

**Breaking Down Walls and Building Bridges: Essays to Understand the  
Structures, Processes, and Potentials of Coworking-spaces**

Dissertation

Zur Erlangung des Grades eines Doktors der Wirtschaftswissenschaft der Rechts- und  
Wirtschaftswissenschaftlichen Fakultät der Universität Bayreuth

Vorgelegt

von

Muhammad Mahmood Aslam

aus

Lahore (Pakistan)

Dekan:	Prof. Dr. Jörg Schlüchtermann
Erstberichterstatlerin:	Prof. Dr. Ricarda B. Bouncken
Zweitberichterstatler:	Prof. Dr. Daniel Baier
Tag der mündlichen Prüfung:	05-04-2022

## Acknowledgments

Seek knowledge even if you have to go as far as China! (anonymous). I even come farther away in Germany –the land of ideas. Alone but surrounded by people, who pulled me up when I was down and helped me out when I had difficulties. It is my pleasure to acknowledge the role of several individuals and communities who were instrumental in the completion of my Ph.D. endeavor.

First and foremost, I am profoundly grateful and indebted to my advisor, Prof. Dr. Ricarda B. Bouncken for accepting me as a Ph.D. candidate, introducing me to the idea of coworking-spaces, providing me the best working and social environment, encouraging and supporting me to aim high, and challenging my thinking with her novel and creative ideas. Thank you very much for sharing your knowledge, expertise, and wisdom with me. I have never experienced such skillful guidance and support in my professional endeavor, and I am looking forward to furthering academic collaborations in the future.

I would also like to thank Prof. Dr. Daniel Baier, my second supervisor, and Prof. Dr. Reinhard Meckl, chair of the Ph.D. colloquium for their time, support, and helpful discussions around the topic.

I wish to acknowledge the community at the Chair for Strategic Management and Organization at the University of Bayreuth. I am grateful to Angelica and Christina for providing every possible social and administrative support. I am especially thankful to Robin for being a savior in my personal and professional life. I am also grateful to Andreas, Victor, Lars, Roman, Till, and Yixin for their support and kindness. I profoundly appreciate your words of inspiration, challenge, and critique. I am also grateful to all other colleagues and coauthors for your support.

I also acknowledge the German Academic Exchange Service (DAAD), Higher Education Commission (HEC), and Lahore Development Authority (LDA), Pakistan for funding.

Last but foremost, my cordial gratitude to my parents, who were always there when the going looks tough and there was no reason to smile. I am especially grateful to my siblings and wife for being so supportive and considerate. I am grateful to all my friends in Germany and Pakistan for their unconditional support and love. I want to thank you all for your considerable patience and for graciously disconnecting the practice of asking ‘when the Ph.D. will be finished.’

## **Dedication**

This thesis is dedicated to my loving family, who always unconditionally love, support, and encourage me.

Especially my parents, who have given me invaluable educational opportunities.

## Abstract

Coworking-spaces break physical and metaphorical walls through interactive spatial designs, collocating users from diverse professional backgrounds, and providing opportunities to interact, socialize, and collaborate. In a micro-ecosystem, a coworking-space plays the role of a bridge between independent knowledge professionals, entrepreneurs, startups, small and micro enterprises, large corporations, innovation facilities, and universities. Coworking-spaces vary in size, scope, and community, yet are consistent with the fundamental values of openness, communication, collaboration, and community. The extant literature broadly defines the concepts, discusses mostly independent coworking-spaces, and presents them as utopian workspaces where only creativity and serendipity flourish.

This thesis consists of eight research articles that shed light on the structures, processes, and potentials of coworking-spaces by employing contemporary theoretical lenses, such as design perspective, sociomateriality, and practice theory. All these research articles have separate research questions and independent research designs. The first research article in chapter two explains the fluid work environment of coworking-spaces. It focuses on the mechanisms that bring stability through normative, regulative, and activation domains without compromising the fluidity of coworking-spaces. Chapter three explains the structure of coworking-spaces by analyzing their various designs. It highlights the constitutive entanglement of actors and artifacts that contour and create the possibilities for users and define the borders, e.g., when, where, and with whom to communicate and work. The sociomateriality perspective in chapters four and five helps to analyze the conditions in coworking-spaces. Chapter four provides valuable suggestions for companies revitalizing, while chapter five focuses on the role of sociomaterial assemblage on entrepreneurial outcomes. Similarly, chapter six throws light on entrepreneurial legitimacy-building mechanisms in coworking-spaces. Chapters seven and eight describe the synthesis of knowledge among diverse users of coworking-spaces and the role of permeability in the facilitation of innovation, respectively. Chapter nine describes the challenges that coworking-spaces can create for entrepreneurs and other independent users.

