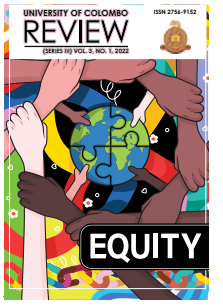
DOI: http://doi.org/10.4038/ucr.v3i1.56



University of Colombo Review (Series III),
Vol. 3, No. 1, 2022

Embedding ethics of care into sustainable human resource management to foster gender inclusive work culture in engineering

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ABSTRACT

As the social and environmental demands evolve, business organizations specializing in engineering are required to reconsider their gender policies and practices to retain competitive advantage. This conceptual article highlights that the movement towards sustainability could encourage organisations to achieve critical constructs of workplace gender inclusion. This article uses the Sustainable Human Resource Management (HRM) framework and Ethics of Care approach as the theoretical foundation to create a conceptual model on inclusion. The model specifically helps to understand how the assumptions and beliefs of internal organizational stakeholders contribute toward adopting care-based values to promote gender inclusivity in engineering workplaces. In conclusion, the article highlights the need for more empirical research on the Sustainable HRM approach and how it can help to foster an inclusive workplace.

KEYWORDS:
Ethics of Care, Gender, Sustainable HRM, Workplace inclusion

Suggested Citation: Wijayawardena, K. (2022). Embedding ethics of care into sustainable human resource management to foster gender inclusive work culture in engineering . *University of Colombo Review* (New Series III), *3*(1), 3 - 19.

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Introduction

Men have dominated the engineering profession since its establishment (Ainsworth, Batty, & Burchielli, 2014; Makarem & Wang, 2020). Women are still considered a minority in this profession (Meiksins et al., 2017). Therefore, the researchers, especially from Western countries, have taken on the task of investigating the issue of women's exclusion in the engineering profession (Beddoes & Borrego, 2011; Galea et al., 2020; Hatmaker, 2013). For example, even countries with high gender equality (such as Norway, Finland, and New Zealand) find it hard to attract women into professions like engineering (Khazan, 2018). Although gender inequality has attracted the interest of researchers, many studies have considered either the challenges experienced by women as engineering professionals or institutional and policy level developments to increase their numbers in engineering education (Cook & Glass, 2014; Glass et al., 2013; Jones, Ruff & Paretti, 2013; Schafer, 2006). Similarly, the research focus, firstly, on individual and organizational strategies to overcome workplace barriers to attract women; and secondly, on different mentoring and motivational programs to popularize engineering education amongst younger women (Faulkner, 2009; Wang & Degol, 2017). As such, much of the existing research analyzes the demographic imbalance in engineering (male to female ratio). Very little research has focused on understanding the concept of "gender" and its role in engineering (Acker, 2012; Denissen, 2010; Faulkner, 2007; 2009; Meiksins et al., 2017). Furthermore, only a limited number of articles examine how traditionally gendered organizations such as engineering businesses could develop long-term solutions to nurture an inclusive workplace culture to ensure the career progression of women engineers (Adamson et al., 2016; Swan, Paterson, & Bielefeldt, 2014).

To this end, Human Resource Management (HRM) plays an essential role in building an inclusive work culture (Baker, Ali & French, 2019; Francis & Michielsens, 2021; French & Strachan, 2015). Traditionally, HRM tends to approach gender as a barrier to organizational success and uses gender-neutral HRM policies and practices to attract and retain female engineers (Bilimoria, Joy & Liang, 2008; Meiksins et al., 2017). However, this gender-neutral approach in HRM may simply encourage the gender gap in engineering. Rather than relying on neutralized HR policies, researchers and practitioners are increasingly engaging with the diverse perspectives of gender with the goal of closing the gender gap in traditionally gendered professions (Basart, Farrús & Serra, 2015). Organizations understand that they need to embrace forward-thinking, cross-disciplinary, and holistic approaches to sustain their business systems in an ever-changing context (Lazzarini & Pérez-Foguet, 2018). In response to this challenge, organizations now prefer Sustainable Human Resource Management (Sustainable HRM) practices over the traditional HRM approach.

