Abstract
For most organizations dealing with change, it means dealing with changing goals. New goals can provide a different organizational course which might influence the dynamics in teams. As a result, the structure of teams can change and this influences the inter-team dynamics. What is the result of this on the performance of the team? The relevance of this question is in normal economical conditions present, but in times of economic crises even more.

This thesis is about team dynamics, researched in several different organizations where the focus is on goal consensus, team identification and team performance. The research question is: ‘how does team identification (partially) mediate the positive relation between goal consensus and team performance?’ Goal consensus is not measured directly like team identification and team performance, it is constructed from two components, goal understanding and goal commitment.

A cross-sectional research is used to provide answers, with two different surveys (one for team members and one for team managers) collected personal and by mail in 59 teams. Because a mediating effect is researched, an additional macro in SPSS is used to calculate the effects. The effects are presented for team performance rated by team members and separately for team performance rated by team managers. Both theoretical and practical answers are given to the research question.

Results show that goal understanding and goal commitment are correlated which each other. Together they provide a level of goal consensus which can be plotted to gain insight for both team members and managers. For team members’ rated team performance, results show that team identification partially mediates the positive relation between goal consensus and team performance. This means that the effect of goal consensus on team performance is reduced due to the intervene of team identification. For team managers’ rated team performance, a fully mediating effect has been found. This means that the effect of goal consensus on team performance disappears under influence of team identification. The influence of constituents is clearly present, which might be caused by introspection. The control variable team tenure is significantly and positively related to team identification. However, in both models, the influence of team tenure is very small.

Although this research seems to give clear answers, the question about the effect size remains. There are strong indications that a larger effect size results in more power to the mediating effect which might cause different results. Another recommendation for further research is due to developments in the last decade: the development of virtual teams. These teams are not researched in this thesis but it is interesting to see if the results also comply in these teams, especially because these teams are not geographically in close proximity.

Keywords: goal understanding, goal commitment, goal consensus, team identification, team performance, mediating effect.
Do we all agree on our goals?

A graduation research about the mediating effect of team identification on the relation between goal consensus and team performance

"All those in favour say 'Aye'."

"Aye."

"Aye."

"Aye."

"Aye."

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Preface

By nature, I am a person who likes to make sure that the bases of what I am working with, is solid. For this reason I have chosen a topic which is about the fundamentals of an organization and of a team. The degree of having consensus about the goals and their relation with team performance where team identification, the sense of feeling “one” with the team, is of influence. Maybe not the most sexy topic one can imagine, but nevertheless something I have researched with pleasure. With this thesis I finish my Master study at the Open University. The study was very motivational but sometimes also difficult and often confronting. When you don’t have a job, it is very difficult to proceed in this study. So at the end of this, feelings of pride and relief are on my account. Pride because I have finished it, relief because it’s also nice to not have to study for a while (I think).

I am thankful for my teachers Wim Jurg (for the first four years of my study) and Jeroen de Jong for guiding me through this thesis. Wim especially for his contributing comments; direct and confronting which helped me to think differently and from other points of view, Jeroen for the cooperation during my thesis and research. I would like to thank Theo Rijnbeek and Agathe Oude Veldhuis for their nice and constructive cooperation. It was really a pleasure to work with you! I would like to thank Hans Holterman for the opportunity to do some research within the National Police organization during my ICM period. For providing useful comments I would like to thank Mark Terpstra and Francy van der Werf for carefully reading this thesis.

Finally I will clear out the table in the living room, as promised to my girlfriend Francy, when I have finished my study. For all her support throughout the years, being a sparring partner and giving room for exploration, I am most grateful to you!

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**Explanation of illustration**
The used illustration clearly displays what goal consensus is about, overall agreement on goals. In the illustrated situation this is clearly not the case. It is unclear if the people do not understand the goals or feel no commitment to the goals. However what is clear, is that they say ‘Yes’ but they mean ‘No’.
Chapter 1 Introduction

1.1 Introduction

In the landscape of change, changing goals are imminent (Homan, 2005). As a team manager, I have seen many cases where both team members and managers have to deal with changes which interact with working procedures and structure. The impact of change is due to inter alia; changing goals, changing the way team members socially interact with each other and the performance of the team. A team is a special kind of group, in which the individuals are interdependent in their tasks, but have a shared responsibility for the outcome, they are a social intact entity embedded in a social system (for example a department of an organization) and manage their relationships across organizational boundaries, according to Cohen & Bailey (1997). In other words; a group of random people waiting for the train to arrive is not a team, but when the same people are working together to accomplish tasks in the same department of an organization, they are most likely a team.

For a manager, dealing with change means dealing with different and changing goals, various stakeholders and often stressed performance issues. I have experienced these issues and that is why my interest is in how group dynamics work, how a group can become a team, how team members deal with different and changing goals and what effect this has on the team’s performance. It is imaginable that team members, being confronted with yet another major change, are getting frustrated because the solid ground beneath their feet is vanished. This might even turn into (collective) resistance to change. In this thesis I have focused on three elements in group dynamics; goal consensus, team identification and team performance. With the research I have conducted, I intent to contribute to the scientific knowledge in this area which, to my knowledge, has not been researched before.

1.2 Research problem

I have witnessed that some managers think that because a team is created, it will function like one. But creating a team does not guarantee that the members will act like one (Solansky, 2011). When a team is confronted with goals, what effect has this on the team in terms of working together, understanding and being committed to these goals, the performance of the team and the emotional attachment between team members? Goal consensus is defined as the level of agreement among team members on the factor of team goals (Dess & Priem, 1995). Goal consensus is derived into two elements: mutual understanding goals and mutual commitment to goals (Floyd & Wooldridge, 1992). Understanding is the cognitive part of goal consensus and commitment the emotional part (Floyd & Wooldridge, 1992). When team members show high levels of goal consensus, team performance can be positively influenced according to Lewis & Greene (1977) and Dess & Origer (1987). In contrary to this, in an earlier research from Wooldridge & Floyd (1990), they argue that goal consensus measured among middle managers does not relate to performance. In this thesis, it is presumed that goal consensus has a positive effect on team performance rated by both team members and team managers.

Goal consensus has an emotional part and a cognitive part (Floyd & Wooldridge, 1992). When focused on the emotional part, the question is, does a team member in a team with a high level of commitment about the goals, also develop a stronger emotional relationship with the team, due to the emotional influence of commitment? When an individual in a team experiences an emotional relationship with a team, this is called team identification (Van der Vegt & Bunderson, 2005) or team cohesiveness (Blazovich, 2013). In other words, does goal consensus (partly) influence team identification? Chi & Anouar (2012) argue that to reach goal consensus, communication between
team members is necessary and through this communication the social and emotional relationships develop. That indicates a relation between goal consensus and team identification. Team identification is known to act like a determinant of team performance (Solansky, 2011; Van der Vegt & Bunderson, 2005). The combination of these three factors has, to my knowledge, not been researched before. This is why in this thesis, goal consensus, team performance and team identification are researched.

1.3 Research question
From the previous mentioned aspects, the research question is formulated as follows:

To what extent does team identification mediate the positive relationship between goal consensus and team performance?

1.4 Research relevance
In the Netherlands, the economic crisis (which started in 2008) is slowly turning into better times. The crisis had an enormous impact on organizations. For example, a lot of companies were closed down and many had to downsize their organization. Inside organizations, the strain on employees is increasing because less people have to do the same work as before. Tasks and goals can become ambiguous due to the strain put on both management and team members. In these struggling times, for a team it is important to keep focus on the job at hand and to act like a team. Consensus about the team goals among team members is important to maintain direction. Without direction a team is like a ship drifting on the sea, without a course to follow. For managers it is thus important to be involved in the consensus building process, to assure that team members develop a general level of agreement on the fundamental priorities of the organization (Markóczy, 2001).

1.5 Research goal
The goal of this research proposal is to determine what the (positive) effect of goal consensus is on team performance and how this relationship is (partially) influenced by team identification. The effects of goal consensus will be researched as a variable and by research of the two components it is build of; understanding goals and commitment to goals.
Chapter 2 Literature research

2.1 Introduction
In this chapter, the variables researched in this thesis are explained through literature research. The more in-depth backgrounds are discussed to provide insight in groups and teams, and how goal consensus affects individuals and teams. Team identification and team performance are discussed for their part in the research model, control variables are discussed for their influence on the model.

2.2 Groups, teams and individuals

2.2.1 Groups and teams
Is there a difference between a group and a team? There are different views on this subject and enough publications to write a book about it. In this thesis, the term ‘teams’ will be used instead of using the terms ‘groups’ and ‘teams’ interchangeably. The reason for this is that in several publications (Kozlowski & Bell, 2003; Petrică, 2010; Mathieu, Maynard, Rapp, & Gilson, 2008) differences between groups and teams are mentioned. Kozlowski & Bell (2003) state that teams are defined as a special kind of group which (a) consists of two or more members, (b) who exist to perform relevant tasks for their organization, (c) share one or more common goals, (d) have social interaction, (e) are interdependent in their tasks (i.e., workflow, goals, outcomes), (f) maintain and manage boundaries, and (g) are embedded in an organizational context that sets boundaries, constrains the team, and influences exchanges with other units in the broader entity. Petrică (2010) states that teams are a particular kind of group, because the team members’ actions are interrelated and coordinated, each team member has a private role that is specified and that there are common purposes and objectives. Mathieu, Maynard, Rapp & Gilson (2008) state that: a work team is defined as: team members with the purpose to perform organizationally relevant tasks, share at least one common goal, have social interaction, exhibit task interdependencies, maintain and manage boundaries, and are embedded in an organizational context that sets boundaries, constrains the team, and influences exchanges with other units in the broader entity. It is also mentioned that the term ‘groups’ is tended to be used more in psychological studies and the term ‘team’ is used almost exclusively in business context (Petrică, 2010). Others mention that a team is a group with a high degree of groupness (Cohen & Bailey, 1997). A conclusion about this debate is: all the teams are groups, but not all groups are teams (Petrică, 2010).

In this thesis, the description of Kozlowski & Bell (2003) is used; so teams consist of a minimum of two members, they have to perform relevant tasks within their organization, share one or more common goals, interact socially, are interdependent in their tasks, maintain and manage boundaries and are embedded in an organizational context.

