

Who's the Boss?

A quantitative study about informal leadership in
small groups

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Abstract

Background

Leadership is a huge area, with countless of schools and organizations trying their best to educate the leaders of tomorrow, but what is actually leadership? What happens in a group when no one is appointed leader? What is it that makes the group listen to some over others and who has the power over the agenda and the ability to influence people into following his or her lead?

Purpose

The purpose of this thesis was to analyze what effect gender and personality traits have on making people in a group listen to and follow someone's lead. The purpose was also to study how a majority and minority setting of gender constellations in the groups affect the results.

Method

The study used a quantitative approach and a field experiment was conducted on high school students in Stockholm. The cooperation exercise, Desert Survival Trial, was used. The participants first made an individual ranking of objects necessary to survive in a desert and then they were divided into groups and made a group ranking of the same items. By comparing the two rankings the level of influence each person has over the group's decisions was calculated. The closer a person's ranking was to the group's ranking, the higher influence over the group's decision that person had. Following this, the students answered a Big Five Personality Traits questioner to measure their personality traits.

Conclusion

The study cannot support the hypothesis of a gender effect on a person's influence over the group's decisions. It can support that the combination of the Big Five Personality Traits has a larger effect than gender on a person's ability to influence the group's decision.

Keywords

Leadership, Influence, Gender, Big Five Personality Traits, Tokenism

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*Thanks to our group, Max, Helena, Marie
and everybody else who helped us.*

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Introduction

Background

Leadership has always interested people and it has followed humanity throughout history. In almost every culture, country and group of people there has been someone in charge either by being born into it, elected, self-made or through the faith that people around has put in that person. The research field of leadership is huge and can be divided into countless leadership theories and styles. President Trump for example carry the marks of an autocratic leader while a famous transactional leader is Steve Jobs. Both are leaders, but in different ways, however, they both have in common that they were appointed the role. What happens in a group when no one is appointed leader? What is it that makes the group listen to some over others and who actually have the power over the agenda and the ability to influence people into following his or her lead? This study seeks out to investigate who becomes an informal leader in certain situations and can affect others to follow their ideas. Leadership is therefore defined as the ability of a person to influence others into following his or her ideas when no one is officially appointed the leadership role.

Certain personality traits have long been connected to who makes a good leader and though it has changed over time some characteristics seem to remain popular; being outgoing, social, and energetic remain connected to people in leading positions who are capable of making others both follow and listen.

At the same time many studies claim that men appear better at making people follow them when compared to women. With a casual glance to history this seems true as the great and influential female leaders of the past are a small minority. However, the historical lack of female leaders and the unwillingness of people to follow women might devolve from how women have occupied a lesser role in society and have often been locked out from both leadership positions and work. In the modern world where both men and women are represented in almost every segment of society, this subconscious reluctance and distancing of female influence over people continues. And so it would be interesting to analyse these two attributes, gender on one hand and personality traits on the other to see what makes someone influence a group of people into following that person's lead to the largest extent and further more to see how this might change when men and women are set in a majority and minority.

This thesis aims to study who becomes the informal leader in a group by paying attention to two different factors: personality traits and gender. The reason why this area with the two attributes of gender and personality traits is revisited is due to two major reasons. Firstly, there seem to be a lack of research in comparing these two leadership traits to see which affect a person's influence the most. Secondly, many of the recognized models and studies measuring female influence have been conducted during late 20th century and mostly in America. Time and place might lead to the results being different which will make for a topic to study.

The thesis will study this through conducting an experiment with 50 high school students in Stockholm. In order to examine how personality traits and gender impact influence, the thesis make use of the Tokenism theory created by Kanter as well as the Big Five Personality Trait theory. Tokenism is one of the most influential theories regarding male and female reactions to being in a minority and thus will be used to account for gender while the Big Five Personality Trait theory will help determine the personality traits of the participants in the experiment.

Purpose and Research Question

The purpose of this thesis is to further understand who becomes the informal leader in a group. In order to achieve this the study will focus on what it is that makes some people have greater influence over a group's decision than other group members. A quantitative study with focus on revealed preference aims to answer the research question:

What influences a group's decision?

More specifically, an experiment on high school students in Stockholm was conducted with a commonly used cooperation exercise and the results was analyzed with OLS. The goal is to gain further insight in different types of leadership and to inspire further quantitative research within the leadership academia.

Delimitation

The study is delimited to examine what effect gender, personality and group composition have on influence over a group's decision. Other factors that might have an influence, such as performance, have not been considered. It will delimit gender to only two alternatives, the participant social gender: woman or man, which also is done in Kanter's theory of Tokenism. The thesis will delimit personality to the Big Five Personality Traits: openness, conscientiousness, extraversion, agreeableness and neuroticism. This thesis will neglect all the participants perception of the situation and their view of how influential their group members are and only focus on the numerical values.

Theory

Literature Review

Leadership and Influence

What leadership is has haunted countless researchers. Is it the ability to motivate followers, good versus bad results or simply that the leader achieves the desired outcome? Stogdill wrote that "there are almost as many different definitions of leadership as there are persons who have attempted to define the concept" (Stogdill 1974). Bennis estimated there to be around 650 literary definitions of leadership by the end of the 20th century (Bennis, Townsend 1995) and by 2012 that number seems to have increased to be approximately 1400 definitions according to Kellerman (Volckermann 2012). When Silvano wrote about leadership he described it as being one of the most used terms in a great number of areas such as business and politics, with fortunes spent every day by schools and corporations to create the leaders of tomorrow. Yet it is hard to define what a leader is. (Silva 2016)

For centuries leadership was often seen as a personal quality. In his book *The Prince*, Machiavelli described a leader to be virtuous and intelligent in order of to have the support of the people (Machiavelli 1532), where large parts of the thinking went in line with the ideas of Plato and Confucius who came before him. The Great Man Theory composed by Carlyle in 19th century described leaders as heroes or exceptional people with massive intellect and intelligence who have large amounts of influence over others (Carlyle, Kinser et al. 2013).

In the 1980s Kotter started to describe leadership as "the process of moving a group (or groups) in some direction through mostly non-coercive means" emphasizing that coercion was not leadership. This view was later contested by Kellerman who claimed that a show of power and force also is a kind of leadership (Volckermann 2012). Leadership authors such as Drucker simply described a leader as "the only definition of a leader is someone that have followers" (Drucker 1996) while Northouse described leadership as someone who influence others to achieve desired goals (Northouse 2004) It is hard to find a shared meaning of leadership, but this thesis defines it as a person's ability to influence a groups decision. The definition is inspired by thinkers such as Bass who described leadership as a process characterized by the interactive influence between a leader and the followers (Silva 2016, Bass 1990b).

Gender and Influence in Groups

The fact that different genders have different abilities to influence each other is a rather well documented phenomenon (Eagly, Carli 1981, Eagly 1978). Carli wrote that men have a greater influence over group decisions than women regardless of group composition (Carli 2001) and the explanations behind this can depend on multiple reasons such as women possessing lower status, especially such power which originates from expertise and legitimised authority (Carli 1999). This can partly be explained by the gender roles that men and women have possessed through history. Where men have been more involved in leadership, high educational jobs such as doctors, lawyers and scientists which has high status while women have been more involved in other occupations with lower status and with more focus on caring which creates stereotypes that we still see today, this grants men a more natural authority (Carli 2001).

Multiple authors argue that men exert a higher level of influence in mixed groups by multiple sources (Karpowitz, Mendelberg Tali 2014, Propp 1995, DiBerardinis, Ramage et al. 1984) and that this greater influence could span across different age as well, from small kids and children up to adults. For example, an experiment conducted on small 33-month-old children indicated that when there was mixed groups of boys and girls, the boys would take more room while the girls tended to stand passively by or returned to their parents in comparison with groups consisting of just girl (Jacklin, Maccoby 1978). Another experiment conducted on older boys and girls in the 6th grade, displayed that boys had a higher ability of influencing their classmates into eating bitter cookies than girls. The analysis established that the boys made more attempts to influence and were more persistent (Dion, Stein 1978).

In group settings gender appears to influence the situation in a way that individual men are able to exercise a higher level of influence compared to individual women. This, however, changes to some extent depending on the gender composition of the group. With a majority of women and a small amount or just one single man, the man gets a disproportional large amount of influence and control over the group and its decisions, while women facing a similar situation (majority men) have a disproportionally small amount of influence (Johnson, R., Schulman 1989). However, when put in groups equally divided between the genders, women manage to acquire more influence in comparison to being in a group consisting of any kind of majority (Craig, Sherif 1986). This concept has also been supported in an experiment based on the self-ratings of union employees, where the individual women felt that they were able to influence groups with an equal gender distribution more, compared to a majority or minority in either way (Dafna 1983). At the same time, a rather interesting phenomenon which occurs in equally divided groups, is that men tend to demonstrate a higher willingness to communicate with women than with men, but also that men tend to question decisions to a higher extent than women and are asking more counter questions in comparison to women (Johnson, C., Clay-warner et al. 1996).