This article questions how engineering organizations can foster workplace inclusivity for women through sustainable practices. The article draws on the current literature on gender, sustainable human resource management, and ethics of care in engineering to answer this question.

Workplace inclusion

Inclusiveness is considered a growing field in organizational research (Ferdman, 2017; Randel et al., 2018; Shore, Cleveland, & Sanchez, 2018). The increased interest in Feminist Standpoint Theory highlights how men and women have different experiences, knowledge, and ways of doing things (Beddoes & Borrego, 2011). Similarly, the Optimal Distinctiveness Theory emphasizes the importance of focusing on satisfying individual needs within a group and thereby, encourages researchers to consider individual differences as an organizational resource (Brewer, as cited in Shore et al., 2011). Inclusive work culture is defined by Wasserman, Gallegos, and Ferdman (2008) as a context where "all the people in different social categories/identity groups have the opportunity to be present, to have their voices heard, appreciated, and to engage in core activities on behalf of the collective" (as cited in Shore et al., 2011, p. 1268). Uniqueness and sense of belonging are the critical characteristics of workplace inclusiveness, and it differs from exclusion [low in uniqueness and low in sense of belonging], differentiation [high in uniqueness and low in sense of belonging], and assimilation [low in uniqueness and high in sense of belonging] (Shore et al., 2011). A culture that values employee uniqueness is essential to attracting the best talent pool with a diverse range of skills and competencies (Ertürk & Vurgun, 2015). A culture that encourages a sense of belonging will retain the employees with unique skills (Hatmaker, 2013; Randel et al., 2018). As Shore et al. (2011) explain, most policies and practices that refer to workplace inclusiveness tend to address either uniqueness or a sense of belonging separately.

Furthermore, the existing inclusive frameworks (e.g., Mor Barak, 2000; Pless & Maak, 2004; Shore et al., 2011) are designed as general and context-free models targeting overall organizational inclusion. In their work, Shore et al. (2011) indicate that the inclusivity literature has not investigated how and why inclusion can benefit different workplace scenarios. Pless and Maak (2004) state that the role of HRM in creating an inclusive culture is based on different principles, such as mutual recognition, mutual understanding, respect for plurality, trust, and integrity. Further theoretical and empirical research in HRM is needed to discuss the ethical aspects of inclusive work cultures (Shore et al., 2011; Shore, Cleveland & Sanchez, 2018).

Sustainability focused engineering

Organizations are increasingly becoming interested in adopting an agenda that emphasizes sustainability in the workplace (Ehnert & Harry, 2012). Many studies define sustainability as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" based on United Nations Documents (1987) by the World Commission on Environment and Development (e.g., Dao, Langella & Carbo, 2011, p. 64; Florea, Cheung & Herndon, 2013, p. 392). The research seems to assume that designing policies and practices to uphold sustainability will result in construction engineering organizations fostering a foundation of morality and ethical practice. These features can be regarded as essential elements of inclusive work culture. However, limited

research has been carried out to assess exactly how policies and practices that prioritize sustainability maintain inclusive work practices (Udén, 2017).

Engineering plays a critical role in transforming modern society (Hersh, 2017; Seager, Selinger & Wiek, 2012). However, the profession itself also needs to evolve in response to changing societal needs (Chubin, May & Babco, 2005). When organizations are committed to pursuing an agenda that prioritizes sustainability, they need to hire, train, and support engineers who are aware of social and environmental issues. Further, the technological and economic solutions that these organizations provide for their clients should sustain rather than degrade the natural environment while improving community lifestyles and wellbeing. Sustainability as a holistic approach can encourage engineers to expand their horizons.

