



Leadership for Sustainability is Female

Or is it? A critical gender perspective on sustainability
consciousness

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Abstract

This Master's thesis argues for leadership for sustainability as a role consisting of skills that can be learned, and re-examines the notion that female leaders are better for sustainability. While gender socialisation may equip women and girls with competencies required for considerate and holistic problem solving and seeing beyond purely economical benefits, it hinders men and boys to develop the same skills. The world needs leaders with the necessary skills, regardless of gender. Through a survey, sustainability consciousness (SC) and leadership skills are established in working adults in Sweden. Regarding SC, the mean average of ($N=218$) is 3.9 on the Likert Scale, pointing towards decent awareness of sustainability in the sample. Gender did show to have an effect on SC, but gender had no effect on leadership skills. Regarding the correlation between leadership skills and SC, the human and conceptual skills correlate well with all the components of SC, but the technical skill correlate least with all. These results disprove many gender stereotypes and highlight issues with research claiming one gender over another as a better leader for sustainability.

Keywords:

Sustainability consciousness, leadership, critical gender studies, gender socialisation, quantitative research

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1. Introduction

Recent research points to a difference in sustainability leadership depending on the gender of leader (Marshall 2007, Glass et al. 2016). While a difference might be detectable, it is not caused by actual difference between the sexes, but of the gender socialization process that means boys and girls are viewed and treated differently from each other and by each other. Yet, leading sustainably cannot rely on sex, but should focus on capabilities: anyone can become a sustainable leader with the right skills and training.

According to the popular calculations of the Global Footprint Network, humanity is overusing our planet's resources in an increasing speed since the 1970's, when our annual usage of natural resources overtook what Earth is able to provide in a year. In less than 50 years the date has gone from January 1st to August 1 st in 2018. (Earth Overshoot Day, n.d., Global Footprint Network, n.d. a) In the short time since the adoption of the UN Agenda 2030 towards Sustainable Development in 2015 our ecological footprint has not declined globally, but has stayed fairly stable since the early 2010's (Global Footprint Network, n.d. b).

It might appear that a plateau is reached in reducing our Global Footprint and the efforts to understand the concept of sustainability are ever growing. The introduction of corporate social responsibility (CSR) to the business world means companies have finally starting to accept responsibility for addressing issues of ecological damage, environmental and human well-being and social justice (Marshall, 2007). For a world leader, awareness and knowledge of CSR is the initial and crucial first step towards sustainable change. Without this awareness, acting for sustainability is impossible (Kakabadse et al. 2009). Studies of female leadership show promise towards more sustainable corporate actions (Marshall 2007), and diversity in leadership and board rooms is agreed on as generally better for firms (Cox & Blake 1991, Erhardt et al 2003). In the words of former UN Deputy Secretary-General Asha-Rose Migiro: "We must harness the full potential of women as leaders, /.../ They hold the keys to unlocking the barriers to sustainable development, /.../ when women occupy leadership positions, the focus on issues close to the people benefits men and women alike." (M2 Presswire/UN 2009). Regarding sustainability consciousness, recent research shows girls having a higher level of sustainability consciousness than boys, with the gap growing bigger with age (Gericke et al. 2018).

The history of human development shows women globally having less economical possibilities and opportunities, less health care, and subjected to more violence and unfair treatment than their male counterparts (Nussbaum 2000). Perhaps it is only cosmic and karmic justice that women today are the better leaders, who should be prioritized to save our planet? Or perhaps gender socialisation is not only detrimental and discriminating towards non-males, but also deeply unfair to boys and men, and harmful to all efforts to create sustainable leadership and an equal world.

1.1 Problem and Purpose

This thesis seeks to explore sustainability consciousness (SC) and leadership through a gendered lens. Viewing any gender as the better leader is problematic, especially for sustainability. The differences that may exist between leadership and SC between men and women come from learned societal constructs, which impact not only individuals of any gender negatively, but also the efforts towards increased sustainability.

1.1.1 Research questions

This study explores the level of sustainability consciousness in working adults in Sweden. The hypotheses connected to it are examining gender effects on SC, leadership and possible connections between sustainability consciousness and leadership knowledge.

H1: Is there an effect of gender on SC?

H2: Is there an effect of gender on leadership skills and interests?

H3: Is there a correlation between SC and leadership skills and interests?

1.1.2 Aim and Contribution

The aim and contribution of this research is to raise and develop the question of why gendered leadership is deemed better for sustainability, as it fuels the problems and issues brought on by sex-divided views in society and the actions caused by them. Regardless of gender, capabilities towards of a leader and acting sustainably can and should be learned by each of us.

1.1.3 Outline of the Thesis

The rest of this chapter presents current research on the areas of consciousness, leadership and gender studies. This sets the stage for the theoretical framework that will follow as they shape the authors' perspectives. The theoretical framework details sustainability consciousness, leadership as skills and a critical take on gender socialization theories, showing connections and some contradictions. A data analysis provides the statistical results of the questionnaire, answers the research question and hypotheses. The discussion offers insights of the results by applying the theoretical framework. Finally, a future research section and conclusion bring the thesis to a full circle with the final remarks and suggestions for further studies.

1.2 Definition and dilemma: Sex vs Gender

Clarity in definitions is essential when conducting gender research. The first term refers the natural science of biology and the second term is a social construct. *Sex* is the term for defining and differentiating the physical build up: female genome has two X chromosomes and the male genome has an X and a Y chromosome. It is generally thought that there are only two sexes, but variations beyond these two sets exist. *Gender* is used of the social function and the

personal set up of a human being, most commonly thought of in terms of feminine and masculine types (although other genders are also starting to emerge and become more widely recognised). (Caplan & Caplan 2009, p. 6-7.) Physiological differences between the sexes exist, of course, but to quote a physiology and biophysics professor: “what is human and the same about the males and the females /.../ is much greater than the differences” (Estelle Ramey, quoted in Caplan & Caplan 2009, p. 65). Like the Caplans, “we do not claim that there are definitely no sex differences in humans’ behaviour”, and agree also that the amounts of deeply flawed and unequally distributed studies only strongly underline that “males and females have nowhere been treated identically from birth, [so] it is virtually impossible to know what inevitable sex differences there might be” (Caplan & Caplan 2009, p. 12).

1.3 Previous research

This section presents first an overview of sustainability research in terms of corporate social responsibility and how gender affects and has been studied in organisational context, bringing in economical and ecological feminist perspectives. Then the concept of consciousness is elaborated on, its components of knowledge, behaviour and attitude are clarified, as well as environmental consciousness, which is the stepping stone towards sustainability consciousness. The final section here gives some general outline of what leadership is and of the direction of studying leadership as skills and capabilities.

1.3.1 Sustainability, CSR and Gender

Companies are feeling pressure to create long term environmental strategies, though perhaps not the top interest of their shareholders, and are seeking the leadership implementation to do so. Sustainability and corporate social responsible are not mutually exclusive with maximizing profits, however, the research proves just the opposite. For example, Al-Najjar and Anfimiadou (2012) found that UK firms that implemented ecologically sustainable practices enjoyed higher market values than firms that did not. Similarly, Boiral et al. (2012) found that in Canada, firms committed to reducing greenhouse gas emissions experienced better financials than firms that were not committed to reducing greenhouse gas emissions. The research also suggests that failure to adopt sustainability strategies can be more expensive. The lack of environmental responsibility can cost an organization millions of dollars in fines and legal liabilities (Glass et al. 2016). The media also plays a large part in the price of the company’s shares. If there are several reports of a company’s environmental violations, this can drive down share prices aggressively (Glass et al. 2016). And so, in light of evidence to prove that sustainability is not only necessary, but also very profitable, scholars are seeking for the most effective style of leadership for sustainability. A new type of leader is required that can consider many types of stakeholders at once and a different perspective than primarily used by classic leadership styles.

This need to study a new type of leader has led to a current trend sweeping academia involving the study of gendered leadership with special emphasis has been placed on the female leader

for sustainability. Marshall (2007) takes an early look at the requirements of this new leader for corporate social responsibility (CSR) and the way in which men and women approach the title differently. They propose that women are “change agents,” (p. 166) exercising symbolic power to shape discourses and practices of sustainability and social justice matters (2007). They state: “A newly developing area of corporate action and study might be expected to incorporate plural voices and leaders of different kinds, respecting qualities previously typed as masculine and feminine,” (p.166). Their research highlights how CSR is becoming gendered and that leadership is held differently by men and by women, with men more dominant in defining organizational meanings, rhetorics and practices (2007). The authors take issue with CSR as a new wave of responsibility held almost predominantly by white men leaders and scholars, and the use of the triple bottom line model to justify sustainability as a business case. While doing a basic google search of books written on the subject, of 493 authors just 76 were females, a clear inequality in the voice of the development of the theory. Using this as confirmation of their hunch, the authors explore the different dynamics that men and women bring to leadership for sustainability.