This disproportional distribution of influence seen in groups consisting of minority of women and men, seems to find its origin in the fact that when a person in a specific gender becomes a minority, they often start acting as a stereotype of their own gender (Carli 2001). This means that men typically increase their contribution to the assignment the fewer they become, while women typically increase their amount of contribution to the assignment the more they become. Thus, as men becomes fewer, each individual man influences the group more, compared to each individual woman. (Johnson, Schulman 1989, Bordalo, Coffman et al. 2019). Other things that separates men from women is that women are more reluctant of sharing ideas with men (Bordalo, Coffman et al. 2019), the same goes for the will of sharing career ambitions when there are men present (Bursztyn, Fujiwara et al. 2017). Even the will of taking risks decreases for women when they are surrounded by men (Booth, Cardona-Sosa et al. 2014).

Plenty of the iconic research in this area have been conducted in the late 20th-century which might highlight a need for retests, to see if the results stay the same. Many of the studies are also conducted in the United States, meaning that the results might be specific to the American cultural and socioeconomic context. Results are therefore in need of verifying across a variety of countries, for example Sweden (Globalis 2018).

Personality and Influence

Personality has been described in a multitude of ways over the years such as “an individual's characteristic pattern of thought, emotion, and behaviour, together with the psychological mechanisms – hidden or not – behind those patterns” (Funder 1997) or as set of tendencies and characteristics which determine differences in peoples psychological behaviour in thoughts, feelings and actions (Maddi 1996).

People in general have believed that personality traits are thoughts and beliefs that people imagine about them self, that personality is something only influenced by things a person has gone through and that they are created by situations in everyday life without any base in science (Walter 1996). However, in studies where self-ratings were compared to peer ratings it showed moderately high agreement on all factors studied, the view of personality traits started to change (McCrae, Costa 1987, Funder, Kolar et al. 1995). Further research has proved that personality traits are connected to family members and can be heritable (Bouchard Jr, Loehlin 2001) and longitudinal studies have been conducted, where traits are assessed and compared years apart, showing that they are consistent over time with an increasing stability over the years (Roberts, DelVecchio 2000). Personalities have also been tested across cultures where a five-dimensional structure showed that people living in the same regions show similar constellations of personality traits (Schmitt, Allik et al. 2007, McCrae, Terracciano 2005).

Despite the research of gender differences in influence some researchers claim that there is no real difference between male and female psychology. A meta-study which is connected to the Gender Similarities Model proclaimed that men and women are more alike than they are different, the study rejected previous research such as Gray's studies that men and women are strongly different in everything from communication styles to

leadership (Hyde 2005). This notion of psychological resemblance between the genders, would then mean that people should be able to influence each other at the same level regardless of gender and more due to personality traits. However, some researchers criticised this (Tannen 1990, Gray 1992).

There is research on how some personality constellations are optimal to perform certain tasks, such as the best composition of an individual's traits to achieve top efficiency in a team, which core traits are most common with managers or which traits that explains how a university student learns at different kinds of tutoring. (Maddi 1996, Georgellis, Sankae 2016, Kichuk, Wiesner 1997). There seem to be a lack of research of how a person's personality traits affect his or her ability to influence others. However, the research conducted on emerging leadership, which is when people are likely to appoint or treat a person as a leader when no leader is specifically appointed (Cogliser, Gardner et al. 2012), is somewhat similar to the leadership analysed in this thesis. Basically, having emergent leadership generates a large amount of influence over the group, where it is possible to assume that this person influences a group's decisions to a large extent.

Theoretical Framework

Tokenism

Due to the research regarding men being more influential when in minority than women, focus went out to find a theory that somewhat explains or at least could give some basic structure to why women are less influential. This, among other things, can be explained by Kanter's theory of Tokenism.

In 1977 Kanter created the charter of tokenism that would lead to large amounts of discussions regarding minorities place, influence and position within groups. This theory of Tokenism and skewed groups as it is called (Kanter 1977a), would come to be one of the most influential theories within management and psychology of how people look and act against each other unconsciously (Blomberg 2017). Kanter found that when women represents 15-20 % of the group constellation, it affected how the group worked and that the minority would experience more focus on their appearance, fall deeper in stereotypical norms and that a polarization between the two groups would increase (Kanter 1977b). Furthermore, Kanter pointed out that women in minority would have a limited influence on group decisions and performance due to their low numbers (Kanter 1977), which supports the research on influenceability. A further note made by Kanter, was that this effect was more common for women in management roles and when women entered occupations with a history of being male dominated.

Yet it seem that when the amount of women increase in a group and coming closer to "critical mass", somewhere around 30-40% of the group composition, their influence on the groups decisions and performance increase as well (Torchia, Calabrò et al. 2011, Konrad, Kramer et al. 2008). Kanter's theory have been tested multiple times in plenty of different settings and with different minorities (Gustafson 2008, Floge, Merrill 1986), her theory has stood the test of time. However, the effect that Kanter's theory describes, does not affect men and women in the same way. While women influenced less and were scrutinised, men who entered jobs typically performed by women faced encouragement and advantages which has proved to accelerate their careers (Floge, Merrill 1986, Hammond, Mahoney 1983).

The thesis aims to use Kanter's theory as it explains gender differences in groups, which creates our hypotheses number 1.

Hypothesis 1a: A male high school student has a higher influence on the group's decision than a female high school student.

Hypothesis 1b: A male high school student has a higher influence on the group's decision than a female high school student, in a female dominated group.

Big Five Personality Traits

The theory of the Big Five Personality Traits has come to be considered the most valid model for measuring personality traits, furthermore it is one of the most commonly used theories for exploring personalities among people (John, Naumann et al. 2008) and has been fabricated through many years of studies. The theory originated from research conducted by Fiske and his four terms of personality adaptability, emotional control, conformity and inquiring intellect (Fiske 1949). Next to the studies conducted by Fiske, the research of personality traits evolved to consist of five groups, in turn influenced by a full compilation of relevant formulations of traits in contemporary American English related to aspects of human behaviour (Norman 1967). Later followed by more defined research, truly specifying the five personality traits or NEO-FI which is its academic description (Costa Jr, McCrae 1992, Goldberg, L. R. 1981).

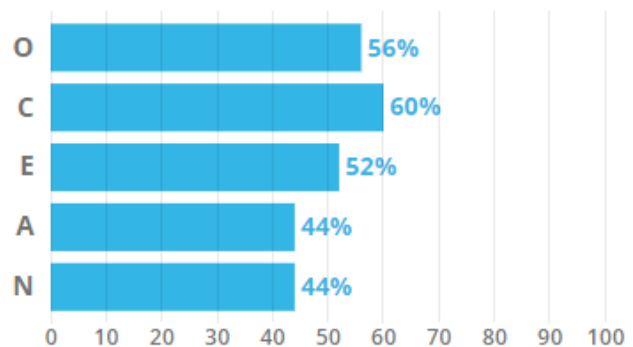
The five traits in the theory are shown in table 1. (McCrae, Costa Jr 2008)

Table 1.		
Trait	High	Low
Openness to experience	<i>Imaginative, curious</i>	<i>Rigid, practical</i>
Conscientiousness	<i>Hardworking, purposeful</i>	<i>Laid-back, unambitious</i>
Extraversion	<i>Warm, outgoing, cheerful</i>	<i>Reserved, solitary</i>
Agreeableness	<i>Generosity, honesty</i>	<i>Selfishness, aggression</i>
Neuroticism	<i>Sad, scared</i>	<i>Calm, stable</i>

The theory of the Big Five as of today is composed of the five personality traits listed in table 1. When conducting the test, the person tested answer about 50 questions (Appendix B), where there are typically ten questions for each of the five personality traits based on special trait-descriptive markers (Lewis 1992, Fruyt, McCrae et al. 2004). The alternatives ranges from one to five where 1=disagree, 3=neutral and 5=agree. After the test subjects have answered all questions, the results are calculated. The participant is now placed in a spectrum between 0 to 100 % in each personality trait, showing the strength of each of the five personality traits. A person who scores high on extraversion is therefore more probable of being outgoing and cheerful while a person scoring low on agreeableness tend to be more selfish and aggressive. Together, the scores on the different traits creates a person's personality.

FIGURE 1

Figure 1 shows the result after taking the test. When comparing the percentages in figure 1 with the traits in table 1 it becomes clear that the person in question is higher in openness, extraversion and conscientiousness showing she is more characterized by being imaginative, hardworking and outgoing. The scores on agreeableness and neuroticism are lower so she tends to be more selfish than generous and more stable than sad.



Due to the lack of research on how a person's personality traits affect their ability to influence others which is mentioned in the literature review, we assume that traits important for emergent leadership are the same as for influence over others.

Research has showed that people who score high on extraversion and thus are talkative and cooperative, tend to become emerging leaders (Judge, Bono et al. 2002). Additionally, extraverts like to spread their own view of a problem and because of this they often become opinion leaders, which in turn creates a strong social influence over other people in a group (Reichard, Riggio et al. 2011, Riva, Wiederhold et al. 2016). Some studies have even stated that extraversion is the single strongest personality trait that decides if a person becomes a leader or not

(Judge, Bono et al. 2002). This is backed up with peer reviews which state that sociability and dominance, two of extraversion's major facets, are the key to being appointed a leader by fellow peers (Gough 1990). Since a large amount of the research show that extraversion explain why certain people become emergent leaders instead of others, the theses will focus on that trait for easier interpretation and a more focused analysis.

