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Bachelorarbeit

Analysis of Leadership and Personality Styles in a Software Project

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Abstract

Given the current data on how software engineers are working together with their leader, you will most likely find a lot of data that is outdated or not focused on the software engineering part. Behavioral Software Engineering tries to change the focus to the software engineering part. The path is hard though because the information for this topic is sparse. This bachelors thesis contributes to the few sources out there who try to understand how software engineers are coping with the leadership styles of their leaders. By analyzing the personality traits of two teams and comparing them to the different leadership styles I am trying to outline what the styles and traits have in common and how they are interacting with each other. This will help team leaders understand their leadership style and how they are affecting their team with their behavior.

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1 Introduction

Software development teams are formed out of many different people each with their individual style and preference. Team members and leaders are completely different people who have distinct ideas on how to work together properly. Finding a common ground is therefore hard. Some teams communicate perfectly with their team leader while others do not. To understand this problem, I wanted to find out if certain leadership styles might affect different developers on the team. I knew that people have various personalities and wanted to know if this might affect them on how they interact with the team leader. This bachelors thesis intends to solve this dilemma, by asking two software development teams and their respective team leaders about their leadership styles, their personality and their current satisfaction. Based on these findings I intend to solve the mystery of how software engineers work best together.

Chapter descriptions

In the second chapter [2] I will explain the motivation behind my bachelors thesis. I will explain why I am fascinated by this topic and also why this topic is relevant for the scientific community.

The third chapter [3] will describe the current literature review. I will explain why I chose not to use certain study methods and what the current state of research is.

The fourth chapter [4] describes planning of the experiments. What methods I chose to use and why. It will be explained how I justified my methods and describe the company where I did the surveys.

The fifth chapter [5] contains the analysis. Here will be shown the results from both the team leader and the team. It will display the leadership styles of the team leader and give a short summary of the personality traits of the team and how satisfied they are with the current situation, based on their average satisfaction. With this premise I will explain how this result affects the team and how they perceive their team leader based on each

personality trait.

The sixth chapter [6] contains the discussion. Based on the analysis I will explain how the personality traits and leadership styles can be connected. I will give reasons why these leadership styles are able to work with certain personality traits and discuss why some traits do not fit perfectly with different parts of the leadership styles.

The seventh chapter [7] gives a conclusion and describes possible future work in this domain.

The eighth chapter [8] contains the attachment with all the results from the team leader and the results from the team.

2 Motivation

The motivation for this bachelors thesis came from the seminar “Behavioral Software Engineering“ which I attended at the University of Stuttgart in fall semester 2016/2017. Behavioral Software Engineering is relatively new and only gained traction in around 2015. It tries to focus mainly on the behavior of software engineers. How software engineers acquire knowledge, act and react to other people. My topic was “Behavioral aspects of the effects of leadership and leadership styles in software development teams“. The idea was to find data that would provide information on how different team styles can work with different leadership styles together. One of the biggest issues I had was that because the topic was relatively new, it lacked the needed sources. Most sources were either very old or used techniques that are no longer in use.

Therefore I wanted to do this bachelors thesis as a way to contribute to the missing data to this topic, by providing data that tries to build a missing link between different leadership styles and personality traits.

With this data it is possible to determine which personality traits work best with different leadership styles and therefore find a recommendation for the team leaders on how they should act upon certain software development teams.

3 Literature Review

3.1 Leadership Style Tests

The main idea of finding a suitable method to determine the leadership style was to find one that would not put leaders into just one style.

Finding questionnaires on this premise was very difficult. Most leadership styles are determined by analyzing the behavior of the team leader at work and on their success. Based on this the researchers deduce the suited leadership style or define one, as Hodgkinson [Hod09] or Kliem and Anderson [KA96] did. The other possibility is that the questionnaire is behind a paywall as the Multifactor Leadership Questionnaire Form 5X from Avolio, Bruce J. and Bass, Bernard M. and Jung, Dong I [ABJ99]. These have the issue that you cannot see into the processing of the data.

3.2 Personality Traits Tests

The literature review on personality traits test was based on papers about Behavioral Software Engineering. Most researches use methods that categorize participants into only one personality. For example Dhomne and Hall [DH12] who describe different personality styles of software development teams with their method I-Opt. I-Opt's idea is based on how people are processing the input of the environment and then react to it.

Another very common method to describe the personality trait is to use the Myers-Briggs personality traits test by Myers and Briggs [Mye62]. The Myers-Briggs test asks participants several questions where they can either agree or disagree with given statements. The participants are then put into one of 16 types, based on their responses.

Based on this study by Pittenger [Pit], people change their style after only 5 weeks, after they passed their first test. With this result I choose not to determine the personality of the software developers by the Myers-Briggs test or I-Opt, because they seem too vague.

3 Literature Review

Topics that cover the connection of the leadership styles of team leaders in software development teams and personality traits of software engineers were not present at the time of research [April-July 2017].

4 Experiment Planning

The intention of the experiment is to find out the team leadership style, the personality traits of the team members and their current satisfaction. The experiment should give insight on how the styles and traits can be connected.

I first determined the company and team where I would perform the surveys.

4.1 Company

The research was done inside a small software company in the south of Germany with around 35 employees

4.1.1 Team 1

The first team was formed out of 7 members. One team leader and 6 software engineers. The team leader was leading since November 2016. Everybody had at least a bachelors degree and the average age was 36 with the youngest being 27 and the oldest person 42. All team members completed the survey.

4.1.2 Team 2

The second team was formed out of 17 members. One team leader and 16 software engineers. The team leader was leading this team since November 2016. Everybody had at least a bachelors degree and the average age was 35 with the youngest person being 27 and the oldest 55. 14 out of 16 team members completed the survey.

4.2 Team Leaders

I first planned the survey of the team leaders.

For the survey I used the questions from the “Multifactor Leadership Questionnaire Form 6S“ from Avolio and Bass [AB04]. This questionnaire consists of 21 questions and divides

4 Experiment Planning

the team leaders into 7 factors. For each factor the team leader can be categorized into being HIGH, MODERATE or LOW, depending on his score from the answered questions for that specific factor. The questionnaire is in English.

This survey asks the questions in such a way, so that the team leader needs to estimate how he sees himself. These are the descriptions of the factors.

Factor 1 – IDEALIZED INFLUENCE indicates whether the leader holds subordinates' trust, maintains their faith and respect, shows dedication to them, appeals to their hopes and dreams and acts as their role model. [AB04]

Factor 2 – INSPIRATIONAL MOTIVATION measures the degree to which the leader provides a vision, uses appropriate symbols and images to help others focus on their work, and tries to make others feel as if their work is significant. [AB04]

Factor 3 – INTELLECTUAL STIMULATION shows the degree to which the leader encourages others to be creative in looking at old problems in new ways, creates an environment that is tolerant of seemingly extreme positions, and nurtures people to question their own values and beliefs of those in the organization. [AB04]

Factor 4 – INDIVIDUALIZED CONSIDERATION indicates the degree to which the leader shows interest in others' well-being, assigns projects individually, and pays attention to those who seem less involved in the group. [AB04]

Factor 5 – CONTINGENT REWARD shows the degree to which the leader tells others what to do in order to be rewarded, emphasizes what he expects from them, and recognizes their accomplishments. [AB04]

Factor 6 – MANAGEMENT-BY-EXCEPTION assesses whether the leader tells others the job requirements, is content with standard performance, and is a believer in "if it ain't broke, don't fix it". [AB04]

Factor 7 – LAISSEZ-FAIRE measures whether the leader requires little of others, is content to let things ride, and lets others do their own thing. [AB04]

I chose this survey, because unlike most other surveys they do not put the leader into just one leadership style. The leader can have 0-100% for each factor. Other reasons why I did not choose other surveys, was because they were behind a paywall. Which would

mean that I would not be able to have full control over the evaluation.