Marshall (2007) summarizes that many CSR initiatives are just mainstream business forms, while impressive and seemingly open to invite change, they are not sufficient to address the deeper issues of sustainability. Further, this is related back to gender as stating that CSR challenges might address more important issues than trivial gender disputes, but that gender is so thoroughly interwoven with environmental destruction and poverty, that ignoring how these issues might be gendered disregards important qualities of their potential nature (Marshall 2007). A closer look into how men establish their credentials to speak for change using their status, sometimes achieved through success in the organization mainstream, and possibly including that conferred by masculinity, to critique business practices triggers the development of a term called “tempered radicals”, defined as “people who work within mainstream organizations and professions and want also to transform them” (Marshall 2007, p.165) for example, promoting diversity. They are simultaneously insiders and outsiders (Meyerson & Scully, 1995, p. 586). The idea of these tempered radicals as men embarking on a quest for CSR is important to this discussion because, while these change agents set out with big intentions, they do not seek a change that would inconvenience them. This type of behavior is ultimately what stunts the sustainability movement in organizations and Marshall’s (2007) study provides an insight as to the why. If one aspect of social sustainability is equality between the sexes, it is possible that these tempered radicals acting as self-proclaimed CSR experts that have set the sustainability parameters are in fact the same barriers that impair the progress of equality.

Feminist scholarship on gender differences in value orientations suggests that socialization differentially encourages and rewards different types of behavior in men and women, for example, women receive more positive rewards than men for altruistic behavior, including caring and concern for others (Glass et al. 2016). Further, women are seen to be more typically “other-oriented” which as a result leads to a higher degree of awareness and concern for the

links between environmental harm and personal well-being (Glass et al. 2016). As a field, sex and gender have been studied for many hundred years from many and varied angles and in different contexts, biology and psychology being the first approaches. The early studies were concerned with finding differences between the sexes and proving the weakness of the female sex (Fagot et al 2000, Hyde 2014), and were based on initial incorrect assumptions (Caplan & Caplan 2009, p.14, Stanford University n.d.). Evidence for male superiority over females has been sought after in brain size (Caplan & Caplan 2009, p. 16-17, 58-64), body size and social Darwinism (Caplan & Caplan 2009, p.18), math skills and spatial skills (Caplan & Caplan 2009, p. 36-37, 46-47), and verbal abilities have been presented as an area of female superiority (Caplan & Caplan 2009, p. 52- 57). But proposed sex differences ultimately point towards gender socialisation, which is the central theory in this thesis and elaborated on in the Theory section 2. Gender socialisation is linked to a cluster of other theories, of which gender stereotypes and social role theory are relevant to mention. Gender stereotype studies outline the characteristics a gender is perceived and expected to have: women are typically described with social/ communal/ interpersonal attributes and men are typically described with agency and achievement-oriented attributes (Zemore et al. 2000, Eagly 1987, Deaux & LaFrance 1998). Definitions along these sentiments exist in many cultures and have resisted the shifts of time (Deaux & Kite 1993, Ruble & Ruble 1982, Swim et al. 1995, Bem 1974). When individuals “stray” from a stereotype, meaning they do not conform to what is expected of that stereotypical role, the reactions, responses and consequences may include emotions such as disgust and anger, and actions such as bullying, violence and discrimination (Zemore et al. 2000, p. 211-212). Gender stereotypes originate in the belief of differences between the sexes, meaning people want to believe that there are differences (Eagly et al. 2000, p. 132) and they are further reinforced by the fact that many of the stereotypic differences between men and women are approved of, generally, by individuals and shared with others in the society (Eagly et al. 2000, p. 134-135). Further, the stereotypes of women and men are reinforced by genders treating each other differently depending on if the recipient is a man or a woman (Eagly et al. 2000, p. 144-145). (For studies of different treatment of boys and girls in varying settings, see for example Shakin et al. 1985, Rubin et al. 1974, Thoman et al. 1972, Block 1976, Stoneman & Brody 1981, Fagot & Leinbach 1995, Fagot & Patterson 1969, Serbin et al. 1973, Fagot 1981.) The social role theory is built on observed behaviour, similarities and differences, and connected to a sex (Eagly et al. 2000, p. 126): “Women and men adjust to sex-typical roles by acquiring the specific skills and resources linked to successful role performance and by adapting their social behaviour to role requirements.” This is also the essence of gender socialization.

The role congruity theory reveals that women leaders face double prejudices: the gender role of what is seen as positive for a woman clashes with what is seen positive for a leader (Eagly 2003, p 81-93, Meeker & Weitzel-O’Neill 1985, Gutek & Morasch 1982, Schein 1975). Yet as more women are stepping into top leadership positions, Eagly (2003, p 88-89) notes that what is seen as good leadership is consistent of the values and attributes that are in line with the traditional female gender role: “democratic relationships, participatory decision-making,

delegation, and team-based leadership skills” (Eagly 2003, p, 89, Eagly et al. 2000, p. 156). Glass et al. (2016) explain that women are seen to be more typically “other-oriented” which as a result leads to a higher degree of awareness and concern for the links between environmental harm and personal well-being which has caused a trend in current research that women might be better leaders for sustainability, than men. Yet the male dominance prevails over all and the lack of female leadership in powerful large corporations (Eagly 2003). In 2018, only 24 female CEOs are on the Fortune 500 list (Meija, 2018) which is even less than the year before, making gender balanced leadership far from a stable condition. So even if the research shows there is connection between female leadership and sustainability, as women show greater responsibility and interest in environmental sensibility (Glass et al. 2016), the gender gap is still ever presenting. Galbreath (2017) found in quantitative study that women in leadership roles positively moderate the link between export intensity and green innovations. They hypothesized this study given the empirical evidence that women tend to be more sensitive to environmental issues than men and advocate for greater environmental responsibility. They state that as women in firms take up more leadership roles and gain more decision-making power, they would be expected to not only recognize and comply with coercive and mimetic forces coming from export markets for green innovations, but push to exceed expectations in implementation rates (Galbreath 2017).

Eco-feminism and gendered aspects of the human-nature relationship started to appear both as a social movement and knowledge production practices. Management theories have since revised themselves to only accept some stereotyped qualities of the feminine such as caring, nurturing and reconciling differences. However, it’s been suggested that there are other qualities of the “feminine” that should be valued calling for radical change in the way management is done and the global economy is configured (Calás & Smircich, 1989). In 2018, their research on sustainable organization theory through feminist ecological perspectives claim that issues of sustainability such as the negative effects of economic development and climate change are not adequately addressed as they fall disproportionately on women (Ergene et al. 2018). They argue that it is feminist economists, sociologists and philosophers who develop the understandings to critically address human/nature, reason/emotion and economy/ecology dualisms. They highlight several feminist perspectives such as feminist materialism, Marxism, economics, among others that are key to understanding the ecological problems we face today. The problem in these being that they all begin with a “feminist” perspective which creates the impression that the problems belong only to the female community, when they should in fact be part of the all-encompassing broader understanding of sustainability issues. For example, Marshall (2007) finds Marilyn Waring, a feminist economist, particularly outstanding. Waring (1988) argues that women’s work and the environment are not assigned economic value in the global economy and are not valued, counted or considered in policy-making. Waring uses the example of the Philippines as a microcosm of the world economy that in conventional economic terms “child prostitution is more economically beneficial than subsistence farming” (Marshall, 2007, p. 174). While Waring’s work is mostly well received, some say her “over and repeated feminist views detract from ‘her case’” (Marshall, 2007, p.174).

1.3.2 Consciousness: Knowledge, Attitude, Behaviour

Consciousness is a psychological concept with several different interpretations. Velmans (2009a) states the three most common meanings as: consciousness as in self-consciousness as one differentiates oneself from the surrounding world; consciousness as a state of wakefulness; consciousness for knowledge: To be conscious of something is to have knowledge of it. However, since knowledge can be non-conscious as well it does not mean consciousness is required to have knowledge. Thus, one can define consciousness as the experience itself and can be exemplified by all the things we can observe or experience (Gericke et al. 2019).

Environmental consciousness is a multidimensional function including intermingled psychological components and has been used in many different disciplines with the most popular being business research for marketing purposes (Sarrica et al. 2016). Environmental consciousness has also been used in psychological research to explore the awareness of environmental issues and the relationship to action in a pro-environmental direction (Gericke et al. 2019). According to Zelezny and Schultz (2000), environmental consciousness consists of a belief system that refers to specific psychological factors related to individuals' propensity to engage in pro-environmental behaviour. Sharma and Bansal (2013) defined environmental consciousness as a mental state related to environmentally friendly behaviour. Sharma and Bansal (2013) propose a model that links environmental consciousness with ecological purchasing behaviour, which consists of various knowledge and attitudinal components. Krause (1993) developed a questionnaire investigating environmental consciousness based on an understanding or awareness of environmental issues and attitudes, and the willingness to make lifestyle (behavioural) changes. Jiménez Sanchez and Lafuente (2010) have perhaps conducted the most ambitious empirical as well as theoretical work in terms of defining and operationalizing the full breadth of environmental consciousness. They define environmental consciousness from a multidimensional and behaviour-oriented point of view in which environmental consciousness is related to pro-environmental behaviour, and mostly shaped by the attitudinal dimension (Gericke et al. 2019). It consists of four dimensions: the affective dimension (general beliefs and values), the dispositional dimension (personal attitudes), the cognitive dimension (information and knowledge), and the active dimension (pro-environmental behaviour).

Environmental consciousness is however just one measurement in the world of environmental studies. Common themes can be observed in the reviewing of previous environmental studies. The first concept is that environmental consciousness needs to be an inclusive concept mirroring the different components of human consciousness (Gericke et al. 2019). This means that the operationalizations of environmental consciousness all include constructs of knowledge, attitudes, and behavior which are then often divided into subcategories such as concerns, awareness, intentions, and willingness, but the three main constructs are always present (Velmans, 2009a; Velmans, 2009b). The second theme is that environmental consciousness is

continuous (Gericke et al. 2019). In all the studies there is a positive relationship between the answers of more knowledge, positive attitudes and willingness to act which are all related to a topic of environmental studies. The problem with many of these studies is that they are too narrowly focused and operate more specifically on the environmental issues of sustainability. A new train of thought is necessary in order to understand the complexity of these issues using not only the environmental dimension but also the societal and economic dimensions of sustainability.

