# Shared leadership and team creativity: does task complexity contribute to this

relationship?

Brendan Snoek

S3752771

Department of Psychology, University of Groningen

PSB3E-BT15: Bachelor Thesis

2122\_2a\_16

Supervisor: (prof.) (dr(s).) Roxana Bucur

Second evaluator: (prof.) (dr(s).) First name Last name

In collaboration with: Boudewijn Leertouwer, Christos Zaiferiou, Lars van der Lee and Roeland Fernández Roos.

June 29, 2022

#### Abstract

Shared leadership is an emerging style of leadership, which has been studied a lot recently. There is growing evidence that shared leadership contributes to team creativity. In the current study the team creativity model has been designed, to examine if task complexity moderates

the relationship between shared leadership and team creativity. Using a sample of 131 individuals working in teams in various different industries, we found that the moderation of task complexity on the relationship of shared leadership and team creativity is not significant.

We did however find that shared leadership and task complexity both contribute to team creativity. These findings provide knowledge on the effects that shared leadership and task complexity have on team creativity. This is important for organizations that are looking to increase the creative outcomes of their teams, because this study shows that shared leadership and task complexity can be used to positively increase the creativity of teams.

# Shared leadership and team creativity: does task complexity contribute to this relationship?

In order to achieve success organizations should look to increase creativity within their organization. Employee creativity has been shown to be an important factor to organizational success (Wang & Peng, 2022). Literature suggests that employee creativity contributes to organizational success because employee creativity facilitates the generation of innovative and advantageous outcomes (Oldham & Cummings, 1996). Shared leadership has been shown to be positively related to team creativity and team performance. Shared leadership is furthermore an important driver for team effectiveness (Carson et al., 2007; D'Innocenzo et al., 2016) and has positive effects on a number of team outcomes (Hoch, 2013). Moreover, shared leadership leads to more novel ideas and suitable solutions for complex problems (Klasmaier & Rowold, 2020). And because it has been shown that shared leadership may be a way for organizations to increase their creativity.

Past research has revealed some reasons as to why shared leadership is positively related to team creativity. For example it has been shown that shared leadership leads to an improvement in employees' psychological safety, which in turn possibly stimulates their creativity (Wang & Peng, 2022). In addition to this, when there are high levels of shared leadership, team members are more likely to share their ideas and unique information to the other team members, as a result higher levels of creativity will be reached (Hoch, 2013). Furthermore, a large number of interactions of team members within a shared leadership structure can accelerate the process of information flow, and this dynamic then promotes team creativity (Wu & Cormican, 2016). But these studies have mostly shown more direct consequences of shared leadership in regard to creativity. What is less known is under which conditions is the relationship between shared leadership and team outcomes stronger or in other words, what moderating factors could be contributing to this relationship.

In this current study to confirm previous research, we will research if shared leadership leads to team creativity and we will look to find if this relationship is moderated by task complexity, to extend on previous research. We will do this with the help of the team creativity model, which we designed ourselves. One thing the model suggests is that shared leadership has a positive relation with team creativity. We already know that this is in fact true (Klasmaier & Rowold, 2020; Wang & Peng, 2022; Wu & Cormican, 2016). Additionally as already mentioned higher levels of shared leadership will lead to higher levels of creativity (Hoch, 2013). Furthermore there is reason to suggest that task complexity could be a moderating factor in this relationship, because it has been shown that task complexity is a factor contributing to creativity (Oldham & Cummings, 1996). In addition to this creative efficacy and creativity task demands are needed for the team to leverage its shared leadership to enhance team creativity (Ali et al., 2020). For these reasons we propose that task complexity is a key moderator in the relationship between shared leadership and team creativity.

We investigate this model using a questionnaire sent to multiple organizations. For this study we are interested in teams and we want the minimum team size to be three. Furthermore we are also only interested in people working more than twenty hours per week. By doing this we hope to further increase the knowledge on the relationship between shared leadership and team creativity, therefore making an important contribution to the existing literature on this subject. As such we hope to add more strength to the current literature that shows that shared leadership is beneficial for team creativity (Klasmaier & Rowold, 2020; Wang & Peng, 2022; Wu & Cormican, 2016; Hoch, 2013). While also illustrating why task complexity should be researched to gain more understanding of its role in the relation between shared leadership and team creativity.

