MASTER

Creativity and multi team membership
do a perception of job characteristics and team heterogeneity make a difference?

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Creativity and multi team membership:

Do a perception of job characteristics and team heterogeneity make a difference?

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Abstract

The use of multi team membership (MTM) as a working strategy is being used in more and more organizations. The previous literature has focused on the effect that MTM has on performance. This study has focused on MTM and the aspects of job characteristics (i.e. job autonomy, need for creativity and time pressure) and team heterogeneity (i.e. geographical dispersion, functional diversity and membership similarity) on creativity and vigor. This research has found evidence for the linear relationship between MTM and individual creativity. Additionally, in a MTM context job autonomy and need for creativity are proven to be related to increased creativity. Increased job autonomy can be obtained by teaching leaders to empower their employees. In MTM settings, geographical dispersion is related to increased creativity. Teams that are geographically dispersed are found to have a relationship with higher creativity in a MTM setting. The last significant effect found in this study is that in a MTM context functional diversity is not directly related to creativity. However, a strong promotion focus prevents a decrease in creativity when functional diversity is high. The data showed no significant relationship between MTM and vigor, which could mean that the levels of MTM used in the sample do not take a toll on the energy levels of the employees. This is promising information for implementation of MTM. The study is concluded with a discussion of the theoretical contributions and managerial implications for large firms that use the MTM working strategy.
Management summary

In recent literature there has been more focus on being part of multiple teams at the same time (i.e. multi team membership, MTM). These studies point out the adoption of this working strategy is as high as 65 to 90%. Until the moment of writing the quantitative research had focused on business outcomes like performance that could be affected by a MTM way of working. This study set out to research if MTM could be influence the creativity of individuals and teams. On an individual level the relationships of MTM and creativity were investigated and checked whether job autonomy, need for creativity and time pressure influence this relationship. Next to that it was analyzed if at an individual level if the amount of MTM relates negatively to vigor of an employee, to see whether working with this strategy could take a toll on the energy levels of employees. On team levels the effect of team MTM (i.e. average numbers of team memberships held by the members of the team) relates to team creativity.

This study invited 50 teams of a high tech machine manufacturer to participate in a digital survey. In total 194 respondents participated and 28 teams had a response of higher than 50%. From the data several discoveries are made regarding individual creativity, team creativity and vigor in a MTM environment.

This study was the first to find a positive relationship between individual MTM and individual creativity. Next to that a positive relationship between job autonomy (i.e. the extent to which an employee has the freedom and independency to schedule work, choose methods and make decisions) and individual creativity was found. However, it was not found that job autonomy has an effect on the relationship between MTM and individual creativity in contrast to what was expected. Need for creativity was found to be positively related to individual creativity as well.

Next to individual creativity this study looked at the effects of MTM on vigor (i.e. possessing high energy levels and elasticity, willingness to invest effort in the job, persistence to face obstacles and the ability to
stay refreshed). This study found no significant relationship between MTM and vigor. Job autonomy was in this study positively related to vigor. There was not found a relationship between MTM and vigor. This means that at the levels of MTM measured in this study, the upsides of individual MTM can be used without taking a toll on the levels of vigor.

There was not a relationship between MTM and team creativity. Geographical dispersion was found to be positively related to increased team creativity. That increased MTM would lead to increased functional diversity was not found in the study and functional diversity did neither have a direct relationship with creativity. However, the study found an interaction effect of functional diversity and promotion focus (i.e. motivation towards gains and opportunities instead of avoiding losses and ensure security) in a MTM environment. A high promotion focus is related to high creativity in highly functional diverse teams, where teams with a low promotion focus score to be less creative in functional diverse teams. This study has not found any evidence to support the hypothesis that membership similarity across the different teams has an influence on the team’s creativity.

**Guidelines for management regarding the implementation of MTM**

The first guideline is relevant for most companies because it draws conclusions on the overall positive effect of individual MTM on creativity which is supported by the results of table 5. (I) Management should increase the number of teams a person is member of to a moderate level, (M) because increased MTM is related to increased individual creativity, (O) which will result in more novel solutions. Previous research indicated a maximum of 9 memberships. Even though a linear positive relationship was found in the current study, the reader should also note that the average number of MT memberships was low in the dataset.

The findings used in the second guideline confirm previous research regarding empowering leadership and job autonomy for a MTM environment. I advise (I) managers to use the empowering leadership
style, (M) because this is likely to increase job autonomy which, (O) is positively related to vigor and creativity. In order to empower an employee, a manager can improve his/her self by developing six characteristics according to earlier studies. The first characteristic is management style. Empowering leaders are characterized by being open and collaborative to their subordinates regarding management tasks. They try to gain and create opportunities for employees to participate in decision. Second, empowering leaders share their power with their team members, so they receive autonomy of the manager and he/she puts effort in enabling them to work. The next characteristic of an empowering leader is to recognize the performances of employees and to being able to give constructive feedback. The fourth characteristic is interpersonal empathy, by being open to relationships with every employee to enable that a manager can cope with the emotional side of leading as well and facilitates in problem solving and motivating in that aspect. The fifth aspect is communication. Empowering team leaders have clear communication channels with their team. Finally, empowering leaders develop a clear vision for the team, which helps to create meaningful and inspirational goals for the members. Multiple companies can facilitate workshops and/or seminars about this leadership style to educate managers to become more empowering.

For functional diverse teams, lessons are learnt for a MTM working strategy as well. Figure 5 showed that the negative relationship between functional diversity and creativity is moderated by a promotion focus in a way that increased promotion focus will decrease the negative relationship of functional diversity and creativity. The third guideline is therefore related to the promotion focus of a team. (I) Managers of highly diverse teams should stimulate the team to adopt a promotion focus, (M) because a promotion focus buffers the negative relationship between functional diversity and team creativity, (O) and will therefore prevent a decrease in team creativity. A promotion focus can be gained by setting a motto for the team that voices a promotion strategy (e.g. “If there’s a will, there is a way”). A motto with a promotion strategy can be proposed by one person the study found and does not have to be
established by the whole team. Additional to research found that a manager can induce team members a promotion focus in a similar way by having a continuous promotion focus him/her self. To achieve this, a manager has to be aware of his/her own promotion focus and should act according to this. Managers can increase the promotion focus of a team by carrying out a promotion strategy.

The last advice I would like to make for management is based on my own findings and the work of previous research. All research at the moment of writing that is regarding MTM have found that up until a certain level MTM (up to 9 memberships) relates to higher scores on commonly used business outcomes (i.e. performance, innovativeness, creativity). The fourth guideline is therefore a stimulus for management to adopt this way of working. (C) Organizations that have not adopted MTM or only in a limited manner, (I) are advised to implement or increase the levels of MTM, (M) because being part of multiple teams relates positively to individuals’ creativity, performance and individual innovativeness without decreasing vigor, (O) which means it will result in increased business outcomes without harming the employees.
Acknowledgements

While writing this master thesis, I've read many literature regarding the benefits of being part of a team, and even the benefits of being part of multiple teams. It goes without saying this thesis would not have been possible without the help of the teams I received support from during my graduation project.

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Last but not least, I want to thank my girlfriend, family and friends for their support. This team enabled me to relax and unbend when needed.

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1 Introduction

Being part of more than one team is occurring in more and more companies (O'Leary, Mortensen, & Woolley, 2011). In the few studies performed about this topic, this is referred to as multi team membership. Multi-team membership (MTM) is a form of work organization in which individuals are simultaneously member of two or more teams for a given period. At a team level, the level of MTM is the average of team memberships held by each team member at a given moment (O'Leary, Mortensen, & Woolley, 2011). An individual operating in a MTM context has a focal team. This is the team where the where the study focusses on, which allows aggregation of scores to a team level. In empirical studies about MTM the focal team is often used for research, for example to measure the influence of time allocation on the different teams in an MTM environment (Cummings & Haas, 2012). With a clear understanding of definitions in MTM research, this chapter will continue to explain why MTM is relevant, followed by the opportunities and threats it inhibits. The chapter ends with the introduction of a creativity model which helps getting an understanding how MTM could influence creativity.

1.1 Relevance of MTM

In a survey performed in 2007 among 401 current and former MBA students of two American universities, 65% of the respondents reported they were part of more than one team (Mortensen, Woolley, & O'Leary, 2007). On average the respondents were part of 2.7 teams. A study from Martin and Bal (2006) among alumni of the Center for Creative Leadership showed that 95% participated on more than one team. Their sample size consisted out of 118 former strategic leadership students which were by then spread among several industries (Healthcare/Pharmacy, Financial and Other account for 57%). Peter Essens, researcher at TNO, stated in April 2013 that more than 80% of the Dutch employees was part of more than one project team at that time. He even stated that 60% were part of more than two teams (de Hoop, 2013).
In order to be innovative, creative ideas are needed. As innovative orientation is related to organizational performance (Dobni, 2011), this knowledge benefits the company at an important aspect. Because multi-team membership is happening at companies, and creativity is something companies want to obtain, research in this direction is of great value. Knowledge regarding MTM and creativity will give companies an opportunity to optimize their working strategy. By having more know-how about the relationship between a MTM working strategy and creativity, gains in business performance can be achieved.

For that reason, a state of the current literature on multi-team membership is given.

1.2 Opportunities of MTM

Being part of more than one team can result in the situation that a person has different roles among the teams the employee is part of. Having more than one role can result in role accumulation, which may increase a person’s well-being because more resources can be accessed through multiple role enactment. Role accumulation is defined as the ability to have more role privileges, buffers for failure, more social support and more possibilities for self-enhancement and ego gratification (Pluut, Curseu, & Flestea, 2014). Next to the benefits mentioned of role accumulation, scholars have argued that having more than one role to fulfill prevents employees having spare time where they have to wait for others to finish. Having the opportunity to change between tasks of different projects is theorized to enhance an employee’s performance for that reason (O’Leary, Mortensen, & Woolley, 2011).

Another proposition by O’Leary, Mortensen and Woolley (2011) is that an individual’s performance can gain from MTM due to the transferred knowledge between the different teams. For example, due to a larger amount of teams an individual is part of, a broader set of knowledge is maintained. This could result in finding latent opportunities and promotes the exchange of knowledge (Ruff, 2006). This is consistent to what is known about team boundary spanning. Team boundary spanning is the effort of a
team to establish linkages and to manage interactions with parties outside of the team. These linkages include relationships with other teams within the organization as well as relationships with parties outside the organization, for example with customers and suppliers. These linkages are used for task coordination with other teams and seeking knowledge from external experts. This has shown to increase the team performance and organizational innovation (Marrone, 2010).

There is empirical research that suggests that similar things may happen in an MTM context. Cummings and Haas (2012) surveyed 285 teams in a multinational company in the food industry with more than 100,000 employees. The majority of these teams were one-time teams, especially founded to work on one specific, knowledge intensive, project, and were disbanded once the project was finished. The results of their study suggest that if team members participated in more than one team, the performance of the focal team increased, but only when team members were co-located. Thus adding members to the team that are not at the same site seems to increase the attention and coordination costs to a level that it does not outweigh the benefits to the team performance.

Chan (2014) studied effects of MTM on innovative performance of individual team members and the creativity of the team. Chan’s sample had a total of 435 respondents, all following a post graduate course in project management at a South African University. Interviewing members that were responsible for most of the activities (i.e. core team members) of a specific project, Chan found an inverted U-shape relationship between MTM and individual innovative performance (i.e., individual innovative performance is measured as the behavior an individual shows regarding idea generation, idea promotion and idea realization).