The sustainability agenda requires engineers to develop new skills, abilities, values, and attitudes (Bakshi & Fiksel, 2003; Hess et al., 2017). The skills shortage in engineering has influenced the promotion of women's participation in this occupation (Kerr, 2010; Menches & Abraham, 2007). Consequently, it is vital to explore how organizations can attract and retain an unexploited resource pool in the labor market (Strachan, Adikaram, & Kailasapathy, 2015). Doing so will help enhance opportunities for pursuing a sustainability-focused agenda in the engineering industry (Ehnert & Harry, 2012). The sustainable societal changes seem to have influenced the profession to internalize care-based approaches when solving problems (Capobianco & Yu, 2014; Schäfer, 2006). Here, engineering professionals are encouraged to develop new competencies such as social-cultural skills (Belanger, Diekman & Steinberg, 2017; Fielden et al., 2000) and better awareness of the environmental impacts of their profession (Campbell & Wilson, 2017; Makarem & Wang, 2020; Riley, Pawley, Tucker & Catalana, 2009).

The traditional gender-biased culture of engineering may have influenced the lack of these competencies because it tends to be highly dominated by traditionally male-oriented values (i.e., agentic, technical orientation, assertiveness, focus on self-interest, minimum communication, and rationality without creativity) (Denissen, 2010; Jorgenson, 2002; Oswald, 2008). Casimir and Dutilh (2003) conducted a cross-country analysis that detected an inverse relationship between traditional male gender values and sustainable ideologies. In contrast, feminine values tend to generally include communal characteristics such as nurturing, caring (Colvin et al., 2012), responsiveness (Rigg & Sparrow, 1994), empathy, supportiveness, softness (Acker, 2012), social orientation (Zhang & Hou, 2012), and concern for others (Irvine & Vermilya, 2010). These characteristics tend to better complement the sustainability agenda.

Subsequently, sustainability-focused engineering organizations can no longer reject employees who hold traditionally feminine values as they add a competitive advantage to the profession (Bastalich et al., 2007; Kerr, 2010; Menches & Abraham, 2007). However, much of the existing research appears to indicate the difficulty of attracting and retaining employees with feminine values to the engineering profession (Beddoes & Borrego, 2011; Cannady, Greenwald & Harris, 2014; Cook & Glass, 2014; Jones, Ruff & Paretti, 2013; Kerr, 2010; Menches & Abraham, 2007; Schafer, 2006; Wang & Degol, 2017). For this reason, it is a timely requirement to identify possible mechanisms to implement a workplace

culture that embraces employees with feminine-communal competencies (Brown et al., 2015). In this regard, engineering organizations need to take on board appropriate cultural norms and values to build an environment that supports the career progression of women and marginalized groups (Rao et al., 2013).

Sustainable HRM as the platform for inclusivity in the engineering context

Sustainable HRM is an emerging concept defined as having a focus on organizational and human sustainability (Kramar, 2014; Wilkinson, Hill, & Gollan, 2001). Although the concept is still in its infancy, it serves as a benchmark for organizational success (Ehnert & Harry, 2012). Existing definitions of sustainable HRM elaborate on how HRM could help businesses make profits while at the same time saving the environment and ensuring social equity (De Prins, Van Beirendonck, De Vos & Segers, 2014; Ehnert & Harry, 2012; Spooner & Kaine, 2010). Sustainable HRM also highlights how the attraction and retention of talented employees are critical for the survival of modern companies (Ehnert & Harry, 2012). Therefore, Sustainable HRM can make a positive contribution to employee wellbeing and workplace performance (Gehrels & Suleri, 2016; Jabbour & Santos, 2008; Wilkinson, Hill & Gollan, 2001).

The author uses the sustainable HRM framework as the theoretical basis to explain the benefits of having a sustainable value orientation at work (De Prins, as cited in Gehrels & Suleri, 2016; Mazur, 2015). The article specifically uses the framework based on three different perspectives, namely, psychological, sociological, and 'green.' The article omits the strategic perspective from its discussion as it is beyond the set research scope. The framework also explains the connection between the economic, ecological, and social activities of organizations and their impact on people's behavior (Kozica & Kaiser, 2012).

