and that provides you with ideas on how to do things differently”* (CSF)

Respondent CP has a similar idea on opportunity exploration at other events:

*“You start to look at other events differently, yes. Sometimes you watch TV and focus on the way they use roadblocks or traffic regulators. But it is more an interest than really actively tracking it”* (CP)

So, to some extent these coordinators are involved in opportunity exploration outside of Stichting Zevenheuvelenloop, based on their involvement in their coordinating position. Within Stichting Zevenheuvelenloop, they are a lot more aware of developments than the sub-coordinators and volunteers are, but still not fully aware of developments in the entire organisation. Respondent CSF responds to the question to what extent she is aware of developments within the Zevenheuvelenloop, yet outside of her own coordination area:

*“Obviously, less than in my own coordination area. Although, we are immediately informed on big developments, because it often affects the Start/Finish.”* (CSF)

Respondent CP substantiated a similar opinion:

*“well, not entirely. You can't expect all coordinators to fully keep track of all developments, that would be confusing and takes way too much time. A balance is required, to be informed well enough to function properly, but not too much. It depends per coordinator what their preferences are.”* (CP)



So, the coordinators are more up to date in comparison to sub-coordinators and volunteers. This is partly due to their experience, which makes them look at other events differently. Additionally, due to their responsibilities they are more involved in certain areas of development. This is a deliberate decision, as this allows the office to consult the expertise of particular coordinators, whose coordination areas are affected by the development. Coordinators are less aware of developments in coordination areas that do not affect their area, as they feel there is no need to and it takes too much time.

When coordinators are looking for opportunities for innovation, they tend to focus on improving their area of coordination. These innovations are often incremental, and aimed at improving efficiency. The same applies for sub-coordinators, although their span of focus is even more converged. Exploration of opportunities that extend particular coordination areas tends to happen within the office or the board. As respondent CB explains:

*“Big new ideas are introduced by the office. [...] Ideas from the [voluntary] people... perhaps more practical ideas: dressing room, layout. But they won't introduce the hourglass start, those are not big changes. Those are small changes [...].” (CB)*

Respondent IB draws the same conclusion. When asked in what parts of the organisation innovation occurs, he answered:

*“Everywhere. Although coordinators are mainly concerned with optimising their own coordination area [...].” (IB)*

In summary, it can be concluded that the degree of opportunity exploration is higher in organisational positions in which people are more involved in organisational activities. This seems due to their involvement in the organisation, allowing them to think about subjects that affect their area more often. Additionally, this increased involvement leads to more active exploration outside of the organisation. For coordinators and sub-coordinators, opportunity exploration tends to be limited to their own area of coordination. Within the board and the office, this limitation is exceeded, as their functions are broader than particular areas of coordination.

#### 4.1.2 Idea generation

Idea generation is referred to as a process of openly discussing substantial work-related issues, addressing beliefs and values and introducing and discussing ideas on how to change these problems (Messmann & Mulder, 2012). Starting the analysis on idea generation within the Zevenheuvelenloop at the level of daily volunteers, similarly to the findings of opportunity exploration, respondent DVDM is hardly occupied with idea generation as well. She explains that her involvement in creating new ideas is very limited. She is only involved during the day and focuses on her job in the organisation. She gives limited feedback on potential areas of improvement or asks critical questions. However, when she notices something that does not work, she likes to suggest potential ideas for improvement with her sub-coordinator:

*“I like to think about those things, but that is personal. I think most day volunteers don’t really care”* (DVDM)

The generation of ideas thus is limited for daily volunteers and seems to only apply for solving small practical problems that occur during the day. The daily volunteer said she did not express any kind of evaluation, although other sources in the organisation did state that an evaluation survey among all day volunteers was shared. However, the idea generation as provided by this survey is limited to very practical points, such as quality of lunch.

The sub-coordinators are more actively expressing evaluations, by discussing them with their coordinators and the office. Respondent SCDP says:

*“It is very important to make notes during the day, to ensure the office can use them in evaluation for next year.”* (SCDP)

The sub-coordinators thus partake in generating ideas on what to improve, though this is concentrated within their area of coordination. The sub-coordinator of the Drinks and Medals stand explains that his evaluation on potential improvements serves as input for the office and coordinators to turn into actual improvements.

Coordinators are more involved in generating ideas. Firstly, this is due to the fact that the office involves them in new ideas that exceed specific coordination areas:

*“That happens via the office, often via the managing director. He sent us an email saying “guys this is the idea, what do you think about it?” This way, we are involved in the idea” (CSF)*

She explains that if a coordinator has a big idea, this is also developed by discussing it with the office. In the interview, she said:

*“Often, big new ideas are discussed based on previous evaluations. If you have an idea, you bring it to the office. Although, I haven’t really thought of anything big myself. Bigger new ideas often are introduced by the office.” (CSF)*

New ideas thus are generated by discussion between the relevant coordinators and the office. Within coordination areas, these discussions are based on evaluations of the previous year. Respondent CP explains that coordinators are not really helping to generate and improve new ideas that are not related to their own coordination area:

*“not really. For many of us, it [=coordinating] is more of a side job. Other areas are often busy thinking of improvements, and you really have to know a lot about the details to help generate and improve these ideas. You try to stay out of that and focus on your own area. You don’t have the time to put into other areas. So, no, regarding innovations or changing things, coordination areas tend to do that within their own area and by discussing it with the office. You stay out of that.” (CP)*

Idea generation within coordination areas thus often happens based on evaluations, as provided by mainly sub-coordinators and coordinators. These evaluation ideas on how to improve certain aspects within the coordination area are discussed between the coordinator and the board, sometimes also involving a sub-coordinator if specific details are required. Additionally, many of the innovative ideas that exceed the limits of specific coordination areas are introduced by either the board or the office. Within the office, ideas are stimulated:

*“At the office, all of us are together in one room and thus you overhear things, that automatically provides an involvement and stimulates you to think “this might work”. And sometimes we deliberately have brainstorm sessions on certain topics.” (CMO)*

The chairman of the board explains that mainly the innovator of the board is particularly skilled in thinking out of the box and introducing radical new innovations. Additionally, the director is

very skilled in innovative ideas. The board and the office have a lot of contact regarding innovation, as substantiated:

*“We constantly try to come up with things that others cannot think of. It is a fixed topic on the agenda: innovation.”* (CB)

*“We [=the board] meet every month. Additionally... sometimes [the director] contacts us about certain topics and when the secretary has an idea, he discusses it with the office as well.”* (CB)

These broad ideas are then discussed by the office and the coordinators whose area is involved. If specific, detailed information is required, the sub-coordinator is contacted as well. For example, the introduction of Ooho balls to the event. Ooho balls are sustainable packages of seaweed that contain drinks and are introduced to decrease waste. This idea was introduced by the office, who then involved several coordination areas. For the specific implementation, they involved the sub-coordinator of the Drinks Post as well.

#### 4.1.3 Idea promotion

The theory on innovative behaviour, as explained by Messmann and Mulder (2012), notes that once an idea is generated, it has to be promoted within the organisation to ensure that implementation can be possible. This regards whether people promote their ideas to gain support of colleagues and supervisors. Within Zevenhevelenloop, idea promotion seems to be of little significance. As discussed in the previous section, idea generation usually happens by starting dialogue and discussing it with the relevant parties, often including the office and relevant coordinators. These also tend to be the main sources of new ideas, in which coordinators are mainly occupied with introducing incremental innovations within their coordination area. Due to this organisational characteristic in which development occurs through dialogue, idea promotion doesn't seem required to enable ideas to be realised. This is addressed in the following quotation:

*“[...] when we would think of something, we could put it on the table. I do not feel a threshold for going to the office and say: “I have got this idea, perhaps that would work?”. Although in the end, the office is responsible of course.”* (CSF)

The openness and willingness to share ideas and stimulate innovation within the organisation is seen as a major asset. When this was mentioned in the interview with respondent CMO, she responded:

*Definitely! A nice example of this regarding medals. We used to have medals [...] made of zinc. This was very bad. [...] [we introduced a more sustainable alternative]. We mentioned this during a coordinators meeting. The coordinator Catering came to me and said: "I thought about it, you should consider [whether these medals are made fully sustainable]. People are really involved, he did not care that it wasn't in his coordination area and he felt free to talk to us about that. That is a great sign, it shows commitment and that they feel welcome to share input and criticism. That shows the character of the organisation" (CMO)*

This shared feeling of openness and willingness to stimulate new ideas and the shared mind-set of 'what is best for the organisation' decreases the need to 'promote' new ideas and to try to convince others within the organisation to consider the idea.

#### 4.1.4 Idea realisation

Idea realisation, as distinguished by Messmann and Mulder (2012), consists of three indicators: introducing colleagues to the application of a solution, testing solutions when putting them into practice and analysing solutions on unwanted side-effects.

With regards to the introduction of the application of a solution to colleagues, similarities to idea promotion can be found. Due to the character of the organisation in which dialogue between relevant positions is stimulated when developing ideas, several instances within the organisation are involved in the application of the innovation. As sub-coordinators are involved in coordinating the execution of tasks during the event, discussion on how to apply an innovation also involves the relevant sub-coordinator. A good example of this is the implementation of the Ooho:

*"These things are introduced by the office. [...] they immediately ask us, the drinks posts, what we think. How should they be implemented? What do we think about it in general? Such an innovation means that you have to redesign your drink post. Therefore the sub-coordinator and me think about that, how to design it, how to place everything. The three of us discussed that, me, the sub-coordinator and [production manager]. (CP)*

This shows that in order to ensure proper implementation of a new idea, all relevant layers of the organisation are involved to make a full, detailed plan on the realisation.