## Figure 1.

Team creativity model



## THEORY AND HYPOTHESIS DEVELOPMENT

## **Shared leadership**

Shared leadership has been defined as the dynamic interaction between multiple people within a group that is aiming to guide another to realise the group goals or the organizational goals. (Pearce & Conger, 2003). Another definition of shared leadership is by D'Innocenzo and colleagues, *'Shared leadership is an emergent and dynamic team phenomenon whereby leadership roles and influence are distributed among team members*. '' (D'Innocenzo et al., 2014). In my opinion both of these definitions are valid and are able to coexist. By looking at these definitions it is clear that within shared leadership, just as the name implies, there is no one singular leader. The leadership is shared by the different members that are working within the same team. So shared leadership is clearly different from more traditional vertical leadership, which emphasizes the role of the person in the formal

### Shared leadership and team creativity

Creativity has been defined as the generation of unique and helpful ideas by a person or small group of people working in cooperation (Amabile & Pratt, 2016). Team creativity on the other hand, refers to the production of novel and useful ideas by a group of individuals working together (Pirola-Merlo & Mann, 2004). However team creativity is not just a simple aggregation of individual creativity (Hoever et al., 2018). Because team creativity also requires relevant team interactions to integrate the creative efforts of each member (Pirola-Merlo & Mann, 2004). Team creativity is quite important because a lot of organizational problems and tasks are complex in nature. So teams rather than individuals are often required to come up with creative solutions for these complex problems (Byron et al., 2022). This is why research on team creativity in particular is important. If we know what factors contribute to team creativity, more organizations are able to put these factors in place within their organization to improve their team creativity.

We already know that according to previous research shared leadership is beneficial for team creativity (Klasmaier & Rowold, 2020; Wang & Peng, 2022; Wu & Cormican, 2016), which is why in our model we expect that shared leadership is positively related with team creativity. Shared leadership leads to more novel ideas and suitable solutions for complex problems (Klasmaier & Rowold, 2020). And we know that team creativity refers to the production of novel ideas by a group of individuals working together (Pirola-Merlo & Mann, 2004). So shared leadership leads to novel ideas which is an important part of team creativity. We also know that shared leadership is connected with psychological safety, and idea sharing and thus an acceleration of information flow, all of which resulting in more creativity (Wang & Peng, 2022; Hoch, 2013; Wu & Cormican, 2016).

Furthermore, Hunter et al., (2017) suggests that when there is just one leader, then this individual cannot have all the skills and abilities required to satisfy creativity demands. In contrast, shared leadership shares responsibilities among team members, which benefits overall team capacity by leveraging the skills and abilities of all members within the team (Pearce, 2004). Due to the division of responsibilities an environment is created wherein commitment to team goals, and ownership of team processes and performance are increased, resulting in team members being more likely to increase their effort in generating creative ideas (Carson et al., 2007; Huang et al., 2009; Pearce, 2004). While within shared leadership the team members are motivated to reflect together on the current situation and harmonize their creative efforts with each other, resulting in enhanced team creativity (Hoch, 2013; Hoever et al., 2018). Shared leadership also promotes the development of the whole team's confidence to take on challenges at work, therefore motivating team members to come up with creative ideas to deal with difficult and complex team tasks (Gu et al., 2020). Therefore, based on previous empirical studies, we propose that shared leadership enhances team creativity through psychological safety, sharing of ideas, an accelerated information flow, shared responsibilities, shared reflection and development of confidence in teams.

Hypothesis 1: Shared leadership is positively associated with team creativity.

## Task complexity and team creativity

We suggest that the relationship between shared leadership and team creativity is more complex than what has been suggested thus far. We propose that task complexity has a positive influence on this relationship. The reason being that creative efficacy and creativity task demands are needed for the team to leverage its shared leadership to enhance team creativity (Ali et al., 2020). And task complexity is also a factor that contributes to creativity (Oldham & Cummings, 1996).

Task complexity exists of the multiple relationships between task inputs as an important predictor of the performance of people, because these relationships create demands on the abilities, knowledge and resources of team members. Therefore it is an important determinant of human performance (Wood, 1986). When a task is high in complexity the chance that a single person has all the necessary skills, knowledge and abilities to lead the team to successfully complete the task, is quite low (Bligh et al., 2006). So as task complexity increases, shared leadership and its benefits become more important (Bligh et al., 2006; D'Innocenzo et al., 2014). This can be tied into something that was already mentioned, that one leader cannot have all the skills and abilities required to satisfy creativity demands (Hunter et al., 2017). Thus shared leadership becomes more important, resulting in shared responsibilities which increases effort in generating creative ideas (Pearce, 2004). And shared leadership being more important also leads to more novel ideas and suitable solutions for complex problems (Klasmaier & Rowold, 2020), which is a big part of team creativity (Pirola-Merlo & Mann, 2004). So one could argue that task complexity results in more teamwork, which results in more creativity. In addition to this task complexity has influence on decision making and information processing (Byström & Järvelin, 1995; Payne, 1976). This may have an influence on creative idea generation (Chen et al., 2018). Task complexity may also cause conflicting views, this is important to meet the demands of the task, because it promotes the generation of creative ideas. And when confronted by a complex task, individuals may feel more motivation to invest effort, time and attention to team tasks, resulting in team creativity (Vashdi et al., 2013). Therefore we suggest that task complexity is positively associated with team creativity.