The remaining four personality traits have other associations with emergent leadership. The connection between agreeableness and emergent leadership is a bit ambiguous. Agreeableness is on one hand connected to leadership (Bass 1990a) since leaders should be agreeable (Judge, Bono et al. 2002), while on the other hand, people who radiate agreeableness are often rather modest (Goldberg, Lewis R. 1990) which is not optimal for being a leader, emergent or otherwise (Bass 1990). Focusing on neuroticism, Judge and Bono shows through their studies neuroticism to be negatively correlated with leadership in general. When looking at the other personality traits and their connection to leadership and emergent leaders, it seems that both openness and conscientiousness are both quite strongly related to leadership but not as much as extraversion (Judge, Bono et al. 2002).

This makes it possible to formulate a hypothesis whether the Big Five Personality Traits can explain influence on a group's decision amongst high school students in Stockholm, and if extraversion by itself explains influence on a group's decision. Lastly, this will be tested in combination with Kanter's theory of Tokenism, if females will benefit from being extraverted to the same extent as males.

Hypothesis 2a: The Big Five Personality Traits can explain a high school student's influence on a group's decision.

Hypothesis 2b: Extraversion will explain a high school student influence over a group's decision.

Hypothesis 2c: Being extraverted as a female high school student does not have the same effect to influence the group's decision as being extraverted has for male high school students.

Research Gap

As can be observed from the theories above, both Kanter and the research on extraversion from the Big Five Personality Traits claim to explain why some people effect a groups decision more than others, but which of these are the strongest? There has been research which argue for both sides, yet little research has been made where both aspects are compared. A study was conducted in Switzerland calculating group influence and studying its connection to gender as well as examining who the willing leader would be (Born, Ranehill et al. 2018). Sadly, they did not put much thought into how the personality of the participants could affect the study. The same could be said for quite a large amount of research regarding gender where researchers only see the gender of people and totally neglects the personality traits. Besides retesting previous theories, the study also tests how a female in a female dominated group is affected by being more extraverted. Furthermore, the thesis will compare the explanatory values of gender, personality and group composition on group influence, thus comparing two research fields.

Hypothesis 3a: Being extraverted as a female high school student does not have the same effect to influence the group's decision as being extraverted has for male high school students, regardless if there is a male or female minority in the group.

Hypothesis 3b: When controlling for personality, the gender effect will decrease, compared to the model in hypothesis 1, but it will still explain who influences a group's decision.

Methodology

Study Design

The method used is deductive quantitative with focus on revealed preference in the positivist paradigm. The approach of using an actual experiment is in this case preferable to a survey-like method, as the goal is to find participant's actual behaviour and not have to rely on participant's perceived behaviour, which is what would have been captured with a survey. If a survey would have been used it is likely that the results would have a bias towards behaviour that goes against social norms, for example few would openly state that they act in a more dominant way towards women than men.

Population and Sample

The chosen sample consists of senior students from Östra Real high school which is one of the biggest schools in Stockholm and therefore should attract different types of students and have a better representation of the population. Another practical reason is that as seniors, the students should all be 18 and can authorize themselves to be a part of an experiment, instead of needing their guardian's approval. The helpfulness of a teacher who supported the experiment to a large extent was also one of the reasons to choose Östra Real. To get an even better representation of the population more schools were contacted, and experiment occasions were planned but due to a pandemic they were all cancelled.

The population consists of high school students in Stockholm. The population was chosen because of practical and structural reasons. The first practical reason is that high school students have more class-time together, meaning an increased probability to have access to a gathered group of students. This is the case especially when compared to university students who spend less time in a classroom setting. Since the thesis is written in Stockholm the experiment is conducted in Stockholm.

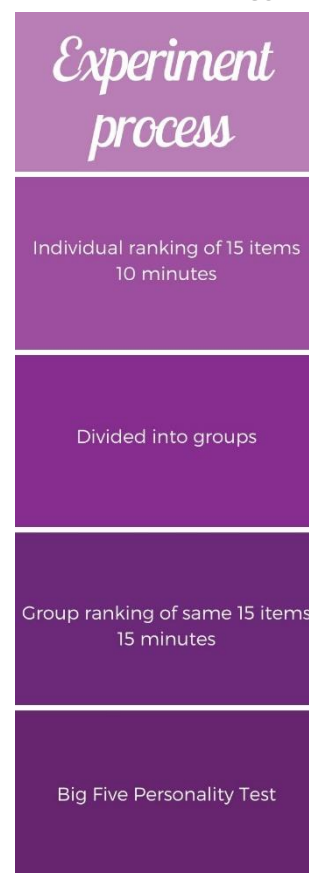
The first structural reason for choosing youths is that the likelihood of the participants having done this cooperation exercise beforehand is smaller, compared to people that are older. Also, the likelihood of biasedness is smaller, the students have chosen the same high school, but they are less homogeneous compared to for example university students who are more like minded and specialized toward a common interest. Furthermore, the younger population helps to minimize the risk of someone having more knowledge within the tested area. Finally, a large part of the iconic research in this area has been focused on participants older than high school students, increasing the chances that the thesis contributes to this academic field.

Experiment design

The study obtained its data by a field experiment, described in figure 2. A commonly used cooperation exercise, the Desert Survival Trail, translated into Swedish, since the participants have Swedish as their first language, was used. (Appendix A) The cooperation exercise with a survival environment was chosen to minimize the preconceptions of who would be better at the task, because there is a right or wrong answer and since there is a winning team, which creates incentives for the participant to do their best.

The scope of the Desert Survival Trial is a plane crash in the desert, the participants recover 15 items from the crashed plane and need to rank them in order of how important they are for their survival. The participants had ten minutes to come up with their own, individual ranking, the most important item is scored one, the second most important scored two and so on to the least important scored 15. The

FIGURE 2



participants were then divided into groups of four or five, with a majority of girls or boys in each group. The majority consisted of three to four people while the minority always consisted of one person.

The aim of the group division was to have groups of four. The reason for not having more than four in each group was to get as many groups as possible and in that way increase statistical significance. However, when an uneven number of participants occurred, rather than letting someone not participate, the dominant gender would be increased from three to four in some groups. The reason for not having three participants in the group was because of the original Token theory, it needs the minority to consist of a maximum 15 %, otherwise the effect of Tokenism will not show. Even though later studies have shown an effect up to 40 %, a group of four was preferred as it is closer to the original theory and because it should show a higher effect of Tokenism. To get a higher statistical significance all the groups had a gender majority, which is why gender-neutral groups were excluded. The participants were divided into groups by last name to achieve randomization and reduce biasedness.

After creating an individual ranking, the groups made a joint ranking for the fifteen items. To create incentive to perform, the group with the ranking most similar to a predetermined experts' ranking received energy shots from Boost, donated by The Sports Committee of SASSE, worth around 700 sek. After this the participants filled in their personal information, such as name - to identify gender, and name of their group members – to identify treatment.

Finally, the participants took a Big Five Personality test online on their mobile devices and wrote down their results. (Appendix B) This online test was chosen because it is free, it works on mobile devices, is medium length which increases the chance of completed tests, and because merited lecturers at Stockholm School of Economics has used this website which proves its reliability. Over a million people has used this particular test in the last 30 days (Truity). The online test was taken after the group exercise was done so the participant would not be affected by their results, for example if someone got high on extraversion they might be aware of how extraverted they supposedly are and act more on that personality trait then they normally would have done.

Measures

Dependent variable

The dependent variable is the influence percentage. It is obtained by first computing the influence score, which is the sum of the differences between the individual's ranking and the group ranking. If player one ranked the flashlight as number three, and the group ranked it as number eight, the difference is five. The sum of all those differences are the player's influence score. The score is then inverted and set relative to the group by dividing the player's score with the sum of the group's score. If the dependent variable is 100 % the player's ranking is the same as the one created by the group and the player therefore had 100 % influence of the group's decision. When transforming it to a percentage and inverting it, it becomes easy to interpret.

$$Influence\% = 1 - \left(\frac{influencescore_1}{influencescore_1 + influencescore_2 + influencescore_3 + influencescore_4} \right)$$

Independent variables

Our study seeks to understand what it is that makes some people have a higher influence than others on the group's decision. With base in theory this thesis will evaluate the independent variables of gender and personality. Gender as a dummy variable where male = 0 and female = 1. Personality is based on The Big Five Personality Traits and is measured as a percentage. The different treatments are the gender combinations in the groups. Two treatments are used: male dominated groups = 0 and female dominated groups = 1.

Control variables

The control variables are the independent variables which will not be a focus in this thesis. The variables are based on accessibility and relevance. It would have been interesting to control for parent's education or yearly salary but the risk of the participants not knowing this was too high. Instead, the participants' zip-code is used and the

average incomes in the area where the participants live (Checkbiz 2018), which provides a rough indication of socioeconomic status. The average income is then divided into three categories: low, medium and high based on the Swedish taxation thresholds. The other control variable is the birth month of the participants. Studies (Psychology Today 1989, Bound, Jaeger 2000, Dhuey, Lipscomb 2008) show that people born earlier in the year tend to be more developed and as an example might perform better in sports. This can have an influence on how the students behave in groups.

