SELF-MANAGING WORK TEAMS THAT FEEL EMPOWERED: THE KEY TO HIGH PERFORMING TEAMS?

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PREFACE

Before you lies the thesis “Self-managing work teams that feel empowered: the key to high performing teams?”. This thesis was my final step to the completion the Master Business Administration at the University of Twente. Writing this thesis was part of an internship at RONT Management Consultants and De Passerel. These two organizations worked together on the implementation of self-managing work teams at De Passerel.

Gathering information, new insights and performing statistical analyses were one thing but the writing part was the most difficult own for me. It cost me all my strength, and the patience of my supervisors, to put my research on paper. In the end, it was all worth it.

I would like to thank all my supervisors for their guidance and support during this process. I enjoyed the talks, together with Henk Doeleman and Johan Machiela, that gave me each time new energy and inspiration. Also, the confidence and freedom I got from professor Celeste Wilderom motivated me. Finally, I would like to thank Tom de Schryver for his role as the second supervisor.

To my other colleagues at RONT Management Consultants and De Passerel: I would like to thank you for your wonderful cooperation as well. Your knowledge and expertise helped me during my research but also helped me in my personal development.

Milou Wolsing

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ABSTRACT

This case study brings together the view of academic literature, and the view of practice, e.g. business. In both worlds, a lot of questions exists concerning self-managing work teams and team empowerment, and their relation to team performance. Following this increased interest in these topics this research is framed around the following research question: "Are the conditions for self-managing work teams and team empowerment positively related to team performance?". This study is built on data subtracted from one disabled care organization, De Passerel, that changed their work teams into self-managing work teams around the start of 2016. The organization developed a questionnaire based on academic literature to test the conditions of self-managing work teams. The first hypothesis in this study tests if the items of the condition test for self-managing work teams can be reduced, and thereby improving the quality of the questionnaire. The reduction is done with a principal component analysis on individual level (N=385). The original questionnaire which consists of 32-items is reduced to fourteen items. It was not possible to validate the condition tests therefore validation of this questionnaire is recommended for future research. The next three hypotheses are done with longitudinal data of self-managing work teams on team level (N=22). Hypothesis 2.1 and 2.2 stated that the conditions for self-managing work teams and team performance did not significantly change between January 2016 and November 2016. This was tested with a paired sample T-test. It appeared that the team performance indeed did not change significantly, but the conditions of self-managing work teams decreased. This indicates that the team members became more critical towards the degree the conditions are met. This could be explained by several change process theories. The third hypothesis that uses the longitudinal data tested if the change in the condition of self-managing work teams correlates positively with the change in team performance. No relation was found in the regression analysis. However, these results do not mean that the relationship is not present at all. The small timeframe and small sample size make generalization difficult. The last hypothesis tests if there is a positive correlation between the conditions for self-managing work teams, team empowerment, and team performance. The results for this hypothesis were remarkably strong, especially with this small sample size. This could indicate an overfitting of the model. Significant correlations were found between the control variable sex ratio and the change of the conditions for self-managing work teams and team performance. The results of this study do not provide strong evidence, but it provides a reason for further research concerning the conditions for self-managing work teams, team empowerment, and team performance.

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1. INTRODUCTION

Whether someone is a professional worker, a manager or a person with a disability, everyone wants to have their own freedom of choice. In the disabled care sector, people agree that the client must become central again, and the care and support must serve the disabled people (Van Rijn, 2016). This same movement is also seen in the disabled care organizations, but then between the organization and the professional. The freedom of choice of the professionals is increased, and the support departments become facilitation instead of directing. This movement is seen throughout the whole society. Professor Rotmans from the Erasmus University of Rotterdam speaks about a change of eras (Rotmans, 2014).

"We don't live in an era of change, but in a change of eras" **– Jan Rotmans**

He believes that the old society is characterized by the following concepts: central, top-down, big organizations, systems, and structures, fixed and rigid with a directing government. This old society is replaced by a new society including the following concepts: decentral, bottom-up, small networks, people and initiatives, fluid and flexible with a facilitating government. Also during the yearly speech of the Dutch King in 2013, where expectations from the government of the next year are outlined, it is announced that the society is changing from the traditional welfare society into a participation society. The changing society is one of the reasons for the decentralization which The National Government of The Netherlands started in three areas; work, care, and youth (VWS, 2014). Those three topics for decentralization together are called the decentralization of the social domain. The local government is since 2015 responsible for these topics instead of the National Government, because they are closer connected to the citizens in their municipalities, and therefore better able to anticipate on the local change in demand. Due to large financial cutbacks, that were necessary in order to reduce the governmental expenses, the decentralizations are under more pressure than it already was by only the radical changes (VNG, 2013a).

These decentralizations lead to complex challenges, of which this study focuses on the disabled care sector (TNO, 2011). To find answers to the changing context the disabled care sector needed a different approach towards the organization of the care services. The Dutch sector association for disabled care (VGN) renewed its vision on the quality of the disabled care at the beginning of 2013 (VGN, 2013b). This vision is better aligned with the current and future demand. This should increase the quality of the disabled care. Priority is given to maintaining and improving the quality of life of the clients, and give the client freedom of choice whenever it is possible. The client and the relationship between the professional and the client form an integral part of the vision of the VGN (2003).

The State Secretary for Public health, Welfare, and Sport (VWS), Mr. Van Rijn, published in the beginning of 2016 a quality agenda for the disabled care sector (VWS, 2016). This agenda contains a vision that goes

further in a participative approach compared to the vision of the VGN. They want to empower the client in cooperation with their relatives, a very competent professional with both hard and soft skills, visionary leadership, and a leader who connect people. Furthermore, the sector must become transparent, innovative, and improve the collaboration between the stakeholders involved in the care of the clients. The awareness of the importance of the collaboration between client, relatives, and professional (Figure 1.1) is not only grown at the VWS but also within the International Standardization Organization (ISO) that is initiating, for example, the ISO 9001 standards. The ISO 9001 standard focuses not only on the needs and expectations of clients but from all interested parties
(ISO, 2015).

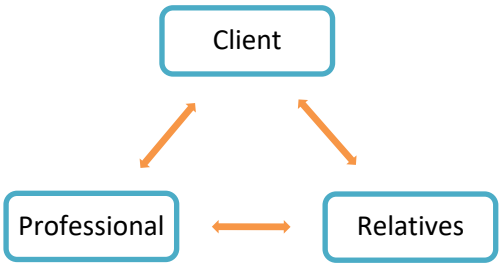

Figure 1.1. The triangular relationship between the client, professional, and relatives.

De Vries, Wittmayer, Neuteboom, and Hooijmaijers (2010) conducted research on how the health care in The Netherlands should innovate to meet the changing demand and expectations. They found five points where the health care should innovate: 1) create room for bottom-up changes, 2) innovate with vision and connection, 3) learn and achieve by adjusting the system to successful pilots, 4) use the passion and creativity from the practice, and 5) make people the driving force.

The implementation of self-managing work teams is the most widely used solution by disabled care organizations in The Netherlands to find an answer to the changing demand and expectations (HEAD & finance ideas, 2015). Therefore, this study focus on the conditions of self-managing work teams, team empowerment, and team performance.

1.1 Relevance

1.1.1 Practical relevance

As described in the previous section, the disabled care organizations have to look for new organizational structures in order to meet the changing demands and new visions of different stakeholders, for example, the clients, the VNG, and the government. Self-management is one of the concepts that stimulates bottom-up changes, by giving the professional more insight into the organization and more discretionary power. The

implementation of self-managing work teams is executed by 41% of the disabled care organizations, which is the at the same time the most widely used approach according to this study (HEAD & finance ideas, 2015). All the organizations try to find answers on how to establish the desired change. Some healthcare organizations are really successful with the deployment of self-managing work teams, for example, Buurtzorg. This organization was founded in 2006 in The Netherlands and is a home care organization. Right from the beginning, this organization uses an organizational design including self-managing work teams and the organization is still growing. But for existing organizations, it turned out to be much more difficult to implement self-managing work teams and some organizations fail to implement self-managing work teams properly (Nijssen, 2017). One of the most critical success factors seems to be that besides the teams, other organizational departments changes as well. When the business context, and the organization as a whole, does not adjust to the self-managing work team, the professionals within the teams will not be truly empowered. Nevertheless, in the Netherlands self-managing work teams are mainly used to empower the professional within the teams and to decentralize the responsibility (Nijssen, 2017; Rijnconsult, 2015). The use of self-managing work teams is the most often used solution to the desired changes, but the implementation of it fails too often in practice. Therefore the practice is in need for studies on this topic.

1.1.2 Theoretical relevance

Besides the presence of the practical relevance, this study is also relevant for academic literature. The organizational design of self-managing work teams is a topic of interest for both researchers and practitioners in the past decade (Guzzo & Dickson, 1996). Particularly the interest in the link between self-managing work teams and their design, structure, performance, and effectiveness increased (Wageman, 2001; Spreitzer, Cohen & Ledford, 1999; Janz, Colquitt & Noe, 1997; Cohen & Bailey, 1997; Cohen, Ledford & Spreitzer, 1996; Hackman, 1987). However, the empirical research is limited, more and more evidence shows that the use of self-managing work teams contribute to several outcome variables, such as productivity improvement (Guzzo, Jette & Katzel, 1985), costs savings (Wall, Kemp, Jackson & Clegg, 1986), manager-ratings, and self-ratings of performance effectiveness (Cohen & Ledford, 1994), and employee satisfaction (Cohen & Ledford,1994; Corderey, Mueller & Smith, 1991; Wall et al.,1986). Cohen et al. (1996) tested the full model of self-managing work team effectiveness of Cohen (1993). This is a relatively comprehensive model of self-managing work team effectiveness in comparison to others. Most models include one or two predictors, one or two outcome variables, or the model is about work teams in general. According to Cohen et al. (1996), further research is needed using different operationalization of variables or a different measurement instrument. In this study, a new measurement instrument is proposed to test the degree of conditions for self-managing work teams. The proposed questionnaire is thereafter used to examine the relationship between the conditions for a self-managing work team, team performance, and

team empowerment. Kirkman and Rosen (1997) developed a model for empowered work team and differentiate the concept of empowered work teams with self-managing work teams. Kirkman and Rosen (1997) found that highly empowered teams are more effective than less empowered teams. Still, more evidence is needed to prove this relationship and in combination with the desire from organizations to empower the work floor, this is a real interesting relationship to study.

1.2 Goal, problem statement, and research question

During the past decades, there are limited answers to what extend self-managing work teams and team empowerment lead to an increase in team performance. Most researchers and practitioners believe that self-managing work teams and team empowerment could have a positive impact on an organization in different areas (Spreitzer, 2008; Cohen et al., 1996; Cordery et al., 1991). This study contributes to the determination of the relationship between the conditions for self-managing work teams, team empowerment, and team performance. This resulted in the following research question:

"Are the conditions for self-managing work teams and team empowerment positively related to team performance?"

2. LITERATURE REVIEW

In the literature review, the theoretical concepts are discussed. The current knowledge is used to develop several hypotheses, which are used as guidance towards an answer to the research question. The concepts covered are self-managing work teams, team performance, and team empowerment.

2.1 Self-Managing Work Teams

Self-management finds its origin in the psychology literature. Management studies picked it up and mainly applied it on team level; self-managing work teams. “Self-managing work teams are groups of interdependent individuals that can self-regulate their behavior on relatively whole tasks” (Cohen & Ledford, 1994, p. 13). This definition of self-managing work teams corresponds to the following definition: a kind of work group of individuals who work interdependently and share responsibility for specific outcomes for their organization (Hackman, 1987**;** Sundstrom, De Meusse & Futrell, 1990; Kirkman & Rozen, 1999). In this study, the definition of Cohen and Ledford (1994) is used, because it includes self-regulation which is the main distinction between self-managing work teams and for example self-designing work teams.

2.1.1 Work teams

There are different types of work teams and self-managing work teams are one of them. That is why first the concept of self-managing work teams is considered deeper. A short and often used definition of work teams is 'a performing organizational unit' (Hackman, 1987; Costa, 2003). Because this definition is relatively short, a more detailed list of the characteristics of a work team is given to create a better view on the concept of work teams (Kozlowski & Bell, 2003). A work team: 1) consists of at least two individuals, 2) owes its existence to perform tasks relevant to the organization, 3) has at least one common goal, 4) interact socially, 5) contains task interdependencies, 6) is indicated by boundaries between the team and organizational context, and 7) is part of an organization. To analyze the effectiveness of a work team Sundstrom et al. (1990) created an analytical framework, shown in figure 2.1. "The framework is deliberately vague about causal and temporal dynamics, reflecting the premise that team effectiveness is more a process than an end-state" (Sundstrom et al., 1990, p. 122). In their framework, they included the variables; organizational context, boundaries, team development, and team effectiveness which are interrelated with each other.

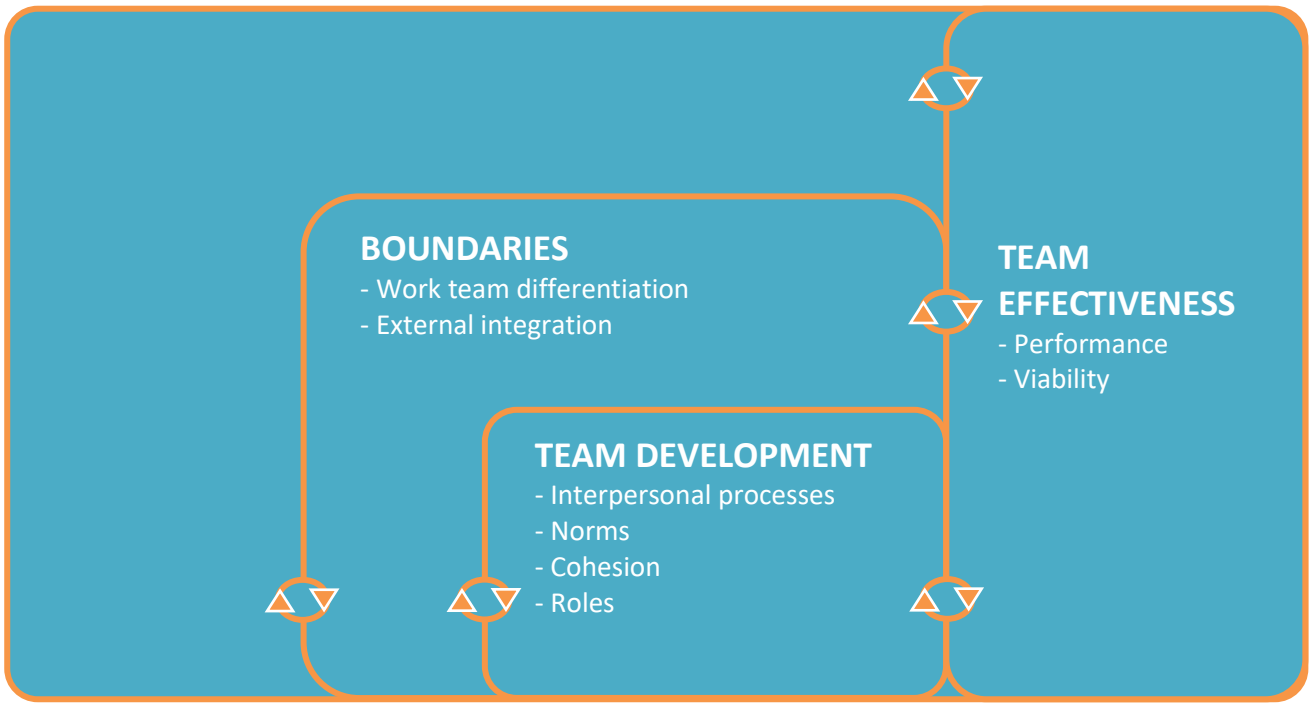

Figure 2.1. Analytical framework for work teams effectiveness

Note. Reprinted from "Work Teams: Applications and Effectiveness", by Sundstrom, S., De Meuse, K. P., and Futrell, D., 1990, American Psychologist. 45(2), p. 122.