Hypothesis 2: Task complexity is positively associated with creativity

#### The moderating role of task complexity

The most complex tasks are characterized by having multiple paths to different outcomes, some desired and some undesired, conflicts among outcomes and ambiguity of path-outcome connections, calling for team members to cooperate, have mutual understanding and share knowledge and information (Chang et al., 2014; Wood, 1986). This further strengthens the argument that task complexity makes shared leadership more important, thus resulting in higher team creativity. Moreover, task complexity displays a unifying and generic task characteristic, which has an important role in team interaction and effectiveness (Liu & Li, 2012). Combine this with previous points made about the relationship of task complexity between shared leadership and team creativity and you have a compelling argument as to why task complexity would moderate the relationship between shared leadership and team creativity. Where high task complexity would strengthen this relationship.

This is very different when task complexity is low, low complexity tasks are more structured and regular. This means that they can be completed via standardized processes and routines (Byström & Järvelin, 1995). For low complexity, tasks diverse perspectives may interrupt the task process and undermine task progression, not to mention creative outcomes (Vashdi et al., 2013). This is why the influence of task complexity on team creativity will be different for simple and complex tasks (Chen et., al, 2018). We expect that under low task complexity the relationship between shared leadership and team creativity will be lower. As mentioned, low task complexity will have tasks that can be completed via standardized processes (Byström & Järvelin, 1995). So you can expect less creativity and cooperation will be required to complete these tasks. Furthermore, as also mentioned before, low task complexity could even interrupt creative outcomes (Vashdi et al., 2013). Therefore it makes sense to think that low task complexity will result in a weakened relationship between shared leadership and team creativity has more of a

positive influence on the relationship between shared leadership and team creativity than low task complexity.

**Hypothesis 3:** Task complexity moderates the relationship between shared leadership and team creativity. This relationship is more pronounced when task complexity is higher rather than lower.

## Methods

## Sample

The sample used in this research was made up of 131 people working for different organizations. Out of these 131 participants 30 did not work more than 20 hours a week and were controlled for. In addition 5 more participants were controlled for, because they did not work in a team. Furthermore 49 participants did not complete the questionnaire in its entirety. This brought the amount of participants who completed the questionnaire down to 47. Out of these 47 participants 28 identified as female and 19 as male. 19 of our participants were in their twenties, 4 were in their thirties, 8 were in their forties, 12 were in their fifties and 4 were in their sixties. Out of our 47 participants 36 were Dutch and 11 had other nationalities. In terms of education 20 of our participants had a university study as their highest level of education, 15 had a higher vocational education as highest education, 8 had an intermediate vocational training as their highest level of education, 2 had a doctorate as their highest level of education, 1 had a post-doctorate as their highest level of education and 1 had secondary school as their highest level of education. 11 respondents work between 20 and 30 hours per week, 18 work between 30 and 40 hours per week, the remaining 18 respondents work 40 or more than 40 hours per week, except for one respondent who works between 0 to 40 hours per week.

## Procedure

Data was gathered using an online questionnaire, we approached the participants to participate in our study ourselves. So convenience sampling was used to gather participants, but snowball sampling was also used. In this research more variables have been tested than have been used. This is because this research is part of a bigger project. There was no compensation for participation in the study, so we relied completely on people voluntarily filling the questionnaire in. The confidentiality of participants was made sure of through the informed consent. Data was collected from May 15th until the 6th of June.

#### Measures

## Shared leadership

We asked the participants questions on their cooperation with their team members to measure shared leadership. For this we used an adapted eighteen-item measure from Hoch, Pearce and Welzel (2010). Items were rated on a 7-point Likert scale (from 1 = strongly disagree, 4 = neutral, to 7 = strongly agree). Two examples of the items were: "My team members and I work together to decide what my performance goals should be." and "My team members encourage me to search for solutions to my problems without supervision." Cronbach's alpha was .85

#### **Team Creativity**

Participants rated their teams overall creativity using an adapted thirteen-item measure from Zou and George (2001). Participants were asked to rate their team's creativity using a 7point Likert scale (from 1 = not at all characteristic, 4 = neutral, to 7 = very characteristic). Two examples of the items were: 'My team suggests new ways to achieve goals or objectives." and "My team comes up with creative solutions to problems." Cronbach's alpha was .96

## Task Complexity

Task complexity was measured by using an adapted four-item measure from Maynard and Hakel (1997). Participants rated their task complexity using a 7-point Likert scale (from 1 = totally disagree, 4 = neither agree nor disagree, to 7 = totally agree). The questions asked were: *'I find the tasks at my job to be complex.''*, *'The tasks at my job are mentally demanding.''*, *'The tasks at my job require a lot of problem solving.''* and *'I find the tasks at my job to be challenging.''* Cronbach's alpha was .903

## **Control Variables**

We used a couple of different control variables to make sure that we gathered data that is useful for our research. First of all we considered if someone works in a team, since that is a prerequisite for what we are looking to research. We also took team size into account, because a team of only two people is not something we are looking for. Lastly we controlled for working hours. This is important because we are looking for people who are involved with working in their team a lot, so if someone is working less than twenty hours their data would not be used. We furthermore looked at the different industries people work in, by doing this we can see if there is a difference in creativity depending on industry.