Coding

The coding was conducted as follows

Table 2.	
Group	Each group got a number between 0-11
Player	Each player got a number between 0-49
Female	If male = 0 female = 1
Female dominated	If male dominated = 0 if female dominated = 1
Birth month	January = 0, February = 1, ..., December = 11
Socioeconomical status	If average yearly income on player _i zip code: average income < 455 300 = 0 455 300 < average income < 662 300 = 1 Average income > 662 300 = 2
Openness	Player _i result in %
Conscientiousness	Player _i result in %
Extraversion	Player _i result in %
Agreeableness	Player _i result in %
Neuroticism	Player _i result in %
Score	The sum of the differences between the individual's ranking and the experts' ranking for each item. lower = less difference to the experts = better
Group score	The sum of the differences between the group's ranking and the experts' ranking for each item. Lower = less difference to the experts = better
Influence score	The sum of the differences between the individual's ranking and the group's ranking for each item. Lower = less difference between own ranking and group ranking = higher influence
Influence %	1- Player _i influence score/the sum of the group's influence score. Giving us a percentage of influence for each player in relation to their group. 100 % = the player's ranking is the same as the group's ranking.

Statistical method

We estimate linear models using OLS. This has two advantages over logistic models: the coefficients are easier to interpret, and the model requires fewer assumptions. Error terms might be correlated across observations: we thus use heteroskedasticity-robust standard errors.

Hypothesis 1a: A male high school student has a higher influence on the group's decision than a female high school student.

$$Influence\% = \beta_0 + \delta_1 female + \delta_2 birthmonth + \delta_3 socestat + u$$

A t-test is used to test:

$$H_0: \delta_1 = 0 \text{ against } H_1: \delta_1 \neq 0$$

Hypothesis 1b: A male high school student has a higher influence on the group's decision than a female high school student, in a female dominated group.

$Influence\% = \beta_0 + \delta_1 female + \delta_2 femdom + \delta_3 female * femdom + \delta_4 birthmonth + \delta_5 socestat + u$
A t-test is used to test:

$$H_0: \delta_3 = 0 \text{ against } H_1: \delta_3 \neq 0$$

Hypothesis 2a: The Big Five Personality Traits can explain a high school student's influence on a group's decision.

$$Influence\% = \beta_0 + \beta_1 extraversion + \beta_2 openness + \beta_3 conscientiousness + \beta_4 agreeableness + \beta_5 neuroticism + \delta_1 birthmonth + \delta_2 socestat + u$$

A F-test is used to test the joint hypothesis:

$$H_0: \beta_1 = 0 \text{ and } \beta_2 = 0 \text{ and } \beta_3 = 0 \text{ and } \beta_4 = 0 \text{ and } \beta_5 = 0 \text{ against}$$

$$H_1: \beta_1 \neq 0 \text{ and } \beta_2 \neq 0 \text{ and } \beta_3 \neq 0 \text{ and } \beta_4 \neq 0 \text{ and } \beta_5 \neq 0$$

Hypothesis 2b: Extraversion will explain a high school student's influence over a group's decision.

A t-test is used to test:

$$H_0: \beta_1 = 0 \text{ against } H_1: \beta_1 \neq 0$$

Hypothesis 2c: Being extraverted as a female high school student does not have the same effect to influence the group's decision as being extraverted has for male high school students.

$$Influence\% = \beta_0 + \delta_1 female + \delta_2 femdom + \beta_1 extraversion + \delta_3 female * extraversion + \delta_4 birthmonth + \delta_5 socestat + u$$

A t-test is used to test:

$$H_0: \delta_3 = 0 \text{ against } H_1: \delta_3 \neq 0$$

Hypothesis 3a: Being extraverted as a female high school student does not have the same effect to influence the group's decision as being extraverted has for male high school students, regardless if there is a male or female minority in the group.

$$Influence\% = \beta_0 + \delta_1 female + \delta_2 femdom + \beta_1 extraversion + \delta_3 female * extraversion * femdom + \delta_4 birthmonth + \delta_5 socestat + u$$

A t-test is used to test:

$$H_0: \delta_3 = 0 \text{ against } H_1: \delta_3 \neq 0$$

Hypothesis 3b: When controlling for personality, the gender effect will decrease, compared to the model in hypothesis 1, but it will still explain who influences a group's decision.

$$Influence\% = \beta_0 + \delta_1 female + \beta_1 extraversion + \beta_2 openness + \beta_3 conscientiousness + \beta_4 agreeableness + \beta_5 neuroticism + \delta_2 birthmonth + \delta_3 socestat + u$$

A t-test is used to test:

$$H_0: \delta_1 = 0 \text{ against } H_1: \delta_1 \neq 0$$

Complications

Limitations

As a compliment to this empirical method interviews and observations could have been used. That would have given a deeper understanding of the participants perception of who influenced who and in what way. Questions such as *who influenced you* and *who did you perceive to be the leader*, could have been answered but as wanted to try to capture their behaviours the numerical method was used.

As the method entire being revolves around high school students being physically present, Covid-19 made us painfully aware of the limitations of performing a field experiment. The restriction put on high schools, made it impossible to collect the amount of data initially planned, resulting in a shortage of data which reduced the possibility of attaining statistically significant results.

Gender neutral groups would have been a valued addition to the experiment, but due to the risk of not acquiring statically significant results and the shortage of data, this was not prioritized. However, reducing the alternatives, to only focusing on gender and personality and not group composition, would have generated a result easier to interpret. Groups consisting of only one gender would not add anything to the experiment as a female would obviously have the most influence in a female dominated group. Further risks that might emerge when conducted field experiment in a closed setting, might be that the participants know that they are part of an experiment and might alter their behavior. In order of minimizing this risk, the participants were not informed of what the experiment was about.

Ideally the participants would be strangers to each other's as preconcerted roles will probably be present in a class that have studied together for three years. This could be a problem since the established roles can lead to some being unwilling to share their views or to fold their opinions to someone who inhabits a special status role in the class. At the same time, it could be said that it is the students' personality traits which give them their preconcerted role and that it therefore would not affect the experiment.

Another problem is that the chosen independent variables might not be the most accurate to explain a person's influence over a group's decision. Another possible variable to examine is preconceptions of who would be good at what, as an example: if the test involved ranking car engines, would the result be the same as ranking items for survival?

Furthermore, the heteroskedasticity-robust standard errors used in the models tends to have a downward bias which will be more likely to get false positives. The usage of clustered standard errors was considered, but the risk of having to few clusters made us abandon the idea.

Ethical Considerations

All the main areas in ethical principles for business research (Bryman, Bell 2011) have been considered in this experiment. All the participants were informed that they were part of the experiment and all checked a box stating that they were "above 18 years old and consent to be a part of the experiment". Since no qualitative method was used, all the participants know exactly what information has been gathered about them as they wrote it down themselves. However, the experiment was conducted during class time, and even though the students were asked and allowed to say no to participating, group pressure could have affected their choice to participate. The research papers, with the participants name and zip code, will be destroyed and the data used in the research will thus become anonymous.

To avoid unethical p-hacking the statistical method was decided before looking at the data and will not be changed when looking at the results. The experiment was finished, and no more data was gathered after starting to process the data. The data from all participants and groups will be used and not selected in order to increase statistical power.

Results

Characteristics and Descriptive Statistics

The data consists of 50 participants, 23 male and 27 females, they form 12 groups where five are male dominated and seven female dominated groups. They are all seniors in the high school Östra Real in Stockholm. All the birth months are represented among the participants, most common is April with the birthday of ten participant while June and November are the least common with only one participant each. 15 participants live in areas where the average income is below the lower taxation threshold, 24 lives in areas with average income between the two thresholds, leaving 11 that lives in areas with an average income above the higher taxation threshold.

In table 3 characteristics of the Big Five Personality Traits are presented together with the dependent variable Groupinfluence and the control variables.

Table 3.					
VARIABLES	N	mean	sd	min	max
Female	50	0.540	0.503	0	1
Femdom	50	0.580	0.499	0	1
Bmonth	50	4.880	3.062	0	11
Socestat	50	0.920	0.724	0	2
Openness	50	67.86	18.24	25	100
Conscientiousness	50	61.78	15.61	15	92
Extraversion	50	65.30	22.41	10	96
Agreeableness	50	61.28	15.60	15	94
Neuroticism	50	44.04	22.38	0	94
Groupinfluence	50	76.00	5.605	66.36	87.10

Correlations

The correlations between the Big Five Personality Traits, the dependent variable and the control variables are shown in table 4. As the theory predicts neuroticism has a negative correlation with influence over the group while openness and extraversion have a positive correlation. Contradicting to the research done on the theory of the Big Five Personality Traits, conscientiousness and agreeableness are negatively correlated to influence in this sample. Also, according to theory extraversion has the strongest positive correlation, however only one correlation, agreeableness, is statistically significant.

The two control variables, socioeconomic status and birth month are not statistically significant correlated with any other variable. Females tend to be statistically significantly more agreeable and more neurotic which could be expected by some of the theory (Hyde 2005).

The low to medium-low correlations indicates that there is no multicollinearity.