At the team level, Chan (2014) found that the innovative performance of the team had a positive linear relationship with the number of team memberships (Chan, 2014). This finding is comparable with what O’Leary et al (2011) defined as the improvements of the focal team by lessons learnt at other teams.
They proposed that at moderate levels MTM will increase team performance due to learning. For example, members can gain knowledge about more alternatives for resources and learn to use more efficient routines. O’Leary et al. (2011) expected an inverted U-shape for MTM on team performance whereas Chan found a positive linear relationship. Also Bertolotti et al. (2015) found an inverted U-shape relationship between MTM and team performance (in a sample of 83 employees of an R&D unit of a world-leading alternative energy company). Thus these findings indicate MTM is related to team performance gains but when the amount of memberships becomes too high, innovative performance declines. Chan (2014) argues the absence of the declining relationship if MTM rises in her research as a result of the sample which were well-trained programme and portfolio managers that have advanced skills in scheduling and staffing human resources. Next to this, on an individual level she discovered a positive relationship between emotional and cognitive skills and individual performance in a MTM environment. Well-trained programme and portfolio managers were proposed to be able to anticipate on this, and thereby eliminating the negative effect of too high MTM.

It is proposed by Bertolotti et al. (2015) that the performance decreases at high levels of MTM because employees start asking for direct help needed to solve the problem instead of seeking for exploratory advice. This is because due to the limited time proven solutions are searched, instead of interesting research areas which might provide a new insight to solve the problem. However, time pressure in MTM settings can also be a stimulator of creativity as Ohly and Fritz (2010) found that due to the perceived challenge, employees in a R&D department were more creative under high levels of time pressure due to proactive behavior. Environments with reduced cognitive control and increased distractions are found to be stimulating for creativity.

In a MTM environment effects of membership change on creativity might exist. The impact of temporal membership of a team on group creativity was examined by Choi and Thompson (2005). In a study
among 45 Master students and 21 managers following an executive education course at a large private university they researched whether membership change improves group creativity. By having two moments of measuring in the experiment, the researchers were able to change membership of participants between the tasks in their study. This provided ability to check whether groups that had changed membership performed differently than others. The groups with membership change showed a greater fluency, meaning that they brought up more unique ideas and had a greater flexibility as they came up with more different kinds of ideas compared to groups without membership change. In a second experiment among 72 undergraduates and 27 managers in an executive education course, the contribution of the changed members and old members was investigated. Again, the groups performed two tasks, but in this experiment the tasks were unrelated. The results indicated that if a newcomer possessed high levels of creativity, the newcomer had a more positive impact on the group creativity compared to those groups that didn’t change membership. Interesting is the finding that even though for the second task the fluency and flexibility of idea generation of the team was higher, the increase was higher for old members on average than for teams that had changed members. This may suggest that creativity as a result of MTM can be increased by membership change during the project. As the roles of employees can be more specific and only needed during specific periods, the come and go of members during project can according to Choi and Thompson (2005) result in increased group creativity. Additionally, adding the fact that newcomers might have different functional backgrounds and knowledge of other resources, the increase in group creativity may probably turnout to be even higher.

1.3 Threats of MTM

A study on MTM in a Romanian IT company found that MTM was related to participants’ role strain. Role strain is defined as a negative impact on a person’s well-being due to conflicting expectations and/or an overload of demands from the projects. That same study also found that participants received less social support from team members when the number of teams they participated in was higher.
These findings of higher inter-role conflict and the reduced social support seem to suggest that MTM is not benefitting an individual’s well-being (Pluut, Curseu, & Flestea, 2014). Cummings and Haas (2012) mentioned that an increase in demands on MT members’ attention increases feelings of having too much to do and too little time to do it. That is, MT members experience time-pressure, which as illustrated in other research, is mostly negatively related to people’s creativity (Amabile, et al., 2002). A diary study by Amabile et al. (2002) found that individuals might perceive they are more creative under time pressure, however, most of the time their actual creativity was lower experiencing time pressure. The only situations in which high time pressure was related to increased creativity was when there was a sense of focus (i.e. employees were able to work on a task for a significant portion of the day) and the time pressure had to be perceived meaningful (i.e., feeling the job had to be finished and get the sense of being on a mission). Thus it seems important that employees need to protect themselves and their work from disturbances and interruptions (Amabile, et al., 2002). Previous research suggests that people tend to work longer to finish the tasks under time pressure, but are likely to be less creative because they base their actions more on routines (Amabile, 1998). Because MTM may increase perceptions of time pressure (Cummings & Haas, 2012), it is important for members to be able to isolate and focus on a single project for a longer period of time in order to enable creativity.

So, as proposed by O’Leary et al (2011), even though MTM can increase productivity by not having to wait for other people’s input in order to proceed their activities, the possibility of experienced time pressure might result in less creative outcomes (Amabile, et al., 2002).

When the number of team memberships increases and becomes too large, it becomes hard (or impossible) for individuals to focus on their respective tasks (i.e. increase of fragmented attention). When people are part of different projects, they become more easily distracted during work (Bertolotti, Mattarelli, Vignoli, & Macri, 2015) and distractions are likely to hamper creativity (Amabile, et al., 2002).
Being member of different project teams may also imply that people have different team/project leaders to work with. The different demands of the several leaders can also become too high (Pluut, Curseu, & Flestea, 2014). Every project leader will prioritize their own project and might not take the other tasks of a member into account, which means the demands of the MTM can become too overwhelming for members and result in diminished performance (Pluut, Curseu, & Flestea, 2014). Additionally, the quality of the leader-member exchange may decrease, resulting in a decrease of performance. It is possible that team members have multiple leader-member exchange relationships which can be a stressful and dissatisfactory experience (Alfaro, 2009).

Mortensen (2014) investigated whether MTM could be associated with membership divergence as the time allocated to a team declines. The 378 respondents of the research were part of 38 teams and worked for a software development company. Membership divergence means that team members do not have a shared perception of who is on the team and who is not. The results suggested that MTM related to reduced time allocated to the focal team. This again was proven to be related to higher model membership divergence, which had a negative influence on the transactive memory and thereby the performance of the team. Transactive memory is the understanding of the team’s knowledge to efficiently and effectively manage the best practices to increase performance and is characterized by knowledge specialization, coordination and credibility (Mortensen, 2014). This implies that even though the time spent on each team becomes less, acknowledging the role of each member is important for a good performing team, especially in a MTM environment.

Besides the roles of employees getting smaller, the membership of teams might get shorter. It seems possible that employees with certain functional background are part of a team only for a specific period of time in which they are of use for the team. Especially within a MTM environment where the time spent on each team is reduced as proposed by Mortensen (2014), this could be an issue. For example, a
newcomer with specific knowledge who only acts as an advisor for a smaller period of time within the team might not experience any decision power for the project even though he is an expert on the subject. Chen (2005) examined the performance of a newcomer within a team and the development of this newcomer's performance. Chen's sample consisted out of 390 knowledge workers of 104 teams within three companies. The performance of the newcomer was measured four times with 21 day intervals. Each team in his research had one newcomer. The newcomers showed only improvement of their performance over time if they entered an already effective team. If a newcomer was empowered by the leader (i.e., provided with challenging work, the team was informed about the newcomer’s competences and skills) team performance would increase. However, if at the second measure moment the empowerment was low, the performance reduced and the willingness to quit the job increased. This is a threat of MTM where employees might be added as newcomers to existing teams.

1.4 Creativity in a MTM environment

In this last part of the introduction the creativity model by Nijstad et al. (2010) is introduced. This model provides a basis for developing hypotheses for new MTM research.

Nijstad and colleagues (2010) developed a model that argues that individual creativity and team creativity (Rietzschel, De Dreu, & Nijstad, 2009) can be reached in two different ways. The dual pathway of creativity as they call this model, is a function of cognitive flexibility and cognitive persistence. In their experiments and meta-analysis, they observed the ability of people to come up with original and appropriate ideas. In their research, flexibility is defined as the use of tapping into many different categories to come up with original and appropriate ideas. On the other hand, persistence is defined as having lots of ideas within a few content categories. Their results suggest that both approaches generated original and feasible ideas. When applying these approaches to a MTM organized work strategy it seems to provide an interesting paradox. On the one hand, being a member of multiple teams
gives members the ability to tap into more knowledge pools and increasing their cognitive flexibility which is likely to increase their creativity. On the other hand, switching between roles, tasks, and teams may also hinder members to focus and decrease their cognitive persistence, which may decrease their creativity.

The assumption that relationship between MTM and creativity is an inverted U-shape, can be made based on the model of Nijstad et al. (2010). If we assume that flexibility is positively related to higher MTM and the persistence is negatively related to increasing MTM, these contradicting conflicts could create a curvilinear relationship for total creativity. Chan (2014) found the existence of this curve in her research for individual innovative performance, which is closely linked to creativity, so the assumption that this curve exists for creativity seems reasonable.

2 Theoretical framework

As mentioned in the introduction creativity can be driven by cognitive flexibility and cognitive persistence (Nijstad, De Dreu, Rietzschel, & Baas, 2010). A multi team environment can alter the ability to be either flexible or persistent. It seems therefore that if MTM is low, individual team members have more time to focus and thus to be cognitive persistent in order to develop original and appropriate ideas. This ability may decrease as the amount of team memberships of an individual increases. For flexibility driven creativity a relationship in the opposite direction can be imagined. If an individual becomes part of more teams, she/he has more content categories to combine. As proposed by O’Leary and colleagues (2011) the environments where MTM is used, the functional backgrounds of team members are often diverse. This gives team members the ability to learn from each other’s knowledge fields and thereby stimulate their own cognitive flexibility. For that reason, the dual pathway to creativity by Nijstad et al. (2010) is used to define the direction of the proposed hypotheses. The dual pathway model of Nijstad et al. (2010) describes cognitive persistence and flexibility as two ways to
reach creativity as discussed in previously. It is expected that persistence driven creativity is possible in low MTM environments and decreases as MTM increases. Flexibility driven creativity, is expected to increase when MTM increases. For hypotheses that describe the influence on the relationship between MTM and creativity this logic will be used to predict the relationship.

The first hypotheses will be used to research the direct relationship between MTM and creativity. In previous research, Chan (2014) found that the relationship between individual innovative performance and MTM follows an inverted U-shape. An inverted U-shape means that the relationship between MTM and innovative performance is positive at a decreasing rate, and eventually turns negative. This means that a moderate amount of MTM is related to the highest individual innovative performance. Observing the similarity this has with creativity, it is likely that this relationship is similar. High MTM for that reason opposes a threat to the individual creativity.

Hypothesis 1a: The relationship between the number of multi team memberships that an individual has and individual creativity is curvilinear (inverted U-shape). The positive relationship increases at a decreasing rate and eventually turns negative (Figure 1).

For the effect of team MTM on team creativity it is expected that a similar inverted U-shape relationship exists. If members are part of multiple teams, they cannot focus solely on the focal team’s goal and could thereby be hindered in their cognitive persistence (Nijstad, De Dreu, Rietzschel, & Baas, 2010). The increase in memberships of other teams will result in higher flexibility, due to learning from more functional diverse team members (O'Leary, Mortensen, & Woolley, 2011), and thereby likely increase the team creativity. However, if the amount of teams gets too high it is expected that the increased ability for flexibility driven creativity might start to decrease due to too diverse team contexts and too diverse knowledge. That high levels of MTM relate to negative effects on team performance was measured by Bertolotti et al. (2015). They found that the relationship between MTM and team
performance followed an inverted U-shape, in contrast to the findings of Cummings & Haas (2012) as they found only a positive relationship between MTM and team performance. Bertolotti et al. explain this difference as a result of the higher team MTM values they measured compared Cummings & Haas. The maximum level of MTM Cummings & Haas measured was lower than the inflection point of Bertolotti et al.; the amount of MTM at their inflection point is around 9 team memberships. This number of team memberships is the average number of MTM each member of the team has. Bertolotti et al. state in their research that they expect values for MTM of 9 or more to happen more in the future as innovative contexts are characterized by increasing levels of MTM (Cummings & Haas, 2012; Bertolotti, Mattarelli, Vignoli, & Macrì, 2015).