Sustainability consciousness (SC) is a new construct which evolved from the classic ideology of environmental consciousness. The concept of consciousness, in this case, refers to the presence (or awareness) of experienced phenomena to measure SC which refers to the presence (or awareness) of the sustainability phenomena (Gericke et al. 2019). Michelini (2012) in his book "*Sustainability and Consciousness*" claims that humans apply intelligence to promote progress by enhancing the habitat, supplying suitable foodstuffs, lodging shelters and spending riches to make their lives more comfortable, and have been doing this since the beginning of civilization humans have been modifying their lives for a better quality of existence. He claims that this is the consequence of trusting our knowledge that comes from common sense as well as scientific interpretation of reality (Michelini 2012). He defines the awareness of this as what allows us to look at the future with confidence of trustworthy continuance. The anthropic principle supports this claim that our knowledge has been providing such impressive laws describing all linked details from the outer universe to the biological processes that we believe in their credibility and usability (Michelini 2012). "This approach is being identified mostly within the western civilization's culture, in which the cause-effect relationship leads to the discovery of truth as the main principle of humans' patterned behavior" (Michelini 2012, p. x). The current scientific outlook on reality is that industrialization and mass consumption has over utilized the earth's resources. According to Michelini's theory, if we, as humans, trust our knowledge and common sense, we can create a better quality of existence still. SC plays an important piece to this puzzle because it takes a holistic approach to consider the economic, societal and environmental issues we face today and at what level society understands them.

1.3.3 Leadership

The complex phenomenon of leadership difficult to define (Stronge 1998), and a multitude of skills, characteristics and actions can be ascribed to a leader and deemed necessary/important for leadership. One basic contextual requirement is to have a group of individuals with a common task/goal - otherwise there is no need for a leader (Chemers 2003). Just as the concept of sustainability, leadership can be divided into three perspectives, which, on top of the inherent complexity of the three aspect separately and in combination with each other, they may also be contradictory within: the context of the group, both internal and external, might not align; the goals of the group, the individual ones and the collective goal may be different; and the subjective and objective realities (the knowledge and perception of what is real) may clash (Chemers 2003, p. 6).

What defines a leader has been studied from different angles, beginning with trait theory which views leadership as a set of specific personal characteristics, to developing towards leadership being defined through a leader's relationships and interactions with the followers. There is a recent development in leadership studies towards treating leadership as skills. Chemers (2003) assesses effective leadership in a series of actions, based on social influence. Another approach is to try to understand and optimize leadership by typing it into meta models (Zaccaro 2014). Mumford et al. (2016) engage the meta model of leader-as-a-problem-solver, seeing leadership as cognitive achievement since leaders ultimately depend on their skills to solve complex problems in a social, interactional and changing setting, and must constantly acquire knowledge to do their job (Mumford et al. 2000). As the challenges of shifting towards increased sustainability in organisations requires acquiring new knowledge and adjusting the way things are done in concert with many different stakeholders, a sustainable leader is a problem solver.

Leadership, even when focused on skills and capabilities to perform tasks, can not shake the close connection to traits and characteristics. Being just and fair are elements that sway from a characteristic to a skill: for example fairness may be seen as a trait, but the action of being fair is an important skill for a leader (Chemers 2003, p 13-14, de Cremer 2003). Fairness is also central in the work towards sustainability and equality (United Nations. n.d. a). Mumford et al. (2016) mention intelligence as something leaders must possess, albeit intelligence is a hereditary trait - but they also break the concept down into expertise, knowledge, and skills for working with this knowledge. *Expertise* is a deep and well-organised knowledge built on what is required in a specific field and experience of working with related tasks, of *case-based knowledge* of actual events and follower interactions, and *mental models*, abstract constructs of cases, problems and solutions created through experience (Mumford et al. 2016, p. 25-27). To work with these, the leader needs nine critical skills, each skill requires gathering different kinds of knowledge, and the skills are connected and interdependent (Mumford et al. 2016, p. 28, 35). People can be trained to develop the needed skills to work with that knowledge in leadership tasks (Scott et al. 2004).

Utilising leadership skills gains the leader experience, which in turn will help in gaining the needed knowledge and allow the person to be a more capable leader (Mumford et al. 2000, 2016). Developing and focusing on individual capabilities for a full human life is a strong tool for fighting inequalities such as discrimination and poverty (Nussbaum 2000, 2011, 2013), and the education of, for example, public-good professionals through developing their capabilities is a central way to work towards more equal and sustainable societies (Walker & McLean 2015). Mumford et al.'s claim that leadership as "a skilled performance" is needed for a changing world (2000, p.26), could perhaps be adjusted to be the skilled performance needed for changing the world.

2. Theory

The theoretical framework consists of the two reasonably recent theoretical fields of sustainability consciousness and leadership as skills together with the more traditional theory of gender socialisation, here presented in the integrated developmental and social psychology model.

2.1 Sustainability consciousness (SC)

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland 1987), and from this, a multitude of sustainability initiatives have been launched worldwide in the areas of business, society, the environment and education. However, Gericke et al. (2019) identified a gap in the empirical data of understanding citizens level of stakeholder engagement and sustainable development policies, while instead, these sustainable initiatives are based on policy recommendations and the gut feelings of practitioners. They developed the sustainability consciousness (SC) questionnaire as the first of its kind in the sustainability field that has the capabilities to measure the holistic and integrative concept of sustainable development (Gericke et al. 2019). They state: “with this tool, researchers have the ability to investigate and evaluate people's perceptions of various kinds of efforts regarding the promotion and evaluation of sustainable development through policy, communication or education” (Gericke et al. 2019, p. 36).

Sustainability consciousness poses as the theoretical backbone to this study because of its' holistic approach to measure attitudes, behaviour and knowledge about sustainability in the three subjects of economy, society and the environment based from the UNESCO (2015) framework as being imperative to sustainable development. The term knowledge is associated with factual knowledge and thereby often perceived as an objective truth (Gericke et al. 2019). This is not the type of knowledge which is used for SC but rather the knowledge tested refers to the theory of knowingness by Von Glaserfeld (1990). Knowingness has both a cognitive, knowledge based component and affective-based component which in the context of SC, involves those issues that could be regarded as offering recognition of the fundamentals of sustainable development and thereby incorporates affective and cognitive aspects (Gericke et al. 2019). Knowingness is similar to the construct of beliefs because it investigates the state of mind in which a person thinks something to be the case (Gericke et al. 2019). The attitudes portion aim to measure emotions, moods or feelings corresponding either positively or negatively to an object, person or issue, but they can also be linked to knowingness. Finally, the behavior items evaluate the tendency of a respondent to engage in behavior in favor of, or opposed to, the attitude object, person or issue (Gericke et al. 2019).

The concept of sustainable citizenship sheds light on the importance of measuring and understanding SC. Sustainable citizenship is a term used predominantly in the political, business and educational sciences to describe a responsible person or organization that, based on their own incentives, has the capability to act in line with sustainable development (Gericke et al. 2019). Dobson (2011) argues that attitudes are important to make behavioral changes that ultimately will create long lasting changes on a personal level for the sake of sustainable development. Huckle (2013) states that sustainable citizenship should be considered as a right or a civic duty that a citizen should be obliged to live by. In 2012, Micheletti and Stolle argued that sustainable citizenship involved an understanding of citizenship as a total practice of responsibility between individuals and their political, social, economic and natural environments. Gericke et al. (2019) contends that sustainability consciousness is a form of measurement or indicator for the acceptance of sustainable citizenship as a norm within individuals, a group of individuals, or an organization.

2.2 Gender socialization

To discuss the findings from a gendered perspective, gender socialisation considers human development as a process, people seeing gendered behaviour and reproducing it and this happens as a continuous, reciprocal process between the individual and the environment (Fagot et al 2000, Zemore et al. 2000). An integrated developmental and social psychology framework of gender socialization (Eckes & Trautner 2000) combines developmental studies and social psychology. The developmental aspect recognises that people and gender constructs are dynamic, responsive to time and place. Further, the theory bases on people acquiring knowledge, utilizing experience, and keep constantly developing and engaging in different kind of change patterns, depending on the context and type of action/result needed for the social knowledge or behaviour (Eckes & Trautner 2000, p 6-7). Social psychology sees gender as a social category, in its core and based on the tenet that “an individual’s thoughts, feelings, and behaviours are heavily influenced by a host of intertwined multilevel social and cultural factors associated with the categorical distinction between female and male. These factors include the division of labour between the sexes, descriptive and prescriptive beliefs about women and men, and attitudes toward the sexes and toward gender-related issues” (Eckes & Trautner 2000, p.8).

Similarly to gender socialisation theory, the capabilities approach recognises social differences in the real life between the lives of men and women, yet it would be universally benefitting, for global economic growth (Woetzel et al. 2015) as well as generally, to treat each person as a mean to their own end, not someone else’s, thus recognising each individual’s capability and ability to act accordingly (Nussbaum 2000, Nussbaum & Comim, 2013). If an individual is capable to access and utilize that skill depends less on sex and more on gender socialisation: how we are taught and learn to act, react and interact.