By doing so, this thesis contributes to the rudimentary literature of shared workspaces and develops an understanding of this phenomenon in the wake of organizational and entrepreneurial concepts. This thesis also brings valuable insights for post-bureaucratic and contemporary organizations that are embracing new work forms.

## **Zusammenfassung**

Coworking-Spaces durchbrechen physische und metaphorische Mauern durch interaktive Raumgestaltung, bringen Nutzende mit unterschiedlichem beruflichem Hintergrund zusammen und bieten Möglichkeiten zur Interaktion, zum sozialen Austausch und zur Zusammenarbeit. In einem Mikro-Ökosystem spielt ein Coworking-Space die Rolle einer Brücke zwischen unabhängigen Wissensspezialisten, Unternehmern, Start-ups, Klein- und Kleinstunternehmen, Großunternehmen, Innovationseinrichtungen und Universitäten. Coworking-Spaces variieren in Größe, Umfang und Gemeinschaft, sind jedoch mit den grundlegenden Werten von Offenheit, Kommunikation, Zusammenarbeit und Gemeinschaft vereinbar. In der vorhandenen Literatur werden die Konzepte breit definiert, meist unabhängige Coworking-Spaces diskutiert und als utopische Arbeitsräume dargestellt, in denen nur Kreativität und Serendipität gedeihen.

Die vorliegende Arbeit besteht aus acht Forschungsartikeln, die die Strukturen, Prozesse und Potenziale von Coworking-Spaces mit Hilfe zeitgenössischer theoretischer Ansätze wie der Designperspektive, der Soziomaterialität und der Praxistheorie beleuchten. Alle diese Forschungsartikel haben separate Forschungsfragen und unabhängige Forschungsdesigns. Der erste Forschungsartikel in Kapitel zwei erklärt das fluide Arbeitsumfeld von Coworking-Spaces. Er konzentriert sich auf die Mechanismen, die durch normative, regulative und aktivierende Bereiche für Stabilität sorgen, ohne die Fluidität von Coworking-Spaces zu beeinträchtigen. Kapitel drei erklärt die Struktur von Coworking-Spaces durch die Analyse ihrer verschiedenen Designs. Es hebt die konstitutive Verflechtung von Akteuren und Artefakten hervor, die die Möglichkeiten für die Nutzenden konturieren und schaffen und die Grenzen definieren, z.B. wann, wo und mit wem man kommuniziert und arbeitet. Die Perspektive der Soziomaterialität in den Kapiteln vier und fünf hilft, die Bedingungen in Coworking-Spaces zu analysieren, mit Anregungen für die Wiederbelebung von Unternehmen und der Rolle von soziomaterieller Assemblage. In ähnlicher Weise beleuchtet Kapitel sechs die Mechanismen zur Schaffung von unternehmerischer Legitimität in Coworking-Spaces. Die Kapitel sieben und acht beschreiben die Wissenssynthese unter den verschiedenen Nutzenden von Coworking-Spaces bzw. die Rolle der Durchlässigkeit bei der Erleichterung von Innovationen. Kapitel neun beschreibt die Herausforderungen, die Coworking-Spaces für Unternehmer und andere unabhängige Nutzende darstellen können.

Damit leistet diese Arbeit einen Beitrag zur rudimentären Literatur über gemeinsam genutzte Arbeitsräume und entwickelt ein Verständnis dieses Phänomens im Zuge von organisatorischen und unternehmerischen Konzepten. Diese Arbeit liefert auch wertvolle Erkenntnisse für post-bürokratische und zeitgenössische Organisationen, die neue Arbeitsformen einführen.

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## Abbreviations

Assoc.	Association
CATA	Computer-Aided Text Analysis
Corp.	Corporation
CWS	Coworking-spaces; a coworking-space; coworking space
Cf.	Compare
e.g.,	For example
et al	And others
EU	European Union
i.e.,	That is to say; in other words
ibid	Ibidem (in the same place)
Ltd.	Limited
No.	Number
P.	Page number
R&D	Research and development
Sr.	Serial
SoC	Sense of Community
USA	United States of America
Vs.	Versus

## Index of Research Papers

This thesis comprises the following research papers.