The framework first explains the psychological perspective of sustainability, which focuses on what motivates employees to perform well. Unlike masculine hegemonic values, femininity as a value is more aligned with helping and supporting others. Engineers in the contemporary work context are required to deal with employees, professionals, and non-professionals, and respond effectively to community interests and concerns. Thus, the article proposes that engineers need to embrace altruistic values instead of existing hedonist values when dealing with internal and external parties. Altruistic values allow engineers to utilize their feminine values at work rather than hide them. With this in mind, the sociological perspective of the framework describes how important workplace diversity is for sustainability. Understanding and respecting individual differences and enabling equality are crucial factors that promote sustainability (Kramar, 2014; Mazur, 2015). Inclusiveness is a value that will assist engineering businesses to achieve global competitive advantage (Colvin, Lyden, & León de la Barra, 2012). As per Swan, Paterson, and Bielefeldt (2014), the inclusive mindset within engineering can be an effective strategy for attracting and retaining the underutilized workforce of women and underrepresented minorities. Furthermore, inclusiveness as a mindset can help disadvantaged groups to feel valued in the workplace once they are recruited. This will enhance the positive work identity of such individuals.

Finally, the green or environmental perspective is mainly concerned with maintaining a positive relationship between human beings and the natural world (Rao et al., 2013). Schwartz (1994) describes this perspective under benevolence values while Stern, Dietz, and Kalof (1993) call them biospheric values. Meanwhile, ecofeminist literature showcases how women are more inclined to be sensitive to environmental issues (Beddoes & Borrego, 2011). Similarly, Stern, Dietz, and Kalof (1993) explain that women tend to be better environmentalists because they have a biospheric value orientation. The promotion of green values in the engineering occupation can be a win-win solution for sustainable development (Arora-Jonsson, 2014).

Respecting individual differences and enabling equality is crucial to ensure sustainability (Blake-Beard et al., 2010; Mazur, 2015; Kramar, 2014). Simultaneously, addressing social exclusion and marginalization can be considered an essential contribution to Sustainable HRM (Wilcox, 2006). Hence, this article argues that the career progression of women and minorities in traditionally gendered professions (such as engineering) requires deep-rooted ethical solutions rather than a surface-level solution. As Campbell and Wilson (2017) stated, changing the gendered organizational culture requires alteration of thinking in the value system. Sustainability is also recognized as an ideology based on a particular set of beliefs and values (Pfeffer, 2010), which can influence existing occupational, organizational, and individual orientations (Florea, Cheung & Herndon, 2013). Sustainable HRM is underpinned by moral-ethical values required by the organizations to fulfill their social, environmental, and economic obligations (Ehnert & Harry, 2012). Hence, the author uses the theoretical framework of "ethics of care" to understand the ethical dimensions of sustainability introduced here.

Ethics of care

In contrast to impartiality and universal standards, care ethics emphasizes compassion, care, and context (Campbell & Wilson, 2017). The theory has evolved through various disciplines such as psychology, sociology, educational psychology, and other contexts, including counseling, care work, military, and engineering (Parton, 2003). The theory was initially devised to recognize values relating to "care" and challenge the marginalization and devaluation of care as an activity and the carer as a person (Riley et al., 2009). Liedtka (1996) defined "care" as an attempt to empathize with people and try to help them in any feasible way. The main elements of ethics of care include a) paying attention to others in actual contexts; b) a focus on the needs versus the interests of those others; c) commitment to dialogue as the primary means of moral deliberation; and d) consideration of care as a mode of responsiveness (Liedtka, 1996).

Tronto (1993; 1998) clarifies these elements as 1) caring about what is essential; 2) taking care of another person's needs; 3) caregiving or meeting needs through actions, and 4) care receiving. As explained by Kardon (2005), those who engage in a care process must make judgments about needs, take responsibility for developing strategies to achieve those needs, be competent to realize the care, and provide feedback as care-receivers. The theory was also used as a transformative approach to understanding and changing professions such

as social work (Parton, 2003) and engineering (Dias, 2003; Riley, 2013). Ethics of care has been explained through concepts such as empathy (Hess et al., 2017), being open to others (Parton, 2003), and interactions and communication (Campbell & Wilson, 2017). As stated by Parton (2003), "[ethics of care] underlines the importance of sensory knowledge, symboli[z]ed by the unity of head, hand and heart" (p. 11).