Gender socialisation steps away from the notions that there are differences between the sexes and seeing gender as a personality trait with stable, internal qualities (Eckes & Trautner 2000, p.8-9). Instead, gender is seen as multifaceted and multidimensional concept: it consists of an individual's personal sphere of orientation, interests and relations, which is influenced by our social surrounding and context, which most often delivers vague and conflicting information to an individual regarding gender, and is prone to change when the individual changes settings and/or contexts (Eckes & Trautner 2000, p.10-11). Gender materializes in social interactions, it "is not an essential quality of an individual's psychological makeup - rather, it is an inherently *relational* category (Eckes & Trautner 2000, p.11, emphasis in original).

2.3 The three skill sets of a leader

The theory of leadership as skills builds on Katz's (1974) skills of effective managers, which are divided into technical, conceptual and human skills, identified already in the 1950's. The technical aspect is about the specialized knowledge of details, tools and techniques required for the job. The leader may gain them personally, or engage in and with others who have the needed skills for completing a task. The conceptual skill builds on intelligence and judgment in its reach towards using creativity and seeing and envisioning the bigger picture. The human skill completes the set, as without being able to work, inspire and "morally elevate" (Stronge 1998) others, the technical and conceptual skills will fall short. Yet, as there are different levels of leadership and management in organisations, all three skills in equal measures is most needed on the middle management level for effective leadership. The top level can do with less technical skills and the supervisors with less conceptual skills, but for each type of leader, the human skill is central for effectivity. (Katz 1974.)

This centrality of human skills is expressed more clearly and continued on in the recent studies. Mumford et al. (2000) define the three sets as *problem solving skills*, *social judgment skills* and *social skills*: the basic ideas are the same, although the technical aspect is not pronounced and the conceptual and human skills have both been developed to include a social, human aspect: the social judgment skill refines solutions and organizational frameworks and the social skill is about motivating and directing others. Mumford et al. (2000, 2016) also stress the importance of acquiring and utilizing knowledge to develop the leadership skills. Further, they note that leadership as skills is still in a developing stage and more research is needed, and that the lists of skills are most probably not exhaustive (Mumford et al. 2016, p. 34). Thus, it should be kept in mind that the Leadership Skills Inventory Test used in this survey is thus able to provide some direction for possible future research, but not to make any claims of personal skills.

3. Method & Methodology

This is a basic, descriptive quantitative research study dealing with a theoretical problem using univariate, bivariate analyses and having some explanatory reach (Blaikie 2003, p.12, 29-30).

3.1 Method & Design

In order to assess the level of sustainability consciousness in Sweden, within the time frame at disposal, a randomly distributed open questionnaire was used. Data was gathered during 20 days, 6 - 26 of May 2019, using an online questionnaire service¹. The questionnaire was offered in Swedish and English, some translations both ways were made by the current researchers and both language sets were reviewed by other academic researchers in order to check the accuracy of the translations. The first question of the survey was in regard to consent and the respondents had to agree that their answers be used anonymously in order to complete the survey. The questionnaire was circulated digitally by direct emails and through social media (facebook, instagram and twitter) in an attempt to reach a wide geographical spread and a variety of people in as many different working environments as possible. Requests for sharing and spreading further were made clearly and repeatedly in each contact, as an attempt to reach beyond the direct contact of the researchers' personal networks. This study is not based on empirical data and no kind of observations were made, as they were not deemed necessary as "an attitude scale, consisting of an integrated set of statements to which responses are made, provides a more precise and consistent measure than, say, listening to individuals discussing some issue" (Blaikie 2003, p. 15).

The questionnaire SCQ+L was created by combining the Sustainability Consciousness Questionnaire Long with the Leadership Skills Inventory (For the questionnaire, see Appendix). The creators of the SCQ, Daniel Olsson and Niklas Gericke from Karlstad University, approved of the use and modification (personal communication, April 2019). The SCQ questionnaire uses a Likert scale from 1-5 with a 6th option for "Don't know" to test three categories of responses: cognitive, affective and behavioural (Gericke et al. 2018). The cognitive responses can be described as thoughts, opinions and ideas about an object and are found in the knowingness items, but also the attitude items. The affective responses are tested in the attitude items and are defined as moods, emotions or feelings towards an object. Lastly the behaviour items measure the tendency to respond in favor to or opposed to the attitude object.

The Leadership Skills Inventory Test is developed by Northouse (2013, p. 67) through combining research on leadership as skills, the leader-as-a-problem-solver meta model (Mumford et al. 2000, 2017) and the general basic idea of three types of managerial skills (Katz 1974): technical, human and conceptual. The skills inventory is a comprehensive self-assessment tool, using the Likert scale, again with a 6th answer added for "Don't know". Although it has not been tested for reliability and validity for proper research purposes, the skills approach is a descriptive method based on solid empirical research (Northouse 2013, p. 57, 67-68), and is well suited for exploring the presence of leadership interest/skills in individuals. The combination of the two questionnaires aims at suggesting a possible correlation between

¹ <https://www.soscisurvey.de/>

leadership skills and level of SC through the data obtained. Leadership skills were calculated as a sum of the answers, and the SC through a mean average.

For analysing the data, the statistical software SPSS provided through Malmö University was used.

3.1.1 Presentation of the sample

The survey was clicked 481 times and completed 225 times. 6 responses of not working/not residing in Sweden were excluded from the final sample. The sample analysed consisted of 218 survey responses. Of the 115 workplaces mentioned (optional), a wide geographical spread to many other areas in Sweden was noted although the majority were located in Scania. Further interesting details of the uncompleted responses is that 7 times consent was not given, and 60 times the survey was finished on page 7 where the actual survey questions started.

The questionnaire was published on Facebook on May 16 resulting in a peak of responses, and a second push resulted in another peak on May 23. Besides the personal networks, the questionnaire has been pushed in over a dozen miscellaneous groups, some with a local connection to smaller towns in different areas of Sweden, some with a specific interest (not sustainability), ranging from 600 to 6000 members, and some specific interest groups ranging from under 100 to over 40.000 members with no connection to a given geographical area. Of course, the amount of members in a facebook group is no indication of the amount of people actually reached by a post. The researchers' personal connections include many sustainably interested individuals.

3.2 Methodology

The epistemological and ontological position of this research lands in a seemingly contradictory place between the two traditions of critical rationalism and social constructivism (Blaikie 2003, p. 17). The data gathering is done in a critically rational fashion by a quantitative survey, but the reality measured by the survey is socially constructed: the data gathered assesses people's assumptions and opinions of the world they live and how they see themselves interacting in it. Yet, quantitative research in social sciences is about transforming "aspects of social reality /.../ into numbers" (Blaikie 2003, p. 22) and the most elementary and commonly occurring use of numbers in real life is simply to categorise things, either to identify and separate them from others, or to arrange them in continuum. This study does both, so the measuring is both on nominal level (identification) and ordinal level (ordering) (Blaikie 2003, p. 23). The nominal level categories are mutually exclusive, in this study it is mainly the category of gender (also workplace description, whether it is public or private), which is an important point to scrutinize regarding the ability of this study to meet its aim of critical gender research. Analyses of studies on sex and gender differences show that when a study sets out to find differences, the results will almost surely show a difference as the male and female populations are separated from the start (Caplan & Caplan 2009). But are the found differences based on sex or on the socialisation

of genders (Caplan & Caplan 2009, p. 11)? This possible blurring of results can be addressed by being careful in two design steps: the accurate use and knowledge of the meaning and definitions of *sex* and *gender*, and the formulation of the research question. A research question formulated in a non-gendered way, applied and addressed to a diverse, non-segregated population, may actually provide gender relevant findings (Caplan & Caplan 2009, p. 7). This is also harmonious with the study of Andreoni and Vesterlund “Which is the Fair Sex? Gender Differences in Altruism” (2001), where they did not set out to find equal groups of both gender as doing so would create a divide before the study has even been conducted.

The SCQ+L was open for all, and no gender balancing was made, which on the other hand made the distribution more susceptible to the bias of the researchers’ sex and the gender socialisation of more females in their networks (elaborated on in the Bias-section, 3.4). That the gender/sex division is not made in the designing of the study does not make gender differences less relevant or not possible to assess, quite the opposite. SCQ+L questionnaire is self-reporting, the researchers are not making divisions from the start, and the respondent has the additional options of not naming their sex, or use ‘other’ instead of ‘female’/‘male’. (All respondents chose either male or female.) This is relevant in order to assess the effect of gender on SC and leadership, and to see if a comparison to the findings of Olsson and Gericke (2017), the significant gender gap in SC in adolescents which increased by age, meaning the girls became more concerned with SC and the boys even less, is present in working professionals in Sweden. Although the SCQ+L consists of two different questionnaires, the responses within are compatible as both questionnaires use the Likert-scale to create data that is categorised ordinally: the categories are along a continuum without equal distances (Blaikie 2003, p. 27). And as the tool of measurement is in essence the same as used by Olsson and Gericke, with the same variables and using same definitions, it allows comparisons to be made of the findings (Blaikie 2003, p. 22).

