

# Towards A Human Centred Leadership For 4IR: Exploring Female Leadership Within 21<sup>st</sup> Century

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## ABSTRACT

The changes brought on by the fourth industrial revolution call on leaders to adopt 21st-century skillsets to navigate the changing workforce landscape. While equality in the workforce has seen strides towards equal participation of men and women in the workforce, women are still documented to be underrepresented in managerial positions. This article consists of a systematic review of literature aimed at analyzing leadership styles within the modern workforce, with a specific focus on female equality and leadership. The research question from which this paper emanates is: How does the Fourth Industrial Era shape a context for female leadership ascension? Framed through Harro's cycle of socialization and Trait theory, this paper seeks to analyze current literature to examine the barriers women face in the workplace in their subsequent influence on industry 4.0 practice.

**KEYWORDS:** Leadership Styles; Gender Equality; Socialization; Organizational Culture; Fourth Industrial Era; Female Leadership.

## ABBREVIATIONS

STEM: Science, Technology, Engineering, Mathematics; STARA: Smart Technologies, AI, Robotics and Algorithms; 4IR: Fourth Industrial Revolution;

## 1. INTRODUCTION

The advent of Industry 4.0, or the Fourth Industrial Revolution, sees disruptive changes to organizations as industry standards become increasingly connected within a digital world [21]. These changes in socio-economic systems see the digital realm become increasingly intertwined with the physical realm, as human-machine interaction becomes central to a networked-based environment necessitating new business models. Of significant importance is the influence these changes have on leadership [3]. Traditional, masculine leadership models valuing assertive and task-oriented behavior have proved ineffective in recent years and have given way to leadership styles better associated with collaboration and empowerment to navigate challenges brought on by the dynamic changes of the 21st-century workforce [25]. Furthermore, decision-makers often believe gender disparities in the workplace are not of concern and reject that it is more difficult for women to advance, widening the gender gap and slowing progression toward equality in the workforce [63].

While women are documented as well represented in mid-management positions, executive positions are often still male-dominated, with women being underrepresented in the areas of leadership pertaining to governance and directorship [61]. Literature underscores several reasons for women's underrepresenting leadership in organizations, namely structural barriers to promotion and organizational socialization [61], as well as personal factors such as family and work-life balance considerations [44,48]. Research in this area points to a strong association between structure and socialization, suggesting that a person's position impacts one's behavior, with the opposite holding true for behavior impacting one's position as well [10]. Gender inequality in the workplace is a clear example of how the cycle of socialization is perpetuated. Gender norms reinforce male dominance and sustain organizational systems to the detriment of female talent, often perpetuating gender inequality simply through organizational boundaries being too closed for change. The cycle, in turn, is perpetuated by behavior that roots gender equality moot in the workplace, manifesting through discrimination, unequal wages, stereotyping, and insufficient empowerment incentives.

While female representation has made strides within organizations, gender equality has not yet manifested at the desired level [49]. There is a gap in theory related to which strategies women adopt in response to these constraints in a meaningful manner promoting career outcomes, as well as little consensus about a best-fit approach that promotes effective female leadership within the Fourth Industrial Era [10,12]. Fitzsimmons *et al.* [17] found that a deficit in women's career-related experiences during childhood and adolescence significantly restrained their accumulated capital throughout their career span. Resultantly, women often tend to adopt workplace strategies that inadvertently further perpetuate inequalities

or keep themselves as hidden and invisible as possible in their approach within the workspace [10]. Furthermore, leadership requirements on the part of the Fourth Industrial Revolution necessitate skillsets and leadership strategies that do not align with the traditional masculine leadership models, constituting assertive task-oriented approaches to employee management.