**Research paper 1:** Bouncken, R.B. and Aslam, M.M., “Organizership in fluid organizational settings: Conceptualizing findings from coworking-spaces”, (ready for submission manuscript).

Target: *Organization Studies*

**\*Research paper 2:** Bouncken, R.B. and Aslam, M.M. (2021), “Bringing the design perspective to coworking-spaces: Constitutive entanglement of actors and artifacts”, *European Management Journal*, Pergamon, available at: <https://doi.org/10.1016/J.EMJ.2021.10.008>.

(VHB-JQ3: B; ABDC-Rank: B; Impact Factor: 5.075)

**Research paper 3:** Bouncken, R.B., Aslam, M.M. and Qiu, Y. (2021), “Coworking spaces: Understanding, using, and managing sociomateriality”, *Business Horizons*, Elsevier Ltd, Vol. 64 No. 1, pp. 119–130, available at: <https://doi.org/10.1016/j.bushor.2020.09.010>.

(VHB-JQ3: C; ABDC-Rank: B; Impact Factor: 6.68)

**Research Paper 4:** Aslam, M.M., Bouncken, R. and Görmar, L. (2021), “The role of sociomaterial assemblage on entrepreneurship in coworking-spaces”, *International Journal of Entrepreneurial Behaviour and Research*, Emerald Group Holdings Ltd., Vol. 27 No. 8, pp. 2028–2049, available at: <https://doi.org/10.1108/IJEBr-07-2021-0564>.

(VHB-JQ3: C; ABDC-Rank: B; Impact Factor: 4.412)

**Research Paper 5\*\*:** Aslam, M.M. and Bouncken, R. B., “Audience Diversity and Co-legitimization of Ventures: Insights from Coworking-spaces”, (ready for submission manuscript)

Target: *Journal of Business Venturing*

\*\* The earlier version of this paper was presented in the *Academy of Management Proceedings* (Vol. 2019, p. 19262). Boston, USA, and in

the *SMS special conference* (Vol. 2018), Las Vegas, USA. The abstracts were accordingly published in conference proceedings.

**Research Paper 6:** Bouncken, R. B., & Aslam, M. M. (2019), “Understanding Knowledge Exchange Processes Among Diverse Users of Coworking-spaces”, *Journal of Knowledge Management*, Vol. 23 No. 10, pp. 2067–2085, available at: <https://doi.org/10.1108/JKM-05-2018-0316>.

(VHB-JQ3: C; ABDC-Rank: A; Impact Factor: 8.182)

**Research Paper 7:** Bouncken, R. B., Aslam, M.M. and Brem, A. (2019), “Permeability in Coworking-Spaces as an Innovation Facilitator” In PICMET. Portland, Oregon, USA: *Portland International Conference on Management of Engineering and Technology*, Available at: <https://doi.org/10.23919/PICMET.2019.8893737>.

(VHB-JQ3: NA; ABDC-Rank: NA; Impact Factor: NA)

**Research Paper 8:** Bouncken, R.B., Aslam, M.M. and Reuschl, A.J. (2018), *The Dark Side of Entrepreneurship in Coworking-Spaces*, Contributions to Management Science, available at: [https://doi.org/10.1007/978-3-319-62455-6\\_10](https://doi.org/10.1007/978-3-319-62455-6_10).

(VHB-JQ3: NA; ABDC-Rank: NA; Impact Factor: NA)

## Chapter 1: Introduction

### 1.1 Motivation and Research Context

Miles and Snow (1986) long ago predicted that “future forms [of organizations] will all feature some of the properties of the dynamic network form, particularly heavy reliance on self-managed workgroups and a greater willingness to view organizational boundaries and membership as highly flexible” (P. 72-73).