For the relationship with team creativity it is expected that there will be a similar U-shape, as the demands of the different teams get too high the employees will experience difficulties in allocating time to each team. If the amount of MTM is high, it is expected that there will be little to none persistence driven creativity.

Hypothesis 1b: The relationship between the number of multi team memberships that a team has and the team creativity is curvilinear. The positive relationship increases at a decreasing rate and eventually turns negative (Figure 2).

Because these direct links have been proposed for productivity (O’Leary, Mortensen, & Woolley, 2011) and proven for team performance (Bertolotti, Mattarelli, Vignoli, & Macrì, 2015) and individual innovative performance (Chan, 2014), this research could add valuable knowledge by investigating the relationship of MTM and creativity. As Bertolotti et al. (2015) expected individuals and therefore teams to have higher MTM in the future than they do have now, knowledge regarding multiple team memberships will only become more valuable. Adding two concepts to this research will help creating an even higher value. For MTM environments to exist there have to be teams and team members.
Teams can be found in totally different compositions (i.e. functional diversity, geographical dispersion) which can help or block team creativity (team heterogeneity). In addition to that, the creative outcome of the individual team members can be facilitated or hindered as well, because a member can experience a MTM setting (job characteristics) either as demanding or promising (i.e. by experiencing autonomy or time pressure). To research how MTM and creativity relate in an effective manner it is proposed to focus on specific project teams composed of members who are part of multiple teams. This provides the ability to gain knowledge on how the MTM and creativity relationship connects to individual perceptions and team heterogeneity. In the upcoming paragraphs factors of a perception of job characteristics that could relate to creativity are hypothesized. Because Cummings & Haas (2012) noted that members of multiple teams experience that they have too much to do, in too little time, the influence of individual MTM and the factors that could increase creativity also could harm/increase an individual’s energy levels, the relationships surrounding MTM and vigor are hypothesized after that. The final factors that will be proposed for research are constructs about team heterogeneity that are expected to relate to MTM and creativity.

2.1 Perception of job characteristics and individual creativity

The perceptions of an individual about his/her membership of a specific project team can highly influence the individual’s input and affective state. For example, individuals that experience a lot of time pressure can disable them to provide creative input (Amabile, et al., 2002). However, one member can perceive high time pressure by having large roles in two teams, whereas another individual could not perceive any time pressure having only small roles in many teams. Knowing how an individual perceives his/her multiple memberships could explain why an individual can be more or less creative. Time pressure, job autonomy and perceived need for creativity are all known to relate to individual creative outcomes in single team settings. Therefore, the relationship between MTM and creativity can be altered by the individual’s perception of these factors.
2.1.1 Job Autonomy

In order to be creative, individuals need to be autonomous and have the opportunity to decide themselves what the priorities are (Amabile, Hadley, & Kramer, 2002). The model by Ford (1996) also describes freedom as a tool to stimulate creativity. If the strategic goal and vision are clear, freedom to find the way towards this goal will increase creativity. The study by Madjar and Shalley (2008) also found that if the goals are clear, having discretion to switch between tasks can lead to higher creativity. This freedom can be described as job autonomy and has been measured several times before in individual and team research (Morgeson, Delaney-Klinger, & Hemmingway, 2005). Morgeson et al. (2005) defined job autonomy as the extent to which an employee has the freedom and independency to schedule work, choose methods and make decisions. In the context of MTM it seems likely that job autonomy is related to higher creativity as well. The possibility to change from context will give the information time to incubate in the employee’s mind (Madjar & Shalley, 2008). As this change in context is facilitated by MTM, creativity will possibly increase. However, this is only possible if the employee has job autonomy.

For example, if a person has only two pre-set days that he/she can work on a specific project and the other part of the week he/she has another project to work on, the employee still cannot benefit from his/her MTM to let the ideas incubate. However, when an employee can schedule his/her whole schedule according to its own wishes, he/she can let a specific task rest for just a few hours, giving the information time to incubate and to be more creative. Furthermore, the autonomy of an employee to schedule its own time might provide the possibility to initiate some individual idea generation before the collective ideation. As found by Girotra et al. (2010) this could increase the quality of the ideas. This makes sense if a translation is made to the dual pathway model of Nijstad et al. (2010) because this gives an employee the opportunity to be creative in a persistence driven way. It is expected that in a low MTM environment job autonomy will not make employees more persistent because they have only a few teams to focus on. Furthermore, it is expected that there is little to none influence of job autonomy
on cognitive flexibility. However, because job autonomy might give an employee the ability to be persistence in a higher MTM environment by having the discretion to switch tasks (Madjar & Shalley, 2008), it is proposed that a high score on job autonomy will result in higher creativity in a high MTM environment.

Hypothesis 2: *Job autonomy will moderate the inverted U-shaped relation between multiple team membership and individual creativity so that:*

1. *neither high nor low job autonomy will exhibit a significant effect on individual creativity in response to low multiple team membership;*
2. *individuals with high job autonomy will exhibit higher individual creativity in response to high multiple team membership than those who score low on job autonomy.*

2.1.2 Perceived need for creativity

Research has found that if creativity is perceived as a need for the job, the engagement in the collective creative process increases as Gilson & Shalley (2004) cite from Speller and Schumacher (1975). Task interdependence increases the engagement in this process as well (Gilson & Shalley, 2004). For those reasons, it is hypothesized that a high score on perceived need for creativity will relate to higher individual creativity in a low MTM environment. With MTM, the perception of needed creativity can vary among the different teams and result in different outcomes of innovative performance between the teams. An individual that has a perceived need for creativity might be more persistent in the idea generation even though he/she has multiple team memberships. This persistency can pay off in more creative ideas (Nijstad, De Dreu, Rietzschel, & Baas, 2010). If this need for creativity is not perceived, the use of MTM might have a weakened influence on individual creativity. But if they do they perceive a large need for creativity, individuals might show an even larger increase in creative performance if they are part of multiple teams. This can be due to the even more extended use of different experiences and
knowledge sources, as they feel the need to come up with innovative ideas even more. So, it is proposed that a high perceived need for creativity will result in higher individual creativity in a high MTM environment. If an employee is part of multiple teams and perceives need for creativity, the flexibility and persistency of the dual pathway to creativity model might add up and produce very creative outputs (Nijstad, De Dreu, Rietzschel, & Baas, 2010). This might change the mindset of employees that are part of many teams to be more motivated to actively participate in “yet another meeting”.

Hypothesis 3: Perceived need for creativity will moderate the inverted U-shaped relation between multiple team membership so that:

a. individuals with high perceived need for creativity will score higher on individual creativity in response to low multiple team membership than those who score low on perceived need for creativity;

b. individuals with high perceived need for creativity will score higher on individual creativity in response to high multiple team membership than those who score low on perceived need for creativity.

2.1.3 Time-pressure

Cummings and Haas (2012) noted that employees in a high MTM setting experienced increased feelings of having too much to do in too little time. O’Leary et al. (2011) cite sources as evidence to argue that individuals under time pressure work more efficient. However, in contrast to what might be true for performance (i.e. increased efficiency might result in increased performance (O’Leary, Mortensen, & Woolley, 2011)), creativity might be killed by time pressure. Amabile (1998) found that individuals that experience time pressure might fall into routines and thereby preventing themselves to be creative. Ford (1996) also stated that resources, what can be time, are needed to be creative. So if time gets limited, creativity might be slowed down as well. Looking at the dual pathway to creativity model by
Nijstad et al. (2010), the persistence of an individual might weaken and a decision to go after an idea can be made too soon.

In contrast to this, time pressure can also be a stimulator as Ohly and Fritz (2010) found that due to the perceived challenge, employees in a R&D department were more creative under high levels of time pressure due to proactive behavior. This environment with reduced cognitive control and increased distractions are good for flexibility driven creativity. This increase in creativity due to time pressure is likely explained by flexibility driven creativity (Nijstad, De Dreu, Rietzschel, & Baas, 2010). It is argued that MTM leads to an increase in time pressure. As MTM likely facilitates the flexibility driven creativity and time pressure creates an environment where flexibility driven idea generation is facilitated as well, increased time pressure will result in increased creativity.

Hypothesis 4: Time pressure will mediate the positive relationship between individual MTM and individual creativity, such that MTM is related to increased time pressure, and increased time pressure will be positively associated with individual creativity.

The hypotheses regarding the perceptions of the individual surrounding MTM and individual creativity are included in the model found in Figure 1.

Figure 1 Hypothesized relations regarding individual MTM and individual creativity
2.2 Vigor & Empowering leadership

Cummings and Haas (2012) noted that employees in a high MTM setting experienced increased feelings of having too much to do in too little time. Besides the negative effect this has on creativity (Amabile, et al., 2002), high individual MTM for that reason imposes other threats to an individual energy levels as well. Pluut et al. (2014) found that participants receive less social support if the number of teams they participate in is higher. Schaufeli et al. (2009) found in their longitudinal study that high social support is directly related to increased vigor (i.e. possessing high energy levels and elasticity, willingness to invest effort in the job, persistence to face obstacles and the ability to stay refreshed (Maslach, Schaufeli, & Leiter, 2001)). This suggests that MTM could harm an individual’s well-being. On the assumption that a member’s perceptions can influence his/her affective state in a MTM environment, it is proposed to add an additional outcome variable for individual MTM. It is valuable to not only research how the perceptions of the member relate to his/her creativity in MTM environments, but also how the perceptions influence the individual’s energy levels. It is expected that individual MTM for before mentioned reasons is negatively related to vigor.

Hypothesis 5: Individual MTM is negatively related to vigor.

It is proposed to research the relationships in the ‘perceived job characteristics’ model (Figure 1) to gain knowledge about the relationship between an individual’s perceptions and his/her outcomes.

2.2.1 Time Pressure

Time pressure and work overload are seen as job demands (Schaufeli & Bakker, 2004). These job demands can be countered by high job resources as job autonomy (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007). Schaufeli and Bakker (2004) found in their research that high scores on job demands do relate to burnouts, but not directly to decreased engagement. Vigor is one of the aspects of engagement as mentioned in the beginning of the chapter. Engagement mediates the relationship
between burnouts and health problems. Schaufeli and Bakker (2004) found a relationship between vigor and health problems, meaning there exists an indirect negative link between vigor and time pressure. Because Cummings & Haas (2012) remarked that individuals in increased MTM settings did experience they had too less time to complete their tasks, it is assumed that there are increased levels of time pressure in a high MTM environment. The increased time pressure will result in high job demands, which due to mentioned indirect effect, will have a negative impact on vigor. For that reason, it is proposed that increased MTM relates positively to time pressure and negatively to vigor.

Hypothesis 6: Time pressure will mediate the negative relationship between MTM and vigor, such that MTM is related to increased time pressure, and increased time pressure will be negatively associated with vigor.

2.2.2 Job Autonomy

Besides the moderating effect of job autonomy on individual creativity, it might impact the relationship between individual MTM and vigor as well. Bakker et al. (2007) found among 805 Finish teachers that job control and vigor show a significant positive relationship. In their study they note to found job control and job autonomy as the same constructs. In their study, job control/autonomy is said to be one of the six major job resources. Besides that, vigor is part of work engagement together with dedication and absorption. In their discussion they point out that especially when the job demands are high (i.e. stressful situations), job resources are highly important for the work engagement. Similar to these findings, Schaufeli et al. (2009) discovered that high job resources have a positive influence on work engagement over time as well. More specifically, they found that increasing job demands (e.g. work overload due to MTM) and decreasing job resources (e.g. autonomy) relate to higher future burnout scores. It is proposed that individuals that act in increased MTM environments experience high job
demands as well. This is why it is proposed that job autonomy moderates the relationship between individual MTM and vigor.

