

**The Green Feminine Stereotype and the Eco-Gender Gap:
How Gender Impacts Sustainable Consumption in the Triangle, NC Area**

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2021-2022

Abstract

Eco-friendly behaviors are often associated with femininity due to existing gender stereotypes that women care more about the environment than their male counterparts. Therefore, a large majority of eco-friendly, sustainable household care products are marketed towards and bought by women, further perpetuating the green-feminine stereotype. There is a critical need for increased participation in eco-friendly practices and consumption among men, and for a more gender neutral and equitable approach to be taken to combat climate change. This research seeks to assess (1) how the green-feminine stereotype may play a role in sustainable consumption in the Triangle Area of North Carolina and, (2) how local policies can encourage more equal gender involvement in environmental friendly and sustainable consumption practices in the household through a review of current literature, reports, and policies, and a supplementary in-depth interview with a local environmental-focused service provider. Local-level policy incentives to buy sustainable household products and to participate in green household behaviors, as well as an increase in gender-neutral or more products that appeal to men may lead to an increase in environmental health awareness across the gender spectrum and a more sustainable approach to one's lifestyle.

Background

Climate change is one of the most dire multilevel challenges modern-day society has ever faced (1). The threat to the earth's ecosystem, including rising temperatures, unpredictable crop yields, polluted air, acidic ocean water, exacerbated extreme natural disasters, disrupted electrical supplies, deadly forest infestations, and the destruction of natural animal habitats, has never been closer (2, 3). The United Nations Act Now Campaign for individual action on climate change

and sustainability lays out 10 impactful actions individuals can incorporate into their lifestyles to reduce greenhouse-gas emissions to net zero by 2050. This campaign targets actions associated with the energy, food, and transport sectors, each contributing 20% of lifestyle emission (4). Goal 9 on the list encourages individuals to choose more eco-friendly products, such as by buying local and seasonal foods, and choosing products from companies who use resources responsibly and are committed to cutting their gas emissions and waste.

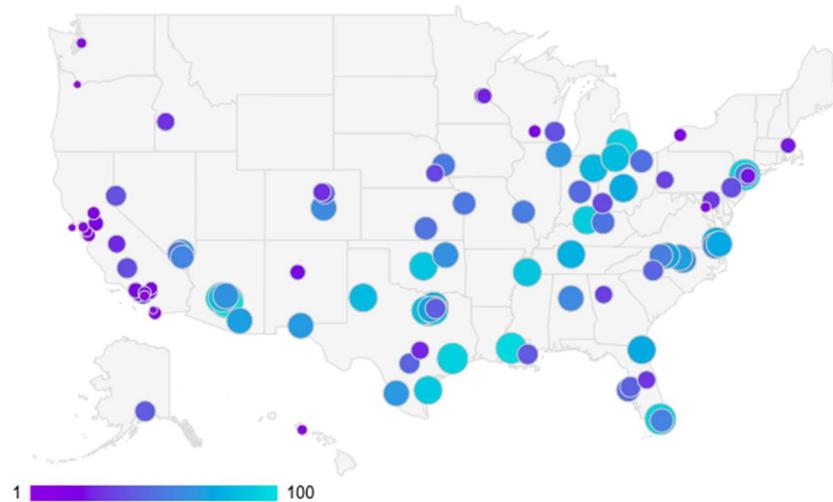
Eco-friendly, or green, behaviors are often associated with femininity due to existing stereotypes that women care more about the environment and sustainability than their male counterparts (5). Simultaneously, this stereotype may deter men's willingness to engage in green behaviors by threatening or affirming their masculinity (6). Although modern men have taken more prominent roles in household chores, women still tend to be responsible for a majority of home "caretaking", such as recycling, laundry, dishwashing, and general cleaning (7, 8). Therefore, a large majority of eco-friendly, sustainable household care products are often marketed towards and thereby bought by women, further perpetuating the green-female stereotype (9, 10). Most commonly, sustainable household products consist of: reusable cutlery, reusable bags, plastic-free packaging of soap and other personal hygiene products, and more environmentally-friendly household cleaning products.