2.2.2 Individuals and teams
To work in teams can have some advantages, from an organizational point of view, concerning working with individuals. First, motivation is an issue. In a team, actions are completed in a manner that encompasses a variety of perspectives, which is the motivational premise of a team (Van der Vegt & Bunderson, 2005). Secondly, cognition is an issue. Teams are expected to be especially suitable for complex tasks, because team members can share and monitor the workload (Solansky, 2011). Thirdly, integration benefits are an issue. Team members contribute a diversity of skills, expertise and resources to the team, that go beyond a single individual’s capabilities (Solansky, 2011). The capabilities of teams are therefore more than simply the sum of its members (Petrică, 2010). Behavior is also not the sum of the members of a team; team members have behavior and this causes team level phenomena, teams do not have behavior at itself (Kozlowski & Bell, 2003).
2.2.3 Characterization of teams

Teams are being defined in different ways, as already mentioned earlier in §2.2.1. In this thesis, the characterization of Kozlowski & Bell (2003) is used because they provide a widely spread view on teams. Virtual teams are added because they are more often present in the last decade (Hoch & Kozlowski, 2014). For reasons of clearness, the different types of teams are presented in Table 1.

<table>
<thead>
<tr>
<th>Type of team</th>
<th>Description of this type of team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production team</td>
<td>team members who produce cyclically tangible products and have a variable amount of supervision; from complete till none (self-managing teams)</td>
</tr>
<tr>
<td>Service team</td>
<td>service teams work closely with customers in repeated variable transactions, but most commonly focused on repairing and installing products</td>
</tr>
<tr>
<td>Management team</td>
<td>(senior) managers of business units with primary responsibility for directing and coordinating lower level units under their authority</td>
</tr>
<tr>
<td>Project team</td>
<td>temporary teams that execute specialized time-constrained tasks and then disband (e.g., new product development)</td>
</tr>
<tr>
<td>Action and performing team</td>
<td>these teams are composed of interdependent experts who engage in complex time-constrained performance events. Examples include aircrews, surgical teams, military units, and musicians</td>
</tr>
<tr>
<td>Advisory team</td>
<td>This type of team consists of experts who give advice about certain topics to management or directors</td>
</tr>
<tr>
<td>Top Management Teams (TMT)</td>
<td>These teams are based on the level in the organizational hierarchy, which is the highest level</td>
</tr>
<tr>
<td>Cross-cultural teams</td>
<td>These teams distinct based on cultural differences. Other names for these types of teams are: mixed-cultural or transnational teams</td>
</tr>
<tr>
<td>Virtual teams</td>
<td>Specific character for these type of teams is that there is none or very little face-to-face contact between team members, they are distinct through time and space. Therefore, members communicate through advanced electronic communication media (for example, Skype, WhatsApp or conference calls) (Hoch &amp; Kozlowski, 2014)</td>
</tr>
</tbody>
</table>

Table 1 Different types of teams (Kozlowski & Bell, 2003) with supplement

In this thesis, production teams, service teams and project teams are researched.

2.2.4 Social view on teams

So far, individuals who form a group, is viewed from the perspective of business. But do individuals voluntarily want to belong to a group? The theory which explains this, is called the Social Identity Theory (SIT). The SIT is developed in the 1972 by Tafjel to understand why individuals want to belong to certain groups and ‘out-group’ others (Trepte, 2011; Hogg, 2006). The SIT can be seen as a force inside an individual, which drives that individual towards groups that have the same identity (Trepte, 2011). Examples are: young individuals who join the same WhatsApp-group, individuals who strongly support their favorite sports club, individuals who support environmental organizations (Greenpeace f.E.). Membership is defined as the social identity, according to Trepte (2011). Individuals want to develop a positive social identity, to enhance the individual’s self-esteem and to reduce uncertainty (Trepte, 2011; Hogg, 2006). To reach this, individuals show all kinds of different behavior to belong to the desired social group (Trepte, 2011). In fact, almost every individual has as many social groups that he or she belongs to, that “there are groups they belong to and personal relationships they are involved in” (Hogg, 2006, p. 115) and shows different behavior in every group (Hogg, 2006).

When one person likes another person as a team member, this allows them to develop positive interpersonal relationships (Hogg, 2006). That means that when people are in the same team, they need to have certain common aspects (which allows them to feel part of the same social identity) in order to make every team member feel like they belong to the same work group. The sense of feeling “oneness” with other team members is an important aspect of team identification, which in turn is positively influencing team performance (Solansky, 2011). The chemistry between team
members is that they have to like each other, to ensure that they can all feel like ‘family’. The opposite is also true, if there is no liking each other in a team, the team most likely will not be close, team members will not feel like they are one or even “family”.

2.2.5 Aggregation
In the multilevel environment of organizations, there are three levels of aggregation: the organizational, the team and the individual level (Kozlowski & Bell, 2003). Individuals are nested within teams, teams are nested in organizations or other larger multilevel systems (Kozlowski & Bell, 2003). This hierarchical nesting is the reason why the different levels have to be researched separately by means of aggregation to study team phenomena (Kozlowski & Bell, 2003). Another reason for aggregation is that the data collected at a lower level of analysis must be similar enough to one another before that data can be assumed to be an indicator of the construct at a higher level of analysis (LeBreton & Senter, 2008; Van der Vegt & Bunderson, 2005).

The three variables in this research are measured on different levels of analysis. Goal consensus (consisting of goal understanding and goal commitment) and team identification are measured on an individual level. Team performance is measured on the team’s level and rated by both team members and team managers. Team performance is a compilational construct that does not exist at the individual level of analysis (Kozlowski & Klein (2000) in DeShon, Kozlowski, Schmidt, Milner, & Wiechmann (2004)). The statistical analyses available to examine relationships with team performance makes it necessary that the individual level constructs has to be aggregated and represented at the team’s level (Kozlowski & Klein (2000) in DeShon, Kozlowski, Schmidt, Milner, & Wiechmann (2004)).

For this reason, all variables are aggregated to the team’s level for analyses.

2.3 Goal consensus

2.3.1 What is goal consensus?
Goal consensus is the level of agreement, build upon both understanding and commitment, among team members on team goals (Floyd & Wooldridge, 1992), and therefore both cognitive and emotional dimensions are researched.

The cognitive dimension for members of a team is when they don’t share a common perception of what the goals mean to them, they can deviate in different directions (Floyd & Wooldridge, 1992). The emotional dimension of goal consensus is that team members must feel some degree of commitment to the goals in order to take fully-hearted actions (Floyd & Wooldridge, 1992). Consensus is not a status quo (Fiol, 1994) but a process consisting of many decisions made over time, to get the team goals in line with the organizational strategy (Child in Michie, Dooley, & Fryxell (2006)). It is a process which occurs after goals are delivered to a team, discussion about the pros and cons has occurred and when all members of a team are in agreement (indicating the highest level of consensus) or none of them agree (indicating the lowest level of consensus) (Dess & Origer, 1987). Consensus is therefore considered to be a evolving proces.

2.3.2 Level of goal consensus
The level of goal consensus can be interpret as a combination of cognitive and emotional dimensions, resulting in four different outcomes, as shown in Figure 1 (Floyd & Wooldridge, 1992). This figure is not used for testing the hypothesis, but to gain information about how teams differ reciprocally and to provide feedback to the managers of the researched teams what the situation is concerning goal consensus in their team(s), following the work of Floyd & Wooldridge (1992).
Only when both understanding and commitment are at a high level, strong consensus appears. When only the level of understanding is high, team members know what is expected from them but they don’t feel like following them, because commitment is low. This is called informed skepticism. On the other side of the spectrum, when only commitment is high, team members are willing to follow every goals whatsoever, although they do not fully understand them. This can occur in for example the military, soldiers have to follow orders because that’s part of their job and otherwise people get killed. This level of consensus is called blind devotion, people in this stage are well-intentioned but ill-informed (Floyd & Wooldridge, 1992). Finally, when team members have no understanding about the goals and are not in agreement about the goals, weak consensus appears. In the teams researched in this thesis, both goal understanding and goal commitment is measured and can be plotted in a two-dimensional graph, following the work of Floyd & Wooldridge (1992). Floyd & Wooldridge (1992) used two tradeoffs along both axes of the plot, to display opposing ends of a conceptual continuum, for example using questions about differentiation strategy and coast strategy. In this thesis, a different form is used, by plotting understanding along the X-axes and commitment along the Y-axes.

In short, the four different outcomes are:

1. When neither shared understanding nor commitment is high, weak consensus is the result;
2. When team members understand the goals but are not committed to it, they are well informed but unwilling to act, this is called informed skepticism;
3. When team members are fully committed to the goal but don’t understand it, blind devotion is the result;
4. When both commitment to goals and understanding the goals are high, strong consensus is the result (Floyd & Wooldridge, 1992).

The before mentioned aspects lead to the expectation that there is an interaction between goal understanding and goal commitment, because different levels of goal understanding and goal commitment leads to different levels of goal consensus (Floyd & Wooldridge, 1992). This leads to Hypotheses 1:

H1: There is a significant relation between goal understanding and goal commitment.

The combined effects of goal understanding and goal commitment leads to goal consensus according to Floyd & Wooldridge (1992) and therefore the effects of goal consensus is researched as representative of the two components; goal consensus = goal understanding + goal commitment.
When team members have consensus about their goals, this will presumably give them a direction in what way they are expected to perform. This direction is necessary for reaching goals (reaching goals will increase team performance) and therefore it is assumed that the level of goal consensus affects team performance positively (Lewis & Greene, 1977; Dess & Origer, 1987).

Besides the level (or degree (Markóczy, 2001)) of consensus, the content and scope are other elements that characterize the role of consensus. The content of consensus is what team members agree about (Floyd & Wooldridge, 1992; Markóczy, 2001). The dominant view is that the content of consensus is about goals (Markóczy, 2001). In this thesis this view is adhered, the focus is on goal consensus. The scope of consensus (the domain) characterizes who the consensus is among (Floyd & Wooldridge, 1992). The scope is also referred to as locus (Markóczy, 2001). In this thesis, the focus on the domain is a work team (for brevity ‘team’ will be used).

A forth element is added by Markóczy (2001): the scope of consensus. Notably Markóczy (2001) uses another definition than Floyd & Wooldridge (1992)); the scope according to Markózy is described as the number of members participating (Markóczy, 2001). In this thesis, the number of members participate in the consensus are for each team at least two members.

Consensus can have both positive and negative influence on a team (Dess & Priem, 1995). Positive, because consensus may result from the open sharing of information and the expressing of opinions and perceptions about the goals of the organization. Such interactions may help resolve differences and lead to both a common understanding and a strong commitment to strategy (Dess & Priem, 1995). On the other side, in highly cohesive groups, normative pressure can be found on every member to confirm, supressing information that counters the groups’ belief (Dess & Priem, 1995).