Extensive new innovations usually are implemented gradually. This way, Stichting Zevenheuvelenloop reduces risk and has the opportunity to test whether an idea seems to be successful, before fully implementing it. The Ooho balls provide a good example of this as well:

*“Big innovations, such as the Ooho and the Chip, are tested on a smaller scale first. That is crucial. There always are unexpected aspects to these kinds of things. People might throw the Ooho away instead of swallowing it, that could lead to people slipping on the seaweed.” (IB)*

Respondent CB adds:

*“We used those balls at one event, and we only used 5000 even though there were a lot more participants. Only a few people got them. [...] We do tests, use surveys and stuff to measure the response of participants.” (CB)*

This shows that these extensive innovations tend to be implemented gradually, and Stichting Zevenheuvelenloop tries to test it before fully implementing a radical idea. For smaller, incremental innovations, this testing phase has lesser importance.

#### 4.1.5 Reflection

Reflection regards whether a person can assess the process and evaluate the success of a certain innovation, based on set criteria (Messmann & Mulder, 2012). Evaluation is of big importance for Stichting Zevenheuvelenloop. They use this as one of the main sources of input for changes to make in the upcoming year. To ensure that the organisation can learn as much as possible of previous editions, evaluation is quite extensive. All sub-coordinators and coordinators fill in an evaluation template, which regards both their coordination area and area exceeding aspects, such as communication lines. Respondent PMO explains the use of the evaluations:

*“the coordinator and you [...] look at the evaluation, what went well last year and what went wrong, who should we contact, should we approach it differently or plan things differently. Together, you translate the tactical into the operational.” (PMO)*

The evaluations thus function as a guidance for potential improvements and innovations, based on experience. When something new is implemented, extra attention is paid to it in the evaluations. For example, respondent SCDP mentioned:

*“Definitely, that is what makes it interesting. If you keep doing the same every year, it is no fun. Building the drinks post and ensuring everyone gets their drink is no challenge. You want to grow as an event and therefore, I want the drink post to become better and more exciting. So, whether the innovative idea comes from the office or me, you pay extra attention to it that year. And in the evaluation you automatically focus on that new aspect more, yes”* (SCDP)

On the one hand, this shows the drive of various organisational layers to strive for continuous improvement and innovations. On the other hand, it shows that evaluations are important when implementing new ideas. This is in line with what the innovator of the board explained regarding idea realisation, that testing of ideas is essential. To assess whether the test or newly implemented idea is successful, adequate evaluation is required. In addition to evaluation of the event itself, evaluation on the process is assessed, by sub-coordinators, coordinators and the office:

*“Those are important things as well. It [=evaluation] is about the event itself, how the collaboration went and the preparations, those kinds of stuff”* (CSF)

For some sub-coordinators, despite trying to continuously improve, there is a limit to the extent to which they can improve based on evaluations. This is explained by respondent SCDM:

*“There also are certain things you can’t influence yourself. For example, the people who are volunteering during the day. Sometimes, these daily volunteers function better than other years”* (SCDM)

#### *4.2 Organisational structure*

Organisational structure in this thesis is defined as the way tasks are defined, related, and divided within an organisation (Achterbergh & Vriens, 2010; 2019). Using a sociotechnical design perspective, defining the operational process of the organisation often is a useful starting point for analysing structure. Regarding the Zevenheuvelenloop, two interrelated operational

processes can be unravelled. As the production manager of the office explains, there is a difference between activities that take place in advance of eight weeks before the event starts, in the activities in the last eight weeks. Eight weeks before the event is the deadline for the permits, which means that all the important, general aspects for the event are fixed. This process unfolds as follows:

*“The event minus eight weeks, that is the permit deadline. At that time, the programme must be clear, the parcours must be clear, the medical-, traffic-, and safety measures must be clear. A full blueprint of the entire event thus is required at minus eight weeks. [...] If we [= the office] have thought of how to design it strategically, then we include coordinators to make the translation of tactical to operational. [...] So,] in the time span between minus 8 weeks and 0, you and the coordinator take a look at “this is what we said we would do in the permit, [...] how will that take shape?”” (PMO)*

This minus eight week mark thus distincts two operational processes. Firstly, the operational process related to the execution of the event and the implementation of plans. This is the period starting at minus eight weeks, in which practical preparations are made. Additionally, the execution of the event and the direct evaluation afterwards are part of this process. Coordinators are highly involved in this, as they finalise the preparations, monitor during the event and evaluate on their activities afterwards. As the quotation of the production manager of the office shows, the plans that are made for the upcoming event are translated to practical and operational activities. The other operational process regards the full process of organising the event. This process follows the cycle of managing projects, which contains four phases: initiation, planning, execution, and closure (Westland, 2007). This process starts as soon as the first preparations for the new event are starting to take shape, which usually is months in advance and happens within the office. After the event has taken place, this process also takes the full evaluation and reflection period into account. The two operational processes overlap as the broader operational process also contains the execution- and implementation centered process.

This distinction is of importance for analysing the organisational structure of Zevenheuvelenloop as the two processes are different objects of research. Depending on what operational process is seen as the primary process, a different analysis on several parameters can be distinguished. This thesis researches the relationship between organisational structure and innovative behaviour. As previously argued, the voluntary members account for a



substantial part of the organisation and are a major potential source of innovative opportunities. As the voluntary members of the organisation seem mainly involved in the executional process of the event, the decision is made to take the execution- and implementation centered process as the primary object of analysis in the diagnosis. Given that the role of the volunteers is mainly focused on this executional process, a large part of the collected data relates to this process. However, paragraph 4.4 on additional findings will provide remarks on the operational process based on the entire project management cycle, as analysing the relationship between organisational structure and innovative behaviour in this process can also provide valuable insights. When analysing organisational structures, Achterbergh and Vriens (2010;2019) suggest to use workplaces as units of analysis. In this case, one workplace is one coordination area. This includes the particular coordinator(s), sub-coördinator(s), and daily volunteer within one workplace. In the next paragraphs, the parameters will further be discussed.

#### 4.2.1 Functional concentration

Functional concentration is defined as the way tasks are divided among workplaces, with respect to orders (Achterbergh & Vriens, 2010). In case of the Zevenheuvelenloop, orders can be seen as the three sub-events: Zevenhevelennacht, Bedrijvenloop (business run), and Mini Zevenheuvelenloop (for children). To organise these sub-events, the organisation is divided into coordination areas. Each coordination area is supervised by one of the employees of the office. The larger coordination areas contain several smaller sub-coordination areas. An overview of all coordination- and sub-coordination areas can be found in the appendix B. As can be seen, seven of the coordination areas have supportive purposes: Electricity (Stroom), Logistics (Logistiek), Safety (Veiligheid), Mobility (Mobiliteit), Environment (Milieu), Connections (Verbindingen), and Signs (Borden). These coordination areas provide services for all of the sub-events during the event. For example, the coordination area of Logistics ensures transport for the Zevenhevelennacht, business run, Mini Zevenheuvelenloop and the (regular) Zevenheuvelenloop. Thus, these workplaces are involved in all orders, within one event as a whole. Along with supportive coordination areas, there are areas with a more output-based purpose. For example, there is a separate coordination area for the Mini Zevenheuvelenloop, which takes place in between the start and finish of the regular Zevenheuvelenloop. However, this coordination area still has contact with several of the other

coordination areas. For example, the coordination area of Mini Zevenheuvelenloop relies on Logistics, Electricity, Environment, etc. This is substantiated by respondent PMO:

*“Yes [the Mini Zevenheuvelenloop and] the business run are separate entities, but they are fully incorporated in the activities of the Zevenheuvelenloop. It is not a fully separate event with a separate coordinator who takes care of [all supportive activities himself]” (PMO)*

It thus can be concluded that the area of Mini Zevenheuvelenloop, although mainly occupied with organising the Mini Zevenheuvelenloop, is not fully responsible for the entirety of the order, as they have dealt with a network of varying contacts with other coordination areas. The same applies for other output-based coordination areas, as found during one of the interviews:

*“You have a lot of contact with the other coordination areas. With some more than others. We have to discuss things with Mobility, to ensure roads are blocked[...]. We also tune with Logistics, as they provide materials. And Signs, they provide signage. A lot of other areas are of importance to us.” (CSF)*

Based on the findings that workplaces deal with varying orders and workplaces have to interact with a network of other workplaces in order to perform their operational activities, the conclusion can be made that the degree of functional concentration within the Zevenheuvelenloop is high. Given this high value, some additional remarks on this parameter are required. It is notable that according to the interviewees, this amount of interactions hardly ever leads to problems occurring. This is due to two factors. Firstly, the experience of most coordinators and sub-coordinators:

*“I think it works really well because we have been working with the same people for a few years now, we know each other well and our experience allows us to think for ourselves and make our own decisions. The coordinator thus does not have to give instructions all the time, we also know what needs to happen. [...] that is a strength, we know each other and how everything works.” (DVL)*

A similar view was provided by respondent CP, who said:

*“The first time, you don’t really know what everything looks like. After a couple of years you know the entire map of the city by heart, you know all detours and shortcuts. Within a second you know how to fix things. [...] having experience definitely helps.” (CP)*

Respondent CL has a similar line of thought on this topic:

*“In interactions... there are relatively few problems occurring, because I can coordinate it myself. [...] And partly due to the experience of the entire team. [...]”* (CL)

Respondent PMO explains how experience influences the way interactions within the structure occur:

*“Someone who has been within the organisation a long time knows the lines better than someone who is doing it for the first time. [...] Sometimes, he can skip a few stations, but that depends on how experienced the person is. [...] so it can go cross medial.”* (PMO)

A second reason why the amount of interactions does not necessarily lead to problems can be accounted for by the voluntary nature of coordinators, sub-coordinators, and daily volunteers. They do not work for personal gain. The motivation for volunteering is substantiated in one of the interviews:

*“I just like doing it. It is grateful work to be involved and to see that the event goes well. [...] they are kind and flexible people that make working together really easy. You get to know each other and make the best out of it together”* (SCDM)

The voluntary character of a lot of the people working for the events thus apparently allows them to transcend personal agendas and politics, and ensures that people are working for the same goals. The combination of this experience and commitment to the organisation helps to tackle structural problems occurring due to functional concentration. Nevertheless, a high parameter value remains notable.

