

Knowledge Exchange Networks: Does Gender Matter?

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Abstract

Gender diversity in knowledge exchange networks can be a source of innovation in organizations as it provides new insights that improve the creative process. Diversity literature provides enough evidence of the importance of utilizing mixed-gender teams to gain innovative outcomes. However, in knowledge management literature, gender diversity has been scarcely addressed. Knowledge management literature happens to be dominant, and there is a need to study the impact of gender diversity in knowledge creation processes and networks. This theoretical paper links the diversity literature to knowledge management literature and provides new understandings by considering gender as an important factor in the knowledge creation process. This paper contributes to the literature by emphasizing on exploring knowledge exchange relationships through a feminist perspective. Feminist perspective is also missing in knowledge management literature; thus, by making gender an important consideration in the socialization phase of the knowledge creation process, this paper provides a diverse perspective in knowledge management literature. Furthermore, this paper presents a conceptual model of gender-diverse knowledge exchange networks that shows the inclusion of women in knowledge exchange networks enhances the effectiveness of teams. Women are being neglected when it comes to inclusion in knowledge-creating networks because of in-group bias against men and the stereotypical perception of women's lack of technical and innovative knowledge. This paper sheds light on the importance of women's inclusion in knowledge exchange networks by emphasizing the vitality of diversity in creating knowledge and innovation in collaborative networks and teams in organizations.

Keywords: Gender Diversity, Feminist Perspective, Exchange Networks.

Introduction

Participation of women in paid employment has been increasing every year for the last few decades. Due to this factor, gender diversity in organizations and the inclusion of women in various predominantly male domains are gaining attention (Ali et al., 2011; Azmat, 2019). When it comes to the inclusion of women in either upper echelons of the hierarchy, prestigious ranks or in technical fields like R&D, they have always been neglected (Taparia & Lenka, 2022). When we look at the knowledge management literature, we see the same discrimination and exclusion of women from the knowledge creation process and knowledge exchange networks. Although many researchers have emphasized improving gender diversity and its benefits in terms of better performance of the teams (Frink et al., 2003; Xie et al., 2020), women still represent a minority in teams that are involved in the process of knowledge creation in firms.

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Many researchers have emphasized the significance of research on gender diversity in groups and teams and its relationship with performance (Dai et al., 2019; Xie et al., 2020; Wu et al., 2022). In previous research, diversity has been mainly considered concerning background, tenure and education, but diversity domains encompass broader demographic approaches (Lee et al., 2023). Literature presents varied evidence of the relationship between performance and diversity (O'Reilly & Williams, 1998).

Some studies present a negative relationship between team performance with gender diversity (Rogelberg & Rumery, 1996; Cady & Valentine, 1999). Some other researchers have presented a non-significant (Stewart & Johnson, 2009), while some presented a positive association of team performance with diversity (Lee & Farh, 2004; Østergaard et al., 2009; Yang et al., 2022).

The impact of gender diversity on the exchange relationship in a team greatly depends on the context of the organization. Most researchers have emphasized the importance of gender diversity in job performance, all those activities involving technical aspects (Motowidlo et al., 1997; Yang et al., 2022). There is limited research on the effect of gender diversity on activities that involve social networks and contextual performance.

This theoretical paper focuses specifically on analyzing the impact of diversity in knowledge exchange networks that involve technical and routine activities of the organization along with contextual performance components, as knowledge is mainly dependent on context. According to the knowledge creation theory by Nonaka, it is created during the process of “socialization, externalization, combination and internalization (Nonaka & Takeuchi, 2009)”. Knowledge exchange networks in any organization help create an inclusive context of innovation and creativity. This paper proposes that for creating such an environment that fosters innovation and promotes knowledge creation, a gender-inclusive context is important. Diversity literature shows mixed evidence about the impact of gender diversity on the performance of the team.

The impact of gender diversity in the knowledge creation process through exchange relationships in teams is missing in the extant literature. This study links the knowledge management literature to diversity literature and presents new insights by assuming gender as an important component in the process of knowledge creation in teams. Knowledge exchange networks enable firms to develop innovative and creative products, processes and services by combining different knowledge resources.