The importance of goal consensus is that when team members make decisions that are inconsistent with the team goals, performance may be compromised (Nie & Young, 1997). Consensus on goals is associated with higher performance because coordination within the team is improved (Feger, 2014; Dess & Origer, 1987; Lewis & Greene, 1977). In other words, clear goals are needed for a team to perform (Cummings & Worley, 2009). Confronted with unclear goals, ambiguity is at hand. Ambiguity is when individuals have many ways of thinking about the same circumstances in different ways (Feldman, 1989). When a group of members all think the same about the same circumstances or phenomena (i.e. team goals), they have reached total collective agreement, in other words: the highest level of consensus (Dess, 1987; Dess & Origer, 1987). When they don’t have reached any consensus about the team goals, goal ambiguity is at hand. That is why, to avoid confusion in terminology, throughout this thesis goal consensus is treated as the opposite of goal ambiguity. To test the variable goal consensus, questions about goal ambiguity are used for testing the hypothesis.

In the research question it is stated that a mediation model will be researched in this thesis. In a mediated model, the effect of the independent variable goes through the mediator and that effects the dependent variable (Fritz & MacKinnon, 2007). Therefore, first the expected mediator team identification is discussed.

### 2.4 Team identification

Team identification is when individuals in a work team experience an emotional relationship with a team (Van der Vegt & Bunderson, 2005), they sense a feeling of “oneness” with the team (Gundlach, Zivnuska, & Stoner, 2006). In teams with high levels of team identification, team members are committed to the team and to the team goals rather than to individual goals (Van der Vegt &
14

Do we all agree on our goals?

Bunderson, 2005). This perception indicates cohesion between members of a team, team identification is therefore also called team cohesiveness (Blazovich, 2013). Team identification is a cognitive individual construct (“I feel part of this team”). But this construct has to be aggregated to the team’s level, because it otherwise does not provide information regarding the functioning of a team as a collective (DeShon, Kozlowski, Schmidt, Milner, & Wiechmann, 2004).

Team identification is important because productivity will enhance (Blazovich, 2013; Solansky, 2011; Gundlach, Zivnuska, & Stoner, 2006). This is explained by Van der Vegt & Bunderson (2005) and Henttonen, Johanson, & Janhonen (2014) who both state that individuals are committed to the team and its goals rather than their own goals or the goals of their particular specialty areas and this increases team performance.

As stated before, a team needs goals. But when goals are presented to a team, what happens with this information and what happens within the team? When team goals are presented to a team, they will socially interact about the goals, since they are a team (Erez & Zidon, 1984). When team goals are interpret as being unclear or even ambiguous, team members will think about this goals and evaluate their interpretation with other team members. The model which describes this behavior is called Locke’s model, which is modified by Erez & Zidon (1984, p. 70), see Figure 2.

![Figure 2 Locke’s model, with modifications by Erez & Zidon (1984, p. 70)](image)

Through these discussions a certain level of agreement can develop, because some team members will presumably take over other team members’ interpretation and this develops into a shared agreement about the team goals (Williams, 2010; Chi & Anouar, 2012). The communication about team goals helps to develop the social and emotional relationships (Chi & Anouar, 2012) and therefore the level of team identification. This indicates a relation between goal consensus and team identification.

2.5 Team performance

Team performance is defined as to what extent the outcome of the team’s work meets the desired levels of performance (Savelsbergh, Van der Heijden, & Poell, 2010). This implicates that the focus in this thesis is on team goals rather than on individual goals, or groupcentric goals, which are individual goals that focus on contributions to team performance (DeShon, Kozlowski, Schmidt, Milner, & Wiechmann, 2004).

In organizations, management has to measure team performance, to determine how well the strategy is realized (Wit & Meyer, 2011). If deviation does occur between goals and the outcome (i.e. team performance), action has to be taken by management, in order to get the results of teams in
line with expectations (Wit & Meyer, 2011). To measure performance, several techniques can be used: quantitative indicators, qualitative indicators or a Balanced Scorecard (Wit & Meyer, 2011). Quantitative indicators are objectively measurable in figures, such as financial indicators like turnover or profit (Wit & Meyer, 2011), production records like repair and response times or amount of pieces produced (Cohen & Bailey, 1997). These measures are specifically linked to the task and type of teams (Cohen & Bailey, 1997).

Qualitative indicators are the attitudinal and behavioral measures like satisfaction or commitment to the organization (Cohen & Bailey, 1997), clients satisfaction or efficiency (Wit & Meyer, 2011). When more extensive and varied indicators are preferred by management, a Balanced Scorecard (BSC) can be used (Wit & Meyer, 2011). The BSC translates the mission and strategy of an organization into a set of performance measures that provides the possibility for a strategic measurement and management system (Kaplan & Norton, 1996). The BSC measures organizational performance using four different perspectives: financial, customers, internal business processes, and learning and growth and enables companies to track financial results while simultaneously monitoring progress in building the capabilities of the team and acquiring the assets needed (Kaplan & Norton, 1996).

In this thesis the focus is on qualitative indicators to measure team performance, following the work of Van der Vegt & Bunderson (2005).

Performance is related to constituents; team members are most likely to have a different view on performance than managers (Ancona & Caldwell, 1992) or have different possibilities to observe and evaluate distinctive sets of employees’ job behaviours (Janssen & Van der Vegt, 2011). The reason for this is that team members have day-to-day information about the way their team operates and most likely will use this information to evaluate their performance (Ancona & Caldwell, 1992). Managers, on the other hand, are more distant and rely more on quantitative data (Ancona & Caldwell, 1992). Another reason why team members rate performance different from managers, is due to introspection (Henttonen, Johanson, & Janhonen, 2014). When team members are asked to rate their own performance, introspection changes their experience, because introspection is an experience on its own (Kordes, 2013). The objective view of team members on their performance will change, because it is under investigation, according to Kordes (2013) and Henttonen, Johanson, & Janhonen (2014). In fact, when team members rate themselves, they tend to rate their own efforts more positively than their managers do, up to average 0,7 standard deviations higher (Janssen & Van der Vegt, 2011). To solve these issues, both team members and managers are asked to rate the team’s performance rather than the individual performance (Henttonen, Johanson, & Janhonen, 2014).

Summarized can be concluded that goal consensus has a positive relation with team performance and with team identification. Team identification has also a positive relation with team performance. Therefore it is presumed that team identification has a partly mediating effect on the positive relationship between goal consensus and team performance and this leads to the Hypothesis 2 and 3:

| H2: | Team identification partially mediates the positive relationship between goal consensus and team performance rated by team members |
| H3: | Team identification partially mediates the positive relationship between goal consensus and team performance rated by team managers |
The research model for H2 and H3 is displayed in Figure 3, in which ‘1’ indicates H2 and ‘2’ indicates H3. In this figure, the ‘+’ indicates the positive relation between the variables.

![Figure 3 Research model H2 and H3](image)

2.6 Control variables
Several control variables are mentioned in the survey which is used in this research; age, level of education, hours team members work weekly, organizational tenure and team tenure. The effect are studied on the team’s level and are aggregated, thus ruling out gender. Because the sample size of this research is relatively small and the control variables age, level of education, hours working and organizational tenure are not significant, special interest is in the remaining control variable: team tenure. Team tenure is in this research the number of months a team member is part of the team. The control variable team tenure is included in this research, because it is supposed that a longer tenure may increase the social interaction processes and helps to develop team identification (Schaeffner, Huettermann, Gebert, Boerner, Kearney, & Song, 2015).
Chapter 3  Methodology

In this chapter, the methodology of the research conducted in this thesis is explained. Attention will be given to the followed procedure, how the variables are measured and what the analyses provide.

3.1  Procedure and sample

In this thesis a cross-sectional research is used (Verboon, 2015); two surveys are used once to collect data; one survey for team members and another survey for the managers, see Appendix 1. The survey for the managers had the purpose to get information about team performance which was also asked at the team members. Having both answers makes it possible to determine if there are different views on team performance (McComb, Green, & Dale Compton, 1999). The survey for team members is conducted in 63 different teams in 11 organizations, the total of respondents is 384. From four teams, the team managers did not fill in the survey, that is why a total of 59 teams is included in the research. Each team has a minimum of 3 members and a maximum of 18 members. The teams and organizations are mentioned in Table 2.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Description (all except one located in the Netherlands)</th>
<th># Teams</th>
<th># Team members</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>National bank</td>
<td>16</td>
<td>93</td>
</tr>
<tr>
<td>2</td>
<td>Temporary employment agency</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>3</td>
<td>Semi government department</td>
<td>23</td>
<td>175</td>
</tr>
<tr>
<td>4</td>
<td>Technical maintenance firm</td>
<td>6</td>
<td>34</td>
</tr>
<tr>
<td>5</td>
<td>Higher education organization</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td>Average education organization</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>7</td>
<td>IT firm</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>8</td>
<td>Civil consultancy firm (one is located in Belgium)</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>9</td>
<td>Package handling organization</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>Accountants firm</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>11</td>
<td>Primary school</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total: 11</strong></td>
<td><strong>Total: 63</strong></td>
<td><strong>Total: 384</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table 2 Overview teams and organizations

The survey consists of 15 items for measuring and 7 control items (for reasons of aggregation, gender is not used and from the remaining five items, only team tenure is used in this research). In total, from 384 respondents the survey is collected with a minimum response rate of 82%. The average number of team members per organization is 6. As pointed out in Table 2, the organizations differ in nature and in size and, in one case, in country.

The data is obtained by two different ways: personal and by mail. The personal data collection is conducted the following way; the researcher has made contact with the manager of a team asking for a meeting to conduct the research, in this meeting the researcher has been given time to conduct the research, the survey was handed out on paper, the respondents filled in the survey and the researcher afterwards collected the survey. Feedback, if desired by the manager, was promised after completing the entire research. In some cases, the survey was send by mail to the manager and this person forwarded the mail to respondents with the request to fill in the survey on the computer. Afterwards, the survey was send back to the researcher by mail. Feedback, if desired by the manager, was promised after completing the entire research. The reason why not every survey was conducted personal was because some managers did not want or did not have the time to organize a meeting, but they nevertheless wanted to cooperate.
3.2 Measuring variables

The control variable which is used in this research is months working with this team (team tenure). Goal consensus is split into two elements to measure: goal understanding and goal commitment (Floyd & Wooldridge, 1992). Goal understanding is measured using three items (originally for measuring goal ambiguity\(^1\)) based on the work of Stazyk, Pandey, & Wright (2011) including the following questions: “It is easy to explain the goals of this team to outsiders”, “This team’s mission is clear to everyone who works here”, “This team has no clearly defined goals (R)”. The three items are measured on a 5-point scale, as done so by Stazyk, Pandey, & Wright (2011). (R) means reversed question.

The three questions about goal commitment are taken from Aubé & Rousseau (2005). The questions are changed into personal questions, “we” in the original questions is changed into “I”: “I am committed to pursuing the team’s goals”, “I think it is important to reach the team’s goals” and “I really care about achieving the team’s goals”. The three items are measured on a 5-point scale, as done so by Aubé & Rousseau (2005). The items measured are an individual cognitive construct and have to be aggregated to the team’s level.