Hypothesis 7: The negative relationship of individual MTM and vigor is moderated by job autonomy in a way that, if job autonomy increases, the negative association between vigor becomes less negative.

2.2.3 Empowering leadership

MTM environments could need a different leadership style as well. As pointed out, perceived job autonomy can in a MTM setting be of great importance for the creativity and vigor of an individual. A leadership style which aims to achieve this is empowering leadership. As defined by Arnold et al. (2000), empowering leadership consists of five dimensions. These are leading by example, informing, participative decision-making, coaching, and showing concern. The research of Xue et al. (2011) notes that empowering leadership is related to increased job autonomy. They also state that job autonomy is essential for voluntary knowledge sharing. Tapping into new knowledge pools is one of the areas where one can really benefit from MTM. For those reasons, it is expected that higher scores for empowering leadership will relate to higher job autonomy in a MTM environment, which again relates to increases in vigor and creativity.

Hypothesis 8: Empowering leadership will be positively related to job autonomy in a MTM environment.

The hypotheses regarding the perceptions of the individual surrounding MTM and vigor are included in the model found in Figure 2.
2.3 Team heterogeneity

By focusing on specific teams, it is possible to test the relationship between team MTM and team creativity. Comparable to individual creativity in a MTM environment where the attributes of the member are important, at the team-level attributes of the team can alter the relationship between team MTM and team creativity. A lot of research has been done on how team creativity is influenced by team heterogeneity, in all types of forms (Cummings & Haas, 2012; Mannix & Neale, 2005; Richter, Hirst, Van Knippenberg, & Baer, 2012; Choi & Thompson, 2005). As proposed previously, MTM utilizes the increase in cognitive flexibility, which is found to be beneficial to creativity (Nijstad, De Dreu, Rietzschel, & Baas, 2010). Key to this assumption is that MTM offers the possibility to tap into other knowledge pools and work with people with different perspectives. For this reason, it is valuable to check whether heterogeneity of a team is needed to achieve the full potential of a MTM environment. To validate the relationships in a MTM context, it is proposed to research the “team heterogeneity” model (Figure 2).

2.3.1 Geographical dispersion

Large organizations often use MTM. But within these large organizations, the dispersion of the employees is often higher as well. Cummings and Haas (2012) indicated that if members participated in more teams, the performance would be higher and the same is expected for team creativity. However geographical dispersion might hamper team creativity. Geographical dispersion influences the coordination and communication, even when the differences of location are as small as not being in the same room. Cummings and Haas (2012) found in a multinational company that adding valuable members from a different location to a team did not increase the performance, unless they devoted the majority of their time to the project. However, geographical dispersion can hinder team creativity because it reduces teamwork (i.e. feeling some processes could better be performed individually) and it enlarges the differences between the members (due to strong subgroups isolated participants are not heard) (Chamakiotis, Dekoninck, & Panteli, 2013). This research, however, notes that subgroups within
the team can diminish the negative effect on creativity, due to larger comfort in collaborating. In the research they note this type of subgroups was based on common characteristics and location. Taking into consideration that Richter and colleagues (2012) found that knowing the distribution of specific knowledge can enhance creativity, the negative effect geographical dispersion could be diminished.

As the performance of an individual is higher if he/she has the possibility to focus most of his time on a certain project (persistence), an increasing number of projects will likely result in lower performance.

For geographical dispersion to work, individuals seem to have the ability to tap into their persistent creativity (Nijstad, De Dreu, Rietzschel, & Baas, 2010). In a low MTM environment, team creativity could benefit from geographical dispersion. However, as MTM rises, this positive effect is likely to diminish and will increase the negative effect of geographical dispersion. In other words:

Hypothesis 9: Geographical dispersion will moderate the inverted U-shaped relation between multiple team membership and team creativity so that:

a. teams with high geographical dispersion will score higher on team creativity in response to low multiple team membership than those who score low on geographical dispersion;

b. teams with high geographical dispersions will score lower on team creativity in response to high multiple team membership than those who score low on geographical dispersion.

The organization where this study is conducted has started to roll out Activity Based Working. An activity based working environment is in literature referred to as a flex office (De Been & Beijer, 2014). A flex office is defined as a combination of open and half open office spaces and based on transparency. Within the office there are a few back-up areas for focused individual work, meetings and phone calls. In this type of offices there are less working stations than employees, which means that employees have to leave their desks clear when they leave for longer than half an hour (rule of company that supported in this research). These offices often have lockers for employees to leave their laptop, notes and
documents, so they do not have to take all their belongings along with them to meetings/home when they leave. In a MTM setting, having the ability to work where you want can be highly beneficial. For example, an employee can work in the same office space as his colleagues without having to make reservations upfront. This can lower the occurrence of subgroups which is negatively for the creativity as found by Chamakiotis (2013). Due to the indirect effect it is assumed that teams in an activity based working environment overall score lower on geographical dispersion, which moderates the team MTM – creativity relationship.

Hypothesis 9c: Activity Based Working is negatively related to geographical dispersion in a way that if employees are able to work in an Activity Based Working environment, the team will score lower on geographical dispersion.

2.3.2 Functional diversity

Functional diversity, defined as the difference in functional areas where employees spend the greater part of their career, within a team can increase creativity because people need to think outside their own knowledge field (Mannix & Neale, 2005; Bunderson & Sutcliffe, 2002). The diversity from which a team can leverage the most is functional diversity. In the context of MTM this often happens as the functional backgrounds are likely to differ a lot (Kurtzberg, 2005). Richter et al. (2012) found that knowing who knows what within the team is beneficial to team creativity. In the context of the dual pathway to creativity model of Nijstad et al. (2010) this can be related to flexibility driven creativity. Knowing who to approach in a functional diverse team will increase the flexibility and offer the members to come up with ideas from more content categories. As mentioned before, MTM is likely to relate to more functional diverse teams, this in return is likely to result in higher creativity. For that reason, it is proposed that the relationship of MTM on team creativity is mediated by functional diversity.
Hypothesis 10a: *Functional diversity will mediate the inverted U-shape relationship between MTM and team creativity, such that MTM is related to increased functional diversity, and increased functional diversity will be positively associated with team creativity.*

A strong promotion focus of a team increases the team creativity (Sacramento, Fay, & West, 2013) and makes employees think about a problem in different perspectives (Henker, Sonnentag, & Unger, 2014). Hoever et al. (2012) proved that perspective taking is key to make the creativity leverage from diversity. In the research of Baas et al. (2013) it is found that openness to experience is one of the traits that are related to flexibility driven creativity. A promotion focus seems for this reason related to flexibility driven creativity. As mentioned before, diversity is likely common in MTM and this is an environment in which it is proposed that flexibility driven creativity can thrive. For that reason, it is assumed that functional diverse teams that have on average more members with a strong promotion focus will have higher team creativity.

Hypothesis 10b: *The positive relationship of functional diversity and team creativity is moderated by promotion focus of a team in a way that, if the promotion focus of the team increases, the team creativity increases as well.*

### 2.3.3 Membership similarity

In previous MTM research, membership similarity has not been investigated and for researches prior to the MTM research this was not relevant. Membership similarity has been defined as the resemblance of other teams the members of the focal team are part of (i.e. in how many teams do individuals work together with the same colleagues). In a MTM context, membership similarity seems relevant as there are several studies to which this can be related. For example, Richter and colleagues (2012) have found that creative self-efficacy influences the creativity the most if an employee knows who possesses which information within a functional diverse team. The know-how of who knows what is possibly part of why
communication is so important within teams. When team members know each other from other project groups, this know-how is likely more apparent. Research by Chamakiotis et al. (2013) found that subgroups (i.e. members that are located in the same country, attending the same university) within a team can diminish the negative effect of geographical dispersion on creativity. Being part of several teams with a few colleagues might result in such a subgroup, and for that reason have an influence on the creativity of the team. Referring to the work of Nijstad et al (2010), it could be that multiple people on the team have the same content categories in a specific project, that if during a meeting a reference is made to a certain application in another team, than the discussion could start easier when multiple people have more in-depth knowledge. Another reason why membership similarity could have an influence on the relationship between MTM and team creativity is that Choi and Thompson (2005) have found that newcomers influence the creative outcomes of a team. If people share the membership across several teams, the newcomer effect might occur with the employees added to this “subgroup”. The research of Choi and Thompson showed that if a newcomer possesses high levels of creativity he/she had a positive impact on group creativity. The interesting fact is that teams where a newcomer had been added to the group, the creativity of the “old” members rose. Chen (2005) researched the performance of a newcomer within a team and the development of this newcomer’s performance. The newcomers showed faster improvement of their performance when they became part of a more effective team. However, when a newcomer is not empowered by the leader, their performance will be less than the initial value and the willingness to quit the job will be increased. Within a MTM environment where the roles, as proposed by Mortensen (2014), get smaller, this can cause an effect on the creativity. A newcomer with specific knowledge who only acts as an advisor for a smaller period of time within the team might not experience any decision power for the project. This can result in lower performance and creativity.
In a low MTM environment high membership similarity might relate to higher team creativity, especially looking at the positive effect it has in geographical dispersed team environments. However, in a high MTM environment, high membership similarity will reduce the positive effect of cognitive flexibility. There will be no sources of new knowledge and this will diminish the expected positive effects of an MTM environment, and might likely even result in a larger negative effect of the coordination efforts. For that reason, it is expected that high membership similarity in high multiple team membership environments will relate to lower team creativity.

Hypothesis 11: *Membership similarity will moderate the inverted U-shaped relationship between multiple team membership and team creativity so that:*

a. teams with higher team similarity will score higher on team creativity in response to low multiple team membership than those who score low on team similarity;

b. teams with higher team similarity will score lower on team creativity in response to high multiple team membership than those who score low team similarity.

In Figure 3 the team heterogeneity model can be found, which shows the influence of MTM on team creativity.

*Figure 3 Hypothesized relationships regarding MTM and team creativity*
3 Data and Methods

A quantitative study seems the most appropriate approach to get useful insights. As earlier studies regarding creativity in a MTM environment mainly did theoretical thinking and interviews to provide propositions, this study should aim to validate the concepts with empirical data. In order to accomplish these objectives sufficient teams should be used for input. A criterion for every employee and his/her team that responds in the survey is that he/she is part of multiple teams during the same period.

3.1 Sample

In order to get a large sample size, a collaboration with a large multinational company that is leading in inventing and developing lithography systems for the semiconductor industry was set up. The company employs more than 5000 R&D workers and their corporate strategy states they need creative people that can act in multinational and multidisciplinary teams (Company, 2015).

The Development & Engineering department of this firm consists out of over 3000 employees. In this department the employees work often in project teams and most of the time on more than one during the same period. The large Development & Engineering department splits into over 150 smaller departments. A HR representative of the company provided a list of open projects. From this list could be checked to how many projects certain employees were linked. A list with the project teams that had at least one person that participated in multiple teams was created. From this list with projects, Excel randomly selected 50 teams with corresponding 420 team members which were invited for the research. By inviting teams across the whole department, a homogeneous sample could be gained. Sending out a digital survey using Survey Gizmo by e-mail to selected teams, and allowing the
employees to respond for 2 weeks resulted in 194 respondents and 28 teams of which at least 50% of the members responded. After the first week a reminder to increase the response was sent.

The average age of the respondents was 40.10 years (SD=9.34) and they had been with the company for an average of 7.6 years (SD=6.89).