Engineering is known as a problem-solving profession, and it was commonly believed that technical skills and competencies would suffice to address the contemporary challenges that link with social, economic, and environmental concerns. (Campbell & Wilson, 2017). Overemphasis on technical abilities tends to devalue the ability of non-technical competencies needed for solving problems (Michelfelder & Jones, 2016). Effective problem-solving requires a combination of technical and social skills that capture multiple layers of a problem (Allenby, 2009). The dependent relationship between people and the planet requires engineering professionals to be sensitive to social, cultural, and environmental aspects of the problems that they are responding to (Campbell & Wilson, 2017). Consequently, ethics of care is required to address the missing social dimensions of traditional engineering ethics. The traditional code of ethics in engineering tends to be more masculine and thus may not serve the moral needs discussed above.

Adam (2001), Dias (2003), and Campbell and Wilson (2017) have attempted to introduce the ethics of care approach to professional engineering organizations and the engineering education system. Riley et al. (2009) used ethics of care to discuss the transformation of engineering designs from a capitalistic- or militaristic-driven process to one focused on care. A profound understanding of ethics of care can help change traditional engineering practices, and how engineers engage with society and the environment, with certain attitudes, values, and personal qualities (Basart Farrús & Serra, 2015). Furthermore, flexible, and caring engineering solutions are required to enhance the existing moral standards of engineering (Riley et al., 2009). Campbell and Wilson (2017) call for such an approach as humanitarian engineering. Several other studies describe how ethics can help the engineering profession be empathetic, moving beyond the formal knowledge and technical training that are part and parcel of the masculine system of values (Basart Farrús & Serra, 2015; Parton, 2003; Pantazido & Nair, 1999).

Although ethics of care has evolved as a care-based feminist theory, later, the founders (Tronto, 1993; 2013) excluded the concept of gender from the theory and proposed it as a gender-neutral theory. However, Hess et al. (2017) highlight how care tends to be a feminine quality, and women tend to be more empathetic than men. Also, Rabe-Hemp (2008) notes that women, when compared to men, were more likely to provide support and behave altruistically towards others. For example, Klotz et al. (2014) noted that female engineering students tended to help other people significantly more than their male counterparts. Therefore, engineering can no longer ignore the need to enhance women's participation in the profession because the women can introduce the ethics of care approach to engineering through their feminine values. Gilligan, Karniol, Grosz, and Schorr (2003) state that:

> "… women's morality is a direct outcome of the caretaking role that women have played in social systems throughout history. This role has led women to be more concerned with the maintenance of social relations, to experience a sense of responsibility, and to extend help to those in need" (p. 11).

An integrated framework of gender inclusion

According to Jabbour and Santos (2008), effective organizational mechanisms must be established to recognize diverse skills and talents possessed by women and minorities. Companies should have a culture of inclusion built on moral precepts (Pless & Maak, 2004). Consequently, it is crucial to understand how ethics of care can make sustainability-focused engineering possible. Therefore, the article will assess mechanisms to attract and retain employees with these essential communal competencies.

Linnenluecke and Griffiths (2010) state that sustainability-focused work cultures are nurtured by sound ideologies driven and promoted by diverse stakeholders and institutions. Florea, Cheung, and Herndon (2013) describe those sustainable ideologies as encouraging staff members to possess care-based human values like altruism and empathy. Harrison and Wicks (2013) state that changing the existing narrow economic focus can create a more positive organizational culture that embraces social and environmental values. Riley (2013) argues that care-based ethical values can establish a foundation for the engineering profession to embrace emotions, empathy, and creativity. The approaches of care taken by internal organizational stakeholders can change the existing gendered perception in the engineering work culture, which can lead to a fundamental change that provides due recognition for value-driven employees who can provide care. The article applies the three perspectives of Sustainable HRM to discuss how key internal stakeholders (such as employers, managers, and employees) can transform the existing gendered culture of engineering (Mazur, 2015).