Table 4.	Openness	Conscie...	Extrav...	Agreea...	Neuroticism	Groupinfluence	Female	Socestat	Bmonth
Openness	1								
Conscientiousness	-0.0883	1							
Extraversion	0.156	0.386**	1						
Agreeableness	0.370**	-0.0806	-0.0705	1					
Neuroticism	0.0624	-0.0596	-0.0952	0.269	1				
Groupinfluence	0.0432	-0.103	0.211	-0.328*	-0.152	1			
Female	-0.0627	0.119	0.155	0.308*	0.422**	0.0170	1		
Socestat	0.104	0.0273	0.00403	0.226	-0.0817	-0.157	0.0650	1	
Bmonth	0.0136	-0.152	-0.191	0.0575	0.274	-0.141	-0.222	-0.0136	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

OLS Regressions

Hypothesis 1

Table 5.	1 (1a) Groupinfluence	2 (1a) Groupinfluence	3 (1b) Groupinfluence	4 (1b) Groupinfluence
Female	0.189 (1.603)	-0.0534 (1.687)	-1.262 (3.176)	-1.150 (3.277)
Bmonth		-0.265 (0.267)		-0.235 (0.282)
Socestat		-1.229 (1.105)		-1.176 (1.133)
Femdom			-1.948 (2.317)	-1.306 (2.406)
Female*femdom			3.001 (3.839)	2.207 (3.931)
_cons	75.90*** (1.160)	78.72*** (2.286)	76.49*** (1.491)	78.87*** (2.373)
r2	0.000288	0.0453	0.0152	0.0525

Robust standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In table 5 the model for hypothesis 1 is presented. Model 1 and 2 are for hypothesis 1a, where model 1 is without control variables and model 2 is with the control variables. The p-values for female are both above 0.9, which

means the effect is insignificant at all meaningful levels. The coefficient for female is close to zero, especially in relation to the high standard errors, and the r^2 is low which indicate that this model does not accurately display the data.

Model 3 and 4 are for hypothesis 1b, where model 3 is without control variables and model 4 is with the control variables. The interaction between female and a female dominated group is not significant at any meaningful level and the R^2 value is low which indicates that the models are explaining at max 5 %, thus the models are missing explanatory variables. Further, the coefficient is half of the standard deviation, which also implies the coefficients statistical insignificance. However, as the coefficient is positive it would mean that, if it was significant, females benefits 2.2 percentage points from being in majority.

The conclusion is that we cannot reject the null hypothesis $H_0: \delta_1 = 0$ or the null hypothesis $H_0: \delta_3 = 0$. In this sample, we cannot say that gender matters for a player's influence on the group's decision and we cannot say whether women would have more or less influence in a female dominated group.

Hypothesis 1a: A male high school student has a higher influence on the group's decision than a female high school student.	Not supported
Hypothesis 1b: A male high school student has a higher influence on the group's decision than a female high school student, in a female dominated group.	Not supported

Hypothesis 2

Table 6.	1 (2b) Groupinfluence	2 (2b) Groupinfluence	3 (2c) Groupinfluence	4 (2c) Groupinfluence
Extraversion	0.0615 (0.0323)	0.0575 (0.0330)	0.0115 (0.0585)	0.00631 (0.0525)
Openness	0.0374 (0.0449)	0.0389 (0.0456)		
Conscienti...s	-0.0789 (0.0531)	-0.0804 (0.0505)		
Agreeablen...s	-0.129* (0.0556)	-0.122* (0.0585)		
Neuroticism	-0.0132 (0.0351)	-0.00987 (0.0377)		
Bmonth		-0.191 (0.267)		-0.147 (0.296)
Socestat		-0.720 (1.125)		-1.315 (1.144)
Female			-6.093 (5.548)	-6.408 (5.418)
Femdom			-1.156 (1.877)	-0.901 (1.927)
Female*extraversion			0.0992 (0.0770)	0.101 (0.0730)
_cons	82.81*** (4.031)	84.26*** (3.881)	75.54*** (4.267)	77.90*** (4.803)
r2	0.206	0.224	0.0887	0.123

Robust standard errors in parentheses

* p<0.05, ** p<0.01, *** p<0.001

The F-test conducted on the Big Five Personality Traits generated $F(5, 44) = 4.02$ and $\text{Prob} > F = 0.0043$. This is testing the joint significance of all the Big Five Personality Traits and it shows a low p-value which is in line with the F statistic which is significant at the 99 % level.

In table 6 the models for hypothesis 2 are presented. Model 1 and 2 are for hypothesis 2b, where model 1 is without control variables and model 2 with the control variables. The p-values for the coefficient extraversion are low ($p_1 > 0.06$ and $p_2 > 0.08$), making them significant at a 90 % level, but not at a 95 % level. For both the models the r^2 is above 20 % and is greater with the control variables which suggest that the models are explaining 1/5 of the

effect. The coefficient is positive which supports the hypothesis; however, the coefficient suggests that one percentage point higher on extraversion generates 0.06 percentage points higher group influence which would not be considered economically significant. If we would choose to focus on agreeableness instead of extraversion, we would see that it is negatively correlated with group influence and significant at the 95 % level, but it too would not be economically significant.

Model 3 and 4 are for hypothesis 2c, where model 3 is without control variables and model 4 is with the control variables. The interaction between female and extraversion is not significant at any meaningful level and the model explains 10 % of the effect. If the coefficient was significant it would not support the hypothesis but suggest the opposite; that being extraverted benefits females.

The conclusion is:

H2a: We can reject the null hypothesis $H_0: \beta_1 = 0$ and $\beta_2 = 0$ and $\beta_3 = 0$ and $\beta_4 = 0$ and $\beta_5 = 0$ on the 99 % level.

H2b: We can reject the null hypothesis $H_0: \beta_1 = 0$ on the 90 % level, but not on the 95 % level.

H2c: We cannot reject the null hypothesis $H_0: \delta_3 = 0$.

This means that together, the Big Five Personality Traits have an effect on the influence on a group's decision. With a 90 % confidence level we can say that being more extraverted has an effect on how much influence a high school student has over a group's decision. We cannot say if being extraverted has a different effect for a male than a female.

Hypothesis 2a: The Big Five Personality Traits can explain a high school student's influence on a group's decision.	Supported
Hypothesis 2b: Extraversion will explain a high school student's influence over a group's decision.	Not supported
Hypothesis 2c: Being extraverted as a female high school student does not have the same effect to influence the group's decision as being extraverted has for male high school students.	Not supported

Hypothesis 3

Table 7.	1 (3a)	2 (3a)	3 (3b)	4 (3b)
	Groupinfluence	Groupinfluence	Groupinfluence	Groupinfluence
Female	-2.170 (2.850)	-2.255 (2.858)	2.355 (1.617)	2.256 (1.815)
Femdom	-2.848 (2.137)	-2.517 (2.224)		
Extraversion	0.0319 (0.0465)	0.0287 (0.0442)	0.0495 (0.0331)	0.0483 (0.0329)
Female*extra version*femdom	0.0626 (0.0469)	0.0599 (0.0452)		
Bmonth		-0.152 (0.294)		-0.0701 (0.285)
Socestat		-1.193 (1.098)		-0.809 (1.176)
Openness			0.0525 (0.0458)	0.0529 (0.0474)
Conscientiousness			-0.0834 (0.0491)	-0.0826 (0.0480)
Agreeableness			-0.153** (0.0549)	-0.143* (0.0574)
Neuroticism			-0.0332 (0.0357)	-0.0338 (0.0388)
_cons	74.80*** (3.756)	76.94*** (4.557)	83.92*** (3.624)	84.52*** (3.744)
r2	0.0910	0.121	0.237	0.248

Robust standard errors in parentheses

* p<0.05, ** p<0.01, *** p<0.001

In table 7 the models for hypothesis 3 are presented. Model 1 and 2 are for hypothesis 3a, where model 1 is without control variables and model 2 is with the control variables. The interaction term female*extraversion*femdom has p-values which are insignificant at all meaningful levels, both with and without the control variables. Furthermore, the coefficient is getting closer to 0, also indicating that it is not significant.

Model 3 and 4 are for hypothesis 3b, without and with the control variables. Here we are looking at the independent variable female once again, and as well as in hypothesis 1 the p-values are insignificant. However, the p-values are lower when controlling for personality and the r^2 is higher, now explaining 25 % of the effect, indicating that this model might be closer to the truth. The coefficient is considerable higher, indicating a stronger

effect when controlling for personality and, in contrast to the theory, the coefficient is positive which indicates that females have a higher influence over the group's decision. As in the first model, we find agreeableness to be statistically significantly negatively correlated with group influencely.

Thus, we reject the null hypothesis $H_0: \delta_3 = 0$ and $H_0: \delta_1 = 0$. We cannot say if there is a different effect of being extraverted for a male than a female depending on which gender dominates the group. Also, we cannot say if there is a gender effect on influencing the group's decision when controlling for personality traits.

Hypothesis 3a: Being extraverted as a female high school student does not have the same effect to influence the group's decision as being extraverted has for male high school students, regardless if there is a male or female token in the group.	Not supported
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Hypothesis 3b: When controlling for personality, the gender effect will decrease, compared to the model in hypothesis 1, but it will still explain who influences a group's decision.	Not supported
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Analysis

The results show that one sub hypothesis out of seven was supported. The reason for this could be that the sample is too small or that there is no effect to be found. The results do show, however, that influence over a group's decision can be explained to a higher degree by personality traits than by gender. Unfortunately, the results are not statistically significant and thus they are unreliable.

Hypothesis 1

Hypothesis 1a set out to examine Kanter's theory in a group of high school students. The results were insignificant, and the model had low explanatory value. Due to the relation between the high p-values, low coefficient and the high standard deviation this might be because there is no effect in this younger group and not due to the low number of participants. This could be explained by how society is in constant change or that many of the studies conducted on Kanter's theory are outdated or have a focus on people older than high school students.