To map these factors to software engineering, I used the leadership styles of Hodgkinson[Hod09] and sorted the 7 factors to fit the three different leadership styles: **personal authority style**, **decision making style** and **activity management style**

personal authority style defines a person who is charismatic, an expert, who organizes and motivates the team in the development process. He is a person who will motivate the team by his ideas and his charismatic appearance. He has a vision and wants to enforce it.

activity management style defines a leader who is characterized to train, support and empower the team members. He is there for the developers. If they need support then he will take some time of this duties and will work with the developer to solve the problem.

decision making style defines a leader who involves or does not involve the team in the decision making process. He is either telling the team exactly what to do or he will be a character that actively involves the team into working with him and giving suggestions during meetings.

I sorted factor 1 and 2 as fitting best into personal authority style. Factor 3,4 and 7 as being best suited for the activity management style and factors 5,6 and 7 for the decision making style.

I used the factor 7 for both decision making style as well as activity management style, because they both have the style laissez fair.

Based on the points the team leaders got for each factor, I added those up and calculated the percentages for each style.

The following graph [4.1] displays the mapping.

4.2.1 Execution

The questioning was performed online with google forms. The leaders had two weeks time to complete the survey. I helped them with the descriptions of individual questions but tried not to involve myself too much to avoid changing the result. The survey had a five point likert scale with points from 0 to 4 where 0=Not at all, 1=Once in a while, 2=Sometimes, 3=Fairly often and 4=Frequently, if not always.

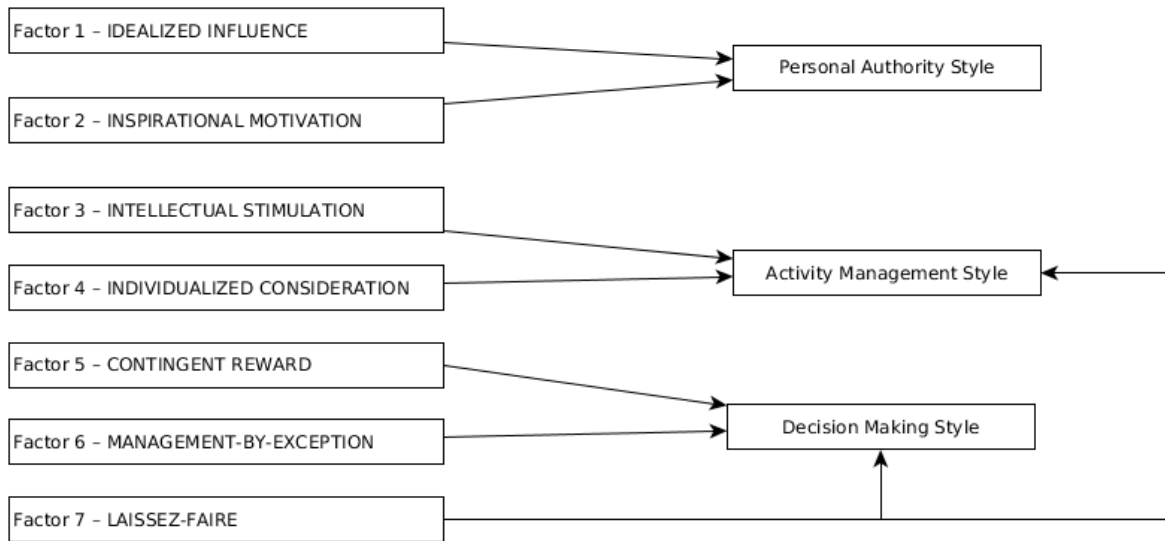


Figure 4.1: Mapping of MFLQ to Hodgkinson

4.3 Team Personalities

The survey for the team was divided into three parts.

The first part consisted of three standard questions about their age, education and how long they were working with this team leader. I specifically did not ask for the gender, because I wanted to keep the anonymity of the participants.

The second part consisted of the big five personality traits survey explained by Rothmann and Coetzer [RC03] to determine the personality traits of each individual team member. I used the big five personality traits test because it does not put people into one category but divides them into percentages. Based on five traits people can score for each trait between 0 and 40 points. Participants have to answer questions on a five point likert scale ranging from 1=disagree, 2=slightly disagree, 3=neutral, 4=slightly agree and 5=agree.

These traits include

- Extroversion (**E**)
- Agreeableness (**A**)
- Conscientiousness (**C**)
- Neuroticism (**N**)
- Openness to Experience (**O**)

Extroversion is the personality trait of seeking fulfillment from sources outside the self or in community. High scorers tend to be very social while low scorers prefer to work on their projects alone.[RC03]

Agreeableness reflects how much individuals adjust their behavior to suit others. High scorers are generally considerate, kind, generous, trusting and trustworthy, helpful, and willing to compromise their interests with others. Agreeable people also have an optimistic view of human nature. Low scorers place self-interest above getting along with others. They are generally unconcerned with others' well-being, and are less likely to extend themselves for other people. [RC03]

Conscientiousness is a tendency to display self-discipline, act dutifully, and strive for achievement against measures or outside expectations. It is related to the way in which people control, regulate, and direct their impulses. High scores on conscientiousness indicate a preference for planned rather than spontaneous behavior. [RC03]

Neuroticism describes how emotional a person is. High scorers are emotionally reactive and vulnerable to stress. They are more likely to interpret ordinary situations as threatening, and minor frustrations as hopelessly difficult. Low scorers are less easily upset and are less emotionally reactive. They tend to be calm, emotionally stable, and free from persistent negative feelings.[RC03]

Openness to Experience defines how much someone is seeking for new experience and intellectual pursuit. High scores might have a lot of ideas while low scorers are more down to earth. [RC03]

The third part consisted of 21 triples of questions (See attachment [8]). They were based on the multi-factor leadership questionnaire. The questions were transformed so that they would ask the team if the team leader would actually behave as he said he would, ask them if they want their team leader to behave as he was questioned in the survey and at last if they are satisfied with the current situation. The questions were on a five point likert scale with points 1-5 with the values 1=always, 2=sometimes, 3=Every once in a while, 4=rarely and 5=never.

4.3.1 Execution

The team had three weeks to complete the survey. The survey was published with the "Rogator" Software of the University of Stuttgart. The survey was held in English. The team had the possibility to ask me any question they had.

4.4 Theories for the Traits

In order to know how the leader or the leadership style fits best with the personality traits, I am going to define some **theories** based on how people with this trait might perceive their team leader based what they want from him.

Depending on the points the participants have from the survey, I am dividing the theories into a high score and a low score section and explain what people might expect in these sections.

Participants with a score range from 0-9 and 10-19 are in the low score section. Participants with a score range from 20-29 and 30-40 are in the high score section.

For **Trait E** the theories are:

High scorers want their team leader to **involve** himself.

Explanation: People who are outgoing, want to work with people.

Low scorers **do not want attention** from their team leader.

Explanation: People who are more introverted, enjoy to work without the attention of others.

For **Trait A** the theories are:

High scorers want their team leader to **encourage / help** others in the team.

Explanation: They believe that helping others is very important, so they want to have a team leader that encourages this.

Low scorers want their team leader to **be straightforward / give clear** instructions.

Explanation: They don't want to think too much about how the team leader means what he says, but they just want to do their work.

For **Trait C** the theories are:

High scorers want their team leader to give them **structure**.

Explanation: Those people have a planned behavior and want therefore their team leader to behave the same.

Low scorers want their team leader to leave them enough **freedom**.

Explanation: Those people do not like to plan their day and therefore want the freedom to proceed as they themselves estimate it.

For **Trait N** the theories are:

High scorers are more **stressed** if they get instructions from the team leader.

Explanation: Those people see critique as threatening.

Low scorers are **less stressed** if they receive instructions from their team leader.

Explanation: Low scorers are less easily upset and are less emotionally reactive. They tend to be calm, emotionally stable, and free from persistent negative feelings.

For **Trait O** the theories are:

High scorers want to be **challenged**.

Explanation: These type of people are already fascinated by new ideas and challenges, so they want their team leader to provide them with more challenging work and ideas.

Low scorers **don't** want to be **challenged**.

Explanation: These type of people are more down to earth and know what they can rely on, so they don't need their team leader to give them new ideas that would contradict their own ideas.