Dynamic markets, change in work structures, and development in information and communication technologies have dramatically influenced modern forms of organizing (Ringel, Hiller, & Zietsma, 2018). Contemporary organizations develop and design their competencies, structures, and work processes that promote networks, spontaneous interactions, and improvise processes instead of hierarchies, formal rules, and specialized departments (Eisenhardt & Brown, 1998; Puranam, Alexy, & Reitzig, 2014; Schreyögg & Sydow, 2010; Siggelkow & Rivkin, 2005). Coworking-spaces are the primary example of such a contemporary form of organization, where individuals, groups, and firms share office spaces without any common employment affiliations (King, 2017; Spreitzer, Bacevice, & Garrett, 2015). Coworking-spaces are embracing workplace designs that allow autonomy, flexibility, serendipity, and intrinsic motivation in aesthetic and playful office settings (Alexandersson & Kalonaityte, 2018; Bouncken & Reuschl, 2018; Khazanichi, Sprinkle, Masterson, & Tong, 2018).

Coworking-spaces emerge to combat the feeling of social isolation among independent knowledge professionals, mostly freelancers, which later gained popularity among entrepreneurs, startups, small and micro enterprises, and large corporations (King, 2017; Spreitzer, Garrett, & Bacevice, 2015). According to the statistics of 2018, more than 1 million people are working in around 12,000 coworking-spaces all around the globe (Foertsch, 2018). Despite a decrease in the number of users and slower growth due to the COVID-19 (a global pandemic), surveys show that the coworking industry will survive and grow in the post-pandemic era (José, 2021). These coworking-spaces are operated and supported by large corporations as part of their large portfolio of work settings, universities, libraries, independent firms, and individuals (Bouncken, 2018; Bouncken, Aslam, & Qiu, 2021; Gabor & Lindsay, 2018). Therefore, coworking-spaces differ in ownership, architecture, interior, work plan, membership criteria, pricing, and community, yet are consistent on the fundamental values of

openness, communication, collaboration, and co-creation (Blagoev, Costas, & Kärreman, 2019; Bouncken & Aslam, 2019; Spreitzer, Garrett, et al., 2015; Vidaillet & Bousalham, 2018). However, the various appearances of coworking-spaces limit clearly defined boundary conditions for their successful implementation. For example, an independent coworking-space might be run and governed by dedicated providers (e.g., WeWork, Impact Hub, or MindSpace) or independent individuals, which rent out work and social space to the public. Such independent coworking-spaces host users from diverse organizational or professional backgrounds that are mostly freelancers, startups, as well as employees of firms. The users might develop a sense of community through interaction and sharing and thus the independent coworking-spaces provide specific advantages beyond a shared facility (Spreitzer, Garrett, et al. 2015). Alternatively, a coworking-space might belong to an incumbent firm or corporation that establishes an (internal) workspace for a more open, flexible, creative, and contemporary work organization (Bouncken et al., 2021; Gabor & Lindsay, 2018; Spreitzer, Garrett, et al., 2015). Users are mainly employees of the company. Such corporate coworking-spaces can also open their spaces for their customers, complementors, and freelancers. The openness of the firm boundary can facilitate creative or entrepreneurial potentials (Bouncken, Aslam, & Qiu, 2020). Through the common affiliation, incumbent's trajectories of organizational principles, the working contract, predefined teams/projects, and the collocation, the users in the corporate coworking-spaces might naturally develop a sense of community. Thus, besides the sense of community, what makes the shared workspace a 'coworking-space' rather than an open-plan workspace? What advantages do firms or users gain from a corporate coworking-space? With respect to independent coworking-spaces what makes a coworking-space specific and different from a rented office space or an accelerator—and how do the specificity influence individual work, projects, and venture performance? Accordingly, the research questions about the characteristics of different coworking-spaces appearances, their boundary conditions, and their outcomes turn out to be important.

The extant literature is in the rudimentary stage but still gives some know-how about the structures, processes, and potentials of coworking-spaces for its users. The first stream of research presents coworking-spaces as an alternate place to work and a solution to social isolation for independent self-employed professionals, e.g., freelancers (King, 2017; Spinuzzi, 2012; Spreitzer, Garrett, et al., 2015; Waber, Magnolfi, & Lindsay, 2014). These studies evaluate coworking-spaces in the background of sharing economy, where people share their vehicles, homes, and recently offices in the form of coworking-spaces (Bouncken & Reuschl,

