

An Experiment on the Effects of Gender Stereotypes on the Judgement of Leadership Competence

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Abstract

There are still few women in the maritime industry, especially in leadership position. This is believed to be caused by second generation bias, which is based on gender stereotypes. The aim of this thesis was to find out if the maritime industry judge leadership competence based on gender stereotypes. The questionnaire was designed based on the Goldberg paradigm where the independent variables were male, female, and gender neutral leaders. 247 people from the maritime industry participated in the research. None of the hypotheses showed any significant results. Meaning that there was no reliable evidence to suggest whether the maritime industry do or do not judge leadership competence based on gender stereotypes.



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Introduction

Women in the Maritime Industry

In the maritime industry as a whole, there are 52 times more men than women (Özdemir & Albayrak, 2015), among the maritime attorneys only 8 % of women become partner (Wouters, 2015), and out of the 1.25 million seafarers, only 2 % are women (ITF, 2016). The maritime industry faces challenges from tight labour market conditions, lack of recruitment, as well as interest among young people (Özdemir & Albayrak, 2015). More women in the maritime industry would help with these problems, and they are particularly needed in leadership roles (IMO, 2016), which can be seen by the smaller number of female than male officers among seafarers (ITF, 2016).

There are more women now in the maritime industry than there has ever been before, but there are still very few women in leadership positions. Because leadership has been a male-dominant role in the past, women are quite rare in top management and executive positions today (Eagly & Karau, 2002). Part of the reason for this is the lack of female role models. Women become discouraged, and leave to join companies with higher numbers of women in top positions. "This is particularly prevalent in the maritime sector, both on-board ships and ashore" (Mackenzie, 2015, p. 76).

Nowadays more and more efforts are being put to breaking down the wall separating what used to be called men's work and women's work, creating a world of equality. Most countries in the West now have policies to bring more women into male-dominant occupations (Ibarra, Ely & Kolb, 2013). The maritime unions are striving to protect the interests of female members, now numbering 23,000 worldwide (ITF, 2016). Through IMO's programme on the Integration of Women in the Maritime Sector (IWMS), they are making an effort to help women achieve a larger representation in the maritime industry. IWMS programme includes gender specific fellowships, facilitating technical training for maritime



women in developing countries, and career development opportunities for women in maritime administrations, ports and maritime training institutes. As part of this effort, IMO has held several conferences and seminars, as well as published a book titled 'Maritime Women: Global Leadership', which is a compilation of scientific articles presented at an international conference in 2014, with the same name. IMO has also launched two videos: 'Women at the Helm' in 2013; and 'Making Waves: women leaders in the maritime world' in 2015 (IMO, 2016).

Gender Discrimination

Gender discrimination is a big part of why there are so few women in the maritime industry. For instance, in 1945 there were only three professions women had access to onboard ships: nurse, radio officer, and service personnel. Female radio officers were not allowed until the Second World War, and girls was first allowed to work on deck and in the engine room in the 1960s. The first female deck and machine officers did not appear until the 1970s (Lønnå, 2010). Women, in the 1960s and 70s felt constantly watched and judged, and many were sexually harassed. They constantly had to prove themselves. The first Norwegian female decks officer said that the crew kept an extra close watch on her because she was a woman, and had to do everything twice. When the Norwegian International Ship register (NIS) was started, some women, when looking for hire, were told to show a doctor's note stating that they were infertile because NIS was exempted from the rule about free trip home if pregnant (Lønnå, 2010).

There is still gender discriminatory practices within the maritime industry today. Özdemir and Albayrak found ten major challenges for women working in the maritime industry, several of them related to discrimination: "Not being able to rise to the top positions; not getting the same salary as the men in the same positions; having to work more than the men do to be promoted" (Özdemir & Albayrak, 2015, p. 220). Women seafarers may also be



denied the facilities and equipment available to male workers (ITF, 2016). Wouters (2015) also found discrimination among work colleagues within maritime law firms, where gender stereotyping in some verbal form was the most common conduct. This included gender stereotyping in jokes, impolite and sexually inappropriate conduct towards women.