3.3 Limitations / Delimitations

The study was set to measure working professionals only in Sweden. The questionnaire was only distributed online so respondents had to have access to a mobile phone or computer in order to complete it, and the rate of halfway dropouts /incomplete responses (256 of 481) could point towards the software not being fully compatible with the smaller cell phone screens, which could have put respondents off continuing. Another limitation is that most of the respondents were found through social media, indicating that the personal connections of the researchers probably impacted heavily on the sample, possibly skewing it towards females, sustainability interested, journalists/people working in media, and people living in Southern Sweden and Stockholm area. Geographical location was not indicated in the survey, but relating to the information provided by the respondents, no media overrepresentation could be made out among professions and a reasonably wide spread of work place locations in Sweden is present, albeit the main concentration is in Scania.

3.4 Bias & Reliability

As the questionnaire was distributed randomly, initiated through personal connections and the final sample obtained was small, generalisations cannot be made. No attempts to achieve a statistically accurate sample to represent the Swedish working population was made. The study is also open to bias as the researchers are both female students studying sustainability in Sweden. There is also a possible bias towards multilinguals in the sample, as both researchers speak other languages besides Swedish fluently and there is an interest towards multilinguality in the personal networks.

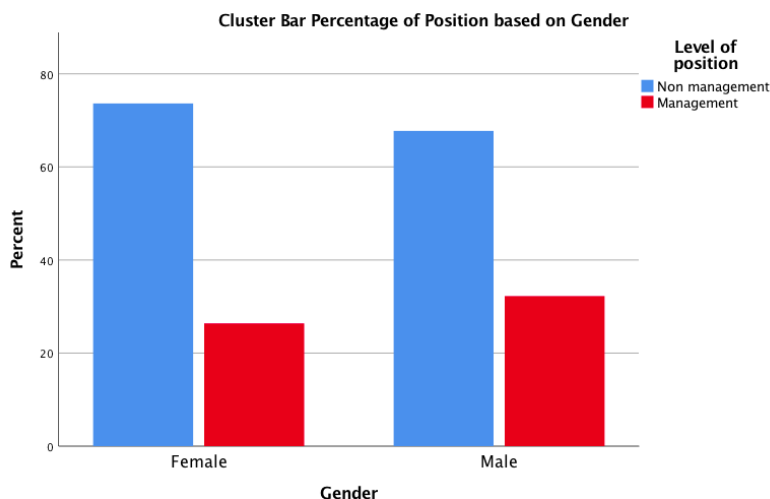
As for the validity and reliability of the instrument, a full account is found in Gericke, Boeve, Berglund and Olsson (2019), *The Sustainability Consciousness Questionnaire: The theoretical development and empirical validation of an evaluation instrument for stakeholders working with sustainable development*.

4. Analysis

Total sample size (N) was 218, and consisted of 159 females and 59 males. 179 were employed, 27 self-employed, 16 unemployed, and 4 times both employed and self-employed were clicked. As this study is concerned with people in working life, the type of employment is of less interest. Thus the two categories of employment were joined, giving a division of 202 (206 minus 4) and included 16 not currently in working life, but potentially so.

The percentage of male respondents in management positions was higher (35%) than the amount of females in management positions (22%), even though there were far less males than females who responded to the survey (59 males and 159 females).

4. Table 1: Percentages of management/non-management

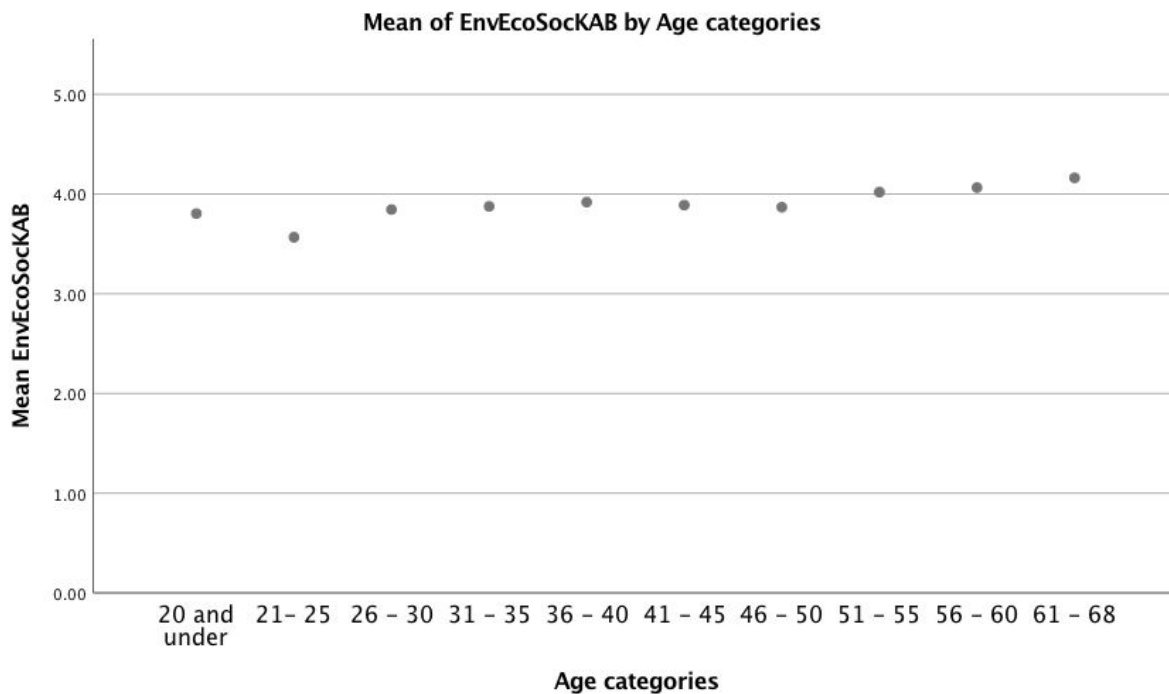


4.1. What is the SC level of working professionals in Sweden?

The total level of SC was calculated by taking the mean of the three variables Env KAB, Eco KAB, and Soc KAB to create a new variable named EnvEcoSoc KAB to find out the overall level of SC in working professionals in Sweden.

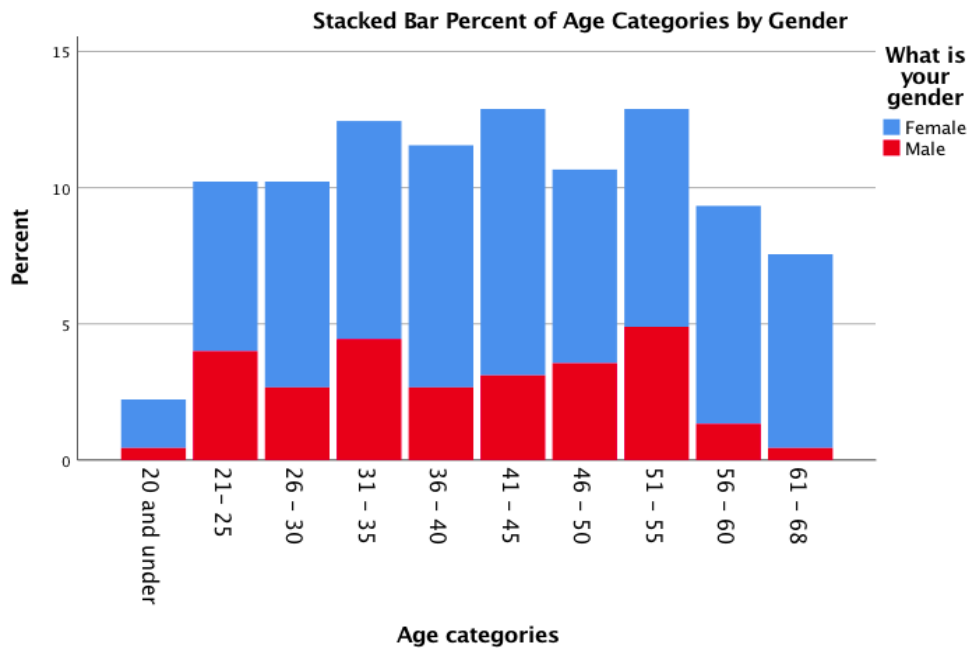
A dot chart was developed to show the overall SC by age categories of the respondent's. It is clear that the respondents all had a level ranging around the 4th level of "Agree" on the Likert scale with a mean average of 3.9 overall SC. Despite a small dip in after age 20, the level of SC and age are positively correlated meaning that as the age got higher, so did the respondents' level of SC.

4.1 Table 2: Levels of SC by age categories

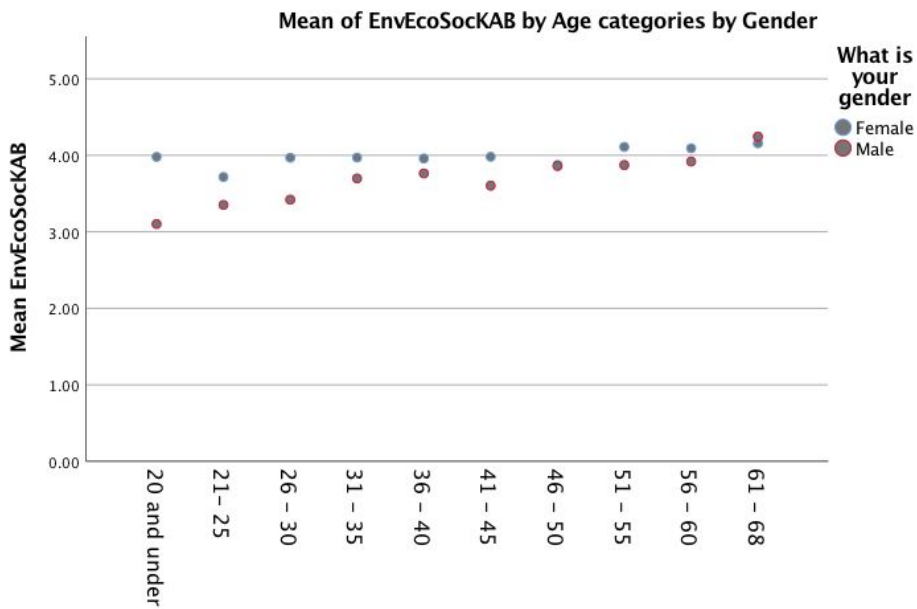


As the study seeks to look at the gendered differences in SC, a bar graph was developed to show the percentage of Male VS Female respondents for each age category. Then a second dot chart was created to show the mean of EnvEcoSoc KAB based on Gender.