In a 2018 study, a significant difference was found between men and women in their perceptions regarding the importance of protecting and preserving the environment -- 64% of men believed it to be important compared with 71% of women (11). Previous research found that women are socialized or "groomed" more frequently than men to care about others and to be socially responsible. This may lead them to care more about environmental concerns and to adopt environmentally-friendly behaviors (12, 13, 14). It therefore remains critical for increased participation in eco-friendly practices and consumption among men, and for a more gender neutral and equitable approach to be taken to combat climate change. A study completed by the American National Election Studies (ANES) presents the idea that if the social norms and gender binary participation can be shifted, there is a greater chance of solving the environmental crisis sooner (15). To help achieve this, feminine stereotypes need to be destigmatized, and companies should apply a gender inclusive marketing and branding approach to encourage gender-neutral sustainable consumption.

The 100 most populated U.S. cities were compared and evaluated in a recent study in the following four areas: environment, transportation, energy sources, and lifestyle & policy. Durham, North Carolina, received a lower eco-friendly score in comparison to its surrounding cities Raleigh and Cary (16, 17). These areas were evaluated using 28 metrics relevant to the corresponding area and on an overall 100-point scale – 100 points portraying the greenest and most eco-friendly cities (see Figure 1). Through this scale, Durham was awarded 49.75 points, where Raleigh and Cary were each awarded more than 50. Specifically, Durham received 32

points for environment, 54 for transportation, 77 for energy sources, and 55 for lifestyle & policy - resulting in an average of 49.75.

Figure 1. Greenest Cities in the U.S.



This research seeks to assess (1) how the green-feminine stereotype may play a role in sustainable consumption in the Triangle Area of North Carolina and, (2) how local policies can encourage more equal gender involvement in environmental friendly and sustainable consumption practices in the household through a review of current literature, reports, and policies, and a supplementary in-depth interview with a local environmental-focused service provider.

Methods

Ethics Waiver

An ethics waiver to conduct these research activities was obtained from North Carolina State University's Institutional Review Board in December 2021.

In-Depth Interview

Local government and sustainable consumption representatives and service providers, such as employees of renewable energy programs, in the Triangle NC area were contacted via e-mail and invited to participate in an online interview led by the student PI. One participant completed the interview. The participant has worked in environmental health and sustainability programs in NC for over 10 years. An in-depth interview guide was established to lead discussion regarding current NC policies and business practices regarding sustainable consumption, gender-sensitive approaches, and potential solutions to increase equal level sustainable consumption practices

across all genders in purchasing and use of household goods. Questions specifically addressed three main themes: (1) the marketing of sustainable household or health products, (2) current policies or programs in place to encourage local sustainability (including gender gaps), and (3) areas for improvement and ideas of what participants would like to see happen to increase sustainable consumption in the Triangle.

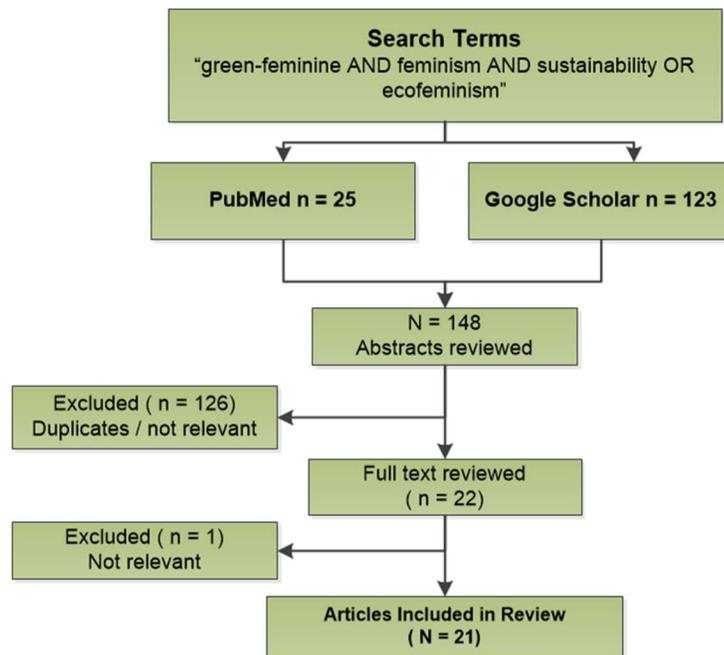
Prior to participation in the interview, the individual was emailed a link to complete an electronic consent form. The e-consent was programmed in Qualtrics, a powerful survey programming tool via a secure cloud-based subscription software platform. The e-consent form database is only accessible by the student PI via a unique password and ID. All e-consent data will be deleted within five months of project completion. The participant's consent form is not linked to interview responses. The interview was conducted via a password protected and video-disabled Zoom line and lasted approximately 45 minutes. The interview was audio recorded, after obtaining informed consent, to ensure that main themes were captured.

