

The role of online communities in shaping the Society 5.0 paradigm: a social capital perspective

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Abstract

Purpose – The study's purpose is to understand how online communities, thanks to their knowledge-sharing potential, can help to achieve the principles of a human-centered society. The social capital theory is applied to understand knowledge contribution and knowledge sharing in online communities.

Design/methodology/approach – A qualitative approach based on a single case study of an international online community is adopted.

Findings – The case study highlights how each social capital facet unfolds within the online community to model efficient knowledge exchange among members. The developed social capital generates benefits at three interconnected system levels: micro (individuals), meso (companies), and macro (society).

Originality/value – The paper makes several contributions to the literature on Society 5.0, social capital theory, and knowledge management by bringing the needed empirical evidence on how to exploit online digital technologies to generate the benefits associated with Society 5.0. It also demonstrates that social capital theory is a valuable theoretical lens through which to explain how knowledge-sharing and exchange mechanisms in online communities contribute to shaping a human-centered society.

Keywords Social capital, Online community, Society 5.0, Human-centric, Sustainability, Women empowerment

Paper type Research paper

1. Introduction

The present era is characterized by the rapid evolution of digital technologies, which has brought significant changes to industry and society at large (Fukuyama, 2018). The pace of technological, economic, and social change has accelerated in recent years, with businesses and communities striving to keep up with the speed (Fukuda, 2020). Researchers and practitioners alike have suggested an overly technocentric view of technological development (Ferreira and Serpa, 2018; Ietto *et al.*, 2024; Troisi *et al.*, 2023). To avoid such technological determinism, others have advocated earnestly for a human-centric society in which people enjoy a high quality of life (Carayannis and Morawska-Jancelewicz, 2022; Del Giudice *et al.*, 2023; Fukuda, 2020; Fukuyama, 2018).

This led to the development of the Society 5.0 (S5.0) paradigm (Huang *et al.*, 2022), which envisages a futuristic, super-smart society in which humans can take full advantage of



information and communication technology (ICT) to enjoy high-quality and comfortable lives through the fusion of cyberspace and physical space (Fukuyama, 2018; Huang *et al.*, 2022).

However, although researchers, practitioners, and policymakers acknowledge the need for a more holistic and socio-technical perspective on how digital technologies may improve social, economic, and environmental systems, contributions to date have been largely speculative or conceptual in nature (e.g. Ferreira and Serpa, 2018; Huang *et al.*, 2022; Troisi *et al.*, 2023).

The present paper aims to contribute to the lively debate on S5.0 by focusing on the role that online communities may play in promoting the principles of a human-centric society. Online communities emerge as a valuable study context as they exemplify the interplay between cyberspace (i.e. they exhibit a technological component) and real world (i.e. they are populated by human beings) that forms the basis for S5.0. Additionally, online communities generate knowledge contributions and sharing mechanisms, which have proven crucial for attaining the benefits associated with S5.0 (Konno and Schillaci, 2021).

To understand knowledge contribution and knowledge sharing in the online community context (Li *et al.*, 2019; Wang *et al.*, 2022), we adopt social capital theory as this study's theoretical framework. Social capital in online communities has been defined as a collective construct embedded in the community's structure, a multidimensional asset that is developed within the community rather than from the individual's perspective (Meek *et al.*, 2019). Different social capital dimensions (namely, structural, relational, and cognitive) may help facilitate the flow of communication between members, improve the sharing of information, and cultivate members' sense of belonging, thus yielding varied benefits for different actors (Cao *et al.*, 2022). While several studies to date have used social capital theory to combine and integrate knowledge management into innovative solutions (Nahapiet and Ghoshal, 1998; Sherif *et al.*, 2006), including in the context of online communities (e.g. Sheng and Hartono, 2015), no existing study has specifically explored its implications for S5.0.

Based on the above, the present study examines how the social capital dimensions developed within online communities generate knowledge-sharing and exchange mechanism fostering benefits for society as a whole. To this end, the paper employs a qualitative approach based on a single case study (Eisenhardt, 1989) of an international online community, Women in Procurement (WIP). This case was selected for its revelatory potential (De Massis and Kotlar, 2014; Eisenhardt and Gaebner, 2007).

The paper makes several contributions to the literature on S5.0, social capital theory, and knowledge management. First, it sheds light on the opportunities that digital technologies offer not only for the development of technological innovation *per se* but also in terms of achieving social and sustainable innovation for human well-being, thus providing the needed empirical evidence for how S5.0 solutions might best be implemented (Bartoloni *et al.*, 2022). In doing so, the study also contributes to a multilevel understanding of S5.0 by translating its general principles at three contextual levels: micro (i.e. individuals), meso (i.e. organizations), and macro (i.e. society). Second, the article contributes to the literature on social capital and knowledge management by demonstrating that this is a valuable theoretical lens through which to examine how knowledge-sharing and exchange mechanisms in online communities contribute to shaping S5.0. Our study employs the theory of social capital in a novel setting and examines the inherent value and benefits that arise from these relationships and interactions in terms of S5.0.

From the managerial perspective, this research contributes to management knowledge by showcasing the strategic advantages derived from using the personal and professional networks that develop through social media and electronic word-of-mouth (eWOM) to promote self-sustaining community growth and improve organizational reputation (Kaplan and Haenlein, 2010; Hoffman and Fodor, 2010). Organizations can enhance their reach and influence by leveraging structural and relational capital, which enables them to share information extensively and provide collaborative opportunities, resulting in improved public perception and employer reputation.

In addition, online communities support the integration and orientation of new members, promoting inclusivity, trust, and reciprocity and highlighting the importance of soft skills in addition to technical training and dynamic knowledge sharing (Dirks and Ferrin, 2001; Avolio *et al.*, 2009). From the personal perspective, the research reveals that participation in professional online networks can significantly improve both individual and company profiles, leading to career progression and organizational achievements. This research provides a roadmap for managers considering the creation of online environments for their professionals to enhance operational performance, employee contentment, and overall market competitiveness. It emphasizes the importance of such communities as valuable assets for businesses seeking to utilize digital platforms for sustainable expansion.

The remainder of the article is structured as follows. We first present the theoretical background by outlining social capital theory, the S5.0 concept, and the importance of knowledge sharing, as acknowledged in our conceptual model. Subsequently, we describe the case study methodology, data collection approach, and analysis before presenting the study findings. The paper concludes with a consideration of the theoretical and managerial implications as well as the study's limitations and potential avenues for future research.

2. Theoretical background

2.1 Social capital theory and online communities

Users are progressively employing web platforms to collaboratively produce various materials (Naab and Sehl, 2017). In light of recent increases in internet penetration, previous studies have implemented a social capital theoretical framework to understand users' exchanges and participatory behaviors in different online situations (Filipovic and Arslanagic-Kalajdzic, 2023; Kumi and Sabherwal, 2018). Online groups derive considerable advantages from social capital, since it has the power to shape the efficient exchange of resources and knowledge among community members (Cao *et al.*, 2022; Chandler and Vargo, 2011).

Social capital theory, as proposed by Adler and Kwon (2002), explains how social capital improves cooperation among group members and creates value for both individuals and the group within the network (Nahapiet and Ghoshal, 1998). Social capital is defined as "the sum of the actual and potential resources embedded within, available through, and derived from the network of relations possessed by an individual or social unit" (Nahapiet and Ghoshal, 1998, p. 243). As such, it is an intangible asset that arises from networks of relationships characterized by norms of voluntary participation, reciprocal exchanges, and trust among individuals (Motkuri, 2018; Putnam, 1995). Social capital encompasses the inherent and realized assets within networks, conventions, and trustworthy relationships that facilitate the successful achievement of shared goals (Putnam, 2000). Relationship quality may be categorized based on two dimensions of social capital: bridging social capital, which refers to the connections between individuals across different social groups through weak ties, and bonding social capital, which pertains to the strong ties and shared sense of identity and belonging that arise within social groups (Spottswood and Wohn, 2020).

Social capital comprises three interconnected facets: structural capital, relational capital, and cognitive capital (Meek *et al.*, 2019; Nahapiet and Ghoshal, 1998). As such, social capital is a versatile and useful resource that has the potential to enhance the growth and formation of social ties and networks among users in the digital environment (Jeong *et al.*, 2021; Li *et al.*, 2019).

Structural capital refers to the arrangement of social connections among individuals in social networks, including the strength of social interactions and the hierarchies among users (Chandler and Vargo, 2011; Tóth *et al.*, 2022). In contrast to human capital, which is based on an individual's abilities and expertise, structural capital is ingrained in the relationships that exist between people and the institutionalized processes — such as social conventions, group regulations, and procedures — that mold these relationships. This notion highlights the significance of well-organized networks in improving communication, trust, and collaboration

among people, which may result in greater creativity, productivity, and social cohesion (Bourdieu, 1986; Coleman, 1988). Online communities' efficacy and durability are heavily influenced by structural capital, which dictates how information is exchanged, cooperation is encouraged, and social connections are established. The design and administration of structural capital can exert a substantial impact on the communities' degree of involvement, quality of contributions, and general social unity (Jeong *et al.*, 2021; Sanz-Blas *et al.*, 2021; Vătămănescu *et al.*, 2023; Zhou, 2022), including forums, online social networking sites, or collaboration tools.

Relational capital concerns the quality of interpersonal connections developed via social interactions (Coleman, 1988; Wong and Lee, 2022)—that is, the affective connection between users that develops when individuals experience strong feelings of identity, belonging, and trust within a network. Norms, trustworthiness, and reciprocity in relational capital serve as cohesive forces that unite individuals and expedite the creation of value and exchange of information and resources (Nahapiet and Ghoshal, 1998). Social trust in a brand community is based on the dependability, capability, honesty, and integrity of its members. It ensures that members do not exploit one another and that they honor their commitments when interacting with one another. Reciprocity, meanwhile, refers to the sense of cooperation and duty to repay favors and assist fellow members of the brand community who may be in need of help (Meek *et al.*, 2019). Participation in dependable, beneficial, and truthful information exchange may promote the establishment of mutually trusting relationships that provide value and norms of reciprocity (Leung *et al.*, 2020).

Cognitive capital refers to the degree to which individuals within a social network possess a collective viewpoint and comprehension (Chandler and Vargo, 2011; Kumi and Sabherwal, 2018), including shared vision and language (Chiu *et al.*, 2006; Wang *et al.*, 2022). Cognitive capital offers principles and criteria for interpreting and exhibiting relevant behaviors that might help community members accomplish community objectives (Kumi and Sabherwal, 2018). Shared language pertains to the commonly used vocabulary, grammar, sound patterns, and meanings in discussions and messages relating to the community's interests. Meanwhile, shared vision represents the community's values and goals that foster unity, integration, and connection among its members (Meek *et al.*, 2019). Both components enhance social interaction, facilitate information sharing, and promote the communication of different perspectives and ideas (Cappiello *et al.*, 2020; Zhou *et al.*, 2022).