3.2 Measures and reliability

For scales to be considered reliable Cronbach’s alpha of at least 0.7 is recommended (Nunally, 1978). This value is used to assess the reliability of the measurement methods. A list with all the used questions can be found in Appendix 1.

3.2.1 Dependent variables

Individual creativity was measured using a three-item scale. Sample questions are “I have a lot of creative ideas” and “I prefer tasks that enable me to think creatively” and these are measured on a seven-point scale from strongly disagree to strongly agree. The scale was reliable (Cronbach’s alpha of 0.70) in the current survey (Miron, Erez, & Naveh, 2004).

Team creativity was measured using the scale of Kratzer et al. (2010). A sample question of this scale is “How would you rate the newness and originality of the solutions your team finds to problems?” (1= not new, to 7= very new). The team creativity score was calculated by summing the points of the three items together. The reliability was acceptable (Cronbach’s alpha of 0.87).

Vigor was measured with the 6 items from the UWES scale of Schaufeli & Bakker (2003). This scale contains questions like “At my work, I feel bursting with energy” and “At my job, I am very resilient, mentally”. The seven-point scale indicates how often the situations occur, from 1= never to 7= every day. The Cronbach’s alpha was equal to 0.79.
3.2.2 Independent variables

In this study, members were invited for being a member of specific project team (i.e. the focal team). Because the people were invited per project team the scores needed for the hypotheses on team level can be measured. Respondents were asked to indicate the amount of teams he/she is part of for individual MTM. For team level MTM the average amount of reported MTMs for the focal team was used. (Bertolotti, Mattarelli, Vignoli, & Macrì, 2015; Chan, 2014).

A proven way to measure geographical dispersion is the method of Cummings and Haas (2012). This measure classifies the groups as follows: same room, same hallway, different hallway, different level, different building, different city, and different country. Team members filled in the score on how far they are separated from each team member. In the study of Cummings & Haas (2012) they tried several geographical distance measurement scales in a MTM environment. This scale proved to show the best results in their survey.

The study of De Been and Beijer (2014) has studied the effect of different office types on satisfaction and support. In their study they describe three types of office spaces, namely individual and shared room office, combi office, and flex office. Based on descriptions and pictures of possible lay-outs similar to what De Been and Beijer (2014) used in their study, employees will be asked to choose which office type describes best their office. Using a three-point scale (1 = individual and shared room office, 2 = combi office, 3 = flex office) the researcher will be able to average the score for the team, enabling to see whether the ability to engage in Activity Based Working (flex office) has an effect on geographical dispersion.

For measuring time pressure the three-item construct tested by Ackerman and Gross (2003) was used. Questions asked in this scale are “I feel a lot of time pressure”, “I often feel hurried” and “I often feel rushed”. The Cronbach’s alpha of this construct is equal to 0.92.
Job autonomy was measured using the scale of Morgenson et al. (2005). Respondents answered whether propositions like “I have significant autonomy in determining how I do my job” and “I have considerable opportunity for independence and freedom in how I do my job” applied to their job. In this study the reliability of this scale (Cronbach’s alpha) was 0.90, which means it is reliable.

To measure empowering leadership the scale developed by Ahearne et al. (2005) was used. Respondents rate from 1 to 5 how much they agree with suggestions like “Our team leader helps us understand how our objectives and goals relate to that of the company” and “Our team leader allows us to do our jobs our way.”. Cronbach’s alpha = 0.91.

To measure functional diversity the functional diversity construct proposed by Bunderson and Sutcliffe (2002) was used. This way of measuring the functional background is based on the total years of experience the team members had in specified categories (sales or marketing, manufacturing, finance or accounting, personell/HR, distribution or warehouse, R&D, equipment management, administrative support and general management. The percentage of years compared to the total was for each category squared. From all the different categories the percentages were summed, this resulted in a number between 0 and 1, whereas 0 means low diversity and 1 represents high functional diversity within the team.

To measure the promotion focus the six-item questionnaire developed and proved by Higgins et al. (2001) was used. The questions in this scale are for example “Compared to most people, are you typically unable to get what you want out of life?” (Reversed) and “I feel like I have made progress toward being successful in my life”. In this study the reliability (Cronbach’s alpha) of this construct was only 0.53. By dropping the question “I have found very few hobbies or activities in my life that capture my interest or motivate me to put effort into them”, this score increased to 0.57. Due to the high validity in previous studies the conclusions based on this variable can still be valid.
To measure the perceived need for creativity, items from the creative requirement scale developed and tested by Unsworth, Wall and Carter (2005) are used. This scale uses five items with a five-point scale to let the respondent assess the degree to which the job demands the employee to be creative. A four-item scale with scores ranging from 1 to 5 contained propositions like “My job requires me to have ideas about changing ways of organizing work” and “My job requires me to have ideas about changing the environment in which I work”. The internal consistency of this construct was 0.82 in this study.

Using the question “With how many members within this project team do you work together for other projects at this moment?”, the employees were asked to indicate with how many colleagues they share teams to measure membership similarity. By giving the respondents the ability to respond with a number, a score between 0 and 1 (by averaging the score for all team members and then dividing it by the team size) was calculated. This number reflects the membership similarity in a way that 0 means there is no membership similarity and 1 means that there is high membership similarity (all team members work together on the same projects) (M=.340, SD=.164).

### 3.2.3 Control variables

To control for the effect sociodemographic differences could cause age, gender (1=male, 2=female), educational level (1= vocational, 2= bachelor, 3= master, 4= PhD) and team size were asked. In addition to that the influence of task interdependence will be checked as Hon & Chan (2012) found this impacts the team creative efficacy. To measure task interdependence the three item scale of Campion et al. (1993) with propositions like “I cannot accomplish my tasks without information or materials from other members of my team” and “Within my team, jobs performed by team members are related to one another” will be used. This construct had a reliability (Cronbach’s alpha) of 0.59.
3.3 Data analysis

In order to test the quadratic and linear effects of multi team membership on creativity hierarchical multiple regression is used. Following the procedures of Bertolotti et al. (2015) and Janssen (2001) first the control variables will be added, followed by the linear MTM variable. The next step will be the quadratic MTM variable and the last steps will add the moderator variables and interaction effects. As Janssen (2001) noted, to facilitate testing of the quadratic and interaction effects, standardized independent variables are used.

4 Results

Because individual data was used to calculate team scores, it was important to statistically verify whether the aggregated individual scores reflect the team-level scores in a reliable way. Each team invited for this study had at least three members. To make sure that calculations on agreement made sense, it was decided to maintain a response threshold 50% for teams. This resulted in 28 teams for the analyses on team level, with at least 2 respondents per team and at most 9 respondents. Calculating the rwg of the team level constructs shows the agreement of among the team members. Following the method described by LeBreton & Senter (2008), the calculated rwg scores of team creativity and task interdependence are respectively .63 and .74. This means that there is a moderate to strong agreement between the team members, and justifies aggregation to the team level.

Table 1 presents means, standard deviations and the correlations amongst the variables. As can be seen in Table 1, individual multi team membership is positively related to individual creativity ($r=.160$, $p<.05$). The mean for MTM in this study is 2.99 ($SD=1.65$) which is lower than the amount of MTMs reported in previous studies. Chan (2014, p. 81) reported a mean of 3.54 ($SD=3.15$) and Bertolotti et al. (2015, p. 918) reported a mean of 8.92 ($SD=2.16$). This shows that although MTM is relevant at the organization, the use of MTM is lower compared to other companies.
**Table 1: Descriptive data and Pearson intercorrelation amongst the variables**

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>Intercorrelation coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Individual Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Vigor</td>
<td>195</td>
<td>.86</td>
<td>6.00</td>
<td>4.82</td>
<td>.75</td>
<td></td>
</tr>
<tr>
<td>2. Individual MTM</td>
<td>195</td>
<td>0</td>
<td>10</td>
<td>2.99</td>
<td>1.66</td>
<td>.06</td>
</tr>
<tr>
<td>3. Individual creativity</td>
<td>195</td>
<td>1.00</td>
<td>7.00</td>
<td>5.28</td>
<td>1.00</td>
<td>.30**</td>
</tr>
<tr>
<td>4. Job autonomy</td>
<td>195</td>
<td>1.00</td>
<td>5.00</td>
<td>3.96</td>
<td>.79</td>
<td>.41**</td>
</tr>
<tr>
<td>5. Empowering leadership</td>
<td>195</td>
<td>1.00</td>
<td>5.00</td>
<td>3.78</td>
<td>.71</td>
<td>.37**</td>
</tr>
<tr>
<td>6. Need for creativity</td>
<td>195</td>
<td>1.00</td>
<td>5.00</td>
<td>3.52</td>
<td>.86</td>
<td>.23**</td>
</tr>
<tr>
<td>7. Time pressure</td>
<td>195</td>
<td>1.00</td>
<td>7.00</td>
<td>4.82</td>
<td>1.32</td>
<td>-.03</td>
</tr>
<tr>
<td>8. Age</td>
<td>191</td>
<td>23</td>
<td>64</td>
<td>40.1</td>
<td>9.34</td>
<td>-.03</td>
</tr>
<tr>
<td>9. Gender</td>
<td>185</td>
<td>1</td>
<td>2</td>
<td>1.1</td>
<td>.32</td>
<td>-.15*</td>
</tr>
<tr>
<td>10. Educational level</td>
<td>195</td>
<td>1</td>
<td>4</td>
<td>2.7</td>
<td>.80</td>
<td>-.02</td>
</tr>
<tr>
<td>11. Tenure</td>
<td>193</td>
<td>0</td>
<td>35</td>
<td>7.60</td>
<td>6.89</td>
<td>-.02</td>
</tr>
<tr>
<td>Team Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Team MTM</td>
<td>28</td>
<td>1.60</td>
<td>5.67</td>
<td>3.065</td>
<td>.92</td>
<td></td>
</tr>
<tr>
<td>2. Team creativity</td>
<td>28</td>
<td>3.60</td>
<td>6.00</td>
<td>4.592</td>
<td>5.93</td>
<td>-.24</td>
</tr>
<tr>
<td>3. Membership similarity</td>
<td>28</td>
<td>.06</td>
<td>.62</td>
<td>.340</td>
<td>.16</td>
<td>-.25</td>
</tr>
<tr>
<td>4. Geographical dispersion</td>
<td>28</td>
<td>1.34</td>
<td>4.36</td>
<td>2.736</td>
<td>.83</td>
<td>.35</td>
</tr>
<tr>
<td>5. Office type</td>
<td>28</td>
<td>1</td>
<td>3</td>
<td>1.781</td>
<td>.48</td>
<td>.29</td>
</tr>
<tr>
<td>6. Promotional focus</td>
<td>28</td>
<td>2.75</td>
<td>3.90</td>
<td>3.236</td>
<td>.25</td>
<td>-.04</td>
</tr>
<tr>
<td>7. Team satisfaction</td>
<td>28</td>
<td>3.33</td>
<td>4.80</td>
<td>4.023</td>
<td>.43</td>
<td>-.54**</td>
</tr>
<tr>
<td>8. General team performance</td>
<td>28</td>
<td>4.04</td>
<td>6.50</td>
<td>5.299</td>
<td>.64</td>
<td>-.26</td>
</tr>
<tr>
<td>9. Task interdependence</td>
<td>28</td>
<td>2.50</td>
<td>4.83</td>
<td>3.919</td>
<td>.47</td>
<td>-.43*</td>
</tr>
<tr>
<td>10. Functional diversity</td>
<td>28</td>
<td>0</td>
<td>0.76</td>
<td>.330</td>
<td>.20</td>
<td>-.33</td>
</tr>
<tr>
<td>11. Team Size</td>
<td>28</td>
<td>3</td>
<td>15</td>
<td>8.5</td>
<td>3.28</td>
<td>-.14</td>
</tr>
</tbody>
</table>

* p < .05 | ** p < .01 | Gender: 1= male; 2=female | Education: 1= Vocational training; 2= Bachelor; 3= Master; 4= PhD
4.1 Individual creativity

In hypothesis 1a it was expected that individual MTM was related to individual creativity by following an inverted U-shape. Table 2 shows the results of a hierarchical regression to investigate the effects of MTM on individual creativity. When the control variables were added in step one, not one of the control variables explained a part of the variance of individual creativity. In step two the linear term of MTM membership was added. This term showed to be significantly related to individual creativity. The squared term of MTM to confirm the curvilinear effect was added in step 3, and did not prove to be significant. For that reason, hypothesis 1a was not supported.