## Results

## **Regression assumptions**

The assumptions that have been checked for the regression analysis are normality, linearity, homoscedasticity, independence, multicollinearity and we also checked for outliers. Normality of the variables was investigated using the Shapiro-Wilk test. Shared leadership (p = .14) and task complexity (p = .07) seem to not be normally distributed. Team creativity however is normally distributed (p = .52). A QQ-plot has also been made to investigate normality in addition to the Shapiro-Wilk test. In the plot you can see that the standardized residuals mostly follow the line of the plot. Only at the bottom are there two residuals below the line, the same holds true for at the top. This means that no other steps will be taken in this regard and the analysis will be conducted with parametric tests. Independence was checked using the Durbin-Watson test. Using this test it was shown that the data met the assumption of independent errors (*Durbin-Watson value* = 2.52). We also checked for linearity and homoscedasticity. The scatterplot of standardized residuals showed that the data met the assumptions of homoscedasticity and linearity. Tests to check for the assumption of collinearity indicated that multicollinearity was not a concern (*shared leadership, tolerance* = 1.00, *VIF* = 1.00; *task complexity, tolerance* = 1.00, *VIF* = 1.00). Furthermore by using Cook's distance no outliers were found.

### **Descriptive statistics**

Table 1 shows the descriptive statistics and correlations for the variables used in our team creativity model. As shown, team creativity has a strong significant correlation with shared leadership (r = .60, p = < .001). Team creativity is also significantly correlated with task complexity (r = .29, p = .05). Furthermore task complexity is also significantly correlated to shared leadership (r = .38, p = .01). Previous research has already shown that shared leadership and team creativity are positively related, so the high correlation between the two in this study is not actually all that surprising.

	Ν	Mean	SD	1	2	3
1. Shared Leadership	70	4.59	.89			
2. Team Creativity	48	4.74	1.13	.60**		
3. Task Complexity	47	4.88	1.41	.38**	.29*	

 Table 1

 Means and Standard Deviations and Correlations of the Variables

*Note*. N = 70. \*\* p < .01, \* p < .05, †p < .10

## Hypothesis testing

To test hypothesis one and two, we made use of a regression analysis. We have centered the data, because the predictors do not have a meaningful value at null. As shown in table 2, there is a significant main effect of shared leadership on team creativity (B = .60, SE =.15, p = < .001). There is also a significant main effect of task complexity on team creativity (B = .29, SE = .11, p = .05). Lastly we have our moderation hypothesis, that task complexity moderates the relationship between shared leadership and team creativity. The results were not as expected as the outcomes did not support this hypothesis. We observed an insignificant shared leadership \* task complexity interaction on team creativity (B = 1.07, SE = .10, p =.18).

## Table 2

**Regression Analysis** 

		Unstanda Coefficie	rdized nt	Standardized Coefficient		
Model		В	Std. Error	Beta	t	Sig
	(constant)	4.77	.17		28.81	<.00*
	Shared leadership	.76	.15	.60	5.02	<.00*
	Task complexity	.23	.11	.29	2.02	.05
	Interaction	.14	.10	.17	1.36	.18

*Note*. Dependent variable: Team Creativity. N = 70. \* p < .001

#### Discussion

This study examined the role of shared leadership and task complexity on team creativity. And more specifically the moderating role of task complexity on the relationship between shared leadership and team creativity. The results supported the first two hypotheses, showing that when shared leadership is high, team creativity is also high. The same goes for task complexity, when it is at a high value, team creativity is also high. The results however did not support our third hypothesis, that task complexity moderates the relationship between shared leadership and team creativity. Therefore it seems that, in our sample, the relationship between shared leadership and team creativity is not different at different levels of the moderator task complexity. So when shared leadership is in place and has its influence on team creativity, the complexity of the tasks of people within the team seems to have no further influence on the creativity of the team. There are several ways in which these outcomes extend previous research.

## **Theoretical Implications**

The current results strengthen the already existing knowledge on the consequences of shared leadership on team creativity. Previous research has already shown that shared leadership is positively related to team creativity (Klasmaier & Rowold, 2020), and that higher levels of shared leadership lead to higher levels of team creativity (Hoch, 2013). The outcomes of this present study support these findings and thus add to the body of work which shows that shared leadership is beneficial for team creativity. There are multiple reasons as to why shared leadership is beneficial for team creativity. One reason is that shared leadership leads to more novel ideas and suitable solutions for complex problems (Klasmaier & Rowold, 2020). Another reason is that shared leadership is connected with psychological safety, and idea sharing and thus an acceleration of information flow, all of which resulting in more