Recent studies have highlighted not only the significance of social capital in online business behavior (Ellison *et al.*, 2007; Filipovic and Arslanagic-Kalajdzic, 2023; Jang and Dworkin, 2014; Phua *et al.*, 2017; Wong, 2023; Yan *et al.*, 2023) but also the impact that the various dimensions of social capital dimensions exert on knowledge creation and sharing among online communities. For example, Sheng and Hartono (2015) found that social capital positively facilitates the creation and sharing of knowledge in online communities and that this process fosters different outcomes for firms in terms of the development of new products, enhanced relationships, environmental and community involvement, and customer acknowledgment. To date, however, no studies have specifically explored the role that social capital and knowledge management play in creating benefits at a broader level, thus embracing the S5.0 paradigm.

2.2 Society 5.0

First presented in January 2016 as a growth strategy for Japan, S5.0 has its roots in the principles of Industry 5.0 (I5.0). The I5.0 paradigm envisions a human-centric, sustainable, and resilient manufacturing system that employs flexible and adaptable technologies to ensure that production respects the planet's boundaries and places the welfare of industry technicians at its core. The S5.0 concept takes these principles to a higher level and aims toward a futuristic, super-smart society in which humans are empowered to take full advantage of ICT to enjoy high-quality and comfortable lives facilitated by the fusion of

cyberspace and physical space (Fukuyama, 2018; Huang *et al.*, 2022). It is a vision of a future in which technological innovation is seamlessly integrated into everyday life, thus overcoming an overly technocentric approach to create a human-centered and lean society (Ferreira and Serpa, 2018). Specifically, a super intelligent society is a system that leverages the potential of digital technology, instruments, and networks to improve the quality of human life (Pereira *et al.*, 2020).

Striking a balance between technology-centric and human-centered innovations will generate general societal value (Letto *et al.*, 2024), in keeping with the objectives of the United Nations Sustainable Development Goals (SDG) (Bartoloni *et al.*, 2022; Carayannis and Morawska-Jancelewicz, 2022). Indeed, the use and development of new technologies, which have seen an increase in human-machine interactions, has not invariably been regarded as positive (Scuotto *et al.*, 2024), given its role in displacing working environments as well as human rights (Del Giudice *et al.*, 2023). However, the foundational tenets of the S5.0 paradigm lie in the notion that diverse stakeholders need to reap substantial benefits from the ongoing wave of technological advancements.

One way in which individuals, organizations, and society at large can harness the power of technological evolution to their advantage is collaborative knowledge sharing (Aquilani *et al.*, 2020; Bartoloni *et al.*, 2022). Individuals are the first to benefit from the merging of cyberspace and physical space to attain a higher quality of life (Huang *et al.*, 2022). As such, the promotion of talent's creativity and the enhancement of personal skills are regarded as essential for value creation, transformation, and social innovation (Nikum, 2022). Skills enabled through learning processes based on mentoring, training, and research are key to ensuring a successful shift toward S5.0 (Troisi *et al.*, 2023). Organizations represent another key actor with a stake in the S5.0 concept (Carayannis *et al.*, 2021; Huang *et al.*, 2022). Companies are not only urged to adopt digital technologies in production processes but such technologies can also be used to incorporate external knowledge and resources within their organizations' boundaries (Carayannis *et al.*, 2021). The existing research reveals that the flow of knowledge within a broader network of companies supports the creation of innovative technological solutions (Bartoloni *et al.*, 2022). Companies, acting as catalysts for innovation, may empower local communities, guide policy development, and foster economic diversity (Fukuda, 2020; Santos *et al.*, 2024). However, today's innovation demands a degree of socio-economic fusion that transcends individual and company boundaries (Konno and Schillaci, 2021). Previous studies have demonstrated that the improvement of social interactions between different actors and the creation of social entrepreneurship projects can support societal growth (Bartoloni *et al.*, 2022; Caputo *et al.*, 2023).

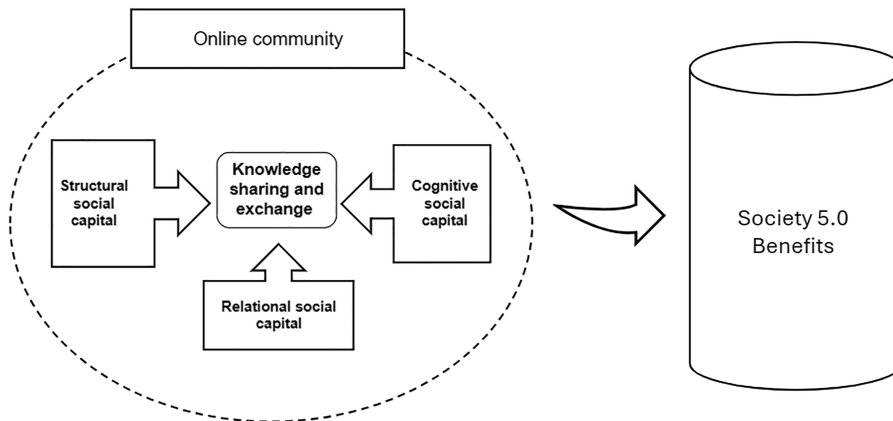
Particularly, in the Society 5.0 era, women play an important role since their active participation helps driving economic and social transformation as well as fostering competitiveness and innovation, especially through entrepreneurship (Rosca *et al.*, 2020; Aparicio *et al.*, 2022). Empowered women contribute significantly to family income and community well-being by establishing and managing businesses (Siregar *et al.*, 2024). This is also emphasized by the United Nation, which explicitly acknowledges the critical role of empowering women to create a more inclusive society. The SDG 5 addresses the problem of gender inequality which is still deep-rooted in every society. In most countries, women suffer from lack of access to decent work and face occupational segregation and gender wage gaps. They are also under-represented in political and economic decision-making processes. Hence, a society that promote empowered women and female entrepreneurship is a sustainable society creating social value at a wider level. In this scenario, digitalization and social media are crucial for empowering women by providing tools for business expansion, marketing, and competitive growth (Siregar *et al.*, 2024; Ughetto *et al.*, 2020).

2.3 Social capital and knowledge sharing in society 5.0: a conceptual model

The knowledge management literature has extensively investigated the role that knowledge creation and sharing play in generating various outcomes, such as improving social innovation capabilities (Fait *et al.*, 2023a; Le and Lei, 2019) and enhancing employees' engagement and job performance (Fait *et al.*, 2023b; Luqman *et al.*, 2023) in addition to other organizational outcomes (e.g. Della Peruta *et al.*, 2014; Pereira and Mohiya, 2021). However, as noted above, collaborative knowledge sharing and exchange among various stakeholders should yield significant benefits for society as a whole beyond individual organizations. Hence, the key to achieving S5.0 lies in the ability to leverage digital technologies not merely as tools for innovation but as vehicles for the acquisition and dissemination of knowledge from which values and solutions to resolve challenges can be drawn (Fukuyama, 2018; Konno and Schillaci, 2021).

Based on these assumptions, the paper posits that the combination of technology and human ability—which have the potential to help tackle social problems and pursue growth for society as a whole (Troisi *et al.*, 2023)—pass through knowledge-sharing mechanisms among diverse actors interacting within an online environment. Hence, to better understand the roles that social capital and knowledge sharing play in generating the benefits associated with S5.0, we develop a conceptual model (see Figure 1).

The model allows us to investigate how each social capital dimension (structural, relational, and cognitive) unfolds within an online community, thus creating a fertile environment in which community members can exchange resources and knowledge (Cao *et al.*, 2022; Chandler and Vargo, 2011), ultimately bringing benefits to the whole society. The conceptual model highlights the way in which online communities shape relationships and interactions among diverse actors within the community and how these interactions generate knowledge-sharing and exchange mechanisms. Once generated and managed, these mechanisms can be beneficial for diverse stakeholders, creating benefits at a broader level and thus embracing the S5.0 paradigm.



Note(s): Dotted lines surrounding the online community indicate the blurred boundaries between cyberspace and the real world

Source(s): Authors' own work

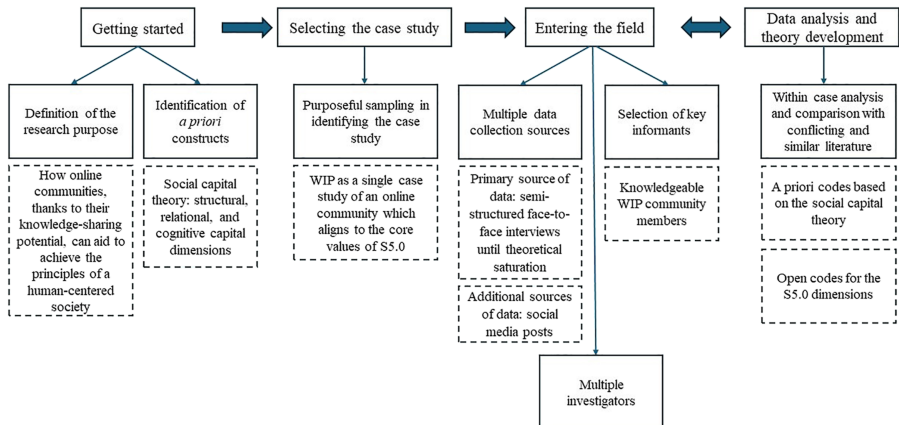
Figure 1. Conceptual model

3. Methodology

3.1 Research method

Despite a general acknowledgment of the need for a more holistic perspective on how digital technologies may contribute to the development of S5.0 that considers both the technological and social aspects, studies on this topic are scant and largely conceptual. Accordingly, our research is exploratory in nature and employs a qualitative method to conduct an in-depth analysis of the role of online communities in shaping the S5.0 paradigm. Specifically, we employed a single case study to address the novelty and complexity of the topic at hand (Eisenhardt, 1989). Case studies are proven to be particularly valuable as they offer comprehensive insights into the “how” and “why” of various phenomena, facilitating a holistic and realistic comprehension of complex situations in which numerous elements and actors interact with one another (De Massis and Kotlar, 2014). Their objective is to thoroughly understand and examine a single subject of analysis rather than aiming at statistical generalization (Eisenhardt and Gaebner, 2007; Stake, 1998). Hence, case studies are particularly relevant to management research since they promote “understanding the dynamics present within single settings” (Eisenhardt, 1989, p. 533) using a variety of lenses, allowing the revelation of for multiple facets of the phenomenon.

Specifically, we adapted Eisenhardt’s (1989) roadmap to build theory from case study research to our work (see Figure 2). In this regard, a single case study of an online community—WIP—was purposefully selected (Eisenhardt, 1989; Patton, 1990). This community was selected for its revelatory potential as it offers a distinctive setting in which to explore the phenomenon under investigation (De Massis and Kotlar, 2014; Eisenhardt and Gaebner, 2007). The case was chosen to extend the emergent theory of S5.0 since it makes the topic under investigation “transparently observable” (Eisenhardt, 1989). In this regard, WIP is a community of professionals in the field of procurement (e.g. country procurement director, senior purchasing manager, head of procurement, buyer, etc.) focused on individual empowerment. Preliminary knowledge of the community revealed that it promotes self-confidence, diversity, inclusion, and people-to-people contacts with a particular focus on women. Hence, the organization aligns perfectly with the core values of the S5.0 paradigm—namely, human psychological well-being, quality education, gender equality, and improving the circumstances of women and girls in society (Cillo *et al.*, 2022). It is thus “very special in the sense of allowing one to gain certain insights that other organizations would not be able to provide” (Siggelkow, 2007, p. 20).