<table>
<thead>
<tr>
<th>Table 2 Results of hierarchical regression analysis: Individual MTM - individual creativity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Gender</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>Step 2: MTM</td>
</tr>
<tr>
<td>MTM squared</td>
</tr>
</tbody>
</table>

* p < .05 | ** p < 0.01

In hypotheses 2a and b it was expected that the curvilinear relationship between MTM and individual creativity was moderated by job autonomy. Table 3 shows the results of a hierarchical regression analysis to see if this relationship exists. As can be seen, there is no support for the moderation of job autonomy on the curvilinear relationship between individual MTM and individual creativity, so hypotheses 2a and b were not supported. However, the high β-values of the interaction terms could imply this hypothesis could be supported in a study by a larger sample. In this regression analysis the VIF scores for the interaction terms added in step 4 and 5 are respectively 16.857 and 41.978 which means that only a small percentage of the sample is used to check whether the β-value is significantly different than 0.
Table 3 Results of hierarchical regression analysis: Interaction effect of job autonomy on MTM and individual creativity

<table>
<thead>
<tr>
<th>Step</th>
<th>β</th>
<th>ΔR²</th>
<th>ΔF</th>
<th>R²</th>
<th>Adj R²</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.116</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.067</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>.065</td>
<td>.032</td>
<td>1.990</td>
<td>.032</td>
<td>.016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2: MTM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTM</td>
<td>.149*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job autonomy (JA)</td>
<td>.207**</td>
<td>.065</td>
<td>6.289**</td>
<td>.097</td>
<td>.071</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3: MTM squared</td>
<td>.082</td>
<td>.002</td>
<td>.338</td>
<td>.099</td>
<td>.068</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 4: MTM x JA</td>
<td>-.360</td>
<td>.008</td>
<td>1.498</td>
<td>.106</td>
<td>.070</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 5: MTM squared x JA</td>
<td>.224</td>
<td>.001</td>
<td>.232</td>
<td>.108</td>
<td>.066</td>
<td>2.608**</td>
<td>1-173</td>
</tr>
</tbody>
</table>

* p < .05 | ** p < .01

In hypothesis 3a and 3b it was expected that a higher perceived need for creativity would increase the individual creativity on high and low levels of MTM. Table 4 shows that the need for creativity is directly related to creativity and that neither of the added interaction terms added in steps 4 and 5 show any significant effect on the relationship of MTM and individual creativity. Hypothesis 3a and 3b were not supported, but the results indicate that a higher need for creativity linearly relates to increased individual creativity.

Table 4 Results of hierarchical regression analysis: Interaction effect of need for creativity on MTM and individual creativity

<table>
<thead>
<tr>
<th>Step</th>
<th>β</th>
<th>ΔR²</th>
<th>ΔF</th>
<th>R²</th>
<th>Adj R²</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.115</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.089</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>.067</td>
<td>.034</td>
<td>2.085</td>
<td>.034</td>
<td>.018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2: MTM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTM</td>
<td>.165*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Need for Creativity (NfC)</td>
<td>.176*</td>
<td>.056</td>
<td>5.474**</td>
<td>.090</td>
<td>.064</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3: MTM squared</td>
<td>.086</td>
<td>.002</td>
<td>.364</td>
<td>.092</td>
<td>.061</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 4: MTM x NfC</td>
<td>-.076</td>
<td>.004</td>
<td>.696</td>
<td>.096</td>
<td>.059</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 5: MTM squared x NfC</td>
<td>-.073</td>
<td>.001</td>
<td>.258</td>
<td>.097</td>
<td>.055</td>
<td>2.333*</td>
<td>1-174</td>
</tr>
</tbody>
</table>

* p < .05 | ** p < .01

In hypothesis 4 it was expected that MTM is positively related to time pressure which itself is positively related to individual creativity. In table 2 it can be seen that MTM has a direct relationship with individual creativity. The results of the regression analysis to check the relationship between MTM and time pressure indicated that MTM and the control variables only explained 1.5% of the variance.
(R²=0.015, F(1,173)=.697, p=.595). It was found that MTM (β=.041, p=.588) was not significantly related to time pressure and for that reason hypothesis 4 was rejected.

### 4.2 Vigor & Job Autonomy

Next to the relations regarding individual creativity the relationship of MTM and vigor was analyzed as well. In hypothesis 5 it was expected that individual MTM was negatively related to vigor. In table 5 the results of the hierarchal regression analysis to check if hypothesis 5 exists are shown. In step 1 the control variables were added. As one can see, the gender of an individual is related to vigor. In this sample, which is skewed due to the high percentage of male workers at the organization, females score on average lower on vigor than male employees do. In step 2 MTM is added. MTM did not have a significant effect on vigor, which means that hypothesis 5 was not supported.

*Table 5 Results of hierarchical regression analysis: Individual MTM - vigor*

<table>
<thead>
<tr>
<th>Step 1: Gender</th>
<th>β</th>
<th>ΔR²</th>
<th>ΔF</th>
<th>R²</th>
<th>Adj R²</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>- .174*</td>
<td>.033</td>
<td>2.042</td>
<td>.033</td>
<td>.016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>.098</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>- .025</td>
<td>.004</td>
<td>.787</td>
<td>.037</td>
<td>.016</td>
<td>1.727</td>
<td>1-178</td>
</tr>
<tr>
<td>Step 2: MTM</td>
<td>.066</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p <.05  | ** p < 0.01

In hypothesis 6 it was expected that increased MTM was positively related to time pressure, which by itself was negatively related to vigor. Because it was found while checking hypothesis 4 that MTM has no direct relationship with time pressure and a mediation analysis (R²=0.033, F(1.541, p=.192) showed that time pressure (β=-.020, p=.793) and vigor are not related, hypothesis 6 was not supported.

In hypothesis 7 it was expected that the negative relationship of individual MTM and vigor was influenced by job autonomy in a way that, when job autonomy increased, the negative relationship of MTM on vigor was weaker. The results of the multiple regression analysis to check this effect are shown
in table 6. Job autonomy is significantly positively related to vigor. The interaction term of MTM and job autonomy is not significantly related to vigor, hypothesis 7 was for that reason not supported.

Table 6 Results of hierarchical regression analysis: Interaction effect of job autonomy on MTM and vigor

<table>
<thead>
<tr>
<th>Step 1: Gender</th>
<th>β</th>
<th>ΔR²</th>
<th>ΔF</th>
<th>R²</th>
<th>Adj R²</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.174*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>-.025</td>
<td>.033</td>
<td>2.042</td>
<td>.033</td>
<td>.017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2: MTM</td>
<td>.043</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Autonomy (JA)</td>
<td>.432**</td>
<td>.183</td>
<td>20.727**</td>
<td>.217</td>
<td>.194</td>
<td>8.117**</td>
<td>1-176</td>
</tr>
</tbody>
</table>

* p < .05 | ** p < .01

In hypothesis 8 it was expected that empowering leadership is related to increased job autonomy. Using a hierarchical regression analysis controlling for age, gender and education to see whether this direct relationship exists provided the results given in table 7. In step 2 empowering leadership was added and this showed a significant positive relationship with job autonomy. Hypothesis 8 was for that reason supported.

Table 7 Results of hierarchical multiple regression analysis: Empowering leadership - job autonomy

<table>
<thead>
<tr>
<th>Step 1: Gender</th>
<th>β</th>
<th>ΔR²</th>
<th>ΔF</th>
<th>R²</th>
<th>Adj R²</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.118</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>-.067</td>
<td>.034</td>
<td>2.085</td>
<td>.034</td>
<td>.018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2: Empowering leadership</td>
<td>.296**</td>
<td>.086</td>
<td>17.367**</td>
<td>.120</td>
<td>.100</td>
<td>6.048**</td>
<td>1-178</td>
</tr>
</tbody>
</table>

* p < .05 | ** p < .01

4.3 Team heterogeneity

All hypothesis regarding team heterogeneity have team creativity as the dependent variable. In hypothesis 1b it was expected that team creativity had an inverted U-shaped relationship with team creativity. In table 8 the results of a hierarchical multiple regression are shown. In step 1 the control variables were added of which neither had a significant effect on team creativity. In step 2 and 3 the
linear and quadratic term of MTM were added. Neither of the terms had a significant effect of team creativity. This means hypothesis 1b was not supported.

Table 8 Results of hierarchical regression analysis: Team MTM - team creativity

<table>
<thead>
<tr>
<th>Step</th>
<th>β</th>
<th>ΔR²</th>
<th>ΔF</th>
<th>R²</th>
<th>Adj R²</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Task interdependence</td>
<td>.276</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team size</td>
<td>-.093</td>
<td>.079</td>
<td>1.072</td>
<td>.079</td>
<td>.005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2: MTM</td>
<td>-.161</td>
<td>.021</td>
<td>.533</td>
<td>.100</td>
<td>-0.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3: MTM squared</td>
<td>.143</td>
<td>.003</td>
<td>.067</td>
<td>.102</td>
<td>-.54</td>
<td>.656</td>
<td>1-23</td>
</tr>
</tbody>
</table>

* p <.05 | ** p < 0.01

Hypothesis 9a and 9b expected that the curvilinear relationship between MTM and team creativity was moderated by geographical dispersions in a way that teams with high geographical dispersion scored higher on team creativity in response to low multiple team membership than those who scored low on geographical dispersion, and teams with high geographical dispersion scored lower on team creativity in response to high multiple team membership than those who score low on geographical dispersion. In table 9 the results of the hierarchical regression analysis to check these hypotheses. Geographical dispersion itself is significantly related to increased team creativity. In the results two high beta scores stand out, namely MTM (β=-1.269, p=.072) and MTM squared (β=.980, p=.135). Both these effects could be statistically significant if the sample is larger, but cannot be checked properly in this sample due to the high multicollinearity. This means that in this sample hypotheses 9a and 9b are not supported.

Table 9 Results of hierarchical regression analysis: Interaction effect of geographical dispersion on MTM and team creativity

<table>
<thead>
<tr>
<th>Step</th>
<th>β</th>
<th>ΔR²</th>
<th>ΔF</th>
<th>R²</th>
<th>Adj R²</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Task interdependence</td>
<td>.276</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team size</td>
<td>-.093</td>
<td>.079</td>
<td>1.072</td>
<td>.079</td>
<td>.005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2: MTM</td>
<td>-.169</td>
<td>1.895</td>
<td>.268</td>
<td>.102</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTM squared</td>
<td>.980</td>
<td>.189</td>
<td>.266</td>
<td>.059</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geographical dispersion (GD)</td>
<td>.589*</td>
<td>.006</td>
<td>.165</td>
<td>.274</td>
<td>.020</td>
<td>1.079</td>
<td>1-20</td>
</tr>
<tr>
<td>Step 3: MTM x GD</td>
<td>-.051</td>
<td>.003</td>
<td>.268</td>
<td>.059</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 4: MTM squared x GD</td>
<td>-.143</td>
<td>.000</td>
<td>.165</td>
<td>.274</td>
<td>.020</td>
<td>1.079</td>
<td>1-20</td>
</tr>
</tbody>
</table>

* p <.05 | ** p < 0.01 | ¹ p=.072 | ² p=.135
In hypothesis 9c it was expected that activity based working would be negatively related to geographical dispersion. Running a hierarchical regression analysis to check the direct effect of the office type on geographical dispersion, controlling for team size and task interdependence explained 17% of the variance (R²=.170, F(1,20)=1.636, p=.207). It was found that the office type (β=.094, p=.635) had no significant relationship with geographical dispersion. Hypothesis 9c is for that reason not supported.