The results of model 1b insinuates that women have a higher influence on the groups decision when they are in a majority. This however goes against the stated hypothesis and the relevant theory. The theory says that a male that is alone in a female majority group should have more influence than a female, thus the coefficient should have been negative. However, since the experiment generated an insignificant coefficient, we cannot reject the possibility that the composition of gender in the group has no effect. Even this inconclusive result goes against the theory. One possibility is that it is because of the few numbers of participants in the study but it might also be because the effect found in previous literature does not exist in this group of high school students in Stockholm.

Hypothesis 2

First and foremost, the F-test for hypothesis 2a gave a result which shows that the personality traits of high school students have an explanatory value of who influences the groups decisions, which in turn is in line with the theory and hypothesis and thus seems like a plausible true result.

In hypothesis 2b however, the experiment concludes that extraversion in itself is the main driving personality trait to influence which goes in line with both the hypothesis and theory. However, the fact that the coefficient is only significant at 90 % limit instead of 95 % limit, forces the study to reject the hypothesis despite the high plausibility of a true effect. The only trait that has a statistically significant value is agreeableness; a more agreeable person tends to have a lower influence on the group's decision. On one hand this makes sense since literature has shown that leaders tend not to be excessively modest, which people high on agreeableness tend to be. On the other hand, leaders must be agreeable to some extent. Unfortunately, even though the experiment found some somewhat significant results, in reality the level of extra influence generated by a higher extraversion is so low that it is negligible. This contradicts the previous research that says that there is an effect that matter.

Whether the effect of extraversion depends on gender or not is examined in model 2c and the effect is found to be statistical and economical insignificant. Thus, we cannot say whether the effect of extraversion differ between gender.

Hypothesis 3

As a continuation of hypothesis 2c, model 3a seeks to understand how extraversion effects females when they are in a female dominated group. The coefficient female*extraversion*femdom is positive, which would indicate that for an increasing extraversion a female in a female dominated group influences more, compared to when she is in a minority. However, since it is insignificant and close to zero any effect seems too small to pick up in this sample.

In model 3b female influence becomes positive and quite strong relative to the model in hypothesis 1, which would indicate that women have a higher influence on a groups decision than men do. Since this model has a higher r^2 it explains more of the effect and are in turn more reliable than the one in hypothesis 1. The findings are in line with the ones in hypothesis 1: it contradicts Kanter's token theory. This model also shows that the big five

has a higher explanatory value than gender which is supported by the models in hypothesis 1 and 2. This supports the literature on the Big Five Personality Traits and contradicts Kanter.

Discussion

This thesis seeks to understand what it is that makes some people influence a group's decision more than others. It therefore asked the question:

What influences a group's decision?

To answer the research question: the study cannot reject the possibility that it does not matter what gender a person has among high school students in Stockholm when influencing a group's decision. The group composition also seems to have little impact on a person's influence. Finally, the Big Five Personality Traits jointly seems to explain a person's influence over a group's decision to a higher degree than gender does.

Implications for Tokenism

Among other things, Kanter's theory on Tokenism implies that women in minority should not be able to influence a group to the same extent as a man in minority. The results in this thesis, however, suggests that there might not be a significant gender effect (Floge, Merrill 1986, Gustafson 2008).

This thesis is far from enough to question the validity the Theory of Tokenism as a large amount of studies would be required to overthrow such an established theory. However, some of the results presented here might give a small hint that the theory is starting to become outdated, perhaps because society has moved forward in terms of equality. The World Bank's initiative *Women business and the law* states that there have been improvements in women's legal rights (Hylland, Djankov et al. 2019). Also, Historical Composite Gender Inequality index consisting of the four dimensions health, autonomy within the household, political power and socioeconomic resources reveals that most countries of the world have made progress in gender equality over the past 50 years (Dilli, Carmichael et al. 2019). This shows that the world has changed since Tokenism was first issued in 1977.

Another possibility for the contradicting results might be that only small amounts of data related to Kanter has been collected in Sweden and that Sweden's longstanding fight for equality has taken the country further than many other countries in terms of equality. One more implication is how age affect Kanter's theory? Are the effects the same between groups of teenagers and grownups or do they differ? According to research presented in the literature review in this thesis, gender effects in groups should be visible over age groups.

Implications for Leadership

The view this thesis adds to leadership as a research area is a deeper understanding of who influences group members depending on the personality traits and gender present in the group when no leader is appointed.

An implication for management that can be discussed is the usage of gender quotations. When companies are actively recruiting for a specific position, they usually know what kind of competence and person they are looking for. If the recruitment has already decided that they need a woman, then the question becomes, why do they need a woman? Is it because they want more women for equality or because they want to diversify their agenda? When looking at politics women and men tend to have different areas of interest (Lyn, Fox et al. 1991, Schwindt-Bayer 2006, Shevchenko 2002, Clots-Figueras 2011) and to get a more diverse agenda it would seem reasonable to simply add women to the group. However, the findings in this this thesis suggests that considering the personalities of the group members would give a higher effect.

Another aspect is that of wanting to be the leader of a group. Knowing what it is that influences a group's decision is an advantage for the person who wants the group to follow their agenda. For example, if a person wants to influence people more, one would need to act more outgoing and cheerful while if the person wants someone else to take the lead it would act more generous and honest instead.

Limitations and Future Research

There are limitations in the thesis that must be taken into consideration when reading the text.

Some limitations of the thesis, and possible steps for future research, are found in the execution of the experiment. First, the sample is too small and needs to be extended in order to achieve more reliable results. Secondly there are more women than men participating in the experiment and a few groups consist of five people in comparison with most of the groups that consist of four people. The optimal solution would be the same amount of both genders and the same amount of people in all groups. Thirdly, the sample is from one school in Stockholm. To make the sample more representative of the population and to capture the different people attending different schools, multiple schools could be used.

Further parameters to research with this method would be to test people of different ages and in both male and female dominated workplaces. On one hand, having an environment closer to Kanter's original setting, to understand if her theory still holds in time. On the other hand, to understand if it is personality or gender that influences a group's decision in different settings. Could it be that the gender effect is stronger in an adult board meeting than amongst high school students?

Instead of changing the setting, further research could study the effect of other factors than personality and gender, which this thesis limits itself to. For example, knowledge of the discussed area could have a greater effect on influence than gender, making the topic important. Will men have a higher influence when discussing car engines?

We have compared gender and personality traits and their effect on leadership. In the future some focus could be put at the critical mass mentioned by Kanter, where the signs of tokenism are the strongest when the token is smaller than 15% (Kanter 1977). This experiment used 25% which is defined as a minority and not a token (Blomberg 2017). However, it is supposed to be enough with 25 % to get the effect of tokenism as other studies have calculated critical mass to be achieved at 30% (Torchia, Calabrò et al. 2011) but further research is needed to define what the critical mass is for youths in Stockholm.

The area of people's influenceability and its connection to different personality traits is also a possible step for future research.

Conclusion

Leadership is an academic field well researched with many associated theories. One type of leadership, which was examined in this thesis, is how much influence a person has over the decisions made by a group. Why does some people seem to get their will through all the time, while others never do? According to research men tend to have a higher level of influence over group's decision than women (Carli 2001) and people who are more social and outgoing tend to be listened to, become emergent leaders and in turn affect a group's decision more than someone who scores lower on extraversion (Reichard, Riggio et al. 2011). These two attributes, gender and personality traits and their effect on a person's ability of influencing others have been studied in this thesis. It was done by using Kanter's theory of Tokenism together with a stream of continuous research which suggests that when women are in a minority they influence less, but also by adding the Big Five Personality Traits. The reason this area is revisited is because there seems to be a lack of research on comparing these two leadership traits and because many of the recognized models and studies measuring female influence have been conducted during late 20th century and mostly in America. Time and place might lead to the results being different which will make for a topic to study. This led to the research question:

What influences a group's decision?

The study was delimited to examine what effect gender, group composition and personality have on influence over a group's decision.

The thesis created three different hypothesis which consisted of seven sub hypotheses regarding the influence of gender and personality traits a person has over a group's decisions. To find the answer a quantitative field experiment was conducted. The cooperation exercise Desert Survival Trial was performed on 50 high school students where they ranked 15 items in order of how important they were for survival. First the students ranked the items individually and then as a group. The two rankings were compared, and the closer the individual's ranking were to the group's ranking the more influence that person was considered to have.

The results were for the most part statistically and economically insignificant, for six out of seven sub hypotheses. We could not reject the hypothesis that there is no effect of extraversion or gender on influence over a group's decision. The results were stronger for extraversion than gender to have an impact, but they were still insignificant. There is no support for the effect of extraversion to be different on gender or the group composition to make a difference. The reason for this result might however be not due to lack of effect but due to the sample being too small. The joint effect of all the Big Five Personality Traits had a significant effect on group influence and thus seems to have a higher explanatory value on a person's influence in comparison to gender.

The results implied that the lack of a gender effect opposes the theory of Tokenism and calls for future research on the theory. The society and people preconceived notions about gender are slowly changing and that might be the reason the no effect was found in this experiment. Is it possible that youths of today can see past the stereotypes of gender? Much of the research done earlier have been conducted in America, so future research could be inspired to look at how the results differ between different countries and cultures.