The audio recording was saved in a password protected file on a secure NCSU data drive, accessible only by the student PI, and will be permanently deleted within 6 months of study completion. The student PI completed partial transcription of the recordings using Microsoft Word to capture quotes related to the three main themes described above. No personally identifiable information was transcribed to protect the privacy of the participant.

Literature Review

Between August - November 2021, a literature review was conducted to explore the relationship between the eco-gender gap and its effect on sustainable consumption utilizing PubMed and Google Scholar search databases. The following terms were searched via both databases: 'green-feminine AND feminism AND sustainability OR ecofeminism'. PubMed yielded 25 results, whereas GoogleScholar yielded 123, resulting in a total of 148 abstracts that were reviewed for relevance. Between the two sources, 126 abstracts were excluded from the literature review for either being a duplicate or not relevant to the study. The remaining 22 articles were read in full, with 1 determined not to be relevant to this research and ultimately excluded, resulting in the inclusion of 21 articles in this review (see Figure 2).

Figure 2. Search Methods



Results

In-Depth Interview (IDI)

Marketing of Sustainable Household or Health Products

Multiple studies have shown that women make up the majority of household consumer purchasing (18, 19, 20). This has also been proven true regarding the purchasing of sustainable products (21). The majority of such products are therefore marketed towards women, which both utilizes and enforces gender norms to present the idea that sustainable goods are for women, because women “do the job” these products are intended for. This is further corroborated by the following:

“In general, cleaning products and household products are more marketed towards women anyway because women are the people seen as doing the cleaning. So, I think green products follow that, the same marketing as traditional products do...It’s kind of messed up, that traditional products are that way.” - IDI Participant

Marketing sustainable products towards women, which includes color-coding selected products, product placement, and product promotion (amongst other factors), allows for a harmful narrative to take place, encouraging the idea that sustainability is a woman’s responsibility. Gendered marketing has already been criticized as promoting negative gender stereotypes and as potentially doing more harm than good (22, 23, 24). Especially as the climate change crisis worsens, a united, gender-neutral approach to sustainability is crucial. Sustainable products need to be marketed if not with a gender-neutral approach, then equally to both men, women, and all other genders.

Current Policies or Programs in Place to Encourage Local Sustainability

There are no current policies in Raleigh, Cary, or Durham that take a gendered approach to encouraging local-level sustainability practices. When discussing potential policies or programs with the IDI participant, they described that such initiatives are not feasible at this time, largely due to both political blockage and the COVID-19 global pandemic.

When asked if any gender-specific approaches to sustainability were either in place or being contemplated, the IDI participant stated:

“It’s not so much at an individual level, just because I don’t have a lot of avenues to get to people at an individual level – especially during a pandemic.” - IDI Participant

Prior to the COVID-19 pandemic, Durham, NC was considering a 10 cent fee for plastic bags in order to reduce Durham’s single-use plastic footprint and to encourage the use of reusable bags ([25](#), [26](#)). This idea was first proposed in August 2019; however after the onset of the global pandemic in March 2021, the initiative was determined no longer feasible or a priority. However, nearly a year later in October 2021, the initiative was proposed again and continues to be discussed ([27](#)). Many cities in America already have similar initiatives in place, such as Los Angeles, California, Snohomish, Washington, and Santa Fe, New Mexico ([28](#), [29](#), [30](#)).