2018; Gandini, 2015). The second stream of research focuses on the benefits that users can acquire in the form of social interaction and networking (King, 2017; Spinuzzi, 2012; Waber et al., 2014), learning and knowledge sharing (Bouncken & Aslam, 2019; Parrino, 2015; Rese, Kopplin, & Nielebock, 2020), entrepreneurship and economic activities (Aslam, Bouncken, & Görmar, 2021; Butcher, 2018; Cabral & Winden, 2018; Fuzi, 2015; Giudici, Combs, Cannatelli, & Smith, 2018; Vidaillet & Bousalham, 2018), cooperation and collaboration (Bouncken, Laudien, Fredrich, & Görmar, 2017; Cabral & Winden, 2018; Castilho & Quandt, 2017), and creativity and innovation (Clayton, Feldman, & Lowe, 2018; Marchegiani & Arcese, 2018; Schmidt, Brinks, & Brinkhoff, 2014). In both streams of research, two themes remain dominant. First, the ‘sense of community’ that emerges between the users of a coworking-space from diverse professional backgrounds (Blagoev et al., 2019; Castilho & Quandt, 2017; Garrett, Spreitzer, & Bacevice, 2017). Second, the ‘spatial designs’ that consist of office and social spaces, enable users to interact, cooperate, collaborate, and exchange knowledge (Bouncken & Aslam, 2021; Marchegiani & Arcese, 2018; Spinuzzi, 2012).

However, the extant literature on coworking-spaces has three major limitations. First, most of the studies are conceptual and broadly define the concepts of coworking-spaces without employing any empirical evidence (e.g., Bouncken & Reuschl, 2018; Clayton et al., 2018; Gandini, 2015; King, 2017; Nagy & Lindsay, 2018). Second, the existing empirical studies have one common assumption that all the coworking-spaces host independent professionals (e.g., Blagoev et al., 2019; Garrett et al., 2017; Spinuzzi et al., 2019), either completely neglecting or understating the importance of other forms of coworking-spaces, e.g., corporate coworking-spaces. Third, almost all these scholars ignore the challenges associated with coworking-spaces and present them as utopian workspaces where only creativity and serendipity flourish.

This thesis aims to shed light on the structures, processes, and potentials of coworking-spaces for users in general and entrepreneurs in particular. I started exploring the phenomenon of coworking-spaces with broad and straightforward, yet powerful research questions (e.g., what are coworking-spaces; who are their users; what are their objectives and goals, which they want to pursue in coworking-spaces). Then, I dug deeper to understand the interactions of coworking-spaces with their users, among users, and other stakeholders. Most of the research articles in this thesis are based on inductive research methodology. This approach is appropriate research in an emerging field of research (Strauss & Corbin, 1998). In combination with the inductive research method, pattern matching approaches for qualitative data analysis have also

been utilized (Bouncken et al., 2021; Sinkovics, 2018). This mixed-method approach helps to understand the complex real-life phenomenon involving multiple actors (e.g., coworking-spaces) by establishing the linkage between existing literature (Gatignon & Capron, 2020; Greenwood, Hinings, & Brown, 1994) and new or emerging patterns from the data (Sinkovics, Choksy, Sinkovics, & Mudambi, 2019). The research articles in this thesis not only explain the phenomenon of coworking-spaces but also contribute to the existing realms of organization and entrepreneurship.

### **1.2 Structure of the Thesis**

This thesis consists of eight research papers including four journal publications, one book chapter, two conference papers, and one ready submission manuscript. Each research paper has an independent research question and has a separate research design. Together, these papers explain the structures, processes, and outcomes of coworking-spaces. Figure 1.1 depicts the structure of the thesis and also illuminates the major findings of each article. Research paper 1 explains the fluid context of coworking-spaces, while research paper 2 throws light on their designs. Research papers 3 and 4 define sociomateriality in coworking-spaces and explain how does sociomateriality plays its role in companies revitalizing and entrepreneurship respectively. Research paper 5 elaborates entrepreneurial legitimacy-building mechanisms in the wake of audience diversity in coworking-spaces. Research paper 6 explains the knowledge sharing mechanisms and research paper 7 defines the roles of permeability as a facilitator of innovation in coworking-spaces. Challenges associated with coworking-spaces, specifically for entrepreneurs have been analyzed in research paper 8.