Linnenluecke and Griffiths (2010) identified organizational leaders as the most important internal organizational stakeholder who can transform cultures in the workplace. Being attentive (caring about) and responsible (taking care of) are the most significant aspects of the moral and ethical values of leaders (Riley, 2013). Organizational leaders who are committed to promoting sustainability are more likely to make ethical decisions to protect the environment by implementing energy-efficient engineering solutions, maintaining economic viability, and ensuring social inclusion (Campbell & Wilson, 2017; Klotz et al., 2014; Riley, 2013). Similarly, employees (engineers) who work in a sustainable work context are more inclined to incorporate specific care-based ethical values in their day-to-day work roles. This can relate to specific care-based feminine competencies such as empathy, respect, fair communication, and emotional intelligence (Strobel et al., 2013).

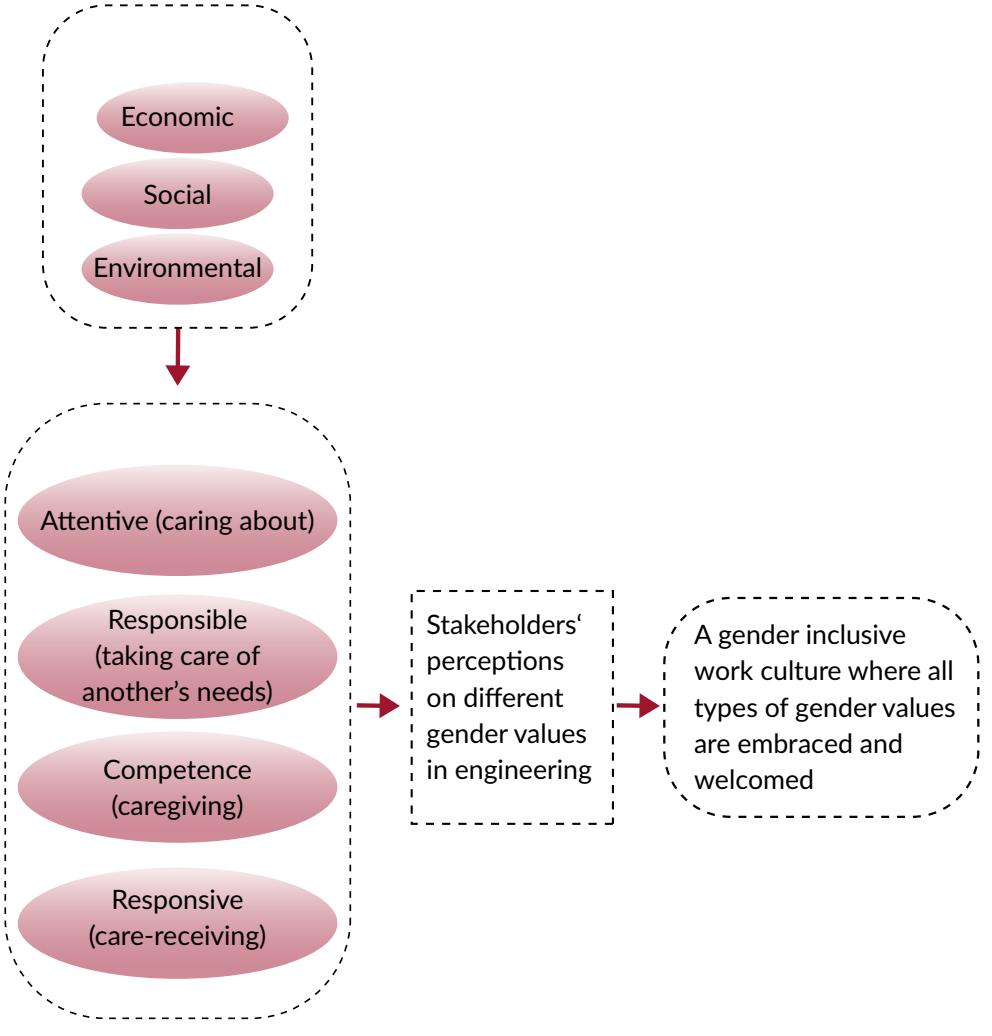
Furthermore, when building an inclusive work culture, organizations should not neglect society. Mor Barak (2000) explained that corporate-community relationships are essential for corporate social responsibility. Customers, regulatory bodies, and watchdogs tend to be sensitive and responsive to sustainable (or unsustainable) business practices. The