Goal consensus is the sum of goal understanding and goal commitment (Floyd & Wooldridge, 1992), accordingly constructed in SPSS and checked for reliability (see Appendix 4). This means that goal understanding and goal commitment are measured directly by means of the survey, checked for reliability and then put together resulting in goal consensus, which is also checked on reliability.

Team performance is measured using five criteria rated by managers and team members (Henttonen, Johanson, & Janhonen, 2014; McComb, Green, & Dale Compton, 1999), three criteria based on previous research (Ancona & Caldwell, 1992): efficiency, quality, overall achievement, and two added by managers as mentioned in Van der Vegt & Bunderson (2005): “productivity and mission fulfillment”. The items measured are an individual cognitive construct and have to be aggregated to the team’s level. The rating by the manager will be treated separately from the rating by the members (McComb, Green, & Dale Compton, 1999). The five items are measured on a 5-point scale.

Team identification is measured based on the four highest scoring items of the Affective Commitment Scale (Allen & Meyer, 1990) following the work of Van der Vegt & Bunderson (2005). In this cognitive subscale, the words ‘group’ are changed in ‘team’ because this research is about teams. The questions are: “I do not feel like ‘part of the family’ at my team (R)”, “I feel ‘emotionally attached’ to this team”, “This team has a great deal of personal meaning for me” and “I do not feel a strong sense of belonging to my team (R)”. (R) means reversed question. The items measured are an individual cognitive construct and have to be aggregated to the team’s level. The four items are measured on a 5-point scale.

3.3 Data analyses

The steps taken in the data analysis are mentioned in Appendix 3. After removing questions which are not included in this research, the reliability of the data was checked, see Appendix 4. The discriminatory validation is researched by means of Factor analysis. The results are displayed in Table 3. In this table, goal consensus is not mentioned because it is constructed from goal understanding and goal commitment as explained in the previous paragraph.

---

\(^1\) Goal ambiguity is treated as the opposite of goal understanding; the absence of ambiguity indicates a high level of understanding. The questions used are taken from Stazyk, Pandey, & Wright (2011) but are interpreted in the opposite way.
Do we all agree on our goals?

Rotated Component Matrix

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal Understanding 1</td>
<td>.210</td>
<td>.014</td>
<td>.682</td>
</tr>
<tr>
<td>Goal Understanding 2</td>
<td>.077</td>
<td>.139</td>
<td>.805</td>
</tr>
<tr>
<td>Goal Understanding 3</td>
<td>.105</td>
<td>.165</td>
<td>.759</td>
</tr>
<tr>
<td>Goal Commitment 1</td>
<td>.806</td>
<td>.130</td>
<td>.123</td>
</tr>
<tr>
<td>Goal Commitment 2</td>
<td>.826</td>
<td>.013</td>
<td>.247</td>
</tr>
<tr>
<td>Goal Commitment 3</td>
<td>.791</td>
<td>.176</td>
<td>.062</td>
</tr>
<tr>
<td>Team identification 1</td>
<td>.166</td>
<td>.766</td>
<td>.278</td>
</tr>
<tr>
<td>Team identification 2</td>
<td>-.042</td>
<td>.569</td>
<td>-.102</td>
</tr>
<tr>
<td>Team identification 3</td>
<td>.313</td>
<td>.703</td>
<td>.145</td>
</tr>
<tr>
<td>Team identification 4</td>
<td>.077</td>
<td>.757</td>
<td>.201</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis
 Rotation Method: Varimax with Kaiser Normalization

Rotation converged in 5 iterations

Table 3 Varimax rotated factor matrix

The underlined figures in Table 3 are factor loadings greater than 0.40 which is acceptable (Allen & Meyer, 1990). This means that the variables do discriminate and therefore the variables are correctly measured.

After aggregating the data in order to measure the effects on the team’s level, the data is merged with the data provided by the team managers. A scatter plot is made of the direct results (mean values of the teams) of goal understanding and goal commitment and plotted on respectively X-axes and Y-axes to gain insight in the situation of the teams reciprocal (“Ist”-situation), see Appendix 5. Ratings below 3 are, according to the questionnaire used, below median. Three teams have a below median level of goal understanding. That means that in these teams, the level of consensus is called blind devotion. This information is useful for practical reasons and shall therefore be used in the feedback to the teams and their managers, as described in § 3.1. For descriptive reasons, a comparison of the mean and Standard Deviation (SD) is used to describe the differentiation between goal understanding and goal commitment.

Scattered plots are made of the data, before correlation is researched. The plots are displayed in Appendix 6. Since none of the plots show a clear geometric pattern, it is assumed that all models are linear (Vocht, 2012). Hypotheses 1 is checked for correlation and a regression table is made.

Table 4 shows the correlations and reliability of all variables.

N, means, standard deviations, correlations and in parentheses Cronbach’s alphas

<table>
<thead>
<tr>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Team tenure</td>
<td>59</td>
<td>36.80</td>
<td>43.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. GoalCons</td>
<td>59</td>
<td>8.03</td>
<td>5.8</td>
<td>.005</td>
<td>(.718)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. GoalUnder</td>
<td>59</td>
<td>3.75</td>
<td>.38</td>
<td>.043</td>
<td>.883**</td>
<td>(.670)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. GoalComm</td>
<td>59</td>
<td>4.29</td>
<td>.30</td>
<td>-.045</td>
<td>.803**</td>
<td>.428**</td>
<td>(.766)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Team identification</td>
<td>59</td>
<td>3.83</td>
<td>.36</td>
<td>.397**</td>
<td>.494**</td>
<td>.396**</td>
<td>.447**</td>
<td>(.752)</td>
<td></td>
</tr>
<tr>
<td>6. Team perform WN</td>
<td>59</td>
<td>3.79</td>
<td>.29</td>
<td>.211</td>
<td>.490*</td>
<td>.400**</td>
<td>.434**</td>
<td>.515**</td>
<td>(.865)</td>
</tr>
<tr>
<td>7. Team perform LG</td>
<td>57</td>
<td>3.84</td>
<td>.48</td>
<td>.170</td>
<td>.311*</td>
<td>.323*</td>
<td>.191</td>
<td>.416**</td>
<td>.523**</td>
</tr>
</tbody>
</table>

** p<.01 (2-tailed)
* p<.05 (2-tailed)

Table 4 Descriptive statistics
In Table 4: ‘team tenure’ means the months team members work in the team, ‘Goalcons’ means goal consensus, ‘Goalunder’ means goal understanding, ‘Goalcomm’ means goal commitment, ‘Team perform WN’ means team performance rated by team members and ‘Team perform LG’ means team performance rated by team managers.

To measure the effect of a mediation variable in SPSS 20, the macro of Hayes\(^2\) is used because it more directly calculates the effects then the method of Kenny\(^3\) does. With the method of Kenny, the direct effect is derived from the total effect and the indirect effect while Hayes calculates the total effect from the indirect en direct effects. Nevertheless, the procedure of Kenny is calculated and shown in Appendix 8. The regression details, calculated with use of the macros of Hayes, are mentioned in Appendix 9. After calculating the effects, the mediated effect is evaluated using the causal-step approach (Fritz & MacKinnon, 2007), in which all steps must satisfy:

1. The total effect of X on Y must be significant (c-path)
2. The effect of X on M must be significant (a-path)
3. The effect of M on Y controlled for X must be significant (b-path)
4. The direct effect of X on Y adjusted for M (c’-path) must be non-significant for fully mediated models, when only the c’-path < c-path rather than that the c’-path is non-significant, the effect is partially mediating (Baron and Kenny, 1986 in Fritz & MacKinnon (2007)).


\(^3\) See: [http://davidakenny.net/cm/mediate.htm](http://davidakenny.net/cm/mediate.htm), visited 10\(^{th}\) of August 2015
**Chapter 4 Results**

**4.1 Control variable**

To provide information about the respondents, in Appendix 2 the output from SPSS is displayed concerning respondents, before aggregation. The control variable which is used in this research, team tenure, is displayed in Table 5. Because the analyses are performed on teams, the control item on the team’s level (after aggregation) is also displayed as “percentage teams”.

<table>
<thead>
<tr>
<th>Control item</th>
<th>Description</th>
<th>Percentage respondents</th>
<th>Percentage teams</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years working in team</td>
<td>&lt;3 years</td>
<td>76,8%</td>
<td>62,7 %</td>
</tr>
<tr>
<td></td>
<td>3-6 years</td>
<td>10,2%</td>
<td>15,3 %</td>
</tr>
<tr>
<td></td>
<td>6-9 years</td>
<td>4,2%</td>
<td>13,6 %</td>
</tr>
<tr>
<td></td>
<td>9-12 years</td>
<td>2,9%</td>
<td>5,1 %</td>
</tr>
<tr>
<td></td>
<td>12-15 years</td>
<td>2,6%</td>
<td>3,4 %</td>
</tr>
<tr>
<td></td>
<td>15-18 years</td>
<td>0,8%</td>
<td>0 %</td>
</tr>
<tr>
<td></td>
<td>18-21 years</td>
<td>0,8%</td>
<td>0 %</td>
</tr>
<tr>
<td></td>
<td>21-24 years</td>
<td>0,8%</td>
<td>0 %</td>
</tr>
<tr>
<td></td>
<td>&gt;24 years</td>
<td>1,0%</td>
<td>0 %</td>
</tr>
</tbody>
</table>

Table 5 Overview outcome control variables

Remarkable about the information in Table 5 is that more than 60% of the teams consists of team members working less than 3 years in the team.

**4.2 Results of consensus matrix**

The consensus matrix, as displayed in Appendix 5, shows that three teams have a level of consensus which is called ‘blind devotion’, indicating that in these teams the level of goal understanding is low. All other teams show a strong level of consensus, where the overall level of goal understanding is lower than the level of goal commitment (Mean) and the variance for goal understanding is higher, see Table 6.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum Statistic</th>
<th>Maximum Statistic</th>
<th>Mean Statistic</th>
<th>Mean Std. Error</th>
<th>SD Statistic</th>
<th>Variance Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal understanding</td>
<td>59</td>
<td>2,78</td>
<td>4,44</td>
<td>3,7451</td>
<td>.04991</td>
<td>.38337</td>
<td>.147</td>
</tr>
<tr>
<td>Goal commitment</td>
<td>59</td>
<td>3,60</td>
<td>5,00</td>
<td>4,2850</td>
<td>.03934</td>
<td>.30221</td>
<td>.091</td>
</tr>
</tbody>
</table>

Table 6 Descriptive statistics goal understanding and goal commitment

**4.3 Results of regression**

The regression of the research model is calculated for team performance rated by team members, resulting in Table 7, and for team performance rated by team managers resulting in Table 8. The linear regression is in both cases calculated in three steps. The values represent unstandardized coefficients, standard errors are in parentheses.
4.4 Hypothesis H1
The correlation between goal understanding and goal commitment is found to be .428 (see Table 4) and significant at the .01 level (2-tailed). That means that (.428²) = .183 or 18.3% of goal commitment is explained through goal understanding. This means that there is a significant relation between goal understanding and goal commitment thus confirming Hypotheses 1.