Note(s): The left-right arrow between “Entering the field” and “Data analysis and theory development” signals the iterative nature of the two phases

Source(s): Adapted by Eisenhardt (1989)

Figure 2. Methodology process

3.2 Case study description

WIP is an online community that emerged during the 2020 lockdown and was conceived from the founders' eagerness to transcend the boundaries of their homes and connect with like-minded professionals in the purchasing world—particularly women—to gather and share experiences. Three founders initiated an online exploration to verify whether a digitally-based community focused on women in the purchasing realm, in Italy and Europe, was already in existence. To their surprise, they observed a void in communities dedicated to procurement, particularly within the European context.

WIP was then established, promptly positioning itself as a brand within the purchasing domain, securing trademark rights in Italy and across Europe. The community's inception involved five professionals from diverse companies across different industries. As of now, with a combination of active and inactive participants, the community has flourished to encompass thousands of individuals (with more than 2000 followers on social media). The board comprises 13 people responsible for developing the editorial plan for social media and managing the training and coaching activities.

WIP's overarching objective is to rethink the procurement field in response to contemporary challenges, prominently digitalization (e.g. generative AI) and sustainability (e.g. empowerment, diversity, equity, and inclusion, etc.). As expressed by one of the founders, WIP serves as "*a safe place for colleagues, both females and males as it stands as an inclusive community where participants actively seek to exchange ideas, engage in training, coaching, mentorship, and share best practices.*" (I1)

In practical terms, WIP organizes approximately three events per year, with a primary focus on issues relating to female empowerment. These events may go beyond the conventional by incorporating innovative elements, such as role-playing games centered on negotiation. These interactive sessions involve external observers who actively participate and subsequently provide valuable feedback to the participants.

Complementing these physical events, WIP's core activity takes place via digital channels, where weekly virtual meetings are held using platforms such as Microsoft Teams or Google Meet. These meetings serve as forums for discussion and offer a space in which community members can contribute insights and information on topics of significance or interest. This serves as the foundation for the design of the columns that underpin the activities conducted on social media. Communication is indeed of paramount importance within the WIP community, and this is manifested through active engagement on social media platforms, such as LinkedIn and Instagram. These channels serve as conduits for sharing inspirational content relating to WIP's central themes, such as updates on network initiatives or events featuring WIP ambassadors, and announcements regarding the inclusion of new members. These consistent communication efforts contribute to building a dynamic and connected community.

In addition to group meetings, the WIP network is committed to providing personalized support with one-to-one coaching and mentorship initiatives using video conferencing tools, thus fostering individualized growth and development within the community.

3.3 Data collection and analysis

The empirical data were collected from December 2022 to February 2024 using different methods. Semi-structured face-to-face interviews with well-informed WIP community members served as the primary data source. Semi-structured interviews guarantee uniform coverage of the research themes and the appropriate flexibility in gathering informants' free descriptions as the dialogue between the researchers and the interviewee develops (Bryman, 2012). We conducted 9 interviews in total (see Table 1) before reaching data saturation. Specifically, saturation denotes information redundancy regarding the extent to which predetermined codes are adequately represented in the data in studies that apply pre-identified themes, such as social capital theory (Saunders *et al.*, 2018). Likewise, the inductive thematic saturation suggests the extent to which new theoretical insights are

Table 1. Profiles of key informants

Participant	Job title	Industry	Role in WIP	Number of interviews
I1	Cluster Category Indirect Procurement	Healthcare	Founder and board member	2
I2	Country Procurement Director	Beauty and personal care	Founder and board member	1
I3	Senior Buyer	Food	Founder and board member	2
I4	Procurement Area Manager	IT services	Member	1
I5	Head of Ethical Trade and Environmental Sustainability	Fashion	Board member	1
I6	Senior Buyer Indirect Operation	Healthcare	Member	1

Source(s): Authors' own work

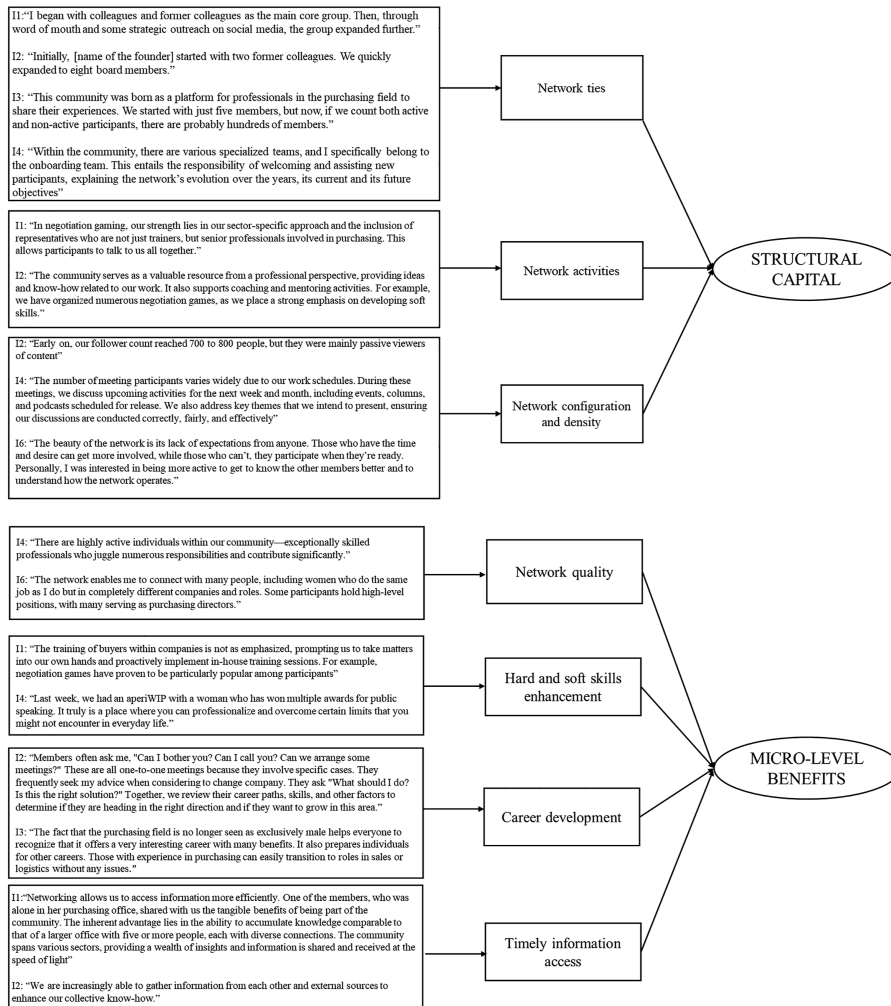
derived from the data via this process. The informants were carefully selected to include both founders and board members involved in the birth and rise of the online community as well as members participating in its activities. Significantly, the involvement of members in the empirical material collection process provided a comprehensive view of the phenomenon under consideration and broadened our perspective. Some actors were interviewed more than once to further scrutinize key aspects that emerged during the fieldwork. The interviews lasted between 45 and 90 min, were conducted in Italian, recorded, and transcribed verbatim.

The interview track is based on open-ended questions within a standardized protocol to ensure both an appropriate balance between guidance and consistency in the interviewing style and an adequate level of freedom in answering. This further allows us to identify recurrent themes among the participants.

First, we asked the participants to provide background information regarding their job roles and their respective companies. Second, we explored how the online community was born by focusing on its main purposes and activities, the members' profiles, and how it changed over time. In line with social capital theory, we also asked specific questions regarding the nature and quality of relational bonds between members, vision and values, the topics addressed, and the language used (cf. Nahapiet and Ghoshal, 1998; Wang *et al.*, 2022). Third, we asked for the benefits that participation in such a network might bestow on individuals, companies, and society at large. The interview-based information was supplemented and triangulated with additional data (Eisenhard, 1989)—namely, social media posts—that were analyzed to verify and increase the evidence. The interview transcripts were manually coded by two researchers (Eisenhard, 1989). They independently conducted their coding iteratively by moving back and forth between the collection of empirical material and data analysis and theory development (see Figure 2). The researchers regularly met to cross-check their analyses at each step of the process.

Thematic analysis using *a priori* codes was used to handle the data. This was then complemented by open coding in an iterative process (Tóth *et al.*, 2022). *A priori* codes were theory-driven, and the open codes emerged from the data. The literature on social capital informed the development of the initial (*a priori*) codes, covering “social trust,” “shared language,” “network ties,” “network configuration,” “sense of belonging,” etc. Other codes were derived based on the themes arising from the data and were then primarily referred to benefits at the micro-, meso-, and macro-levels: “soft skills enhancement,” “hard skills enhancement,” “network quality,” “training opportunities”, etc.

Figure 3 presents examples of *a priori* coding of the structural capital dimension and open coding of micro-level benefits.



Source(s): Authors' own work

Figure 3. A priori coding and open coding

4. Findings

4.1 The role of structural capital in WIP

WIP's members are interconnected via network ties both professionally and personally. Initially founded by five former colleagues and friends (I2), the community expanded through the founders' professional networks, word-of-mouth, and social media. The community's digital nature has significantly accelerated its growth. It continues to expand autonomously today, with many individuals spontaneously expressing their interest in joining. More social network ties provide members with increased opportunities to connect (Wang et al., 2022), promoting prompt and efficient knowledge dissemination among members.

Now, instead of actively seeking profiles we find appealing on LinkedIn or Instagram, individuals are spontaneously reaching out to us thanks to the events we organize. This results in a surge in both followers and contacts expressing interest. Over the past year, we have observed an increase of approximately 30%, signaling a clear need of such a community. (I1)

I found myself browsing on LinkedIn, in search of something undefined, when I stumbled upon a WIP event collaboration with another group associated with a friend of mine. I got interested and I decided to reach out to a representative from WIP, and that marked the beginning of my adventure in the community. (I4)

While the founders possess extensive experience within the community and oversee its general activities, the community does not adhere to a hierarchical structure (Chandler and Vargo, 2011; Tóth *et al.*, 2022). The network comprises participants—predominantly women, though it also welcomes male members—who all identify themselves as community ambassadors. To ensure the efficient execution of network activities, internal teams have been established.

As an ambassador, I am a fully integrated member of the community. Within the community, there are various specialized teams, and I specifically belong to the onboarding team. This entails the responsibility of welcoming and assisting new participants, explaining the network's evolution over the years, its current and its future objectives. (I4)

Activities within the community are orchestrated based on two fundamental pillars: communication via social media, which targets a broad network of followers, and discussion, training, coaching, and mentorship activities, which are tailored to a more intimate network of participants (I2). Hence, a notable difference in density emerges with respect to network configuration. Indeed, people may decide to follow the community's social media profiles in pursuit of inspirational content on various topics, such as columns on negotiation (e.g. sympathy vs empathy in negotiation, framing in negotiation, etc.), book reviews, the history of WIP ambassadors, etc. (I1). Followers find value in consuming the curated material, benefiting from the insights and inspiration provided without directly contributing to the content creation aspect. Thus, in social media communication activities, the WIP community is distinguished by a scarcity of redundant contacts. This distinctive feature allows participants to access a diverse range of knowledge at a reduced cost, facilitated by the immediacy of digital channels (Nahapiet and Ghoshal, 1998).