The research question from which this paper emanates is: How does the Fourth Industrial Era shape a context for female leadership ascension? It is evident that women still face barriers within the workforce that hinder growth and career expectations, with behaviors of discrimination and stereotyping still manifesting within organizations [9, 63, 62]. The changes brought on by the fourth industrial revolution necessitate a collaborative approach to management, with traditional masculine-oriented models of leadership styles proving ineffective in leading employees through challenges brought on by Industry 4.0. This article centers on exploring female leadership and leadership styles through the lens of Harro's cycle of socialization and Trait theory. The adoption of an appropriate leadership style within the dynamic landscape of the fourth industrial revolution will be required to navigate the challenges brought on by an ever-changing vocational landscape. This paper will also investigate the need for a 4IR-appropriate leadership style, which constitutes a humane-centered approach against the technologically-centered backdrop of the Fourth Industrial Era. Specifically, female leadership talent is underscored as fundamental to the ideals of authentic leadership, collaboration, and empowerment within the modern workforce.

## 2. METHODOLOGICAL CONSIDERATIONS

Methodological considerations informed the writing of this desktop review of literature, as documented by Laher and Hassem [40] who note the steps for a systematic review of literature. The first step was to formulate a research question that was exploratory in nature. Second, regarding the parameters of the search for literature, peer-reviewed sources in the form of published articles, dissertations as well as theses were searched for on scholarly platforms such as EBSCO and Google Scholar under the main criteria of workplace inequality, female leadership, and leadership styles. Primarily, inclusion allowed for only articles between 2013 and 2021. However, the parameter was broadened to include literature from 2009 to include a stronger systematic review and as such, 70 sources were selected from the 115 gathered in terms of relevance, date and findings related to the topic and within the parameters of a social and trait perspective. It is noteworthy that the inclusion date period restricts the literature parameters, indicative of the gap in recent research pertaining to female leadership within the Fourth Industrial Era. Thereafter, the researchers analyzed each piece for relevance and context, with two researchers screening manuscripts to reduce bias. After sources were collected within the set parameters, each was sorted in terms of relevance and topicality to specifically highlight literature positioned to reflect the most current trends and to advance the discourse surrounding the topic of gender inequality. Furthermore, by focusing primarily on peer-reviewed work in the areas stipulated, the quality of the work explored was substantially optimized. Lastly, the articles were analyzed in accordance with the research question and the grouped selected literature, with further specific emphasis given where significant descriptive and analytical findings can inform the theoretical discussion.

## 3. SOCIALISATION AND TRAIT THEORY

Harro's cycle of socialization [23] provides an explanation of the systemic learning that occurs throughout an individual's lifespan. From birth, we are taught the appropriate behaviors which are expected on the part of men and women. The onset of birth is often characterized by color, with boys being associated with blue and girls being associated with pink. Institutions such as schools and churches see the addition of expected patterns of behavior, which further mold and dictate norms that are expected to be upheld within society. These norms are perpetuated within society, reinforcing beliefs, values and behaviors that are socially acceptable, while anything going against the status quo is punished. This form of systematic learning sees individuals build a repertoire of acceptable and unacceptable behavior. This is especially evident in media and how the media sexualizes male and female bodies. Not only does this shape a context where looking a certain way is socially more acceptable, but we're not achieving that standard, which, in turn, causes self-esteem challenges and a misconstrued self-concept. Socialization often plays an important role in post-school career-based decisions. For example, social expectations often prescribe women entering soft-skill-oriented positions such as teaching, nursing, or social work, with more women than men shown leaving STEM courses due to a lack of role models such as teaching assistants and instructors [24].

Schein [60] defines organizational socialization as "the process by which a new member learns the value system, the norms, and the required behavior patterns of the society, organization, or group which he is entering". The process of socialization is important in organizations to induct new employees to retain standard practice, involving both the inductee and those around them. Houghton [27] points to the importance of socialization for new employees, stating that while various socialization agents are found in co-employees and the information they share, one of the most important agents for newcomers is found in supervisors and mentors. These agents play a vital role in career related support as well as psychosocial support. Mentorships thus expose the protegee to the norms and expected behaviors within the organization, while psychosocial support is found in the development of the employee's professional identity. Recently, Wu *et al.* [69] investigated female career development within the Maritime industry (n = 202). Organizational socialization was noted to have a significant mediating effect on women's organizational culture and women's career development, with a significant

negative association noted between women's workplace culture and organizational socialization. Interestingly, Makura's [45] study for a female distinct leadership theory did not return distinct characteristics that emanate from an explicit female approach, as participants' self-perception reports indicated task-oriented yet relational-based behavior. Recent work by Alonso-Almeida *et al.* [2] notes that, within the Spanish context, female leaders show greater adaptability through adopting transformational and dual-leadership styles.