4.1 Table 3: Gender percentage in age categories



4.1 Table 4: SC in age categories by gender



The results show that the difference between SC and age are negatively correlated: the difference between levels of SC shrinks in the responses of women and men in the older age groups.

As stated in the Methodology (section 3.2), no attempts were made to gather equal numbers of responses from males and females to avoid discrimination against respondents. However, in order to complete many statistically sound calculations, it is important that n = the same amount. A random sample was generated from the 159 female respondents to make a female n -sample of 59, which would match the amount of male responses.

Tables 5 and 6 compare the means from the sample where $N= 159$ and $n = 59$. It can be seen that where $N= 159$, the mean averages of EnvKAB = 3.5816, EcoKAB = 4.0823 and SocKAB = 4.2748. Comparatively, where $n = 59$, the mean averages were 3.5852, 4.0876, and 4.2398.

4.1 Table 5: SC $N = 159$

		Statistics			
What is your gender		EnvKAB	EcoKAB	SocKAB	
Female	N	Valid	159	159	159
		Missing	0	0	0
		Mean	3.5816	4.0823	4.2748
		Median	3.6471	4.1667	4.3500
		Std. Deviation	.34920	.57483	.49064
		Range	2.00	3.08	3.45
		Minimum	2.29	1.83	1.45
		Maximum	4.29	4.92	4.90
	Male	N	Valid	59	59
		Missing	0	0	0
		Mean	3.3121	3.6963	3.9907
		Median	3.4118	3.7500	4.1000
		Std. Deviation	.55206	.73170	.74761
		Range	3.53	4.75	4.80
		Minimum	.71	.00	.00
		Maximum	4.24	4.75	4.80

4.1 Table 6: SC $n = 59$

		Statistics			
What is your gender		EnvKAB	EcoKAB	SocKAB	
Female	N	Valid	59	59	59
		Missing	0	0	0
		Mean	3.5852	4.0876	4.2398
		Median	3.5882	4.2500	4.4000
		Std. Deviation	.29663	.60873	.57316
		Range	1.47	3.00	3.45
		Minimum	2.82	1.83	1.45
		Maximum	4.29	4.83	4.90
	Male	N	Valid	59	59
		Missing	0	0	0
		Mean	3.3121	3.6963	3.9907
		Median	3.4118	3.7500	4.1000
		Std. Deviation	.55206	.73170	.74761
		Range	3.53	4.75	4.80
		Minimum	.71	.00	.00
		Maximum	4.24	4.75	4.80

The differences were deemed as statistically insignificant and accepted as the new means in order to accept or reject the thesis' hypotheses.

4.2 H1: There is an effect between gender and SC

The first hypothesis was $H1$: There is an effect between gender and SC, with $H0$: There is no effect between gender and SC. The null hypothesis was rejected as follows.

In order to compute the relationship, the means were calculated of respondent's answers to the questions listed in Env KAB, Eco KAB and Soc KAB. The independent variable was gender and the dependent variables are *Env KAB*, *Eco KAB*, and *Soc KAB*. A MANOVA test was used to find out if the independent grouping variable simultaneously explains a statistically significant amount of variance in the dependent variable. A p value less than 0.05 is normally seen to be viewed as statistically significant.

For this study, the Bonferroni correction was applied to avoid making accumulative type I errors (the false positive, rejecting the null hypothesis when it is actually true in the population) as the same sample was used in multiple probability tests. The necessity of using the Bonferroni correction is debated, partly as its effects are negligible in bigger samples, but as the effect can be quite severe in small sample sizes (VanderWeele and Mathur 2019), it was decided to be applied.

Wilks' Lambda is seen to have a $p = 0.002$ which, even with the Bonferroni correction, is a significant value, meaning gender did play a significant role in the respondents' answers. Pillai's Trace is reported as it is the more robust measurement, and it also reports $p = 0.002$.

4.2 Table 7: Multivariate tests $H1$

		Multivariate Tests ^a							
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^c
Gender	Pillai's Trace	.120	5.196	3.000	114.000	.002	.120	15.587	.918
	Wilks' Lambda	.880	5.196	3.000	114.000	.002	.120	15.587	.918

a. Design: Intercept + Gender

c. Computed using alpha =

Therefore, we reject the null hypothesis that gender does not have significant effect on SC.

The between-subjects effects present that for the items of *EnvKAB* and *EcoKAB*, gender played very significant roles with $p = 0.001$ and 0.002 . However, in the *SocKAB* $p = 0.044$ which, with the Bonferroni correction, is **not** a significant value - meaning gender did not have a big effect on the respondents' answers.

4.2 Table 8: Tests of between-subjects effects *H1*

Tests of Between-Subjects Effects									
Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^d
Gender	EnvKAB	2.202	1	2.202	11.211	.001	.088	11.211	.913
	EcoKAB	4.516	1	4.516	9.969	.002	.079	9.969	.879
	SocKAB	1.831	1	1.831	4.127	.044	.034	4.127	.522

d. Computed using alpha =

The pairwise comparisons show that the female mean scores were in fact higher than the men's on all counts, with the *EcoKAB* having the highest mean difference, and the *SocKAB* the lowest.

4.2 Table 9: Pairwise comparisons of gender / *EnvKAB*, *EcoKAB*, *SocKAB*

Pairwise Comparisons							
Dependent Variable	(I) What is your gender	(J) What is your gender	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
						Lower Bound	Upper Bound
EnvKAB	Female	Male	.273 [*]	.082	.001	.112	.435
	Male	Female	-.273 [*]	.082	.001	-.435	-.112
EcoKAB	Female	Male	.391 [*]	.124	.002	.146	.637
	Male	Female	-.391 [*]	.124	.002	-.637	-.146
SocKAB	Female	Male	.249 [*]	.123	.044	.006	.492
	Male	Female	-.249 [*]	.123	.044	-.492	-.006

Based on estimated marginal means

*. The mean difference is significant at the

b. Adjustment for multiple comparisons: Bonferroni.

Olsson and Gericke use effect sizes to show possible trends and tendencies between groups: "According to Cohen (1988), a common way to describe the magnitude of the detected differences between groups of respondents is to calculate the effect size of the difference, e.g., using Cohen's *d*. "The power of a statistical test depends on three parameters: the significance criterion, the reliability of the sample results, and the 'effect size,' that is, the degree to which the phenomenon exists" (Cohen, 1988, p. 4). When Cohen's *d* is calculated, mean values and standard deviations of the two groups are used. The effect size is considered small, moderate, medium and large if $d > 0.2, 0.3, 0.5,$ and $0.8,$ respectively" (Olsson & Gericke 2017, p. 362).

Effect size was calculated to see how relevant this mean difference is with the Cohen's *d* formula: *EnvKAB*: $d = 0.616$; *EcoKAB*: $d = 0.581$, *SocKAB*: $d = 0.374$.

4.3 H2: Gender has no effect on leadership skills and interests

The second hypothesis was *H2*: Gender has an effect on leadership skills and interests, and *H0*: **Gender has no effect on leadership skills and interests**. The null hypothesis was accepted as follows.

Using the leadership skills inventory assessment, the questions were separated into three types of skills: technical, human and conceptual. The scores are calculated by adding together the points to assess a respondent's top skills. High points are within the range 23-30, moderate 14-22 and the low range 6-13. The means of the three skills are presented by gender in the following table.

4.3 Table 10: Leadership skills scores Female/Male

Descriptive Statistics				
	What is your gender	Mean	Std. Deviation	N
Technical	Female	22.9153	3.55881	59
	Male	23.0847	5.23347	59
	Total	23.0000	4.45682	118
Human	Female	26.3390	4.39282	59
	Male	24.3390	5.58820	59
	Total	25.3390	5.10441	118
Conceptual	Female	23.3051	3.79316	59
	Male	21.5085	4.87914	59
	Total	22.4068	4.44383	118

The MANOVA test was then conducted on leadership skills: there was no significance between gender and leadership skills from both Wilks' Lambda and Pillai's Trace show $p = 0.088$.

4.3 Table 11: Multivariate tests *H2*

Multivariate Tests ^a									
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^c
Gender	Pillai's Trace	.056	2.233	3.000	114.000	.088	.056	6.699	.553
	Wilks' Lambda	.944	2.233	3.000	114.000	.088	.056	6.699	.553

a. Design: Intercept + Gender

c. Computed using alpha =

The tests of Between-Subjects Effects show us that Gender had no significant effect on the technical skills items with $p = 0.837$. The human and conceptual skills had more of an effect with $p = 0.033$ and $p = 0.027$. However, with the use of the Bonferroni correction, none of these results would be considered significant. Therefore we choose to accept H_0 that gender had no significant effect on leadership skills.