The first research paper “*Organizership in Fluid Organizational Settings: Conceptualizing Findings from Coworking-Spaces*” in chapter 2 is ready for submission manuscript. This paper defines the fluidity in coworking-spaces that emerges due to the spatial collocation of largely autonomously working actors, often freelancers, entrepreneurs, and creative professionals who tend to have no shared affiliation. The open spatial design allows fluid exchanges, openness, autonomy, and low formality. The openness permits different voices to surface (polyphony) and not being suppressed by formal authority rights or by a corporate institutional logic (Gümüşay, Smets, & Morris, 2020; Shotter, 2008). This paper analyzes the mechanisms that back stability in coworking-spaces without compromising their fluidity and while being potentially affected by polyphony (Dobusch & Schoeneborn, 2015; Schreyögg & Sydow, 2010). This qualitative study is based on a flexible pattern matching research method where

initial patterns are developed from theory and then are iteratively compared with qualitative case data (Bouncken, Qiu, et al., 2021; Sinkovics, 2018). The empirical findings of this study are derived from secondary data and multiple respondents of the provider- and user level in 19 coworking-spaces cases, support the expected patterns, and also provide further insights into theory. The findings of this study invoke a three-domain model. First, the normative domain is mainly represented by the proposed and supported mechanism of a shared co-constructed sense of community. Second, the regulative domain supports minimal rules as a representative mechanism. Third, the activation domain defines the possibility of temporary organizational acts by actors. This study also suggests a process model and might inform fluid multi-local work arrangements proliferating in the Covid-19 era.

*This research paper is authored by Ricarda Bouncken and Mahmood Aslam. Ricarda Bouncken worked on the core idea, especially the theoretical section of the paper. Mahmood Aslam conducted the empirical analysis and worked on the findings.*

The second research paper, “*Bringing the Design Perspective to Coworking Spaces: Constitutive Entanglement of Actors and Artifacts*” in chapter 3 was published in the *European Management Journal*. Drawing on the theoretical background of the design perspective (Berglund, Bousfiha, & Mansoori, 2020), this study elaborates how organizations can be designed to achieve intended outcomes. Following a flexible pattern matching approach of qualitative data analysis, this study uses data in the form of observations, records, and interviews from the participants (owners, managers, and users) of ten different coworking-spaces. In contrast to the previous studies that take an actor-centric approach (Blagoev et al., 2019; Garrett et al., 2017; Spinuzzi et al., 2019), the findings of this study suggest that artifacts can contour and create the possibilities for actors. The design choices and physical properties of artifacts (e.g., nature, color, size) can build perception of actors and communicate cues of openness, autonomy, and creativity; create mutual interdependencies among actors to develop a shared understanding, meanings; and narratives familiar to the community. The findings suggest that taking the inter-play of actors-artifacts together in theory and practices can help organizations make progressions towards effective organizational designs to improve the flow of communication, collaboration across boundaries, and architect innovation.

*This research paper is authored by Ricarda Bouncken and Mahmood Aslam. Both authors equally contributed to all parts of the paper.*