4.5 Hypothesis H2 and H3
Hypotheses 2 states that team identification partially mediates the positive relation between goal consensus and team performance, rated by team members. With regression, all effects are calculated. In the mediated model the total effect of X on Y is calculated (this is without the effect of the mediator = path C), the indirect effect is calculated (the effect of X on M and M on Y, indicated respectively by path a and b) and finally the direct effect is calculated (the effect of X on Y adjusted for M = path C’). The regression values are displayed in Table 9 and Table 10. Goal consensus is abbreviated to GC, team performance to TP, Team identification to TI. The paths mentioned are illustrated in Figure 4.
The results of the analyses (displayed in Table 9, see Appendix 9 for all data) show that the relation between goal consensus and team performance is positive (indicated by the c-path), that the relation between goal consensus and team identification is positive (indicated by the a-path) and that the relation between team identification and team performance is positive (indicated by the b-path).

Hypotheses 3 states that team identification partially mediates the positive relation between goal consensus and team performance, rated by team managers. The calculation for this hypotheses is similar to hypotheses 2. The results of the analyses for hypotheses 3 (displayed in Table 10, see Appendix 10 for all data) show that the relation between goal consensus and team performance is positive (indicated by the c-path), that the relation between goal consensus and team identification is positive (indicated by the a-path) and that the relation between team identification and team performance is positive (indicated by the b-path). The c’-path is not significant.

According to the causal-step approach (Fritz & MacKinnon, 2007), Table 9 shows that step 1, 2 and 3 are satisfied, step 4 displays a significant relation where c’-path < c-path and that means that this model is partially mediating, thus confirming Hypotheses 2.

According to the causal-step approach (Fritz & MacKinnon, 2007), Table 10 shows that step 1, 2, 3 and 4 are satisfied, and that means that this model is fully mediating, thus rejecting Hypotheses 3. Figure 5 shows the coefficients for Hypotheses 2 (indicated as ‘1’) and Hypotheses 3 (indicated as ‘2’).
Do we all agree on our goals?

### 4.6 Testing control variable Team tenure

For team performance rated by team members, team tenure has a very small effect on team identification, the coefficient is .0033, see Appendix 10. However, $R^2$ for team identification is increased from 24.39% to 39.98% (around 40% of team identification is explained through the combination of goal consensus (24.39%) and team tenure (15.59%)). The effect of team tenure on the total model regarding the perspective of team members is negligible. Regarding the research model for team performance rated by team managers, no significant effects have been found that team tenure affected the model (see Appendix 11 for details). Team tenure does effect team identification in the same way as described above for team performance rated by team members, but this is no surprise due to the fact that the data for this relation is not changed.

---

**Figure 5 Results H2 and H3**

- **A-path**
  - $0.310^{**} (1)$
  - $0.309^{**} (2)$

- **M:** Team identification
  - $0.296^{**} (1)$
  - $0.453^{*} (2)$

- **X:** Goal consensus

- **B-path**
  - $0.161^{*} (1)$
  - $0.114 (2)$

- **C'-path**

* $P < .05$
** $P < .01$
Chapter 5  Conclusion, discussion & recommendations

5.1  Conclusion
The research question in this thesis is to what extent team identification mediates the positive relationship between goal consensus and team performance. The results in this research indicate that goal consensus can be seen as the result of goal understanding and goal commitment, where the weight of goal commitment is higher than goal understanding. In this research, 95% of the teams show a strong level of consensus. This research shows strong indications that when team members are asked to rate their team’s performance, team identification has a partial influence on the relation between goal consensus and team performance. The effect of goal consensus on team performance decreases under influence of team identification. When team managers are asked to rate the performance of their team, team identification completely takes over the effect of goal consensus on team performance (this relation disappears due to the intervening effect of team identification). Goal consensus effects team identification which on its turn effects team performance rated by team managers. This means that the perspective of team performance has a major influence on the effect of team identification on the relation between goal consensus and team performance. To my knowledge, this has not been shown before in the literature.

In the landscape of change, changing goals are imminent (Homan, 2005). When goals are changing, the dynamics in a team will also change. For managers, being responsible for the output of teams while dealing with change, it is important to understand how this dynamics work. First there has to be mutual understanding and agreement (together they are called: goal consensus) about the goals. Without this, there is no consensus about goals and the team will drift without course. Mutual understanding and commitment will be reached by social interaction and evaluation, meaning communicating about the goals and taking over other team members’ interpretation. Through this social interaction, the feeling of “oneness” in the team (team identification) will increase and the performance of that team will be positively influenced. Goal consensus does directly and positively influences team performance. But because team identification is always present (either at higher or lower level), the effect of goal consensus on team performance is reduced under influence of team identification (in the perspective of team members) or even disappears, in the perspective of team managers.

5.2  Discussion

5.2.1  Theoretical implications
For teams in general, this thesis provides clear and direct answers to several Why? and How? questions about team dynamics from a managerial point of view. By combining the Social Identity Theory (SIT), Locke’s Model of communication and Floyd & Wooldridge’s model for goal consensus, I have tried to give some insight in team dynamics. Goal consensus is not a status quo, it is a process the evolves over time. But how do team members come to goal consensus? It’s a two-step process; by communicating about goals they can come to a mutual understanding about the goals and when they all agree on the goals, they reach mutual consensus about the goals (Floyd & Wooldridge, 1992). Team identification is not something that falls out of the clear blue sky, so how does this evolve in a team? By thinking and socially interacting about unclear goals, evaluating their interpretation with others and taking over other team members’ interpretations a team comes to mutual understanding about goals (Williams, 2010; Chi & Anouar, 2012). Through this process, the social bonding between team members evolves, emotional relationships build up and team members identify with each other (Solansky, 2011). The feeling of “oneness” builds up and that increases the level of team
identification. Why do team members sometimes show a longer tenure in the same team? Because this increases team identification and makes them feel more like they are part of a family (Gundlach, Zivnuska, & Stoner, 2006; Solansky, 2011). Evidence for this is show in this thesis, the correlation between tenure and team identification is .397, Appendix 10 shows more details about the influence of team tenure on team identification.

The findings of this research have revealed a significant difference in constituents; the effect on team performance relates heavily to the perspective of the researched group or person. A possible explanation can be that this is caused by poor introspection (Kordes, 2013); team members who give high ratings to their level of goal consensus and team identification, will probably give also high rating to their team performance. A similar situation is revealed by McComb, Green, & Dale Compton (1999); the consensus about team goals shows high correlations with team performance rated by team members but not at all by team managers. The ratings of team members depended on the rating of team managers and found to be less objective (McComb, Green, & Dale Compton, 1999). A reason for this can be because their own performance is under investigation and this influences the objectivity (Kordes, 2013; Henttonen, Johanson, & Janhonen, 2014). To avoid this decrease of objectivity, anonymity was guaranteed in this research, because there is evidence that when anonymity is guaranteed, self-ratings will correlate higher with more objective measures (Henttonen, Johanson, & Janhonen, 2014). Unfortunately, in some cases during the execution of this research, remarks of team members indicated that the anonymity was not truly felt by them, therefore some team members did not fill in their gender or age. So, conclusions about research topics in which subjects have to rate their own performance, should be treated restrained for reasons of poor introspection.

To my knowledge, the combination of goal consensus, team identification and team performance is not published before. The relation between some variables are indeed researched, such as the relation between team identification and team performance (Solansky, 2011; McComb, Green, & Dale Compton, 1999; Van der Vegt & Bunderson, 2005) and the relation between goal consensus and team performance (Lewis & Greene, 1977; Dess & Origer, 1987). In this research, the relation between team identification and team performance is significantly present and this confirms the findings of Solansky (2011), McComb, Green, & Dale Compton (1999) and Van der Vegt & Bunderson (2005). Further more, in this research, goal consensus is found to be an antecedent of team identification which is an addition to the work of Van der Vegt & Bunderson (2005) which is also mentioned by Solansky (2011).

Lewis & Greene (1977) and Des & Origer (1987) state both that when team members show high levels of goal consensus, team performance can be positively influenced. This research shows however, that these findings are not completely true! The effect of goal consensus on team performance is not directly, but, depending on the constituents, goes partially or fully through team identification. For the theory on this subject, this means that the relation between goal consensus and team performance is more complex due to the effect of team identification.

The relation between goal consensus and team identification is in this research clearly present. This relation is also mentioned by McComb, Green, & Dale Compton (1999), who state that a dramatic increase in team identification is shown by team members when they have clear goals. The findings in this thesis support this statement.
The findings in this research thus confirms and strengthen the theoretical statements about the relation between goal consensus and team identification, between team identification and team performance and between goal consensus and team performance. Additionally, this research adds a new relation to these factors; the fully mediating effect of team identification on the relation between goal consensus and team performance rated by team managers and partially mediating when team performance is rated by team members.

5.2.2 Practical implications

Several practical implications can be found in this research. First, feedback to the teams researched can be provided by using the four different outcome of the goal consensus matrix as displayed in Figure 1. This can provide both team members and team managers an indication how their team relates to other teams in ratings of goal understanding and goal commitment on this moment (“1st”-situation).

In this thesis, a differentiation is made to the perception of team members and team managers. The practical implications are, as a result, also different for both groups. **Team members** should focus on both understanding and being committed to their team goals, in order to improve team performance and to improve team identification which also effects team performance. The understanding of team goals can be achieved by communicating about goals and trying to understand the interpretation of other team members. The communication about goals is an ongoing process and should lead to a mutual agreement on team goals. Team members should also invest time and effort in team identification because this directly improves their team performance. Feeling one with the team can be achieved by socially interacting and working on team goals rather than individual goals. **Team managers** should focus on the antecedents of team identification, such as goal consensus. They should understand that the level of goal consensus does not directly improve team performance but it helps to improve the level of team identification and that improves team performance. Helpful in this case, and an addition to the work of Van der Vegt & Bunderson (2005) as mentioned in Solansky (2011), is a number of advises to solidify the importance of team identification; (1) poll team members to gain insight on the strength of identification, (2) communicate the importance of team unity within the team, (3) reward team-based outcomes as opposed to relying solely on individual rewards, (4) be aware of and observe the extent of identification, (5) provide teams with information regarding what their shared goals should be, (6) be conscientious of how individuals are placed in teams by considering how each will impact cohesiveness and productivity, (7) monitor that team goals are consistently aligned with organizational goals (Solansky, 2011, p. 254). The findings in this research can be added to this list, because goal consensus (and therefore the two components it is constructed from: goal understanding and goal commitment) is expected to be a determinant of team identification.