#### 4.2.2 Differentiation of operational activities

The extent of differentiation of operational activities is perceived as clearly evident within Stichting Zevenheuvelenloop. Due to the event-based nature of the organisation, executive tasks can be seen as the tasks in direct preparation of-, during-, and directly after the event. This includes preparing the parcours, blocking roads, filling and manning the drink stands. These activities do not only take place during the event, but a few days in advance as well. A good example can be found within the coordination area of Logistics:

*“I am a volunteer [...] Logistics, which means that I work under the supervision of the coordinator Logistics, mainly during the event but also in anticipation of the event. I am responsible for moving stuff from A to B. [...] Usually the event takes place on Saturday and Sunday, and thus we work on Friday, Saturday, Sunday, and Monday.” (DVL)*

Preparatory activities in the few weeks before the event takes place are mainly performed by coordinators and sub-coordinators. For example:

*“I am coordinator so I am not doing executional tasks but I prepare the scripts and planning and ensure everyone knows what their tasks are [...] so we make specific plans and discuss them with the sub-coordinators because they are more involved in the execution” (CSF)*

Given that these coordinators and sub-coordinators are part of the workplace, it can be argued that the coordination area as a whole thus performs both preparatory- and executional activities. As discussed in the section regarding functional concentration, some coordination areas perform preparatory activities for other coordination areas. For example, the Logistics area makes sure all required items are present at the right places when the event starts. The argument thus can be made that not all coordination areas are responsible for their own preparatory activities. However, these supportive activities are directly related to the execution of the event and can thus be considered executional activities of the supportive coordination area.

The supportive activities related to the event are perceived to be mainly performed by the office. For example, financial declarations and compensation of the volunteers are managed at the office, as they ensure structural facilities are available and they dictate communicational pathways. Additionally, supportive tasks such as ICT and HR during the executional process of the event are performed by members of the office. During the interview, respondent CMO explains some of her supportive tasks as office member:

*“Communications, building the website, newsletters, all information flows and expressions regarding the event.” (CMO)*

To summarise, both preparatory- and executional activities are performed within workplaces. However, a clear distinction between executive- and supportive activities becomes evident, as general supportive activities are performed by the office instead of coordination areas. Based on this, it can be concluded that the value of this parameter is rather high.

#### 4.2.3 Specialisation of operational activities

As introduced in chapter two, this parameter regards the degree to which tasks are specialised into (cyclical) sub-tasks (Achterbergh & Vriens, 2010). The perspective of this parameter, in contrast to the previous parameters, is aimed within a workplace, or in this case, a coordination area. For the Zevenhevelenloop, the degree of cyclical sub-tasks within a coordination area is limited. An example is provided:

*“Depending on the event, you let them know how many days you want to work. Usually the event takes place on Saturday and Sunday, and thus you are working on Friday, Saturday, Sunday, Monday to build everything and clean it up.” (DVL)*

This shows that within the workplace of Logistics, daily volunteers are involved in putting everything in place, working during the event and picking things up afterwards. There are no short cyclical sub-tasks, which would be the case if for example one member of Logistics was occupied with putting all items in place on Friday, while another member performs the task of picking everything up on Monday. The same applies in other coordination areas. For example:

*“At drinks and medals you are mainly involved in preparing the post, ensuring everything is in place for the start. And when people finish, they get their drinks and medal.” (DVDM)*

The preparation of the stand on Friday however happens with a smaller number of people than the amount of people handing the medals and drinks. But this is not a case of serially divided activities, as the people who help preparing the stand are also involved in handing the drinks. Given this multifunctional character of the tasks as performed by workplaces, the value of the parameter can be seen as low.

#### 4.2.4 Division between operational- and control activities

As workplaces are seen on the level of coordination areas, one workplace includes a coordinator, optionally sub-coordinators, and daily volunteers. As briefly mentioned in previous paragraphs, the daily volunteers are mainly occupied with executional tasks during the event. However, the degree to which they have control activities tends to differ per coordination area. For example, within the area of Logistics, the daily volunteers have a lot of regulatory capacity, as substantiated:

*“The thing is, it’s not just the coordinator or manager, but together we look at the problem and how to solve it. And that is a big compliment to the organisation.” (DVL)*

One important aspect in this is that the daily volunteers of Logistics have experience with the organisation and their work. The respondent explains that he has been helping for several years with a fixed team of people. This way, the team members know the process and know how to work together. This experience allows them to have more autonomy and solve problems themselves, or by discussing it with other relevant parties. Within the coordination area of Logistics, the coordinator functions as a connecting, monitoring, and coordinating function. The daily volunteers are occupied driving around and delivering items to coordination areas, while the coordinator is stationed in the central area. He explains that a lot of issues that occur can be solved within the coordination area:

*“Smaller changes and issues are easily handled myself. Usually I explain them to [production manager] and if he agrees, I can implement them myself” (CL)*

In other coordination areas, this degree of autonomy and combination of operational- and control activities seems similar for the coordination area as a whole. However, there is a more clear distinction in control activities within the coordination area, as the control functions lie a lot more at the level of coordinators and sub-coordinators and a lot less at daily volunteers. During the event, the coordinator of Start/Finish has a monitoring function and has a lot of contact with sub-coordinators. When asked what her activities are during the event, she explains:

*“Solving a lot of small problems. If something doesn’t fully go according to plan, you go there and see what is going on and how to solve it. But usually, most things run smoothly so we don’t really have to do that much. [...] usually answering a lot of questions of the sub-coordinators as well, as we are the first contacts they have” (CSF)*

As Start/Finish is a large coordination area, sub-coordinators are also required to coordinate the daily volunteers. As respondent SCDM explains:

*“As sub-coordinator of the start/finish area [...] I coordinate the stand. So, I have several volunteers and I build the place and coordinate them. That is my main task” (SCDM)*

Meanwhile, The daily volunteer at this area are only doing operational tasks:

*“There is a coordinator who tells us what to do, and he is in contact with the coordinators of the whole area. And we simply follow his instructions. [...] There is always a coordinator walking around to see whether everything is going according to plan. And the [sub-]coordinator himself is checking whether it is happening according to time schedule” (DVDM)*

Within coordination areas as a whole, a lot of control activities to deal with disturbances are present. Dependent on the size of the coordination area, the complexity of tasks and the experience of the daily volunteers, there is a division of operational- and control activities within the coordination area. To respond to disturbances that transcend single coordination areas, coordinators often consult with office members and other relevant coordinators to find a suitable solution.

As this analysis perceives coordinators as a part of the workplaces, it can be concluded that workplaces possess a lot of regulatory capacity. Given this reasoning, the value of division between operational- and control activities can be concluded to be low.

#### 4.2.5 Division of regulatory capacity to process parts

This parameter regards the extent to which regulatory activities are divided into three types of activities: monitoring, assessing, and acting (Achterbergh & Vriens, 2010). As was previously explained, a lot of these regulatory activities are allocated at the level of coordinators and sub-coordinators. During the event, they monitor whether everything is running smoothly, assess whether intervention is required and eventually act upon it. During the interview, this was substantiated by respondent CSF:

*“If you sense something doesn’t go as planned, you go over there to see what the issue is and you solve it if possible” (CSF)*

Respondent CP shares a similar experience in his area of work. During the interview, he said:

*“If everything is set, I drive around the parcours a few times to assess whether everything is set properly. [...] if there is an issue, I can solve that immediately” (CP)*

Sub-coordinators try to perform the monitoring, assessing, and acting activities themselves as much as possible, as the following quotation substantiates:

*“A practical example, I once saw that the flow of runners did not go smoothly, and I assessed that it was due to the medals which are stacked in cardboard boxes and the cardboard was not taken away. I immediately decided to collect a few people and made sure the cardboard was brought to a container some meters away. This way, you solve problems immediately.”* (SCDM)

If they encounter problems they are unable to deal with themselves, they contact the coordinator. If the coordinator is unable to solve it as well, or if the issue is transcending the level of individual coordination areas, they contact the office. Within coordination areas there thus seems to be some division of regulatory capacity to process parts. However, coordination areas as a whole perform the three activities of monitoring, assessing, and acting themselves, it can be concluded that the value of the division of regulatory capacity to process parts is low.

#### 4.2.6 Division of regulatory capacity to aspects

The division of regulatory capacity to aspects regards the extent to which regulatory activities of strategic-, design-, and operational nature are performed by separate organisational workplaces (Achterbergh & Vriens, 2010). As previously explained, for the execution of the events, coordinators and sub-coordinators have a lot of operational regulatory capacity. Additionally, some of the daily volunteers who are more experienced and have more elaborate operational activities also have operational regulatory capacity. It can thus be concluded that generally, operational regulatory capacity can be found within workplaces for the execution of events.