In smaller cohort events, such as physical workshops and online meetings held via Microsoft Teams or Google Meet, discussion, training, coaching, and mentorship activities take place. Weekly online meetings with varying participant numbers inspire fruitful discussions. Additionally, the community facilitates one-on-one matches for personalized interactions, training, and coaching (I2, I4, I6). These contexts increase network density, enhancing knowledge sharing on topics with ambiguous boundaries, such as sustainability, equity, diversity and inclusion, and digitalization's impact on procurement.

Our social media activity involves internal curation of columns, such as one dedicated to negotiation, without delving too deeply into technical aspects. We prioritize content that serves as inspiration. Consequently, our social media followers are aware that our profiles and community serve as gateways to specific information and professionals. (I1)

Within these voluntary networks, individuals often find it convenient to join with a more passive role, observing and perhaps commenting. However, a smaller subset of us actively meets every week to make decisions on the topics to be included in the social editorial plan. During these meetings, we brainstorm ideas, we select books to review, and discuss various aspects, ensuring a more engaged and participative approach. (I2)

The high network density of workshops, weekly online meetings, and one-on-one sessions leverages the diverse profiles within the community. Participants vary with respect to age, professional background, and experience, thus constituting a broad knowledge spectrum. This diversity is a valuable asset, as intensified interactions facilitate a dynamic exchange of perspectives, insights, and expertise (Nahapiet and Ghoshal, 1998). Hence, the participants' interactions foster "*moments of pre-competitive, cross-category, and cross-market comparisons*" (I3). For instance, negotiation games unite professionals from various industries, creating a unique environment in which diverse areas of expertise converge. The inclusion of senior buyers and managers adds valuable experience and perspectives (I1, I6).

The visibility of this mixed group enhances the appeal and impact of the negotiation games, fostering a rich exchange of ideas and insights that transcends individual sectors.

Several individuals within WIP operate in multinational contexts. As a result, I acknowledge that my discussions on certain topics may seem routine to me, yet for those employed in smaller companies, these concepts can be novel, leading them to pose numerous questions. (I2)

4.2 *The role of relational capital in WIP*

Relational capital plays a crucial role in the WIP online community, forming the basis for initial collaboration and enhancing knowledge sharing through trust, identification, and reciprocity (Wang *et al.*, 2022). These elements are embedded in the WIP community's DNA, shaping its members' relationships and broader societal impact. The community originated from the founders' personal interactions rooted in friendship and respect (Nahapiet and Ghoshal, 1998). This relational embeddedness spread throughout the community, generating a strong sense of trust among members. The strong culture of honesty and integrity within the community prevents opportunistic behaviors (Nahapiet and Ghoshal, 1998).

The girls on the board are like my best friends. I trust them. We are all positive people. We worked hard to create this environment and sometimes in the past it happened to force people, who do not share the same mentality, to leave the community. (I3)

The community is based on full transparency. Clearly, we are all professionals who work in totally different sectors, and we all know how much we can share about our job. Members who approach the community know what we are here for, that is not to share sensitive data about potential suppliers or competitive strategies. (I1)

The sense of trust, defined as an individually held belief that other participants will engage consistently in behaviors that follow the same norms and principles as those of the community (Chiu *et al.*, 2006; Ridings *et al.*, 2002), allows members to freely discuss past experiences and seek information beyond their technical roles. Founders describe this as a "safe environment" in which women share their insights regarding trustworthy suppliers or learn how others handled new job offers. This trust is evidenced by the influx of new members seeking guidance from experienced members who offer cooperation and assistance when needed (Meek *et al.*, 2019). This mutual trust increases with personal interactions within the network.

In WIP, I often assist new girls in their career development sessions, a specific aspect involving coaching. It entails discussing their career paths and contemplating potential solutions for their future. Growth may not always be vertical but can also encompass horizontal aspects and more. It's all about helping them develop their soft skills rather than their technical knowledge. (I2)

Therefore, trust lies at the heart of the entire knowledge exchange mechanism. Otherwise, the companies in which the members are employed would not have permitted these individual interactions (I2, I3, and I6).

If anyone ever starts talking about prices, I will have to remove myself from the network! (I3)

Knowledge sharing and contribution appear to be also facilitated by a strong sense of belonging and reciprocity, which is deeply intertwined with mutual trust (Chandler and Vargo, 2011). Regarding identification and sense of belonging, all members, particularly the board, are deeply invested in and committed to the community. They devote at least one hour per day of their spare time to community activities, such as event preparation and coordination, editorial planning, and coaching. Additionally, as I2, I3, and I4 reported in the interviews, they proudly present themselves as part of WIP when they attend meetings that lie beyond their formal work responsibilities.

At the beginning during my teaching activity, I was always linked to my company which gave me a sort of recognition. But fortunately, today when I go to these meetings people are more and more interested in my activity and experience as a WIP member than the other way around. (I3)

This important outcome was achieved through the development of a strong sense of belonging to the WIP community, presented as a sort of family that protects and nurtures the women who are a part of it.

What I want is to be able to protect these women under the WIP brand. What does it mean? It means that as part of WIP these women are allowed to express their thoughts and issues about their jobs. Additionally, by identifying themselves as a community member they can freely pursue their personal aspirations or acquire new knowledge about a certain topic such as AI in procurement. (I1)

Additionally, for WIP members, it feels fair to mutually share content and help others within the community (I4). However, willingness to actively contribute to the community seems higher among the board members while other women are sometimes reluctant to contribute more due to personal characteristics (e.g. fear of being judged or shyness) or time availability.

Sometimes when women see that there is a lot to do, to expose themselves, they are a little afraid. I work in a company in which we are all women, and it is a very good place to work for. I asked everyone if they wanted to be part of the community and the truth is that I'm still alone. Many attended meetings, or joined negotiation activities, but nobody decides to actively contribute to the community. I think it's a cultural factor. Women fear to be exposed sometimes. (I3)

I2 also stressed this cultural factor, *"It's funny to see that women only apply for a job position when they fulfill all the requirements. On the contrary, male candidates usually take the plunge and try even if their background does not perfectly match with the job post. Women let fear stop them from taking that plunge."* This is one of the reasons that initially convinced the founders to create the community.

4.3 The role of cognitive capital on WIP

WIP members all believe in the same causes and value cooperation as part of their personal beliefs (I2), which serves as a bonding mechanism, indicating a strong presence of cognitive capital. The WIP members are profoundly convinced of the power inherent in sharing experiences, knowledge, and connections since learning from one another can help with overcoming the cultural issues and prejudices inherent in the procurement career (Chiu *et al.*, 2006; Tsai and Ghoshal, 1998). In the case of the WIP, social media platforms (particularly LinkedIn) have played a pivotal role, which allowed the founders to find people who share the same vision. Eventually, people who do not align with these values naturally leave the community.

These findings reveal that, despite lacking a specific social media policy (I1), members have developed a common language and codes that foster a shared understanding. This shared understanding is also enhanced through the use of narratives, in the form of stories, something that previous studies (Nahapiet and Ghoshal, 1998) have shown to increase knowledge sharing.

I will always remember one of the girls who shared her story with us. She told us that one of the things that makes her more distinguishable in her office is the fact that when she walks you can hear her heels. Why? Because she was probably the only woman in the office. This is something that perfectly explains our situation in certain environments. It affected me deeply. (I3)

For young women entering the world of procurement, especially within corporate environments that may exhibit rigid structures, engaging with those who have already walked through similar paths can be helpful to develop perspectives and approaches within the company, fostering a culture that embraces diversity, inclusion, and forward-thinking ideals. (I4)

However, in the future, as the community continues to grow, they are willing to improve this part by developing a code of conduct that enhances their efficiency of communication.

4.4 Benefits of participating in online communities

The findings reveal how participation in WIP has offered various benefits at three interconnected system levels: micro, meso, and macro (cf. [Chandler and Vargo, 2011](#)). The micro-level comprises the individual actors—namely, the members of the online community.

First, the knowledge exchange rooted in network ties (I2, I3) provides participants with timely access to valuable information compared to those outside the community ([Chandler and Vargo, 2011](#); [Nahapiet and Ghoshal, 1998](#)).

Networking allows us to access information more efficiently. One of the members, who was alone in her purchasing office, shared with us the tangible benefits of being part of the community. The inherent advantage lies in the ability to accumulate knowledge comparable to that of a larger office with five or more people, each with diverse connections. The community spans various sectors, providing a wealth of insights and information is shared and received at the speed of light. (I1)

Study findings show that individuals may derive benefits from the integration of digital technologies in terms of skills enhancement ([Nikum, 2022](#); [Troisi et al., 2023](#)).

As stated by I3, “*the skills acquired by individuals within the network are also crucial on a professional level.*” The community’s knowledge exchange covers technical subjects such as negotiation activities, scouting, tenders, and purchasing trends (I1, I4). For instance, discussions may include the potential applications of generative AI. This collective focus contributes significantly to the enhancement of purchasing expertise.

Talking about generative AI, I can explain that ChatGPT4 incorporates templates for efficient negotiation. This means that the entire routine aspect of negotiation can seamlessly be entrusted to an algorithm. In explaining these tools, I strive to present the information in a clear and straightforward way. (I2)

This is highly relevant, since participants emphasize how the acquisition of specific knowledge “*can be more challenging within your own company. If I am the only one managing a particular activity and my colleagues are focused on different areas, they may not be able to provide advice on the commodities I oversee.*” (I6).

Significantly, the shared knowledge extends beyond the practical and technical insights derived from hands-on experience in the field of purchasing to encompass the most valuable knowledge relating to the development of soft skills (e.g. interpersonal abilities, leadership, resilience, leadership, self-confidence, public speaking, etc.) (I2, I4, I6) abstracted from the experiential base ([Nahapiet and Ghoshal, 1998](#); [Le and Lei, 2019](#)). This contributes significantly to the holistic development of individuals within the community, especially since companies often overlook essential training for the buyer’s professional role.

We recognized that irrespective of one’s gender, the deficiency within the purchasing office was more closely tied to a matter of soft skills. Locating a negotiation course is straightforward, and finding a course that delves into market intricacies is also easy. However, finding guidance on managing both internal and external stakeholders proves to be a more challenging task. Consequently, our emphasis shifted toward further developing this particular aspect above all. (I3)

The training of buyers within companies is not as emphasized, prompting us to take matters into our own hands and proactively implement in-house training sessions. For example, negotiation games have proven to be particularly popular among participants. (I1)

I am actively improving my soft skills, pushing my boundaries. This mentorship enhances my personal aptitudes to overcome challenges that could range from public speaking to refining my approach to leadership. [...] We have podcasts and conduct training sessions within our community. For instance, we collaborated with an award-winning public speaker to enhance our skills. This community is a space for professional development, enabling individuals to overcome challenges that may be daunting to face alone in their everyday lives. (I4)

Another key benefit of participating in the online community is the development of members’ careers (I3). The network ties formed, trust and reciprocity established, and the ensuing

knowledge exchange significantly influence the potential creation of valuable referrals—namely, processes that provide information on available opportunities to actors in the network (Nahapiet and Ghoshal, 1998). They constitute a flow of information about possibilities and can include a reputational endorsement for the actors involved. Moreover, during one-to-one meetings, participants can seek advice when contemplating a job change, inquire about opinions concerning suitable choices aligned with their skills, and receive guidance on the behaviors conducive to ensuring substantial professional growth (I2). Interestingly, board members who actively engage as coaches and mentors derive personal gratification as a significant benefit. This personalized support system within the community enhances the overall experience and fosters individual growth as well as job performance (Luqman *et al.*, 2023).