Eagly and Karau (2002) found evidence that there has been an overall decrease in gender discrimination over time. The disapproval of female leaders, which has been stronger by men, has decreased. In Mackenzie's study (2015), several women reported that there was a lot more discrimination 20 to 30 years ago than exists today. Even though there is less gender discrimination than before, it still exists and in a different form. Second generation bias compared to the in your face first generation bias, is harder to notice if one is not looking for it. This second generation gender bias is on a subconscious level compared to the first generation, which is an out-in-the-open gender segregation. It is somewhat hidden inside companies through the sub-consciousness of its employees, despite these equality and prowomen policies most companies have today (Ibarra, Ely & Kolb, 2013).

Gender Stereotypes

In a work environment where a single person or a small group of people are very different from the majority, because of their gender, or for other traits, the people belonging to this small group become very visible and get a lot of attention. This attention is directed towards what makes the minority different from the rest. Instead of appearing as individuals, those who belong to the minority, will be seen as representatives for all people belonging to that category. They become subjected to stereotyping (Lønnå, 2010).

Prejudice against female leaders stems from the incongruity between their role as women and their role as leaders. It is a clash between how a woman should behave and how a leader should behave. (Eagly & Karau, 2002). Stereotypically a woman is supposed to behave in a kind and empathic manner, care about other peoples' feelings and act in a democratic



way. While a leader, which is closer linked with the stereotypical beliefs of a man, should behave in a commanding, directive and autocratic manner.

According to Biernat, Manis and Nelson (1991), people have different beliefs or standards about men and women, which causes people to judge individuals differently based on these beliefs. Meaning that a woman who is considered to be a competent leader is in fact considered to be less competent than a male leader because people have one standard scale for women and one standard scale for men in their mind.

By inserting a gender-neutral leader it might be possible to find the representation of peoples' stereotypical beliefs. This way it is possible to compare the male and female leader to the gender-neutral leader to see if people from the maritime industry judge based on gender stereotypes. In accordance to Eagly and Karau, (2002), leaders who act in accordance with the stereotype will be evaluated as normal because of the congruency between the gender role and the leader role. Leaders who do not act in accordance with the stereotype will be evaluated negatively (or positively) because of their perceived incongruence with the stereotype.

Aim of this Thesis

The aim of this thesis is to find out if the maritime industry judge leadership competence based on gender stereotypes.

Hypothesis 1. Women are held to a lower standard than men. For example, in Biernat and Fuegen's (2001) study of male and female job applicants, the female applicant was held to a lower standard, than the male applicant, which led to being more often short-listed. But the female applicant also had to present more evidence of skill than the male applicant to be hired. Also, several studies have shown that men were evaluated as better leaders than women (Biernat, Crandall, Young, Kobrynowicz & Halpin, 1998; Eagly, Makhijani &Klonsky, 1992; Eagly, Karau & Makhijani, 1995).

Hypothesis 1 is stated as: Men are evaluated as better leaders than women.



Hypothesis 2. Eagly, Karau and Makhijani (1995) found that women were more effective leaders than men so far as the role was congenial to women, and men were more effective leaders than women so far as the role was congenial to men. In studies by Eagly, Makhijani and Klonsky (1992) and by Eagly, Karau and Makhijani (1995), they found that type of organization context had an effect on the evaluation of leaders. For business, manufacturing, and military contexts (male-dominant work domains), male leaders were more favourably evaluated, while in education, government, and social services contexts (female-dominant work domains) female leaders were more favourably evaluated.

The hypothesis is therefore split in two:

Hypothesis 2a is stated as: *In the male-dominant work domain (Maritime)*, participants' evaluation will produce a greater difference between female leader and gender neutral leader than between male leader and gender neutral leader, with male leader being more favoured than female leader.