A degree of regulation by design can also be found within coordination areas during the executional process of the event. Regulation by design regards the way the organisational infrastructure is organised (Achterbergh & Vriens, 2010). During the event, coordination areas have the capacity to flexibly reallocate tasks over people. A practical example of this regulation is provided during the interview with respondent SCDM. As introduced in the paragraph above, he once encountered problems with cardboard boxes that were not taken away. His solution was to reallocate tasks:

*“I immediately decided to collect a few people and made sure the cardboard was brought to a container some meters away. This way, you solve problems immediately.”* (SCDM)



It also occurs that regulation by design is used to solve problems that transcend individual (sub-)coordination areas. An example of this was also provided:

*“If all runners have started and the first people arrive at the finish, it happens that my area lacks capacity to hand drinks to all runners. I discuss this with the coordinator of Start/Finish or the Environment area and they provide people who can help us”* (SCDM)

In the interviews with members of the areas of Logistics and Parcours, no specific examples of regulation by design were provided. Additionally, there were limited findings on the degree of strategic regulatory capacity within coordination areas. Strategic regulation regards changing goals to deal with disturbances (Achterbergh & Vriens, 2010). It can be argued that due to the experience of the organisation and many of the more involved members, the more radical regulatory activities of design and strategic regulation are less required during the events to solve problems:

*“I believe that the Zevenheuvelenloop is organised really well. We notice this as we do not have to work very hard during the event, this indicates that the organisation is running smoothly”* (DVL)

Similarly, respondent IB shares this believe that the events are executed really well. He said during the interview:

*“If people are busy in the execution, they do not have time to look around for improvements. That is based on quality of organisation. We do have the time to look around. [...] that says something about the way we organise the event”* (IB)

It can thus be reasoned that regulation by design and strategic regulation in the execution of the events are rarely required. Given the conclusion of the previous paragraph that coordination areas often can solve problems themselves or in consultation with the office, an argument can be made that they have sufficient regulatory capacity. However, a decisive conclusion on the degree of division of regulatory capacity to aspects in the executional process of the event cannot be provided due to a lack of empirical evidence on the amount of strategic regulatory capacity of workplaces.

#### 4.2.7 Specialisation of regulatory activities

Specialisation of regulatory activities regards the degree to which regulatory activities are divided over workplaces based on specialised topics (Achterbergh & Vriens, 2010). With regards to this parameter, most of these regulatory activities during the executive organisational process are performed by the office. For example, one of the office employees is mainly responsible for finance, another focuses on communication, two others are occupied with production. A full overview of the main responsibilities of the office employees can be found in the organogram, in appendix B.

For the employee of the office to make regulatory decisions regarding one of these specialisations, they discuss it with the other office employees and the director. This way, although one person is in charge of the theme, the decision is made collectively within the office. For example, one member of the office is responsible for finances and thus handles the declarations and financial compensations of the volunteers during the executional process of the event. However, the decision on what financial compensations volunteers can receive is made collectively. Additionally, for several decisions, the office employees involve relevant coordinators and sub-coordinators for input and ideas on the matter.

Taking this into account and given that office members make collective decisions despite each member being specialised in certain topics, it can be concluded that the value of the specialisation of regulatory activities can be seen as low. It is notable though that all of these more specialised regulatory activities are mainly based within the office and not in coordination areas. As this distinction between office and coordination areas has been discussed previously for other parameters, no specific quotations on specialisation of regulatory activities were distinguished in the coded interviews.

#### *4.3 Relation between organisational structure and innovative behaviour*

During the interviews, the relation between the organisational structure of the Zevenheuvelenloop and the innovative behaviour in the executional process became clear to some extent. For example, respondent IB said during the interview:

*“In organisations, if you are well prepared and organised, you have the freedom to look around. If you are busy executing and solving problems, you don’t have the time to look*

*around and see what could be improved. That is the quality of our organisation. We have the time and space to look around during the event to look for improvements. Especially on larger aspects.” (IB)*

He clearly thinks that one of the assets of the organisation, which distinctively allows them to have a leading role in innovation, was the smooth organisation. This can be (partly) assigned to the organisational structure. As previously explained, the sub-coordinators can solve a lot of occurring issues during the event themselves. The coordinators and office employees are present during the event to tackle larger issues if they occur. However, they also have the time and opportunity to look for possibilities for improvement. The same applies for the board members, who have a free role during the event to look for opportunities to improve:

*“The office has no real executional tasks during the event, they are free to solve large problems and to have an overview. So the office- and board members can look for new opportunities during the event. The volunteers are more occupied with the execution within their scope”. (IB)*

Coordinators introduce several ideas for improvement, although these tend to be incremental and limited within their own coordination area. The same applies to sub-coordinators, who specifically focus on their part of the coordination area. The scope to which people explore innovative opportunities therefore is limited to the area of the organisation they are mainly occupied in. This is determined by the organisational structure. This is substantiated by respondent CP, who said:

*“Usually, I improve small things within my own area. [...] you stop thinking of big opportunities outside of your area. The intensity to which you think on how to improve the organisation is limited at some point” (CP)*

To summarise, the degree of functional concentration and the extent to which there is differentiation of operational activities over the operational process of the event influences the extent to which opportunity exploration and idea generation by the workplaces occurs, outside of the particular coordination areas in which coordinators and sub-coordinators are active.

When implementing and realising new ideas, some errors tend to occur. The cause of this can also be found in the organisational structure. As members of the office explain, the degree of vertical hierarchy sometimes leads to interaction-related problems. This occurs due to the fact

that the daily volunteers who are responsible for the execution of the event, are not included in the preparation. Preparation is done by the office and coordinators. The coordinators have to transform the plans into detailed handbooks, which are given to the sub-coordinators. Thus, several interactions are required to ensure that plans are transformed into practice. This can inhibit the implementation of innovations:

*“We hear that quite a few times, that not everyone knows about the innovation. Sometimes we work on an idea with a small group, and then someone who has to execute it at the end of the line doesn’t understand it or encounters issues that we did not think about”*  
(CMO)

It can thus be concluded that the separation between operational- and regulatory activities as well as the differentiation of operational activities and the degree of functional concentration to some extent inhibit the realisation and implementation of innovations.

#### *4.4 Additional findings*

As previously was introduced, the qualitative research method as chosen in this thesis allows for unexpected and additional findings to occur in analysis. These findings do not directly apply to the constructs as operationalised, yet provide some complementary insights. This section discusses the main results of these additional findings.

In paragraph 4.2, the distinction between two objects of research regarding organisational activities was discussed. As one object was chosen as central object for analysis, this paragraph will discuss findings that regard the second object, which is the broad organisational process based on the project management cycle. This paragraph starts by discussing the relationship between the organisational structure and innovative behaviour as analysed on the level of the project management cycle. Afterwards, other additional findings are discussed.

Preparatory activities of the event in its entirety start approximately half a year in advance of the event. These preparations initially start at the level of the office. Coordinators are involved later on, usually when their expertise or ideas on a certain topic of innovation is required. An important moment in time is the permit deadline, eight weeks in advance of the event. Once this moment is reached, the majority of the event is set:

*“At this time, [...] a blueprint of the entire event should be available. [a coordinator] who will be doing the same as last year, won’t be involved until that point. [...] and in the period of minus 8 weeks until 0, me and the coordinator look at [...] how to translate the tactical into the operational.” (PMO)*

At eight weeks in advance of the event, the coordinator gains an increasingly important role to ensure that all practical details are prepared. In earlier preparation however, the role of the coordination areas is limited. As mentioned earlier in the chapter, the majority of the more impactful and coordination area-transcending innovative ideas are introduced by the office and board. Previously it was argued that this seems to have a structural cause, as the office and board have a coordination area transcending role. However, a structural cause of this limited innovative behaviour of voluntary members can also be found when analysing the organisation on the level of the project management cycle. The majority of major developments are determined in an early stage of preparation of the event. As only the board members and office employees are involved in this early stage, radical innovative ideas are introduced only by them. They tend to involve relevant coordinators for input on practical implications, but only after the idea already has been generated. This was found during one of the interviews:

*“Based on evaluations, we [=office] check whether we want to change things, we are both initiators and executors. [...] The coordinators are involved in a much later stadium. Those guys really aren’t looking at the new event at that point in time.” (PMO)*

The volunteers are allowed to bring in radical innovative ideas, but due to the voluntary character of their involvement, the amount of time they spend on the event outside of their regular tasks is limited:

*“At a certain point, you stop trying to change large aspects, because in the end you are a volunteer. The intensity of thinking about the organisation... we do it because we enjoy it, but there is a limit to that extent [...] in the end the office has to decide what they want to do with it. I would like to be more involved, but I am a volunteer[...].” (CL)*

A similar argument was made by respondent CP:

*“You know, it is a side job for us. Often, other areas are working on innovations and you really have to be up to date to think about that. Therefore, you decide to stay out of it and*

*to focus on things that are important for your part. You don't have the time to spend hours on other coordination areas.” (CP)*

The organisation tries to tackle this by organising meetings to discuss potential ideas for change. For example, at a brainstorm session for the Mini Zevenheuvelenloop, two coordinators of the Start-Finish area were also present as it partly involved their area of coordination.

As introduced in previous paragraphs, when discussing the division of regulatory capacity into aspects for the executional organisational process, no clear conclusions regarding strategic regulation were found. However, when assessing the organisational process based on the project management cycle, other insights on the division of regulatory capacity can be found. Strategic regulation on the level of the project management cycle generally takes place in the initiation and planning phase of the event, as this is when major decisions regarding the event are made. The quotation below explains how these strategic decisions are made:

*“Once we at the office decide what we want to change strategically, we eventually involve the coordinator for the translation to practical implications. [...] We ask for input when we think it is useful. The board and the office provide ideas on strategic changes. Once we agree on the direction, we invite the coordinator to discuss how to design it operationally.”*  
(PMO)

As coordination areas have a limited role in the (re-)formulation of goals of the event and the way the organisational infrastructure is designed to achieve them, they have a limited role in the innovation and development of these goals and design.