Nowadays, due to the competitive environment, knowledge has gained importance as a critical resource for the value creation and the success of the firm (Nonaka & Takeuchi, 2009; Grant, 1996). If firms are able to manage their intangible knowledge resources effectively, they can easily attain a competitive advantage over competitors. Knowledge combination capability is “The capability of individuals to absorb and integrate exchanged information in the organization (Carmeli & Azeroual 2009, p. 87)” which can be utilized to achieve competitive advantage in various arenas. This ability allows firms to outperform competitive firms as well as revolutionize products in a dynamic industrial context (Collins & Smith, 2006; Grant, 1996). Moreover, it also enables new knowledge creation that allows for attaining a sustainable competitive advantage (Carmeli & Azeroual 2009). Many researchers have emphasized the importance of knowledge and consider it an indispensable factor in optimizing the task performance of the team (Collins & Smith, 2006; Camelo-Ordaz et al., 2011; Ferrari & Déo, 2022). Knowledge creation happens at the level of the group as ingenious and creative solutions to the problems result because of the interactions within the groups (Hargadon & Bechky, 2006). When divergent perspectives and thoughts are integrated resulting from gender-diverse teams, creativity emerges that leads to innovative outcomes (Rodan & Galunic, 2004; Barczak et al., 2010).

Women differ from men in their perspectives, experiences, risk-taking, competition aversion, entrepreneurial attitude, knowledge and skills (Bagshaw, 2004; Jisr & Maamari, 2014; Brighetti & Lucarelli, 2015). The inclusion of women in knowledge exchange networks results in the accumulation of dissimilar backgrounds that foster creativity and innovation in the process (Sastre, 2015; Galia et al., 2015). Sometimes, it happens that increasing gender diversity creates a negative impact on the knowledge-creation processes due to the formation of various social identity groups of men and women in gender-diverse teams and organizations. In such teams, due to the presence of such groups, men and women display group bias where they collaborate with the same gender as compared to other gender members (Kanter, 1977; Gruenfeld et al., 1996). Due to this, gender diversity diminishes the benefits of intra-organizational collaborations (McPherson et al., 2001; Ferrary & Déo, 2022), which results in an adverse effect on innovation and creativity.

In light of the above arguments, this theoretical paper accentuates gender diversity as an important factor in the knowledge exchange network for the knowledge creation process. In this way, integrating men and women in knowledge exchange networks can reap benefits in terms of enhanced knowledge creation and innovation.

Research Questions

The following research questions are developed to build a theory on this.

1. Does gender diversity in knowledge exchange networks lead to innovation?
2. What is the role of gender diversity in the knowledge creation process?

Theoretical arguments from diversity literature provide evidence to support this study, as increasing gender diversity provides a greater human capital pool to be hired in knowledge exchange networks. Moreover, men and women understand their respective gender segments in the consumer markets, so inculcating both genders enhances understanding of the customers (Knouse & Chretien, 1996).

This theoretical paper integrates two different streams of literature that have needed to be addressed in the past. It combines evidence from diversity and innovation literature (Barczak et al., 2010; Østergaard et al., 2011; Díaz-García et al., 2013; Galia et al., 2015; Sastre, 2015) with knowledge management literature (Rubenstein et al., 2001; Takeuchi, 2004; Nonaka, 2008) in order to analyze the influence of gender composition of knowledge exchange networks on knowledge creation process.

The paper is structured as follows. After the introduction, the literature review establishes the importance of gender diversity in knowledge exchange networks. Then a conceptual model has been presented that shows how gender diversity may enhance the innovative output of knowledge exchange networks. Following this section, discussion and implications have been discussed along with limitations and future research directions.