In hypothesis 10a it was expected that increased MTM led to higher functional diversity, which by itself would relate to higher team creativity. Running a first regression analysis to check this relationship controlling for team size and task interdependence (R²=.100, F(1,20)=.886, p=.462) showed that there was no direct significant relationship between and MTM (β=-.161, p=.464) functional diversity. Running a second regression analysis (R²=.117, F(1,20)=1.062, p=.384) to check if an indirect effect through functional diversity could exists showed that functional diversity (β=-.251, p=.381) had no direct effect on team creativity either. Hypothesis 10a is for that reason not supported.

In hypothesis 10b it was expected that the positive relationship between functional diversity and team creativity would be moderated by promotion focus in a way that if functional diversity increases, a higher promotion focus would lead to higher team creativity. The results of the regression analysis to check if this effect exists, can be found in table 10.

<table>
<thead>
<tr>
<th>Step 1: Task interdependence</th>
<th>Step 2: Functional diversity (FD)</th>
<th>Step 3: FD x PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>β</td>
<td>∆R²</td>
<td>F</td>
</tr>
<tr>
<td>Team size</td>
<td>-0.93</td>
<td>1.072</td>
</tr>
<tr>
<td>Step 2: Functional diversity (FD)</td>
<td>-0.259</td>
<td>6.331*</td>
</tr>
<tr>
<td>Promotion focus (PF)</td>
<td>-0.044</td>
<td>0.523</td>
</tr>
<tr>
<td>Step 3: FD x PF</td>
<td>0.575*</td>
<td>2.032</td>
</tr>
</tbody>
</table>

*p < .05 | **p < 0.01
During the analysis to see whether hypothesis 10a it was concluded that functional diversity had no significant relationship with team creativity. The interaction term of functional diversity and promotion focus did have a significant effect as can be seen in table 10. To gain further insight in this interaction the relation was plotted in figure 5. As can be seen, when the promotion focus of a team is low, increased functional diversity relates to lower creativity. A high promotion focus diminishes this negative relationship. Even though hypothesis 10b is not supported because increased promotion focus by itself does not relate to increased team creativity, a promotion focus for a team appears to be important because it can diminish the negative relationship of functional diversity on team creativity.

![Interaction effect of promotion focus on functional diversity and team creativity](image)

Running an additional regression analysis ($R^2=.191$, $F(1,23)=1.354$, $p=.280$) to check whether the relationship between MTM and team creativity was moderated directly by promotion focus showed promising results for future research. Neither MTM nor promotion focus showed a direct relationship with team creativity, however the interaction of these variables showed a trend ($\beta=.354$, $p=.10$). However due to the relative large standard errors it is difficult to verify how this moderation relates to team creativity.
In hypothesis 11a and 11b it was expected that the curvilinear relationship between MTM and team creativity was moderated by membership similarity in a way that teams with high team similarity score higher on team creativity in response to low MTM than teams that score low on team similarity and that teams with higher team similarity will score lower on team creativity in response to high MTM than those who score low on team similarity. In order to test these hypotheses a multiple regression analysis was performed of which the results can be found in table 11. As can be seen not a single coefficient was significant in this regression analysis, for that reason hypotheses 11a and 11b are not supported.

Table 11 Results of hierarchical regression analysis: Interaction effect of membership similarity on the relationship of MTM and team creativity

<table>
<thead>
<tr>
<th>Step</th>
<th>β</th>
<th>ΔR²</th>
<th>ΔF</th>
<th>R²</th>
<th>Adj R²</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task interdependence</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team size</td>
<td>.276</td>
<td>.079</td>
<td>1.072</td>
<td>.079</td>
<td>.005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTM</td>
<td>-.293</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Membership similarity (MS)</td>
<td>.011</td>
<td>.023</td>
<td>.192</td>
<td>.102</td>
<td>-.102</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTM squared</td>
<td>.142</td>
<td>.045</td>
<td>1.119</td>
<td>.148</td>
<td>-.096</td>
<td></td>
<td></td>
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<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTM x MS</td>
<td>-.248</td>
<td>.066</td>
<td>.140</td>
<td>.154</td>
<td>-.142</td>
<td>.519</td>
<td>1-20</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTM squared x MS</td>
<td>-.224</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

* p < .05 | ** p < 0.01

5 Discussion

5.1 Theoretical contributions

The relevance of MTM has been growing in the past few years, with a reported adoption of this new working strategy between 65-95% in previous studies (Mortensen, Woolley, & O'Leary, 2007; Martin & Bal, 2006; de Hoop, 2013). In addition to several quantitative studies aimed to analyze the influence of multiple team membership on performance outcomes, this study set out to find if the creativity of individuals and teams relates to MTM. Next to this, the study aimed to see if a relationship between MTM and a person’s vitality exists. By sending out a questionnaire to teams, 194 responses were obtained and there were 28 teams of which at least 50% of the members responded. The mean level of
MTM was 2.99 (SD=1.66) in this study, which is lower than in previous research. For example, the study of Bertolotti et al. (2015) found a curvilinear relationship between MTM and performance outcomes was found the inflection point was around 9 and measured an average MTM of 8.92 (SD=2.16).

The lower values for individual MTM did showed a positive linear relationship between MTM and an individual’s creativity in contrast to the expected curvilinear relationship. This suggests that being a member of multiple teams enables employees to combine both cognitive persistence and flexibility to reach creativity (Nijstad et al., 2010). Persistence driven creativity is defined as having lots of ideas within a few content categories whereas flexibility driven creativity is defined as the use of (combinations of) many different categories to come up with original and appropriate ideas.

In addition, I found that need for creativity to be positively related to individual creativity, which is in line with previous research (Gilson & Shalley, 2004; Nijstad, De Dreu, Rietzschel, & Baas, 2010). People with a high need for creativity are likely to be more motivated or persistent in the idea generation processes among his/her teams, which results in a higher level of creativity. In addition to need for creativity, job autonomy was also found to facilitate creativity. This finding suggests that job autonomy helps members of multiple teams to focus on and be persistent in all the teams they participate in. Probably because members can switch between activities on their own initiative and therefore can remain cognitive persistent (Sacramento, Fay, & West, 2013). Persistence driven creativity can therefore likely be maintained at higher MTM-levels by giving individuals job autonomy and make them perceive a need for creativity.

Earlier in this study it was proposed that increased levels of MTM could stimulate flexibility driven creativity in addition to persistence driven creativity. This study has found clues for its presence on a team level. A moderation effect of a promotion focus on the relationship between functional diversity and team creativity was found in a way that functional diverse teams with a strong promotion focus are
related to higher creativity than functional diverse teams with a weak promotion focus. A promotion focus is in previous research proposed to be related to flexibility driven creativity because it stimulates to have broad conceptual attention and accessing multiple content categories (Baas, De Dreu, & Nijstad, 2008). That in highly functional diverse teams where team members belong to multiple teams a strong promotion focus is significantly related to higher creativity indicates that in settings where MTM is used, flexibility driven creativity is likely existent and therefore might be increased with a promotion focus. The additional analysis of the direct interaction of MTM and promotion focus on team creativity indicated a trend of a positive interaction. Assumed that this trend truly exists, a high promotion focus would relate to higher scores on team creativity for high MTM compared to low MTM. However, because promotion focus itself had a low reliability and the mediocre significance of the trend signals that this finding should be interpreted with caution. Nevertheless, the finding suggests some support for the assumption that flexibility driven creativity is apparent in teams that use a MTM working strategy. Additional evidence for this can be found in the positive relationship between geographical dispersion and team creativity. In the sample, most team members were located relatively close, but not in the same room or the same hallway. In previous research it is argued that members in different locations can benefit from diverse networks and therefore gain varied information and know-how (Cummings, 2001). I argue this increases the flexibility in idea generation. Combined with the interaction effect that the promotion focus of a team has on creativity these results suggest that flexibility driven creativity is existent when teams use a MTM working strategy.

The final goal of this study was to examine potential threats to an MTM working strategy. Previous research suggested MTM might be related to less social support, and lower levels of vigor (Pluut et al., 2014). However, the results of the current study did not confirm a negative relationship between MTM and vigor. This can be explained by previous research that indicated that quantitative workloads (i.e. challenging job demands) could increase the vigor, by motivating the employees (Lin, Siu, Shi, & Bai,
2009), while individuals indicated that being part of multiple teams made them receive less social support what is related to lower levels of vigor (Schaufeli, Bakker, & Van Rhenen, 2009). These two relationships could counter each other and therefore have no significant effect. So overall, this study found no threats of MTM for individual employees.

It was expected that MTM would negatively relate to vigor and therefore I researched factors that positively related to vigor in previous research. The goal was to find if these factors could reduce the negative effect of MTM on vigor. Even though the proposed relationship did not exist, the findings did provide insights. Similar to previous research, job autonomy was in this study positively related to vigor (Lin, Siu, Shi, & Bai, 2009). This is proposed to be caused because more demanding jobs with added autonomy motivate the employees. These traits can be increased with empowering leadership. In this study a positive relationship between an empowering leadership style and job autonomy was found, similar to what Xue et al. noted (2011).

In addition, I found no support for a negative relationship between time pressure and vigor. Together these findings imply that MTM has no negative consequences for the vitality of individual members. Which means that people will keep similar levels of energy, willingness to invest effort in the job and stay persistent to face challenges in the job even when MTM increases (Maslach, Schaufeli, & Leiter, 2001).

5.2 Managerial implications

This study provides useful insights for managers in companies aimed to stay innovative. By creating an environment that is related to increased creativity managers could stimulate employees to become more creative. Because this study is not longitudinal, it is not possible to predict whether certain interventions do cause increased creativity. This does not mean that shaping an environment that is known to be related to increased creativity will have no significant effects on the creativity of individuals
and teams. To provide managers with guidelines the CIMO-logic is used (Denyer, Tranfield, & Van Aken, 2008). This logic describes a context (C) for which the proposed intervention (I) works. Followed by an explanation of the mechanism (M) it uses and the expected outcome (O). Since the sample of this study was gained from one organization, the context of each CIMO is similar namely, (C) Large organizations where employees work for more than one team simultaneously. In order to prevent repetition, the context will not be repeated for each CIMO unless it is different to the previous stated context.

The first CIMO is relevant for most companies because it draws conclusions on the overall positive effect of individual MTM on creativity which is supported by the results of table 5. (I) Management should increase the number of teams a person is member of to a moderate level, (M) because increased MTM is related to increased individual creativity, (O) which will result in more novel solutions. Previous research indicated a maximum of 9 memberships (c.f., Bertolotti, et al., 2015). Even though a linear positive relationship was found in the current study, the reader should also note that the average number of MT memberships was low in the dataset (Bertolotti, Mattarelli, Vignoli, & Macrì, 2015), therefore I advise to avoid exceeding 9 team memberships to avert (possible) negative effects to creativity from happening.