4.3 Table 12: Tests of between-subjects effects H_2

Tests of Between-Subjects Effects									
Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^d
Gender	Technical	.847	1	.847	.042	.837	.000	.042	.055
	Human	118.000	1	118.000	4.671	.033	.039	4.671	.573
	Conceptual	95.220	1	95.220	4.986	.027	.041	4.986	.600

d. Computed using alpha =

The pairwise comparisons show the mean differences between means of the independent variables (male or female) based on the dependent variables (the leadership skills). It is clear there is almost no difference in the *Technical* skills items and the females actually show a smaller mean, where as the *Human* skills items had the largest difference of 2 which was a significant difference with the men having a lower mean. The *Conceptual* skills also showed the females scored higher overall and the difference was deemed significance.

4.3 Table 13: Pairwise comparisons of *gender / tech, hum, conc*

Pairwise Comparisons							
Dependent Variable	(I) What is your gender	(J) What is your gender	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
						Lower Bound	Upper Bound
Technical	Female	Male	-.169	.824	.837	-1.801	1.462
	Male	Female	.169	.824	.837	-1.462	1.801
Human	Female	Male	2.000 [*]	.925	.033	.167	3.833
	Male	Female	-2.000 [*]	.925	.033	-3.833	-.167
Conceptual	Female	Male	1.797 [*]	.805	.027	.203	3.390
	Male	Female	-1.797 [*]	.805	.027	-3.390	-.203

Based on estimated marginal means

*. The mean difference is significant at the

b. Adjustment for multiple comparisons: Bonferroni.

Cohen's d was calculated for the three types of skills. *Technical*: $d = 0.037$, *Human*: $d = 0.398$, *Conceptual*: $d = 0.411$.

4.4 H3: There is a correlation between SC and leadership skills/interests

The third hypothesis was *H3*: There is a correlation between SC and leadership skills and interests, with the null hypothesis *H0*: There is no correlation between SC and leadership skills and interest. The null hypothesis was rejected, albeit with a mention in regard of the technical skills, as follows.

A correlation chart was created to show the means of the *EnvKAB*, *EcoKAB*, *SocKAB*, *Technical*, *Human* and *Conceptual* variables.

4.4 Table 14: Correlation chart of SC/Leadership skills

		Correlations					
		EnvKAB	EcoKAB	SocKAB	Technical	Human	Conceptual
EnvKAB	Pearson Correlation	1	.710**	.740**	.423**	.743**	.686**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	118	118	118	118	118	118
EcoKAB	Pearson Correlation	.710**	1	.827**	.376**	.777**	.764**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	118	118	118	118	118	118
SocKAB	Pearson Correlation	.740**	.827**	1	.466**	.819**	.837**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	118	118	118	118	118	118
Technical	Pearson Correlation	.423**	.376**	.466**	1	.379**	.344**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	118	118	118	118	118	118
Human	Pearson Correlation	.743**	.777**	.819**	.379**	1	.813**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	118	118	118	118	118	118
Conceptual	Pearson Correlation	.686**	.764**	.837**	.344**	.813**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	118	118	118	118	118	118

** . Correlation is significant at the 0.01 level (2-tailed).

The technical skills have the lowest correlations with all of the items. The highest related items were *SocKAB* and the *Conceptual* skills with a correlation level of 0.837. It also worth noting the *SocKAB* had high correlations with *EcoKAB* at 0.827 as well as the *Human* skills with 0.819.

Thus, the *H0* can be rejected because the *Human* and *Conceptual* leadership skills show strong correlations with SC levels. But it is worth noting that the *Technical* skills do not share as strong of a correlation, though it is still present.

5. Discussion

As expected, the level of SC had a significant difference between the two genders reported in the responses. This is congruent with Gericke and Olsson's study (2017) stating that there is a significant gender difference in SC. What is different however, is that unlike their study where the gender gap widened with age, the results here show the gender gap in sustainability consciousness narrowing with age. On the other hand, as this study has not been repeated over time, this could point towards generational differences, meaning for example that education and socialization have varied during the years and are thus different in the older age groups, and not so much that the actual levels of sustainability consciousness are changing.

What also differs between the studies is that gender showed to have a very small effect size on the economic items in Gericke and Olsson (2017), but in this survey shows a medium effect size on the economic items. The environmental items showed the largest effect size proving that gender plays a significant role in the results. The social dimensions showed an insignificant *p* value and a small effect size. This meant that gender did not play much of a role in the responses concerning social sustainability.

The second hypothesis was rejected that gender had an effect on leadership skills. It is especially noticeable in the technical skills scores that no significant *p* value and the effect size was less than 0.2. The technical skills proved to have the lowest correlation with all the other items as well as having no effect from gender at all. This could prove popular gender stereotypes wrong, which has women showing less interest in technicalities, or could also indicate that the technical questions were unclear. The human and conceptual skills showed higher effect sizes but still considered to be in the moderate range. However, the *p* value was not considered to be significant. The results did connect the conceptual and human leadership skills strongly to the SC items, especially the variable *SocKAB*. While the *SocKAB* showed the strongest relationship to all the other items, it also showed that gender was not significant in its results. The human and conceptual skills also showed strong relationships with each other as well as with *SocKAB*, and did not differ between males and females.

Showing no-difference results in gender research is an important contribution to the field. The nature of academia requires researchers to publish, and a study finding sex differences may be more popular and thus get published rather than the ones not showing sex differences, and thus remain in the file drawers (Favreau 1997, Rotton et al 1995). "For every published study in which a group difference is reported, a certain number of studies with no-difference results languish in researcher's file drawers, never to be published and never to become a part of the conversation about the field" (Caplan & Caplan 2009, p.34).

The findings of this study point at gender having no real effect on the social sustainability items is promising because it supports the positive notion that both sexes are knowledgeable about existing social inequalities. It is also relevant that strong correlations exist between the human and conceptual leadership skills yet with no significant gendered effect, because a sustainable leader needs to have the ability to consider multiple stakeholders. So the results in regard to the notion that women are better sustainable leaders are thus contradictory: the notion is disproved because there were no significant effects divided by gender on several of the responses, but females did score an overall higher level of SC, which was most present on the economic and environmental variables, supporting the theory that women are better leaders for sustainability today.

The gender socialization theory brings the upbringing and treatment of boys in society and by society in question. The traditional stereotyped roles of men and male leaders point towards males not receiving the necessary knowledge, behaviour and attitudes to become sustainable leaders, which the results of this study also point towards. People develop, reinforce and use gender stereotypes because they may assist in an insecure or uncertain situation and they create simple social rules for behaviour (Eagly et al. 2000, p. 131, Zemore et al. 2000). Creating sustainable change is often problematic and complex, complicated and multidimensional, and made more difficult by the existing gender socialisation. But how that is to be tackled is beyond the scope of answers this study provides. Our categorization of each other as female/male is done quickly and more readily than any other categorization, for example race, age or occupation (Fiske et al. 1991, Stangor et al. 1992, van Knippenberg et al. 1994). Further, most of us are solidly gender socialized early in our lives: Kohlberg and Zigler (1967) showed that a child develops the full understanding of the physiological differences between male and female at the age of 6 or 7 years, yet sex-typing starts much earlier, in some cases even before the age of 2. Most children know by the age of 3 their own sex and recognise that of others, and from 3 to 6 “the stereotyping of behavior is not only evident but rampant” (Fagot et al. 2000, p. 67). Yet, there is hope as methods of child rearing develop, and social movements such as #metoo impact on workplace harassment but also have boys starting to talk about caring and showing consideration (Hofström 2015). (Although an online survey shows only moderate increase of awareness of abusive behaviour under the influence with great differences of experienced harassment between adolescents of different gender (IQ 2019).) Continued work towards seeing and developing capabilities is more sustainable than stereotyped gender socialization, and through seeing capabilities and exercising the ability to act accordingly will assist in evening out the playing field for all.

While the questionnaire tested for sustainability consciousness through a gendered lens, it did not test on the awareness of gender socialization. Since gender socialization happens through such a young age, most people are not aware of its existence. Had the questionnaire been labelled something about gender, it might have affected the way the questions were answered as women would assume themselves to answer one way, and men another. This again stresses

the importance of not selecting an equal gendered group of participants. However, on the flip side, to be conscious of something is to have knowledge of it, so to expose how a gendered perspective might influence a respondent's answers, it could also have the opportunity for the respondent to think critically passed what is expected of them, and give a more true answer (Velmans, 2009a).

5.1 Future research / Suggestions

In the future, this study should be conducted in with a larger sample to offer statistically generalisable results, and it would also be interesting to conduct the test in controlled groups, offering more specific results for different professional fields, geographical areas and workplace positions. Further, a properly tested and evaluated research instrument for leadership skills would be required to confirm the correlations, offer more solid results and develop the findings of this study further. Also, with a wider application a stronger contribution could be made towards working for the Sustainable Development Goal # 5: Gender equality and Goal # 8: Decent work & economic growth (United Nations, n.d a).