Trait theories have gained renewed interest in leadership research. Researchers are attempting to predict leadership success by investigating physical traits, abilities, and personality traits. Trait theory posits that an individual's behavior is consistent across situations due to the basic traits preceding behavior. Trait theories of leadership still emanate from what is known as the Great Man era due to the prevalence of men during this timeframe, which strongly consists of male traits reinforcing what is viewed as effective leadership [57]. However, the Fourth Industrial Era brings to the fore the necessity for new leadership skills to emerge for organizations to be successful. With respect to social perception, men are often viewed for their perceived logic, aggressiveness, and task-oriented nature, with women more often socially perceived through people-oriented traits such as being nurturing and caring [38]. In light of the changing nature of work and the flexibility required on the part of leadership styles, the traits often perceived on the part of female leaders became central to optimizing interpersonal relationships and adapting skills accordingly during the Fourth Industrial Era [3].

This article is framed through trait theory and the cycle of socialization, as social and environmental contexts play an interrelated role in shaping how individuals express themselves while facilitating which traits are needed to succeed within a given environment. The interplay between socialization and trait theory provides a valuable lens from which to explore female leadership and contextualize the traits necessitated by the dynamics of the fourth industrial revolution. For example, a study conducted by Kadenge [33] reflects that how an employee is socialized in an organization influences their willingness to stay. The traits of agreeableness, extroversion and openness were subsequently found to be associated with positive organizational socialization and a decrease in turnover intentions. With the changing nature of the world of work, a new set of traits associated with human-centered behavior are called upon as a means to sustain an effective organizational culture and to lead employees effectively across cultural fissures toward a gender-equal workplace.

#### 4. DIFFERENT LEADERSHIP STYLES

With the ongoing changes and dynamic socio-economic variables influencing the business processes, many organizations have been forced to rethink leadership styles and positions of power toward the promotion of a more collaborative approach [43]. These shifts in power between the employee and employer is an important change within modern leadership models, necessitating leaders to rethink traditional styles of leadership [29]. As a result, leaders are called upon to exhibit revolutionary leadership, which encompasses a participatory approach, including employees as informal leaders within the organizational structure. Revolutionary leadership, according to Rahbi *et al.* [56], challenges disruptive behavioral patterns within the organizational context to accomplish a shared goal. Furthermore, effective leadership styles are shown to be the cornerstone of influencing an organization's strategic priority and the implementation of formal control systems [50].

Leadership styles can be defined as the strategy or approach used to motivate followers. Over time, various leadership styles have been proposed to accommodate socio-economic changes with no leadership style showing universal applicability. However, effective leadership is documented as inspiring and motivational and directs behavior within the workplace to reach organizational goals [7], traits strongly associated with transformational leadership [20]. Ali *et al.* [4] note that leadership styles vary significantly between male and female managers, with male managers often adopting a transactional leadership style compared to female managers more often reflecting a transformational leadership style. These differences are not equally documented to be as significant [20]; varying degrees of differences between genders with respect to effective leadership styles are reported on, with certain research reflecting the difference between genders as smaller than commonly thought, while other perspectives indicate that women enjoy an advantage in leadership style. While no consensus is found in the literature regarding gender and leadership differences, the importance thereof is well documented. Leadership styles are shown to have a significant influence on organizational performance [1], employee motivation [37,70] and organizational commitment [5]. Hryniewicz and Vianna [28] note that women may be better at utilizing leadership styles. This is attributed to men more easily attaining power positions, necessitating stronger needed skillsets on the part of women to achieve the same positions.