To summarise, the lack of involvement of voluntary members in early stages of the organisational process from the perspective of the project management cycle results in a low amount of radical innovation initiated by voluntary members. More specifically, the differentiation of operational activities, division of regulatory capacity to aspects, and separation between operational- and control activities in the broader organisational process results in reduced opportunity exploration and idea generation of voluntary members regarding radical innovations.

In addition to these findings on the relationship between organisational structure and innovative behaviour using the perspective of the project management cycle, one final finding should be discussed.

When discussing functional concentration in paragraph 4.2, it was mentioned that issues caused by the high value of this parameter were partly negated due to experience of most volunteers. However, relying on experienced volunteers brings potential risks for the organisation, as explained below:

*“You often see that coordinators who are very committed, get involved more. [...] We really do lean on those coordinators, we give them a lot of freedom but we also expect a lot of them. [...] It is great that they are very enthusiastic, but we also tend to ask those involved people for the other events as well. And if someone then leaves, that means that we have to find three people for the three events. It is a risk for the organisation because a lot of knowledge and experience can leave at once.” (PMO)*

Another downside to the fact that experiences helps to interact smoothly, is that less experienced coordinators sometimes find it a bit more difficult. The organisation tries to counter this by asking current coordinators to let them know a year in advance if they want to quit. This way, this year can be used to train a new coordinator. In addition, the foundation is aiming to improve structured documentation, to ensure that new coordinators have better material to get familiar with the way the organisation operates. Yet the issue of lost knowledge and experience when a coordinator leaves remains.

#### *4.5 Diagnostic conclusion*

To adequately diagnose the current innovative behaviour, organisational structure, and their relation, the previous section discussed the findings of eleven semi-structured interviews, analysed based on a deductive operationalisation and coding plan. This paragraph briefly summarises the main findings of the diagnosis, which can be used as input for the redesign phase.

Regarding innovative behaviour, five dimensions were distinguished. Within the voluntary organisational layers of the Zevenheuvelenloop, mainly the coordinators and sub-coordinators were the most involved in innovative activities. For the daily volunteers, the degree of innovative behaviour seemed dependent on the complexity of their tasks and their general experience and involvement in the organisation. One of the dimensions, idea promotion, seemed to be of little relevance within the research. Idea promotion generally is required to

ensure that an idea, once expressed, is also understood and supported by other organisational members. This way, it can reach the right people in the organisation, so that implementation can occur. Idea promotion thus is required to overcome barriers related to organisational politics and power (Messmann & Mulder, 2012). Due to the open and flexible character of the organisation in which innovations and ideas are encouraged, this phase of innovative behaviour is perceived not to be required by organisational members. Due to the inherent limits of voluntary work, coordinators and sub-coordinators were perceived to perform the other four dimensions of innovative behaviour solely for the coordination area they are active in. Regarding the role of the voluntary members of the organisation, opportunity exploration on other organisational areas and idea generation for radical innovations seemed very limited.

With regards to organisational structure, mainly the parameters regarding functional concentration, differentiation of operational activities, and separation of operational- and regulatory activities are high. The former two, which are related to the operational processes of the event, have high values due to the large amount of interactions between coordination areas and the inherent differentiation of preparatory-, supporting-, and executional activities. However, the negative effects of these high values seem to be negated by the flexible and enthusiastic culture in the organisations, in which the volunteers strive to bring the event to the best possible result.

Additionally, the parameter division of regulatory capacity into aspects was perceived as high as coordination areas have a limited involvement in the early stages of the organisation of the event. With this regard, strategic regulation was separated from operational regulation. This division is partly responsible for the limited innovative behaviour that coordinators and sub-coordinators perform regarding activities outside of their own span of control.

The relationship between organisational structure and innovative behaviour was found to some extent. In the executional process, the high degree of functional concentration and differentiation of operational activities result in low opportunity exploration and idea generation of voluntary members outside of the particular coordination areas in which they are active. The implementation and realisation of innovations are sometimes inhibited by the organisational structure as interaction-related problems occur within coordination areas. This is due to the finding that within coordination areas, coordinators are a lot more involved in preparatory activities compared to sub-coordinators, and especially in comparison to daily volunteers. On



the broader analysis level of the project management cycle, the limited involvement of voluntary layers in early preparatory activities results in low amounts of radical innovation initiated by voluntary members.

## **5. Redesign**

As previously announced, this chapter will propose a redesign of the organisational structure of the Zevenheuvelenloop, based on sociotechnical redesign theory and the input as derived from the diagnosis. As is argued by Achterbergh and Vriens (2019), input of organisational members is of high importance when composing a redesign of an organisational structure. Thus, a focus group was conducted, of which the summary can be found in appendix C.

In chapter 2, the sociotechnical design sequence was introduced. This design sequence will serve as structure for the upcoming paragraphs. This means that first, the redesign of the production structure is discussed from macro- to micro level. Although the design sequence suggests that after this step the control structure is designed from micro- to macro level, the decision is made to combine these three levels in one section as the urgency for redesigning the control structure was perceived to be a lot lower than is the case for the production structure.

As discussed in the diagnosis, two parameter values were perceived as high: functional concentration and differentiation of operational activities. During the focus group, the findings of the diagnosis were discussed. The participants of the focus group agreed with the findings as presented, although it was notable that the interactions between coordination areas were perceived as an organisational strength by participants. They argued that the interactions between coordination areas went smoothly and allowed for coordinators to have a broader organisational perspective, as they were forced to look beyond their own coordination area for these interactions.

When redesigning the structure, one of the starting points is to design a structure that lowers these parameter values. However, the redesign should also take the other parameters into account, to prevent the values of these parameters to increase drastically. Otherwise, new structural problems can occur (Kuipers, van Amelsvoort, & Kramer, 2018) and the practical value of the redesign is rendered less valuable or even useless. This was taken into account when redesigning the organisational structure.

## 5.1 Production structure

### 5.1.1 Production structure: Macro

Kuipers, Van Amelsvoort, and Kramer (2018) explain that at macro level, the goal is to create parallel flows with homogeneous order types. The authors introduce several ways to parallelise operational activities into homogeneous units. Two of the more relevant general directions for a design on macro level are discussed. Firstly, parallelising based on order types. Secondly, parallelising based on geographic features. Within the Zevenheuvelenloop-event as a whole, distinct sub-events can be identified. During the Zevenheuvelenloop weekend, the following events take place: Zevenhevelennacht, Mini Zevenheuvelenloop, Zevenheuvelenloop, and the exposition. These sub-events can be considered ordertypes within the boundary of the Zevenheuvelenloop as a whole. However, redesigning the production structure by making each sub-event an independent flow brings a lot of practical issues. The participants of the focus group swiftly rejected this proposition. As was argued by one of the participants:

*“These events have a lot in common. The Zevenhevelennacht and Zevenheuvelenloop share parts of the parcours, so that is an issue. [...] you don’t want to reinvent the wheel everytime for each activity.”*

As participants argued, creating independent flows based on the sub-events would cause inefficiency, tasks being done multiple times unnecessarily and a lot of new interactions due to geographical overlap. Additionally, the Zevenheuvelenloop has a lot more participants than the other sub-events, which results in one flow being excessively larger in comparison to the others.

The second design proposal on macro level is to parallelise based on geographic features. In this redesign proposal, independent macro flows are created based on the location of clustered activities. One of the large current coordination areas is the Start/Finish area, which currently contains several sub-coordination areas. This Start/Finish coordination area can be seen as one geographic hotspot. In addition, the exposition, locations, the Mini Zevenheuvelenloop and the Parcours could be separate macro flows. When comparing this design proposal to the current organogram, it can be concluded that these five clusters are already distinct coordination areas. On a macro level, these current coordination areas thus are divided efficiently. This was supported by the focus group participants, who argued that these current output-based coordination areas were an efficient way of clustering activities. An overview of these flows is provided in figure 5 below.

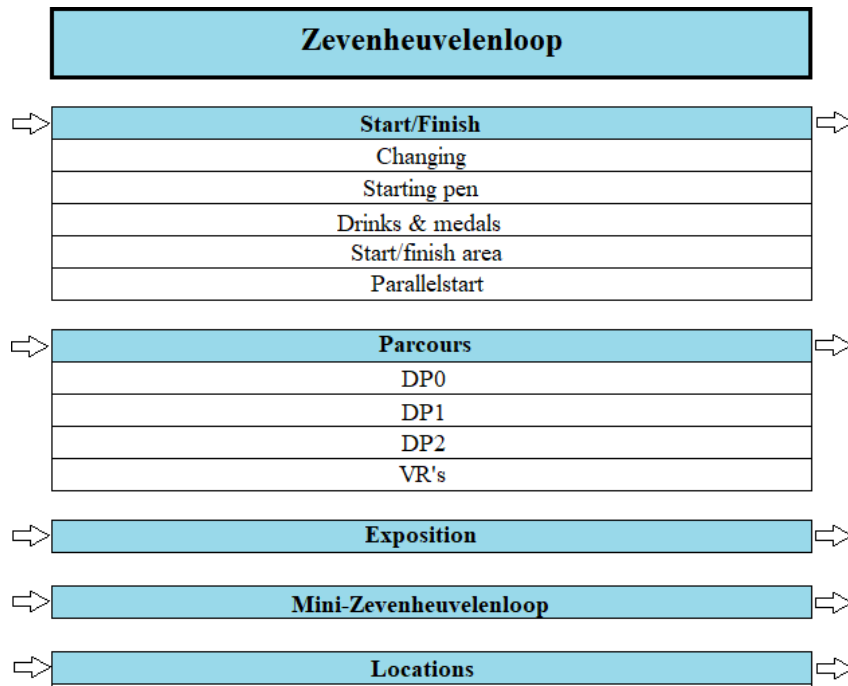


Figure 5: Proposed macro redesign

However, as previously discussed, the current organisational structure contains a lot of supportive coordination areas as well. As Kuipers, Van Amelsvoort, and Kramer (2018) argue, flows on macro level should be enabled to perform as many supportive and preparatory activities themselves, to restrict the amount of interactions between flows. This could be solved by accommodating these supportive coordination areas within the clusters of output-oriented activities. As this involves segmentation of activities within the parallelised flows on macro level, this will further be elaborated in the upcoming section on meso level.