Literature Review

In the extant diversity literature main focus has been firm performance with emphasis on characteristics of the top management team (Tang et al., 2020; Wiersema & Bantel, 1992; Yang et al., 2022), multicultural organization's diversity (Stah et al., 2010; Hajro et al., 2017; Bouncken, & Aslam, 2019) and merely demographic outcomes of diversity (Chowdury, 2005). In the knowledge creation process issue of gender diversity has been scarcely addressed in the literature. Although there is a positive impact of increased gender diversity on team performance, researchers also suggest that increasing diversity requires enhanced communication and collaboration among the workforce, which sometimes creates disbelief and conflict. It results in making diversity a "two

edged sword” (Milliken & Martins, 1996) and a “mixed blessing” (O’Reilly & Williams, 1998) because of its conflicting results regarding its effectiveness on network performance. Although diversity has been considered an important factor in team performance, its impact has not yet been clearly understood in knowledge exchange networks (Chowdury, 2005).

As gender diversity brings in an assortment of various experiences, knowledge and abilities of members of knowledge exchange networks, it enhances the absorptive capacity of the firm and its acceptance of new and innovative ideas for knowledge exploitation from external sources (Cohen & Levinthal, 1990) along with internal strengths and abilities. It also enhances interactive learning in knowledge exchange networks that results in improved knowledge creation and better utilization of complementarities (Van & Janssen, 2003; Quintana & Benavides, 2008; Santos et al., 2023).

Studies focusing on knowledge exchange network’s innovative outcomes and gender diversity are scant in the literature (Van & Janssen, 2003; Yang et al., 2022). One of the exceptions is the study by (Ostergaard et al., 2011), representing a positive relationship between employee diversity and innovative outcomes. Gender diversity in teams aids in collaborative decision-making (Fenwick & Neal, 2001; Bouncken & Aslam, 2019), as it broadens perspectives and contributes to open debates, enhanced social relationships and a positive work environment (Nielsen & Huse, 2010a, 2010b). This enabling context helps in targeting radical innovation. Inclusion of women in knowledge exchange networks increases decision making capacity by improving soft management perspective leading to creative outputs (Bagshaw, 2004; Dessler, 2001).

Over the years, women have shown more interest towards technology-based as well as creative roles with higher career aspirations after higher education. This trend would lead to redefining gender stereotypes that restrict women from inclusion in technical and creative fields (Eriksson, 2007). Research suggests that firms with a balanced gender composition of the workforce produce more knowledge as compared with those firms that only prefer men for their knowledge-creation process (Ostergaard et al., 2011). As “Innovation is an interactive process and diversity among those who interact promotes innovation process, since diversity affects the way knowledge is generated and applied in the innovation process (Ostergaard et al., 2011, p. 502)” so the inclusion of women in the knowledge exchange networks helps in improved new knowledge creation. Mixed-gender teams usually show better performance; therefore, gender diversity is considered one of the positive team dynamics (Apesteguia et al., 2011; Sung & Choi, 2019). In light of these arguments, the rationale of this paper is that increasing gender diversity in the knowledge exchange networks will foster creativity and innovation. It also makes the network inclusive, proactive and adaptive for the dynamic competitive environment due to the diverse insights and perspectives stemming from incorporating men and women. Different socialization and career paths result in distinct orientations that integrate into the socialization phase of the knowledge creation process, resulting in improved knowledge creation.

Building upon these arguments, this paper proposes that gender-diverse teams enhance the positive exchange relationships in knowledge exchange networks. Diverse team dynamics foster innovation that helps in achieving sustained competitive advantage for the firm.

Social Role Theory

This study is based on the social role theory (Eagly & Wood, 1999) in order to advance a theorization that is gender specific and considers men and women both. According to social role theory, men and women exhibit different tendencies in social interactions. Women tend to be more “communal” and are more towards relationship-building and socially sensitive, while men exhibit “agentic” traits like assertiveness and voice-raising (Eagly & Wood, 1999). At the heart of this

conception, these tendencies of women and men trigger positive interpersonal and social team dynamics (Bear & Woolley, 2011; Carli, 2001), providing a basis for the theoretical ground of gender diversity in knowledge exchange networks (Tang et al., 2020). Following the tradition of social role theory, studies have established that gender differences in the interpersonal inclinations of men and women exhibit themselves in group interactions (Wood, 1987; Woolley et al., 2010; Tang et al., 2020).