5.2.3 Study limitations

All used questions in this research are taken from earlier research:

- Goal understanding from the work of Stazyk, Pandey, & Wright (2011);
- Goal commitment from the work of Aubé & Rousseau (2005);
- Team identification from the work of Van der Vegt & Bunderson (2005);
- Team performance from the work of Ancona & Caldwell (1992) and Van der Vegt & Bunderson (2005).

Goal consensus is constructed from goal understanding and goal commitment following the work of Floyd & Wooldridge (1992). The method of rating team performance seperately for team members and team managers is taken from the work of McComb, Green, & Dale Compton (1999). The
questions, originally asked in English, are translated to Dutch because the research is conducted in Holland. The survey should be reliable to measure the variables. However, some teams completed the survey without the researcher being present. This increases the chance that the interviewee may have chosen the answers what others filled in or discussed about the questions and therefore causing bias in the data.

Several different organizations have been researched, but the amount of organizations within a certain domain are small. For example, only one IT firm, one package handling firm and one accountants firm are researched. This fragmented research can cause bias because the sample size is not large enough to be representative for the particular domain.

Validity
Reliability is a condition for validity; when a research is not reliable, it cannot be valid and a reliable research doesn't have to be automatically valid (Baarda, et al., 2012). The reliability of the variables in this research are sufficient but not very high (see Table 4): Cronbach’s alpha is between .670 and .865. As rules of thumb: $\alpha > .9$ excellent, $\alpha > .8$ good, $\alpha > .7$ acceptable, $\alpha > .6$ questionable, $\alpha > .5$ poor and $\alpha < .5$ unacceptable (Gliem & Gliem, 2003). Increase of $\alpha$ depends partially on the number of items of the scale (Gliem & Gliem, 2003) and in this research the number of items is low (between 3 and 5 items). Since the reliability of the variable in this research is between questionable and good the validity shows room for improvement. In this research eleven different organizations are included, profit and non-profit, large and small, on different locations in Holland and one in Belgium with in total 63 teams and 384 respondents. Despite the widely spread variety of teams, the conclusions from this research can be more generally employed, but strictly in the domains researched.

5.2.4 Recommendations for further research
First, in this research the number of cases is 59 (teams). The question is, if this is suitable for researching the mediating effect as done in this research. The power of the mediated effect depends on the amount of cases, in other words: the effect size (Verboon, 2015). In general, models with mediating effect need even larger effect sizes than models with only a major effect (Verboon, 2015). In general, a power of $.8$ is suitable for mediating effects, where the strength of the a and b-path must be considered (Fritz & MacKinnon, 2007). In this research (hypotheses 2) a-path = .31 and b-path = .29 and c’-path = .16, resulting in $N = 224$ (see result table 3 in Fritz & MacKinnon (2007)). For hypotheses 3: a-path = .31, b-path = .45 and c’-path = .11, resulting in $N = 883$ (see result table 3 in Fritz & MacKinnon (2007)). This indicates that the effect size of this research is rather small and in further research this is an important indicator. New research to the mediating effects of team identification on the relation between goal consensus and team performance should be conducted on a much larger scale. The issue to overcome is, that a researcher first has to choose an effect size, then conduct the research and then has to check if the chosen effect size was appropriate.

Secondly, the last two decades, virtual teams (VT in short, see Table 1) are increasingly more used in organizations, estimates show that 60% of the workers work in VT (Mathieu, Maynard, Rapp, & Gilson, 2008). Because of the nature of VT, the relation between interpersonal processes and team performance is researched and found to be significantly positive (Mathieu, Maynard, Rapp, & Gilson, 2008). It is interesting to see what the results of this thesis would be when it is researched in VT. It can be expected that the level of team identification in these VT’s is much less compared with traditional teams. Additionally, the communication about the goals is likely to be more difficult, due to the distance between the team members. It is interesting to see how these factors influence the findings in this thesis.
Finally, this research was conducted only once. In some cases longitudinal research can give new results, when attention is given to chose the right timing (Verboon, 2015), due to repeating this research. This has not been done in this research and it might give different results if this research is conducted longitudinal.
References


Do we all agree on our goals?


Appendix 1 Survey
In this thesis, two different surveys have been used, one for team members and one for the managers. Both are added here as digital files. Double click on the icons will open them.
Appendix 2 Specifications respondents

a. Gender specifications

<table>
<thead>
<tr>
<th>Geslacht</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumul. Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Man</td>
<td>193</td>
<td>50,3</td>
<td>50,9</td>
<td>50,9</td>
</tr>
<tr>
<td>Vrouw</td>
<td>186</td>
<td>48,4</td>
<td>49,1</td>
<td>100,0</td>
</tr>
<tr>
<td>Total</td>
<td>379</td>
<td>98,7</td>
<td>100,0</td>
<td>100,0</td>
</tr>
<tr>
<td>Missing</td>
<td>Total</td>
<td>5</td>
<td>1,3</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>384</td>
<td>100,0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 11 Frequency table gender

b. Age specifications.

In Figure 7 the different classes of age are specified. On the X-axis the age category is displayed, where “20” means the age category from 15-20 years, “30” means 21-30 years, “40” means 31-40 years and so on. The last category (“65”) is displaying the age category 61 and older.
c. Level of education

![Figure 8 Level of education](image)

<table>
<thead>
<tr>
<th>Opleidingsniveau</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lage leerer/onderwijs</td>
<td>24%</td>
</tr>
<tr>
<td>Middelbaar onderwijs</td>
<td>22.7%</td>
</tr>
<tr>
<td>Hoger leerer/onderwijs</td>
<td>43.2%</td>
</tr>
<tr>
<td>Wetenschappelijk onderwijs</td>
<td>28.4%</td>
</tr>
</tbody>
</table>

Figure 8 Level of education

d. Hours working weekly

Figure 9 displays the hours the respondents work on a weekly bases. The category “24”, means working hours from 0 – 24, the category “32” means working hours from 25 – 32 and the last bar displays working hours from 33-40 every week. 1,3% of the respondents did not fill in their working hours.

![Figure 9 Hours working weekly](image)

<table>
<thead>
<tr>
<th>Werkuren</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>24-30</td>
<td>12.4%</td>
</tr>
<tr>
<td>31-40</td>
<td>23.1%</td>
</tr>
<tr>
<td>41+</td>
<td>54.5%</td>
</tr>
</tbody>
</table>

Figure 9 Hours working weekly
e. Years working with the organization
Figure 10 displays the years the respondents work within the organization. The numbers on the X-axis display the years, so “6” means working between 3 (the former category) and 6 years with the organization. The last category (“25”) displays the respondents working longer than 24 years within the organization.

![Figure 10 Years working with organization](image)

f. Years working with the organization
Figure 11 displays the years the respondents work in the team researched.

![Figure 11 Years working in this team](image)
Appendix 3     Steps taken for research

Steps followed in this research, regarding data collected from employees, using SPSS20:

1. Deleting all data that was collected by fellow-researchers;
2. Recode questions 1A3, 2A1 and 2A4 (recode into same variables);
3. Reliability check (Analyze–Scale–Reliability Analysis) for questions 1A1..1A3 and 1A8..1A10 for independent variable X (goal consensus). Result is a Cronbach’s alpha of 0.718 which is acceptable. SPSS indicates that deleting any of the questions will not result in a higher value of Cr. Alpha. Therefore it is decided that the data will be used without deleting any.
4. Reliability check (Analyze–Scale–Reliability Analysis) for questions 1B1..1B5 for dependent variable Y (team performance). Result is a Cronbach’s alpha of 0.865 which is acceptable. SPSS indicates that deleting any of the questions will not result in a higher value of Cr. Alpha. Therefore it is decided that the data will be used without deleting any.
5. Reliability check (Analyze–Scale–Reliability Analysis) for questions 2A1..2A4 for mediating variable M (team identification). Result is a Cronbach’s alpha of 0.586 which is not acceptable. SPSS indicates that deleting question 2A2 will result in a value of 0.752. Therefore it is decided that question 2A2 is deleted. The questions 2A1, 2A3 and 2A4 are included in the research with a Cr. Alpha value of 0.752 which is acceptable.
6. To research if goal understanding and goal commitment (the two components from which goal consensus is constructed) have a direct effect on team performance, both are checked on reliability. Understanding (questions 1A1..1A3) results in a Cronbach’s alpha of 0.670 which is acceptable, no deletion of questions will result in a higher value. Commitment (questions 1A8..1A10) results in a Cronbach’s alpha of 0.776 which is acceptable, no deletion of questions will result in a higher value.
7. Now five variables are constructed, using Transform–Compute Variable:
   a. GoalUnder = 1A1..1A3, goal understanding, independent variable X1
   b. GoalComm = 1A8..1A10, goal commitment, independent variable X2
   c. GoalCons = 1A1..1A3 + 1A8..1A10, goal consensus, independent variable X
   d. TeamPerf = 1B1..1B5, team performance, dependent variable Y
   e. TeamIden = 2A1+2A3+2A4, team identification, mediating variable M
8. Check on discriminatory validation using Varimax rotated factor matrix.
9. Merging data, plots of the data have been made
10. Correlation research between all variables
11. Linear regression calculation of all variables in three steps
12. Calculation of regression with macro of Hayes in SPSS 20
13. Causal-step approach (Fritz & MacKinnon, 2007) for analyzing results
### Appendix 4  Cronbach’s α

A.  Reliability of variable X Goal consensus

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>Cronbach's Alpha Based on Standardized Items</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.718</td>
<td>.736</td>
<td>6</td>
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#### Summary Item Statistics

<table>
<thead>
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<th>Item Means</th>
<th>Mean</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Range</th>
<th>Maximum / Minimum</th>
<th>Variance</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3,947</td>
<td>3,573</td>
<td>4,377</td>
<td>.804</td>
<td>1.225</td>
<td>.114</td>
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</table>