We're gradually gaining visibility externally as a network. Headhunters are reaching out to us for information on names, profiles, referrals, and reports. (I1)

Engaging in the network as a mentor has brought me considerable personal gratification. The opportunity to conduct career growth sessions and collaboratively explore solutions for their future has been immensely rewarding. (I2)

Another valuable outcome is the establishment of a high-quality network for participants and the enhancement of their professional brand. The community comprises professionals from diverse industries, countries, and age groups, encompassing individuals who occupy different professional roles within their respective companies, including managerial positions. Being part of this community enables participants to engage in informal discussions and establish direct relationships (small and one-to-one meetings), with professionals who hold higher roles.

Originating from diverse organizations and professional backgrounds, the network provides the opportunity to connect and collaborate with individuals, some of whom may hold very high-ranking positions. However, the community is an environment where despite varied professional ranks, all members are considered equals. (I1)

The emphasis on the development of soft skills has significantly enhanced our resonance within the broader Italian and European purchasing realm. Membership in WIP not only brings personal recognition within the European purchasing sector but also extends to one's standing within the company. (I3)

The meso-level consists of the companies in which community members work. Previous studies have shown that designing more human-centric products and services aimed at solving social problems can benefit organizations (Bartoloni *et al.*, 2022). The case study demonstrates that the integration of digital technology into companies is facilitated by knowledge-sharing mechanisms within professional online communities (Sheng and Hartono, 2015). Specifically, the development of social capital and the subsequent knowledge exchange enhance professionalism within the company itself as the network contributes to a constant influx of fresh ideas into the company. The enhancement of professionalism primarily results from the enhancement of individual skills (i.e. micro-level).

This process not only fuels my enthusiasm but also translates into tangible benefits for my company. Just last week, boosted by this energy, we started a global transformation project. I passionately discussed this initiative with my boss, and my steady belief in its potential ultimately resulted in its approval. The project officially came to life in January, stemming from collaborative discussions within the network. (I4)

The organizations to which participants belong actively encourage their involvement in the network, viewing it as a personal investment in their training. This approach alleviates the pressure on companies to provide internal training paths, especially in purchasing, which is often challenging (I1, I3). Enhancing and expediting the knowledge of individuals handling multiple purchasing responsibilities can yield significant benefits, even for smaller companies (I1).

It is also remarkable that I3 emphasized how the existence of such a community “*can bridge the gap for women in the purchasing domain, which has traditionally been male-dominated*”. This presents a potential advantage for organizations in terms of diversifying the pool of individuals who are qualified for certain roles.

Furthermore, the case study highlights that individuals’ participation in WIP reflects favorably on their affiliated organizations’ brand reputation. Indeed, many topics addressed within the community, such as environmental sustainability, equity, diversity, and inclusion, are crucial in today’s business landscape.

Additionally, due to the network’s nature and the quality of relationships established, participants are frequently invited to attend various purchasing-related events (I3). Their companies positively acknowledge this involvement, recognizing its potential to significantly enhance the company’s brand reputation in the industry.

My company is a little different because, unlike most Italian companies, has a higher percentage of women than men. I often run initiatives on female leadership, but the company strongly suggests extending these activities to engineering universities where there is a greater male presence. In general, however, participation in the community is seen very positively. (I2)

I have recently returned from a work assignment in the United States. Before my departure, the company requested that I write a letter emphasizing my engagement in the community. The purchasing director is well-informed and expresses satisfaction with my active involvement in these activities. [. . .] Being a part of the network was considered a significant differentiating factor. (I3)

The company benefits directly, as seen in the case of the global transformation project that I proposed following discussions with other professionals in the network. So, the benefits is even just at an image level. [. . .] I found a lot of enthusiasm from everyone, both from my director, but also from the communication and marketing director. (I4)

Moreover, active participation in the community expands the company’s network. Weekly online meetings and physical gatherings provide opportunities to connect with new individuals and exchange valuable knowledge. This influences scouting activities, which are a pivotal aspect of purchasing (I1, I4, I6), and facilitates connections between companies from diverse sectors. The informal network encourages collaboration and benchmarking between companies, thus fostering a cooperative atmosphere, even with competitors, and promoting industry-wide collaboration.

All the contacts I establish within the community prove to be immensely beneficial to the company. This is a significant reason why my company, unless there is a violation of non-competition agreements or professional ethics, is supportive and would never discourage my participation. (I3)

I believe that the company also gains from my expanded network. The continuous exchange fosters growth, as I consistently bring valuable insights and advancements back to the organization. I return with enhanced skills, fresh perspectives, new contacts. (I4)

The macro-level pertains to society at large and encompasses the overarching benefits for various stakeholders, including citizens, governments, other organizations, and the environment. Study findings show that the combination of digital technology and human ability can effectively contribute to the growth of the entire society (Troisi *et al.*, 2023).

The establishment of network ties, social trust, reciprocity, shared values, and narratives allows participants to exchange valuable knowledge which translates in both intellectual (i.e. the knowledge and expectations a woman holds) and experiential empowerment (i.e. the capacity to control one’s behavior) (Lincoln *et al.*, 2002).

Indeed, participants can achieve heightened self-awareness through mentorship and training activities. Simultaneously, trainers enhance the understanding of their influence on the participants.

I am often approached for guidance, and together, we explore their professional journey, assessing the skills they have acquired and identifying areas for further development. This aims to discern the

optimal direction for their growth in the current domain or explore alternative avenues that align with their aspirations. (I2)

[Name of a founder] embarked on a journey to become a mentor while she was already in the community and I believe that our involvement in WIP has also increased our awareness of these mentoring skills, especially considering our multi-year experience as buyers. (I3)

Participation in the community also serves to overcome cultural barriers. Women, who are frequently hesitant and fearful of exposing themselves (I2, I3, I4), can find support within the community. Collaborating within this network enables them to form alliances and exchange and share knowledge and experiences, fostering a heightened awareness and empowerment.

We often struggle to effectively showcase our accomplishments. I've noticed this is a tendency. I'm not sure if it's inherent or more associated with certain gender norms. Acknowledging our own successes requires a certain level of self-assurance and accountability. Yet, when presenting ourselves within a group context, like in the social media post I was involved in, we're not just representing ourselves but also a network, a collective mindset, a shared approach. In such situations, expressing ourselves becomes easier and more natural. (I4)

I have never given a speech before, so the opportunity to do so, perhaps with the support of others who have experience in this area, seems quite appealing to me. It provides a chance to engage without the fear of making a poor impression. Having someone who has done it many times available to step in if needed can be a great reassurance, like having a lifeline to rely on. (I6)

Empowerment also extends to the experiential sphere in which enhanced self-awareness significantly impacts career decisions. This fosters greater independence from their affiliated companies and a heightened focus on individual professional development. As stated by I3: “[*Our involvement in the community*] frequently leads our companies to recognize a broader identity beyond being employees confined to our respective companies. This serves as a catalyst for personal and professional growth. We are not bound to one company for life. This scenario captures the attention and interest of the companies we represent.” Moreover, WIP plays a crucial role in breaking down gender stereotypes within the historically male-dominated field of purchasing (I4, I6), actively assisting women in recognizing this career as rewarding, interesting, and attainable.

The world of procurement is not the primary choice for women. At university, you never perceive purchasing as an interesting field. Many aspire to pursue marketing or sales. As a matter of fact, I personally viewed procurement as something nebulous, blurred. I changed my perspective later. We want to prevent people and girls from having misconceptions about this matter. (I3)

Furthermore, the online community is evolving into a “business venture,” offering services such as training and personnel recruitment to other businesses. This transition is supported by the community’s official registration as a brand, complying with regulations in Italy and across Europe. The social capital characterizing the online community encourages cooperative behavior, thereby facilitating the development of new forms of association and innovative organization (Del Giudice *et al.*, 2023; Nahapiet and Ghoshal, 1998). Hence, WIP represents an example of female entrepreneurship that benefits society more broadly and aligns with Sustainable Development Goal 5 of the United Nations’ agenda. This goal emphasizes the need to ensure women’s full and effective participation and equal opportunities for leadership in economic and public life.

It didn’t start like this, but over the past year, we have been reached out by various profiles, including coaches or mentors, expressing their interest in collaboration. They propose contributions, offering services or enhancements to the network. (I1)

Finally, the online community allows its members to concretely address important societal issues, both professionally and personally. In this regard, I4 states as follows: “*Discussions on diversity, inclusion, and sustainability in the community have sparked a commitment to*

integrating these values into both my professional and personal spheres. These concepts should not remain trendy buzzwords; I want to translate them into tangible actions to positively impact the numerous situation I encounter.” Thus, the community allows for the discussion of pressing topics such as environmental sustainability, equity, diversity and inclusion, and digital transformation, transcending organizational idiosyncrasies. For instance, I5 handles a column on sustainable procurement focusing on the essentials of what is relevant to procurement in the ESG domain. The exchange of diverse perspectives and multiple viewpoints serves to effectively manage these challenges. Participants do more than just introduce novel ideas into the company. The community enables them to actively foster the creation of more sustainable businesses. Through the sharing of perspectives and best practices, individuals gain insights that inform strategic decisions and operational practices aimed at enhancing sustainability, ultimately benefiting society at large.

The community enables me to go beyond the boundaries set by the company. Discussing these matters within the company confines us to adhere to company decisions. However, within the community, we can engage in discussions in a broader and more general way. (I3)

In the years ahead, my aim is to establish a sustainable supplier value chain that aligns with both my personal objectives and what should be the collective goals of all individuals and organizations: to cultivate more sustainable businesses in every aspect. (I4)

It can also serve as a platform to discuss common issues and understand how other individuals or companies address them. (I6)

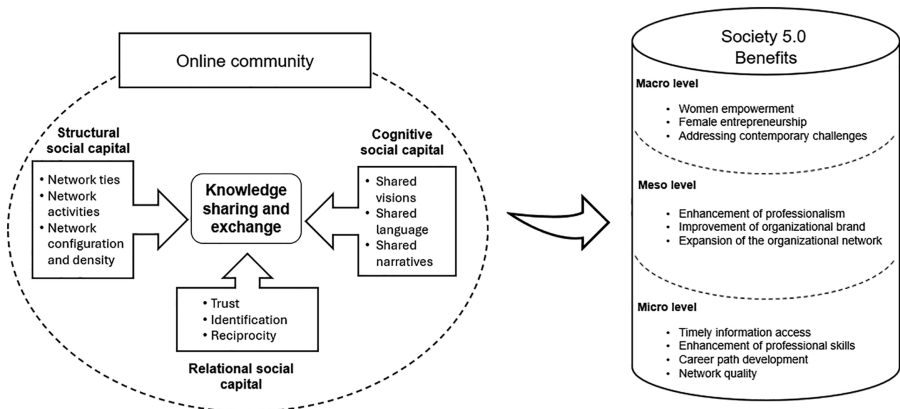
I2 emphasizes that while it is crucial to acquire technical proficiency in tools such as ChatGPT, the progression and widespread influence of such disruptive technologies shift the emphasis toward individuals and their soft skills to effectively address the demands of modern contexts. Hence, facing modern challenges and generating benefits for the entire society are crucial to overcoming a technocentric view to embrace a more human-centric approach (Fukuyama, 2018; Huang *et al.*, 2022).