creativity (Wang & Peng, 2022; Hoch, 2013; Wu & Cormican, 2016). Just like shared leadership is beneficial for team creativity, task complexity also has a positive relation with team creativity. The difference being that this relationship hasn't been researched as much, so there is currently less known about it. That means that this research is adding to the current literature and expanding on it. As has been mentioned earlier, previous research has shown that task complexity is a factor that contributes to creativity (Oldham & Cummings, 1996). Furthermore as task complexity increases, shared leadership and its benefits become more important (Bligh et al., 2006; D'Innocenzo et al., 2014). And as we already know one of the benefits of shared leadership is team creativity. Previous research has also found some other ways in which task complexity may be beneficial for creativity. For example it may have an influence on creative idea generation (Chen et al., 2018), and an increase in motivation to invest effort, time and attention to team tasks (Vashdi et al., 2013). It was for these reasons we suspected that task complexity is positively associated with team creativity. The outcomes of this current research support these claims, therefore adding to and expanding on previous research that has been done on this subject. As such this research supports the notion that shared leadership and task complexity have a positive effect on team creativity. This could be valuable information for organizations looking to increase the creativity of their teams. Furthermore it also alerts researchers to the importance of these factors for possible future research.

Lastly, we proposed that task complexity would moderate the relationship between shared leadership and team creativity, because these factors both contribute to creativity and also because of the fact that when task complexity increases, so does the importance of shared leadership and its benefits (Bligh et al., 2006; D'Innocenzo et al., 2014). In addition to this low task complexity could interrupt creative outcomes (Vashdi et al., 2013). Thus we also proposed that the relationship between shared leadership and team creativity is more pronounced when task complexity is higher rather than lower. The outcomes of this current research do however not support this claim. This does not contradict any previous research, because this specific relationship has not been researched before. However it is interesting that the outcomes of this research do not support our claim, as both shared leadership and task complexity are positively associated with team creativity. But it is important to note that the present research was conducted on a low number of participants, this could be a potential reason as to why no significant result was found for our model. Or perhaps shared leadership and task complexity are both independently leading to team creativity and task complexity simply does not moderate the relationship between shared leadership and team creativity. It is however something that is worthwhile looking into for future studies.

#### **Practical implications**

As has been shown, creativity is an important factor for organizational success (Wang & Peng, 2022). And organizations should look to increase creativity in order to achieve success. This current research adds to the body of work stating that shared leadership is beneficial for team creativity. Therefore organizations could look to shared leadership in order to increase creativity to achieve success. Organizations of differing sizes could implement shared leadership within their teams to stimulate creativity, thereby contributing to the creativity and success of the organization. This might not only apply to commercial organizations, but also governmental organizations, research organizations or even within the educational field. For example students could be tasked to work within a shared leadership setting for a school project. This work environment could enhance the students creativity, therefore perhaps increasing their success as a group.

In addition to shared leadership, this study also shows that task complexity seems to be beneficial for team creativity. So this is also a factor that organizations of different sizes within different fields could take into account, when looking to increase their creativity and success. Besides implementing shared leadership within their teams, organizations could strive towards making the tasks that their teams need to complete challenging. Therefore increasing task complexity and stimulating creativity. To summarize, organizations could look to implement shared leadership and task complexity in order to stimulate their creativity and therefore increasing organizational success.

### **Strengths and limitations**

A strength of this present research is that data was collected from a diverse sample. We approached actual working teams from real organizations, not students and no scenarios were put in place. Our participants worked in multiple different sectors and they were a diverse group in terms of gender, age and seniority in their organizations. Another strength of the present research is that we used good and reliable peer reviewed scales for our questionnaire. This made sure that what we measured was reliable and trustworthy. A final strength is that the subject of this research is very relevant. A lot of teams are making use of some sort of form of shared leadership and it is a subject that has been popular for a while now.

This present research however also has a few weaknesses and limitations. The first being that we used subjective measures for the questionnaire. This means that the outcomes of variables such as team performance and team creativity were entirely based on personal opinions and not on hard truths. There were no performance reviews or anything of the kind used to see what the true team outcomes were. For instance in order to measure team creativity, we could have asked team leaders for their rating. Furthermore the questionnaire was aimed at individuals and not as teams as a whole. By doing this you gain insight in how individuals view their teams level of shared leadership, but you don't gain insight in how the team in its entirety views their level of shared leadership. Another limitation is that this present research is being run by five bachelor students with limited resources. If more resources were available the research could potentially have been distributed to more people, resulting in a bigger sample size. Lastly the questionnaire was quite long, we assume that this resulted in less people finishing the questionnaire, consequently resulting in a small group of participants who completed the questionnaire in its entirety.