### 5.1.2 Production structure: Meso & Micro

Kuipers, Van Amelsvoort, and Kramer (2018) argue that within the parallel flows on macro level, segments on meso level might be required. The general notion of creating units that operate as independently as possible still applies. Kuipers, Van Amelsvoort, and Kramer (2018) introduce several distinct ways of creating segments within the flows on macro level. To ensure a degree of independence, parallel task groups can be created. This however is dependent on the size of the macro flow. For example, in the current structure, the coordination area of Start-Finish is divided into five sub-coordination areas. These sub-coordination areas are functioning

relatively independently, each with their own sub-coordinator to monitor and perform operational regulation. As the focus group participants argue that these current sub-coordination areas are functioning efficiently and the diagnosis did not uncover any problems related to the sub-coordination areas as already present. However, as previously discussed, macro units preferably have their own supportive- and preparatory activities within the unit. The current organisational structure has several functional coordination areas that provide supportive services for all coordination areas. These areas are Electricity, Safety, Logistics, Connections, Signs, Mobility, and Environment. Based on the ideas of Kuipers, Van Amelsvoort, and Kramer (2018) on redesigning the production structure, the proposition was made to divide these organisation-wide supportive clusters of activities into smaller, specialised supportive clusters. For example, the coordination area of Start/Finish would, in addition to the current five sub-coordination areas, also contain a sub-coordination area for Logistics, a sub-coordination area for Electricity, etcetera.

The participants of the focus group agreed that this potentially could decrease the amount of interactions and help to make the execution of the event more efficient. However, several valid remarks were made regarding this redesign.

Firstly, it was argued that not all supportive coordination areas should be segmented per output-based coordination area, as some supportive areas require specialised knowledge or are too complex in nature. As a participant of the focus group argued:

*“Electricity requires very specific expertise, currently there is one person who knows exactly how it works. If you need different people for the areas or you have to rearrange the system, that would not work”*

Due to the required in-depth understanding and degree of specialism that is not generally accessible, it thus seems beneficial not to segment Electricity. With regards to the latter, the example of Signs was proposed as it was argued that the signs system is too complex and requires very precise interactions, which also makes it unsuitable for segmentation. On the other hand, Logistics and Environment are considered as appropriate supportive clusters to be segmented into the output-based flows. These supportive tasks could be well suited to be segmented into coordination areas as they require particular knowledge of the coordination area, but are not complex or specialised in nature. For Logistics, for example, it is crucial that

the right supplies are delivered at the right place at the right time. Having a Logistics coordinator who can arrange this specifically for, for example, the Parcours, would allow for manageable logistics and would decrease potential errors. Also, the interaction network is decreased as these Logistics coordinators are within the workplaces. Figure 6 provides an overview of the structure as proposed, including the segmented supportive activities on meso level. These segmented supportive activities regard those that can be segmented. Others, such as for example Electricity, will not be segmented into the flows.

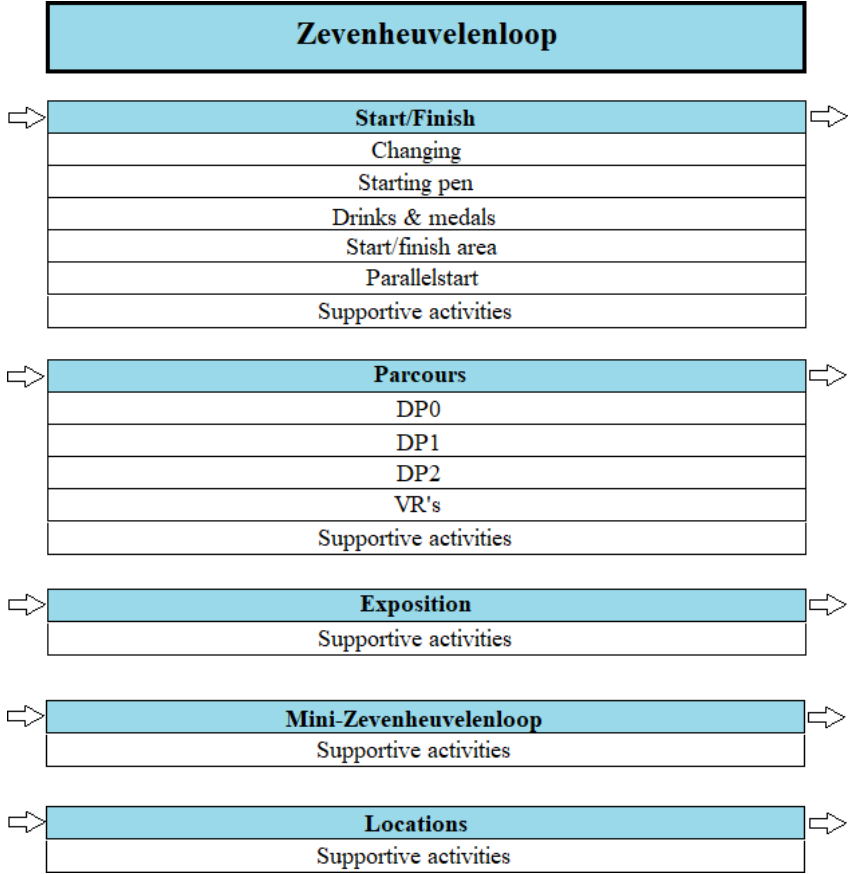


Figure 6: Proposed macro and meso redesign

With regard to the meso level, it can be concluded that it potentially is beneficial to segment certain supportive clusters of activities within the flows. Especially Logistics and Environment are potential candidates to do so. As the focus group argues, implementing the segmentations one cluster of activities at a time would be an adequate way of finding out which supportive clusters are beneficial to segment. Although ideally it is encouraged to segment all supportive clusters of activities into the flows, the theory also states that this should be done given the

limitations of organisational circumstances (Kuipers, Van Amelsvoort & Kramer, 2018). Due to the event-based nature of the organisation, certain interdependencies will always remain.

If sufficient clusters of supportive activities can be segmented within the flows, it might be beneficial to have a facilitative sub-coordinator alongside the general coordinator of the coordination area. This facilitative sub-coordinator would be responsible for coordinating the supportive clusters of activities and would interact with the supportive coordination areas that could not be segmented into the flows. This idea is supported by the focus group, who argue that this would also relieve the coordinators, who often deal with a lot of work. Additionally, on a micro level, the composition of supportive teams will differ from the current structure. Specifically, the supportive clusters that are segmented into the flows will be smaller, as the amount of tasks per specialised cluster decreases.

## *5.2 Control structure*

The control structure is concerned with disturbances that occur in the production structure and how to avoid, solve, or attenuate them (Kuipers, Van Amelsvoort & Kramer 2018). The general notion for the control structure is that these acts of dealing with disturbances can be done locally as much as possible.

As was found in the diagnosis of the operational process on the level of the project management cycle, workplaces generally have a lot of operational regulatory capacity, as sub-coordinators and coordinators often can solve problems that occur in their coordination area themselves, or by consulting office members. Regulation by design and strategic regulation in the broader process currently are intentionally designed at the office. The basis of this decision can be found in the voluntary nature of the workplaces. Although the sociotechnical theory on redesigning organisations suggests that strategic regulation and regulation by design should be placed in workplaces as much as possible, this is once again given organisational circumstances. The voluntary nature of the workplaces limits the possibilities to do so. However, involving workplaces in strategic regulation and regulation by design is encouraged. Currently, the Zevenheuelenloop strives to do so, for example by involving relevant coordinators in a brainstorm session on redesigning the organisation of the Mini Zevenheuelenloop. This involvement can also be facilitated for topics that transcend coordination areas, by sending a

general invitation to all coordinators and sub-coordinators. This way, the coordinators and sub-coordinators who are interested in participating and providing input can respond, and those who are too busy or are not interested can pass.

In the focus group, this was considered a good method to allow the organisation to benefit from the ideas and experience of volunteers without giving them additional fixed tasks. As was argued, not all volunteers are interested in these topics.

### *5.3 Additional suggestions*

In addition to these redesign topics directly related to the production- and control structure, additional suggestions for improvement are discussed below.

With regards to innovations, the participants of the focus group argue that evaluations have a crucial role. The participants agreed that evaluations provide a major source of inspiration and ideas for improvements and innovations. To stimulate innovation, an optimal way of evaluating is required. Currently, sub-coordinators make an evaluation which they deliver to the coordinator. The coordinator combines the evaluations with his own and discusses it with the office. The sub-coordinator is not notified on the results and improvements based on the evaluations until briefly before the start of the new event. During the focus group, it was argued that sub-coordinators should be involved in this process a lot more. To do so, the proposition is made that the sub-coordinators and coordinators of specific areas meet within a few days after the event to evaluate together. To allow for as minimal loss of evaluation information as possible, the idea is proposed to create a digital tool in which coordination areas are allowed to share pictures, clips, short videos and captions of evaluation points during the event. This serves as a useful way of storing the information during the event, which can be used as input directly after the event.

