How Identity Informs the Bicultural Context of South African Indian Women Engineers

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Abstract: This qualitative study articulated the voices of 25 South African Indian women engineers through the exploration of their identities in a bicultural context. Data extracted from their life stories provided elucidation of participants’ bicultural identity navigation. This applied firstly in a personal context, historically known for its culturally driven patriarchal undertones. Secondly, their professional context, in a career dominated by men and deeply rooted in gender partiality against women engineers. Findings of this research indicated the transformed application of Indian cultural norms evidenced by (a) growing family support of a career that would – under Indian culture – be deemed unsuitable for an Indian female, and (b) an unexpected finding: the rise of a paternal motivator that contributed to positive socialisation informing autonomous career decision-making by participants. The continued dominance of men in the profession presented as a strong negative indicator adversely impacting fluid navigation. This article contributed to the literature on identity and biculturalism by considering an insufficiently studied sample of women. The findings and recommendations of this article provided previously untapped information about the identity challenges faced by bicultural female engineers in a male-dominated profession.

Keywords: socialisation, gender, bicultural identity, engineering, Indian women, male dominance

1. Background

Cultural prohibitions imposed on Indian women can be traced back to the days of imported indentured labour and even before, stemming from the land of their ancestry, India (Meer, 1972; Jaga and Bagraim, 2017; Jaga, Arabandi, Bagraim and Mdlongwa, 2018). The orthodox Indian norms and values systems instructing the socialisation process of Indian women were deeply embedded in patriarchal dominance that would have Indian women believe in their subservience to men (Bell and Nkomo, 1998; Bharuthram and de Kadt, 2003; Littrell and Nkomo, 2005; Khan, 2012; Ahmed and Carrim, 2016; Carrim, 2016). Indians, in comparison to Euro-centric cultures, viewed action by humans as being pre-destined; age and seniority were highly valued and helped constitute the wise who would be decision-makers... namely men (Chakraborty, 1995). Indian women traditionally had one purpose: the role of subordination (Carrim, 2012; Carrim and Nkomo, 2016). For South African Indian women, socialisation during early childhood and into adulthood favoured male over female, giving the former the ranking of head of household and the latter, subservience to her male counterpart with little to no agency (Meer, 1972).

The ripple effect of racism and sexism from apartheid South Africa presents in the post-apartheid era as women of colour access opportunities in the workspace. This is evident with White males still dominating top and senior managerial positions, particularly in the private sector (Carrim, 2012). The Employment Equity Act No. 55 (1998) opened up opportunities for women in the workspace (Landman and O’Clery, 2020). However, implementation focused on race with only limited attention being given to gender inequalities (Landman and O’Clery, 2020). Discrimination against women in the workplace continues with men remaining dominant, delaying equal opportunities for all South Africans, especially women (Booyens and Nkomo, 2010; Musetsho, Isac and Dobrin, 2021). With women now occupying professions previously dominated by, and deemed “for men”, a sense of unease presents. This is caused by historic stereotypical perceptions about gender roles, with the notion of man being the “ideal worker” (Schein, Mueller, Lituchy and Liu, 1996; Ryan, Haslam, Hersby and Bongiorn, 2011; Wong, Liu and Klann, 2017). The engineering space is one of the most contested male-dominated spaces now shared by women (Hewlett, 2008).

“Historically, women have faced systematic barriers with regard to their participation in science, technology, engineering, and mathematics” (King Miller, 2017:1). Barriers were fashioned from perceptions about the identities and roles of women that were current during past regimes of oppression (Hooks, 1989; Nath, 2000; Acker, 2006; Carrim, 2016). These perceptions ultimately gave rise to then-pervasive social inequalities that led
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Over the years, gendered ideologies have injured the psyche of women in terms of self-perception of their potential abilities in the engineering field (Triandis, 1989; Bell, 1990; Moreno, Besterfeld-Sacre, Shuman, Wolfe and Atma, 2000; Miramontez, Benet-Martinez and Haritatos, 2005; Sanchez-Hucles and Davis, 2010; Qureshi, 2014; Gordon, 2018; Mayer, Surtee and Mahadevan, 2018). The attrition rates of women in the Science, Technology, Engineering and Maths (STEM) fields remain a concern (Hewlett, 2008; Fouad, Chang, Wan and Singh, 2017). According to the Businesswomen’s Association of South Africa (BWASA), there is clear evidence of a disparity between the pass rates of female STEM graduates (21.2 percent) and their actual representation in the workforce (7 percent) (BWASA, 2017). This disparity was attributed to the influence of societal perceptions about the role women should play. Roles dictated by culturally oppressive gendered norms and values had infiltrated the workplace to reinforce an androcentric notion of “normalcy”, or “the accepted way of life” (BWASA, 2017). Stereotypes associated with the meanings of femininity and masculinity in society influenced attitudes toward women in the STEM fields (King Miller, 2017). Among the barrage of challenges that faced, and continue to face, South Africa Indian women engineers, identity remains a constant. Gaining a deeper understanding of this sample of women will allow for appreciation of some of the challenges faced by these engineers.