There are indeed numerous professionals with a high level of technical expertise. However, I hope to see a shift toward a different mindset among the new recruits joining the business realm, one that aligns more closely with the values of contemporary society. (I4)

5. Theoretical implications

While the S5.0 vision has been gaining momentum, the existing research remains largely conceptual and focused on its definitional boundaries (Bartoloni *et al.*, 2022). Against this backdrop, this study contributes to the existing literature on S5.0 by empirically explaining how online communities, which merge cyberspace and physical space, can help to shape a human-centric society. Digital technology’s value lies not only in its potential to drive technological innovation but also in its ability to address social problems and achieve social and sustainable innovation when coupled with human capability (Fukuyama, 2018; Konno and Schillaci, 2021; Troisi *et al.*, 2023). This combination enhances human well-being and fosters societal growth. Specifically, we demonstrate that this occurs by virtue of social capital development among community members thanks to knowledge acquisition and sharing mechanisms (Cao *et al.*, 2022; Chandler and Vargo, 2011) (see Figure 4).

The present study also advances a multilevel understanding of S5.0 by demonstrating how its general principles can manifest at three interconnected system levels—namely, micro (i.e. individuals), meso (i.e. companies), and macro (i.e. society) (cf. Chandler and Vargo, 2011) (see Figure 4). The case study provides the necessary empirical evidence to support the researchers’ suggestion that, to fully realize the shift toward S5.0, different stakeholders should benefit from technological development (Aquilani *et al.*, 2020; Bartoloni *et al.*, 2022).



Note(s): Dotted lines surrounding the online community indicate the blurred boundaries between cyberspace and the real world; dotted lines separating micro, meso, and macro levels serve to illustrate the interconnection among the three system levels of S5.0, highlighting that benefits at lower levels may influence and impact benefits at higher levels

Source(s): Authors' own work

Figure 4. Online communities, social capital, and S5.0

The study has identified four benefits for individuals participating in the community: timely information access, the enhancement of professional skills, career path development, and network quality. Moreover, the development of social capital and knowledge exchange contributes to enhancing professionalism within the company itself, to the development of the organizational brand reputation, and to the improvement of networks among companies. Finally, the study shows a threefold array of benefits at the macro-level, namely women empowerment, the promotion of female entrepreneurship, and addressing contemporary challenges. In doing so, we also contribute to the literature on knowledge management, demonstrating how knowledge creation and sharing drive benefits not only for employees and companies (Della Peruta *et al.*, 2014; Fait *et al.*, 2023a, b; Le and Lei, 2019) but also for society at large. We highlight how interactions and relationships within online communities can generate knowledge exchange mechanisms that can create multiple benefits spanning beyond the individual and organizational levels to encompass the society at large (Bartoloni *et al.*, 2022; Caputo *et al.*, 2023). Specifically, being WIP an online community of female professionals we also contribute to the literature on the important role digital technologies has in empowering women and fostering female entrepreneurship (Ughetto *et al.*, 2020). Our findings corroborate past studies which identifies these two elements as the basis to create inclusive and sustainable society.

Additionally, the article contributes to the literature on social capital and knowledge management by demonstrating the usefulness of this theoretical lens in a novel context—namely, S5.0—thus highlighting the inherent value that arises from social capital interactions. In doing so, we extend the applicability of this theoretical concept beyond online business behaviors (Ellison *et al.*, 2007; Filipovic and Arslanagic-Kalajdzic, 2023).

By demonstrating how the three dimensions of social capital unfold within online communities and generate knowledge-sharing and exchange mechanisms, we respond to a previous call for research that simultaneously analyzes the three dimensions of social capital (Villena *et al.*, 2011). Specifically, regarding the structural capital dimension, WIP network ties (both professional and personal), activities (communication, dissemination, training, and coaching), configurations, and density are important elements that define how information is

exchanged, thus encouraging cooperation, social interactions, and unity (Zhou, 2022). Additionally, relational capital fosters the creation of value and the exchange of resources and information (Nahapiet and Ghoshal, 1998) through trust, identification, and reciprocity (Wang et al., 2022). These knowledge mechanisms are also facilitated by the presence of shared visions, languages, and narratives referring to the cognitive capital dimension (Meek et al., 2019).

6. Conclusion

6.1 Managerial implications

The study also offers useful managerial insights. First, our findings reveal how initial personal and professional relationships may be systematically expanded through social media and eWOM, resulting in self-sustaining development in community membership (Kaplan and Haenlein, 2010). Organizations are urged to use structural and relational capital to promote community growth and engagement. Managers may significantly increase their community's reach and influence by strategically using existing networks, thereby increasing the likelihood of information sharing and collaborative engagement. This strategic expansion not only increases community awareness but additionally upgrades the organization's public image and employer branding through focused social media marketing and success stories (Hoffman and Fodor, 2010). Good corporate citizenship improves a company's reputation in the market and in society, yielding higher profits, a wider customer base, and increased market share.

Second, research demonstrates the value of not only in-out information flows but also expertise sharing within the system, as the formation of specialized internal teams within communities can significantly improve new member onboarding and integration, as evidenced by the WIP community. Similarly, digital media have been helpful in expanding the WIP community's outreach and engagement initiatives. Consequently, organizations should prioritize the implementation of digital tools that facilitate both broad and focused communication strategies. Nonetheless, the effectiveness of digital tool utilization is substantially affected by members' development of soft skills in areas such as leadership or negotiation (Avolio et al., 2009), and business actors should recognize that improving their employees' professional profiles translates to overall organizational success. Consequently, employers should prioritize soft skills education alongside technical training in their development programs to provide employees with the competencies they need to advance their careers and be more productive overall. In this regard, it would be advantageous for businesses to recognize the complexities of certain components of social capital inherent in their employees' community participation. This increased comprehension will allow them to offer appropriate support to employees who participate in online forums.

Third, the WIP community's success underscores the value of a non-hierarchical organizational structure that fosters inclusivity and participation. Businesses may benefit from implementing comparable frameworks to increase participation and empower members, resulting in more dynamic knowledge exchange and a loyal membership base. Similarly, trust and reciprocity are crucial for enhancing collaborative and knowledge-sharing behaviors among members. In accordance with this, it is possible to conclude that businesses would profit from focusing on the cultivation of settings that foster trust and mutual respect, both of which are necessary for the successful sharing of sensitive or valuable information.

Fourth, personal development is a key aspect in corporate success, as participation in community networks may considerably improve individuals' careers by providing networking opportunities, mentorship, and exposure to new ideas and abilities. Individuals appreciate the value of joining professional online networks to boost their profile by improving personal and professional skills, engaging in relevant activities, and charting career growth paths. In the same vein, managers should encourage participation in professional communities as a means of career advancement as well as acknowledging and supporting individual accomplishments obtained via such interactions.

Finally, these implications indicate that both individuals and businesses can derive significant gains from building dynamic online communities that prioritize information exchange, diversity, and holistic professional development. These techniques can help firms improve their operational performance, employee happiness, and overall market competitiveness (Cohen and Levinthal, 1990). Furthermore, society more broadly can benefit from digital technology integration in human-centric online communities by shifting away from a technocentric perspective toward the construction of a sustainable society that values the well-being of its workers, who are, more significantly, its citizens.

6.2 Limitations and future research directions

The study design is subject to limitations, several of which offer interesting avenues for future research. First, the study is exploratory in nature, relying on a single case study—the WIP online community.

Hence, the chosen methodology may limit the study findings' generalizability to other contexts (Eisenhardt, 1989). Although generalizability was not the study's aim, future research can investigate the role of social capital development and knowledge exchange in other professional online communities. This would help to confirm the identified benefits at S5.0's three systems levels (i.e. micro, meso, and macro).

Additionally, future research may quantitatively study the proposed conceptual model to further validate and elaborate on its effectiveness. By applying quantitative research methods, researchers could measure the extent to which each social capital dimension contributes to resource and knowledge exchange within various online communities. Indeed, quantitative analysis could provide empirical evidence on the broader societal benefits resulting from these interactions, offering a more robust validation of the model. This approach would facilitate a deeper understanding of the mechanisms at play and increase the potential for the model's application across different industries and contexts.

Moreover, we acknowledge that the study's context—a community made up of women—means that the findings are predominantly related to women. As such, we identified no specific outcomes relating to other groups within S5.0 (e.g. men, elders, children, etc.). Future research may explore whether the development of social capital in online communities contributes to broader benefits for other actors.

A multiple case study approach would be also helpful for enhancing external validity (cf. De Massis and Kotlar, 2014; Eisenhardt, 1989). A cross-case analysis would allow comparison of different communities, which might yield different findings and help build a sharper view of the phenomenon.

Finally, the study relies on interviewees with some key informants inside the community as a primary source in the data collection process. Although we followed a strict methodological protocol to guarantee the informants' reliability, this limited the analysis to the internal perspective on the phenomenon under investigation. Future studies may gather additional insights from a wider range of stakeholders, such as other members, companies' managers, service suppliers (e.g. coaches, mentors, etc.), and other relevant actors to better triangulate the results.

References

- Adler, P.S. and Kwon, S.W. (2002), "Social capital: prospects for a new concept", *Academy of Management Review*, Vol. 27 No. 1, pp. 17-40, doi: [10.5465/amr.2002.5922314](https://doi.org/10.5465/amr.2002.5922314).
- Aquilani, B., Piccarozzi, M., Abbate, T. and Codini, A. (2020), "The role of open innovation and value co-creation in the challenging transition from industry 4.0 to society 5.0: toward a theoretical framework", *Sustainability*, Vol. 12 No. 21, p. 8943, doi: [10.3390/su12218943](https://doi.org/10.3390/su12218943).
- Aparicio, S., Audretsch, D., Noguera, M. and Urbano, D. (2022), "Can female entrepreneurs boost social mobility in developing countries? An institutional analysis", *Technological Forecasting and Social Change*, Vol. 175, 121401, doi: [10.1016/j.techfore.2021.121401](https://doi.org/10.1016/j.techfore.2021.121401).