2.1.2 The degree of autonomy within a work team

Autonomy is one of the organizational aspects of the model of Sundstrom et al. (1990). Each organization has its own distribution of autonomy and therefore work teams differ in their degree of autonomy. The degree of autonomy distinguishes the different types of work teams. Sundstrom, et al. (1990) distinguishes three teams based on their level of autonomy: 1) semi-autonomous work teams 2) self-managing work teams, and 3) self-designing work teams. These three categories correspond to the last three categories on the scale 'Team autonomy continuum', shown in figure 2.2. Banker, Field, Schroeder, and Sintia (1996) developed this scale based on a literature review. The difference between semi-autonomous work teams, self-managing work teams, and self-designing work teams will be explained in the following paragraph.

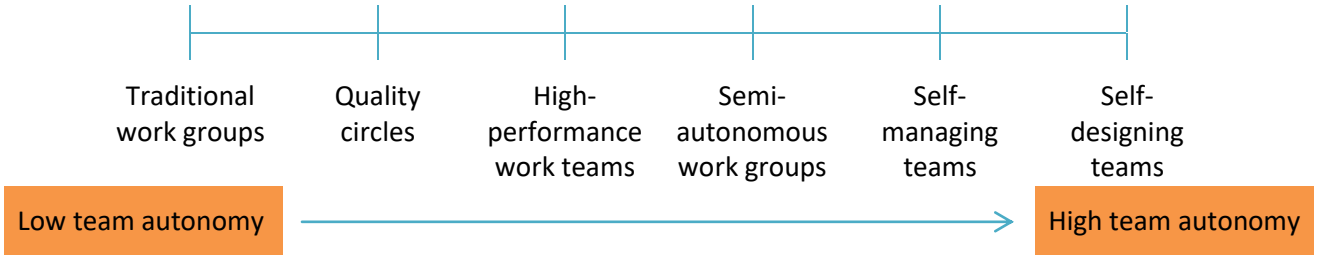

Figure 2.2. Team autonomy continuum

Note. Adapted from "Impact of work teams on manufacturing performance: A longitudinal field study", by Banker, R. D., Field, J. M., Schroeder, R. G., & Sintia, K. K., 1996, *Academy of Management Journal*, *39*(4), p. 868.

Semi-autonomous work teams have the least autonomy relative to self-managing and self-designing work teams. They have a leader who together with the team members controls the day-to-day activities (Becker & Billings, 1993). Self-managing work teams do not have a leader who interferes with day-to-day activities. They have the authority to execute and manage their own the work (Alper, Tjosvold & Law, 1998; Hackman, 1986), but within a structure set by their supervisor(s) (Wageman, 2001). Executing and managing the work processes are the first two general functions of a purposive organization according to Hackman (1987). The last two functions Hackman (1987) addresses are structuring the performing units and its context, and specifying the goals and objectives. Besides the first two functions, self-designing work teams also control the last two functions. In contrast to self-managing work team, they have also the authority over the structural design and the purposes of the team. In other words, self-managing work teams answer to the 'how question' and the organization to the 'what and why question' (Sundtrom et al., 1990), and a self-designing work team answers to all those three questions.

2.1.3 The optimal conditions for a Self-Managing Work Team

When work teams who used to have lower levels of autonomy must become self-managing, it is important that influential conditions are satisfied. The only comprehensive model that focuses specifically on self-managing work teams is the 'Predictive Full Model of Self-Managing Work Team Effectiveness' of Cohen (1993) (Cohen & Ledford, 1994). There are other theories which measure work group effectiveness (Sundstrom et al., 1990), but their applicability to self-managing work teams is not tested. Therefore, the 'Predictive Full Model of Self-Managing Work Team Effectiveness' of Cohen (1993) is used as a base in this study to determine to what extent the conditions are fulfilled in order to work as an effective self-managing work team.

The 'Predictive Full Model of Self-Managing Work Team Effectiveness' (Cohen et al., 1996) exists of predictor variables and outcome variables. This model is shown in figure 2.3. The four predictor variables are group task design, encouraging supervisory behaviors, group characteristics, and employee involvement context. These predictor variables correspond to the evidence Wagenman (2001) found that indicates that the performance of a self-managing work team is mostly affected by structural, technological, and contextual factors. The predictor variables are discussed in the following section. In addition, the corresponding questions which are developed for the condition test of self-managing work teams are mentioned. The original questionnaire is added in Appendix 10.5. In the questionnaire, the questions are categorized based on the requirements of De Passerel in order to fit the grouping to the organization.

The 'Predictive Full Model of Self-Managing Work Team Effectiveness' (Cohen et al., 1996) describes four different output variables; team performance rated by team members and leaders, member attitudes on their quality of work life, and withdrawal behaviors. These criteria are derived from group effectiveness theories, socio-technical theory, and the empirical work on the quality of work life and self-managing work team effectiveness (Cohen, 1993). Appendix 10.1 shows a detailed model with all the items of each variable included. The relation between each predictive variable and each outcome variable can be tested separated and could have different results (Cohen et al., 1996).

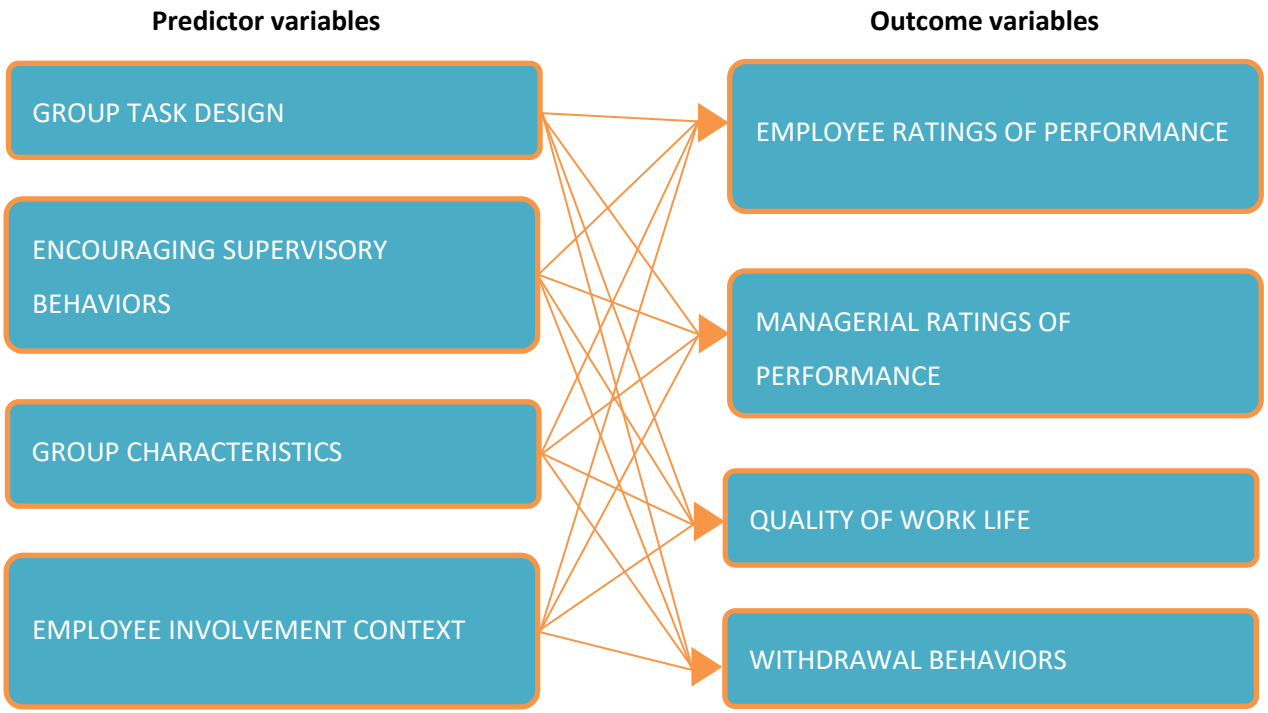

Figure 2.3. Predictive Full Model of Self-Managing Work Team Effectiveness

Note. Reprinted from "A Predictive Model of Self-Managing Work Team Effectiveness", by Cohen, S. G., Ledford, G. E. and Spreitzer, G. M. (1994). Human Relations, 49(5), p.661

2.1.3.1 Group Task Design

Group task design is the first predictor variable (Cohen et al., 1996). Tasks of work teams differ a lot and there are many tasks that can be distinguished (McGrath, 1984). Griffin (1991) found that work teams who are responsible for producing whole products are more effective. Also in other studies on work design, it is found that task design is a predictor of self-managing work team effectiveness (Hackman & Oldham, 1980). Group task design includes the following items: 1) autonomy to decide how the work will be performed, 2) the variety of tasks, 3) the identity of a whole and identifiable work task, and 4) the power to take action and make decisions. The following questions cover the category 'group task design':

- We have enough competencies within the team to accomplish the team assignment
- If it is necessary, we can take over the work of each other
- Our team focus on job rotation
- Our team focus on job enlargement
- We know what we have to do to achieve goals
- We have enough authority to accomplish the team assignment
- Encouraging Supervisory Behaviors

The next category within the full model of Cohen (1993) is 'encouraging supervisory behaviors'. Not only team members have to work differently, also the leader of the team who has a major influence on the team (Kirkman & Rosen, 1999; Cohen, Chang & Ledford, 1997; Hackman, 1986). It takes other leadership skills to lead a self-managing work team comparing to a traditional work team. Manz and Sims (1987) developed six leadership behaviors that encourage the team to lead itself. These six encouraging behaviors of leaders are transformed into six variables which Cohen (1993) included in the predictive full model of self-managing work team effectiveness. In the model of Cohen et al. (1996) this was reduced to a list of two items: 1) self-management, so the team can manage their own tasks, and 2) rehearsal and practice activities in advance. Deci, Eghrari, Partric, and Leone (1994) found similar results They found that it is important that the leader of a self-managing work team needs to support autonomy to its employees. Also, Langfred (2007) underlined the importance of good leadership because they are not always good at managing themselves. Three components are essential for a leader when he or she supports autonomy among employees: 1) Give always a meaningful reason, 2) acknowledge the perspective of the employee on the situation, and 3) Instead of controlling, give the employee freedom of choice (Deci et al., 1994). This is consistent with the theory of Sinek (2011) that all the great leaders start with communicating the 'why question'. The following questions answers to the category 'encouraging supervisory behaviors':

- We work in our team in a stimulating and positive way
- In our team, we evaluate whether our actions contribute to the mission
- We solve problems within our team
- Meeting the standards is the main goal of the team
- We work with best practices to our success
- We improve our work as a team by learning from successes
- We address each other to each other's actions

2.1.3.2 Groups Characteristics

Group characteristics are almost always part of group effectiveness models. The model of Cohen (1993) used three subcategories to define group characteristic; group composition, group beliefs, and group process. Group characteristics are not studied very often within the area of self-managing work teams, but it is studied more often general group studies (Hackman, 1987; Gladstein, 1984; Guzzo & Shea, 1992).

The three subcategories were deleted after the analysis of Cohen et al. (1994), but the following five items remain: 1) a stable team membership, 2) the crystallization of norms which leads to a high consensus within the team, 3) working coordinated with energy and team, so there is no duplicating or wasting efforts, 4) group expertise, so the tame has the appropriate competencies, and 5) the ability of the team to invent

and apply new ideas to do their task. The following questions answers to the category ‘group characteristics’:

- Within our team, it is clear what to expect from each other
- I am satisfied with my work
- I am satisfied with my team
- The tasks correspond to everyone’s talent
- We utilize everyone’s talent
- In our team, we maintain the values of De Passerel
- Our team can respond well to changes
- I am satisfied with the collaboration within our team
- We utilize opportunities as a team
- We think in terms of opportunities
- We apply new ideas and suggestions
- We continuously improve as a team
- Our team focus on work meetings

2.1.3.3 Employee Involvement Context

The employee involvement context is about the decentralization of tasks to the lower organizational levels, so employee involvement can be effective by giving them more discretion (Lawler, 1992). Lawler (1992) suggested five design elements for high employee involvement. Those five items were included in the full model of Cohen (1993), but with the new measurements of Cohen et al. (1996) the items of this dimension were adapted. The items of this category are 1) availability of information about the performance of the team, 2) recognition of the management for the performance of the team, 3) facilitating in training and resources a team needs, and 4) the feedback available for the team on their performance. The following questions answers to the category ‘employee involvement context’:

- We always look at what has been achieved
- Our team has enough space for reflection and giving conscious feedback
- Our team can make decisions well
- The execution of our work is based on the mission
- Our team supports the mission
- We work as a team systematically to the mission

With 32 questions this questionnaire is quite long, especially when organizations conduct more questionnaires among employees. Besides, this questionnaire is not validated yet. The first steps are taken in the process, which are establishing face validity, a pilot test is done and the data is collected (Collingridge, 2015). The next step is performing an principle component analysis (PCA). The quality of the questionnaire is increased by reducing poor performing items (Collingridge, 2015).

Hypotheses 1.1*: The items of the conditions test for self-managing work teams can be reduced.*

2.2 Performance of Self-Managing Work Teams

Most organizations aim to enable high team performance, and high employee quality of life, by implementing self-managing work teams (Cohen et al.,1996). Both team performance and employee quality of life are part of team effectiveness, which is often referred to as a multidimensional construct (Goodman, Ravlin & Schminke, 1987). The empirical research is limited and most studies about self-managing work teams include different categories of team effectiveness as a dependent variable. More and more evidence is gathered that the use of self-managing work teams is positively related to different dimensions of team effectiveness, like increased productivity (Langfred & Moye, 2004; Cohen & Ledford, 1994; Sundstrom et al., 1990), manager and self-reported performance (Cohen & Ledford, 1994), employee satisfaction (Cohen & Ledford, 1994; Cordery et al., 1991; Wall et al., 1986) and organizational commitment (Cordery et al., 1991).

Gladstein (1984) used two dimensions to explain team effectiveness. The first dimension was 'group performance' with the subcategories actual sales and self-reported performance, and the second dimension was team member satisfaction. Sundstrom et al. (1990) used perceived performance by the customers or manager, satisfaction among team viability, and commitment of team members towards the team to measure team effectiveness. The last example of measuring team effectiveness is from Hackman (1987). He used three dimensions to measure team effectiveness: qualitative and quantitative output of the team, the satisfaction of the team members to work in the team, and the ability to continue the work activities in the future. All those three definitions of team effectiveness contain performance output and team member satisfaction. Cohen (1993) used besides team performance and member attitudes about their quality of work life, also withdraw behaviors in the definition of team effectiveness. In this study, only the output variables team performance is measured because the longitudinal data was limited within this case study.

2.2.1 Negative effects of self-managing work teams that could threaten the team performance

Although more and more positive results about the use of self-managing work team can be seen, there are also studies who showed negative effects such as; relationship conflicts within team (Langfred, 2007; Vardi

& Weitz, 2004), informal hierarchy (Driskell & Salas, 1991), and imbalance between individual and team autonomy (Langfred, 2000; Banker et al., 1996). These negative results are threats to the team performance of self-managing work teams, and therefore the founded results are described in the next sections. None of the threats are tested in a comprehensive model, so the relationships found are an indication of the real relationship between self-managing work teams and team performance. The possible negative results are caused by relationship conflict within the team, informal hierarchy, and imbalance between individual and team autonomy.