If the team leader affects those theories with his behavior by satisfying the team on each trait, then this indicates that this leader has an effect on the team based on his leadership style. This can be said, because the team leader is only measured by his leadership style.

4.5 Grouping Method

The team members are grouped in ranges of 0-9.10-19.20-29 and 30-40, depending on the points they got as a result from the big five personality traits test. Team members within the same range will be grouped by concatenation the number of each participant ranging in ascending order.

For example if Person 1 and Person 2 are in the same range, then they are Group 12 . In short form G12.

4.6 Method to validate Results

In order to only include questions that have an effect on the team leader I filtered questions based on two factors.

If a group is contradicting itself, it is not valid

Meaning that if a group says it wants their team leader to behave a certain way and if the team leader does not provide what they want but the group is still satisfied, then it is a contradiction and this result is not considered.

If every group has the same satisfaction, it is not valid

Meaning that if the average satisfaction for each group is the same numerical value or there is a small difference between the values, then this question is not considered valid. It can't support the team leader if both high and low scores are affected.

Sometimes questions are included where only parts of the groups are filtered.

5 Analysis

5.1 Results Team Leader

For the analysis of the team leaders, I collected the results from the online questionnaire and mapped their result to the style from Hodgkinson [Hod09]. Below we see both the results summary of the factors and as well as the mapped results. A detailed summary of the results can be seen in the attachment [8.1].

5.1.1 Leadership Style Team 1

The first leader got the following results from the questionnaire.

Result Factors

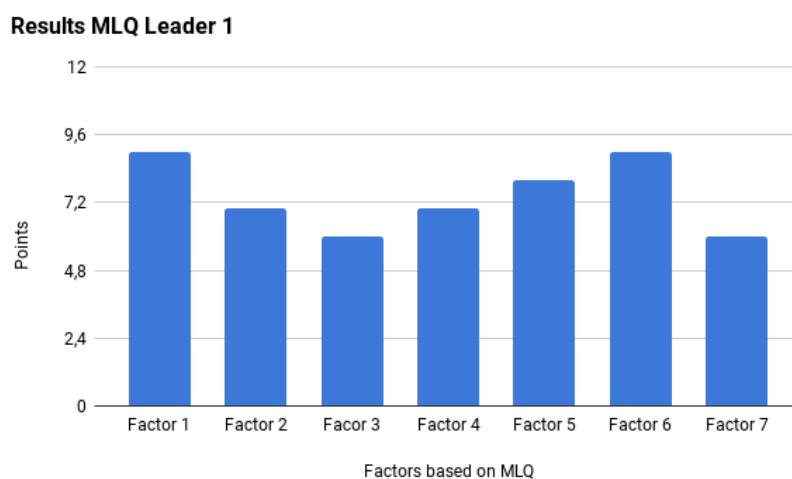


Figure 5.1: MFLQ Results as Factors for Team Leader 1

This result shows that this leader's most prominent factors are factor 1 and 6, because those are the factors where he is in the score of HIGH. These factors conclude that this leader sees himself as someone who shows dedication to the team and gives the team clear directions on how they should perform.

Result Mapping

Personal Authority Style (66%)

Activity Management Style (52%)

Decision Making Style (64%)

This result might indicate that the team leader is someone who is very enthusiastic. He has the knowledge and charisma to motivate the team, but does not see the need to support the team too much. He does not want to take time from his tasks, but rather wants people to just do their job as they are told.

5.1.2 Leadership Style Team 2

The second leader got the following results from the questionnaire.

Result Factors

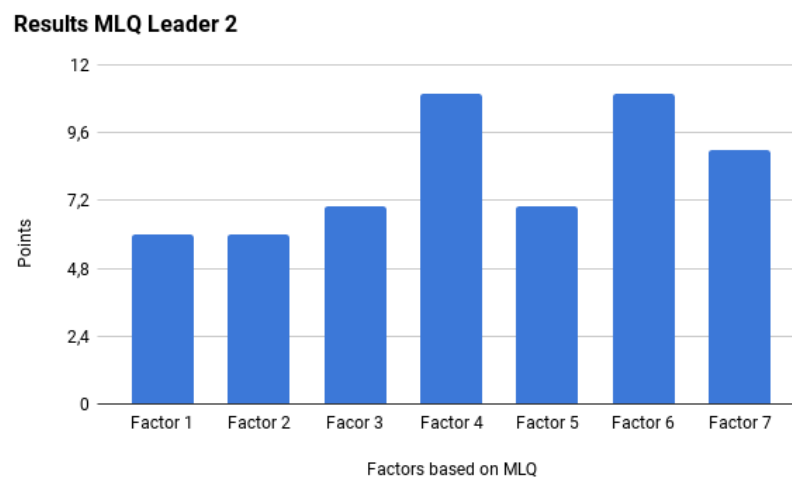


Figure 5.2: MFLQ Results as Factors for Team Leader 2

This result shows that this leader's most prominent factors are factors 4,6,7, because those are the factors where he is in the score of HIGH. This concludes that this leader sees himself as someone who shows interest in the well being of others, gives the team clear instructions and is content to let things untouched if everything is working.

Result Mapping

Personal Authority Style (50%)

Activity Management Style (75%)

Decision Making Style (75%)

This result might indicate that the team leader is someone who focuses a lot of his attention towards the team. He will take time off his own work to help and support others with their problems, but also wants people to do their job.

5.2 Results Teams

This section describes the results from the team survey. I will start by describing team 1 first and then team 2. For each trait, the questions that support the theories will be presented and evaluated by the ranges they support.

5.3 Team 1

These are the results from team 1 reflecting the behavior of the first team leader.

5.3.1 Personality Traits Test Result

Trait	Person 1	Person 2	Person 3	Person 4	Person 5	Person 6
E	21	28	24	36	4	27
A	32	32	30	23	19	39
C	29	33	31	28	29	26
N	26	36	37	32	37	31
O	27	31	33	30	15	30

Figure 5.3: Personality Traits Team 1 Result

5.3.2 Grouping for Trait E

G4 is the range of 30-40 points.

G1236 is the range of 20-29 points.

G5 is the range of 0-9 points.

5.3.3 Questions that support Team Leader 1 on Trait E

The scale of the results is from 1 to 5 where 1 is the best score and 5 is the worst. The grouping in the tables is in descending order. Starting from the highest range, going down to the lowest range.

Question 1: The first question determines if the participants feel good around their team leader

Team	average satisfaction
G4	3
G1236	1.5
G5	1

This result supports the theory that Software Engineers with a range of 20 - 29 points **want** their team leader to **involve** himself.

This result supports the theory that Software Engineers with a range of 0 - 9 points want their team leader to **not** give them **attention**.

This result shows that people with a range of 30 - 40 points do not like being around their team leader.

Question 3: The third question asks the team if they want their team leader to enable them to look at old problems in new ways

Team	average satisfaction
G4	1
G1236	2.25
G5	3

This result supports the theory that Software Engineers with a range of 30 - 40 points **want** their team leader to **involve** himself.

The teams perceives the team leader as someone who wants them to think differently and because he actually does this, G5 is not satisfied. For G1236 the effort is not enough so they do not share the same enthusiasm as G4.

Question 5: The fifth question asks if the developer wants to know from the team leader what he has to do in order to be rewarded

Team	average satisfaction
G4	1
G1236	2.25
G5	3

This result supports the theory that Software Engineers with a range of 30 - 40 points **want** their team leader to **involve** himself.

Question 9: The ninth question asks if the team members want to receive feedback from their team leader

Team	average satisfaction
G4	1
G1236	1.25
G5	2

This result supports the theory that Software Engineers with a range of 30 - 40 points **want** their team leader to **involve** himself.

The result of G1236 does not support the theory that they want their team leader to involve himself even though they are satisfied. The group is contradicting itself here.

Question 11: The eleventh question asks the team members if they want their team leader to tell them how he thinks they are doing

Team	average satisfaction
G4	1
G1236	2
G5	3

This result supports the theory that Software Engineers with a range of 30 - 40 points **want** their team leader to **involve** himself.

This result supports the theory that Software Engineers with a range of 20 - 29 points **want** their team leader to **involve** himself.