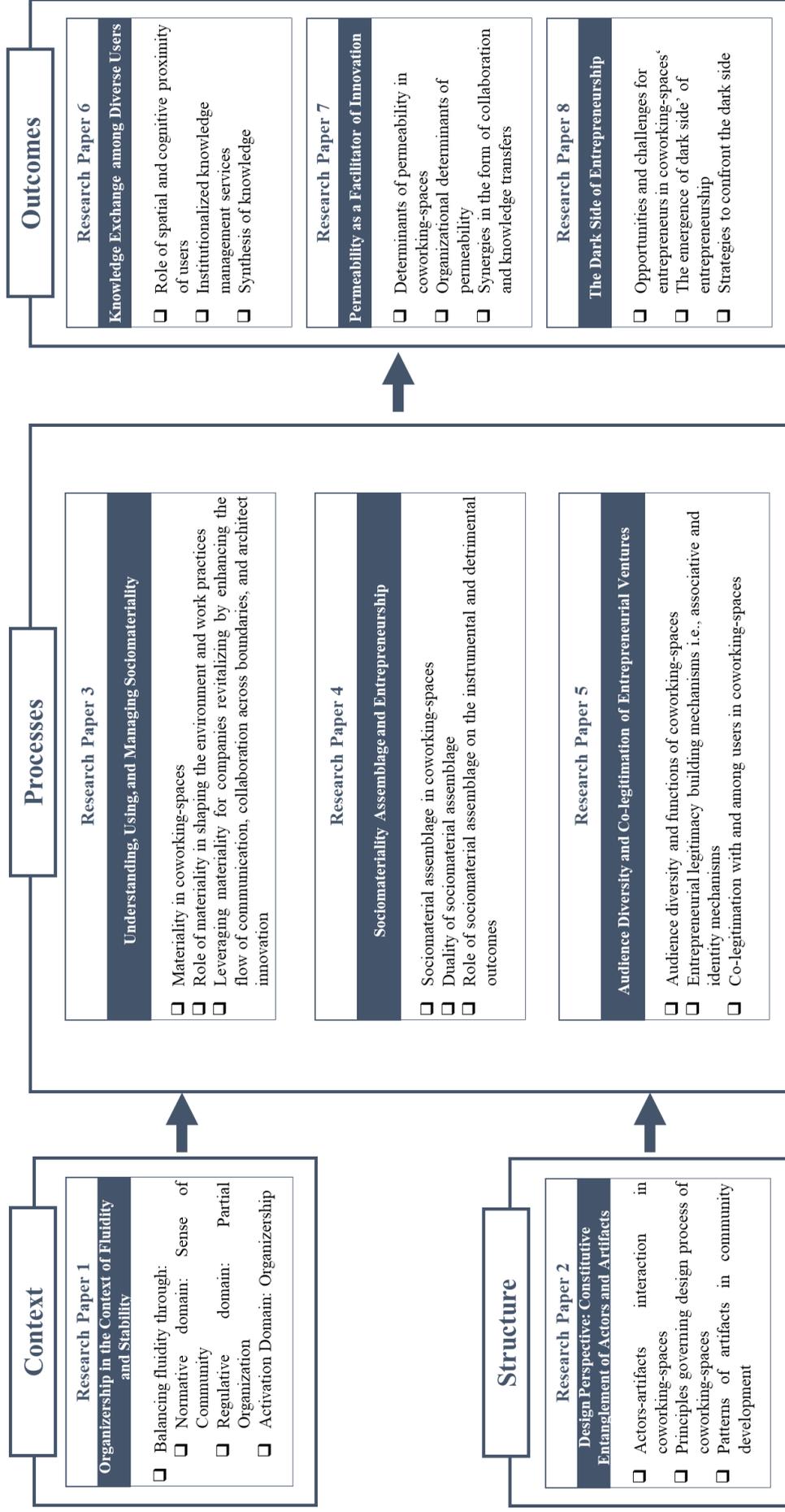


Figure 1.1- Structure of the Thesis

The third research paper, “Coworking spaces: Understanding, using, and managing sociomateriality”, in chapter 4 was published in the “*Business Horizons*”. This practitioner-oriented research paper explains how companies can better use coworking-spaces by following the insights from sociomateriality (Leonardi, 2012; Orlikowski, 2007). Drawing on two case studies, this paper explains materiality in coworking-spaces and how it can shape work practices. The findings suggest that companies can improve the flow of communication by using multiple functional areas to enhance face-to-face interactions, diligently designing the space layouts for spontaneous encounters, and employing digital tools for disseminating information. Companies can foster innovation by designing such coworking-spaces, where people can develop affiliations with space, can interact and share ideas with others, and can have infrastructures, resources, and technologies for the realization of their ideas. This study also lists managerial guidelines for companies to leverage sociomateriality at coworking-spaces.

*This research paper is authored by Ricarda Bouncken, Mahmood Aslam, and Yixin Qiu. Ricarda Bouncken and Mahmood Aslam worked on the central idea of the paper. Yixin Qiu contributed to the finalization of the paper.*

The fourth research paper, “*The Role of Sociomaterial Assemblage on Entrepreneurship in Coworking-Spaces*” in chapter 5 was published in the “*International Journal of Entrepreneurial Behavior & Research*”. This study is based on an inductive research methodology. The findings of this paper suggest that sociomaterial assemblage in coworking-spaces provides autonomous access to the facilities and shared infrastructures, promotes internal and external linkages, and encourages functional uniformity and diversity. This article points out the inherent dualism in sociomaterial assemblage in coworking-spaces that leads to instrumental and detrimental outcomes for entrepreneurs. Instrumental outcomes enable entrepreneurs to build relational and behavioral slack, while detrimental outcomes lead to territorial and defensive behaviors. Based on the sociomateriality perspective, the article explains how to achieve a fit in the duality of sociomaterial assemblage in collaborative workspaces.