Currently, there are two meetings in advance of the event in which coordinators and office members come together to share updates and developments. During the focus group, it was argued that sub-coordinators should be informed better on the outcomes of these coordinator-meetings and be more involved in these earlier stages of preparation. Involving sub-coordinators earlier on and allowing them to provide input allows for more motivation among sub-coordinators. Additionally, as both sub-coordinators and coordinators are involved in early



preparatory stages of the event, a more radically innovative initiative is stimulated in comparison to the current structure, in which only coordinators are involved in the early coordinators-meeting. Thirdly, involving sub-coordinators earlier in the process and keeping them better informed allows for a smoother implementation of innovations. Currently, these innovations are designed by the office with input of coordinators. The coordinators then have to make the translation to the practical implications, which they have to explain to the sub-coordinators. If sub-coordinators are involved in the design of the innovations, less extensive translation is required and thus, risk of potential errors with this regard are decreased. As the focus group argues, the current first coordinators-meeting is more of a 'wake up we are going to get started'-meeting than an actual opportunity to think of innovative possibilities. It is thus suggested to encourage sub-coordinators and coordinators of distinguished areas to have a meeting at the start of the preparations of the new event, instead of only involving coordinators.

As was discussed in the diagnosis, it is notable that coordinators and sub-coordinators are mainly occupied with incremental innovations within their own coordination area. In the section on control structure, it was argued that coordinators should also be involved in strategic regulation and regulation by design. In addition to this, it is proposed that more non-obligated brainstorm sessions and focus groups on topics of innovation are organised, in which coordinators and sub-coordinators can voice their ideas or opinions on topics that are not (or partially) related to their coordination area. Once again, the participants of the focus group added that this should be without obligation, as not all coordinators and sub-coordinators feel the need to contemplate aforementioned topics of discussion.

## **6. Conclusion, Discussion & Recommendations**

As the analysis of both diagnosis and redesign have been discussed, this chapter will provide a conclusion of the research and its most notable findings. After this conclusion, the limitations of the choices made in this research are discussed. Lastly, remarks are made on the implications of the findings with regards to theory as well as practical implications for Stichting Zevenheuvelenloop to consider. Additionally, suggestions for further research in related directions are discussed.

### *6.1 Conclusion*

The aim of this thesis was to gain insights into innovative behaviour, organisational structure and the relationship between these concepts within the Zevenheuvelenloop. Additionally, based on these diagnostic insights, a redesign of the organisational structure of the Zevenheuvelenloop to improve innovative behaviour was made. This twofold goal resulted in the following research question:

*What is the relation between organisational structure and innovative behaviour within the Zevenheuvelenloop, and how can the structure be redesigned to improve innovative behaviour?*

For the diagnosis of innovative behaviour within the Zevenheuvelenloop, the theory on innovative work behaviour as developed by Messmann and Mulder (2012) was used. To assess the organisational structure, the sociotechnical perspective on organisational design was used. Sociotechnical insights were also applied to redesign the structure in order to improve innovative behaviour within the Zevenheuvelenloop.

To properly answer this research question, the following sub-questions were formulated:

- 1. What does the current innovative behaviour within the Zevenheuvelenloop look like?*
- 2. What is the relationship between organisational structure and innovative behaviour within the Zevenheuvelenloop?*
- 3. How can the organisational structure of the Zevenheuvelenloop be redesigned to increase innovative behaviour?*

To study this, a qualitative research strategy was chosen based on a deductive research approach. For data collection during the diagnosis phase, eleven semi-structured interviews were conducted. Additionally, a focus group was conducted to collect data for the redesign.

In the diagnosis, it became apparent that the degree of innovative behaviour differs per organisational layer. With regards to the three layers of volunteers, a relation between involvement in the organisation and the degree to which the person was engaged in innovative behaviour became clear. Mainly the coordinators, who generally are the most involved volunteers in the event, showed characteristics of innovative behaviour. It is important to note that this innovative behaviour was mainly regarding the coordination area in which the coordinator is active, and less with regards to area transcending innovations. Sub-coordinators also engage in innovative behaviour, although to a lesser degree than coordinators due to lesser involvement in organisational activities. Daily volunteers hardly engage in innovative behaviour. It is notable that with regards to innovative behaviour, activities of idea promotion were seldom mentioned. The cause of this can be assigned to the voluntary nature of the organisation and the culture in which input of volunteers and creativity is stimulated, reducing barriers and organisational politics.

Analysing the organisational structure, high values were found with regards to functional concentration and differentiation of operational activities. Although the potential problems of functional concentration and differentiation of operational activities were largely negated by the flexibility and experience of coordinators and sub-coordinators, the high values of these aforementioned parameters seem partly responsible for the limited innovative behaviour of volunteers outside of their own span of control. Specifically, opportunity exploration and idea generation is limited to incremental innovations within a voluntary member's own coordination area, as this is the organisational part they are involved in due to the organisational structure. Additionally, the lack of involvement of voluntary members in early stages of the organisational process from the perspective of the project management cycle results in a low amount of radical innovation initiated by voluntary members. Lastly, issues in idea realisation tend to occur due to late involvement of certain members within coordination areas, specifically a late involvement of sub-coordinators and daily volunteers in the operational process. It is notable in this research that the inherent characteristics of volunteers inhibit the extent to which

parameters can be lowered, as volunteers have limited time capacity and interest to perform organisational activities. However, some improvements can be generated.

To propose a solution to aforementioned issues, a focus group was conducted. With regards to functional concentration, it is proposed to parallelise five output-based coordination areas based on geographic distinction: Start/Finish, Parcours, Mini Zevenhevelenloop, Locations, and Expo. Within these five flows, the current supportive coordination areas should be segmented as sub-coordination areas as much as possible. However, due to the event-based nature of the activities, it is yet to be decided which supportive coordination areas are suited to be segmented into the flows. Arguably, the areas of Logistics and Environment are qualified contenders. Additionally, the introduction of a facilitative sub-coordinator per flow who is responsible for interaction with supportive clusters of activities could help relieve the coordinators of extra work and increase clear and fast communication.

Additionally, it is proposed that coordinators and sub-coordinators are actively invited to help with the initiation of radical innovations, by inviting them to brainstorm-based sessions early on in the organisational process of the event. This way, coordinators and sub-coordinators can voice their ideas, allowing for better idea generation within the Zevenhevelenloop. Sub-coordinators should also be involved in the preparatory stages earlier on, by organising start-up meetings per coordination areas in which coordinators and sub-coordinators come together to think about plans for the upcoming event. This is also expected to increase commitment, according to the focus group.

Thirdly, the evaluation process should occur more shortly after the event and in group-meetings, in which coordinators and sub-coordinators meet with their coordination area-colleagues to discuss evaluation topics. Additionally, a (digital) tool could be used for better recording and storing of evaluative information.

## *6.2 Limitations*

By conducting research, one is bound to making methodological, theoretical, and analytical decisions. Although it is tried to make the decisions that allow for the best quality of research possible, all decisions inherently bring limitations to the research. It is important to discuss these limitations as they provide context, allow for an interpretation of the validity and an

assessment of the credibility of the conducted research (Ioannidis, 2007). Therefore, this section discusses the limitations based on three aforementioned categories: methodological, theoretical, and analytical.

### 6.2.1 Methodological

As mentioned, eleven interviews were conducted among all organisational layers. This way, a full overview among the layers could be gained. Although sufficient saturation is perceived to be achieved, the interviews were conducted with only three different coordination areas. Additionally, within coordination areas, only one member per layer was interviewed. As the interviews did not contradict each other, no immediate urge for additional interviews was deemed necessary. However, it can be argued that generalisation of the results to the entire organisation of the event can only be done to a limited extent.

For the analysis of the diagnosis, quotations of respondents were used to substantiate argumentations with objective data. However, as this thesis is written in English and the interviews were conducted in Dutch, these quotations are translated. This translation could possibly result in misunderstanding or misinterpretation of data.

The focus group consisted of six participants and the researcher, who had a facilitative role. Three of the participants are active in the same coordination area, of which two are coordinators. This composition was chosen due to practical limitations. Having a relatively low variety of organisational members reduces the extent to which the results of the focus group are generalisable over the event as a whole. However, given that some of the topics of discussion in the focus group required personal opinions rather than ideas from an organisational member perspective (e.g. the extent to which volunteers are willing to engage in initiating and developing radical innovations), this is not perceived as a very substantial issue. For the results of the redesign, in contrast to the results of the diagnosis, the decision was made not to include quotations of the focus group.

To increase dependability, during the entire research process, fellow scholars were informed and up to date on the research process and most major decisions were made in consultation with fellow scholars. However, as these fellow scholars were not present during the interviews and

focus group, the validity of the conducted interviews and focus group are solely based on the capabilities of the researcher.

With regards to generalisability, the three events of Stichting Zevenheuvelenloop tend to have a lot in common regarding process, structure, culture, and people. This was substantiated during several interviews, in which respondents explained that they have organisational roles during the other events as well and have similar experiences there. It can thus be argued that the results as found with regards to the Zevenheuvelenloop specifically are to a great extent applicable to the Marikenloop and Stevensloop as well.

### 6.2.2 Theoretical

As a deductive research approach was chosen, existing theory served as a basis for both diagnosis and redesign. This thesis contains two central concepts, for each of which a theory was chosen for operationalisation and analysis. Innovative behaviour was measured using theory on innovative work behaviour as developed by Messmann and Mulder (2012). Although the decision to use this theory as central framework was made after thorough research and this research is considered an extension of previous research on innovative behaviour, no certainty can be given that this theory forms the best basis for measuring innovative behaviour. Additional limitations regarding this theory arise as the theory was directed at employees, not at volunteers. It is unclear to what extent the inherent characteristics of volunteers have an impact on the applicability of the theory. Comparably, as the theory does not specify sectors or types of organisations on which it is applicable, it is unclear to what extent it is fully compatible with sports-event organisations.