An overview of the following four different leadership styles is provided below namely transactional, bureaucratic, democratic, and transformational leadership style.

##### 4.1 BUREAUCRATIC LEADERSHIP STYLE

The first leadership style, the bureaucratic style, stands in contrast with person-centered leadership styles. Concerned with strict rules, procedures and guidelines set by them to be adhered to, such leaders often appear unconcerned with their employees unless they are at fault [1]. While bureaucratic leadership styles hold value when there are safety risks involved or when employees do routine tasks, this style is ineffective in working environments, calling for innovation, communication, and flexibility [7]. In this regard, transformational leadership is best aligned with the aforementioned skillsets, especially during times of change. According to Van der Voet [66], the bureaucratic leadership style is often associated with planned

change, while decentralized flexible styles are more often associated with emergent change. This style specifically corresponds with task-oriented behavior (more commonly associated socially with a male style) while being noted to have a lesser impact on employees and organizational performance [30]. In line with critiquing masculine leadership styles within the Fourth Industrial Era, this paper highlights transactional, democratic, and transformational leadership styles as best aligned with 4IR practice.

#### **4.2 TRANSACTIONAL LEADERSHIP STYLE**

Transactional leadership is a relationship exchange theory that underscores rewards as a key function of a relationship between employers and their employees [31]. Transactional leadership is dual beneficial between the employer and the employee. On the one hand, employers engage with employees in an exchange contract that aims to, through extrinsic reward, motivate employees to reach organizational goals and accomplish performance standards. Followers, in turn, exhibit less workplace anxiety, fulfill self-interest needs, and concentrate on well-articulated organizational objectives [46]. Managers who employ transactional leadership can also rely on active management by exception. Leaders who employ the aforementioned allow for the status quo to exist within the working environment among the employees and only intervene if a mistake is made [65]. According to Guzmán *et al.* [21], transactional leadership is associated with the third industrial revolution in that the style centers on the goal achievement of followers. Commonly, male traits associated with boldness, confidence and conclusiveness are associated with the transactional approach to leadership [38].

#### **4.3 DEMOCRATIC LEADERSHIP STYLE**

Al Khajeh [1] points to the democratic leadership style as decentralized, encompassing the input of subordinates during the decision-making process. With this people-oriented style, the leader is often in close interaction with employees, with a shared leadership function amongst followers. This approach gives employees a sense of ownership while managing difficult challenges more easily due to a larger pool of capabilities and resources [39]. Khwela [38] notes that female traits often associated with effective democratic leadership styles include a better ability to listen and establish connections, as well as establishing better workplace harmony through decision-making processes amongst employees.

#### **4.4 TRANSFORMATIONAL LEADERSHIP STYLE**

According to Silva and Mendis [65] transformational leadership allows women to avoid impressions of masculinity during the exercising of hierarchical control. These leadership styles are characterized by managers paying attention to the individual needs of group members, inspiring higher levels of performance and welcoming followers who challenge the status quo [50]. Leaders adopting transformational styles of leadership do more than the norm in assisting followers to reach benchmarks, inspiring and motivating collaborative practice amongst followers to promote innovation and enhance performance through the collective's involvement [42]. Transformational leadership sees the setting of a clear vision and group goals while promoting individual support. The aim of this leadership style is to change employee values, attitudes, and beliefs to promote their willingness to perform beyond the norm. This leadership style is shown to be effective in extreme events, as managers become more agreeable and open for input from followers, with employers building stronger connections with followers due to more frequent communication patterns that emerge [19]. This change in behavior can also account for lower levels of stress, as Baysak and Yener [11] note on the positive association of the transformational leadership style with occupational stress. Noteworthy is that the traits associated with this leadership style are often socially perceived as aligned with female-oriented traits, such as being people-oriented, nurturing and caring [38]. Considering the changing nature of work as a consequence of the Fourth Industrial Era, these traits are especially valuable in sustaining employee well-being and reducing stress through disruptions that necessitate change.