One of the main negative effects of self-managing work teams is relationship conflicts within the team (Langfred, 2007; Cohen & Ledford, 1994). Conflicts are also a threat for other types of work teams (De Dreu & Weingart, 2003; Peterson & Behfar, 2003; Alper, Tjovold &Law, 2000). It could threaten the team performance (Langfred, 2007; Ilgen, Hollenbeck, Johnson & Jundt, 2005; De Dreu & Weingart, 2003), intra-team trust, autonomy, and task interdependence (Langfred, 2007). The high degree of autonomy and freedom increases the risk of relationship conflicts within a self-managing work team (Vardi & Weitz, 2004). A more general cause of relationship conflicts within a work team is group diversity. Possible solutions to handle relationship conflicts are improving conflict management within a self-managing work team and develop new norms how to handle disagreements (Langfred, 2007; Alper et al., 2000). De Dreu and Weingart (2003) suggested that team norms, openness, and psychological safety can moderate the negative effects of conflict within work teams.

The informal hierarchy of self-managing work teams could also threaten the performance of a self-managing work team. Because team members of a self-managing work team are equals, there is no formal hierarchy within the team. Especially in stressful situations team members with high informal positions are decisive in the team (Driskell & Salas, 1991). In such situations, the autonomy of the group is undermined. This does not necessarily have to be a problem if the team member with decisive power acts in the interest of the team and not in the interest of themselves. Clear goals and team norms can facilitate the team members with high informal positions to act in the interest of the team (Driksell & Salas, 1991).

Another possible threat towards self-managing work teams is the imbalance between individual and team autonomy (Langfred, 2000; Banker et al., 1996). Langfred (2000) found that individual and group autonomy are both related to group effectiveness. Some researchers already suggested to study the degree of individual and team autonomy within self-managing work teams (Kirkman & Rosen, 1999; Markham & Markham, 1995), and that forced team autonomy at the expense of individual autonomy could decrease the team performance (Liden, Wayne & Bradway, 1997; Pearce & Gavlin, 1987).

2.2.2 Implementation process of self-managing work teams

During the implementation of self-managing work teams, the organizational structure of the organization is adapted. 'The term organizational structure refers to the formal configuration between individuals and groups regarding the allocation of tasks, responsibility, and authority within the organization' (Lunenburg, 2012). This process includes transformative change, which "implies that the target of change must unlearn something as well as learn something new" (Schein, 2010, p. 301). The unlearning part is often the most difficult part because it is part of various routines, personal identity, and group identity. Therefore, employees could experience unlearning as a threat to their personal or group identity. The experience of this treat will cause resistance among employees (Schein, 2010).

To manage the resistance during radical change processes the 3-step model developed by Kurt Lewin can be used (Weick & Quinn, 1999; Schein, 1980). **The first step**, unfreezing, creates disequilibrium in the system and therefor it creates motivation to change. The unfreezing step composes of three different processes (Schein,1980). (1) Disconfirming data, (2) the realization that the disconfirming data threatens the fulfillment of important goals which causes anxiety and/or guilt, and, (3) enough psychological safety for having faith in a solution without loss of identity or integrity (Schein, 1980, 1996). **The second step**, change, is about learning new things and can be reached by two mechanisms: imitation and identification versus scanning and trial-and-error learning. Imitation and identification involve role models. This mechanism works best when it is clear what the new way of working is to be and the concepts to be taught are themselves clear. Sometimes a good role model does not exist. In that case, the structure and incentives have to be created by the leader so the learner can choose its own way how to change. The ultimate goals are set by the leader and it is important that those goals are clear. **The third and last step**, refreezing, starts when the positive results become visible. In this stage, the internalization and integration process starts. Which means that value of regulation is transformed to someone's own value or regulation (Ryan & Deci, 2000). In 3-step model is displayed in table 2.1 including the focused points discussed above.

Table 2.1. The 3-step model including the focus points during each step

Step 1: Unfreeze	Step 2: Change	Step 3: Refreeze
1) Disconfirming data 2) The realization of important goals is at risk 3) Psychological safety	1) Imitation 2) Identification 3) Scanning 4) Trail-and-error	1) Positive results 2) Internalization process 3) Integration process

During the implementation of organizational change, the complexity of the organization must also be taken into account. Three types of organizational complexity can be identified: "environmental (variations in the environment outside of the organization), component (number of organizational components and their relations), and hierarchical (number of levels and their relations)" (Glenn & Malott, 2004). These complexities cannot be eliminated, but they can be managed. Jimmieson, Terry, and Callen (2004) found effects during a longitudinal study of two years of employee adaptation to organizational change. The implementation process finished six months before the second measurement (T2). In this case study, the concept of self-managing work teams is implemented. The conditions for self-managing work teams and team performance are measured at T1, January 2016, and T2, November 2016. This is a time frame of elf months and the last stage of the implementation is still going on. The time frame of this study is really small relatively to other longitudinal studies, for example, the study of Jimmieson et al. (2004). However the effect of the change of the conditions of self-managing work teams and team performance is measured in this study, but no significant change is expected, see hypothesis 2.1 and 2.2. The last hypothesis that involves longitudinal data is hypothesis 2.3. With this hypothesis, the correlation between the change in conditions for self-managing work team and team performance is tested. Because several studies found that self-managing work teams have a positive influence on team performance, it is expected that this relation is positive.

Hypothesis 2.1: *In the period of January 2016 to November 2016 the conditions of self-managing work teams are not significantly changed.*

Hypothesis 2.2: *In the period of January 2016 to November 2016 the team performance is not significantly changed.*

Hypothesis 2.3: *The change in the conditions for self-managing work correlates positively with the change in team performance.*

2.3 Team Empowerment

As mentioned in the introduction of this paper, Rijnconsult (2015) found that the reason behind the implementation of self-managing work teams in The Netherlands is often to empower the professional. Different researchers studied the relationship between self-managing work teams and empowerment (Druskat & Wheeler, 2003; Kirkman & Rosen, 1999; Kirkman & Shapiro, 2001). In the late 90's the publications in the field of team empowerment increased (Conger & Kanungo, 1988; Spreitzer, 1995, 1996; Spreitzer, Kizilos, & Nason, 1997; Thomas & Velthouse, 1990). Empowerment is increased task motivation resulting from an individual's positive orientation to his or her work role (Spreitzer, 1995). This definition is supported by the finding of Deci and Ryan (1985) they linked empowerment to intrinsic motivation.

In the literature, two approaches of empowerment can be distinguished. The structural approach which has a focus on the contextual conditions and the psychological approach which focuses on the perceived empowerment (Spreitzer, 2008). The two perspectives are complementary to each other and play an important role in the development of a theory of empowerment (Spreitzer, 1995). Besides the difference in approach, there are also different levels of analysis. Spreitzer (1995) developed a scale to measure psychological empowerment on individual level. Based on this scale Kirkman and Rosen (1999) developed a scale to measure psychological empowerment on team level. This scale is reduced to a 9-item scale by Kirkman, Rosen, Tesluk, and Gibson (2004). Structural empowerment is measured with it CWEQ-II (conditions of work effectiveness questionnaire) on individual level (Laschinger, Finegan, Shamian & Wilk, 2001).

2.3.1 Structural empowerment

Kanter (1977) is one of the most important researchers in the field of structural empowerment in the academic literature. The theory has its origins in theories of social exchange and social power (Spreitzer, 2008). “Structural empowerment is about employee participation through increased access to opportunity, information, support, and resources throughout the organizational chain of command” (Spreitzer, 2008, p. 4). Structural empowerment is about the access to power tools: opportunity, information, support, and resources. More access to power tools means more power to get things done. When a company empowers its employees from the structural approach it means that the employees are getting more access to the power tools. The highest level of structural empowerment an organization can reach is the equal access to the power tools regardless of the position of the employee in the organization. This is comparable with a democracy where every individual has equal power (Prasad, 2001; Prasad & Eylon, 2001). By delegating responsibilities and authority in an existing hierarchical organization the degree of structural empowerment will be increased. By delegating responsibilities and authority there are needed fewer leaders, so their span of control will increase. Spreitzer (1996) found that a wider span of control of the leader leads to more structural empowerment.

Conger and Kanungo (1988) found that structural empowerment was only a part of the whole concept of empowerment. Structural empowerment is needed for employees to feel empowered, but employees do not feel automatically empowered when structural empowerment is present. The perceived empowerment by employees can be measured with psychological empowerment.

2.3.2 Psychological empowerment

Thomas and Velthouse (1990) described psychological empowerment as "increased intrinsic task motivation manifested in a set of four cognitions reflecting an individual's orientation to his or her work role: meaning, competence, self-determination, and impact" (Spreitzer, 1995, p. 1443). Spreitzer (1995) developed a scale to measure the degree of psychological empowerment on individual level which is used by Kirkman and Rosen (1997) to develop a psychological empowerment scale on team level. They used the four cognitions, and translate them into four team dimensions: impact, potency, autonomy, and meaningfulness. In this study, the scale of psychological empowerment on team level is used to measure the perceived team empowerment.

Potency parallels the competence dimension of individual psychological empowerment (Thomas & Velthouse, 1990; Conger & Kanungo,1988). Potency is the shared belief of a team that is works effectively (Guzzo, Yost, Campbell & Shea, 1993).

Meaningfulness corresponds with the meaningful dimension of individual psychological empowerment. Meaningful tasks are those tasks that a team experiences its tasks as important, valuable, and worthwhile (Hackman & Oldham, 1980; Hackman, 1987).

Autonomy parallels with the construct of choice of individual psychological empowerment (Thomas & Velthouse, 1990). Autonomy is the perceived freedom, independence, and discretion in their work (Hackman, 1987). The increase of perceived team autonomy could lead to a perceived individual autonomy (Langfred, 2004).

Impact corresponds with the impact dimension of individual psychological empowerment (Thomas & Velthouse, 1990). A task with impact is a task that a team performs that have impact on the organization (Hackman, 1987).

2.3.2.1 Intrinsic motivation explained by the self-determination theory

Not only the four dimensions of team empowerment are important for the understanding of the definition of psychological empowerment, but also intrinsic motivation. Intrinsic motivation is one of the types of motivation of the self-determination theory (Ryan & Deci, 2000). This theory is based on the belief that people have a natural motivation to learn and develop themselves. People have three basic psychological needs; feel competent, related, and autonomous. When people experience these basic needs, they are intrinsically motivated (Ryan & Deci, 2000).

Ryan and Deci (2000) relate the degree of self-determination to the type of motivation and the three basic psychological needs (Ryan & Deci, 2000). Self-determined behaviors represent conviction and the experience of freedom non-self-determined behaviors are accompanied by the experience of pressure and control, and behavior that not represents one's self (Ryan & Deci, 2000). These behaviors are the two extremes on the continuum of self-determination, shown in figure 2.4.

Behavior	Non self-determined					Self-determined
Type of motivation	Amotivation	Extrinsic Motivation				Intrinsic motivation
Type of regulation	Non-regulation	External regulation	Introjected regulation	Identified regulation	Integrated regulation	Intrinsic regulation
Perceived Locus of causality	Impersonal	External	Somewhat external	Somewhat internal	Internal	Internal

Figure 2.4. The self-determination continuum including type of motivation, type of regulation, and locus of causality

Note. Reprinted from "The" what" and" why" of goal pursuits: Human needs and the self-determination of behavior" by Deci, E.L. & Ryan, R. M., 2000, *Psychological Inquiry, 11*(4), 237.

Underneath the continuum of self-determination first three types of motivation are displayed: amotivation, extrinsic motivation, and intrinsic motivation, see figure 2.4. Intrinsic motivation represents behavior driven by the satisfaction of the three basic psychological needs; *autonomy* (feel the freedom to make own choices which correspondents with one's sense of self), *competence* (act effectively in what one does by possessing the right abilities, knowledge, and skills), and *relatedness* (feel a connection with other people). Extrinsic behavior is driven by external rewards or separable consequence and amotivation is a total lack of intention to act.

Below the different types of motivation several types of regulation for behavior are mentioned. People can have different reasons for their behavior. When people experience amotivation, there is a non-regulation of behavior, because people don't act. When people experience intrinsic motivation, the reason for their behavior comes from intrinsic regulation. But extrinsic motivation could have different types of regulation (; Schafer, 1968). The type of regulation for extrinsic behavior is divided into four types which vary in the degree of experienced self-determination along the continuum. *External regulation* covers the traditional definition of extrinsic motivation, people do something because of external demand or possible reward.

With *introjected regulation* the driving force is contingent self-esteem and pride, but not recognize the regulation as their own. *Identified Regulation* means that the person related the external motivation with his or her own self-esteem. *Integrated regulation* occurs when the regulation has been fully adopted by the person's own beliefs.

Last the locus of causality is displayed in figure 2.4 (Deci & Ryan, 1985). With internal perceived locus of causality the origin the person's behavior comes from inside and with external perceived locus of causality there is an external force for the behavior of someone (De Charms, 1968; Ryan & Connell, 1989). When people experience external and introjected regulation they feel mainly controlled or alienated. They have an external perceived locus of causality. When people experience identification and integrated regulation they mainly accept the regulation as if it were their own and have a moderate perceived internal locus of causality. Extrinsic motivation with a perceived internal locus of causality showed positive effects (Lepper & Henderlong, 2000; Sansone & Smith, 2000).

The transformation of externally regulated behavior into internally regulated behavior is called the process of internalization and integration were extrinsically motivated behaviors become self-determined behaviors (Deci & Ryan, 1985). "Internalization is the process of taking in a value or regulation, and integration is the process by which individuals more fully transform the regulation into their own so that it will emanate from their sense of self." (Ryan & Deci, 2000, p. 60).

2.3.3 Connection between the conditions for self-managing work teams, team empowerment, and team performance

Cohen et al. (1994) created an analytical framework where the conditions for self-managing work teams predict the team performance of a self-managing work team. Also, other researchers found evidence for a positive relation between self-managing work teams and team performance (Langfred & Moye, 2004; Cohen & Ledford, 1994; Cordery et al., 1991; Sundstrom et al., 1990). Also, psychological empowerment is found positively related to team performance in prior research (Chen, Kirkman, Kanfer, Allen & Rosen, 2007; Kirkman & Rosen, 1999). Therefore, it is assumed that both independent variables are positive related to the dependent variable, team performance.

The relation between the conditions of self-managing work teams and team empowerment is more complicated. Kirkman and Rosen (1999) stated that empowered team are always self-managing work teams, but self-managing work teams are not by definition empowered teams. "Both self-managing teams and empowered teams are autonomous, but the members of the latter also share a sense of doing meaningful work that advances organizational objectives; thus, team empowerment is a much broader construct"

(Kirkman & Rosen, 1999, p. 59). In the previous section, team empowerment is explained by the self-determination theory. During the planned change of implementing self-managing work teams the teams are imposed by the management to adopt a new way of working. So the change within the teams is caused by an external factor.

Each team experienced this implementation differently and therefor the degree of experienced self-determination and the type of perceived regulation varies. This is the start of the causal process of the self-determination theory. Sheldon, Turban, Brown, Barrick, and Judge (2003) developed an analytical model to displays the general causal process model of the self-determination theory, see figure 2.5. It is desirable that at the end of the implementation process all the teams have adopted the new way of as their own way of working, become intrinsically motivated to work like a self-managing work team and therefor feels empowered. This is called the internalization and integration process which is also part of the third step of the 3-step model of Lewin, see table 2.1. This causal relation between conditions of self-managing work teams and team empowerment is supported by the findings of Jo & Park (2016). They found that more discretionary power leads to more empowerment.