Hypothesis 2b is stated as: *In the female-dominant work domain (Kindergarten)*, participants' evaluation will produce a greater difference between male leader and gender neutral leader than between female leader and gender neutral leader, with female leader being more favoured than male leader.

Method

Participants

The experiment consisted of 247 participants (57 women, 187 men, 3 unknown). 159 (38 women, 118 men, 2 unknown) of the participants answered a paper version of the questionnaire, and the 88 remainder (19 women, 68 men, 1 unknown) answered a web version of the questionnaire. All the participants had a relationship with the maritime industry, either studying, working or had worked within the maritime industry, with work experience from the



maritime industry ranging from 0 to 60 years (M = 4.54, SD = 9.162). Age ranged from 19 to 79 years (M = 29.69, SD = 10.484).

Design

A 3 x 2 x 2 x 2 (leader's gender x participant's gender x work domain x leadership behaviour) split-plot design was used with leader's gender and participant's gender as between group variables, and work domain (maritime and kindergarten) and leadership behaviour (directive and empathic) as repeated factors.

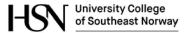
Sampling

Non-random sampling with self-selection was used. Two different methods for data collection, the paper questionnaire and the web-based questionnaire, had slightly different effects on how self-selection had an effect on participation. Participants with the paper questionnaire could choose not to participate by not handing in a form (a type of negative self-selection), while the participants of the web-based questionnaire could choose to participate by following the link distributed on Facebook, LinkedIn and via email (a type of positive self-selection).

Exclusion of participants. Seven participants were deleted from the analysis as all seven had answered every question with the same number. The remaining 240 participants were used in the data analysis.

Procedure

The paper version of the questionnaire was distributed by visits at lectures of bachelor students from Nautical Science, Marine Engineering, and Shipping and Logistics, and master students from Maritime Management, at the University College of Southeast Norway. The questionnaire sets (female leader, male leader and gender-neutral leader) had been pre-stacked



so that every third questionnaire that was handed out was the same, to ensure an equal distribution of the three questionnaire sets.

The web version of the questionnaire was distributed by link via a Facebook event, a LinkedIn post, as well as through emails to different maritime organizations. The three questionnaire sets where distributed by the use of an extra question (compared to the paper version), asking what the last number in their phone number was. Numbers 0, 3, 6 and 9 gave the participant the questionnaire set with the gender-neutral leader, numbers 1, 4 and 7 gave the male leader, and numbers 2, 5 and 8 gave female leader.

The demographics that was collected was age, gender, what relationship they had with the maritime industry, and years of work experience in the maritime industry. With the questionnaire being completely anonymous, and the demographics collected was not enough to identify the individuals, informed consent and sensitive storage of data were considered unnecessary.

Experimental Manipulation

The participants were informed that the questionnaire was developed to better understand how people in the maritime industry feel about different leadership behaviour and that their participation was voluntary. In Wouters' article (2015): *Women Leadership in Maritime Law Firms: The Antwerp Case*, where she used questionnaires to measure the magnitude to which women are under-represented in maritime law firms and the potential causes. She mentioned in her article that the male participants tended to be very cautious when replying to the questionnaire and answered in a very gender-neutral way. By thinking that this is about leadership behaviour, and not about gender stereotyping, the hope was to get unconscious answers about stereotypes.

The questionnaire was based on the Goldberg paradigm where the experimental control used can circumvent problems by controlling for the attributes of men and women



who are compared. The manipulation of the independent variable (leader's gender) and random assignment of participants allows for a causal argument about the gender stereotypic effects (Eagly & Karau, 2002).

The questionnaire was divided into three questionnaire sets, one with female leader, one with male leader, and one with a gender-neutral leader. The stories in the questionnaire consisted of two stories about a captain (male-dominated work domain), one story exhibited directive leadership behaviour and one story exhibited empathic leadership behaviour, and two stories about an adult working in a Kindergarten (female-dominated work domain), one story exhibited directive leadership behaviour and one story exhibited empathic leadership behaviour. The four stories were identical in all the questionnaire sets, except for the leader's name and gender.