The four components subsuming inspirational leadership are idealized influence, inspirational motivation, intellectual stimulation, and empowerment [6]. The first component, idealized influence, points to leaders also assuming role model influence on followers. Characterized by being honest, trustworthy, and sincere, the consistency of leadership behavior and the perceived moral nature thereof play a central role in employee perceptions and motivation to follow. Inspirational influence refers to the motivational component of leadership, pointing to leaders who harness employee aims for the collective vision, inspire them, and motivate them toward attaining organizational goals. The third component, intellectual stimulation, implies that transformational leaders spark creative input from employees and promote innovation. Lastly, empowerment points to the individual attention given to employee needs on the part of transformational leaders. Transformational leaders establish organizational cultures promoting growth and development. Paying attention to individual needs further aligns transformational leadership with an altruistic approach, which is in stark contrast to authoritarian leadership approaches [14]. Furthermore, the research underscores effective transformational leadership amongst women as the consequence of people-oriented traits, which especially underscore cooperation, mentoring and collaboration [38].

### **5. BARRIERS TO FEMALE EQUALITY WITHIN THE WORKPLACE**

The term 'glass ceiling' is used to describe an invisible plateau prohibiting women from advancing in organizations. The past 50 years have seen strides made in gender equality in the workplace. However, while women are noted to advance to mid-

management positions with more ease than in the past, further advancement toward senior positions becomes excessively difficult to navigate easily [61]. Subsequently, the prevalence of gender bias and factors such as sexual harassment and race discrimination still pose challenges for women in navigating managerial career trajectories [34]. The influence of socialization plays a central role in barriers impeding females from entering the workforce, specifically female employees from entering managerial positions [8,37]. According to Harro's cycle of socialization [23], individuals are taught to act and behave according to certain standards through different institutional or societal influences occurring from birth. Societal expectations and subsequent behaviors are rooted in their expectations of others [51]. As such, women's roles allocated through socialization often subsume the roles associated with housewives or caregivers to the family and children. These expectations are grounded in values that often negate high expectations of women in the workplace.

It is important to note that while policy and constitutional reform open boundaries to advancing women's leadership in organizations, the influence of socialization stretches much wider and much deeper than merely manifesting within organizational systems. Socialization plays a fundamental role in shaping background culture, with women having entered many environments reinforcing a low leadership self-concept. Vial, Napier and Brescoll [67] note that female leaders often need to legitimize themselves before they are respected amongst followers. This leads to female leaders exhibiting negative behaviors, not only enforcing negative perceptions about female leadership but reinforcing a cycle of illegitimacy. Certain cultures are still highly embedded in patriarchal values, and stagnation of cultural dynamics sees closed boundaries for many women, especially of color, to advance into senior positions. Furthermore, the constraints of various external obligations and expectations see many women adopting a dual role in their home-life balance, radically restricting their advancement options or leadership capabilities due to socialized values prescribing behavior associated with subordinates, especially toward men [59]. In certain cultures, women are also seen as supporters of the male's occupation and must tend to their husbands emotionally while supporting them in their studies and job endeavors [51].

It is interesting to note that, according to Hryniewicz and Vianna [28], women are more likely to attribute success to external factors, such as being in the right place at the right time, luck, or due to good networking. Men, on the other hand, are more likely to credit themselves for their successes. Low levels of assertiveness and confidence can be associated with various factors negating agency and effective leadership skills [22]. A low sense of self-efficacy in leadership roles can be credited to a lack of female role models and peers in similar positions, while personal background factors related to esteem through exposure to career options and support play a mediating role in women perceiving themselves as capable of assuming a leadership position effectively.