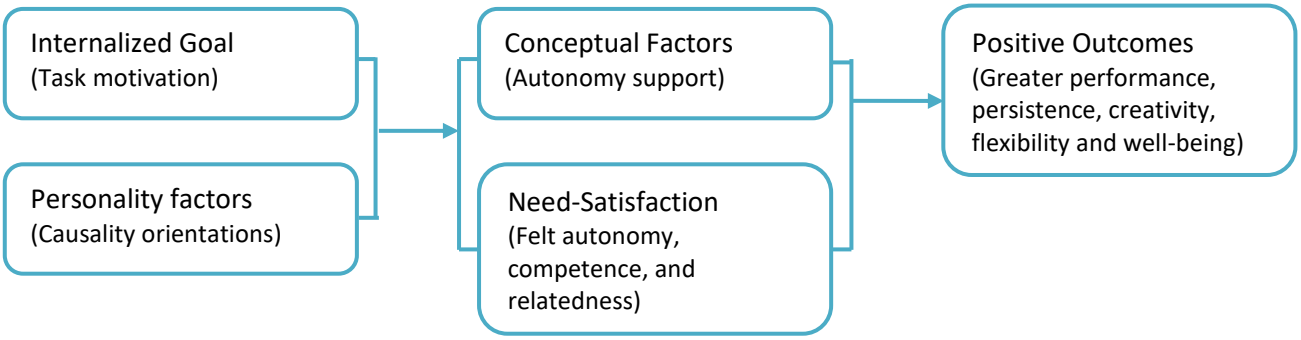

Figure 2.5. Self-determination general causal-process model.

Note. Reprinted from "Applying self-determination theory to organizational research" Sheldon, K. M., Turban, D. B., Brown, K. G., Barrick, M. R., & Judge, T. A., 2003, *Research in personnel and human resources management, 22*(1), 368.

Assumed is that self-managing work teams that feel empowered outperform self-managing work teams that do not feels empowered. So the positive relation between the conditions between self-managing work teams and team performance is partial positive related to team empowerment. The last hypothesis will test the correlation between the conditions for self-managing work teams, team empowerment, and team performance.

Hypothesis 3.1: *There is a positive correlation between self-managing work teams, team performance, and team empowerment.*

3. METHODS

3.1 Research design

In the literature review five hypotheses are developed, which are summarized below:

Hypothesis 1.1: *The items of the conditions test for self-managing work teams can be reduced.*

Hypothesis 2.1: *In the period of January 2016 to November 2016 the conditions of self-managing work teams are not significantly changed.*

Hypothesis 2.2: *In the period of January 2016 to November 2016 the team performance is not significantly changed.*

Hypothesis 2.3: *The change in the conditions of self-managing work correlates positively with the change in team performance.*

Hypothesis 3.1: *There is a positive correlation between self-managing work teams, team performance, and team empowerment.*

All the hypotheses originated from one basic conceptual model which is shown in figure 3.1. In this model, the causal effects are included. There is a direct positive causal relation between the conditions for self-managing work teams and team performance. This relation is positive mediated by team empowerment in the model. However, these causal and mediation effects could not be tested in this study because the sample size of this study is not appropriate. The correlations between the independent and dependent variables in the model could be tested and give an indication of the feasibility of this conceptual model.

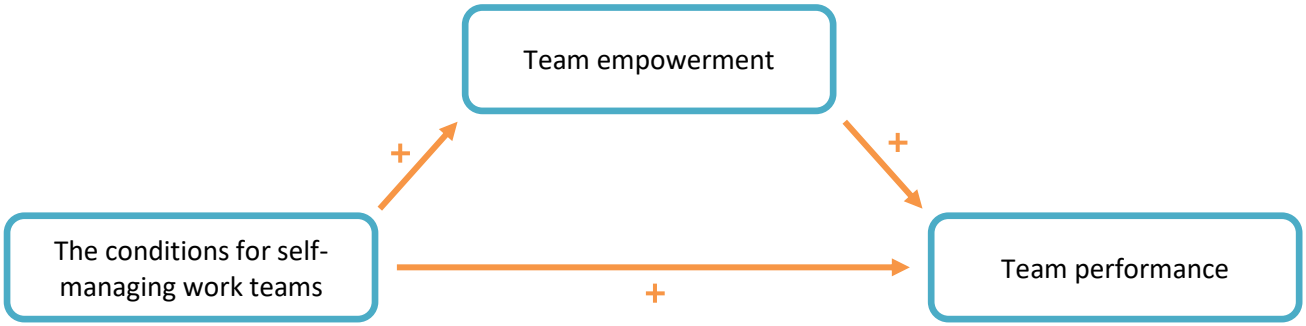

Figure 3.1. Conceptual model

Three statistical methods are used in order to find answers to the hypotheses. Hypothesis 1.1 requires a reduction method to reduce the items of the questionnaire, this is done with a principal component analysis (PCA). The next statistical method used is a paired sample t-test to test whether or not the conditions for self-managing work team and team performance shows a significant change. This test will answer to hypothesis 2.1 and 2.2. The third method used is a linear regression analysis. For hypothesis 2.3 the

correlation between dependent, independent, and one control variable is tested. For hypothesis 3.1 also a linear regression model is used, but it includes two independent variables.

3.1.1 Principal component analysis

The first hypothesis 1.1 states that the items of the original condition test of self-managing work teams will be reduced. A PCA is used to reduce the poor performing items. The PCA is concerned with finding variables that contribute to a common component and one PCA can contain several components. Another type of extraction uses common factors instead of common components (Gorsuch, 1983). The common factor models and component models are conceptually distinct models because of the different extraction method but often produce similar results. In this study, there is not chosen for common factor models because this type of extraction is used to find underlying structures caused by latent variables. This could be the next step in the improvement of the measurement model. PCA is used to reduce items (Osborne & Costello, 2009; Conway & Huffcutt, 2003). Therefore, PCA is chosen as the extraction model in order to answer hypothesis 1.1.

3.1.2 Paired sample T-test

The paired sample t-test assesses if the mean difference between two sets of observations is zero. This test will answer hypothesis 2.1 and 2.2. The scores from the first and the second measurement of each team is paired. The null hypothesis states that the mean of the differences of the paired in the sample is zero. The alternative hypothesis states that the mean difference does not equal zero. The null hypotheses will be accepted when $p > 0.05$ and rejected when $p < 0.05$, then the alternative hypotheses is accepted.

3.1.3 Linear regression analysis

A linear regression analysis tests the linear dependency between a dependent variable and one or more independent variables. When there are more independent variables, it is called a multi-regression analysis. The regression forecast the change of a dependent variable on the basis of change in one or more independent variables. A linear regression line is drawn into a graph with the data points of the dependent and independent variables, this is shown in figure 3.2. The distance of the regression line and the data points are mineralized. The relationship measured in a regression analysis does not involve causality, only a correlation.

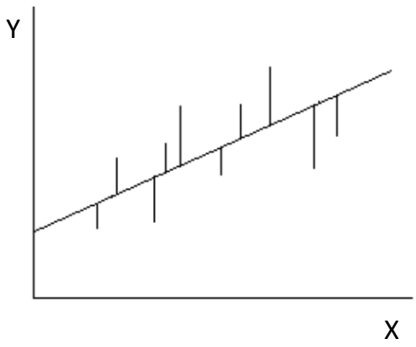

Figure 3.2. Graphical example of linear regression modeling

3.2 Context

This case study is performed on the data derived from one organization, De Passerel which is a disabled care organization in The Netherlands. De Passerel operates in three municipalities: Apeldoorn, Voorst, and Epe. The organization decided to change their structure and all the work teams of the organization had to become self-managing work team. Beside the implementation of self-managing work teams and fit the new structure, also the other parts of the organization had to change to facilitate the self-managing work teams. The change process is described in the next part and the information is gathered by a document analysis. A document analysis creates the possibility for rich descriptions (Stake, 1995; Yin, 1994), enables the researcher to discover insights relevant to the research problem (Merriam, 1988), and track changes over time (Bowen, 2009; Yin, 1994). To get a clear picture the strategic frameworks from 2002 till 2016 were read one by one. In the next paragraph, a summary is given of the full description of the context of this case study. The full description is added in the appendix 10.2.

3.2.1 Chronological description of the organizational development and the change process

De Passerel originated from two mergers, one in 1999 and the other in 2002. These mergers are the basis for the current range of the care services for disabled people provided by De Passerel. The most important reason for the last merger was to respond to the changing demand. Besides daytime care and activities for disabled children and adults, a new kind of service was added to the organization namely, residential care. After the mergers the organization focused on alignment of the different departments and developed a new mission statement and strategy. At that time the organization focused on the improvement of the formal systems, for example, quality management and Health & Safety policy (OHS policy) which were taken to a professional level.

In 2006 the organization establishes itself a new ambition ‘We want to be the best and therefor the biggest care provider in the disabled care sector in the region!' (De Passerel, 2006). This new ambition was partly a reaction to the increasing competition within the Health Care Sector due to a new vision of the national government and legislative changes. Since 2006 the profit was declining and in 2008 and 2009 the organization showed a negative financial result. These structural declines had some clear causes; the investment in quality and quantity, change in accounting policy, falling charges, increasing care intensity, increasing administrative pressure and therefor increasing overhead costs (De Passerel, 2009). Some of these causes are the result of internal decisions, but also the furthermore, external developments influence the declining profit. The society is changing and major developments like the growing individualization, aging of the population and an increase of the complexity of the society, have their influence on the target group of the organization and therefor on the disabled care sector. But also the changes in the health care

system in The Netherlands have a major influence on the disabled care sector, for example, the decentralization of the social domain.

With all these developments in mind, De Passerel needed to change their business operation to secure the persistence of the organization. The restructuring of De Passerel was driven by the desire to once again, find the balance between the revenue and expenses, but also to keep and improve the quality of their care services (De Passerel, 2009). This became a process of several phases and years. The different stages in a timespan of nine years are shown in table 3.1. The blue stages, one to six, are completed and the orange stages, five and six, are still in progress.

Table 3.1. The six stages of the change process of De Passerel

year	2009				2010				2011				2012				2013				2014				2015				2016				2017			
quartile	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Stage 1																																				
Stage 2																																				
Stage 3																																				
Stage 4																																				
Stage 5																																				
Stage 6																																				

Stage 1 contains some direct adjustments on the policy De Passerel maintained. A full recruitment freeze was executed, and the temporary contracts were not renewed to reach a reduction of 10% of the total staff. Also in other ways, the organization tried to reduce expenses as quickly as possible. For example, three unprofitable locations were closed (De Passerel, 2009).

Stage 2 is all about creating a new direction for the coming years. It starts with the creation of a new mission statement which is based on the old mission statement. The extensions include: focus on the personal context of the clients, partnership with relatives of the clients, and supporting clients in their own decision making. The organization developed itself further into a value-driven organization, with trust and confidence as the main values. The renewed management model of De Passerel relies on the Rhineland model. This model is mission oriented (Brouwer, 2003; Brouwer & Peters, 2011). For De Passerel this comes down to 1) provide high-quality service to the clients by being as flexible as possible, 2) a flat organizational structure with much discretionary power for the professional in the work teams 3) every employee works according to the established norms and values determined by management, and 4) the professionals are supported by strong and inspirational leaders (De Passerel, 2014). The organization wants to achieve an increase of discretionary power and the plate organization with the implementation of self-managing work teams.

The last step in this phase was to determine a new leadership vision for the leaders of the self-managing work teams. As stated above De Passerel wanted strong leaders that could inspire the professionals in self-managing work teams. The leaders must have the capacity to find a good balance between trust and control and uses different approaches so they can handle each situation (Doeleman, Reijmers, Van Oorst & Mol, 2014). To develop a detailed leadership vision, De Passerel hired TNO (At the beginning of 2016 the department of TNO is continued independently as RONT Management Consultants). In cooperation with a workgroup, consisting of managers and some of the team coordinators, TNO developed a leadership vision that fits the future organizational structure of De Passerel. The conclusion of the analysis performed by TNO was that De Passerel needs leaders with a transformational leadership style. Leaders with this type of leadership style are proactive, creating awareness of collective goals by followers and assist them in achieving high personal goals (Bass, 1985; Avolio & Bass, 1991). This conclusion is supported by the findings of Sheldon et al. (2003). They found that transformational leaders were effective in supporting autonomy. A specialized company was hired to select the candidates based on the transformational leadership style.

The team principles have an important place within the organization. They are working at the boundary between top management and self-managing work teams. Because they have the input from both the teams and the organization, they have a lot of knowledge. In the literature, such a role is called the external leader. Druskat and Wheeler (2003) developed a comprehensive model of the external leader and divided four dimensions: relating, scouting, persuading, and empowering. They first need to relate to team members, but also to those in other positions within the organization. Second, they have to scout the relevant information on team and organizational level to define the team and organizational needs. Third, they have to persuade teams to think and work in ways that facilitate the organization but also the other way around, persuade the organization to support and facilitate the self-managing work teams so they can work efficiently. Fourth, the external leader should empower the teams by delegating authority, be flexible regarding team decisions and provide the team with coaching.

Stage 3 One of the organizational features of the Rhineland model is the decentralization of responsibilities and authority. In order to realize that self-managing work teams have the right responsibilities and authority to work with, the responsibilities and authority must be mapped and remapped. The TRA method is used for the decentralization. TRA stands for Task, Responsibility, and Authority and is used to distribute responsibilities and authority (Ahaus, 1994). Authority gives someone power which allows someone to do something, responsibility is what someone should do and a task is what someone does or should do (Ahaus, 2005). De Passerel has six areas of responsibility; Services, Staff, Information Management, Housing, Administration, and Organizational Development (De Passerel & TNO, 2015). Each area of responsibility is divided into levels, strategic, tactical, and operational, and all levels are divided into areas of competence.

For each area of competence, there must be decided who has the power to decide and who has obliged advisory role. In the context of decentralization, the power must lie as low as possible in the organization. The power of decision can only be assigned to one person, but the advisory power can be assigned to multiple persons (De Passerel & TNO, 2015). Each area of responsibility has its own system operator. This role of system operator is fulfilled by managers. They have on strategic level always an obliged advisory role (De Passerel & TNO, 2015).

Stage 4 in this stage the team task board is created. The previous stage the responsibilities and authority are mapped and remapped, but there is nothing done with the tasks. With the input of sessions with focus groups a selection of tasks was made which is used to make a format of team tasks for all the teams. The selection of the definitive tasks is executed by a consultant of RONT and one of the board members of De Passerel. All the self-managing work teams use the same standard tasks, but because of the different work disciplines, some tasks are more relevant for one team than for another. For the consistency throughout the organization, there has been chosen for one standard. In appendix 10.2 a complete overview team task board with the areas of responsibly and tasks is shown. The physical white boards are present at each location. The tasks are printed on a magnetic strip, so the teams can create their own layout on the board. There is only one rule: “Only one person can be assigned to a task”. The first time some teams assign two persons to one task but in a later stage this was corrected by the teams. In addition there is also a digital tool that belongs to the team task board. The system operator is responsible for uploading the a complete task description and the teams are responsible to till in the contact person for each task. This tool also contains a mail application to facilitate the communication between the contact persons of one task (horizontal communication) and between the system operator and the teams (vertical communication).

Stage 5 is the execution of the transformation process and the implementation phase of the change process, this is shown schematically in table 3.2. The transformation process (De Passerel, 2015) aims at the implementation of self-managing work teams and the decentralization of tasks, responsibilities, and authority. The implementation of self-managing work teams has three assumptions: 1) Team development, 2) Connecting the management model to the concept of self-management, and 3) Connecting the staff and central services to the primary process. Only the third assumption is part of the transformation program. The staff and central services must change their focus from regulating to facilitating. Besides this facilitating role, the staff and central services also need to take care of the continuity of the organization and meet the needs of the stakeholders.

Table 3.2. Timeline of the transformation program

Year	2015				2016												2017					
Month	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
Development phase transformation program																						
Effectuation phase transformation program																						
Plan																						
Do																						
Check																						
Act																						
Finishing phase transformation program																						

Stage 6 involves the change of the top structure of De Passerel. At the start of the implementation process a new layer in the organization was added, the team principles. From top to bottom the organization consists of the board, sector managers, the team principles, and the self-managing work teams. In addition, there are also supporting departments. The function of sector manager will be canceled, so the layer of sector manager will be removed. Two other functions are added to the organization. The first is the function counselor care content development and the second function is counselor development and systems. With these two new functions, there will be focus on creating and maintaining horizontal and vertical connections within the organization. By the removal of the layer of sector managers, the team principals are directly under the board. Therefore there will be given attention to the desired leadership style for the chairman.