As a whole, social role theory presents a great gender lens to illuminate the advantages of gender diversity in teams (Krishnan & Park, 2005; Dezsö & Ross, 2012; Jeong & Harrison, 2017; Lyngsie & Foss, 2017). It sheds light on the gender differences in interpersonal penchants and their corresponding impact on team interactions. Research following the social role theory highlights the positive team dynamics due to gender diversity in two ways. First, the equal presence of men and women in teams supports a broad range of behaviours and attitudes where men and women both are free to exhibit their interpersonal tendencies (Kanter, 1977). In traditionally male stereotyped teams like research and development networks, gender diversity decreases pressure on women to “act like men” so that they can freely express their communal characteristics, like being empathetic and compassionate about other’s feelings (Ely, 1995, p.621). Secondly, “a balanced number of different genders helps fully reap the benefits of gender diversity” in this way, men and women shape team dynamics equally (Lee et al., 2018, p.189). If there are fewer women in a team, there are more chances of being marginalized and becoming token females with very little impact on team exchange and interactions (Kanter, 1977; Torchia et al., 2011; Farh et al., 2020). According to this theory, this social categorization based on gender creates in-group and out-group differences and biases (Hewstone et al., 2002). These gender-based differences provide the basis for exploring knowledge exchange networks.

Gender Diversity and Knowledge Creation

Knowledge creation to achieve a competitive advantage over other firms has become crucial for the survival of firms in today’s competitive industry. To sustain a place in the industry, firms have to be innovative by involving in knowledge enhancement and acquisition activities (Sastre, 2016; Tiwarim, 2022). Therefore, to create a knowledge-creating environment and organizational culture that fosters innovation and creation, firms have to look for various ways of managing knowledge that improve the innovativeness of the firm. Employees need to understand the situation, knowledge exchange procedure and practices, values, beliefs and abilities of the firm in order for knowledge management practices to be effective (Leonard & Barton, 2014; Dana et al., 2005). Hence, practices of knowledge management should take into account both components of knowledge, tacit as well as explicit component (Nonaka & Takeuchi, 1995), as tacit knowledge plays its role in exchange networks where unique knowledge held by team members is exchanged, and new knowledge is created through socialization, externalization combination and internalization (Nonaka & Takeuchi, 1995). The traits and composition of team members of the knowledge exchange network affect the creative input during the socialization phase of the knowledge creation process.

Innovative outcomes cannot be attained in an isolated environment because it is a social process (Østergaard et al., 2011). In the knowledge creation process, the participation of team members involves interactions within the team. Individualities of members affect the innovative outcomes of the firm (Homan et al., 2008). Team composition affects the process of innovation and its output (Talke et al., 2010; Li & Wang, 2023). Various facets of team member’s skills, knowledge, and experiences require attention during the process (Leonard & Barton, 2014). Gender diversity in

knowledge exchange networks ensures diverse skill sets, embodied knowledge, and experiences, which are different for men and women because of the varying influence of culture and society on both genders. Considering the knowledge creation process and its nature, this study suggests that gender diversity in knowledge exchange networks would increase the innovative outcome and knowledge creation capability of the team or firm. Scholars have studied various influences of gender diversity based on the innovation nature that is to be produced. If innovation requires interactive decision-making and collaboration of internal and external stakeholders along with enhanced knowledge of the market, then a gender-diverse team would enhance creativity. On the other hand, technical innovation involving the technical capabilities of the team members would not be much affected by the gender diversity of the knowledge exchange network (Fenwick & Neal, 2001; Sastre, 2015; Li & Wang, 2023). In line with the above discussion, the study suggests the following proposition.

Proposition 1: Gender diversity and knowledge exchange processes in teams.