Areas for Improvement

The IDI participant described that many sustainability initiatives were halted due to the COVID-19 pandemic demanding most of the state’s financial resources. Due to this, the participant believes that while North Carolina, specifically the Triangle Area, is doing an effective job with the resources they currently have, however, should the pandemic end, the participant hopes to see more community involvement in recycling and other programs across the state.

“If advertising was less gender-biased, it would probably change some perspectives. If it was regularly part of commercials, where sometimes it was men and sometimes it was women [using sustainable products] it would normalize it.” - IDI Participant

Literature Review

Of the 21 articles* included in this review,

19 addressed the green-feminine stereotype and/or the eco-gender gap,
4 discussed potential solutions to gender disparities regarding sustainability, and
17 described why women tend to care more about the environment than men.

*Some articles were categorized twice as they addressed multiple themes.

The Green-Feminine Stereotype and the Eco-Gender Gap (N= 19 articles)

The green-feminine stereotype encapsulates the idea that environmentalism is seen as feminine as it fits within a woman's stereotypical role as a caregiver (31). The core of this term describes how men tend to avoid environmentally friendly behaviors as a potential mental association exists between greenness and femininity, thus the possibility of engaging in green behaviors could threaten an individual's masculine identity (32). A series of seven studies produced in 2016 concluded that concepts of *greenness* and *femininity* were cognitively linked as well as consumers engaging in green behaviors were stereotyped by others as more feminine and even perceived themselves as more feminine (33). This deconstructive thinking perpetuates feminine stereotypes and encourages women to take responsibility for the sustainability movement in order to avoid further destruction to the earth. As the previous study mentions, "The idea that emasculated men try to reassert their masculinity through non-environmentally-friendly choices suggests that in addition to littering, wasting water, or using too much electricity, one could harm the environment merely by making men feel feminine" (34). In short, the green-feminine stereotype examines how femininity and eco-friendliness have been linked, and thus how women have accordingly assumed responsibility for the green movement, furthering the gender gap.

The eco-gender gap describes the growing difference in environmental awareness and eco-friendly behavior between men and women, and how men accordingly are less likely to feel connected to environmental issues as opposed to women (35). Closely linked to the term 'green-feminine stereotype', the eco-gender gap emphasizes the prevalence of gender norms in the responsibility of domestic labor. Men tend to be threatened by the idea of practicing sustainable habits, whereas women tend to adapt these practices without any threat to their identity (36). This gap not only holds women more responsible for the environmental movement, but also makes it harder for men to contribute without threatening their masculinity as a result of gender socialization. A survey in 2018 showed that 71% of women actively try to live more ethically, whereas only 59% of men do, further emphasizing the gendered gap in eco-friendliness (37).

Solutions to Gender Disparities Regarding Sustainability (N=4 articles)

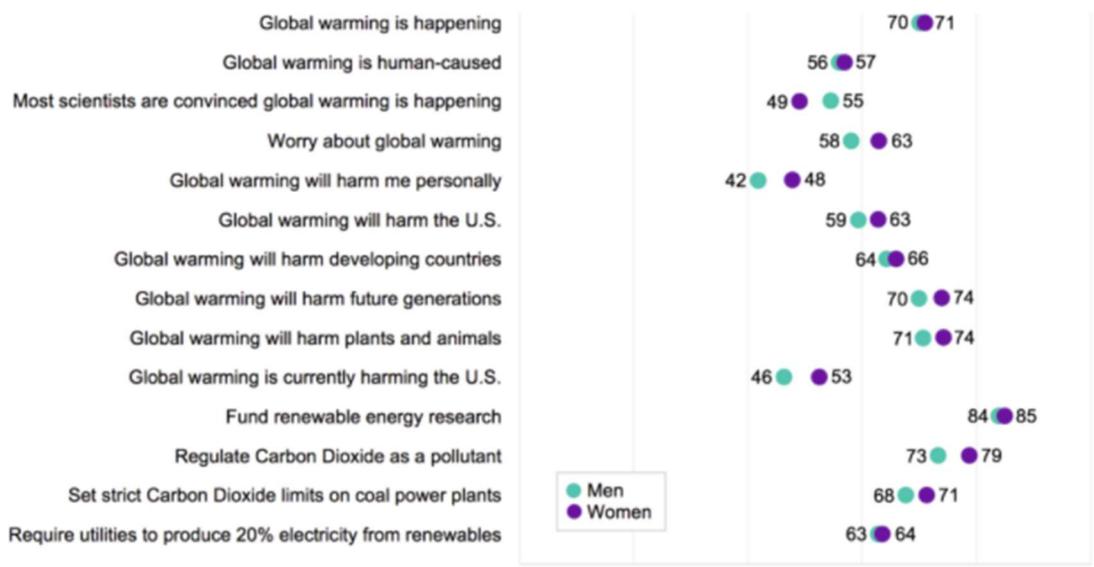
Many solutions have been proposed to help reduce the gender disparities within the sustainability movement. A recent study described the benefits of empowering men to overcome their sensitivity of being perceived as effeminate by affirming their masculinity, as in their study it was discovered that men who were assured and affirmed of their masculinity showed more