For management, this thesis contributed with a quantitative method within leadership research and an increased knowledge about who has the most influence over other group members. For someone who is managing this knowledge is important when composing a group, to understand who's will is more likely to become the groups final decision.

References

- BASS, B.M., 1990a. *Bass & Stogdill's handbook of leadership*. 3 edn. New York: The free press.
- BASS, B.M., 1990b. From Transactional to Transformational Leadership: Learning to Share the Vision. *Organizational Dynamics*, **18**(3), pp. 19-31.
- BENNIS, W. and TOWNSEND, R., 1995. *Reinventing leadership*. New York: Collins Business Essential.
- BLOMBERG, J., 2017. *Management organisations- och ledarskapsanalyser*. 1:1 edn. Lund: Studentlitteratur.
- BOOTH, A., CARDONA-SOSA, L. and NOLEN, P., 2014. Gender Differences in Risk Aversion: Do Single-Sex Environments Affect their Development.
- BORDALO, P., COFFMAN, K., GENNAIOLI, N. and SHLEIFER, A., 2019. Beliefs about Gender. *American Economic Review*, **109**(3), pp. 739-773.
- BORN, A., RANEHILL, E. and SANDBERG, A., 2018. *A man's world?* Göteborg: Department of Economics, Göteborg University.
- BOUND, J. and JAEGER, D., 2000. *Do compulsory school attendance laws alone explain the association between quarter of birth and earnings?*. Worker Well Being: Elsevier Science Inc.
- CARLI, L.L., 2001. Gender and Social Influence. *Journal of Social Issues*, **57**(4), pp. 725-741.
- CARLI, L.L., 1999. Gender, Interpersonal Power, and Social Influence. *Journal of Social Issues*, **55**(1), pp. 81-99.
- CARLYLE, T., KINSER, B.E. and SORENSEN, D.R., 2013. *On heroes, Hero-worship, and the heroic in history, Thomas Carlyle*. Yale: Yale university press.
- CLOTS-FIGUERAS, I., 2011. Women in politics: Evidence from the Indian States. *Journal of Public Economics*, **95**(7), pp. 664-690.
- COGLISER, C.C., GARDNER, W.L., GAVIN, M.B. and BROBERG, J.C., 2012. Big Five Personality Factors and Leader Emergence in Virtual Teams. *Group & Organization Management*, **37**(6), pp. 752-784.
- COSTA JR, P. and MCCRAE, R., 1992. Four ways five factors are basic. *Personality and Individual Differences*, **13**(6), pp. 667-673.
- CRAIG, J.M. and SHERIF, C.W., 1986. The effectiveness of men and women in problem-solving groups as a function of group gender composition. *Sex Roles*, (14),.
- DAFNA, I., 1983. Sex Effects or Structural Effects? An Empirical Test of Kanter's Theory of Proportions. *Social Forces*, **62**(1),.
- DHUEY, E. and LIPSCOMB, S., 2008. What makes a leader? Relative age and high school leadership. *Economics of Education Review*, **27**(2), pp. 173-183.

- DIBERARDINIS, J., RAMAGE, K. and LEVITT, S., 1984. Risky Shift and Gender of the Advocate: Information Theory versus Normative Theory. *Group & Organization Studies (pre-1986)*, **9**(2), pp. 189.
- DILLI, S., CARMICHAEL, S.G. and RIJPMAN, A., 2019. Introducing the Historical Gender Equality Index. *Feminist Economics*, **25**(1), pp. 31-57.
- DION, K.K. and STEIN, S., 1978. Physical attractiveness and interpersonal influence. *Journal of Experimental Social Psychology*, **14**(1),.
- DRUCKER, P., 1996. Unique self-leadership. *Leadership*, **11**(1), pp. 105-125.
- EAGLY, A.H., 1978. Sex differences in influenceability. *Psychological Bulletin*, (85),.
- EAGLY, A.H. and CARLI, L.L., 1981. Sex of researchers and sex-typed communications as determinants of sex differences in influenceability: A meta-analysis of social influence studies. *Psychological Bulletin*, (90),.
- FLOGE, L. and MERRILL, D., 1986. Tokenism Reconsidered: Male Nurses and Female Physicians in a Hospital Setting. *Social Forces*, **64**(4), pp. 925.
- FRUYT, F.D., MCCRAE, R.R., SZIRMÁK, Z. and NAGY, J., 2004. The Five-Factor Personality Inventory as a Measure of the Five-Factor Model. *Assessment*, **11**(3), pp. 207-215.
- GEORGELLIS, Y. and SANKAE, N., 2016. The personality of managers in Britain: gender and sector differences. *Evidence-based HRM: a Global Forum for Empirical Scholarship*, **4**(1), pp. 67-80.
- GLOBALIS, 2018-last update, GII - jämställdhet. Available: globalis.se/Statistik/GII-jaemstaellldhet [-04-27, 2020].
- GOLDBERG, L.R., 1981. *Language and individual differences: The search for universals in personality lexicons*. Beverly Hills, CA: .
- GOLDBERG, L.R., 1990. An alternative "description of personality": The Big-Five factor structure. *Journal of personality and social psychology*, **59**(6), pp. 1216-1229.
- GOUGH, H.G., 1990. Testing for leadership with the California Psychological Inventory. West Orange, NJ, US: Leadership Library of America, pp. 355-379.
- GRAY, J.J., 1992. *Men are from Mars, women are from Venus: A practical guide for improving communication and getting what you want in your relationships*. New York: HarperCollins.
- GUSTAFSON, J.L., 2008. Tokenism in policing: An empirical test of Kanter's hypothesis. *Journal of Criminal Justice*, **36**(1), pp. 1-10.
- HAMMOND, J.A. and MAHONEY, C.W., 1983. Reward-Cost Balancing Among Women Coalminers. *Sex Roles*, **9**(1),.
- HYDE, J.S., 2005. The Gender Similarities Hypothesis. *American Psychologist*, **60**(6), pp. 581-592.
- HYLLAND, M., DJANKOV, S. and GOLDBERG, P., 2019. *Policy Research Working Paper 9080*. World Bank.

JACKLIN, C.N. and MACCOBY, E.E., 1978. Social Behavior at Thirty-Three Months in Same-Sex and Mixed-Sex Dyads. *Child Development*, **49**(3), pp. 557.

JOHN, O.P., NAUMANNEN, L.P. and SOTO, C.J., 2008. *Paradigm shift to the integrative big five trait taxonomy. Handbook of personality: Theory and Research*. 3 edn. New York: Guilford Press.

JOHNSON, C., CLAY-WARNER, J. and FUNK, S., 1996. Effects of Authority Structures and Gender on Interaction in Same-Sex Task Groups. *Social Psychology Quarterly*, **59**(3), pp. 221.

JOHNSON, R. and SCHULMAN, G., 1989. Gender-role composition and role entrapment in decision-making. *Gender & Society*, **3**(3),.

JUDGE, T.A., BONO, J.E., ILIES, R. and GERHARDT, M.W., 2002. Personality and leadership: A qualitative and quantitative review. *Journal of Applied Psychology*, **87**(4),.

KANTER, R.M., 1977a. *Men and women of the corporation*. New York: Basic Books.

KANTER, R.M., 1977b. Some Effects of Proportions on Group Life: Skewed Sex Ratios and Responses to Token Women. *American Journal of Sociology*, **82**(6), pp. 965.

KARPOWITZ, C.F. and MENDELBERG TALI, 2014. *The Silent Sex : Gender, Deliberation, and Institutions*. Princeton University press.

KICHUK, S.L. and WIESNER, W.H., 1997. The big five personality factors and team performance: implications for selecting successful product design teams. *Journal of Engineering and Technology Management*, **14**(3), pp. 195-221.

KONRAD, A.M., KRAMER, V. and ERKUT, S., 2008. Critical mass: the impact of three or more women on corporate boards. *Organizational Dynamics*, **37**(2), pp. 145.

LEONARDO BURSZTYN, THOMAS FUJIWARA and AMANDA PALLAIS, 2017. 'Acting Wife': Marriage Market Incentives and Labor Market Investments. *The American Economic Review*, **107**(11), pp. 3288-3319.

LEWIS, G., 1992. The development of markers for the Big-Five factor structure. *Psychological Assessment*, **4**, pp. 26-42.

LYN, K., FOX, B. and CLARKE, S., 1991. *Ways Women Politicians are Making a Difference*. University of Waikato: Harvard University Press.

MACHIAVELLI, N., 1532. *Prince*. Sheba Blake Publishing.

MADDI, S.R., 1996. *Personality theories: A comparative analysis, 6th ed*. Belmont, CA, US: Thomson Brooks/Cole Publishing Co.

MCCRAE, R. and COSTA JR, P., 2008. Empirical and Theoretical Status of the Five-Factor Model of Personality Traits. *The SAGE Handbook of Personality Theory and Assessment: Volume 1 — Personality Theories and Models*. London: SAGE Publications Ltd, pp. 273.

NORTHOUSE, P.G., 2004. *Leadership: Theory and Practice*. London: Sage.

PROPP, K., 1995. An experimental examination of biological sex as a status cue in decision-making groups and its influence on information use. *Small Group Research*, **26**(4),.