During the knowledge exchange in teams, the perception, information, tacit knowledge and expertise of the participants are exchanged, discussed and shared (Gibson, 2001; Santos et al., 2023). The knowledge exchange process is linked to the effectiveness and efficiency of the team in order to attain desired goals (Mathieu et al., 2008). The key contrasting factor in the knowledge exchange process in teams is an inclusive, strong, open and supportive context where communication is easy within the network (Gibson & Gibbs, 2006; Metiu & Rothbard, 2013). The highest-performing teams are those that stimulate and encourage differences in perspective and philosophy within the knowledge exchange network (Cronin et al., 2011). According to Cronin et al. (2011, p.843), “the counterintuitive results may have been because such conditions forced team members into detailed debate and consideration of wider arrays of alternatives that made the emergence of new approaches possible (Leonard & Straus, 1997)”. This sort of approach supports positive controversies (Tjosvold, 2008), which states that healthy arguments are the result of diversity in thinking patterns. Divergence of opinions creates disparate notions and compares those notions (Cramton & Hinds, 2014), whereas convergence of notions leads to the achievement of common objectives. The knowledge exchange process in teams requires diverse perceptions, so keeping its nature in view, this paper suggests that the integration of women and men in knowledge exchange networks would foster innovation. Men and women possess distinct experiences, insights, knowledge and backgrounds with varying norms that ensure that the inclusion of women in these networks would bring fresh insights to the knowledge-creation process. The dynamics of a gender-diverse team can develop such an environment, which helps firms achieve sustained competitive advantage by ingenuity resulting from the integration of inputs from both genders. Stereotypes regarding gender roles in society result in the exclusion of women from creative domains because, due to this stereotypical approach, they are considered ‘homemakers’ (Faiz, 2015) who are not meant to be technical and creative for domains like knowledge creation despite various studies that establish women as being more innovative and creative than men. Along these lines, this study suggests that in order to create radical innovations and attain a sustained competitive advantage, the knowledge exchange networks need to be more inclusive and need gender diversity along with diversity of knowledge and experience.

Proposition 2: Gender diversity creates divergence in the knowledge exchange process that increases the innovation output of the network.

Feminist Approach and Knowledge Management

The feminist perspective helps to grasp the tenacious and obstinate disparities and oppression of women, especially in patriarchal societies (Hooks, 2000; Lorber, 2001; Heisig & Kannan, 2020). Feminist approaches provide a range of conceptual and theoretical lenses which aid in the development of inclusive, rich and comprehensive theories in studies of the organizations along with the portrayal of “women’s issues” (Cala & Smircich, 1996; Lokot, 2021). This theoretical paper suggests adopting feminist perspective as conceptual lens so that its assumptions identify male hegemony in knowledge exchange networks and the desire to modify the existing status quo in society as well as in knowledge exchange networks (Flax, 1990; Cala & Smircich, 1996; Heisig, & Kannan, 2020) in the extant knowledge management literature, feminist perspective is still missing and keeping in view the nature of knowledge creation process there is a need to incorporate feminist approach in knowledge management domain that would enhance the creative potential by emphasizing equal opportunities for women and increasing gender diversity in exchange networks. This theoretical paper proposes the inclusion of women in knowledge-creation practices, keeping in view the basic assumptions of the feminist perspective. During the socialization stage of knowledge creation (Nonaka et al., 1996), more diversity in opinion, ideas, and interactions is important because implicit knowledge exchange happens during socialization. The inclusion of women would ensure diversity in tacit knowledge because of the difference in career trajectory and expertise of women. Variation in social capital would result in higher performance of the exchange network (Singh et al., 2008) of the team when distinct tacit knowledge is exchanged during socialization.

Keeping in view the basic feminist assumptions, this study aims at knowledge management practices and suggests women's inclusion as part of knowledge creation activities. The socialization phase of the knowledge creation process (Nonaka et al., 1996) requires more diversity in interactions because of the implicit knowledge exchange so presence of women would prove to be highly beneficial as women differ in expertise and career trajectory from men, rather associating to lesser experience, it offers highly varied social capital background, that would contribute to higher performance (Singh et al., 2008) by exchanging tacit knowledge through socialization.

Proposition 3: Including women in exchange networks improves tacit knowledge exchange in the socialization process.