3.3 Sample

All the employees in self-managing work teams at De Passerel have received the original test to measure the degree of the conditions for self-managing work teams. The response rate was over the 80%, in total 385 employees completed the test. For the reduction of the items of the original questionnaire, all these individual data is used. The other tests are done with team-level data.

The work teams included in this study are all active at De Passerel, a disabled care organization in The Netherlands. In total there are 34 teams active at De Passerel. Only 22 teams were suitable in order to include them in the analysis. Appendix 10.4 includes two tables that show the key characteristics of the sample. The reference date for all tables is 1st of December. The characteristics included in table 10.7 are; the number of team members, the number of team members who left the team, average age of the team members, male, female, sex rate, FTE's, average response, and amount of work locations. In this table regular staff and interns are included. In the next table, only the regular staff is included. The characteristics included in table 10.8 are; the number of team members, the number of team members who left the team,

average age of the team members, male, female, sex rate, and FTE's. The main characteristics of the sample are discussed in the following paragraphs. Both tables, 10.7 and 10.8, can be found in appendix 10.4.

The sample includes 21 teams. On average a team consists of fifteen team members including interns, the smallest team consists of seven team members and the largest team consists of 26 team members. Without the interns a team consists on average of thirteen team members, the smallest team consists of seven team members and the largest team consists of 22 team members. The mean of the average age of the team including regular team members and interns is 41 years, the lowest average is of a team is 32 years and the highest average is 49 years. Without the interns, the average age is a little bit higher. The mean of the average age of the team without the interns is 43 years, the lowest average is of a team is 38 years and the highest average is 49 years. On average five team members including interns left the team in the period of the 1st of September 2016 till the 1st of December 2016. Without the interns on average, two team members left the team. Some teams are not left by a regular team member and interns. The largest number of team member's inclusive interns is seventeen and without interns, max five team members left the team. The average sex ratio with and without interns is 0.24, the lowest ratio is 0.0 and the highest 0.83. A ratio of 0.00 means that there are only female team members in the team. The closer the sex ratio is to one, the more balanced the distribution of men and women is within the team.

3.4 Measures

3.4.1 Condition of self-managing work teams

The condition test of self-managing work teams is tested by a questionnaire that is based on the conditions from the 'predicative full model of self-managing work team effectiveness' (Cohen et al., 1994). The original test contains 32 items (see appendix 10.5), but in section 4.1 the items to measure this scale are reduced using principal components analysis to fourteen items, shown in appendix 10.5. The items are answered using a five-point Likert scale ranging from one (Strongly agree) to five (strongly disagree). The reduced scale with fourteen items is used in the analysis to measure the conditions for self-managing work teams. The first questionnaire was conducted at T1 in January 2016 and the second time in October 2016, T2. The questions in the appendix are formulated in English, but the team members filled in a Dutch version. The translation is checked by people with a master degree in Business Administration.

3.4.2 Team performance

In order to measure team performance, the perceived team performance is measured. The first measurement, T1, is conducted in December 2015 and the second measurement, T2, is measured in November 2016. The second measurement includes also the rankings of the team's external leader. This is

done to avoid the same-source bias and improve the quality of the measurement (Podsakoff & Organ, 1986). Because this study started in June 2016, T1 is derived from the employee satisfaction survey. From that moment in time, there was no data available from the leaders of the teams. Cohen (1993) argued that especially employees of self-managing work teams need to know how their team performs because the team members are collectively responsible for performing the tasks and to receive the goals. Therefore, team members of self-managing work team should have the appropriate knowledge how the team is performing. However, for the completeness and quality of the measurements, the scores of the external leaders were included in the measurements. The four items that all relate to team performance and form the scale that is used in this study are:

1) Team members in my team work effectively
2) My immediate colleagues deal with the right things
3) The work of my team contribute to the success of De Passerel
4) In my team, the client comes first

3.4.3 Work team empowerment

Work team empowerment is measured by the shortened scale of Kirkman and Rosen (1997) of psychological empowerment on team level. This shortened version is created by Kirkman et al. (2004) and consists of twelve items on a five-point Likert scale ranging from one (Strongly agree) to five (strongly disagree). These twelve items are classified equally in four dimensions. The twelve items can be found in the appendix 10.5 and all the items were answered. This questionnaire is conducted only once at T2 in November 2016.

3.4.4 Team characteristics

The team characteristics are requested from the staff administration. The reference date for the characteristics is 1st of December 2016. The number of team members who left the team is measured in the period from the 1st of January 2016 to the 1st of December 2016. See appendix 10.4 for the tables with an overview of the characteristics.

3.4.5 Reliability of the scales

To assess the internal consistency of the each scale the Cronbach's alpha is measured and shown in table 3.3. George and Mallery (2003, p.231) provide the following rule of thumb: "$\alpha > 0.9$ – Excellent, $\alpha > 0.8$ – Good, $\alpha > 0.7$ – Acceptable, $\alpha > 0.6$ Questionable, $\alpha < 0.5$ – Unacceptable" which is supported by Gliem and Gliem (2003). All the Cronbach's alpha's are good, or even excellent.

Table 3.3. The Cronbach's alpha of the variables in this study.

Variables	Cronbach's alpha
Team performance T1	α = 0.863
Conditions for self-managing work teams T1	α = 0.913
Team performance T2	α = 0.817
Conditions for self-managing work teams T2	α = 0.895
Team empowerment T2	α = 0.895

3.4.6 Level-of-analysis

A researcher can measure constructs and variables on team-level using individual team member data in at least three different ways (Tesluk, Zaccaro, Marks & Mathieu, 1997). First, the researcher can aggregate self-ratings of team member to team-level by using composition models (Van Mierlo, Vermunt & Rutte, 2009). Second team members can rate their teams and the researcher can calculate the average of all team members to form a team score (Hyatt & Ruddy, 1997; Campion, Papper & Medsker, 1996; Campion, Medsker & Higgs, 1993). Last, the method creates consensus survey ratings (Kirkman & Rosen, 1999). The last method is recommended by previous researchers (Campion et al., 1993; Guzzo et al., 1993). However, the data is available at T1 not suitable for the last method. So the second method is used to create team scores.

Before the individual scores of team members can be aggregated and operate at team level, the intra-class correlation (ICC) has to be tested. In this study, the $\mathrm{ICC}(1)$ and $\mathrm{ICC}(2)$ are used. The $\mathrm{ICC}(1)$ 'represents a form of proportional consistency' (Bliese, 2000, p. 355) which is the extent of agreement among scores from team members of the same team. $\mathrm{ICC}(2)$ provides an estimate of the reliability of the group means (Blies, 2000, p. 357). The following formula is used to calculate the $\mathrm{ICC}(1)$ (Bartko, 1976). Where k is the average group size, MSB stands for Mean Square Between Groups, and MSW stands for Mean Square Within Groups. Both Mean Squares are measures of a one-way ANOVA in SPSS:

$$ICC(1) = \frac{MSB - MSW}{MSB + (k-1)MSW}$$

ICC(1) and ICC(2) are related to each other by the size of the group (Bliese, 1998; Shrout & Fleiss, 1979). When ICC(1) is large, fewer individual ratings are needed for a reliable measure for the group mean, but when ICC(2) is small, a higher amount of individual ratings are needed for a reliable group mean (Bliese, 2000; Shrout & Fleiss, 1979). The following formula is used to calculate the ICC(2) (Shrout & Fleiss, 1979):

$$ICC(2) = \frac{k(ICC1))}{1 + (k-1)ICC(1)}$$

Table 3.3. The ICC scores of the variables in this study

Variable	MSB	MSW	k	ICC(1)	ICC(2)
Team performance T1	1,836	0,35	10,76	**0,28**	**0,81**
Conditions for self-managing work teams T1	1,114	0,221	11,00	**0,27**	**0,80**
Team performance T2	1,300	0,279	10,29	**0,26**	**0,79**
Conditions for self-managing work teams T2	0,871	0,208	10,29	**0,23**	**0,76**
Team empowerment T2	0,695	0,207	5,14	**0,32**	**0,70**

James (1982) found a median of 0.12 for the ICC(1) and Bliese (2000) found ICC(1) of 0.05 to 0.20 but encountered ICC(1) values greater than 0.30 in field studies. The ICC(1) of Team empowerment T2 is a little bit above 0.30, but that is probably the result of the low k. For the ICC(2) the cutoff-point 0.60 and 0.70 are used in the literature for aggregation. Based on the ICC's all variables can be aggregated from individual level to team level.

3.5 Processes in data collection

The first part of the data collection is done before this study started, the measures at T1. The data is collected by a specialized company in employee surveys because an external agency conducted the questionnaires and analyzed the responses, the anonymity has been guaranteed. The same external agency conducted also the questionnaire at T2 in October that included the condition test for self-managing work teams and the team performance. All those questionnaires were part of the change process of De Passerel. The questionnaire of team empowerment was conducted in November. It started a week after the closure of the previous questionnaire. For this questionnaire, a digital tool is used that the Passerel deploys for internal use.

4. RESULTS

4.1 Hypothesis testing

4.1.1 Pre-tests for hypothesis 1.1

First, each variable is checked on a normal distribution. This is done with histograms, the skewness, and the kurtosis of the variables. All variables were distributed normally, except from 'Taken 4G'. The kurtosis of this variable was 3.437 and therefore to high. This variable is deleted from the data.

The Kaiser-Meyer-Olkin (KMO) test is used to determine the adequacy of the sample size. The KMO index suggests whether it make sense to group the data into smaller sets of factors (Field, 2009). KMO values between 0.8 and 1 indicate the sample size is adequate. The KMO measure of overall sampling adequacy was .930, which supports the appropriateness of a factor analysis on this dataset (Field, 2009). Chandler, DeTienne, McKelvie, and Mumford (2011) provide an indication of 100-200 for an adequate sample size for most factor solutions. This sample contains 276 samples, which is adequate based on this indication. Bartlett's test of sphericity was found significant (chi-square 3457, df=465, $p < 0.000$). This means that the dataset contains more than one factor, so it is suitable for a PCA (Field, 2009).

Next, the anti-image correlation matrix was checked. This matrix provides KMO scores for each variable. All the measures along the diagonal should be values above 0.5 and the others should be close to zero (Field, 2009). The anti-image correlation matrix meets this requirement. No variable had to be removed from the dataset.

Before the PCA is performed an inter-correlation table with bivariate Pearson's correlation coefficients including significance is checked. Bivariate correlations are an effect size of the relationship between two variables. Evans (1996) created a guide so the absolute values can be discussed. The values are displayed in table 4.1. Each variable should have correlations with other variables, but they should correlate not too highly. High correlations could imply that there is multicollinearity within the data. Each variable should have a unique contribution to the factor solution (Netemeyer, Bearden & Sharma, 2003). In the appendix 10.6, the bivariate Pearson's correlation coefficients of this dataset are added. All correlation coefficients are significant and most of the correlation coefficients have a weak to moderate effect, some of them have a strong effect. Different cutoff points are used for intercorrelation among independent variables; > 0.7, > 0.8 and > 0.9 that could signal a possible problem. One value, 0.797, is above > 0.7 and therefor the VIF scores are checked. The literature holds no formal threshold for the VIF score, but five and ten are commonly used (Craney & Surles, 2002). The VIF scores of the variables with the correlation of 0.797 were 2.884 and 2.911, so they both are below five which indicates that there are no multicollinearity problems.

Table 4.1. Effect size of correlations

0.00 – 0.19	Very weak
0.20 – 0.39	Weak
0.40 – 0.59	Moderate
0.60 – 0.79	Strong
0.80 – 1.00	Very strong

4.1.2 Principal component analysis

A few decisions have to be made before the principal component analysis can be executed. First, the number of components has to be determined. There is no perfect technique to determine the number of components. Fabrigar, Wegener, MacCallum, and Strahan (1999) recommended using multiple techniques. One technique is to retain all components with eigenvalues greater than 1.0, but this technique could result in too many components (Osborne & Castello, 2009). The second technique is the scree-test. This test creates a scree-plot based on eigenvalues and the researcher will look for a natural bend of a break point. All components above this breakpoint are retained for the rotation. One last important decision technique is the interpretability of the results. The components produced by the PCA should be interpretable for the researcher. Based on these three techniques there is chosen for five components. There are five components with an eigenvalue greater than 1.0, one component explains most of the variance and therefore the scree-plot is a little bit difficult to interpret, but on the other hand the components are easy to interpret.

Finally, the Method for rotation has to be chosen. "The goal of rotation is to simplify and clarify the data structure" (Osborne & Costello, 2009, p. 136). There are roughly two types of rotation, orthogonal rotations, and oblique rotations. Orthogonal rotations produce components that are uncorrelated and oblique rotations allow the components to correlate (Osborne & Costello, 2009). When the components correlate, an oblique rotation is preferred, because orthogonal rotation will force an unrealistic solution. An oblique rotation will create a more realistic and simple structure (Fabrigar et al., 1999; Gorsuch, 1997). Direct Oblimin and Promax are both oblique rotation methods included in the SPSS 23.0 software package. The Promax rotation is used in the analysis.

Two requirements were used in order to reduce the items in the analysis. First cutoffs score is used for component loadings. Component loadings are classified as follows: 0.32 (*poor*), 0.45 (*fair*), 0.55 (*good*), 0.63 (*very good*) or 0.71 (*excellent*) (Tabachnick & Fidell, 2007). The questionnaire has originally 31-items and by reducing the items the noise of unnecessary questions disappears. Only the component loadings with a very good or excellent were accepted. The second requirement was that items cannot load on two components. The final pattern matrix of PCA is displayed in table 4.2. The correlations between the components show no abnormalities, see table 4.3.

Table 4.2. Pattern matrix of PCA with components loadings

Component	1	2	3	4	5
3G	,934				
3F	,926				
5A	,726				
3D	,651				
5D		,871			
5E		,865			
5F		,821			
4D			,871		
4E			,861		
4F			,688		
1E				,950	
1C				,856	
3A					,970
3B					,703

Table 4.3. Component correlation matrix

Component	1	2	3	4	5
1					
2	,581				
3	,521	,459			
4	,387	,435	,423		
5	,403	,370	,353	,313	

The last step to be taken in the interpretation of the components. The first component exists of the following items:

1. 3G I am satisfied with the collaboration within our team
2. 3F I am satisfied with my team
3. 5A We work in our team in a stimulating and positive way
4. 3D Out team respond well to changes

All these items go about how the team members feel about the team processes and collaborations. Therefore, this component is called '**team collaboration**'. The second component exits of the following items:

5. 5D We apply new ideas and suggestions
6. 5E We work with best practices to our success
7. 5F We continuously improve as a team

These items are all related to team learning capabilities and therefore the component is called '**team learning**'. The third component exists of the following items:

8. 4D If it is necessary we can take over the work of each other
9. 4E Our team focus on job rotation
10. 4F Our team focus on job enlargement

These items are about increasing the employability of team members on different tasks. Therefore, this component is called '**task flexibility**'. The fourth component exists of the following items:

11. 1E In our team we evaluate whether our actions contribute to the mission
12. 1C We work as a team systematically to the mission

These items evaluate whether a team works mission oriented so this component is called '**mission oriented**'. The last component exists of the following items:

13. 3A We have enough authority to accomplish the team assignment
14. 3B We have enough competencies within the team to accomplish the team assignment

These items are about the authority and competencies a team has to accomplish their team assignment, so this is components is called '**team capabilities**'. The new questionnaire is displayed in appendix 10.5.