2. Research question
How does identity inform a bicultural context for South African Indian women engineers?

3. Literature reviewed
This section delved deeper into the identity and biculturalism of South African Indian women engineers

3.1 Identity
Social Identity Theory offered an understanding of identity, suggesting that groups internalised with an intended positive impact on a member’s sense of self (Tajfel and Turner, 1979). “Categorisation in terms of a group membership, and having defined themselves in terms of that social categorisation, individuals seek to achieve or maintain positive self-esteem by positively differentiating their in-group from a comparison outgroup” (Jenkins, 2014). An individual’s interface with the wider world obfuscated the nature of this phenomenon and rendered it fluid, as opposed to permanent, indicative of the complexity of this phenomenon (Lincoln and Guba, 1985). “Systems of meaning” referred to societal response to the question of identity that advocated hierarchical groupings based on social classifications of individuals in terms of race, gender, ethnicity and class (Crenshaw, 1989, 1991). These “systems of meaning” exacerbated oppression (Turner-Zwinkels, Postmes and Van Zomeren, 2015). The presence of multiple identities within the self in relation to the social world has the ability to affect an individual’s sense of personal wellbeing, coping mechanisms, levels of self-esteem, levels of stress and behaviour towards others (discrimination) (Turner-Zwinkels et al., 2015). Identity cannot therefore be explored as a static notion but is instead a multidimensional state of change (Hooks, 1989; Crenshaw, 1991). Each identity tag interacts, influences, enables, inhibits, shapes and reshapes an individual’s history (Huynh, Nguyen and Benet-Martinez, 2011).

3.2 Biculturalism
Hooks (1989) speaks about the bicultural phenomenon when she refers to the radical openness of the “margin” space. “A marginal person is one who lives on the boundaries of two distinct cultures, one being more powerful than the other, but who does not have the ancestry, belief system, or social skills to be fully a member of the dominant cultural group” (Bell, 1990:463). A person who occupies space on this boundary is thus considered to be in a marginal space. “Understanding marginality as position and place of resistance is crucial for oppressed, exploited, colonized people” (Hooks, 1989:21). Biculturalism represents comfort and proficiency with both one’s heritage culture and the culture of the country or region in which one has settled. As bicultural individuals, South African Indian women engineers had to navigate between contexts framed by differing cultural value systems, each having its own set notion of the role of women.

3.3 Bicultural South African Indian Women
The experience of the South African Indian woman as a minority is deeply entrenched within systems of oppression based on androcentric European ideologies (colonialism and apartheid), further exacerbated by the ideologies of her own diaspora plus her post-apartheid challenges (Meer, 1972). The presence of South African Indian women in the STEM professions indicates that there is more flexibility for entry into spaces historically
dominated by men. However, whether this reflects a trajectory towards changing perceptions around the role of Indian women is still to be determined, given that historically, most Indian women have been raised in homes following traditional patriarchal ideologies (Meer, 1972; Batliwala and Dhanraj, 2004; Govinden, 2008; Carrim and Nkomo, 2016). Their social conditioning led them to believe that their joining a “male” profession made them outliers from their Indian identity. The subjugation endured in their traditional home and community is just one level of oppression they experience following their failure to conform to the expectations of their cultural context (Jaga et al., 2018).

4. Methodology
This study was exploratory in nature with a qualitative design. Qualitative research aims to provide specific understanding of a phenomenon based on the understandings of those experiencing it (Alharahsheh and Pius, 2020:40). Qualitative research is interpretive and focuses on real, located practice, and is based on an interactive research process involving both the researcher and social actors (Creswell and Creswell, 2017).

4.1 Sampling
A non-probability sampling strategy was adopted and effected through a snowballing technique to purposively secure candidates fitting the eligibility criteria. Merriam (2009) describes a non-probability sampling strategy as being based on the assumption that the investigator wants to discover, understand and gain insight, and therefore must select a sample from which the most can be learned. The criteria for eligibility required that participants be South African-born Indian women, professionally registered engineers, currently employed or practising as engineers, with a minimum of five years’ work experience as engineers, at least 25 years of age, and be based in any province in South Africa. Twenty-five South African Indian women engineers from both the public and private domains participated in the study.