PSYCHOLOGY TODAY, 1989. Drafted at the age of nine (to be a National Hockey League (NHL) player it helps to be born early in the year). *Psychology Today*, **23**(1), pp. 22-22,24.

REICHARD, R.J., RIGGIO, R.E., GUERIN, D.W., OLIVER, P.H., GOTTFRIED, A.W. and GOTTFRIED, A.E., 2011. A longitudinal analysis of relationships between adolescent personality and intelligence with adult leader emergence and transformational leadership. *The Leadership Quarterly*, **22**(3), pp. 471-481.

RIVA, G., WIEDERHOLD, B.K. and CIPRESSO, P., 2016. *Personal experience in online communities*. Warsaw ; Berlin: De Gruyter Open.

SCHWINDT-BAYER, L.A., 2006. Still Supermadres Gender and the Policy Priorities of Latin American Legislators. *American Journal of Political Science*, **50**(3), pp. 570-585.

SHEVCHENKO, I., 2002. Who Cares about Women's Problems? Female Legislators in the 1995 and 1999 Russian State Dumas. *Europe-Asia Studies*, **54**(8), pp. 1201-1222.

SILVA, A., 2016. What is Leadership? *Journal of Business Studies Quarterly*, **8**(1), pp. 1-5.

STOGDILL, R.M., 1974. *Handbook of leadership: A survey of theory and research*. New York: The Free Press.

TANNEN, D., 1990. *You just don't understand*. 1st ed. edn. New York, NY: Morrow.

TORCHIA, M., CALABRÒ, A. and HUSE, M., 2011. Women directors on corporate boards. *Journal of business ethics*, **102**(2), pp. 299-317.

TRUITY, ,
The Big Five Personality Test. Available: <https://www.truity.com/test/big-five-personality-test> [-04-28, 2020].

VOLCKERMANN, R., 2012. Barbara Kellerman and the leadership industry. . *Integral Leadership Review*, .

Appendix A

The deck used for the experiment.

Överlevnad i öknen

Jonathan Berglind, Erica Froste

Klockan är ungefär tio på morgonen i mitten på Augusti och du har precis kraschlandat i Sonoraöknen i sydvästra USA. Propellerflygplanet med plats för 10 passagerare har helt brunnit upp tillsammans med piloten och en passagerare. Bara flygplanskroppen finns kvar men resten av er är oskadda. Piloten hann inte rapportera er position innan kraschen eftersom radion var trasig. Precis innan kraschen skrek piloten att ni befann er 120 km syd-sydväst om en gruva, vilket är den enda bebodda platsen i närheten. Precis innan kraschen befann sig flygplanet ungefär 100 km från den rutt som rapporterats till flygledningen. Planet kraschade på öppen mark med endast ett par Saguaro kaktusar som utgör omgivningen, utöver det är området helt öde. Den senaste väderrapporten meddelade att dagstemperaturen kommer att vara runt +45 grader celsius, vilket innebär att marktemperaturen kommer att ligga mellan 50 och 60 plusgrader. Ni är alla klädda i lättare kläder, kortärmade tröjor och klänningar, strumpor, shorts och vanliga skor. Utöver detta har samtliga en näsduk. Efter kraschen lyckades er grupp rädda de 15 sakerna som är listade på era pappersark, er uppgift är att rangordna dessa saker efter deras förmåga att hjälpa er att överleva, där nummer 1 är den viktigaste saken, nummer 2 den näst viktigaste och så vidare tills att ni når nummer 15.

DITT NAMN:

Överlevnad i öknen

OBJECT	1 INDIVIDUELL- RANKING	2 GRUPP- RANKING	3 EXPERTENS- RANKING	SKILLNADEN MELLAN 1 OCH 3	SKILLNADEN MELLAN 2 OCH 3
Ficklampa (stor)					
Fickkniv					
Detaljerad karta över området					
Regnrock i plast (stor)					
Kompass					
Förstahjälpen kit					
Pistol, kaliber 45 (laddad)					
Fallskärm (röd och vit)					
1.000 st salttabletter					
1 liter vatten per person					
Boken "Ätbara djur i öknen"					
Ett par solglasögon per person					
2 liter vodka, 60 %					
En trenchcoat per person					
Sminkspegel					
			RESULTAT:		

JAG ÄR ÖVER 18 OCH GODKÄNNER ATT
VARA MED I ETT EXPERIMENT ☐

JAG HETER:
MINA GRUPPMEDLEMMAR HETER:

ÅLDER:
FÖDELSEMÅNAD:
SKOLA:
KLASS:
DITT EGET POSTNUMMER:

GÅ TILL
WWW.TRUITY.COM/TEST/BIG-FIVE-PERSONALITY-TEST
GÖR TESTET OCH FYLL I DITT RESULTAT
NEDAN

Openess	%
Conscientiousness	%
Extraversion	%
Agreeableness	%
Nerouticism	%

Överlevnad i öknen



Appendix B

The questions for the Big Five Personality Traits test.

This free personality test gives you accurate scores for the Big Five personality traits. See exactly how you score for Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism with this scientific personality assessment.

To take the Big Five personality assessment, rate each statement according to how well it describes you. Base your ratings on how you really are, not how you would like to be.

	INACCURATE		NEUTRAL		ACCURATE
I have a kind word for everyone.	☐	☐	☐	☐	☐
I am always prepared.	☐	☐	☐	☐	☐
I feel comfortable around people.	☐	☐	☐	☐	☐
I often feel blue.	☐	☐	☐	☐	☐
I believe in the importance of art.	☐	☐	☐	☐	☐
I feel I am better than other people.	☐	☐	☐	☐	☐
I avoid taking on a lot of responsibility.	☐	☐	☐	☐	☐
I make friends easily.	☐	☐	☐	☐	☐
There are many things that I do not like about myself.	☐	☐	☐	☐	☐
I am interested in the meaning of things.	☐	☐	☐	☐	☐
I treat everyone with kindness and sympathy.	☐	☐	☐	☐	☐

I get chores done right away.	☐	☐	☐	☐	☐
I am skilled in handling social situations.	☐	☐	☐	☐	☐
I am often troubled by negative thoughts.	☐	☐	☐	☐	☐
I enjoy going to art museums.	☐	☐	☐	☐	☐
I accept people the way they are.	☐	☐	☐	☐	☐
It's important to me that people are on time.	☐	☐	☐	☐	☐
I am the life of the party.	☐	☐	☐	☐	☐
My moods change easily.	☐	☐	☐	☐	☐
I have a vivid imagination.	☐	☐	☐	☐	☐

Rate each statement according to how well it describes you. Base your ratings on how you really are, not how you would like to be.

	INACCURATE		NEUTRAL		ACCURATE	
I take care of other people before taking care of myself.	☐	☐	☐	☐	☐	☐
I make plans and stick to them.	☐	☐	☐	☐	☐	☐
I don't like to draw attention to myself.	☐	☐	☐	☐	☐	☐
I often feel anxious about what could go wrong.	☐	☐	☐	☐	☐	☐
I enjoy hearing new ideas.	☐	☐	☐	☐	☐	☐
I start arguments just for the fun of it.	☐	☐	☐	☐	☐	☐
I always make good use of my time.	☐	☐	☐	☐	☐	☐
I have a lot to say.	☐	☐	☐	☐	☐	☐
I often worry that I am not good enough.	☐	☐	☐	☐	☐	☐
I am not interested in abstract ideas.	☐	☐	☐	☐	☐	☐
I criticize other people.	☐	☐	☐	☐	☐	☐
I find it difficult to get to work.	☐	☐	☐	☐	☐	☐
I stay in the background.	☐	☐	☐	☐	☐	☐

I seldom feel blue.	☐	☐	☐	☐	☐
I do not like art.	☐	☐	☐	☐	☐
I stop what I am doing to help other people.	☐	☐	☐	☐	☐
I change my plans frequently.	☐	☐	☐	☐	☐
I don't talk a lot.	☐	☐	☐	☐	☐
I feel comfortable with myself.	☐	☐	☐	☐	☐
I avoid philosophical discussions.	☐	☐	☐	☐	☐

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Rate each word according to how well it describes you. Base your ratings on how you really are, not how you would like to be.

	INACCURATE		NEUTRAL		ACCURATE	
Original	☐	☐	☐	☐	☐	☐
Systematic	☐	☐	☐	☐	☐	☐
Shy	☐	☐	☐	☐	☐	☐
Soft-Hearted	☐	☐	☐	☐	☐	☐
Tense	☐	☐	☐	☐	☐	☐
Inquisitive	☐	☐	☐	☐	☐	☐
Forgetful	☐	☐	☐	☐	☐	☐
Reserved	☐	☐	☐	☐	☐	☐
Agreeable	☐	☐	☐	☐	☐	☐
Nervous	☐	☐	☐	☐	☐	☐
Creative	☐	☐	☐	☐	☐	☐
Self-Disciplined	☐	☐	☐	☐	☐	☐
Outgoing	☐	☐	☐	☐	☐	☐

Charitable	☐	☐	☐	☐	☐
Moody	☐	☐	☐	☐	☐
Imaginative	☐	☐	☐	☐	☐
Organized	☐	☐	☐	☐	☐
Talkative	☐	☐	☐	☐	☐
Humble	☐	☐	☐	☐	☐
Pessimistic	☐	☐	☐	☐	☐