Organizational culture further plays a fundamental role in how women navigate the career landscape. Organizational culture refers to the norms, values and beliefs that shape expectations and perceptions about behavior in the workplace [51]. These cultural systems can promote or restrict certain behaviors in the workplace and bid as guidelines, however implicitly, toward what is deemed acceptable and unacceptable behavior. These expected norms are strongly founded in male dominance, as patriarchal values are still prevalent within society and firmly ingrained in organizational structures favoring male power and leadership. For instance, as women enter leadership positions, they are expected to maintain the norm and are frowned upon for challenging the system [32]. These social expectations of gender roles are reinforced in organizations through, for example, the favoring of maternity leave above paternity leave. In turn, the organizational culture becomes a victim of traditional gender norms, which inhibits women from realizing advancement in their career trajectories [61].

## **6. TOWARD AN ETHICAL, HUMAN-CENTERED APPROACH**

The fourth industrial era sees leadership necessitating traits associated with collaboration and a stronger emotional underpinning to successfully motivate and inspire employees, rendering masculine top-down approaches ineffective during the dynamic organizational climate associated with the 21st-century industrial workforce. Furthermore, it becomes increasingly important to facilitate both discourse and literature on female empowerment within the fourth industrial era to successfully bridge the gap that exists in workplace inequality. This becomes especially important during the fourth industrial period as bias needs to be considered, more specifically gender bias, in machine system algorithms that play a significant role in the creation of artificial intelligence systems [58].

More changes in workplace structure have been brought on due to remote work. The COVID-19 pandemic has brought on an accelerated change in the workplace environment as many people were expected to transition to a remote working model [54]. The emergence of such a model sees the need for a change in how leaders motivate and coach their employees, especially as a virtual landscape sees altered changes through employees not working in offices [18]. There is thus an urgent need to investigate bridging gender gaps in equality, especially in relation to the Fourth Industrial Era, or we stand victim of reiterating masculine top-down approaches in not only how employees are approached but also how new digital systems approach procedures, such as employee selection and recruitment [16, 68].

Traditional leadership efficiency was best characterized by charismatic, selfish, and strong-willed people. This, however, is not aligned with modern practice, as leadership styles for the 21st century are more strongly associated with humility, communication, and a non-egocentric approach to managerial behavior [28]. The importance of integrity in the workplace is especially underscored in the managerial function of organizations, as leaders are expected to lead through

honesty and fairness. Authentic leadership is strongly rooted in identity, referring to honest leaders who know their own morals and values, as exemplified through their actions [41]. Authentic leadership requires that leaders know themselves, as the self plays a critical role in how leadership is approached within the organization. Kapasi *et al.* [35], in their study utilizing four prominent businesswomen, Sheryl Sandberg, Karren Brady, Hillary Clinton and Julia Gillard, explored authentic leadership through autobiographical texts. Through investigating how these leaders construct their gender in accordance with leadership, it was found that media representations still play a mediating role in how their identities are publicly constructed. This reflects the way socialization becomes a self-reiterating cycle, where media influences still construct women in a manner consistent with public expectations, which feeds public interest. This creates a difficult landscape for authentic leadership to be modeled, exacerbating gender prejudice, which alters the credibility of women's leadership, especially in a leadership position.

Authentic leadership is strongly underscored by a heightened awareness of self and a stronger mediation of bias, which may occur during the processing and exchange of information within the workplace. However, there has been a critique against authentic leadership, as noted by Hopkins and O'Neil [26]. Described as often utopian, it may not always be the case where employer and employee values are congruent, nor that bias is eliminated. It also remains questionable whether the true self, as the authors argue, is the best self to draw action from in all situations. Furthermore, socialization construes the self-concept in ways where honest and authentic representations of the self only follow keen self-reflection and awareness.

The importance of authenticity, however, can be argued to be a core function within modern leadership approaches, with authentic leadership showing a positive relationship with emotional intelligence [47]. Oosthuizen [52] draws on being emotionally intelligent and emotionally aware as fundamental to modern leadership. The importance of emotional management amongst organizational patterns of behavior has enjoyed increasing popularity in management research. Effective emotional regulation in the workforce is a core necessity in the workplace to facilitate relationships, reflecting the ongoing importance of the collaborative function associated with the fourth industrial revolution. Furthermore, with the interconnected, globalized world of work being characterized by a multicultural workforce, the importance of emotional competencies to successfully facilitate across emotional and cultural fissures is increasingly recognized as central to effective leadership [53]. Socialization pressures the representation of a false self, ethically calling on leaders to show a heightened self-awareness and continuous reflection on the bias as well as impediments prohibiting authenticity within the workplace.