- Avolio, B.J., Walumbwa, F.O. and Weber, T.J. (2009), "Leadership: current theories, research, and future directions", *Annual Review of Psychology*, Vol. 60 No. 1, pp. 421-449, doi: [10.1146/annurev.psych.60.110707.163621](https://doi.org/10.1146/annurev.psych.60.110707.163621).
- Bartoloni, S., Calo, E., Marinelli, L., Pascucci, F., Dezi, L., Carayannis, E., Revel, G.M. and Gregori, G.L. (2022), "Towards designing society 5.0 solutions: the new Quintuple Helix-Design Thinking approach to technology", *Technovation*, Vol. 113, 102413, doi: [10.1016/j.technovation.2021.102413](https://doi.org/10.1016/j.technovation.2021.102413).
- Bourdieu, P. (1986), "The forms of capital", in Richardson, J. (Ed.), *Handbook of Theory and Research for the Sociology of Education*, Greenwood, New York, pp. 241-258.
- Bryman, A. (2012), *Social Research Methods*, Oxford University Press, Oxford.
- Cao, Y., Lin, J. and Zhou, Z. (2022), "Promoting customer value co-creation through social capital in online brand communities: the mediating role of member inspiration", *Computers in Human Behavior*, Vol. 137, 107440, doi: [10.1016/j.chb.2022.107440](https://doi.org/10.1016/j.chb.2022.107440).
- Cappiello, G., Giordani, F. and Visentin, M. (2020), "Social capital and its effect on networked firm innovation and competitiveness", *Industrial Marketing Management*, Vol. 89, pp. 422-430, doi: [10.1016/j.indmarman.2020.03.007](https://doi.org/10.1016/j.indmarman.2020.03.007).
- Caputo, F., Magliocca, P., Canestrino, R. and Rescigno, E. (2023), "Rethinking the role of technology for citizens' engagement and sustainable development in smart cities", *Sustainability*, Vol. 15 No. 13, 10400, doi: [10.3390/su151310400](https://doi.org/10.3390/su151310400).
- Carayannis, E.G., Dezi, L., Gregori, G. and Calo, E. (2021), "Smart environments and techno-centric and human-centric innovations for Industry and Society 5.0: a quintuple helix innovation system view towards smart, sustainable, and inclusive solutions", *Journal of the Knowledge Economy*, Vol. 13 No. 2, pp. 1-30, doi: [10.1007/s13132-021-00763-4](https://doi.org/10.1007/s13132-021-00763-4).
- Carayannis, E.G. and Morawska-Jancelewicz, J. (2022), "The futures of Europe: society 5.0 and Industry 5.0 as driving forces of future universities", *Journal of the Knowledge Economy*, Vol. 13 No. 4, pp. 3445-3471, doi: [10.1007/s13132-021-00854-2](https://doi.org/10.1007/s13132-021-00854-2).
- Chandler, J.D. and Vargo, S.L. (2011), "Contextualization and value-in-context: how context frames exchange", *Marketing Theory*, Vol. 11 No. 1, pp. 35-49, doi: [10.1177/1470593110393713](https://doi.org/10.1177/1470593110393713).
- Chiu, C.M., Hsu, M.H. and Wang, E.T. (2006), "Understanding knowledge sharing in virtual communities: an integration of social capital and social cognitive theories", *Decision Support Systems*, Vol. 42 No. 3, pp. 1872-1888, doi: [10.1016/j.dss.2006.04.001](https://doi.org/10.1016/j.dss.2006.04.001).
- Cillo, V., Gregori, G.L., Daniele, L.M., Caputo, F. and Bitbol-Saba, N. (2022), "Rethinking companies' culture through knowledge management lens during Industry 5.0 transition", *Journal of Knowledge Management*, Vol. 26 No. 10, pp. 2485-2498, doi: [10.1108/jkm-09-2021-0718](https://doi.org/10.1108/jkm-09-2021-0718).
- Cohen, W.M. and Levinthal, D.A. (1990), "Absorptive capacity: a new perspective on learning and innovation", *Administrative Science Quarterly*, Vol. 35 No. 1, pp. 128-152, doi: [10.2307/2393553](https://doi.org/10.2307/2393553).
- Coleman, J.S. (1988), "Social capital in the creation of human capital", *American Journal of Sociology*, Vol. 94, pp. S95-S120, doi: [10.1086/228943](https://doi.org/10.1086/228943).
- De Massis, A. and Kotlar, J. (2014), "The case study method in family business research: guidelines for qualitative scholarship", *Journal of Family Business Strategy*, Vol. 5 No. 1, pp. 15-29, doi: [10.1016/j.jfbs.2014.01.007](https://doi.org/10.1016/j.jfbs.2014.01.007).
- Del Giudice, M., Scuotto, V., Orlando, B. and Mustilli, M. (2023), "Toward the human-centered approach. A revised model of individual acceptance of AI", *Human Resource Management Review*, Vol. 33 No. 1, 100856, doi: [10.1016/j.hrmr.2021.100856](https://doi.org/10.1016/j.hrmr.2021.100856).
- Della Peruta, R.M., Campanella, F. and Del Giudice, M. (2014), "Knowledge sharing and exchange of information within bank and firm networks: the role of the intangibles on the access to credit", *Journal of Knowledge Management*, Vol. 18 No. 5, pp. 1036-1051, doi: [10.1108/jkm-06-2014-0255](https://doi.org/10.1108/jkm-06-2014-0255).
- Dirks, K.T. and Ferrin, D.L. (2001), "The role of trust in organizational settings", *Organization Science*, Vol. 12 No. 4, pp. 450-467, doi: [10.1287/orsc.12.4.450.10640](https://doi.org/10.1287/orsc.12.4.450.10640).

- Eisenhardt, K.M. (1989), "Building theories from case study research", *Academy of Management Review*, Vol. 14 No. 4, pp. 532-550, doi: [10.2307/258557](https://doi.org/10.2307/258557).
- Eisenhardt, K.M. and Graebner, M.E. (2007), "Theory building from cases: opportunities and challenges", *Academy of Management Journal*, Vol. 50 No. 1, pp. 25-32, doi: [10.5465/amj.2007.24160888](https://doi.org/10.5465/amj.2007.24160888).
- Ellison, N.B., Steinfield, C. and Lampe, C. (2007), "The benefits of Facebook "friends": Social capital and college students' use of online social network sites", *Journal of Computer-Mediated Communication*, Vol. 12 No. 4, pp. 1143-1168, doi: [10.1111/j.1083-6101.2007.00367.x](https://doi.org/10.1111/j.1083-6101.2007.00367.x).
- Fait, M., Magni, D., Perano, M., Briamonte, M.F. and Sasso, P. (2023a), "Grassroot processes of knowledge sharing to build social innovation capabilities", *Journal of Knowledge Management*, Vol. 27 No. 5, pp. 1390-1408, doi: [10.1108/jkm-04-2022-0338](https://doi.org/10.1108/jkm-04-2022-0338).
- Fait, M., Cillo, V., Papa, A., Meissner, D. and Scorrano, P. (2023b), "The roots of "volunteer" employees' engagement: the silent role of intellectual capital in knowledge-sharing intentions", *Journal of Intellectual Capital*, Vol. 24 No. 2, pp. 399-429, doi: [10.1108/jic-04-2020-0133](https://doi.org/10.1108/jic-04-2020-0133).
- Ferreira, C.M. and Serpa, S. (2018), "Society 5.0 and social development: contributions to a discussion", *Management and Organizational Studies*, Vol. 5 No. 4, pp. 26-31, doi: [10.5430/mos.v5n4p26](https://doi.org/10.5430/mos.v5n4p26).
- Filipovic, J. and Arslanagic-Kalajdzic, M. (2023), "Social capital theory perspective on the role of academic social networking sites", *Journal of Business Research*, Vol. 166, 114119, doi: [10.1016/j.jbusres.2023.114119](https://doi.org/10.1016/j.jbusres.2023.114119).
- Fukuda, K. (2020), "Science, technology and innovation ecosystem transformation toward society 5.0", *International Journal of Production Economics*, Vol. 220, 107460, doi: [10.1016/j.ijpe.2019.07.033](https://doi.org/10.1016/j.ijpe.2019.07.033).
- Fukuyama, M. (2018), "Society 5.0: aiming for a new human-centered society", *Japan Spotlight*, Vol. 27 No. 5, pp. 47-50.
- Hoffman, D.L. and Fodor, M. (2010), "Can you measure the ROI of your social media marketing?", *MIT Sloan Management Review*, Vol. 52 No. 1, pp. 41-49.
- Huang, S., Wang, B., Li, X., Zheng, P., Mourtzis, D. and Wang, L. (2022), "Industry 5.0 and society 5.0—comparison, complementation and co-evolution", *Journal of Manufacturing Systems*, Vol. 64, pp. 424-428, doi: [10.1016/j.jmsy.2022.07.010](https://doi.org/10.1016/j.jmsy.2022.07.010).
- Ietto, B., Ancillai, C., Sabatini, A., Carayannis, E.G. and Gregori, G.L. (2024), "The role of external actors in SMEs' human-centered industry 4.0 adoption: an empirical perspective on Italian competence centers", *IEEE Transactions on Engineering Management*, Vol. 71, pp. 1057-1072, doi: [10.1109/tem.2022.3144881](https://doi.org/10.1109/tem.2022.3144881).
- Jang, J. and Dworkin, J. (2014), "Does social network site use matter for mothers? Implications for bonding and bridging capital", *Computers in Human Behavior*, Vol. 35, pp. 489-495, doi: [10.1016/j.chb.2014.02.049](https://doi.org/10.1016/j.chb.2014.02.049).
- Jeong, S.W., Ha, S. and Lee, K.H. (2021), "How to measure social capital in an online brand community? A comparison of three social capital scales", *Journal of Business Research*, Vol. 123, pp. 289-302.
- Kaplan, A.M. and Haenlein, M. (2010), "Users of the world, unite! The challenges and opportunities of social media", *Business Horizons*, Vol. 53 No. 1, pp. 59-68, doi: [10.1016/j.bushor.2009.09.003](https://doi.org/10.1016/j.bushor.2009.09.003).
- Konno, N. and Schillaci, C.E. (2021), "Intellectual capital in Society 5.0 by the lens of the knowledge creation theory", *Journal of Intellectual Capital*, Vol. 22 No. 3, pp. 478-505, doi: [10.1108/jic-02-2020-0060](https://doi.org/10.1108/jic-02-2020-0060).
- Kumi, R. and Sabherwal, R. (2018), "Performance consequences of social capital in online communities: the roles of exchange and combination, and absorptive capacity", *Computers in Human Behavior*, Vol. 86, pp. 337-349, doi: [10.1016/j.chb.2018.05.008](https://doi.org/10.1016/j.chb.2018.05.008).
- Le, P.B. and Lei, H. (2019), "Determinants of innovation capability: the roles of transformational leadership, knowledge sharing and perceived organizational support", *Journal of Knowledge Management*, Vol. 23 No. 3, pp. 527-547, doi: [10.1108/jkm-09-2018-0568](https://doi.org/10.1108/jkm-09-2018-0568).