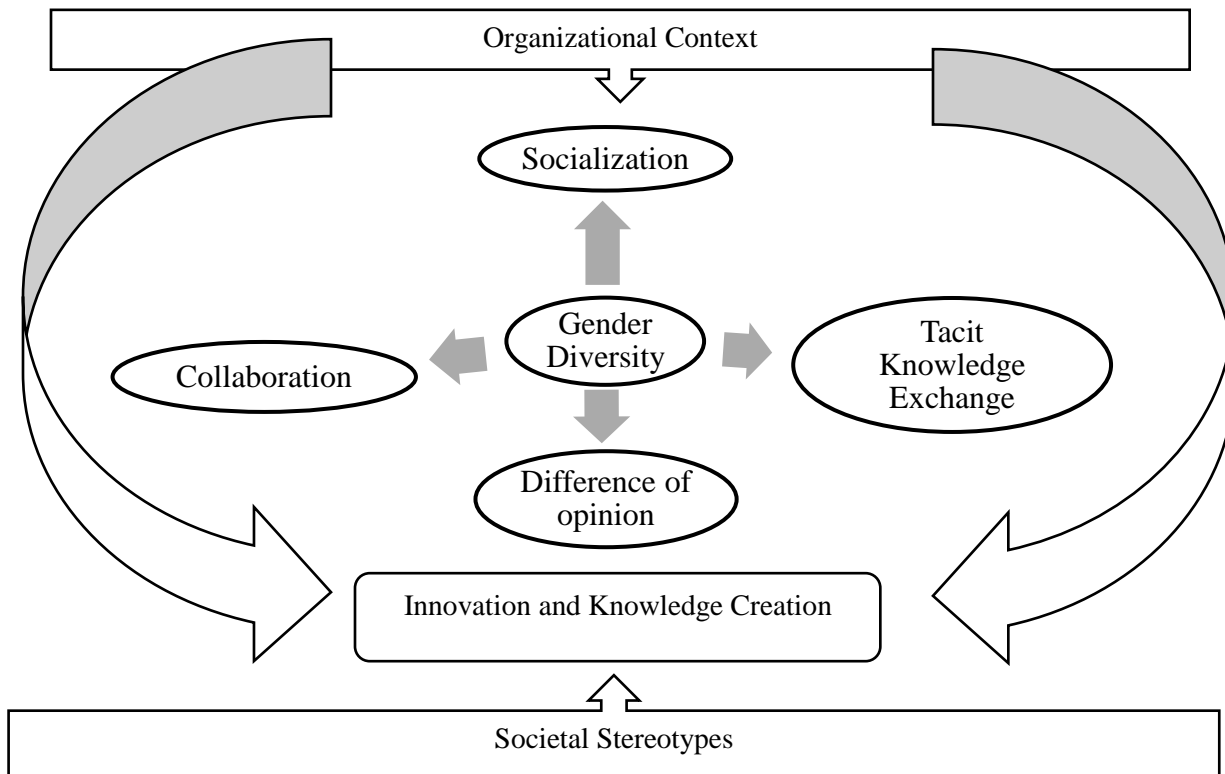
Proposed Conceptual Model

The above discussion and the propositions presented in this paper have been summarized as the proposed conceptual model of the study. The below-proposed model suggests that distinct market orientation, diverse insights and assorted knowledge and experience can be obtained by gender diversity. Men and women tend to have distinct outlooks that make gender-diverse teams and networks more inclusive and collaborative. An inclusive environment and collaboration help in an important phase of socialization in the knowledge-creation process (Nonaka et al., 2000). Socialization is a starting process in Nonaka’s knowledge creation model where tacit knowledge is exchanged in knowledge exchange networks through integration, collaboration and

socialization, where members interact with others and share their tacit experiences and thoughts with others.

When women are included in knowledge exchange networks they can bring fresh insights and a different approach towards things because of their distinct tacit knowledge. The capacity for greater knowledge sharing through socialization can be enhanced through gender-diverse teams.

Figure 1: Conceptual model of gender diverse knowledge exchange networks



Effective socialization process leads to better knowledge exchange within networks that leads to knowledge creation in terms of innovative network outcomes and effective teamwork. Keeping in view the above model, this study suggests that gender diversity is an important factor in the socialization phase of the knowledge-creation process. At the same time, empirical evidence is needed to analyze the effect of gender diversity on other phases of the SECI model like externalization, combination and internalization.