The disruptions brought on by Industry 4.0 see heightened uncertainty amongst employees, specifically as the processes related to the implementation of STARA are shown to be positively associated with employee cynicism and depression, while STARA awareness further reflects negative relationships among employees regarding organizational commitment and career satisfaction [13]. This necessitates managers to show a heightened individual awareness of employee needs, further challenging managers to continuously self-reflect on their awareness of not just others but also of the self and bias that the self carries. Leaders need to be conscious of how bias influences systems while constructing systems within the workforce requires equal and fair participation of all stakeholders. In turn, the argument for a compassionate and caring working environment to enhance human-centered values is fundamental to leading employees through relationship-oriented values [64].

As a result of collective input and collaboration, organizational socialization should consist of an environment promoting authenticity, emotional awareness, and honesty. The ethical foundation of the Fourth Industrial Era further calls on leaders to reflect on their current leadership approaches to sustain an organizational culture driven toward the collective goal and outcome of success. As a result of socialization, leaders are required to show a keen awareness of and engage in ongoing self-reflection to gain a better understanding of their own bias and prejudice emanating from the workplace. Ultimately, if the patterns of behavior within the workplace are not challenged, the further influences of implementing new systems in organizations will perpetuate gender disparities and further the gap of female representation within not only the overall organizational decision-making process but in their overall potential to advance into leadership positions. Organizational socialization should, in turn, also include the appropriate alignment of mentors and supervisors as role models toward gender equity, while clear guidelines will prove valuable as steps to advancement for employees to participate more equally and fairly. Furthermore, the role of cultural differences plays an integral role in socialisation, with the role of cultural influences on leadership attainment being prominent in male dominant communities. The need for cultural awareness and successfully managing emotional fissures across cultural differences is growing increasingly important, underscoring relationship management and emotional awareness as fundamental to managing not only a people-oriented multicultural workforce emphasizing employee equality [15, 55].

## 7. CONCLUSION AND IMPLICATIONS FOR FURTHER RESEARCH

The environmental challenges brought on by the fourth industrial revolution saw a new set of skillsets, abilities and traits emerge, which render traditional models of leadership approaches mute to predict leadership effectiveness. Traditional top-down approaches are ongoingly giving way to collaborative efforts to reach organizational outcomes, with the collective input in decision-making and management becoming increasingly important to nurture employee growth, engagement, and

sense of self. The incorporation of machine learning and Artificial Intelligence systems further sees more and more input from machines being used within managerial tasks and the overall processes of the organization, for example, surveillance systems. With the dynamically changing environment posing new challenges for leadership, the gender divide of female representation in leadership positions becomes increasingly important to navigate the Industry 4.0 landscape. Various leadership styles have been proposed in the literature as approaches to effective leadership within the workplace; however, scant research points to their effectiveness and gender equality within the changing landscape of the fourth industrial revolution.

This paper set out to investigate the barriers women face presently within the workplace, specifically underpinned by socialization factors inhibiting the process of gender equality and leadership. The contextual barriers shaped through gender inequality in the workplace are a self-reiterating cycle that, when left unaltered, perpetuates the gender gap and strengthens gender stereotyping. As a result, new leadership approaches call on human-centered values underpinned by authenticity, honesty, and awareness of self and others to be successful, shifting away from masculine models emphasizing centralized control and power. Future research in the realm of a leadership theory comprising of these traits will inform the theory of modern leadership theory. It will be further valuable to explore how leaders approach and subsequently employ AI in the workplace in a gender-neutral manner or approach the judgment suspension process to decrease gender bias within the implementation of the system in the workplace.

### AUTHOR CONTRIBUTIONS

Both authors contributed equally to this study.

### CONFLICT OF INTEREST

None.

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