Question 12: The twelfth question asks if the team leader is recognizing the accomplishments in the team

Team	average satisfaction
G4	1
G1236	1.25
G5	3

This result supports the theory that Software Engineers with a range of 30 - 40 points **want** their team leader to **involve** himself.

This result supports the theory that Software Engineers with a range of 20 - 29 points **want** their team leader to **involve** himself.

The result shows that Software Engineers with ranges of 0 - 9 points do not want attention, because this team leader is recognizing the accomplishments in the team they are not satisfied.

Question 18: The 18th question asks if the team wants their team leader to get attention to less involved team members

Team	average satisfaction
G4	1
G1236	1.25
G5	4

This result supports the theory that Software Engineers with a range of 30 - 40 points **want** their team leader to **involve** himself.

This result supports the theory that Software Engineers with a range of 20 - 29 points **want** their team leader to **involve** himself.

This result shows clearly that Software Engineers with a low range, are not interested in getting attention from the team leader. The rest of the team is satisfied with his behavior.

Question 19: The 19th question asks if the team wants their leader to call attention to what the team can accomplish

Team	average satisfaction
G4	1
G1236	1.5
G5	3

This result supports the theory that Software Engineers with a range of 30 - 40 points **want** their team leader to **involve** himself.

This result supports the theory that Software Engineers with a range of 20 - 29 points **want** their team leader to **involve** himself.

The average satisfaction of G5 indicates that this group does not like attention and therefore supports the idea that Software Engineers with ranges of 0 - 9 points are not interested in getting attention.

Question 20: The 20th question asks the team if they want to know the given standards by their team leader

Team	average satisfaction
G4	1
G1236	1.5
G5	3

This result supports the theory that Software Engineers with a range of 30 - 40 points **want** their team leader to **involve** himself.

This result supports the theory that Software Engineers with a range of 20 - 29 points **want** their team leader to **involve** himself.

A low value in Trait E objects with a leadership style that has an activity management style of 52%. It might indicate that low ranges cannot cope with this type of leader because according to them they are getting too much attention.

5.3.4 Grouping for Trait A

G1236 is the range of 30-40 points.

G4 is the range of 20-29 points.

G5 is the range of 10-19 points.

5.3.5 Questions that support Team Leader 1 on Trait A

The scale of the results is from 1 to 5 where 1 is the best score and 5 is the worst. The grouping in the tables is in descending order. Starting from the highest range, going down to the lowest range.

Question 3: The third question asks the team if they want their team leader to enable them to look at old problems in new ways

Team	average satisfaction
G1236	2.25
G4	1
G5	3

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to **encourage** / **help** others in the team.

Question 4: The fourth question asks the developers if they want from their team leader to help them develop themselves

Team	average satisfaction
G1236	1.75
G4	3
G5	2

This result supports the theory that Software Engineers with a range of 30 - 40 points want their team leader to **encourage** / **help** others in the team.

It is interesting that ranges 30 - 40 points are satisfied that the team leader helps them, but the slightly lower range of 20 - 29 points is not satisfied with their team leader.

Question 5: The fifth question asks if the developer wants to know from the team leader what he has to do in order to be rewarded

Team	average satisfaction
G1236	2.25
G4	1
G5	3

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to **encourage** / **help** others in the team.

Question 10: The tenth question asks if the team members want from their team leader to provide them with new ways at puzzling things

Team	average satisfaction
G1236	1.75
G4	3
G5	2

This result supports the theory that Software Engineers with a range of 30 - 40 points want their team leader to **encourage / help** others in the team. It is surprising that G4 is not as satisfied as G1236 even though their team leader does encourage the team. This result type repeats itself during the analysis of team 1, because of the small group.

Question 11: The eleventh question asks the team members if they want their team leader to tell them how he thinks they are doing

Team	average satisfaction
G1236	2
G4	1
G5	3

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to **encourage / help** others in the team.

Question 12: The twelfth question asks if the team leader is recognizing the accomplishments in the team

Team	average satisfaction
G1236	1.25
G4	1
G5	3

This result supports the theory that Software Engineers with a range of 30 - 40 points want their team leader to **encourage / help** others in the team.

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to **encourage / help** others in the team.

G5 is not satisfied with question 12, because instead of giving clear instructions, the team leader actually takes time to recognize accomplishments in the team and wasting time in the eyes of G5.

Question 19: The 19th question asks if the team wants their leader to call attention to what the team can accomplish

Team	average satisfaction
G1236	1.5
G4	1
G5	3

This result supports the theory that Software Engineers with a range of 30 - 40 points want their team leader to **encourage** / **help** others in the team.

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to **encourage** / **help** others in the team.

Question 20: The 20th question asks the team if they want to know the given standards by their team leader

Team	average satisfaction
G1236	1.5
G4	1
G5	3

This result supports the theory that Software Engineers with a range of 30 - 40 points want their team leader to **encourage** / **help** others in the team.

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to **encourage** / **help** others in the team.

5.3.6 Grouping for Trait C

G23 is the range of 30-40 points.

G1456 is the range of 20-29 points.

5.3.7 Questions that support Team Leader 1 on Trait C

The scale of the results is from 1 to 5 where 1 is the best score and 5 is the worst. The grouping in the tables is in descending order. Starting from the highest range, going down to the lowest range.

Question 10: The tenth question asks if the team members want from their team leader to provide them with new ways at puzzling things

Team	average satisfaction
G23	1.5
G1456	2.25

This result supports the theory that Software Engineers with a range of 30 - 40 points want their team leader to give them **structure** in their work.

Question 13: The 13th question asks if the team leader wants to change anything if everything is working

Team	average satisfaction
G23	2.5
G1456	1.75

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to give them **structure** in their work.

Based on the decision making style of 64% for this team leader, it might indicate that ranges of 20 - 29 points think that this is enough from the team leader and ranges of 30 - 40 points do not think that their team leader changes enough with these percentages.

5.3.8 Grouping for Trait N

G23456 is the range of 30-40 points.

G1 is the range of 20-29 points.

5.3.9 Questions that support Team Leader 1 on Trait N

The scale of the results is from 1 to 5 where 1 is the best score and 5 is the worst. The grouping in the tables is in descending order. Starting from the highest range, going down to the lowest range.

Question 4: The fourth question asks the developers if they want from their team leader to help them develop themselves

Team	average satisfaction
G23456	2.2
G1	1

This result supports the theory that Software Engineers with a range of 20 - 29 points react more **stressed** if they get instructions from their team leader. G23456 is not satisfied because the team leader actually gives them instructions and they do not enjoy it.

Question 11: The eleventh question asks the team members if they want their team leader to tell them how he thinks they are doing

Team	average satisfaction
G23456	2.2
G1	1

This result supports the theory that Software Engineers with a range of 20 - 29 points react more **stressed** if they get instructions from their team leader.

Question 13: The 13th question asks if the team leader wants to change anything if everything is working

Team	average satisfaction
G23456	2.2
G1	1

This result supports the theory that Software Engineers with a range of 20 - 29 points react more **stressed** if they get instructions from their team leader.

Question 14: The 14th question asks if the the team has the freedom to accomplish their tasks how they want

Team	average satisfaction
G23456	1.8
G1	1

This result supports the theory that Software Engineers with a range of 30 - 40 points react more **stressed** if they get instructions from their team leader.

This result supports the theory that Software Engineers with a range of 20 - 29 points react more **stressed** if they get instructions from their team leader.

The team has the freedom to accomplish their tasks how they want, so they are satisfied, because they do not need to worry about getting orders.

Question 19: The 19th question asks if the team wants their leader to call attention to what the team can accomplish

Team	average satisfaction
G23456	1.8
G1	1

This result supports the theory that Software Engineers with a range of 30 - 40 points react more **stressed** if they get instructions from their team leader.

This result supports the theory that Software Engineers with a range of 20 - 29 points react more **stressed** if they get instructions from their team leader.

Based on the low score of the activity management style of the leader, the team is satisfied that they are not getting orders from their team leader. This might indicate that higher ranges of trait N want an activity management style of under 52%.