#### Item-Total Statistics

<table>
<thead>
<tr>
<th>Goal Consensus 1</th>
<th>Scale Mean if Item Deleted</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>19.92</td>
<td>7.168</td>
<td>.434</td>
<td>.212</td>
<td>.685</td>
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<tr>
<td>Goal Consensus 2</td>
<td>20.11</td>
<td>6.760</td>
<td>.459</td>
<td>.309</td>
<td>.679</td>
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<tr>
<td>Goal Consensus 3</td>
<td>20.04</td>
<td>6.535</td>
<td>.461</td>
<td>.283</td>
<td>.681</td>
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<tr>
<td>Goal Commitment 1</td>
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<td>.384</td>
<td>.680</td>
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<td>7.712</td>
<td>.557</td>
<td>.459</td>
<td>.664</td>
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<td>Goal Commitment 3</td>
<td>19.62</td>
<td>7.455</td>
<td>.413</td>
<td>.347</td>
<td>.691</td>
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Table 12  Reliability of variable X Goal consensus

### B.  Reliability of variable X1 goal understanding

<table>
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<th>Cronbach's Alpha</th>
<th>Cronbach's Alpha Based on Standardized Items</th>
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<td>.670</td>
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<th>Variance</th>
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<tr>
<td></td>
<td>3,657</td>
<td>3,567</td>
<td>3,765</td>
<td>.198</td>
<td>1.055</td>
<td>.010</td>
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### Item-Total Statistics

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<th>Goal Consensus 1</th>
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<th>Scale Variance if Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
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<tr>
<td>Goal Consensus 1</td>
<td>7.21</td>
<td>2.730</td>
<td>.419</td>
<td>.178</td>
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<td>Goal Consensus 2</td>
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<td>2.247</td>
<td>.535</td>
<td>.290</td>
<td>.503</td>
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<td>Goal Consensus 3</td>
<td>7.33</td>
<td>2.175</td>
<td>.501</td>
<td>.265</td>
<td>.552</td>
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Table 13 Reliability of variable X1 goal understanding

### C. Reliability of variable X2 goal commitment

#### Reliability Statistics

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<th>Cronbach's Alpha</th>
<th>Cronbach's Alpha Based on Standardized Items</th>
<th>N of Items</th>
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#### Summary Item Statistics

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<th>Range</th>
<th>Maximum / Minimum</th>
<th>Variance</th>
<th>N of Items</th>
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<tr>
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#### Item-Total Statistics

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<th>Scale Variance if Item Deleted</th>
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<th>Squared Multiple Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
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<td>Goal Commitment 1</td>
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<td>1.439</td>
<td>.599</td>
<td>.381</td>
<td>.686</td>
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<td>Goal Commitment 2</td>
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<td>1.227</td>
<td>.578</td>
<td>.341</td>
<td>.732</td>
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Table 14 Reliability of variable X2 goal commitment
D. Reliability of variable Y Team performance (rated by team members)

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<th>Cronbach's Alpha Based on Standardized Items</th>
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<tr>
<td>.865</td>
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<td>Scale Mean if Item Deleted</td>
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<td>Team Performance 2</td>
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<td>Team Performance 4</td>
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<td>Team Performance 5</td>
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</table>

Table 15 Reliability of variable Y Team performance (rated by team members)

E. Reliability of variable Y Team performance (rated by team managers)

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>Cronbach's Alpha Based on Standardized Items</th>
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<td>.814</td>
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<table>
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Item-Total Statistics

<table>
<thead>
<tr>
<th>Item</th>
<th>Scale Mean if Item Deleted</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team performance 1</td>
<td>15.53</td>
<td>3.397</td>
<td>.669</td>
<td>.520</td>
<td>.760</td>
</tr>
<tr>
<td>Team performance 2</td>
<td>15.25</td>
<td>4.331</td>
<td>.467</td>
<td>.583</td>
<td>.815</td>
</tr>
<tr>
<td>Team performance 3</td>
<td>15.23</td>
<td>4.251</td>
<td>.767</td>
<td>.724</td>
<td>.756</td>
</tr>
<tr>
<td>Team performance 4</td>
<td>15.40</td>
<td>3.888</td>
<td>.542</td>
<td>.310</td>
<td>.799</td>
</tr>
<tr>
<td>Team performance 5</td>
<td>15.44</td>
<td>3.715</td>
<td>.675</td>
<td>.566</td>
<td>.756</td>
</tr>
</tbody>
</table>

Table 16 Reliability of variable Y Team performance (rated by team managers)

F. Reliability of variable M Team identification

Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>Cronbach's Alpha Based on Standardized Items</th>
<th>N of Items</th>
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<tbody>
<tr>
<td>.752</td>
<td>.751</td>
<td>3</td>
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</tbody>
</table>

Summary Item Statistics

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<th>Mean</th>
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<th>Maximum</th>
<th>Range</th>
<th>Maximum / Minimum</th>
<th>Variance</th>
<th>N of Items</th>
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<tbody>
<tr>
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<td>3.446</td>
<td>4.021</td>
<td>.576</td>
<td>1.167</td>
<td>.090</td>
<td>3</td>
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</table>

Item-Total Statistics

<table>
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<tr>
<th>Item</th>
<th>Scale Mean if Item Deleted</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team identification 1</td>
<td>7.47</td>
<td>1.989</td>
<td>.640</td>
<td>.416</td>
<td>.596</td>
</tr>
<tr>
<td>Team identification 3</td>
<td>7.90</td>
<td>2.455</td>
<td>.518</td>
<td>.273</td>
<td>.737</td>
</tr>
<tr>
<td>Team identification 4</td>
<td>7.32</td>
<td>2.240</td>
<td>.588</td>
<td>.366</td>
<td>.660</td>
</tr>
</tbody>
</table>

Table 17 Reliability of variable M Team identification
Appendix 5  
Plot of Consensus matrix teams researched

The questions used to provide this data, was presented on a scale of 1..5, where 1 represents “helemaal mee oneens” and 5 “helemaal mee eens”. On this scale, “3” represents “neutral” and this is the intersection of the two secondary axes in the consensus matrix (Floyd & Wooldridge, 1992). So, if the mean value of a team for goal understanding is below 3, it means below median and is an indication for less goal understanding. Goal commitment is treated the same way, thus resulting in the below mentioned figure.

![Figure 12 Plot of teams goal understanding and goal commitment](image)

From this figure it can be stated that most of the teams researched (95%) have a strong level of consensus in their teams. Three teams show a low level of goal understanding, resulting in a level of consensus which can be indicated as ‘blind devotion’.

Appendix 6  Scatterplots

Figure 13 Scatterplot Goal understanding – Goal commitment

Figure 14 Scatterplot Goal consensus – TePFWN (team performance rated by team members)
Do we all agree on our goals?

Figure 15 Scatterplot Goal consensus – TePfLG (team performance rated by team managers)
Appendix 7  Correlations details

<table>
<thead>
<tr>
<th></th>
<th>TeamtenureMEAN</th>
<th>Goal Cons</th>
<th>GoalConWNMEAN</th>
<th>GoalComWNMEAN</th>
<th>TeamIDWNMEAN</th>
<th>TeamPerfWNMEAN</th>
<th>TeamPerfLG</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>N</td>
<td>Mean</td>
<td>N</td>
<td>Mean</td>
<td>WNMEAN</td>
<td>WNMEAN</td>
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<td>-0.45</td>
<td>59</td>
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<td>0.211</td>
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<tr>
<td>Sig. (2-tailed)</td>
<td>0.005</td>
<td>0.043</td>
<td>0.746</td>
<td>0.733</td>
<td>0.002</td>
<td>0.109</td>
<td>0.207</td>
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<td>0.000</td>
<td>0.000</td>
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<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
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<td>0.000</td>
<td>0.001</td>
<td>0.002</td>
<td>0.000</td>
<td>0.002</td>
<td>0.014</td>
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<tr>
<td>Sig. (2-tailed)</td>
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<td>0.001</td>
<td>0.001</td>
<td>0.002</td>
<td>0.001</td>
<td>0.001</td>
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<td>0.000</td>
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<tr>
<td>Sig. (2-tailed)</td>
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<td>0.000</td>
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<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
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<td>1.000</td>
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<tr>
<td>Sig. (2-tailed)</td>
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<td>0.000</td>
<td>0.000</td>
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<tr>
<td>TeamPerfWN</td>
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<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>1.000</td>
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<tr>
<td>Sig. (2-tailed)</td>
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<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
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<tr>
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<td>59</td>
<td>59</td>
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<td>57</td>
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</tbody>
</table>

Table 18 SPSS plot of correlations
Appendix 8  
Mediation according to Kenny

Source: http://davidakenny.net/cm/mediate.htm, visited 10th of August 2015

According to Kenny, mediation in the model displayed as Figure 16, can be calculated by the formula $C = C' + AB$, the total effect of $X$ on $Y$ equals the sum of the direct effect plus the indirect effect. Three steps have to be taken:

Step 1 = calculate $C$ from $X \rightarrow Y$
Step 2 = calculate $A$ from $X \rightarrow M$
Step 3 = calculate $B$ from $X, M \rightarrow Y$
Step 4 = check for complete mediation, path $C'$ should be zero. If not, partial mediation occurs.

![Figure 16 Mediation model (Kenny)](http://davidakenny.net/cm/mediate.htm)

Step 1. When this model is used, $C=0.240$ and the regression line matches the equation: $Y = 1.765 + 0.252 \times X$ (Table 19 shows the results of SPSS).
Do we all agree on our goals?

### Table 19 SPSS output step 1

Step 2. Path A = 0.244, see Table 20.

### Table 20 SPSS output step 2

Step 3. Path B = 0.339 with X and M as predictors and Y as criterion variable, see Table 21.

### Table 21 SPSS output step 3

Step 4. $C = C' + AB$, thus $0.240 = C' + (0.244*0.339)$, gives $C' = 0.1573$. That means that there is partial mediation of team identification affecting the relation between goal consensus and team performance rated by team members. The effect of mediation is 8.3%.