It should also be noted that the study in itself may increase SC and has the ability to add and/or create higher levels of awareness as the respondents were required to reflect over their own attitudes, beliefs and behaviours when completing the survey. It would be interesting to return the questionnaire to the respondents at a later time and measure if there was in fact a change in the level of SC since they first completed the survey. For that, a specific group would need to be created and studied, with individuals consenting to follow-up.

6. Conclusion

This research aims at elaborating on the question of why gendered leadership is a problematic point of view. The contribution of this thesis is to expand past ideologies that divide sexes into separate groups, and show that while differences are present, they are small and open to interpretation. A more accurate aim to study sustainability and leadership is through a capabilities approach that does not discriminate individuals. Nussbaum (2000, 2011; Nussbaum & Comim 2013) states that the development of human capabilities is an important tool to fight complex inequalities in society. This is congruent with Mumford et al.'s research that leadership can be cultivated as skills needed to adapt to change in the world (2000, 2016).

The lack of significant difference in reported leadership skill sets between the sexes found in this study does not line up with the research that females are better leaders for sustainability. The classically stereotyped feminine leadership roles give importance to qualities such as altruism (Glass et al. 2016), which may be connected to the human and conceptual leadership skills which build on the ability to see the bigger picture and inspire others (Katz 1974). The findings denounce that these types of qualities should be labelled "feminine" as they are obviously acquired by both men and women.

Interestingly enough, the technical skills and the economic portion of the SC, which could both be considered stereotypical masculine areas of work, showed either no difference or a higher level for the females. This reinforces the issues of a socially constructed society relying on stereotypes, making men and women perhaps think they are not suited for certain positions in life just because of their sex, when in fact they may be the best qualified person for the job.

Skills can be learned, and the proper way to lead for a more sustainable world can be as well. Humans continue to modify their lives for a better quality of existence (Michelini 2012, Eckes & Trautner 2000). We are on the road to sustainability, but longer strides are urgently needed. The anthropic principle explains much of how the world works, and gender socialization theory has a role to play. We have the knowledge to create a better economy, environment and society which should not be acquired through a gendered lens, but through focusing on human capabilities.

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Appendix: SCQ +L

Gender (4 choices): M / F / O / don't want to say

Age, fill in:

I am employed / unemployed / self-employed

If employed,

tick: management / not management

tick: Public / Private

Size: Small (up to 50 employees) / Medium (up to 250 employees) / Large over 250 employees

Do you speak/use different languages at work and at home/privately: Yes / No

Part 1:

(OUR K1)² SOC- K2 Improving people's chances for a long and healthy life contributes to sustainable development.

(OUR K2) ENV- K3 Reducing water consumption is necessary for sustainable development.

(OUR K3) ENV- K4 Preserving nature is not necessary for sustainable development.

(OUR K4) SOC- K5 A culture where conflicts are resolved peacefully through discussion is necessary for sustainable development.

(OUR K5) SOC- K7 Sustainable development demands that we humans reduce all sorts of waste.

(OUR K6) SOC- K8 People who exercise their democratic rights are necessary for sustainable development (for example, they vote in elections, involve themselves in social issues, express their opinions).

(OUR K7) SOC- K9 Reinforcing girls' and women's rights and increasing equality around the world is necessary for sustainable development.

(OUR K8) SOC- K10 Respecting human rights is necessary for sustainable development

² The original SCQ had some questions removed in the review process but kept the original numbering (see Gericke et al 2019 for details). The survey software gave some questions a new numbering, and we had to keep track of both.

(OUR K9) SOC- K11 To achieve sustainable development, all the people in the world must have access to good education.

(OUR K10) ECO- K12 Sustainable development requires that companies act responsibly towards their employees, customers and suppliers.

(OUR K11) ENV- K14 Preserving the variety of living creatures is necessary for sustainable development (preserving biological diversity).

(OUR K12) SOC- K15 Having respect for other cultures is necessary for sustainable development.

(OUR K13) ECO- K16 Sustainable development requires a fair distribution of goods and services among people in the world.

(OUR K14) ECO- K17 Wiping out poverty in the world is necessary for sustainable development.

(OUR K15) ENV- K18 Sustainable development requires a shift to renewable natural resources.

(OUR K16) ECO- K19 Sustainable development demands that people understand how the economy functions.

(OUR K17) SOC- K20 For sustainable development, major infectious diseases such as HIV/AIDS and malaria must be stopped.

(OUR K18) ENV- K21 For sustainable development, people need to be educated in how to protect themselves against natural disasters.

SOC- A1 I think that everyone ought to be given the opportunity to acquire the knowledge, values and skills that are necessary to live sustainably.

SOC- A2 I think that we who are living now should make sure that people in the future enjoy the same quality of life as we do today.

ECO- A3 I think that companies have a responsibility to reduce the use of packaging and disposable articles.

(OUR A4) ENV- A5 I think that using more natural resources than we need does not threaten the health and well-being of people in the future.

(OUR A5) ENV- A6 I think that we need stricter laws and regulations to protect the environment.

(OUR A6) ECO- A7 I think it is important to reduce poverty.

(OUR A7) ECO- A8 I think that companies in rich countries should give employees in poor nations the same conditions as in rich countries.

(OUR A8) ENV- A10 I think that it is important to take measures against problems which have to do with climate change.

(OUR A9) SOC- A11 I think that the government should provide financial aid to encourage more people to make the shift to green cars.

(OUR A10) SOC- A13 I think that the government should make all its decisions on the basis of sustainable development.

(OUR A11)SOC- A14 I think that it is important that people in society exercise their democratic rights and become involved in important issues.

(OUR A12) ECO- A16 I think that people who pollute land, air or water should pay for the damage they cause to the environment.

(OUR A13) SOC- A18 I think that women and men throughout the world must be given the same opportunities for education and employment.

(OUR A14) ENV- A19 I think it is OK that each one of us uses as much water as we want.

ENV- B1 Where possible, I choose to cycle or walk when I'm going somewhere, instead of traveling by motor vehicle.

ENV- B2 I never waste water.

ENV- B3 I recycle as much as I can.

SOC- B4 When I use a computer or mobile to chat, to text, to play games and so on, I always treat others as respectfully as I would in real life.

SOC-B5 I often make lifestyle choices which are not good for my health.

ECO- B6 I do things which help poor people.

ENV- B7 I pick up rubbish when I see it out in the countryside or in public places.

ENV- B8 I don't think about how my actions may damage the natural environment.

ECO- B9 I often purchase second-hand goods over the internet or in a shop.

ENV- B10 I always separate food waste before putting out the rubbish when I have the chance.

ECO- B11 I avoid buying goods from companies with a bad reputation for looking after their employees and the environment.

ENV- B12 I have changed my personal lifestyle in order to reduce waste (e.g., throwing away less food or not wasting materials).

SOC- B13 I work on committees (e.g., the student council, my class committee, the cafeteria committee) at my work place.

SOC- B14 I treat everyone with the same respect, even if they have another cultural background than mine.

SOC- B15 I support an aid organization or environmental group.

ECO- B16 I watch news programs or read newspaper articles to do with the economy

SOC- B17 I show the same respect to men and women, boys and girls.

Part 2:

T-L1 I enjoy getting into the details of how things work.

T-L1: Jag gillar att grotta ner mig i detaljerna på hur saker fungerar.

H-L2 As a rule, adapting ideas to people's needs is easy for me.

H-L2: Generellt, så är det lätt för mig att anpassa idéer till att matcha människors behov.

C-L3 I enjoy working with abstract ideas.

C-L3: Jag gillar att arbeta med abstrakta idéer.

T-L4 Technical things fascinate me.

T-L4: Tekniska saker fascinerar mig.

H-L5 Being able to understand others is the most important part of my work.

H-L5: Att kunna förstå andra är den viktigaste delen i mitt arbete.

C-L6 Seeing the big picture comes easy for me.

C-L6: Att se helheten är lätt för mig.

T-L7 One of my skills is being good at making things work.

T-L7: Ett av mina färdigheter är att få saker att fungera väl.

H-L8 My main concern is to have a supportive communication climate.

H-L8: Att ha ett stödjande samtalsklimat är den främsta prioriteringen för mig.

C-L9 I am intrigued by complex organizational problems.

C-L9: Komplexa organisationella problem fascinerar mig.

T-L10 Following directions and filling out forms comes easily to me.

T-L10: Att följa anvisningar och fylla i formulär är lätt för mig.

H-L11 Understanding the social fabric of the organisation is important to me.

H-L11 Att förstå organisationens sociala struktur är viktigt för mig.

C-L12 I would enjoy working out strategies for my organisation's growth.

C-L12: Jag skulle gilla att arbeta med min organisations tillväxtstrategier.

T-L13 I am good at completing the things I've been assigned to do.

T-L13: Jag är bra på att avsluta saker jag har blivit tilldelad att göra.

H-L14 Getting all parties to work together is a challenge I enjoy.

H-L14: Att få alla berörda att arbeta ihop är en utmaning jag gillar.

C-L15 Creating a mission statement is rewarding work.

C-L15: Att skapa en uppdragsbeskrivning (mission statement) är givande arbete.

T-L16 I understand how to do the basic things required of me.

T-L16: Jag förstår hur man utför de grundläggande saker som begärs av mig.

H-L17 I am concerned with how my decisions affect the lives of others.

H-L17: Jag är bekymrad över hur mina beslut påverkar andras liv.

C-L18 Thinking about organizational values and philosophy appeals to me.

C-L18: Att tänka på organisationens värderingar och synsätt tilltalar mig.