interest in purchasing eco-friendlier cleaning products (38). An additional proposition was to market “men-vironmentally-friendly” products, using fonts, colors and images traditionally associated with masculinity (39). Ideally, non-gendered policies and solutions could be put in place to encourage sustainability; but, an acknowledgment of the intersectionality of gender and sustainability is necessary.

Why Women Care More About the Environment than Men (N=17 articles)

Previous research findings have found that women tend to have stronger feelings towards protecting the environment, as well as more negative attitudes towards utilizing natural resources as opposed to men (40). A New Zealand study showed that women tend to show higher levels of conscientiousness, which helps to explain why women hold stronger attitudes towards the environment rather than men. This same result also explains why mens lower conscientiousness may contribute to greater levels of environmental degradation (41). Further studies suggest that feminist beliefs, including commitment to egalitarian values of fairness and social justice, also further this eco-gender gap (42). The same aforementioned study concluded women consistently have higher risk perceptions that global warming will harm them personally, and will harm people in the U.S., plants and animals, and future generations of people (see Figure 3).

Figure 3. Gender Differences in Views and Understanding of Global Warming



Overall, it can be concluded that for various reasons women tend to feel more concerned about the environment as opposed to their male counterparts. Therefore, closing gender gaps in the environmental movement ought to receive more attention in climate education and outreach efforts as one way to lower the eco-gender gap in the environmental movement.

Limitations

While an effort to obtain unbiased information was attempted, the following are limitations of this research:

Small Sample Size

Due to the COVID-19 pandemic still affecting the local community, many officials were unable to be interviewed due to social distancing requirements and the constraints the virus has put on work schedules. Even despite the pandemic, the applicable field of officials working in a related environmental field remains small.

Limited Search Engine Usage

GoogleScholar and PubMed were both used to complete the aforementioned literature review. Due to a plethora of search results, many duplicate results, and the time constraint at hand, only two search engines were used for the completion of this research project.

Limited Search Terms

A limited number of search terms were used due to an initial unwieldy return in search results unrelated to the subject at hand. Inclusion of more terms may have resulted in greater inclusion of pertinent information, but it was not feasible to search through the excess of information due to the time constraint this research project held.

Time Limit

With a time limit of about one year, there was a limited amount of time to collect data around the subject matter. Many interviews were unable to be conducted due to the time constraint. A limited amount of literature was also able to be collected and reviewed due to the nature of the project.

Lack of Community Inclusion

There was an inability to speak with members of the community in the Raleigh, Durham, and Cary areas to include their input on the research at hand. For example, we were unable to interview community members to see if they cared about environmental-safe and sustainable products or use in their communities.

Policy Recommendations

Each of these solutions below would lead to an increase in environmental health awareness and a more sustainable approach to one's lifestyle. Taking both of these solutions into account would allow for the most ample change.