4.1.3 Hypothesis 2.1 and 2.2

Before the paired sample t-test is performed first general assumptions are checked. The observations are independent of one other, so the first assumption is satisfied. The differences between the paired first and second observations form together the dependent variable. Dependent variables, from the change in conditions of self-managing work teams as well as the change in team performance, are continuous. A Shapiro-Wilk test is used to test whether or not the data is normal distributed. This test is given preference over the Kolmogorov-Smirnov test because the Shapiro-Wilk test is more appropriate for small sample sizes (< 50 samples). The significance level of the two variables is greater than 0.05, so the data is normal distributed. There are no outliers found in the data. The results of the paired sample t-test can be found in table 4.4 below.

The change in team performance is not significant and therefor the null hypothesis can be accepted which means that there is no significant difference between the first and the second measurement. However, the change in the conditions of self-managing work teams is significantly increased. Which means the conditions are rated less by the team members because one stands for totally agree and five for totally disagree.

Table 4.4. Results from the paired sampled t-test. Including the mean, standard deviation, and P-value (2-tailed).

	Mean	SD	P-value
Δ Team performance	.02	.28	.786
Δ Conditions of self-managing work teams	.04	.03	.00

4.1.4 Pretests for hypothesis 2.3 and 3.1

This study only includes 21 samples which is a small sample size for finding significant results (Cohen, 1992). This could lead to type II, fail to reject a false null hypothesis. In the correlation table, some control variables are included, but it is not possible to include all control variables in the regression analysis, because of the small sample size the model would become too complex. Overfitting could result in an overfitted model. "Overfitting yields overly optimistic model results: "findings" that appear in an overfitted model don't really exist in the population and hence will not replicate" (Babyak, 2004).

The pretest for both hypotheses starts with testing the normality of residuals. When the residuals are normally distributed, the data is appropriate for a regression analysis. Dependent variable and independent variable(s) are plotted in a scatter plot and a normal P-P plot of regression standardized residual in SPSS 24. The residuals of the change in team performance and change in conditions for self-managing work team in seem to be normally distributed in both the scatter plot and the normal P-P plot of regression standardized residuals. The residuals of team performance T2, conditions for self-managing work team and team empowerment are nicely spread in the scatter plot, but the Normal P-P plot of regression standardized residuals is not so tight on the line, so the residuals are approximately normally distributed.

Finally, the correlation table is checked on multicollinearity. Multicollinearity could be a problem because most data comes from the questionnaires the employees completed. This could lead to the common method/source bias. The bias is a threat to the variance that is attributable to the method or source rather than to the constructs the measures are assumed to represent. This lead to a systematic error variance shared among the variables. The summed scores that are used can mitigate measurement errors in a regression analysis. When there is multicollinearity the correlations are much higher. Correlations of 0.7 or more can cause problems (Tabachnick & Fidell, 1996).

Table 4.5. De means, standard deviations, and correlations of Δ team performance, Δ conditions for self-managing work teams, and control variables (n=21)

	Variables	M	SD	1	2	3	4	5
1	Δ Team performance	.02	.28					
2	Δ Conditions for self-managing work teams	.04	.03	-.23				
3	Team performance January	2.15	.41	-.48*	.10			
4	Amount of team members	15.14	5.05	.29	.37	-.08		
5	Sex ratio within the team	.24	.26	.25	-.63**	.17	-.06	
6	Amount of work locations of the team	1.38	.67	.43†	.14	-.06	.21	.31

p < .05, 2-tailed. **p < .01, 2-tailed. † p < .05, 1-tailed.

Table 4.6. De means, standard deviations, and correlations of Δ team performance, Δ conditions for self-managing work teams, and control variables (n=21)

	Variables	M	SD	1	2	3	4	5
1	Team performance	2.17	.37					
2	Team empowerment	2.17	.36	.79**				
3	Conditions for self-managing work teams	2.39	.30	.75**	.66**			
4	Amount of team members	15.14	5.05	.13	-.03	.14		
5	Sex ratio within the team	.24	.26	.38†	.08	-.05	-.06	
6	Amount of work locations of the team	1.38	.67	.25	-.06	.11	.21	.31

*p < .05, 2-tailed. **p < .01, 2-tailed. † p < .05, 1-tailed.

In table 4.5 there are no values above .7, in table 4.6 there are two values above .7. The VIF scores of the variables with correlations above .7 are checked. The literature holds no formal threshold for the VIF score, but five and ten are commonly used (Craney & Surles, 2002). In a regression analysis, the VIF scores are measured with Team performance as the dependent variable and team empowerment and conditions for self-managing work teams. The VIF scores are both 1.76 and fall within the norm of the threshold.

In table 4.5 there are three significant correlations. The strongest correlation is between the sex ratio within the team and the change of conditions for self-managing work teams. The correlation is negative ($p < .05$, 2-tailed), however, a numerical negative change in the conditions for self-managing work teams means an increase of perceived fulfillment of the conditions because totally agree is one and totally disagree is five. So, a higher sex ratio has a positive influence on the change of the perceived conditions for self-managing work teams. The team performance at T1 has a negative correlation ($p < .05$, 1-tailed) with the change in team performance. This means that a high perceived team score at T1 experienced a decline. Last the amount of work locations showed a positive correlation ($p < .05$, 1-tailed) with the change in team performance. However also for this correlation applies that a numerical positive change in team performance means a decrease of team performance. No significant correlation is found between the change in team performance and the change in conditions for self-managing work teams. Hypothesis 2.3 is not supported in advanced by the preliminary results.

In table 4.6 four significant correlations are found. The correlations between team performance, team empowerment and the conditions for self-managing work teams are all strong and significant ($p < .01$, 2-tailed). Hypothesis 3.1 in advanced by the preliminary results. The last correlation ($p < .05$, 1-tailed) is between sex ratio of the team and the team performance. The direction of this correlation is also affected. A numerical increase of team performance means a decrease in the rating of the team performance. The teams with a higher sex ratio rate their performance lower than teams with a lower sex ratio.

4.1.5 Linear regression analysis

The results of the first regression analysis are displayed in the table 4.7 below. The linear regression analysis is performed with the dependent variable, change in team performance, the independent variable, change in conditions for self-managing work teams and one control variable, the team performance in January. The $R^2 = .25$ and the adjusted $R^2 = .17$ which is a low score and both scores are not significant. The adjusted R square is corrected for the number of independent variables and therefore it is a more stringent measurement. Based on this outcome the change in conditions of self-managing work teams and the team performance at T1 will not give reliable predictions of the change in team performance, so hypothesis 2.3 is rejected.

Looking at results one Beta coefficient is found significant. The Beta coefficient shows the influence of each independent variables on the dependent variable (Field, 2013). The team performance at T1 showed a moderate and significant negative correlation with the change in team performance. The higher performing teams at T1 showed less change in team performance comparing to lower performing teams at T1.

Table 4.7. Regression results with the change of team performance as the dependent variable

Variable	Model 1
Primary order	
Δ Conditions for self-managing work teams	-.23
Team performance January	-.42*
R^2	.25
Adjusted R^2	.17

*p < .05, 2-tailed. **p < .01, 2-tailed.

4.1.6 Multi regression analysis

In table 4.8 the regression results are shown. All the Beta's, the change in R square, R-square, and adjusted R-square are significant. The Beta coefficients and the change in R square have their own p-value to determine the significance, but the significance of the R-square and adjusted R-square is tested with the p-value of the F-test. The F-test of the overall significance compares a model with no predictors to the model with the independent variable(s).

The model including both independent variables the conditions for self-managing work team and team empowerment shows the highest R^2 = .74 and the adjusted R^2 = .71 which means that the independent variables can account for 71% of the variation of the dependent variable. The conditions for self-managing work teams (β = .55) have a stronger influence on the team performance than team empowerment (β = .43). This result support hypothesis 3.1 and therefore it is accepted.

Table 4.8. Regression results with the team performance at T2 as the dependent variable

Variable	Model 1	Model 2
Primary order		
Conditions for self-managing work teams T2	.78**	.55**
Team empowerment T2		.43**
ΔR^2	.61**	.13**
R^2	.61**	.74**
Adjusted R^2	.60*	.71**
Alternative order		
Team empowerment T2	.73**	.43**
Conditions for self-managing work teams T2		.55**
ΔR^2	.54**	.20**
R^2	.54**	.74**
Adjusted R^2	.51**	.71**

*p < .05, 2-tailed. **p < .01, 2-tailed.

5. DISCUSSION

The internal validity of this study is guarded by different requirements in this study, for example, minimum response per team and a stable membership over time to avoid history effects. For this study, all the teams of De Passerel were tested. Only the teams that met the requirements were included in this study to avoid selection problems. There are conducted four different questionnaires in a relatively short time with a lot of changes and the response rates decreased. The team members felt an overload of questionnaires and did know how they would benefit by filling in the questionnaires.

> "In October and November we received questionnaires about subjects that were unclear for us due to the large changes and therefore we felt uncomfortable to fill it in." – team member of De Passerel

Although the ICC's showed good results, the decrease in response could have a negative influence the internal validity. Next, this study is done without control groups. Control groups are used to avoid the bias of any aspect of the design, conduct, and analysis that would make the estimate of the treatment effect deviate from the true effect. Unfortunately, De Passerel changed all their work teams into self-managing work teams, so there was no opportunity for control groups.

Because all the teams work in the same organization the generalization of this study is limited. The organizational structure has a lot of influence on team processes, but also the internal and external context. Therefore, organizational context of De Passerel is described in the method section. Although all the teams work for the same organization, they provide different care services. Some teams work for example at residential buildings for disabled people, some teams work provide daytime activities and other teams provide support on work locations. Also, the ages and the degree of disability of the clients differ a lot among the locations. Because of this variety in care services, it is assumed that the sample representative is for all kind work teams in the disabled care sector. The outcomes are limited generalizable and should be handled with caution.

The main purpose of the conducted study is to gain knowledge about the relationship between the conditions of self-managing work teams, team empowerment, and team performance. The research question was formulated as follows: "Does the conditions for self-managing work teams and team empowerment have a positive relation with team performance?" To find the answer to this question several hypotheses were tested. Hypothesis 1.1 was formulated in order to improve the questionnaire which is used in this study to measure the conditions for self-managing work teams. The items are reduced, but the questionnaire is not validated yet. This could not be done within the scope of this study. The data of the

reduced questionnaire is used for testing of the other hypotheses. Because the theory behind the questionnaire is based on established research and the weak items were deleted, it is expected that the quality of the data of the reduced questionnaire is higher.

For the next three hypotheses, the longitudinal data is used. Only data of the conditions for self-managing work teams and the team performance were available at T1 and T2. First, it was checked whether two variables did significantly change over time. The conditions of self-managing work teams showed a small, but significantly decrease. This means that the teams were more critical towards the degree of fulfillment of the conditions. However, the team performance did not change significantly and remained stable over time. The time between the measurements at T1 and T2 is relatively small, which is already explained in the literature review. First of all, it important to notice, that the T2 measurement is done when the implementation process was still going on. The real effects of the implementation can be measured at the end of 2017. The fact that there is found some significant change proves that there is movement within the organization. It is quite common that during a change process people become more critical. The 3-step model of Lewin includes a scanning and trial-and-error phase. During this phase, a critical attitude is needed to learn from the findings during the process. This growing awareness and a critical attitude are also seen in management literature as the learning dip or implementation dip (Fullan, 2002). The dip is caused by growing awareness among the teams. But it also could be an absolute decrease of the conditions. Based on observations it is expected that the risen awareness of how the new organizational structure should look like and what is expected, the teams became more critical to themselves, but also towards the organization. One of the team members stated:

> *"The first time, our scores were too positive. We thought we were self-managing, but later we noted that we could still be more self-managing."*

At this point in time with this data, the real cause behind the small decrease of the conditions for self-managing work teams cannot be proven. In the first regression analysis, there was found no relationship between the change in conditions of self-managing work teams and team performance. There was found no evidence for hypothesis 2.3. That there was no evidence found with this dataset is explainable. Also in the correlation table that was made prior, the regression analysis did not support this hypothesis in advance. Because the sample does not meet the minimum sample size for a reliable analysis and because the process was still going on this data does not provide reliable outcomes for this hypothesis.

The outcome of the last regression analysis support hypothesis 3.1. It assumes that the conditions of self-managing work teams, team empowerment, and team performance are positively correlated. However, the

results were remarkably strong for this dataset. In behavioral science such strong results are not often found and also the sample size of this study is very small for the statistical methods. It is likely that the model shows overly optimistic results, better known as an overfitted model. The problem of overfitting is that is the findings don't really exist and will not replicate with another dataset.

In the pretests for the regression analysis, some correlations with control variables in the correlation matrix stand out. Only the team performance at T1 was included as a control variable in the regression model, because of the small sample size. The team performance at T1 showed a negative significant relationship with the change in team performance between T1 and T2. Also the Beta between the two variables was significantly negative. This means that the teams with a higher team performance at T1 showed a lower change in team performance relative to the team with a lower team performance at T1. This implies that the rating of the team performance came closer to each other within the organization during T1 and T2. The team performance throughout the organization became more stable.

Another control variable that standout was the sex ratio within the teams. This control variable was only included in the bivariate Pearson correlation tables, because of the low sample size it could not be included in both regression analyses. It showed a significant correlation of -.63 ($p < 0.01$, 2-tailed) with the change in the conditions of self-managing work teams and a significant correlation of .38 ($p < 0.05$, 1-tailed) with the team performance at T1. This means that teams with a higher and therefor more equal sex ratio experienced a more positive change in the conditions for self-managing work teams between T1 and T2 than teams with a lower sex ratio. The second correlation indicates that the teams with a higher and therefore more equal sex ratio scored lower on team performance at T2 relative to the teams with a lower sex ratio. So teams with a more balanced sex ratio showed a more positive change of the conditions for self-managing work teams but scored lower on team performance. It is known that gender diversity among groups can influence the team performance positive or negative at some points (Chatman & O'Reilly, 2004; Kochan et al., 2003). Kochan et al. (2003) found that gender diverse teams were generally effective by eliminating possible negative effects and that balanced groups have more positive interactions than predominantly male or female groups. However, the research about the effects of gender diversity within work teams on the team performance or within change processes is limited.

5.1 Limitations

First of all, this longitudinal research does not cover the whole change process. So it does not say anything about the end results of the implementation of self-managing work teams. To really measure the impact of the implementation another measurement the end of 2017 is necessary. Therefore, the results of this research are only an indication of the progress of the implementation of self-managing work teams.

The choice of data collection methods was influenced by the availability of data that was collected by the organization before this study was started. Therefore, a five-point Likert scale is used which could cause statistical problems such as unreliability and increased Type II error rates (Cicchetti, Showalter & Tyrer, 1985; Rasmussen, 1989). A seven-point Likert scale is found optimal because more point on the Likert scale will decrease the response rate (Gangestad & Snyder, 2000).

The team performance at T1 is only the perceived the fulfillment of the conditions for self-managing work team and at T2 employees and leaders rated the team performance. For the validity of the research, it is better to include observations from employees and leaders as well as objective indicators. This combination is also included in the outcome variables of Cohen et al. (1994).

The shared variation in the model exceeds the cutoff point a little bit. This could be caused by the small sample size and data collection method, but also by the overlap in constructs. The high amount of shared variation threatens the discriminant validity which can cause false relations between variables. This high variation could be caused by variables that contain the same information.

6. RECOMMENDATIONS FOR FUTURE RESEARCH

This research topic still has a lot of potential. Because it is influenced by organizational design, internal and external context, and the psychology and behavior of people, it is nearly impossible to test a full model. Many samples are needed to create enough data to test a complex model. Cohen et al. (1996) designed a comprehensive model to predict the effectiveness of self-managing work teams. This model should be tested more to prove it really includes all the important variables. It is also possible to gain knowledge about such model by testing only some of the relations that are displayed.