Discussion

From the evidence provided above from integrating diversity literature to knowledge management literature, this theoretical paper argues that gender diversity in knowledge exchange networks can be a source of innovation and enhance team effectiveness in any organization. This paper uses the feminist perspective by highlighting the importance of women in the knowledge networks. Women are being deprived of executive roles and top positions in the hierarchy, which is a global phenomenon called the glass ceiling (Taparia & Lenka, 2022). Suppose women are thought of as a valuable resource. In that case, their representation in knowledge exchange networks and higher echelons of the organization can be improved, so this paper sheds light on the importance of

women's inclusion in knowledge exchange networks by emphasizing the vitality of diversity in creating knowledge and innovation in collaborative networks and teams in organizations. Due to the stereotypical approach, women are thought of as less innovative and are excluded from research and development teams and other exchange groups within organizations. This paper emphasizes the importance of utilizing the tacit knowledge of women that might be wasted if they continue to be excluded from knowledge exchange networks. By doing this, firms deprive themselves of a talented pool of individuals. By following this argument, this Paper suggests that gender diversity has to be an important consideration in knowledge knowledge-creation process of the companies. Gender diversity provides additional non-redundant knowledge and information that aims to improve the process of decision-making. Gender-diverse groups evaluate information more comprehensively as compared to homogenous non-diverse groups (Dahlin et al., 2005) because the fact that women use different evaluation criteria in contrast to men in assessing the alternatives (Crow et al., 1991; Park, 1996; Ferrary, & Déo, 2022).

According to Woodman et al. (1993), teams require some uniqueness of thought to increase creativity in the knowledge exchange process. Similarly, Polzer et al. (2002) argued that team practices benefit when members of the exchange process express those specific attributes that make them distinctive.

This paper addresses distinctive diversity attributes by solely focusing on gender diversity. Making gender the core of the study allows a fine-tuned investigation of “gender” as an important component that provides the basis for any social categorization as compared to other factors like race, age, or occupation (Stangor et al., 1992; Bouncken & Aslam, 2019).

As the Paper suggests, gender diversity should be an important component of the knowledge exchange networks because even after going through all the stages of new knowledge creation like socialization, internalization, externalization and combination, knowledge management practices fail to spur new knowledge creation and innovation because its focus remains on the technical aspects and knowledge rather than considering the social ties with external and internal stakeholders. In such cases, gender diversity in exchange networks provides new insights and market orientation because women and men consider different market segments and needs of the customer's services to overcome ignorant sectors and improve market knowledge that would ultimately increase creativity. According to Nonaka and Takeuchi (1999), “groups with individuals who access very different knowledge sources are more likely to be creative”.

Implications and Future Research Directions

This study presents managerial implications that suggest that firms that are involved in the knowledge creation process and are interested in gaining a sustained competitive advantage in the industry need to develop strategic external ties with customers and organizations as well as improve market knowledge. For pursuing all these innovative strategies they have to be concerned with improving gender diversity in their knowledge exchange networks because a more inclusive environment fosters innovation. Gender diverse knowledge networks can improve the working relations of the members and reduce any personal conflict (Cox & Blake, 1991; Amabile et al., 1995; Iles & Hayers, 1997; Richard & Shelor, 2002; Hong & Page, 2004; Nielsen & Huse, 2010a, 2010b; Bouncken, & Aslam, 2019).) Because of the inclusion of women in the team, a soft and flexible environment is created, as many researchers have documented the problem-solving capacity (Hennessey & Amabile, 1998) of gender-diverse networks.

An avenue for future research can be to investigate how the culture of an organization and society at large influences gender composition and its impact on knowledge creation in exchange

relationships. As culture is assumed to have a strong influence on gender-segregated roles and inclusion and exclusion of women in prestigious value-creating roles so, including culture would bring new insights into the knowledge management literature. As this is a theoretical paper that calls for empirical testing, future research is required to empirically test the conceptual model and the propositions developed in this study. Future research can be done on these lines by using qualitative methodologies. Case study research (Yin, 2003), specifically focusing on a knowledge-intensive organization, can be utilized in order to analyze the processes involved in the knowledge creation deeply. This will also help to understand the role of women in these processes clearly. Furthermore, collected data can be analyzed using thematic analysis, which is suitable for case study research.

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