4.2 Analysis
Braun and Clarke’s six-step process of collating and analysing data was used for this study (Braun and Clarke, 2006). Data was collected through semi-structured interviews involving face-to-face meetings or digital platforms such as Skype or WhatsApp. Transcriptions of the interviews were sent to participant to ensure reliability and validity. Lincoln and Guba (1985) proposed using two different approaches to qualitative study to deal with the reliability and validity issues and ensure trustworthiness and authenticity. The following was applied for this study:

4.3 Triangulation
This process entailed using more than one method or source of data in the study of social phenomena (Bryman, 2012). Two sources of data were used, namely literature (global and national) pertaining to the areas under research, and semi-structured interviews. The study also adopted two methods of analysis, namely three-dimensional analysis and thematic analysis.

4.4 Findings
Key themes to emerge from the participants’ storytelling were negotiating and navigating a bicultural identity, societal perceptions about women, and women engineers in a male-dominated space.

An association was evidenced between the level of application of Indian cultural norms and values, that is, cultural looseness, tightness and subtle tightness, and how such application informed negotiation and navigation of a bicultural identity for a South African Indian woman. Participants’ accounts of early childhood and adolescent experiences articulated a range of experiences in terms of homes still adhering strictly to cultural norms (cultural tightness), those applying a certain degree of “subtle tightness”, all the way to a family that applied so-called cultural looseness. Most participants depicted the last: being able to exercise their voices without restraint, indicating a transformed socialisation that supported the positive growth and development of a woman’s identity. Out of the total 25 participants, 23 described their families as being strongly supportive. An unexpected find was the rise of the paternal motivator. When asked who motivated their career choice, the majority of participants indicated it had been their father. PrEng08 stated: “I was encouraged to do it, my dad who wanted me to be independent, he showed me how to change a tyre. We fix things together.” PrEng10 stated that “my dad was a 100 percent. He says: ‘Understand, these are the… the holdbacks, or these are the negatives,
these are the positives. You’re happy with it, you go ahead.’” Only two participants depicted other experiences, with one stating: “My dad was, he was quite upset, that I decided to choose engineering as a career, instead of anything else that he recommended.” This was interesting given that historically, Indian cultural norms were known for their patriarchal undertones that placed women in the role of caregiver and as subservient to men.

Within the main theme of societal perceptions about women and women in male-dominated spaces, there was a predominant element of gender taking precedence over race, society’s gendered understanding of engineering, and the continued dominance of men in engineering.

Participants’ storytelling indicated that the gender identity tag took precedence over race, with the former informing societal perceptions about women in their workspace. Participants advised that societal perceptions inevitably fed into the way women in engineering were viewed by individuals in their personal and professional spaces. PrEng16 stated: “My grandma asked me if I’m gonna be making glue, as she heard of an engineer that works in a Pritt factory.” PrEng20 said her grandmother thought an engineer changed streetlights. These statements are indicative of the lack of understanding of the profession. Moreover, there was an assumption that because engineering was male-dominated, the work could not be done by a woman. Some participants perceived this as concern felt by their families about the conditions under which women would have to work, given that the space was dominated by males. Participants pointed to three careers that were perceived in the Indian community as being “superior” and acceptable for women. Some participants’ parents tried to steer them to choose one of the three preferred paths, indicative of the need to conform to society’s demands.

In the professional space, participants noted the unease their presence caused, especially on-site. PrEng13 stated: “They, basically don’t wanna teach you anything. They would take the male engineers. They will take them, show them and teach them but with me they would sideline me. They would leave me and tell me to read books or watch videos.” PrEng11 stated that the chief engineer told male interns “women belong in the kitchen,” and “it is not the first time that I have heard that in my career”. PrEng10 stated: “The one thing that really hurt me was maternity leave. It’s almost frowned upon.” Only three of the 25 participants described gender and race as working against them in their professional space. One stated: “I hired my retired boss because they would listen to him; he was white with grey hair.” Eight of the 25 participants advised that they had been mentored by senior male engineers. These participants narrated how mentorship by a male engineer contributed to them being accepted into the profession by other male counterparts. Negotiating and navigating proved to be challenges, with negative experiences relating to the identity tags of gender and race, especially in their professional spaces. These experiences activated a flight-or-fight response, the former being the least likely option, given the silence that organisations exuded in the face of such negative work environments.

Narratives elicited in this study evidence the transformation of cultural socialisation that advocates the positive and meaningful inclusion of women. However, the ongoing stereotypical perceptions that are prevalent in the culture of the professional space continue to disadvantage women in engineering.