Dependent Measures

After each story the participant was asked to answer eight questions on a 5-point likert scale by choosing the response that best characterized how they felt about the statements, ranging from 1 (strongly disagree) to 5 (strongly agree). The first four questions were about perceived competence. The last four questions were about perceived leadership behaviour: dominating; dictatorial; empathic; and kind. These questions were aggregated into a mean score indicating how well the person meant that the leader behaved.

There were three further questions at the end about what the participants felt was most important of empathy and command, and what they felt when they heard the word empathy or command. These questions were not analysed in this thesis.



Results

Data analysis

The IBM Statistical Package for Social Sciences (SPSS) was used for statistical analysis and the creation of various figures. All the data were analysed with repeated measure general linear model (GLM) analysis.

Scale reliability

The four questions about competence were run through a reliability test where Cronbach's alpha showed a very high reliability within each story (Story 1 = .965; Story 2 = .893; Story 3 = .836; Story 4 = .95). The mean of these questions for each story was used on the hypothesis testing.

Men are evaluated as better leaders than women

A 3 x 2 x 2 x 2 repeated measures GLM analysis (Leader's gender x Participant's gender x Work domain x Leadership behaviour) was used to test hypothesis 1: Men are evaluated as better leaders than women. The effect size between the gender of the leader was extremely small ($F_{2,224} = .491$, p = .613, $\eta_p^2 = .004$) and one can also see from the mean competence score that the female leader received a slightly better evaluation than the male leader (Male leader; M = 3.885, SD = .076, 95 % CI [3.735, 4.035]; Female leader: M = 3.948, SD = .068, 95 % CI [3.815, 4.082]), which showed an opposite direction than expected and the difference is too small to be significant. Hypothesis 1 was therefore rejected.

The gender-neutral leader failed to show stereotyping effects as it was given lower evaluation scores than both the female and male leader (M = 3.854, SD = .068, 95 % CI [3.719, 3.989]).



The difference between male, gender neutral and female depends on work domain.

A 3 x 2 x 2 x 2 repeated measures GLM analysis (Leader's gender x Participant's gender x Work domain x Leadership behaviour) was used to test hypothesis 2a: In the maledominant work domain (Maritime), participants' evaluation will produce a greater difference between female leader and gender neutral-leader than between male leader and gender-neutral leader, with male leader being more favoured than female leader; and Hypothesis 2b: In the female-dominant work domain (Kindergarten), participants' evaluation will produce a greater difference between male leader and gender-neutral leader than between female leader and gender-neutral leader, with female leader being more favoured than male leader. The distance between female leader and gender-neutral leader was greater than the difference between male leader and gender-neutral leader, for both the male-dominated work domain (Male leader: M = 3.634, SD = .107, 95 % CI [3.423, 3.846]; Gender-neutral leader: M = 3.667, SD = .097, 95 % CI [3.476, 3.857]; Female leader: M = 3.717, SD = .096, 95 % CI [3.529, 3.906]) and the female dominated work domain (Male leader: M = 4.136, SD = .09, 95 % CI [3.957, 4.314]; Gender-neutral leader: M = 4.042, SD = .082, 95 % CI [3.881, 4.203]; Female leader: M = 4.179, SD = .081, 95% CI [4.02, 4.338]), but the differences are too small to be significant and the effect size was extremely small ($F_{2.224} = .289$, p = .749, $\eta_p^2 = .003$). Hence, hypothesis 2a was rejected because the results were not significant, and the female leader was evaluated more favourably than the male leader. Hypothesis 2b was rejected because the results were not significant and the results showed that the difference was greater between female and gender-neutral leader than between male and gender-neutral leader. The genderneutral leader also failed to show stereotyping effects for hypothesis 2b as the gender-neutral leader was given lower evaluation scores than both the female and male leader.