- Leung, W.K., Shi, S. and Chow, W.S. (2020), "Impacts of user interactions on trust development in C2C social commerce: the central role of reciprocity", *Internet Research*, Vol. 30 No. 1, pp. 335-356, doi: [10.1108/intr-09-2018-0413](https://doi.org/10.1108/intr-09-2018-0413).
- Li, S., Modi, P., Wu, M.S.S., Chen, C.H.S. and Nguyen, B. (2019), "Conceptualising and validating the social capital construct in consumer-initiated online brand communities (COBCs)", *Technological Forecasting and Social Change*, Vol. 139, pp. 303-310, doi: [10.1016/j.techfore.2018.11.018](https://doi.org/10.1016/j.techfore.2018.11.018).
- Lincoln, N.D., Travers, C., Ackers, P. and Wilkinson, A. (2002), "The meaning of empowerment: the interdisciplinary etymology of a new management concept", *International Journal of Management Reviews*, Vol. 4 No. 3, pp. 271-290, doi: [10.1111/1468-2370.00087](https://doi.org/10.1111/1468-2370.00087).
- Luqman, A., Zhang, Q., Kaur, P., Papa, A. and Dhir, A. (2023), "Untangling the role of power in knowledge sharing and job performance: the mediating role of discrete emotions", *Journal of Knowledge Management*, Vol. 27 No. 4, pp. 873-895, doi: [10.1108/jkm-01-2022-0016](https://doi.org/10.1108/jkm-01-2022-0016).
- Meek, S., Ryan, M., Lambert, C. and Ogilvie, M. (2019), "A multidimensional scale for measuring online brand community social capital (OBCSC)", *Journal of Business Research*, Vol. 100, pp. 234-244, doi: [10.1016/j.jbusres.2019.03.036](https://doi.org/10.1016/j.jbusres.2019.03.036).
- Motkuri, V. (2018), *Some Notes on the Concept of Social Capital: A Review of Perspectives, Definitions and Measurement*, MPRA (Munich Personal RePEc Archive), No. 86362, available at: <https://mpra.ub.uni-muenchen.de/86362/>
- Naab, T.K. and Sehl, A. (2017), "Studies of user-generated content: a systematic review", *Journalism*, Vol. 18 No. 10, pp. 1256-1273, doi: [10.1177/1464884916673557](https://doi.org/10.1177/1464884916673557).
- Nahapiet, J. and Ghoshal, S. (1998), "Social capital, intellectual capital, and the organizational advantage", *Academy of Management Review*, Vol. 23 No. 2, pp. 242-266, doi: [10.5465/amr.1998.533225](https://doi.org/10.5465/amr.1998.533225).
- Nikum, K. (2022), "Answers to the societal demands with education 5.0: Indian higher education system", *Journal of Engineering Education Transformations*, Vol. 36 No. S1, pp. 115-127, doi: [10.16920/jeet/2022/v36is1/22184](https://doi.org/10.16920/jeet/2022/v36is1/22184).
- Patton, M.Q. (1990), *Qualitative Evaluation and Research Methods*, SAGE Publications, Newbury Park, CA.
- Pereira, V. and Mohiya, M. (2021), "Share or hide? Investigating positive and negative employee intentions and organizational support in the context of knowledge sharing and hiding", *Journal of Business Research*, Vol. 129, pp. 368-381, doi: [10.1016/j.jbusres.2021.03.011](https://doi.org/10.1016/j.jbusres.2021.03.011).
- Pereira, A.G., Lima, T.M. and Santos, F.C. (2020), "Industry 4.0 and Society 5.0: opportunities and threats", *International Journal of Recent Technology and Engineering*, Vol. 8 No. 5, pp. 3305-3308, doi: [10.35940/ijrte.d8764.018520](https://doi.org/10.35940/ijrte.d8764.018520).
- Phua, J., Jin, S.V. and Kim, J.J. (2017), "Gratifications of using Facebook, Twitter, Instagram, or Snapchat to follow brands: the moderating effect of social comparison, trust, tie strength, and network homophily on brand identification, brand engagement, brand commitment, and membership intention", *Telematics and Informatics*, Vol. 34 No. 1, pp. 412-424, doi: [10.1016/j.tele.2016.06.004](https://doi.org/10.1016/j.tele.2016.06.004).
- Putnam, R.D. (1995), "Tuning in, tuning out: the strange disappearance of social capital in America", *PS: Political science and politics*, Vol. 28 No. 4, pp. 664-683, doi: [10.2307/420517](https://doi.org/10.2307/420517).
- Putnam, R.D. (2000), *Bowling Alone: The Collapse and Revival of American Community*, Simon & Schuster, New York.
- Ridings, C.M., Gefen, D. and Arinze, B. (2002), "Some antecedents and effects of trust in virtual communities", *The Journal of Strategic Information Systems*, Vol. 11 Nos 3-4, pp. 271-295, doi: [10.1016/s0963-8687\(02\)00021-5](https://doi.org/10.1016/s0963-8687(02)00021-5).
- Rosca, E., Agarwal, N. and Brem, A. (2020), "Women entrepreneurs as agents of change: a comparative analysis of social entrepreneurship processes in emerging markets", *Technological Forecasting and Social Change*, Vol. 157, 120067, doi: [10.1016/j.techfore.2020.120067](https://doi.org/10.1016/j.techfore.2020.120067).

- Santos, C.T., Ferreira, F., Dabić, M., Ferreira, N.C. and Ferreira, J.J. (2024), “‘Too small to shine? Not really!’: developing Society 5.0 adaptation initiatives for SMEs”, *IEEE Transactions on Engineering Management*, Vol. 71, pp. 9058-9079, doi: [10.1109/TEM.2023.3321747](https://doi.org/10.1109/TEM.2023.3321747).
- Sanz-Blas, S., Buzova, D. and Pérez-Ruiz, P. (2021), “Building relational worth in an online social community through virtual structural embeddedness and relational embeddedness”, *Technological Forecasting and Social Change*, Vol. 162, 120350, doi: [10.1016/j.techfore.2020.120350](https://doi.org/10.1016/j.techfore.2020.120350).
- Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H. and Jinks, C. (2018), “Saturation in qualitative research: exploring its conceptualization and operationalization”, *Quality and Quantity*, Vol. 52 No. 4, pp. 1893-1907, doi: [10.1007/s11135-017-0574-8](https://doi.org/10.1007/s11135-017-0574-8).
- Scuotto, V., Manlio, D.G., Malhotra, A. and Pereira, V. (2024), “Editorial: the evolution of human-machine interaction, from Taylorism to human-centered approach”, *Journal of Management History*, Vol. 30 No. 2, pp. 141-146, doi: [10.1108/jmh-04-2024-305](https://doi.org/10.1108/jmh-04-2024-305).
- Sheng, M. and Hartono, R. (2015), “An exploratory study of knowledge creation and sharing in online community: a social capital perspective”, *Total Quality Management and Business Excellence*, Vol. 26 Nos 1-2, pp. 93-107, doi: [10.1080/14783363.2013.776769](https://doi.org/10.1080/14783363.2013.776769).
- Sherif, K., Hoffman, J. and Thomas, B. (2006), “Can technology build organizational social capital? The case of a global IT consulting firm”, *Information and Management*, Vol. 43 No. 7, pp. 795-804, doi: [10.1016/j.im.2006.07.001](https://doi.org/10.1016/j.im.2006.07.001).
- Siggelkow, N. (2007), “Persuasion with case studies”, *Academy of Management Journal*, Vol. 50 No. 1, pp. 20-24, doi: [10.5465/amj.2007.24160882](https://doi.org/10.5465/amj.2007.24160882).
- Siregar, M.B., Dalimunthe, R.F., Rini, E.S. and Absah, Y. (2024), “Empowered women: strategies to increase competitiveness in the era of society 5.0 through entrepreneurship”, *Randwick International of Social Science Journal*, Vol. 5 No. 1, pp. 25-38, doi: [10.47175/rissj.v5i1.886](https://doi.org/10.47175/rissj.v5i1.886).
- Spottswood, E.L. and Wohn, D.Y. (2020), “Online social capital: recent trends in research”, *Current Opinion in Psychology*, Vol. 36, pp. 147-152, doi: [10.1016/j.copsyc.2020.07.031](https://doi.org/10.1016/j.copsyc.2020.07.031).
- Stake, K. (1998), “Case studies”, in Denzin, N. and Lincoln, Y. (Eds), *Strategies of Qualitative Inquiry*, Sage, Thousand Oaks, CA, pp. 86-109.
- Tóth, Z., Nemkova, E., Hizsák, G. and Naudé, P. (2022), “Social capital creation on professional sharing economy platforms: the problems of rating dependency and the non-transferability of social capital”, *Journal of Business Research*, Vol. 144, pp. 450-460, doi: [10.1016/j.jbusres.2022.01.090](https://doi.org/10.1016/j.jbusres.2022.01.090).
- Troisi, O., Visvizi, A. and Grimaldi, M. (2023), “Rethinking innovation through industry and society 5.0 paradigms: a multileveled approach for management and policy-making”, *European Journal of Innovation Management*, Vol. 27 No. 9, pp. 22-51, doi: [10.1108/ejim-08-2023-0659](https://doi.org/10.1108/ejim-08-2023-0659).
- Tsai, W. and Ghoshal, S. (1998), “Social capital and value creation: the role of intrafirm networks”, *Academy of Management Journal*, Vol. 41 No. 4, pp. 464-476, doi: [10.2307/257085](https://doi.org/10.2307/257085).
- Ughetto, E., Rossi, M., Audretsch, D. and Lehmann, E.E. (2020), “Female entrepreneurship in the digital era”, *Small Business Economics*, Vol. 55 No. 2, pp. 305-312, doi: [10.1007/s11187-019-00298-8](https://doi.org/10.1007/s11187-019-00298-8).
- Vătămănescu, E.M., Bratianu, C., Dabija, D.C. and Popa, S. (2023), “Capitalizing online knowledge networks: from individual knowledge acquisition towards organizational achievements”, *Journal of Knowledge Management*, Vol. 27 No. 5, pp. 1366-1389, doi: [10.1108/jkm-04-2022-0273](https://doi.org/10.1108/jkm-04-2022-0273).
- Villena, V.H., Revilla, E. and Choi, T.Y. (2011), “The dark side of buyer-supplier relationships: a social capital perspective”, *Journal of Operations Management*, Vol. 29 No. 6, pp. 561-576, doi: [10.1016/j.jom.2010.09.001](https://doi.org/10.1016/j.jom.2010.09.001).
- Wang, N., Wang, L., Ma, Z. and Wang, S. (2022), “From knowledge seeking to knowledge contribution: a social capital perspective on knowledge sharing behaviors in online Q&A communities”, *Technological Forecasting and Social Change*, Vol. 182, 121864, doi: [10.1016/j.techfore.2022.121864](https://doi.org/10.1016/j.techfore.2022.121864).

- Wong, A. (2023), "How social capital builds online brand advocacy in luxury social media brand communities", *Journal of Retailing and Consumer Services*, Vol. 70, 103143, doi: [10.1016/j.jretconser.2022.103143](https://doi.org/10.1016/j.jretconser.2022.103143).
- Wong, A. and Lee, M. (2022), "Building engagement in online brand communities: the effects of socially beneficial initiatives on collective social capital", *Journal of Retailing and Consumer Services*, Vol. 65, 102866, doi: [10.1016/j.jretconser.2021.102866](https://doi.org/10.1016/j.jretconser.2021.102866).
- Yan, W., Wen, X., Zhang, Y., Kudva, S. and Liu, Q. (2023), "The dynamics of Q&A in academic social networking sites: insights from participants, interaction network, response time, and discipline differences", *Scientometrics*, Vol. 128 No. 3, pp. 1895-1922, doi: [10.1007/s11192-022-04624-y](https://doi.org/10.1007/s11192-022-04624-y).
- Zhou, T. (2022), "Understanding users' contribution in open innovation communities: a social capital perspective", *Kybernetes*, Vol. 51 No. 3, pp. 937-951, doi: [10.1108/k-10-2020-0665](https://doi.org/10.1108/k-10-2020-0665).
- Zhou, Z., Wang, R. and Zhan, G. (2022), "Cultivating consumer subjective well-being through online brand communities: a multidimensional view of social capital", *The Journal of Product and Brand Management*, Vol. 31 No. 5, pp. 808-822.

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