1) Masculine and Gender Neutral Branding of Sustainable Products

While the current sustainable product industry generally markets towards women, there is a possible solution that would encourage greater male participation in household plastic reduction -- more masculine or gender-neutral branding of sustainable products. The majority of sustainable personal hygiene products, amongst other sustainable products, are marketed towards a feminine population (43). These products feature lighter shades of color, more floral scents, and are advertised by women. A more gender-neutral approach, thus making the products more masculine than they currently stand to be, would allow for the decrease of association between sustainability and “women’s work”. By making sustainability gender-neutral, one consequently recognizes that sustainability is a joint effort between every identity, not just women. A more masculine approach to sustainability also allows for the destigmatization of household chores being deemed a woman’s responsibility. Shifting this gender norm will allow for a weakened association between femininity and being eco-friendly, resulting in a more equal level of sustainable consumption practices in purchasing and use of household goods.

2) Policy Incentives at the Local-Level for Plastic Reduction

A. Lower Taxes on Sustainable Products / Tax Rebate

Many tax rebate options are available for “going green”, such as for: charitable donations, residential energy efficient property credit, electric vehicle incentives, nonbusiness energy property credit, pre-tax savings for mass transit commuters, qualified bicycle commuting reimbursements, and recycled green office supplies (44). The U.S. Department of Energy (ED) maintains a database of tax credits, rebates and savings opportunities which can be easily filtered by state, type of business, and savings category (45). The North Carolina Clean Energy Technology Center runs a similar database, with utility, local, state and federal programs (46). Tax write-offs can also come from installing energy-efficient air conditioning or heating equipment, solar energy systems to power a company’s operations, or going green with waste management (47). In short, many opportunities already exist for sustainable approaches to be advertised as tax rebate initiatives, at both individual and company-wide levels.

These existing approaches acknowledge that a financial incentive is influential on the success of sustainability initiatives. It can be further concluded that lower taxes on sustainable products would serve as an effective incentive to live more sustainably (48). This economic-incentive to purchase more eco-friendly goods would serve as a gender-neutral approach to sustainability, effectively removing gender from the equation. There would be no gender-specific subset to the initiative, but rather an equal opportunity for all to choose greener products while benefiting from lower taxes. Combined with the other initiatives listed, this opportunity emphasizes the need for all to live sustainably.

B. Recycling Incentives / Reverse Vending Machines

Currently, the city of Raleigh provides one free recycling bin per single family household to encourage recycling and support efficient curbside pickup (49). An additional recycling bin averages \$49. Cary and Durham, NC provide similar services (50, 51). While this recycling initiative is a great step for the Triangle Area in making recycling accessible, it does not greatly incentivize people to recycle who do not already. In Beijing, a ‘reverse vending machine’ was introduced, which allows people to receive phone minutes or transportation credits the more they recycle (52). Energizer batteries introduced a similar initiative as well where they offered 12 cents per battery recycled, which can be put towards a new pack of batteries (53, 54). Such an initiative provides a financial incentive to recycle without any gendered limitations.

C. Container Deposit Legislation

Container Deposit Legislation (CDL) is not something new to America, but rather an underutilized policy that would allow for greater return of recycled plastic, as well as a lesser amount being purchased in the first place. Container Deposit Legislation requires a refundable deposit on certain types of recyclable beverage containers in order to ensure an increased recycling rate (55). This legislation would remove gender from the equation, and would impose a fee on the purchase of plastic products across the board. In some cases, cities have implemented policies in which one pays a fee that gets refunded when the container is returned. These policy proposals are not only economically efficient, but also help to decrease plastic waste as well as the stigma associated with femininity and eco-friendliness. Should these policy incentives for plastic reduction be initiated, then sustainability will be approached in a more equitable manner by all genders.

Conclusion

Recognizing and addressing the gender disparities between equal gender participation and engaging in eco-friendly behaviors may help to achieve Goal 9 of the United Nations Act Now Campaign to increase the purchase and use of more sustainable products. This gap is a result of decades of feminine household stereotypes, the association of femininity and sustainability, and other negative associations between eco-friendliness and feminism. An attempt to make sustainable products both created and marketed in a more gender-neutral approach, as well as policy incentives to reduce plastic consumption, are necessities to address the gender-gap and its effect on sustainability.

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