Question 20: The 20th question asks the team if they want to know the given standards by their team leader

Team	average satisfaction
G23456	1.8
G1	1

This result supports the theory that Software Engineers with a range of 30 - 40 points react more **stressed** if they get instructions from their team leader.

This result supports the theory that Software Engineers with a range of 20 - 29 points react more **stressed** if they get instructions from their team leader, but because the team leader does not do it, they are satisfied.

Question 21: The 21st question asks the team if they want their team leader to tell them no more than what is absolutely essential

Team	average satisfaction
G23456	2
G1	1

This result supports the theory that Software Engineers with a range of 20 - 29 points react more **stressed** if they get instructions from their team leader. Based on the decision making style of 64%, it indicates that ranges of 30 - 40 points prefer less than 64% to also be satisfied.

5.3.10 Grouping for Trait O

G2346 is the range of 30-40 points.

G1 is the range of 20-29 points.

G5 is the range of 10-19 points.

5.3.11 Questions that support Team Leader 1 on Trait O

The scale of the results is from 1 to 5 where 1 is the best score and 5 is the worst. The grouping in the tables is in descending order. Starting from the highest range, going down to the lowest range.

Question 3: The third question asks the team if they want their team leader to enable them to look at old problems in new ways

Team	average satisfaction
G2346	1.75
G1	3
G5	3

This result supports the theory that Software Engineers with a range of 30 - 40 points want to be **challenged** by their team leader.

It is interesting that most of the team wants to be challenged, but they react pretty bad on instructions from their team leader as seen by the results of trait N.

Question 6: The sixth question asks if the team leader wants the team to meet on agreed-upon standards

Team	average satisfaction
G2346	1.25
G1	2
G5	2

This result supports the theory that Software Engineers with a range of 30 - 40 points want to be **challenged** by their team leader. G1 and G5 are not satisfied because the leader actually challenges the team with his HIGH value of factor 6.

Question 9: The ninth question asks if the team members want to receive feedback from their team leader

Team	average satisfaction
G2346	1.25
G1	1
G5	2

This result supports the theory that Software Engineers with a range of 30 - 40 points want to be **challenged** by their team leader.

This result supports the theory that Software Engineers with a range of 20 - 29 points want to be **challenged** by their team leader.

Question 11: The eleventh question asks the team members if they want their team leader to tell them how he thinks they are doing

Team	average satisfaction
G2346	2
G1	1
G5	3

This result supports the theory that Software Engineers with a range of 20 - 29 points want to be **challenged** by their team leader.

Question 12: The twelfth question asks if the team leader is recognizing the accomplishments in the team

Team	average satisfaction
G2346	1.25
G1	1
G5	3

This result supports the theory that Software Engineers with a range of 30 - 40 points want to be **challenged** by their team leader.

This result supports the theory that Software Engineers with a range of 20 - 29 points want to be **challenged** by their team leader.

Question 14: The 14th question asks if the the team has the freedom to accomplish their tasks how they want

Team	average satisfaction
G2346	1.75
G1	1
G5	2

This result supports the theory that Software Engineers with a range of 20 - 29 points want to be **challenged** by their team leader. Group 2346 is contradicting itself, because they do not want to have the challenge to do how they please, but are still satisfied that the team leader challenges them to accomplish their tasks how they want. Therefore their result is not considered.

Question 18: The 18th question asks if the team wants their team leader to get attention to less involved team members

Team	average satisfaction
G2346	1
G1	2
G5	4

This result supports the theory that Software Engineers with a range of 30 - 40 points want to be **challenged** by their team leader.

This result supports the theory that Software Engineers with a range of 20 - 29 points want to be **challenged** by their team leader.

This result suggests that G5 is in the company for a long time and is used to the behavior that team members who are less involved should not get attention from the team leader.

Question 19: The 19th question asks if the team wants their leader to call attention to what the team can accomplish

Team	average satisfaction
G2346	1.5
G1	1
G5	3

Based on the high personal authority style of 66% for this team leader it shows that Software Engineers with a range of 30 - 40 and 20 - 29 points want to be **challenged** by their team leader.

Question 20: The 20th question asks the team if they want to know the given standards by their team leader

Team	average satisfaction
G2346	1.5
G1	1
G5	3

This result supports the theory that Software Engineers with a range of 30 - 40 points want to be **challenged** by their team leader.

This result supports the theory that Software Engineers with a range of 20 - 29 points want to be **challenged** by their team leader.

5.4 Team 2

These are the results from team 2 reflecting the behavior of the second team leader.

5.4.1 Personality Traits Test Result

Trait	Person 1	Person 2	Person 3	Person 4	Person 5	Person 6	Person 7	Person 8	Person 9	Person 10	Person 11	Person 12	Person 13	Person 14
E	25	9	33	37	17	19	19	17	21	20	21	10	15	6
A	23	27	33	25	26	20	22	31	26	28	26	24	32	13
C	31	23	31	33	28	16	28	26	31	26	24	31	19	20
N	29	23	31	25	22	16	25	28	34	17	23	27	17	31
O	30	25	32	33	28	25	29	26	29	25	23	20	31	23

Figure 5.4: Personality Traits Team 2 Result

5.4.2 Grouping for Trait E

G34 is the range of 30-40 points.

G191011 is the range of 20-29 points.

G56781213 is the range of 10-19 points.

G214 is the range of 0-9 points.

5.4.3 Questions that support Team Leader 2 on Trait E

The scale of the results is from 1 to 5 where 1 is the best score and 5 is the worst. The grouping in the tables is in descending order. Starting from the highest range, going down to the lowest range.

Question 2: The second question asks if a team member wants to know in few simple words from the team leader what he should do

Team	average satisfaction
G34	3
G191011	1
G56781213	2.167
G214	1

This result supports the theory that Software Engineers with a range of 0 - 9 points want their team leader to **not** give them **attention**.

The result of the group G191011 is not valid here, because they contradict themselves.

Question 3: The third question asks the team if they want their team leader to enable them to look at old problems in new ways

Team	average satisfaction
G34	3
G191011	2
G56781213	2.167
G214	1

This result supports the theory that Software Engineers with a range of 0 - 9 points want their team leader to **not** give them **attention**.

Question 6: The sixth question asks if the team leader wants the team to meet on agreed-upon standards

Team	average satisfaction
G34	3
G191011	2.5
G56781213	2.5
G214	1

This result supports the theory that Software Engineers with a range of 0 - 9 points want their team leader to **not** give them **attention**.

Question 9: The ninth question asks if the team members want to receive feedback from their team leader

Team	average satisfaction
G34	3.5
G191011	1.5
G56781213	2.667
G214	2.5

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to **involve** himself.

Question 10: The tenth question asks if the team members want from their team leader to provide them with new ways at puzzling things

Team	average satisfaction
G34	3.5
G191011	1.75
G56781213	2.333
G214	1

This result supports the theory that Software Engineers with a range of 0 - 9 points want their team leader to **not** give them **attention**.

Range 20 - 29 points seem to be satisfied too, but their answer contradicts itself.

Question 11: The eleventh question asks the team members if they want their team leader to tell them how he thinks they are doing

Team	average satisfaction
G34	3
G191011	1.75
G56781213	2.667
G214	3.5

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to **involve** himself. The result from G214 supports the theory that Software Engineers with a lower range in points prefer not to be bothered.

Question 12: The twelfth question asks if the team leader is recognizing the accomplishments in the team

Team	average satisfaction
G34	2.5
G191011	1.75
G56781213	2.167
G214	2.5

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to **involve** himself.

Question 13: The 13th question asks if the team leader wants to change anything if everything is working

Team	average satisfaction
G34	3
G191011	2.25
G56781213	2.5
G214	1.5

This result supports the theory that Software Engineers with a range of 0 - 9 points want their team leader to **not** give them **attention**.

Question 17: The 17th question asks the team members if they want their team leader to question their beliefs

Team	average satisfaction
G34	3
G191011	2
G56781213	2
G214	1

This result supports the theory that Software Engineers with a range of 0 - 9 points want their team leader to **not** give them **attention**.