#### **Future research directions**

It may be interesting for future research to study and test the same model as used in the present research. As discussed this research has some weaknesses, so it would be interesting to see this study being replicated without those weaknesses. Perhaps the outcomes will be different if the current weaknesses are mitigated. The most important weakness to be rectified should be the sample size, a replication of this study with a larger sample size could make a difference in outcomes and generalizability. Besides this objective measures could be used instead of objective ones and the questionnaire could be aimed at teams rather than individuals to potentially get a better view of the true team dynamics and outcomes. Another thing for future research to look into is to use more control variables. For this study no control variables were used in terms of the statistical analysis. The only control variables that were used were used to make sure the participants met the necessary requirements to participate in the study. A potential control variable could be average team member creativity. Team member creativity is positively correlated with team creativity (Pirola-Merlo & Mann, 2004). So a very creative team member could account for most of the creativity in a team, masking the team's actual creativity. So this could be worth looking into and adding team member creativity as a control variable in our model. Another control variable that could be added is team tenure. Team tenure is shown to be positively related to team creativity for longestablished teams, but slightly negative for newly formed teams (Byron et al., 2022).

Therefore it could be a useful control variable as it influences team creativity based on how long a team has been working together. It however could also be added as an extra moderator variable to the model. Team tenure was a moderator variable in the study of Byron et al. in 2022, when investigating how teams should be designed to be creative and innovative. As mentioned, team tenure is positively related to team creativity for long-established teams (Byron et al., 2022). Thus it could potentially contribute to our current model as a moderator variable. Maybe it will change the outcome of our current model to a significant outcome. So team tenure is definitely something that is worth looking into.

## **Final overview**

The results of this research have shown us that both shared leadership and task complexity are positively associated with team creativity. This means that organizations could look to improve these factors in their teams to increase their creative outputs. In this research we also proposed that the relation between shared leadership and team creativity will be stronger when task complexity is higher rather than lower. This proposition was not supported by the outcomes of this study. However, future research could look further into this model and potential relationship.

#### References

- Ali, A., Wang, H., & Johnson, R. E. (2020). Empirical analysis of shared leadership promotion and team creativity: An adaptive leadership perspective. Journal of Organizational Behavior, 41(5), 405-423. <u>https://onlinelibrary-wiley-com.proxy-</u> ub.rug.nl/doi/10.1002/job.2437
- Amabile, T. M., & Pratt, M. G. (2016). The dynamic componential model of creativity and innovation in organization: Making progress, making meaning. Research in Organizational Behavior, 36, 157-183. <u>https://www-sciencedirect- com.proxyub.rug.nl/science/article/pii/S0191308516300053?via%3Dihub</u>
- Bligh, M. C., Pearce, C. L., & Kohles, J. C. (2006). The importance of self- and shared leadership in team based knowledge work: A meso-level model of leadership dynamics. Journal of Managerial Psychology, 21(4), 296-318. <u>https://www-emeraldcom.proxy-ub.rug.nl/insight/content/doi/10.1108/02683940610663105/full/html</u>
- Byron, K., Keem, S., Darden, T., Shalley, C. E., & Zhou, J. Building blocks of idea and implementation in teams: A meta-analysis of team design and team creativity and innovation. Personnel Psychology, <u>https://onlinelibrary-wiley-com.proxyub.rug.nl/doi/10.1111/peps.12501</u>
- Byström, K. & Järverlin, K. (1995). Task complexity affects information seeking and use. Information Processing & Management, 31(2), 191-213. https://www.sciencedirect.com/science/article/pii/030645739580035R
- Carson, J. B., Tesluk, P. E., & Marrone, J. A. (2007). Shared Leadership in Teams: An Investigation of Antecedent Conditions and Performance. The Academy of Management Journal, 50(5), 1217-1234. <u>https://www-jstor-org.proxy-</u> ub.rug.nl/stable/pdf/20159921.pdf

- Chang, S., Jia, L., Takeuchi, R. & Cai, Y. (2014). Do High-Commitment Work Systems Affect Creativity? A Multilevel Combinational Approach to Employee Creativity. Journal of Applied Psychology, 99(4), 665-680. <u>https://web-p-ebscohost-com.proxy-ub.rug.nl/ehost/pdfviewer/pdfviewer?vid=56&sid=deb6e394-1863-430f-9485-</u> cbabf6d3c464%40redis
- Chen, X., Liu, J., Yuan, Y. & Cui, X. (2018). The curvilinear effect of task conflict on idea generation The mediating role of reflexivity and the moderating role of task complexity. International Journal of Conflict Management, 30(2), 158-179.
   <u>https://www-emerald-com.proxy-ub.rug.nl/insight/content/doi/10.1108/IJCMA-02-2018-0029/full/pdf?title=the-curvilinear-effect-of-task-conflict-on-idea-generation-the-mediating-role-of-reflexivity-and-the-moderating-role-of-task-complexity
  </u>
- D'Innocenzo, L., Mathieu, J. E., & Kukenberger, M. R. (2014). A meta-analysis of different forms of shared leadership-team performance relations. Journal of management, 42(7), 1964-1991. <u>https://journals-sagepub-com.proxy-</u>

ub.rug.nl/doi/full/10.1177/0149206314525205

Gu, Q., Liang, B., & Cooke, F. L. (2020). How does shared leadership affect creativity in teams? A multilevel motivational investigation in the Chinese context. The International Journal of Human Resource Management, 33(8), 1641-1669.
 <u>https://www-tandfonline-com.proxy-</u>

ub.rug.nl/doi/full/10.1080/09585192.2020.1783345

Hoever, I. J., Zhou, J. van Knippenberg , D. (2018). Different Strokes For Different Teams:
The Contingent Effects Of Positive And Negative Feedback On The Creativity Of
Informationally Homogenous And Diverse Teams. Academy of Management
Journal, 61(6).