Additionally, practical issues arose as the items of the initial operationalisation had to be transformed into a semi-structured interview format and translation from English to Dutch was required. This transformation and translation could result in reduced construct validity. Additionally, the only tests on reliability and validity were conducted by Messmann and Mulder (2012) themselves, which brings ethical considerations to a critical mind.

Similar considerations exist with regards to the sociotechnical design perspective of De Sitter (2000). The decision for this design perspective was based on the given that it provides a detailed and applicable operationalisation of organisational structures. Additionally, the

sociotechnical theory acknowledges and discerns the diagnosis and redesign phase and provides practical guidelines for both phases. However, no specifications of the applications of the sociotechnical perspective to event-based organisations have yet been made. Moreover, no previous applications of the sociotechnical theory on volunteers in organisations have been recorded. Both these characteristics of this case specifically require additional analytic consideration of the researcher of this thesis, in comparison to the application of the theory on more traditional organisations with fixed employees. Another remark on the sociotechnical perspective is that it advocates to take an integral perspective of organisations. This entails that one should look at the organisation as a whole. For this research, due to practical constraints and limited time, only one of three events was considered an object of research.

As discussed, a deductive research approach was chosen. Given the application of both theories to a novel type of organisation, it can be argued that the deductive approach is less relevant as this research approach usually applies best to testing existing theories. A new organisational context requires a more exploratory character. Choosing deductive research approach regardless thus can be seen as a limitation of this research. The choice for deductive research approach however can be substantiated as the theories and case are perceived to have sufficient common ground and the deductive research approach allows for a structured and systematic analysis.

### 6.2.3 Analytical

In this thesis, two objects of research could be distinguished based on operational processes. One regards the organisational process that takes up roughly two months around the event, in which voluntary members are involved in operational activities and most preparations on how the event should take place have been done. Therefore, this process is mainly related to implementing innovations and executing the event, based on plans that are made in advance. The other process takes a broader scope as this comprises a wider range of organisational activities that relate to the achievement of organisational goals. This second process follows the full project management cycle instead of implementation-related activities. As was previously argued, the analysis in this thesis is mainly built around the former operational process, as the voluntary members of the organisation are more involved in this process. However, from an analytical point of view, an argument can be made that the broader object should be central in

this thesis. This would be in line with the sociotechnical design perspective as it advocates an integral organisational perspective. In other words, to capture a full image of the structural aspects of organising the event, all activities should be taken in account and not just implementation-related activities. The decision to make the smaller organisational process central in this thesis can thus be seen as an analytical limitation.

Similarly to the remarks made on the limited dependability with regards to the conduction of interviews and the focus group as discussed in the previous paragraph, no fellow scholars aided in the coding and analysis of both interviews and focus group. Therefore, the quality of the coding and analysis are dependent on the capabilities of the researcher.

### *6.3 Implications & directions for further research*

#### 6.3.1 Theoretical implications

Although the goal of this thesis is practice-based, the extensive use of theory and the deductive research approach allow for contribution to current academic theories in several ways.

Generally, the increase in sports-related events and, in particular, running events, results in increased academic attention to the industry (Masterman, 2014; Parent & Smith-Swan, 2013). However, little academic contribution on organisational structure in sports events is known. As organisational structure can impact the way the organisation operates severely, structuring events-organisations seems important to research. Additionally, despite a lot of research being done on volunteers in sports events with regards to commitment and economic profits, little is known on the role of volunteers in organisational innovation. As events often strive to be innovative (Lockstone-Binney, Robertson, & Junek, 2013), the role of volunteers in this seems to be a gap that is worthy of more research. This research shines a light on both structuring event-organisations as well as the role of volunteers enabling innovations to occur in event-organisations. Additionally, it provides insights on the relation between organisational structure and innovative behaviour as performed by volunteers. As discussed, innovative behaviour of volunteers requires academic attention due to its impact and potential value for sports events and event organisations in general. As the results of this thesis indicate a strong relation between organisational structure and innovative behaviour on some aspects, this thesis provides valuable insight on innovative behaviour and how to improve it.



This research builds on the sociotechnical design perspective as developed by De Sitter (2000) a few ways. Although the sociotechnical design perspective provides a clear roadmap on how organisational structures can be diagnosed and redesigned based on seven parameters, a practical operationalisation of these parameters was lacking. This research provides an operationalisation and a semi-structured interview format, to be used in other research. It is recommended however that this operationalisation is to be tested regarding validity and reliability before actually applying it in other researches. Additionally, the sociotechnical design perspective is generally applied to traditional, often bureaucratic, organisations that use fixed employees. This research extends the application of the sociotechnical perspective and contributes to insights on how this design perspective can be used both in event-industry organisations as well as voluntary organisations. As little academic knowledge is available both on designing event-organisations and voluntary organisations, this research provides valuable insights.

With regards to innovative behaviour, similar remarks can be made as this research contributes theoretically by extending the theory as proposed by Messmann and Mulder (2012), as it is applied specifically on volunteers and in an event-organisation context. This application to a new subject as well as a new industry allows for new insights on innovative behaviour. Additionally, as previously only survey items of innovative behaviour were available, this research contributes to academic society as it includes an semi-structured interview format on innovative behaviour that can be applied in several contexts. Once again, it is advised that this interview format is tested on validity before applying it widely.

### 6.3.2 Managerial implications

As this research is aimed at diagnosing and redesigning the structure of the Zevenheuvelenloop specifically, the results have several managerial implications for the Zevenheuvelenloop, Stichting Zevenheuvelenloop as a whole, and the sport-events- and general events industries.

Firstly, with regards to the Zevenheuvelenloop, an in-depth diagnosis and redesign are proposed in this thesis. The diagnosis shows the current state of organisational structure and its influence on innovative behaviour within the event, including the aspects that currently work well or induce problems. Although this research used these diagnostic insights to develop a redesign,

Stichting Zevenheuvelenloop can use these insights to better understand the way their organisational structure and its influence on innovative behaviour works. Additionally, they are enabled to come up with their own improvements based on the diagnosis.

As the redesign as developed is a tailored proposition for improvement for the Zevenheuvelenloop, it provides Stichting Zevenheuvelenloop with a clear idea on possibilities to solve the issues as diagnosed. As previously argued, diagnosing and redesign are the first two stages of the intervention cycle (Achterbergh & Vriens, 2019). Implementation and reflection are not included in this research due to time constraints. However, Stichting Zevenheuvelenloop is advised to consider the diagnosis and redesign and make an assessment of whether- and how- to implement the propositions. Some suggestions for improvement as discussed in the redesign are perceived to be easier to implement than others. For example, the ideas on evaluation of the event might be relatively easy to try and implement, while the segmentation of certain supportive coordination areas into the flows brings more organisational implications.

Previously, remarks on generalisability were made regarding Stichting Zevenheuvelenloop as a whole. As argued, the Marikenloop and Alfa Laval Stevensloop have a lot of similarities to the Zevenheuvelenloop. Additionally, several organisational members have experience and knowledge of multiple of the events. Stichting Zevenheuvelenloop is strongly advised to also apply the above-mentioned suggestions to use the diagnosis and redesign to their other two events. To do so, firstly they should assess whether differences between the events would affect the extent to which the propositions are applicable.

Lastly, the results of this thesis are to some extent perceived to be generalisable to the running-events industry and events industry in general. The diagnosis provided in-depth insights on innovative behaviour of volunteers within this specific event. As can be argued that characteristics of volunteers share similarities across different events, these insights on innovative behaviour might provide other events organisations with valuable insights they can apply to their own organisations. As thick descriptions were provided as much as possible in this thesis, managers of other events organisations are enabled to make their own assessment of the extent to which the results of this research are valuable and applicable to their cases. Similar suggestions apply to the way managers of events organisations can use the insights on the relation between organisational structure and innovative behaviour as provided by this

thesis. Lastly, the proposed ideas on redesigning the Zevenhevelenloop can potentially also be applied to other organisations by their managers.

### 6.3.3 Directions for further research

Although deductive researches usually test current theories, this research also provides some new insights. These insights are mainly related to the industry and type of organisational members to which the research applies. Additionally, this research further explores the relationship between organisational structure and innovative behaviour. Directions for further research can be derived from these insights.

Firstly, as argued, innovation plays a major role in sports-events and the event-industry in general. Finding ways to allow for innovation to occur thus is a valuable academic direction. To do so, it is suggested that more research on innovative behaviour in event-organisations is conducted. As this thesis found sufficient indicators of a relationship between organisational structure and innovative behaviour in one event within one event-organisation, it is strongly recommended that this relationship is investigated more substantially, across different event-organisations. This way, generalisability increases and better conclusions on the relationship can be made. Additionally, as organisational structure impacts not only innovative behaviour but generally impacts the way an organisation operates on several aspects, it is recommended that more research on organisational structure of event-organisations is conducted. Lastly, as previously mentioned, volunteers have an increasingly important role in event-organisations. To this end, understanding volunteers and their role in the organisation seems crucial to deploy them effectively. Therefore, it is advised that more research on the role of volunteers in organisations and their influence in organisational development is conducted, in the event-industry as well as other industries. This is in line with recommendations of Hoeber and Hoeber (2012), who argue that the role of volunteers in the innovation process has been researched too little and requires more academic research.

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