The findings used in the second CIMO confirm previous research regarding empowering leadership and job autonomy (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Xue, Bradley, & Liang, 2011; Morgeson, Delaney-Klinger, & Hemmingway, 2005; Madjar & Shalley, 2008) for a MTM environment. I advise (I) managers to use the empowering leadership style, (M) because this is likely to increase job autonomy which, (O) is positively related to vigor and creativity. In order to empower an employee, a manager can improve his/her self by developing six characteristics (Gratton & Pearson, 1994). The first characteristic is management style. Empowering leaders are characterized by being open and collaborative to their subordinates regarding management tasks. They try to gain and create
opportunities for employees to participate in decision making. Second, empowering leaders share their power with their team members, such that members receive autonomy of the manager and he/she puts effort in enabling them to work. The next characteristic of an empowering leader is to recognize employee performance and being able to give constructive feedback. The fourth characteristic is interpersonal empathy, which means that a leader that has to have good relationships with every employee so it enables a manager to cope with the emotional side of leading and helps in problem solving and motivating the employees. The fifth aspect is communication. Empowering team leaders have clear communication channels with their team. Finally, empowering leaders develop a clear vision for the team, which helps to create meaningful and inspirational goals for the members. It is advised that companies in which people work in multiple teams, invest in workshops to educate team and project leaders on an empowering leadership style.

For functional diverse teams, lessons are learnt for a MTM working strategy as well. Figure 5 showed that the negative relationship between functional diversity and creativity is moderated by a promotion focus in a way that increased promotion focus will decrease the negative relationship of functional diversity and creativity. The third CIMO logic is therefore related to the promotion focus of a team. (I) Managers of highly functional diverse teams should stimulate the team to adopt a promotion focus, (M) because a promotion focus buffers the negative relationship between functional diversity and team creativity, (O) and will therefore prevent a decrease in team creativity. A group promotion focus can be stimulated by setting a motto or slogan for the team that voices a promotion strategy (e.g. “If there’s a will, there is a way”) (Faddegon, Scheepers, & Ellemers, 2008; Kark & van Dijk, 2007). A motto with a promotion strategy can be proposed by one person the study of Faddegon et al. (2008) found and does not have to be established by the whole team. Additional to this Kark and van Dijk (2007) proposed that a manager can induce his/her values through inspirational and visionary messages to a team. A manager with an enduring promotion focus could therefore stimulate a promotion focus for his/her team.
members. Because a manager is often seen as a representative of a group which embodies the beliefs and identity of the group, his or her behavior can influence the whole group.

The last advice I would like to make for management is based on my own findings and the work of previous research (Bertolotti, Mattarelli, Vignoli, & Macrì, 2015; Chan, 2014; Cummings & Haas, 2012). All research at the moment of writing that is regarding MTM have found that up until a certain level MTM (up to 9 memberships) relates to higher scores on commonly used business outcomes (i.e. performance, innovativeness, creativity). The fifth CIMO is therefore a stimulus for management to adopt this way of working. (C) Organizations that have not adopted MTM or only in a limited manner, (I) are advised to implement or increase the levels of MTM, (M) because being part of multiple teams relates positively to individuals’ creativity, performance and individual innovativeness without decreasing vigor, (O) which means it will result in increased business outcomes without harming the employees.

5.3 Limitations

While this study gives new insights regarding the relationship between MTM and creativity, it has some limitations as well. First, the data were collected in one Dutch company, which means the generalizability of this study’s findings can be limited. For example, the organizational and national culture can have affected the direction and extent of the reported relationships (Gelfand, Leslie, & Keller, 2008). The next limitation is that due to the design of the study I cannot make conclusions regarding the causality of the found effects. The relationships found in this study solely describe the relationship with creativity and not whether they truly cause a change in the creativity of an individual or teams. Future studies can use a longitudinal study design to see whether change in factors result in different outcomes for the dependent variables. Both the dependent variables and the independent variables used for this study are self-reported scales, which might lead to common method variance.
(Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Future studies might want to avoid this by using objective measurement methods.

On the team level of analysis the small sample size has had quite a few negative consequences. The limited sample size proved to be too small to validate the complicated models proposed for this research. The high multicollinearity between the independent variables, squared terms and interactions resulted in high VIF values, which meant that only a small percentage of the sample could be used to check whether the influence of a variable was significant. In future research regarding the interactions and curvilinear effect of team MTM a large sample size is for that reason a necessity. There was not found a significant relationship between functional diversity and creativity. Even though this could be true, I think the construct for functional diversity of Bunderson & Sutcliffe (2002) used in this survey might have limitations for this specific sample. The organization where the data was taken has a lot of specialized R&D workers, and many of the teams that participated were R&D teams. This might have led to homogeneous R&D teams as a score for the functional diversity construct used, however their functional background could still differ in a way that I can imagine might influence the creativity (i.e. mechanical engineering, electrical engineering, industrial engineering etc.). In future research the functional diversity construct could be more specialized to the sample size.

The last limitation I would like to address are the relatively low levels of MTM measured in this study. In my sample the mean level of MTM was lower than in prior research, and that is probably why I found a positive linear relationship instead of the hypothesized curvilinear relationship of MTM on creativity. Because there is no common understanding of average levels of MTM yet, future research might want to address the possibility of measuring high or low levels MTM by hypothesizing for both scenarios.
6 Conclusion

Organizations should continue to implement MTM in their way of working. This study found promising results regarding the positive relationship between MTM and individual members’ creativity. By supplementing to other earlier research with empirical data that using MTM at the right levels increases creativity and other business outcomes, this organizational structure becomes even more encouraging for the future. The introduction of this report started with the relevance of MTM in organizations, as stated the relevance is increasing, and yet in literature there is still so much to learn about in this way of organizing team work.
7 Bibliography


de Hoop, R. (2013, April 12). Multi-team membership (MTM) is a form of work organization in which individuals are members of two or more teams for a given period (O’Leary et al., 2011). Retrieved from Managementsite.nl: https://www.managementsite.nl/multitasken-mindfull-multi-team-membership


8 Appendix 1: Questions

This appendix contains all the questions. It does not reflect the order and categories of the final survey.

Multiple Team Membership (Chan, 2014)

1. What is the total number of simultaneous intra-organizational and inter-organizational project teams that you have been involved in extensively in the past 6 months? ____

Individual creativity (Miron et al., 2004)

2. I have a lot of creative ideas (From 1 – strongly disagree to 7 – strongly agree)
3. I prefer tasks that enable me to think creatively (From 1 – strongly disagree to 7 – strongly agree)
4. I like to do things in an original way (From 1 – strongly disagree to 7 – strongly agree)

Team Creativity (Kratzer et al., 2010)

5. How would you rate the newness and originality of the solutions your team finds to problems? (From 1 – not new to 7 – very new).
6. How would you rate the number of possible solutions your team develops to solve problems? (From 1 – not high to 7 – very high).
7. How would you rate the number of possible solutions your team takes into consideration in order to solve problems? (From 1 – not high to 7 – very high).

Vigor (Schaufeli & Bakker, 2003)

8. At my work, I feel bursting with energy
9. At my job, I feel strong and vigorous
10. When I get up in the morning, I feel like going to work
11. I can continue working for very long periods at a time
12. At my job, I am very resilient, mentally
13. At my work I always persevere, even when things do not go well

<table>
<thead>
<tr>
<th>Never</th>
<th>Almost never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Never</th>
<th>A few times a year or less</th>
<th>Once a month or less</th>
<th>A few times a month</th>
<th>Once a week</th>
<th>A few times a week</th>
<th>Every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>A few times a year or less</td>
<td>A few times a month</td>
<td>Every day</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Geographical Dispersion (Cummings & Haas, 2012)

14. To which extent are you separated from every other member of the team? (1=same room, 2= different room on the same hallway, 3= different hallway, 4= different floor, 5= different building, 6=different city 7= different country)

Activity Based Working (De Been and Beijer, 2014)

15. Which office type is the best description of your office environment?
   (1= Individual and shared room office 2= Combi office 3=Flexible office)

Time Pressure (Ackerman and Gross, 2003)

16. I feel a lot of time pressure. (From 1 – strongly disagree to 7 – strongly agree)
17. I often feel hurried. (From 1 – strongly disagree to 7 – strongly agree)
18. I often feel rushed. (From 1 – strongly disagree to 7 – strongly agree)

Job Autonomy (Morgeson et al., 2005)

19. I have significant autonomy in determining how I do my job. (From 1 – strongly disagree to 5- strongly agree)
20. I can decide on my own how to go about doing my work. (From 1 – strongly disagree to 5- strongly agree)
21. I have considerable opportunity for independence and freedom in how I do my job (From 1 – strongly disagree to 5- strongly agree)
Empowering Leadership (Ahearne et al., 2005)

22. Our team leader helps us understand how our objectives and goals relate to that of the company. (From 1 – strongly disagree to 5- strongly agree)
23. Our team leader helps us understand the importance of our work on the overall effectiveness of the company. (From 1 – strongly disagree to 5- strongly agree)
24. Our team leader often consults us on strategic decisions. (From 1 – strongly disagree to 5- strongly agree)
25. Our team leader believes that we can handle demanding tasks. (From 1 – strongly disagree to 5- strongly agree)
26. Our team leader expresses confidence in our ability to perform at a high level. (From 1 – strongly disagree to 5- strongly agree)
27. Our team leader allows us to do our jobs our way. (From 1 – strongly disagree to 5- strongly agree)
28. Our team leader allows us to make important decisions. (From 1 – strongly disagree to 5- strongly agree)

Functional Diversity (Bunderson & Sutcliffe, 2002)

29. How many years of working experience do you have in each of the following functional areas:
   • ___ Sales or marketing
   • ___ Manufacturing
   • ___ Finance or accounting
   • ___ Personnel/HR
   • ___ Distribution or warehouse
   • ___ R&D
   • ___ Equipment management
   • ___ Administrative support
   • ___ General management

Promotion focus (Higgins et al., 2001)

30. Compared to most people, are you typically unable to get what you want out of life? (reversed, 1= never or seldom, 3= sometimes, 5= very often)
31. How often have you accomplished things that got you ``psyched'' to work even harder? ( 1= never or seldom, 3= sometimes, 5= many times)
32. Do you often do well at different things that you try? ( 1= never or seldom, 3= sometimes, 5= very often)
33. When it comes to achieving things that are important to me, I find that I don't perform as well as I ideally would like to do. (reversed, 1= never or seldom, 3= sometimes, 5= very often true)
34. I feel like I have made progress toward being successful in my life. ( 1= certainly false, 5= certainly true)
35. I have found very few hobbies or activities in my life that capture my interest or motivate me to put effort into them. (reversed, 1 = certainly false, 5 = certainly true)

Perceived need for creativity (Unsworth et al., 2005)

36. My job requires me to have ideas about changing services or facilities for patients and/or visitors
37. My job requires me to have ideas about changing ways of organizing work. (1 = not at all, 5 = a great deal)
38. My job requires me to have ideas about changing work goals and objectives. (1 = not at all, 5 = a great deal)
39. My job requires me to have ideas about work procedures (1 = not at all, 5 = a great deal)
40. My job requires me to have ideas about changing the environment in which I work. (1 = not at all, 5 = a great deal)

Membership similarity

41. With how many members within this project team do you work together for other projects at this moment? ___

Control variables

Task Interdependence (Campion et al., 1993)

42. I cannot accomplish my tasks without information or materials from other members of my team. (From 1 – strongly disagree to 5- strongly agree)
43. Other members of my team depend on me for information or materials needed to perform their tasks. (From 1 – strongly disagree to 5- strongly agree)
44. Within my team, jobs performed by team members are related to one another. (From 1 – strongly disagree to 5- strongly agree)

Education (Shin & Zhou, 2003)

45. What is the highest form of education you’ve completed?
   a. Bachelor’s degree
   b. Master’s degree
   c. PhD

Gender
46. What is your gender? (0=male, 1=female)

**Tenure**

47. For how long have you been with this company? ___

**Age**

48. What is your age? ___