https://publications.aston.ac.uk/id/eprint/32136/1/Different\_strokes\_for\_different\_tea ms.pdf

- Hoch, J. E. (2013). Shared leadership and innovation: The role of vertical leadership and employee integrity. Journal of Business and Psychology, 28, 159-174. <u>https://link-springer-com.proxy-ub.rug.nl/article/10.1007/s10869-012-9273-6#Bib1</u>
- Huang, X., Iun, J., Liu, A., & Gong, Y. (2009). Does participative leadership enhance work performance by inducing empowerment or trust? The differential effects on managerial and non-managerial subordinates. Journal of Organizational Behavior, 31, 122-143. <u>https://onlinelibrary-wiley-com.proxy-ub.rug.nl/doi/epdf/10.1002/job.636</u>
- Hunter, S. T., Cushenbery, L. D., & Jayne, B. (2017). Why dual leaders will drive innovation: Resolving the exploration and exploitation dilemma with a conservation of resources solution. Journal of Organizational Behavior, 38(8), 1183-1195.
   <u>https://www.researchgate.net/profile/Samuel-Hunter-</u>
- 6/publication/316275582\_Why\_dual\_leaders\_will\_drive\_innovation\_Resolving\_the\_e xploration\_and\_exploitation\_dilemma\_with\_a\_conservation\_of\_resources\_solution/lin ks/59d63622a6fdcc52aca7c2a8/Why-dual-leaders-will-drive-innovation-Resolvingthe-exploration-and-exploitation-dilemma-with-a-conservation-of-resourcessolution.pdf?origin=publication\_detail
- Klasmeier, K. N., & Rowold, J. (2020). A multilevel investigation of predictors and outcomes of shared leadership. Journal of Organizational Behavior, 41(9), 915-930. <u>https://onlinelibrary.wiley.com/doi/10.1002/job.2477</u>
- Liu, P. & Li, Z. (2012). Task complexity: A review and conceptualization framework. International Journal of Industrial Ergonomics, 42(6), 553-568. <u>https://www-</u>

sciencedirect-com.proxy-

ub.rug.nl/science/article/pii/S0169814112000868?via%3Dihub

- Mainemelis, B., Kark, R., & Epitropaki, O. (2015). Creative leadership: a multi-context conceptualization. Academy of management annals, 9(1), 393-482. <u>https://dro.dur.ac.uk/18573/1/18573.pdf</u>
- Oldham, G. R., & Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. The Academy of Management Journal, 39(3), 607-634. <u>https://erlanbakiev.weebly.com/uploads/1/0/8/3/10833829/oldham\_cummings\_1996.p</u> \_\_\_\_\_\_df
- Payne, J. W. (1976). Task complexity and contingent processing in decision making: An information search and protocol analysis. Organizational Behavior and Human Performance, 16(2), 366-387. <u>https://www-sciencedirect-com.proxy-ub.rug.nl/science/article/pii/0030507376900222?via%3Dihub</u>
- Pearce, C. (2004). The Future of Leadership: Combining Vertical and Shared Leadership to Transform Knowledge Work. Academy of Management Executive,

18(1). <u>https://www-researchgate-net.proxy-ub.rug.nl/profile/Craig-</u>

Pearce/publication/279401039\_The\_Future\_of\_Leadership\_Combining\_Vertical\_and\_

- Shared\_Leadership\_to\_Transform\_Knowledge\_Work/links/55ef01f908aedecb68fd8ef
  - 2/The-Future-of-Leadership-Combining-Vertical-and-Shared-Leadership-to-

Transform-Knowledge-Work.pdf

Pirola-Merlo, A. & Mann, L. (2004). The relationship between individual creativity and team creativity: aggregating across people and time. Journal of Organizational Behavior, 25, 235-257. <u>https://onlinelibrary-wiley-com.proxy-ub.rug.nl/doi/epdf/10.1002/job.240</u>