general acceptance of caring as an essential organizational value may lead to people giving due recognition to the abilities (cognitive and/or physical) of employees with feminine values (Halpern et al., 2007). Consequently, the employers, the workforce, and the wider society may begin to consider traditionally devalued feminine values as a valuable resource. There is great potential to tap into the underutilized female workforce pool by dismantling the perceptions that reinforce gender exclusion in engineering workplaces using ideologies on sustainability (Fielden et al., 2000) (Johnston, 2001; Menches & Abraham, 2007).

Based on the above discussion, the author developed a conceptual model (Figure 1) to show how the sustainability-focused mindset of internal organizational stakeholders can transform the existing gendered culture in engineering. In particular, the conceptual model shows how engineering professionals can pursue social, psychological, and green perspectives by adopting the Sustainable Value Orientation and the HRM framework. Such sustainable value orientation will ensure a positive work identity for women workers. Here the author argues that the changing economic, environmental, and social concerns influence the moral and ethical values of key internal organizational stakeholders. This, in turn, influences them to (1) be attentive and responsible when making organizational decisions; (2) understand the requirement of skills and competencies to show care; and (3) be responsive to the care they receive. The care-based moral values encourage internal organizational stakeholders to change their existing commitment to the traditionally gendered agenda in the engineering culture. Internal organizational stakeholders then become the critical agents for transforming how the organization does things (Linnenluecke & Griffiths, 2010), which then influences other engineering organizations as well to instill an inclusive culture with values possessed by employees from diverse backgrounds.

This can then help to re-establish and celebrate marginalized "feminine" values that have been undermined by the "masculine" nature of the work and feelings of belonging (Simpson, 2004). This inclusive mindset can then help develop a gender-inclusive workplace culture that celebrates the uniqueness of each member irrespective of their gender or value system. In this way, they may feel a sense of belonging to the organization. When there is a philosophical change in the value system in an organization, this can help HRM professionals to devise a range of policies and practices that attract and retain an underutilized workforce. Although the article focused on gender inclusion, the notion of care highlighted in the framework can serve to promote diversity and inclusion of all employees irrespective of gender.

Figure 1: Sustainability-focused gender inclusive framework



Conclusion

Changing social needs are now starting to influence engineers to solve problems using a new set of value systems. Consequently, engineers must learn to develop holistic solutions that will have financial, social, and environmental ramifications. However, how comparatively more feminine, care-focused traits can be valuable to maintain good ethical standards in engineering still can be considered an underexplored research topic. For this reason, in the future, more empirical studies need to examine this phenomenon to understand how feminine values can be incorporated into engineering workplace contexts. Understanding the importance of feminine gender values is very important to instill a gender-inclusive culture in what has been a male-dominant profession. Thus, engineering organizations require effective policies and practices to recruit women and

nurture women's careers. This conceptualization highlighted the significance of Sustainable HRM to improve the workplace inclusivity of women in engineering. The novel theoretical integration proposed here will add to the ongoing gender-based discussions in engineering and assist future research on other types of social discrimination. It is highly recommended that research be conducted using explorative investigations and large-scale empirical tests. This will help the stakeholders to understand the relationship between care ethics and sustainable HRM to resolve this critical workplace issue.

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