The condition test for self-managing should be validated by testing it with a different sample. It is recommended to use a 7-point Likert scale for the items, because it could avoid statistical problems, such as discriminant validity. The condition test of self-managing work teams can be used in another way. In this study the data is gathered by individual scores of team members and the average of the individual score of a team is taken as the team score. The ICC(1) and ICC(2) are used to control the level of agreement within the team and the differences between the teams. This is one of the methods to calculate team scores, but another, and according to Champion et al. (1993) and Guzzo et al.(993) a better, method is to discuss the items in team sessions and create supported team scores. This method is less sensitive towards statistical problems.

Besides the methods of this study, the researcher gained more insights in the change process during interviews with several teams. This interviews were not part of the research but helped to understand the

context and some effects became visible that were not measured by the questionnaires. One of those insights that are relevant for future research is the increase of organizational commitment and shared knowledge in the team.

> “In the past, I only felt responsible during my shifts, but now I am feeling 24 hours a day responsible"
> *“Because we have more diverse tasks within our team, the shared knowledge of the team has grown.”*

Another question that arises based on the interviews is whether or not every person or work team is suitable for becoming a self-managing work team? And which characteristics are the bottleneck? Is it the average education level of the team members or is it team design. Which qualities and competencies are needed to be self-managing besides the qualities and competencies that are needed for the core business of a team? It is important to know what the limitations are when an existing organization decides to change their structure and implement self-managing work teams. It is important to find answers to this question because it could be the reason why some teams are successfully in this change process and other experience more difficulties. One team experienced a decrease of the quality of the care services on their location.

> "Since the implementation of self-managing work teams, we spend more hours on administration at the expense of the care services we provide."

Presumably, this is the cause of an inappropriate team design. To avoid such problems a clear description of the needed qualities within the team is needed. This is also important to know what kind of new employees to attract. More research is needed to answer this kind of questions.

Finally, the sex ratio showed interesting results regarding the implementation process. But it is not yet studied in the context of self-managing work teams and also in group studies the results are limited. Team studies that include gender diversity showed mixed results between gender diversity and team performance.

7. MANAGERIAL IMPLICATIONS

The implementation of self-managing work teams within disabled care organizations contributes to the decisive power of the professional. It still could be the answer to the changing demand of the stakeholders, for examples clients, and their relatives, local government, and national government . The implementation of self-managing work teams is a complex change process. It starts with the restructuring of the

organization. Not only the work teams have to change, but also the context they work in. The conditions to be effective as a self-managing work team can be found in the analytical framework of Cohen et al. (1994). This study started with the validation of a condition test for self-managing work teams, it is a useful tool to monitor the degree of fulfillment of conditions a self-managing work team needs to be effective. At this point in time, there is not a established tool to use and it is very important to know how team members perceive these conditions. It is important that the conditions are, as much as possible, have been completed. In the reduced scale the items are grouped in the following categories: team collaboration, team learning, task flexibility, applying the mission and team capabilities. The significant relation between sex ratio and change in self-managing work teams and team performance indicates that the sex diversity of a self-managing work team has significant impact on the team. But at this point in time, more research is needed to explain the influence of sex ratio on self-managing work teams.

Besides the conditions a self-managing work team needs to be effective, it is also important to focus on the change process itself. In this study, a dip in the conditions for self-managing work teams is found during the implementation. What is seen from existing academic literature a dip is common phenomenon (Fullan, 2002). The results of measurements during the implementation process may be affected by the dip. Therefore the results during the implementation process are not a proper indication for the long-term effects. The dip is not a reason for panic but it needs attention, so the right actions can be undertaken in order to be successful in the long term. These actions can be derived from existing academic literature. Schein (1980) stated that a leader should create structure and incentives for the change during the trail-and-error phase. In addition, the leader should clearly communicate ultimate goals (Schein, 1980). This way each team can find their own way in the change process, without getting off track. Also Sinek (2011) emphasizes the importance of clear communication. According to Sinek (2011) all great leaders start with explaining the 'why-question'. Finally, Deci et al. (1994) found three components that are essential for a leader to support autonomy among employees which are also useful during the implementation process: 1) always give a meaningful reason, 2) acknowledge the perspective of the employee on the situation, and 3) give the employees freedom of choice. In summary, a leader of a team should guide their team members by communicating clear goals and especially the reason behind the goals and never forget to listen to the team members.

8. CONCLUSION

At the end of this research it is still expected, but not proven, that the concept of self-managing work teams and team empowerment have a positive causal relationship with the team performance. More research is much needed to test the causal relations between self-managing work teams, team empowerment, and

team performance. But also academic literature about the implementation process and the dip is scarce. Most literature is originated from management literature, therefore more research is needed about the implementation processes in general. In this study, some interesting correlations were found despite the limitations. Self-managing work teams, team empowerment, and team performance are all positively related to each other. However, the implementation of self-managing work teams could also cause some unwanted effects like relationship conflicts within the team. Additionally, the complexity of the change process also threatens a successful implementation of self-managing work teams. This study only measured at the start and in the middle of the implementation process. A third measurement a few months after the implementation process ended will give more information about the real effects. But only based on the existing literature, some positive indications from the analysis and the feedback from the team members, self-managing work teams is still a promising concept. Self-managing work teams that feel empowered could still be the key to success.

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10. APPENDIX

10.1 Predictive full model of effective self-managing work teams

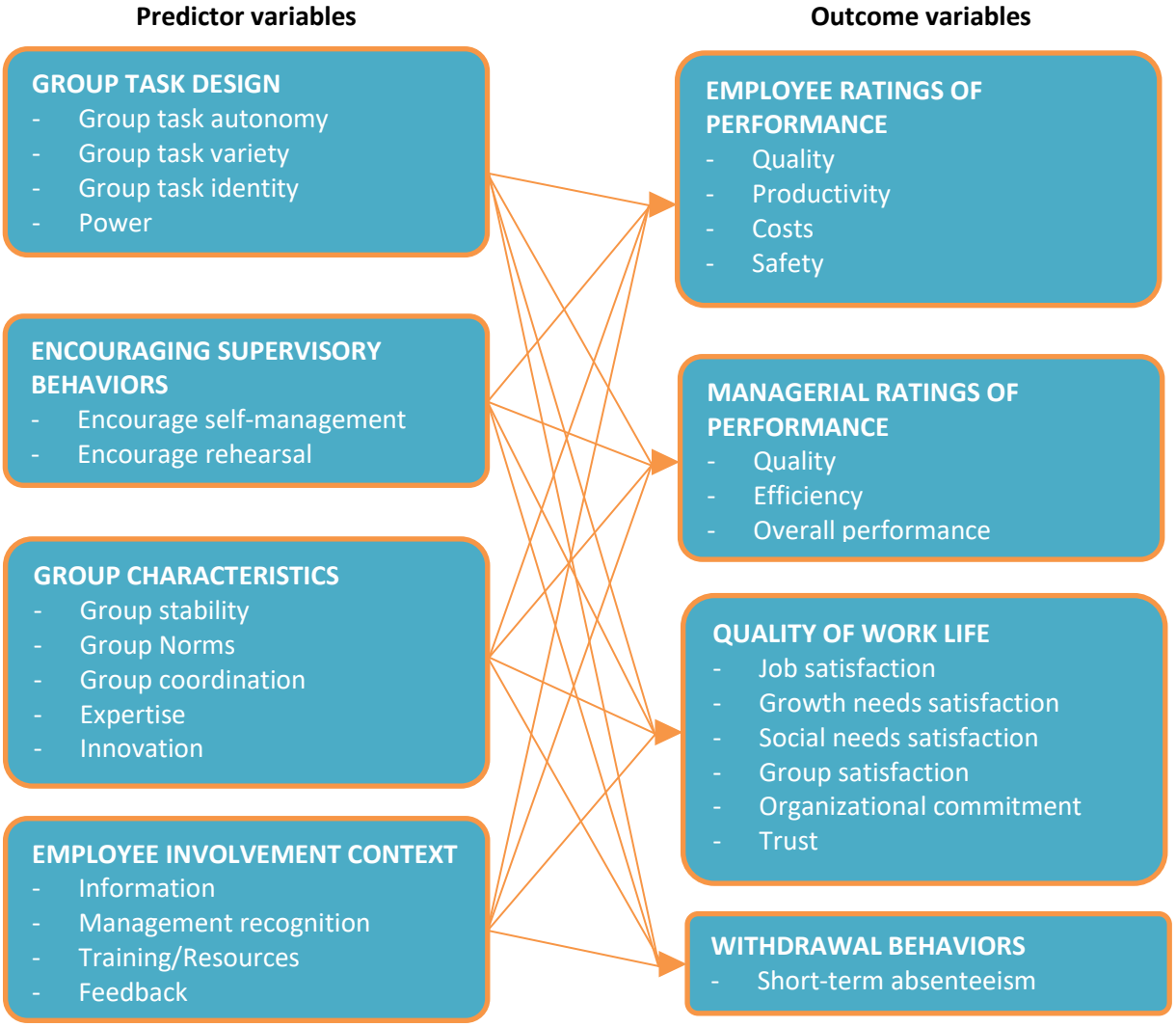

Figure 10.1. Predictive Full Model of Self-Managing Work Team Effectiveness

Note. Reprinted from "A Predictive Model of Self-Managing Work Team Effectiveness", by Cohen, S. G., Ledford, G. E. and Spreitzer, G. M. (1994). Human Relations, 49(5), p.661

10.2 Team task board

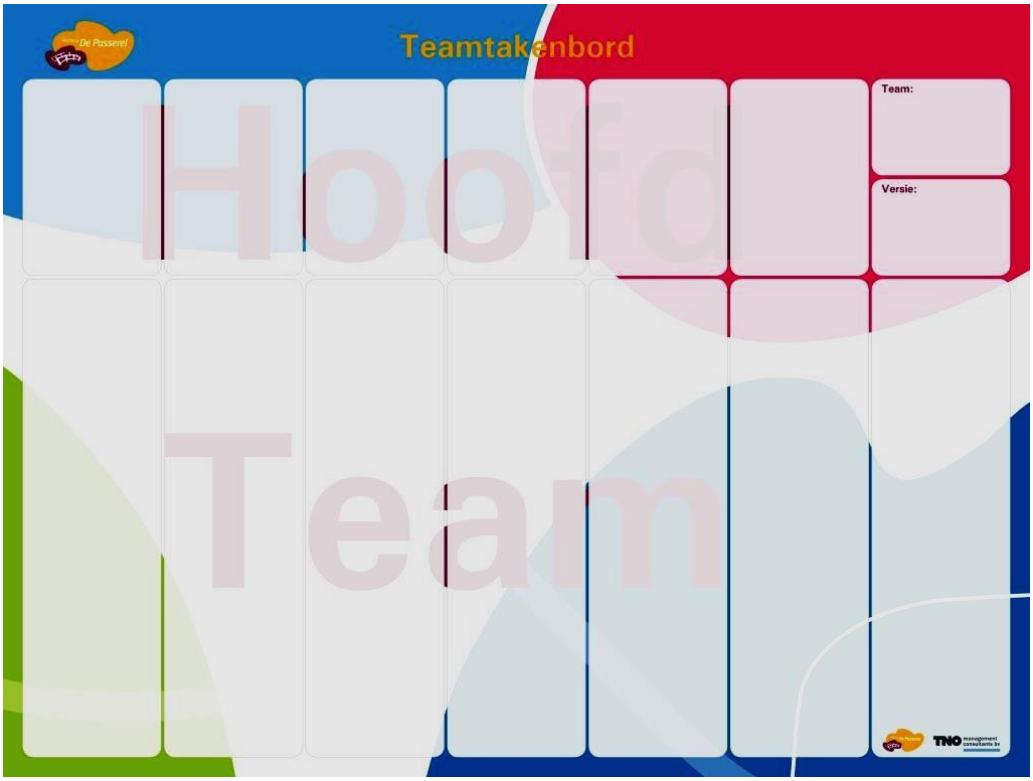

Figure 10.2. Example of a team task board

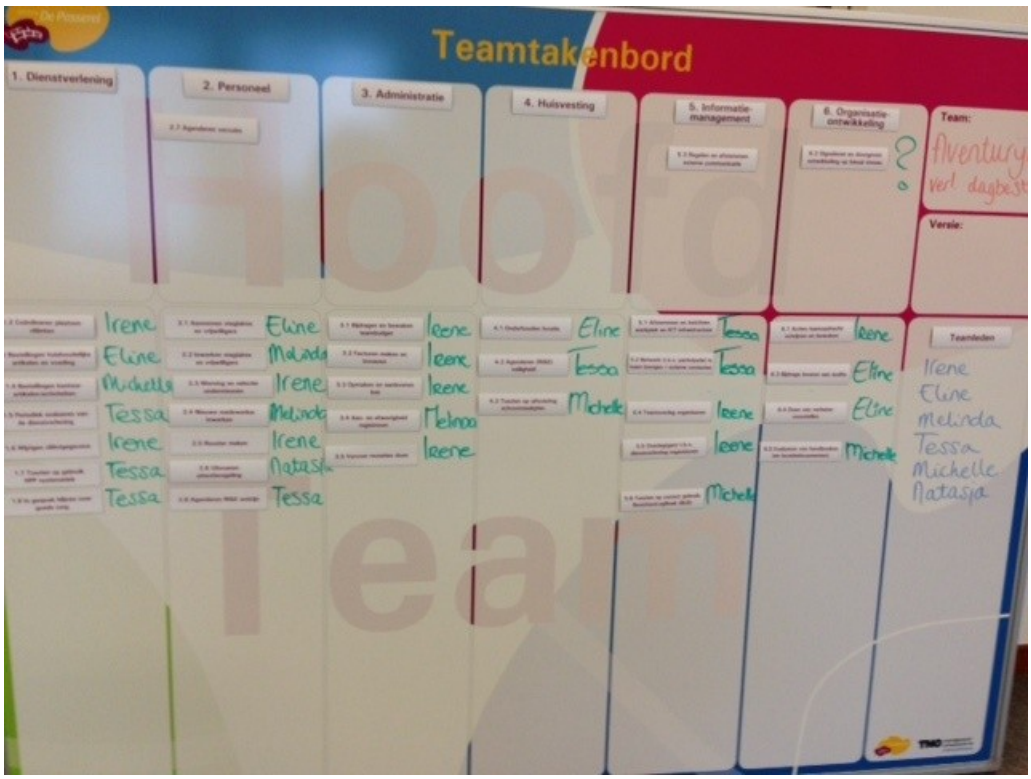

Figure 10.3. Photo of a team task board in practice

Figure 10.4. Photo of team task board in practice

Table 10.1. System areas: Services, Employees, and Administration with related team tasks

Services		Employees		Administration	
1.1	Hiring and evaluating client interns	2.1	Hiring interns and volunteers	3.1	Monitoring team budget
1.2	Coordination of placing clients	2.2	Instructing interns and volunteers	3.2	Creating and entering invoices
1.3	Ordering household items and food	2.3	Guiding and supporting recruitment selection	3.3	Formatting and delivering cash
1.4	Ordering office supplies and supplies for activities	2.4	Instructing new employee	3.4	Register presence and absence
1.5	Periodical evaluating the service	2.5	Create working schedule	3.5	Making transport mutations
1.6	Modify client data	2.6	Executing attention control		
1.7	Monitor use HPP system	2.7	Noticing absenteeism		
1.8	Continue talking about qualitative care	2.8	Contribute to RIE welfare		

Table 10.2. System areas: Housing, Information Management, and Organizational Development with related team tasks

Housing		Information management		Organizational Development	
4.1	Maintaining location	5.1	Communicate with the interior of the workplace and ICT infrastructure	6.1	Write down and monitor actions for team assignment
4.2	Scheduling RIE safety	5.2	Network mapping and external contacts	6.2	Identify and forward developments at local level
4.3	Monitor the execution of the cleaning plan	5.3	Organize and coordinate external communication	6.3	Contribute to audits
		5.4	Organize team meetings	6.4	Contribute to improvement cycle
		5.5	Organize consultations on the services	6.5	Evaluate manuals and location documents
		5.6	Ensure proper use of the message logbook		

10.3 Mission statement September 2012

10.3.1 Mission statement September 2012 - Dutch

De term ‘samenleving’ is niet voor niets ontstaan. In Nederland leven we samen. Iedereen hoort erbij. Ieder mens wil binnen zijn of haar eigen mogelijkheden een volwaardig lid van de samenleving zijn. Door interactie te hebben met anderen, waardering en erkenning te krijgen, kunnen talenten ten volste ontwikkeld en benut worden. Het lukt niet iedereen om helemaal zelfstandig in de samenleving te functioneren. De Passerel ondersteunt mensen, die dit niet geheel op eigen kracht kunnen. Kinderen, jongeren, volwassenen en ouderen met een beperking. Wij zijn er trots op om dit te mogen doen!