Question 20: The 20th question asks the team if they want to know the given standards by their team leader

Team	average satisfaction
G34	3
G191011	2
G56781213	1.833
G214	1.5

This result supports the theory that Software Engineers with a range of 10 - 19 points want their team leader to **not** give them **attention**.

This result supports the theory that Software Engineers with a range of 0 - 9 points want their team leader to **not** give them **attention**.

Question 21: The 21st question asks the team if they want their team leader to tell them no more than what is absolutely essential

Team	average satisfaction
G34	3
G191011	1.5
G56781213	1.833
G214	1

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to **involve** himself.

This result supports the theory that Software Engineers with a range of 10 - 19 points want their team leader to **not** give them **attention**.

This result supports the theory that Software Engineers with a range of 0 - 9 points want their team leader to **not** give them **attention**.

5.4.4 Grouping for Trait A

G3813 is the range of 30-40 points.

G1245679101112 is the range of 20-29 points.

G14 is the range of 10-19 points.

5.4.5 Questions that support Team Leader 2 on Trait A

The scale of the results is from 1 to 5 where 1 is the best score and 5 is the worst. The grouping in the tables is in descending order. Starting from the highest range, going down to the lowest range.

Question 2: The second question asks if a team member wants to know in few simple words from the team leader what he should do

Team	average satisfaction
G3813	3.333
G1245679101112	1.5
G14	1

This result does not support the theory that Software Engineers with a range of 20 - 29 points want their team leader to **encourage / help** others in the team, because this group is contradicting itself.

This result supports the theory that Software Engineers with a range of 10 - 19 points want their team leader to give them **straightforward** instructions.

Question 7: The seventh question asks the team members if they can always work in the same ways as usual

Team	average satisfaction
G3813	2.667
G1245679101112	1.4
G14	1

This result does not support the theory that Software Engineers with a range of 20 - 29 points want their team leader to **encourage / help** others in the team, because this group is contradicting itself.

This result supports the theory that Software Engineers with a range of 10 - 19 points want their team leader to give them **straightforward** instructions.

Question 8: The eighth question asks if the team members have faith in their team leader

Team	average satisfaction
G3813	3.333
G1245679101112	1.5
G14	1

This result does not support the theory that Software Engineers with a range of 20 - 29 points want their team leader to **encourage / help** others in the team, because this group is contradicting itself.

This result supports the theory that Software Engineers with a range of 10 - 19 points want their team leader to give them **straightforward** instructions.

Question 9: The ninth question asks if the team members want to receive feedback from their team leader

Team	average satisfaction
G3813	4.333
G1245679101112	1.8
G14	3

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to **encourage** / **help** others in the team.

Question 13: The 13th question asks if the team leader wants to change anything if everything is working

Team	average satisfaction
G3813	3.667
G1245679101112	2.1
G14	1

This result supports the theory that Software Engineers with a range of 10 - 19 points want their team leader to give them **straightforward** instructions.

Question 14: The 14th question asks if the the team has the freedom to accomplish their tasks how they want

Team	average satisfaction
G3813	2.667
G1245679101112	1.6
G14	1

This result supports the theory that Software Engineers with a range of 10 - 19 points want their team leader to give them **straightforward** instructions.

Question 16: The 16th question asks if the team members want their team leader to help them find meaning in their work

Team	average satisfaction
G3813	3.667
G1245679101112	1.3
G14	1

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to **encourage / help** others in the team.

This result supports the theory that Software Engineers with a range of 10 - 19 points want their team leader to give them **straightforward** instructions.

Question 17: The 17th question asks the team members if they want their team leader to question their beliefs

Team	average satisfaction
G3813	3.333
G1245679101112	1.7
G14	1

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to **encourage / help** others in the team.

This result does not support the theory that Software Engineers with a range of 10 - 19 points want their team leader to give them **straightforward** instructions, because this result contradicts itself.

Question 20: The 20th question asks the team if they want to know the given standards by their team leader

Team	average satisfaction
G3813	3
G1245679101112	1.8
G14	1

This result supports the theory that Software Engineers with a range of 10 - 19 points want their team leader to give them **straightforward** instructions.

Question 21: The 21st question asks the team if they want their team leader to tell them no more than what is absolutely essential

Team	average satisfaction
G3813	3
G1245679101112	1.5
G14	1

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to **encourage / help** others in the team.

This result supports the theory that Software Engineers with a range of 10 - 19 points want their team leader to give them **straightforward** instructions.

5.4.6 Grouping for Trait C

G134912 is the range of 30-40 points.

G2578101114 is the range of 20-29 points.

G613 is the range of 10-19 points.

5.4.7 Questions that support Team Leader 2 on Trait C

The scale of the results is from 1 to 5 where 1 is the best score and 5 is the worst. The grouping in the tables is in descending order. Starting from the highest range, going down to the lowest range.

Question 2: The second question asks if a team member wants to know in few simple words from the team leader what he should do

Team	average satisfaction
G134912	1.8
G2578101114	1.571
G613	2.5

This result might indicate that range 30-40 points and ranges of 20-29 points are satisfied with the team leader because he is very **structural** and range 10-19 is not satisfied because they need more freedom. This result might be influenced by the personal authority style of over 75%.

Question 4: The fourth question asks the developers if they want from their team leader to help them develop themselves

Team	average satisfaction
G134912	2.6
G2578101114	2.286
G613	4.5

This result supports the theory that Software Engineers with a range of 30 - 40 points want their team leader to give them **structure** in their work.

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to give them **structure** in their work.

This result shows clearly that Software Engineers with a range of 10 - 19 points do not want their team leader to give them structure. They want their freedom to develop themselves on their own.

Question 5: The fifth question asks if the developer wants to know from the team leader what he has to do in order to be rewarded

Team	average satisfaction
G134912	2.6
G2578101114	1.571
G613	3

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to give them **structure** in their work.

Question 6: The sixth question asks if the team leader wants the team to meet on agreed-upon standards

Team	average satisfaction
G134912	2.6
G2578101114	1.857
G613	3.5

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to give them **structure** in their work.

This result supports the idea that range of 10-19 points wants more freedom but does not get it from this team leader.

Question 7: The seventh question asks the team members if they can always work in the same ways as usual

Team	average satisfaction
G134912	2.2
G2578101114	1.429
G613	1

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to give them **structure** in their work.

this result supports the theory that Software Engineers with a range of 10 - 19 points want their team leader to give them enough **freedom** in their work.

Question 9: The ninth question asks if the team members want to receive feedback from their team leader

Team	average satisfaction
G134912	2.6
G2578101114	1.857
G613	4

This result supports the theory that Software Engineers with a range of 30 - 40 points want their team leader to give them **structure** in their work.

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to give them **structure** in their work.

Question 10: The tenth question asks if the team members want from their team leader to provide them with new ways at puzzling things

Team	average satisfaction
G134912	2.6
G2578101114	1.714
G613	2.5

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to give them **structure** in their work.

Question 14: The 14th question asks if the the team has the freedom to accomplish their tasks how they want

Team	average satisfaction
G134912	2
G2578101114	1.429
G613	2.5

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to give them **structure** in their work.

The result might suggest that this leader provides structure as well as freedom, but not enough for the ranges 30-40 and 10-19 points.

Question 20: The 20th question asks the team if they want to know the given standards by their team leader

Team	average satisfaction
G134912	2.6
G2578101114	1.714
G613	1.5

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to give them **structure** in their work.

this result supports the theory that Software Engineers with a range of 10 - 19 points want their team leader to give them enough **freedom** in their work.

Question 21: The 21st question asks the team if they want their team leader to tell them no more than what is absolutely essential

Team	average satisfaction
G134912	2.4
G2578101114	1.429
G613	1.5

This result supports the theory that Software Engineers with a range of 20 - 29 points want their team leader to give them **structure** in their work.

this result supports the theory that Software Engineers with a range of 10 - 19 points want their team leader to give them enough **freedom** in their work.

5.4.8 Grouping for Trait N

G3914 is the range of 30-40 points.

G1245781112 is the range of 20-29 points.

G61013 is the range of 10-19 points.