5. Discussion

Hooks states that “to be in the margin is to be part of the whole but outside the main body” (1989:20). She was referring to the identity of women of colour, whose existence and relevance are driven by birth alone. Their intersectional identities are governed by a socialisation where the relevance of existence is relegated to a marginal space (Hooks, 1989; Du Bois, 1969; Crenshaw, 1991; Wong et al., 2017). Further investigation has established that the interlocking nature of the processes of differentiation/social association (racialisation, ethnicisation, gendering) within systems of domination (colonialism, sexism, patriarchy, racism, apartheid) isolates the experiences of some women as uniquely different to others, thus leading to the identity of “otherness” (Hooks, 1989; Acker, 2006; Carrim, 2016). The experiences of some participants differed in terms of their socialisation highlighting otherness, even among a racial grouping within which one might expect homogenous narratives (Hooks, 1989). Although this otherness that each woman carries makes her unique through her experiences that differ from other women, there is still a shared commonality. This is expressed in the way a woman’s identity is fashioned by society as “soft and weak”, while a man is presented as being “tough and strong”. These perceptions informed an “oppressive altruism” that positioned men as women’s caregivers and gatekeepers (Qureshi, 2014). Two participants described the subordination that their husbands expected from them, based on cultural roles assigned to Indian women. This stereotyping infiltrates the workspace where male engineers treated participants with disregard because of their gender, sometimes coupled with their racial
identity. The coupling of inequality regimes and the socialisation processes led to categorisation through the formulation of hierarchies and ranking, which emphasised not only gender, but race, giving rise to a “double jeopardy” experienced by ethnic women (Govinden, 2008; Barnes, 2017).

Studies speaking to the identity work Indian women managers engaged in, trying to control their bicultural identity, showed they were still seen as minors, dependent on the men: from father to brother, upon marriage to husband, and as a widow to their sons (Carrim, 2012). However, narratives developed in this study evidence a changed socialisation process through the supportive family and the rise of the paternal motivator. At the same time identity work was described by participants, involving splitting the self between the indifferent engineer at work and the individual outside work ...the “real self” (Collinson, 2003). Alvesson, Ashcraft and Thomas (2008) stated: “Individuals craft a self-narrative by drawing on cultural resources as well as memories and desires to reproduce or transform their self.” This cultural frame-switching is used as a situational response to the male-dominated work context that participants must successfully traverse (Meca, Eichas, Schwartz and Davis, 2019). Preconceived notions about the profession, coupled with the space still being dominated by men, further intensified this “belief” in engineering as a male profession that is unsuitable, or an odd choice, for a woman. The ideal worker in this space is perceived as male, thereby marginalising women (Acker, 1990, 1998). Eight participants explained how mentorship by white male engineers helped them to build confidence in their profession and, to an extent, “allowed” them to be accepted by other male engineers. It was apparent through their storytelling that the identity tags of race and gender still disadvantaged them as women in their professional spaces. Black, Coloured or Asian women who have been oppressed as a result of their many constructed identities carry the burden of complex construal about self – something that women of privilege do not experience (Sanchez-Hucles and Davis, 2010). The strong socialisation process experienced by the majority of participants, with some participants’ fathers motivating and encouraging them to not let race or gender hold them back, is perhaps the reason these women maintained positive social cognition and continued to be career-oriented. Highly educated women tend to have a strong awareness of gendered inequality (Harnois, 2015). According to Bullough, Moore and Kalafatoglu (2017) this is perhaps the greatest hurdle that women must face in terms of gender stereotyping, more so when such bias is frequently camouflaged, rendering it difficult to address (p. 212).

6. Recommendations

6.1 Future research

It would be valuable to understand this change in a community that historically has been known for strong patriarchal value systems enforced in the household. In a new development, the patriarch assumes the role of motivator and supports empowerment and agency for certain participants. Perhaps this variable should be explored in the course of a comparative study on South African Indian women engineers who have exited the field. This would establish the power such a variable holds in regard to socialisation and associated behaviour of bicultural South African Indian women engineers.

6.2 Practical implications

Participants alluded to the lack of preparation they had received at their respective higher education institutions in relation to the gendered dynamics they encountered when they entered the workspace. A discussion on curriculum review is important if higher education institutions are to build a learning environment that informs a genderless working environment.

7. Conclusion

Advances are being made, but not to the extent of breaking the current vicious cycle. As more women are becoming aware of their potential to contribute in the field of engineering, acute responses must be applied if “cavities within the engineering space” are to be completely eradicated, so that women do not feel suppressed or undermined. The stories related in this study are testament to the armour these participants must wear in their bicultural space to enable them to face the reality of the situation and choose either to take a step closer to the door labelled EXIT or instead, fight tooth and nail, refusing to be placed under duress or demoralised because of their anatomical make-up and the embedded negative perceptions that society has been guilty of attaching to the identities of South African Indian women.
References

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