Iedere dag leven we met onze eigen persoonlijke context: onze familie, klein of groot, zichtbaar of onzichtbaar. Onze herkomst vormt ons. De relatie met familie is de belangrijkste die er is. De mens met een beperking en zijn of haar familie formuleert samen met ons de vraag voor ondersteuning. Wij gaan een partnerschap aan om die ondersteuning aan de cliënt en zijn omgeving te bieden. Wij willen in elke levensfase kunnen ondersteunen!

We hebben allemaal het recht op regie over ons eigen leven. Iedereen mag kiezen hoe en waar hij woont, leert, werkt en zijn vrije tijd invult. Wij ondersteunen mensen met een beperking en hun familie door de keuzemogelijkheden en de gevolgen ervan toegankelijk en begrijpelijk te maken. Dat vinden wij onze professionele verantwoordelijkheid!

Wij zoeken de mensen op in hun eigen vertrouwde omgeving, om bij alle facetten van het leven ondersteuning te bieden. Lukt dit niet, dan bieden we de ondersteuning in een kleinschalige bijzondere voorziening met een eigen sfeer. Verspreid over de regio zijn we in verschillende vormen dichtbij de mensen, in interactie met de samenleving. Vanuit al onze voorzieningen zoeken we lokale samenwerking met anderen; of het nou in een straat, buurt, dorp of stad is.

Nabij en divers is wat wij willen zijn!

10.3.2 Mission statement September 2012 - English

The term "society" did not arise from nothing. In the Netherlands, we live together. Everyone is part of society. Every human being wants to be a full member of society within his or her own capabilities. By having interaction with others, gain appreciation and recognition, talents can be developed and exploited to the fullest. Not everyone is able to operate completely independent in this society. The Passerel supports people who cannot do this on their own. Children, youngsters, adults and elderly people with disabilities. We are proud to be able to do this!

Every day we live with our own personal context. Our family, large or small, visible or invisible. Our origin forms us. The relationship with family is the most important relationship there is. A person with a disability and his or her family formulates together with us the wish for support. We are entering a partnership in order to give this support to the client and his or her environment. We want to support in every stage of life!

We all have the right to control our own lives. Everybody can choose how and where he or she lives, learns, works and fills in leisure time. We support people with a disability and their families by making the choices and their effects accessible and understandable. We believe this is our professional responsibility.

We meet people in their own trusted environment, to provide support in all facets of life to provide support. If this is not possible, we provide support in a small special facility with its own atmosphere. Spread across the region, in different forms, we are close to the people, interacting with society. From all of our facilities we are looking for local collaboration with others; whether it is in a street, neighborhood, town or city.

Close and diverse is what we want to be!

10.4 Characteristics of the sample

Table 10.7. Team characteristic, regular staff, and interns included.

Team	Amount of team members	Amount of team members who left the team	Average age within the team	Male	Female	Sex rate	FTE's	Average response rate	Locations
1	11	1	40	5	6	0,83	9,67	51%	1
2	15	10	41	0	15	0,00	8,10	58%	1
3	18	8	44	0	18	0,00	9,95	43%	1
4	14	4	34	4	10	0,40	11,03	67%	2
5	20	17	40	3	17	0,18	11,69	67%	1
6	17	11	40	1	16	0,06	12,80	73%	1
7	12	6	34	2	10	0,20	8,83	73%	2
8	26	9	41	0	26	0,00	14,66	55%	1
9	11	0	39	0	11	0,00	7,67	82%	1
10	11	2	46	0	11	0,00	8,56	60%	1
11	8	1	49	0	8	0,00	4,69	68%	1
12	13	2	41	4	9	0,44	9,28	62%	3
13	23	14	32	8	15	0,53	13,52	51%	3
14	20	3	40	7	13	0,54	16,42	55%	1
15	19	0	40	5	14	0,36	12,12	57%	2
16	13	2	39	2	11	0,18	8,75	70%	1
17	7	0	48	3	4	0,75	5,44	91%	1
18	8	1	39	0	8	0,00	5,83	86%	1
19	18	3	40	3	15	0,20	13,72	65%	1
20	18	3	40	2	16	0,13	12,43	84%	2
21	16	1	45	4	12	0,33	11,44	76%	1
Average	15,14	4,67	40,57	2,52	12,62	0,24	10,31	66%	1,38
Max	26	17	49	8	26	0,83	16,42	91%	3
Min	7	0	32	0	4	0	4,69	43%	1

Table 10.8. Team characteristic, only regular staff included.

Team	Amount of team members	Amount of team members who left the team	Average age within the team	Male	Female	Sex rate	FTE's
1	11	1	40	5	6	0,83	9,67
2	13	4	44	0	13	0,00	6,88
3	16	3	47	0	16	0,00	8,89
4	11	2	38	4	7	0,57	9,44
5	17	5	44	0	17	0,00	10,08
6	12	2	48	1	11	0,09	10,30
7	9	1	38	2	7	0,29	6,75
8	22	5	45	0	22	0,00	11,78
9	11	0	39	0	11	0,00	7,67
10	11	2	46	0	11	0,00	8,56
11	8	1	49	0	8	0,00	4,69
12	10	1	48	3	7	0,43	7,53
13	15	2	39	4	11	0,36	10,63
14	19	3	40	7	12	0,58	15,53
15	18	0	40	5	13	0,38	11,45
16	12	1	41	2	10	0,20	8,33
17	7	0	48	3	4	0,75	5,44
18	7	0	42	0	7	0,00	5,17
19	17	1	41	2	15	0,13	12,83
20	15	1	44	1	14	0,07	11,22
21	15	0	47	4	11	0,36	10,78
Average	13,14	1,67	43,24	2,05	11,10	0,24	9,22
Max	22	5	49	7	22	0,83	15,53
Min	7	0	38	0	4	0	4,69

10.5 Overview of the questionnaires

10.5.1 Original questionnaire to test the conditions for self-managing work teams

Contribution to the mission of De Passerel

1a) Our team supports the mission
1b) The execution of our work is based on the mission
1c) We work as a team systematically to the mission
1d) In our team, we maintain the values of De Passerel
1e) In our team, we evaluate whether our actions contribute to the mission

Realize team power

2a) We utilize opportunities as a team
2b) Meeting the standards is the main goal of the team
2c) We address each other to each other's actions
2d) We utilize everyone's talent
2e) Our team has enough space for reflection and giving conscious feedback
2f) We improve our work as a team by learning from successes
2g) We always look at what has been achieved

Accomplish the team assignment

3a) We have enough authority to accomplish the team assignment
3b) We have enough competencies within the team to accomplish the team assignment
3c) We know what we have to do to achieve goals
3d) Our team can respond well to changes
3e) I am satisfied with my work
3f) I am satisfied with my team
3g) I am satisfied with the collaboration within our team

Divide and schedule tasks

4a) Within our team, it is clear what to expect from each other
4b) The tasks correspond to everyone's talent
4c) Our team can make decisions well
4d) If it is necessary, we can take over the work of each other
4e) Our team focus on job rotation
4f) Our team focus on job enlargement
4g) Our team focus on work consultations

Continue to improve

5a) We work in our team in a stimulating and positive way
5b) We think in terms of opportunities
5c) We solve problems within our team
5d) We apply new ideas and suggestions
5e) We work with best practices to our success
5f) We continuously improve as a team

10.5.2 Reduced questionnaire to test the conditions for self-managing work teams

Team collaboration

1a) I am satisfied with the collaboration within our team
1b) I am satisfied with my team
1c) We work with best practices to our success
1d) Our team can respond well to changes

Team learning

2a) We apply new ideas and suggestions
2b) We work with best practices to our success
2c) We continuously improve as a team

Task flexibility

3a) If it is necessary, we can take over the work of each other
3b) Our team focus on job rotation
3c) Our team focus on job enlargement

Applying the mission

4a) In our team, we evaluate whether our actions contribute to the mission of De Passerel
4b) We work as a team systematically to the mission

Team capabilities

5a) We have enough authority to accomplish the team assignment
5b) We have enough competencies within the team to accomplish the team assignment

10.5.3 Questionnaire psychological empowerment on team level

Meaning

1a) My team believes that its projects are significant
1b) My team feels that its tasks are worthwhile
1c) My team feels that its work is meaningful

Potency

2a) My team has confidence in itself
2b) My team can get a lot done when it works hard
2c) My team believes that it can be very productive

Autonomy

3a) My team can select different ways to do the team's work
3b) My team determines as a team how things are done in the team
3c) My team makes its own choices without being told by management

Impact

4a) My team has a positive impact on this company's customers
4b) My team performs tasks that matter to this company
4c) My team makes a difference in this organization

10.5.4 Questionnaire team performances on team level

1a) My team works efficiently
1b) My immediate colleagues deal with the right things
1c) The work of my team contribute to the success of De Passerel

10.6 Correlations between the items of the condition test for self-managing work teams

Table 10.X. Pearson correlation matrix between the items of the original questionnaire to test the conditions for self-managing work teams

		Mission					Power						
		1A	1B	1C	1D	1E	2A	2B	2C	2D	2E	2F	2G
Mission	1A												
	1B	**,608****											
	1C	**,520****	**,608****										
	1D	**,496****	**,568****	**,518****									
	1E	**,330****	**,501****	**,684****	**,414****								
Power	2A	,418**	,586**	,505**	,480**	,455**							
	2B	,329**	,430**	,460**	,438**	,487**	**,569****						
	2C	,379**	,468**	,400**	,376**	,404**	**,503****	**,382****					
	2D	,352**	,451**	,426**	,407**	,378**	**,611****	**,400****	**,623****				
	2E	,342**	,499**	,449**	,402**	,459**	**,551****	**,382****	**,726****	**,609****			
	2F	,319**	,423**	,402**	,411**	,405**	**,539****	**,458****	**,501****	**,483****	**,566****		
	2G	,348**	,455**	,432**	,406**	,438**	**,559****	**,517****	**,504****	**,484****	**,521****	**,651****	
Team assignment	3A	,398**	,280**	,312**	,301**	,183**	,268**	,232**	,178**	,249**	,285**	,205**	,173*
	3B	,458**	,410**	,387**	,378**	,270**	,395**	,321**	,330**	,362**	,366**	,370**	,231**
	3C	,461**	,528**	,495**	,402**	,397**	,469**	,470**	,449**	,431**	,472**	,462**	,469**
	3D	,433**	,462**	,420**	,447**	,306**	,560**	,393**	,487**	,465**	,496**	,528**	,471**
	3E	,329**	,371**	,236**	,385**	,142*	,412**	,277**	,353**	,387**	,299**	,274**	,315**
	3F	,436**	,499**	,392**	,444**	,278**	,553**	,326**	,487**	,534**	,484**	,489**	,410**
	3G	,380**	,501**	,390**	,393**	,293**	,586**	,333**	,533**	,510**	,554**	,502**	,425**
Tasks	4A	,407**	,426**	,390**	,424**	,345**	,535**	,421**	,537**	,486**	,559**	,484**	,427**
	4B	,333**	,367**	,307**	,314**	,270**	,469**	,323**	,297**	,527**	,319**	,272**	,300**
	4C	,356**	,472**	,355**	,459**	,317**	,502**	,340**	,474**	,466**	,525**	,477**	,465**
	4D	,233**	,239**	,261**	,360**	,224**	,378**	,206**	,316**	,309**	,350**	,269**	,217**
	4E	,204**	,368**	,427**	,419**	,426**	,400**	,319**	,312**	,345**	,426**	,383**	,419**
	4F	,292**	,320**	,447**	,437**	,381**	,421**	,356**	,376**	,382**	,441**	,440**	,405**
Improvement	5A	,373**	,522**	,425**	,424**	,381**	,572**	,369**	,518**	,479**	,542**	,553**	,476**
	5B	,390**	,468**	,412**	,469**	,355**	,624**	,433**	,481**	,517**	,538**	,544**	,468**
	5C	,319**	,429**	,394**	,449**	,332**	,553**	,322**	,483**	,465**	,529**	,522**	,418**
	5D	,325**	,387**	,325**	,413**	,319**	,526**	,415**	,390**	,412**	,481**	,519**	,436**
	5E	,430**	,530**	,406**	,433**	,395**	,533**	,521**	,458**	,426**	,452**	,587**	,524**
	5F	,362**	,459**	,332**	,326**	,277**	,574**	,405**	,335**	,401**	,414**	,525**	,397**

		Team assignment							Tasks					
		3A	3B	3C	3D	3E	3F	3G	4A	4B	4C	4D	4E	4F
Mission	1A													
	1B													
	1C													
	1D													
	1E													
Power	2A													
	2B													
	2C													
	2D													
	2E													
	2F													
	2G													
Team assignment	3A													
	3B	**,514****												
	3C	**,365****	**,477****											
	3D	**,339****	**,464****	**,508****										
	3E	**,349****	**,305****	**,350****	**,357****									
	3F	**,305****	**,478****	**,437****	**,663****	**,548****								
	3G	**,227****	**,443****	**,478****	**,614****	**,480****	**,797****							
Tasks	4A	,357**	,413**	,451**	,614**	,404**	,516**	,624**						
	4B	,234**	,384**	,297**	,367**	,428**	,416**	,395**	**,470****					
	4C	,261**	,322**	,389**	,538**	,341**	,521**	,523**	**,555****	**,433****				
	4D	,178**	,340**	,250**	,447**	,235**	,347**	,434**	**,387****	**,270****	**,373****			
	4E	,263**	,324**	,390**	,455**	,355**	,348**	,419**	**,435****	**,309****	**,408****	**,547****		
	4F	,302**	,382**	,424**	,475**	,310**	,374**	,427**	**,429****	**,358****	**,391****	**,424****	**,612****	
Improvement	5A	,212**	,380**	,398**	,636**	,329**	,615**	,664**	,552**	,291**	,522**	,440**	,419**	,386**
	5B	,303**	,411**	,428**	,655**	,437**	,599**	,606**	,550**	,435**	,489**	,417**	,459**	,507**
	5C	,313**	,420**	,462**	,527**	,391**	,545**	,604**	,478**	,330**	,510**	,394**	,389**	,464**
	5D	,208**	,345**	,322**	,499**	,371**	,499**	,458**	,456**	,359**	,432**	,308**	,309**	,370**
	5E	,251**	,394**	,521**	,439**	,377**	,449**	,471**	,504**	,363**	,490**	,274**	,375**	,384**
	5F	,301**	,356**	,370**	,481**	,350**	,510**	,442**	,401**	,362**	,384**	,310**	,386**	,415**

		Improvement					
		5A	5B	5C	5D	5E	5F
Mission	1A						
	1B						
	1C						
	1D						
	1E						
Power	2A						
	2B						
	2C						
	2D						
	2E						
	2F						
	2G						
Team assignment	3A						
	3B						
	3C						
	3D						
	3E						
	3F						
	3G						
Tasks	4A						
	4B						
	4C						
	4D						
	4E						
	4F						
Improvement	5A						
	5B	**,695****					
	5C	**,600****	**,525****				
	5D	**,480****	**,628****	**,477****			
	5E	**,527****	**,543****	**,520****	**,660****		
	5F	**,496****	**,580****	**,476****	**,581****	**,611****	