5.4.9 Questions that support Team Leader 2 on Trait N

The scale of the results is from 1 to 5 where 1 is the best score and 5 is the worst. The grouping in the tables is in descending order. Starting from the highest range, going down to the lowest range.

Question 7: The seventh question asks the team members if they can always work in the same ways as usual

Team	average satisfaction
G3914	1.667
G1245781112	1.875
G61013	1

This result supports the idea that Software Engineers with a range of 10 - 19 points are **less stressed** if they receive instructions from their team leader. The ranges 30-40 and 20-29 are less satisfied because the team leader actually gives instructions and they do not like it.

Question 14: The 14th question asks if the the team has the freedom to accomplish their tasks how they want

Team	average satisfaction
G3914	1.667
G1245781112	1.75
G61013	2

This result supports the theory that Software Engineers with a range of 30 - 40 points are more **stressed** if they get instructions from their team leader.

This result supports the theory that Software Engineers with a range of 20 - 29 points are more **stressed** if they get instructions from their team leader.

Question 15: The 15th question asks if the team wants to see their team leader as their role model

Team	average satisfaction
G3914	2
G1245781112	1.375
G61013	2.33

This result supports the idea that Software Engineers with a range of 10 - 19 points are **less stressed** if they receive instructions from their team leader.

Question 20: The 20th question asks the team if they want to know the given standards by their team leader

Team	average satisfaction
G3914	2
G1245781112	2.25
G61013	1.333

This result supports the idea that Software Engineers with a range of 10 - 19 points are **less stressed** if they receive instructions from their team leader.

Question 21: The 21st question asks the team if they want their team leader to tell them no more than what is absolutely essential

Team	average satisfaction
G3914	2.333
G1245781112	1.75
G61013	1.333

This result supports the idea that Software Engineers with a range of 10 - 19 points are **less stressed** if they receive instructions from their team leader.

G1245781112 does not support the theory that Software Engineers with a range of 20 - 29 points are more likely to be **stressed**, because the group contradicts itself here.

5.4.10 Grouping for Trait O

G13413 is the range of 30-40 points.

G25678910111214 is the range of 20-29 points.

5.4.11 Questions that support Team Leader 2 on Trait O

The scale of the results is from 1 to 5 where 1 is the best score and 5 is the worst. The grouping in the tables is in descending order. Starting from the highest range, going down to the lowest range.

Question 1: The first question determines if the participants feel good around their team leader

Team	average satisfaction
G13413	2.5
G25678910111214	1.6

This result supports the theory that Software Engineers with a range of 20 - 29 points want to be **challenged** by their team leader.

If they feel good around their team leader, then they must like the way he challenges them.

Question 2: The second question asks if a team member wants to know in few simple words from the team leader what he should do

Team	average satisfaction
G13413	2.25
G25678910111214	1.6

This result shows that range 30 - 40 wants to know in simple words what they should do, but they don't get it, so they do not **feel challenged enough**. Compared to range 20 - 29 who can work more with the information they get. They feel **challenged** enough.

Question 3: The third question asks the team if they want their team leader to enable them to look at old problems in new way

Team	average satisfaction
G13413	2.75
G25678910111214	1.8

This result supports the theory that Software Engineers with a range of 20 - 29 points want to be **challenged** by their team leader.

Question 5: The fifth question asks if the developer wants to know from the team leader what he has to do in order to be rewarded

Team	average satisfaction
G13413	2.75
G25678910111214	1.9

This result supports the theory that range 30 - 40 wants to be challenged. Because the team leader does not tell the team what they have to do in order to be rewarded, they **do not feel challenged enough**. This result also supports the theory that range 20 - 29 feels **challenged** enough with what they have.

Question 7: The seventh question asks the team members if they can always work in the same ways as usual

Team	average satisfaction
G13413	2.25
G25678910111214	1.4

This result supports the theory that Software Engineers with a range of 20 - 29 points want to be **challenged** by their team leader.

Question 8: The eighth question asks if the team members have faith in their team leader

Team	average satisfaction
G13413	2.5
G25678910111214	1.6

This result supports the theory that Software Engineers with a range of 20 - 29 points want to be **challenged** by their team leader.

This result might suggest, that range 30 - 40 is not satisfied with the team leader, because he does not have the power of providing them with **enough challenges**.

Question 9: The ninth question asks if the team members want to receive feedback from their team leader

Team	average satisfaction
G13413	3.5
G25678910111214	2

This result supports the theory that range 30 - 40 points wants to be **challenged**, because these people seek for constant intellectual pursuit, so if the leader does not provide them with feedback, they cannot improve. This bothers them.

This result supports the theory that ranges of 20 - 29 points are satisfied with the current challenge.

Question 10: The tenth question asks if the team members want from their team leader to provide them with new ways at puzzling things

Team	average satisfaction
G13413	3.25
G25678910111214	1.7

This result supports the theory that Software Engineers with a range of 20 - 29 points want to be **challenged** by their team leader.

Question 14: The 14th question asks if the the team has the freedom to accomplish their tasks how they want

Team	average satisfaction
G13413	2.25
G25678910111214	1.6

This result supports the theory that Software Engineers with a range of 20 - 29 points want to be **challenged** by their team leader.

This result shows that they are able to accomplish their task how they want, but range 30 - 40 wants some challenge, meaning some change. So maybe this is why they are not completely satisfied. They maybe want their team leader to change the way they solve tasks more often.

Question 15: The 15th question asks if the team wants to see their team leader as their role model

Team	average satisfaction
G13413	2.25
G25678910111214	1.5

This result supports the theory that Software Engineers with a range of 20 - 29 points want to be **challenged** by their team leader.

Question 16: The 16th question asks if the team members want their team leader to help them find meaning in their work

Team	average satisfaction
G13413	2.5
G25678910111214	1.5

This result supports the theory that Software Engineers with a range of 20 - 29 points want to be **challenged** by their team leader.

Question 21: The 21st question asks the team if they want their team leader to tell them no more than what is absolutely essential

Team	average satisfaction
G13413	2.25
G25678910111214	1.6

This result supports the theory that Software Engineers with a range of 20 - 29 points want to be **challenged** by their team leader.

6 Discussion

The results try to compare the leadership styles of both leaders and find relationships between the leadership styles and the personality traits. The following points were found.

6.1 General Observation

6.1.1 Team 1

From the analysis you can see that leader 1 influences on trait E mostly the higher ranges. This can be explained as this leader is more of a character, he shows more dedication and acts as a role model as seen on the score HIGH for factor 1 in the multi-factor leadership style.

For Trait A, the leader influences the ranges 30-40 and 20-29 points. This result contradicts the belief I expected, meaning that high values in the activity management style would lead to this result, but the percentages of this leader is lower than those of the team leader 2.

Leader 1 influences on trait C range 30-40 and 20-29, but they are both only supported by one question. This means that this leader does not affect anyone from the team with his leadership style. This is due to the low score on factor 7. This means that he does not provide enough freedom, but also does not provide enough structure.

The next information shows the influence of leader 1 for the ranges 30-40 and 20-29. He manages to calm the team that is very sensitive to stress. This means that he does not give the team enough instructions to make them feel unease. This might suggest that decision making styles up to 64% does not stress people out.

The analysis of trait O reveals that leader 1 influences mostly ranges 30-40 and 20-29. This can be explained by the high value of personal authority style and the high values of factor 1 and 2. It shows that he is a person who is very motivating. On the other hand, the result does not make sense because factor 3 who encourages the team to think

differently is very low here. This result does not support the idea that leadership styles and traits can be compared.

6.1.2 Team 2

The following data can be observed from the analysis. You can see that leader 2 influences on trait E mostly the lower ranges. This can indicate that with his style he satisfies mostly introverted people and not so much extroverted ones. This might be due to his idea that he tells people what to do directly. Having a low score with the personal authority style he shows less dedication to the team, which leads to more satisfaction from the more introverted team members than from the extroverted ones.

Leader 2 influences on trait A the ranges 20-29 and 10-19. This would indicate that both people that are kind and egoistic, but not in an extreme way are satisfied with his leadership style. This result supports the result that this team leader has 75% in the activity management style and 75% in the decision making style. He gives clear instructions but also wants to help and encourage the team.