Discussion

The goal of this study was to find out if the maritime industry judge leadership skills based on gender stereotypes. A questionnaire was developed consisting of four short stories, two were set in a maritime domain (male-dominated work domain), and two set in a Kindergarten domain (female-dominated work domain). Each setting had one story with directive leadership behaviour, and the other with empathic leadership behaviour. The questionnaire was divided into three batches so that one participant would only read about a male, gender-neutral or female leader. Repeated measure GLM analysis was used to analyse the data. No significant results were found in any of the hypothesis tests.

Hypothesis 1 was rejected. Men was not evaluated as better leaders than women. In fact, even though too small to be significant, the female leader was evaluated better than men. This is in line with Delgado, Øvergård and Henden's (2015) findings, based on their study of the transformational, transactional, and laissez-faire scales of leaders skills, where female officers were overall rated slightly higher than male officers by their co-workers, and the female officers were rated higher especially on positive leadership skills. Eagly and Johannesen-Schmidt (2001) found that women were more effective leaders than men based on the same leadership dimensions. These results might be because of the subjective scale used to evaluate. Biernat and Kobrynowicz (1997) found that the applicants were objectively judged more positively for the job that was congruent with their gender, but the subjective evaluation was opposite.

Hypothesis 2a and 2b were rejected. The gender-neutral leader failed to show stereotyping effects which could be caused by participants interpreting the gender-neutral leader as an ideal leader instead of a stereotypical leader, causing the non-significant results in the testing of hypothesis 2a and 2b. As stated in the previous paragraph, it is also possible that the subjective scales used could have led to this effect here as well.



Another reason for the small effect size can be based on the shifting standards theory that the expectations of women's leadership abilities are lower so the standards are lower. This is consistent with findings by Fjærli (2015). "The sample consisting of students had a close to equal overall rating of male and female leaders. The sample from the maritime industry, however, rated the female leaders as needing less leadership attributes, than their male counterparts, to be considered outstanding leaders." (Fjærli, 2015, p. 20) In Biernat and Vescio's study (2002), women were given more positive feedback than the men because of the wow-effect of exceeding expectations. The same could have happened here for the maritime work domain. However, these results showed the opposite effect from what Loiko's (2014) found, where the male leader was evaluated as slightly better than the female leader in the maritime work domain.

Limitations

When there is no significant results, it does not mean that the null hypothesis is true. "It is impossible to distinguish a null effect from a very small effect" (Lane, n.d., p. 386). Meaning that the results were too small to be significant, but it does not mean there is no effect.

One reason for lack of significant results can be the number of options on the likert scale. More options for the participants to choose from, might have shown a greater spread which would give higher statistical power – so a 9-point likert scale has a higher statistical power than a 5-point likert scale and could potentially give different results.

Another reason for these results can be the use of subjective scale. Biernat, Tocci and Williams (2012) found that objective ratings showed pro-male bias, while the subjective comments were more positive overall towards women. Meaning that objective scales are more capable of showing the stereotypical representation that people keep in mind, while subjective



ratings can mask or even reverse this stereotypical representation. For future studies, use of objective scale could potentially give different results.

A third reason for these result could be the possible effect of methods of data collection (web vs. paper questionnaire). Different methods might affect the data (Cronbach et al., 1972). Meaning that the participants of the paper questionnaire could potentially have been less interested and therefore not cared too much what they answered, or been more negative in their answers, while the web-sample could potentially have been more careful in their answering or even been more positive in their answers. Keeping to only one type of questionnaire method could therefore have given different results.

Conclusion

None of the hypotheses showed any significant results. Meaning that there was no reliable evidence to suggest whether the maritime industry do or do not judge leadership competence based on gender stereotypes.



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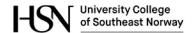
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