- Vashdi, D. R., Bamberger, P. A., & Erez, M. (2013). Can Surgical Teams Ever Learn? The Role of Coordination, Complexity, and Transivity in Action Team Learning. Academy of Management Journal, 56(4), 945-971. <u>https://web-p-ebscohost-com.proxy-</u> <u>ub.rug.nl/ehost/pdfviewer/pdfviewer?vid=64&sid=deb6e394-1863-430f-9485-</u> cbabf6d3c464%40redis
- Wang, H., & Peng, Q. (2022). Is shared leadership really as perfect as we thought? Positive and negative leadership on employee creativity. Journal of Creative Behavior, 0, 1-16. <u>https://onlinelibrary-wiley-com.proxy-ub.rug.nl/doi/10.1002/jocb.532</u>
- Wood, R. E. (1986). Task complexity: Definition of the construct. Organizational behavior and human decision processes, 37(1), 60-82.<u>https://www-sciencedirect-com.proxy-</u> ub.rug.nl/science/article/pii/0749597886900440?via%3Dihub
- Wu, Q., & Cormican, K. (2016). Shared leadership and team creativity: A social network analysis in engineering design teams. Journal of Technology Management & Innovation, 11(2), 2-12.
  https://www.scielo.cl/pdf/jotmi/v11n2/art01.pdf
- Pearce, C. L., & Conger, J. A. (2003). Shared leadership: Reframing the hows and whys of leadership (1- ed.). Sage Publications, Inc. <u>https://books.google.nl/books?hl=en&lr=&id=kvByAwAAQBAJ&oi=fnd&pg=PP1&</u> <u>ots=Ug2Rs6dhgn&sig=BGgiL425xK4zGnFHCUj7\_aWpz3E&redir\_esc=y#v=onepag</u> <u>e&q&f=false</u>

# Appendix A

# **Tables and figures**

## Table A1

Normality Test

	Shapiro-Wilk		
	Statistic	df	Sig.
Shared Leadership	.95	48	.04
Team Creativity	.98	48	.52
Task Complexity	.91	48	.00

# Table A2

Model summary

Model	R	R Square	Adjusted R	Std. Error	Durbin-
			Square	of the	Watson
				Estimate	
1	.63 <sub>a</sub>	.39	.35	.91	2.52

a. Predictors: (constant), Shared Leadership, Task Complexity

Note. Dependent variable: Team Creativity

# Table A3

Variance Inflation Factor

	Collinearity Statistics		
	Tolerance	VIF	
Shared Leadership	1.00	1.00	
Task Complexity	1.00	1.00	

*Note*. Dependent Variable: Team Creativity.

# Figure A1

QQ-plot of standardized residuals





Scatterplot of standardized residuals



# Appendix B

# Measures

## **Shared leadership**

Label Transformational leadership

- 1. My team members provide a clear vision of whom and what our team is.
- 2. My team members are driven by higher purposes or ideals.
- 3. My team members show enthusiasm for my efforts.
- 4. My team members encourage me to rethink ideas which had never been questioned before.
- 5. My team members seek a broad range of perspectives when solving problems.
- 6. My team members encourage me to go above and beyond what is normally expected of one (e.g., extra effort).

Transactional leadership

- 1. My team members and me have clear agreements and stick to those when we work together.
- 2. If I perform well, my team members will recommend more compensation.
- 3. My team members give me positive feedback when I perform well.
- 4. My team members give me special recognition when my work performance is especially good.

Directive leadership

- 1. My team members decide on my performance goals together with me.
- 2. My team members and I work together to decide what my performance goals should be. My team members and I sit down together and reach agreement on my performance goals.
- 3. My team members work with me to develop my performance goals.

Empowerment (individual)

- 1. My team members encourage me to search for solutions to my problems without supervision.
- 2. My team members urge me to assume responsibilities on my own.
- 3. My team members encourage me to learn new things.
- 4. My team members encourage me to give myself a pat on the back when I meet a new challenge.
- 5. My team members encourage me to work together with other individuals who are part of the team.
- 6. My team members advise me to coordinate my efforts with other individuals who are part of the team.
- 7. My team members urge me to work as a team with other individuals who are part of the team.
- 8. My team members expect that the collaboration with the other members in the team works well.

Aversive leadership

- 1. My team members try to influence me through threat and intimidation.
- 2. I feel intimidated by my team members' behavior.
- 3. My team members can be quite intimidating.
- 4. When my work is not up to par, my team members point it out to me

## **Team Creativity**

- 1. Suggests new ways to achieve goals or objectives.
- 2. Comes up with new and practical ideas to improve performance.
- 3. Searches out new technologies, processes, techniques, and/or product ideas.
- 4. Suggests new ways to increase quality.
- 5. Is a good source of creative ideas.
- 6. Is not afraid to take risks.
- 7. Promotes and champions ideas to others.
- 8. Exhibits creativity on the job when given the opportunity to.
- 9. Develops adequate plans and schedules for the implementation of new ideas.
- 10. Often has new and innovative ideas.
- 11. Comes up with creative solutions to problems.
- 12. Often has a fresh approach to problems.
- 13. Suggests new ways of performing work tasks.

## **Task Complexity**

- 1. I found this to be a complex task.
- 2. This task was mentally demanding.
- 3. This task required a lot of thought and problem solving.
- 4. I found this to be a challenging task.
- 5. I was motivated to perform well on this task.
- 6. I found this task to be physically demanding.
- 7. This task was interesting to me.
- 8. I put a lot of effort in coming up with the best possible solution.

How much experience have you had in the past with scheduling tasks similar to this one (check one)?