The following data has resulted from the analysis. Leader 2 influences on trait C mostly the ranges 20-29 but also range 30-40 and 10-19. This supports the result that this team leader gives clear instructions and tells the team to do their job as told. This supports the need of the ranges 20-29 to get structure from the team. This result can be supported with the HIGH value of factor 4.

From the analysis you can witness that leader 2 does not influence a lot of team members on trait N. He only satisfies ranges 10-19 and even their satisfaction is only supported by 4 questions. This result might indicate that most of his team is stressed and that he cannot cope with them based on his style.

The last part of the analysis displays that leader 2 influences for trait O only the ranges 20-29. This assists the result that this team leader supports the team and wants them to think of old problem in new ways a lot. The whole team wants to be challenged and he provides this with his style, because of his MODERATE value in factor 3.

6.2 Common Results

Based on the results from Team 1 and 2 on the trait E we can deduct that a personal authority style of around 50% satisfies mostly lower ranges, while the personal authority style of around 66% indicates that mostly higher ranges are affected.

7 Conclusions and Future Work

It is hard to document what leadership styles and personality traits have in common but this study shows that it is possible to connect them. Some traits can be connected to the leadership styles but others cannot. The smaller team had some discrepancies considering what was expected and what turned out to be fact. Contrary to the larger team who were able to confirm a lot of theories due to the size of the team and the data. Therefore it is important to conduct more studies that include more participants and more even teams.

Future Work

Future work might concentrate on also defining the personality trait of the team leader as well as the leadership style. This might give more indications if the team leader fits with the personality traits of the developers.

It would be interesting to expand the way to collect the data. One possible way is in creating and using a slackbot who would be able to collect data from developers around the world. Another way would be to pinpoint larger companies in Germany who have large and even teams, so that the data could be compared better.

8 Attachment

21 Questions Tripel

Category 1: I want my team leader to be like this...

This would reveal if people with a certain personality trait want this team leaders traits

Questions:

1. I want to feel good around my team leader
2. I want to have faith in my team leader
3. I want my team leader to act as a role model
4. I want my team leader to tell me in simple words what I should do
5. I want to receive feedback from my team leader
6. I want my team leader to help me find meaning in my work
7. I like looking at old problems in new ways
8. I want my team leader to provide me with new ways at puzzling things
9. I like to question my beliefs
10. I want my team leader to help me develop myself
11. I want my team leader to tell me how he thinks I am doing
12. I want that less involved team members get attention
13. I want to know what to do in order to be rewarded
14. I want my team leader to recognize my accomplishments in the team
15. I want my team leader to call attention what I can accomplish in the team
16. I like to meet agreed-upon standards
17. As long as everything is working, I don't want to change anything

18. I want my team leader to tell me the standards that I have to meet
19. I want to always work in the same ways
20. I want to have the freedom to do and accomplish my tasks how I want
21. I like to do no more than what is absolutely essential

Category 2: Does your team leader ...

This category explains if the team perceives the team leader as he sees himself

Questions:

1. Do you feel good around your team leader?
2. Do you have faith in your team leader?
3. Does your team leader make you feel proud working with him?
4. Does your team leader tell you in simple words what you should do?
5. Does your team leader give you feedback for your work?
6. Does your team leader help you find meaning in your work?
7. Does your team leader motivate you to be creative in looking at old problems in new ways?
8. Does your team leader provide you with new ways of thinking at puzzling things?
9. Does your team leader ask you to question your own beliefs and ideas?
10. Does your team leader help you develop yourself?
11. Does your team leader tell you how he thinks that you are doing?
12. Does your team leader give attention to those who seem less involved in the team?
13. Does your team leader tell you what you need to do in order to be rewarded?
14. Does your team leader recognizes your accomplishments in the team?
15. Does your team leader call attention in the team what you are able to accomplish?
16. Does your team leader call attention if you meet the agreed-upon standards?
17. As long as everything is working, does your team leader try to change things?
18. Does your team leader tell you the standards that you have to meet?
19. Does your team leader let you always work in the same ways?

20. Does your team leader lets you do what you want to do?

21. Does your team leader demand more than what is absolutely essential?

Category 3: Are you satisfied with the current situation

This category explains if this personality trait works with the style of the team leader

Questions:

I'm satisfied with the current situation

8 Attachment

Questions MLFQ						
Zeitstempel	Bitte gebe deinen Namen an	I make others feel good to be around me	I express with a few simple words what we could and should do	I enable others to think about old problems in new ways	I help others develop themselves	I tell others what to do if they want to be rewarded for their work
01.06.2017 09:46:00	Teamleiter 2	4	5	3	4	1
06.06.2017 07:59:16	Teamleiter 1	4	4	3	3	3
		1	2	3	4	5
I am satisfied when others meet agreed-upon standards	I am content to let others continue working in the same way	Others have complete faith in me	I provide appealing images about what we can do	I provide others with new ways of looking at puzzling things	I let others know how I think they are doing	I provide recognition/rewards when others reach their goals
5	4	4	1	4	5	4
4	4	4	3	3	3	4
6	7	8	9	10	11	12
As long as things are working, I do not try to change anything	Whatever others want to do is OK with me	Others are proud to be associated with me	I help others find meaning in their work	I get others to rethink ideas that they had never questioned before	I give personal attention to others who seem rejected	I call attention to what others can get for what they accomplish
5	4	1	3	2	5	5
4	2	4	3	3	4	4
13	14	15	16	17	18	19
I tell others the standards they have to know to carry out their work	I ask no more of others than what is absolutely essential					
4	4					
4	3					
20	21					

Figure 8.1: Results Team Leaders

Questions	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Category 1																					
Person 1	1	1	2	4	2	3	3	1	2	4	3	1	1	1	1	3	2	3	4	3	2
Person 2	1	1	1	3	2	1	4	1	1	3	2	3	4	3	1	4	1	3	3	1	2
Person 3	2	2	2	4	4	1	2	2	2	4	3	1	3	1	2	4	4	1	1	2	4
Person 4	1	3	1	1	1	1	5	1	1	1	1	1	3	1	1	5	1	1	1	1	1
Person 5	1	2	3	4	5	1	3	1	3	2	4	4	2	2	5	5	3	3	5	2	3
Person 6	1	3	1	2	2	1	3	1	3	2	3	2	4	2	3	2	1	2	3	1	2
Category 2																					
Person 1	1	1	3	4	1	3	2	1	2	4	3	1	5	1	1	3	3	3	4	3	4
Person 2	1	1	3	5	5	3	3	1	3	4	3	3	4	1	2	4	4	3	4	3	3
Person 3	1	1	3	4	4	1	1	1	2	3	4	1	3	2	2	3	4	1	1	2	2
Person 4	1	1	1	4	1	1	1	1	1	4	2	1	1	3	1	5	4	1	1	1	3
Person 5	2	1	4	3	5	4	2	2	3	2	3	3	4	1	5	4	4	4	4	3	4
Person 6	1	1	3	3	5	1	3	1	3	3	4	2	5	1	3	1	1	1	3	4	3
Category 3																					
Person 1	2	1	3	1	2	2	2	1	1	2	1	1	1	1	1	2	2	2	1	1	1
Person 2	2	1	2	3	3	2	2	2	2	2	3	2	3	1	2	1	3	1	3	2	2
Person 3	1	1	2	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1
Person 4	3	1	1	3	1	1	3	1	1	3	1	1	2	4	1	1	4	1	1	1	4
Person 5	1	1	3	2	3	2	2	1	2	2	3	3	2	2	1	1	2	4	3	3	2
Person 6	1	1	2	2	3	1	1	1	1	2	3	1	2	1	1	1	1	1	1	2	1

Figure 8.2: Results 21 Triple Team 1

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Declaration

I hereby declare that the work presented in this thesis is entirely my own and that I did not use any other sources and references than the listed ones. I have marked all direct or indirect statements from other sources contained therein as quotations. Neither this work nor significant parts of it were part of another examination procedure. I have not published this work in whole or in part before. The electronic copy is consistent with all submitted copies.

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