When team performance rated by team managers is used in the same matter, the effects are quite different: $0.097 = C' + (0.244*0.188)$, $C' = 0.0512$, thus the effect of mediation is 4.6% and there is partial mediation. Note that the total effect decreases from 24.4% to 9.7%, meaning that the strength of the relationship rated by team members is larger than rated by team managers. This is caused by the effect, that team members rated their performance higher when they have high levels of consensus about their goals and feel close to each other (high level of team identification).
Appendix 9  Regression details Tp (team members)

*************** PROCESS Procedure for SPSS Release 2.13.2 ***************
Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
**************************************************************************
Model = 4
Y = TePfWN
X = GoalCons
M = Teamiden
Sample size  59
**************************************************************************
Outcome: Teamiden
Model Summary
\[ R \quad R^2 \quad MSE \quad F \quad df1 \quad df2 \quad p \]
\[ 0.4939 \quad 0.2439 \quad 1.025 \quad 10.857 \quad 10.000 \quad 57.0000 \quad 0.0001 \]
Model
\[ \text{ coeff} \quad \text{ se} \quad t \quad p \quad \text{LLCI} \quad \text{ULCI} \]
constant 1.3391 0.5825 2.2988 0.0252 0.1726 2.5055 (A-path)
GoalCons 0.3102 0.0724 4.2879 0.0001 0.1654 0.4551
**************************************************************************
Outcome: TePfWN
Model Summary
\[ R \quad R^2 \quad MSE \quad F \quad df1 \quad df2 \quad p \]
\[ 0.5821 \quad 0.3388 \quad 0.613 \quad 14.3485 \quad 2.0000 \quad 56.0000 \quad 0.0000 \]
Model
\[ \text{ coeff} \quad \text{ se} \quad t \quad p \quad \text{LLCI} \quad \text{ULCI} \]
constant 1.3692 0.4708 2.9079 0.0052 0.4260 2.3124 (B-path)
Teamiden 0.2960 0.1024 2.8897 0.0055 0.0908 0.5011
GoalCons 0.1606 0.0643 2.4952 0.0156 0.0317 0.2894 (C'-path)
**************************************************************************
TOTAL EFFECT MODEL
Model Summary
\[ R \quad R^2 \quad MSE \quad F \quad df1 \quad df2 \quad p \]
\[ 0.4901 \quad 0.2402 \quad 0.692 \quad 18.0228 \quad 1.0000 \quad 57.0000 \quad 0.0001 \]
Model
\[ \text{ coeff} \quad \text{ se} \quad t \quad p \quad \text{LLCI} \quad \text{ULCI} \]
constant 1.7655 0.4786 3.6890 0.0005 0.8071 2.7239 (C-path)
GoalCons 0.2524 0.0594 4.2453 0.0001 0.1333 0.3714
**************************************************************************
TOTAL, DIRECT, AND INDIRECT EFFECTS
Total effect of X on Y
\[ \text{Effect} \quad \text{SE} \quad t \quad p \quad \text{LLCI} \quad \text{ULCI} \]
\[ 0.2524 \quad 0.0594 \quad 4.2453 \quad 0.0001 \quad 0.1333 \quad 0.3714 \]
Direct effect of X on Y
\[ \text{Effect} \quad \text{SE} \quad t \quad p \quad \text{LLCI} \quad \text{ULCI} \]
\[ 0.1606 \quad 0.0643 \quad 2.4952 \quad 0.0156 \quad 0.0317 \quad 0.2894 \]
Indirect effect of X on Y
\[ \text{Effect} \quad \text{Boot SE} \quad \text{BootLLCI} \quad \text{BootULCI} \]
Teamiden 0.0918 0.0451 0.0218 0.1995

Table 22 Output Hayes macro GC-Ti-Tpmem
Appendix 10  Regression details Tp (team managers)

<table>
<thead>
<tr>
<th>Model = 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y = TePfLG</td>
</tr>
<tr>
<td>X = GoalCons</td>
</tr>
<tr>
<td>M = Teamiden</td>
</tr>
</tbody>
</table>

Sample size
57

Outcome: Teamiden

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
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<tr>
<td>R</td>
</tr>
<tr>
<td>,4941</td>
</tr>
</tbody>
</table>

| Model |
| coeff | se | t | p | LLCI | ULCI |
| constant | 1,3432 | ,5915 | 2,2708 | ,0271 | ,1578 | 2,5286 |
| GoalCons | ,3096 | ,0735 | 4,2144 | ,0001 | ,1624 | ,4568 (A-path) |

Outcome: TePfLG

<table>
<thead>
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<th>Model Summary</th>
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<td>R</td>
</tr>
<tr>
<td>,4331</td>
</tr>
</tbody>
</table>

| Model |
| coeff | se | t | p | LLCI | ULCI |
| constant | 1,1915 | ,8452 | 1,4097 | ,1644 | -,5030 | 2,8860 |
| Teamiden | ,4532 | ,1842 | 2,4600 | ,0171 | ,0839 | ,8226 (B-path) |
| GoalCons | ,1140 | ,1154 | ,9871 | ,3280 | -,1175 | ,3454 (C-path) |

Outcome: TePfLG

| Total effect of X on Y |
| Effect | SE | t | p | LLCI | ULCI |
| ,2543 | ,1049 | 2,4245 | ,0186 | ,0441 | ,4644 |

Table 23 Output Hayes macro GC-Ti-Tpman
**Appendix 11  Regression details control variable team tenure**

```
****************** PROCESS Procedure for SPSS Release 2.13.2 ****************
Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
**************************************************************************
Model = 4
Y = TePfWN (team performance rated by team members)
X = GoalCons
M = Teamiden

Statistical Controls:
CONTROL= Teamten

Sample size
59

**************************************************************************
Outcome: Teamiden

Model Summary
\[
\begin{array}{ccccccc}
R & R^2 & MSE & F & df1 & df2 & p \\
,6323 & ,3998 & ,0828 & 18,6505 & 2,0000 & 56,0000 & ,0000 \\
\end{array}
\]

Model
\[
\begin{array}{ccccccc}
\text{const} & 1,2256 & 5244 & 2,3370 & 0230 & 1750 & 2,2762 \\
\text{GoalCons} & 0090 & 650 & 4,7518 & 0000 & 1788 & 4,393 \\
\text{Teamten} & 0033 & 009 & 3,139 & 0003 & 0016 & 0,051 \\
\end{array}
\]

Outcome: TePfWN

Model Summary
\[
\begin{array}{ccccccc}
R & R^2 & MSE & F & df1 & df2 & p \\
,5867 & ,3443 & ,0619 & 9,6246 & 3,0000 & 55,0000 & ,0000 \\
\end{array}
\]

Model
\[
\begin{array}{ccccccc}
\text{const} & 1,3971 & 4750 & 2,9416 & 0048 & 4453 & 2,3490 \\
\text{Teamiden} & 006 & 1155 & 2,555 & 0281 & 0290 & 4,921 \\
\text{GoalCons} & 0013 & 666 & 2,725 & 0128 & 0379 & 3,048 \\
\text{Teamten} & 0006 & 009 & 675 & 0025 & 0011 & 0023 \\
\end{array}
\]

*************** TOTAL EFFECT MODEL ***************
Outcome: TePfWN

Model Summary
\[
\begin{array}{ccccccc}
R & R^2 & MSE & F & df1 & df2 & p \\
,5325 & ,2836 & ,0664 & 11,0842 & 2,0000 & 56,0000 & ,0000 \\
\end{array}
\]

Model
\[
\begin{array}{ccccccc}
\text{const} & 1,7165 & 4696 & 3,655 & 0006 & 7757 & 2,6572 \\
\text{GoalCons} & 0219 & 0582 & 4,3245 & 0001 & 1352 & 3,685 \\
\text{Teamten} & 0014 & 0008 & 1,8412 & 0709 & 0001 & 0030 \\
\end{array}
\]

*************** TOTAL, DIRECT, AND INDIRECT EFFECTS ***************
Total effect of X on Y
\[
\begin{array}{cccc}
\text{Effect} & SE & t & p \\
,2519 & 0582 & 4,3245 & 0001 & 1352 & 3,685 \\
\end{array}
\]

Direct effect of X on Y
\[
\begin{array}{cccc}
\text{Effect} & SE & t & p \\
,1713 & 0666 & 2,5725 & 0128 & 0379 & 3,048 \\
\end{array}
\]
```
## Indirect effect of X on Y

<table>
<thead>
<tr>
<th>Effect</th>
<th>Boot SE</th>
<th>BootLLCI</th>
<th>BootULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teamiden</td>
<td>0.0805</td>
<td>0.0453</td>
<td>0.0066</td>
</tr>
</tbody>
</table>

*************** ANALYSIS NOTES AND WARNINGS ***************

Number of bootstrap samples for bias corrected bootstrap confidence intervals: 1000

Level of confidence for all confidence intervals in output: 95.00

### Table 24 Testing Team tenure for team performance rated by team members

*************** PROCESS Procedure for SPSS Release 2.13.2 ***************

Written by Andrew F. Hayes, Ph.D.  www.afhayes.com

Model = 4
Y = TePfLG  [team performance rated by team managers]
X = GoalCons
M = Teamiden

Statistical Controls:
CONTROL= Teamten

Sample size 57

Outcome: Teamiden

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>R</th>
<th>R-sq</th>
<th>MSE</th>
<th>F</th>
<th>df1</th>
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<tr>
<td></td>
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Model

<table>
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<th>p</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>constant</td>
<td>1.2209</td>
<td>0.5303</td>
<td>2.3020</td>
<td>0.0252</td>
<td>0.1576</td>
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<tr>
<td>GoalCons</td>
<td>0.3086</td>
<td>0.0657</td>
<td>4.6944</td>
<td>0.0000</td>
<td>0.1768</td>
</tr>
<tr>
<td>Teamten</td>
<td>0.0034</td>
<td>0.0009</td>
<td>3.8297</td>
<td>0.0033</td>
<td>0.0016</td>
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</table>

Outcome: TePfLG

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<tr>
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<th>MSE</th>
<th>F</th>
<th>df1</th>
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<th>p</th>
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<td>53.0000</td>
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Model

<table>
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<th>se</th>
<th>t</th>
<th>p</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
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<td>2.0398</td>
<td>0.0464</td>
<td>0.0071</td>
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<td>1.201</td>
<td>1.0140</td>
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<td>-0.1191</td>
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<tr>
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<td>0.016</td>
<td>0.2660</td>
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</table>

************************** TOTAL EFFECT MODEL **************************

Outcome: TePfLG

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<tr>
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<th>MSE</th>
<th>F</th>
<th>df1</th>
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<th>p</th>
</tr>
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<tbody>
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<td>3.8569</td>
<td>2.0000</td>
<td>54.0000</td>
<td>0.0272</td>
</tr>
</tbody>
</table>

Model

<table>
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<tr>
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<th>t</th>
<th>p</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
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<td>0.0182</td>
<td>0.0449</td>
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</table>

Do we all agree on our goals?
<table>
<thead>
<tr>
<th>Effect</th>
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<th>ULCI</th>
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</thead>
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<td>,0182</td>
<td>,0449</td>
<td>,4626</td>
</tr>
<tr>
<td>Direct effect</td>
<td>,1218</td>
<td>1,0140</td>
<td>,3152</td>
<td>-,1191</td>
<td>,3628</td>
</tr>
<tr>
<td>Indirect effect</td>
<td>,1319</td>
<td>,0706</td>
<td>,0255</td>
<td>,3123</td>
<td></td>
</tr>
</tbody>
</table>

**ANALYSIS NOTES AND WARNINGS**

Number of bootstrap samples for bias corrected bootstrap confidence intervals: 1000
Level of confidence for all confidence intervals in output: 95,00
NOTE: Some cases were deleted due to missing data. The number of such cases was: 2

*Table 25 Testing Team tenure for team performance rated by team managers*