*This research paper is authored by Mahmood Aslam, Ricarda Bouncken, and Lars Görmar. Mahmood Aslam drafted the paper. The rest of the authors contributed to the finalization of the paper.*

The fifth research paper, “*Audience Diversity and Co-legitimization of Ventures: Insights from Coworking-spaces*,” in chapter 6 was presented at the *Strategic Management Society* and *Academy of Management* conferences. This research article explains that entrepreneurs need to conform to the expectations of the collocated users of the coworking-spaces, as well as exhibit and maintain the distinctiveness of their ventures. Based on the data from new ventures operating in three distinct coworking-spaces, findings suggest that coworking-spaces have instrumental and symbolic functions, which enable entrepreneurs to attain optimal distinctiveness. Entrepreneurs co-legitimize their ventures with collocated diverse users through associative and identity mechanisms.

*This research paper is authored by Mahmood Aslam and Ricarda Bouncken. Mahmood Aslam drafted the paper and especially contributed to the data analysis and findings section. Ricarda Bouncken worked on the theoretical section and finalization of the paper.*

The sixth research paper, “*Understanding Knowledge Exchange Processes Among Diverse Users of Coworking-spaces*” in chapter 7 was published in the “*Journal of Knowledge Management*”. This paper discusses the role of spatial co-location in knowledge sharing processes among independent knowledge professionals in coworking-spaces. Based on an inductive research methodology, qualitative data was collected and analyzed. The findings suggest that spatial co-location of individuals in coworking-spaces is first about physical proximity but second about socialization and collaboration opportunities, which then advance cognitive proximity. Spatial co-location and institutionalized knowledge management services can facilitate tacit knowledge exchange, ignite the social disembodiment of ideas, synthesize domain-related knowledge sharing, and promote inter-domain learning.

*This research paper is authored by Ricarda Bouncken and Mahmood Aslam. Both the authors equally contributed to all parts of the paper.*

The seventh research article, “*Permeability in Coworking-spaces as an Innovation Facilitator*” in chapter 8 was presented and published in the proceedings of “*Portland International Conference on Management of Engineering and Technology (PICMET)*”. This research article analyzes how permeability in coworking-spaces influences the internal work structures and processes of members’ organizations who have relatively fixed memberships, stable structures, and steep hierarchies. The study concludes that participational autonomy, spatial and virtual connectivity, and interrelational heterogeneity determine the level of

permeability in a coworking-space. The space level permeability influences the work structures and task processes of members' organizations. Permeability in coworking-spaces facilitates users to leverage the differentiated capabilities of other members within and outside of the space and facilitates knowledge exchange across boundaries and hierarchical levels that lead to innovative outcomes.

*This research paper is authored by Ricarda Bouncken, Mahmood Aslam, and Alexander Brem. Ricarda Bouncken and Mahmood Aslam contributed equally to all parts of the paper. Alexander Brem contributed to the finalization of the paper.*

The eighth research article, "*The Dark Side of Entrepreneurship in Coworking-spaces*," in chapter 9 was published in the book titled "*Inside the Mind of the Entrepreneur*." The article argues that coworking-spaces provide a creative and innovative atmosphere for entrepreneurs. However, the professional and social dynamics in coworking-spaces bear the risk of stress, exploitation, conflicts, and distrust, which negatively affect entrepreneurial self-efficacy and passion, undermining the advantages of coworking-spaces and leading to the withdrawal of entrepreneurs. The article suggests that coworking-spaces can support entrepreneurs in facing these challenges by developing entrepreneurial communities and providing mentoring, coaching, and social support services.

*This research paper is authored by Ricarda Bouncken, Mahmood Aslam, and Andreas Reuschl. Ricarda Bouncken and Mahmood Aslam contributed equally to all parts of the paper. Andreas Reuschl contributed to the finalization of the paper.*

In the end, a brief conclusion illuminates the need for 'redefining work' in a typical hierarchical organization due to the increasing demand for fluid multi-local work arrangements in the wake of COVID-19 (a global pandemic). It also highlights the potential avenues for future research in the context of coworking-spaces and other contemporary organizations that are changing their spatial designs to cater to the needs of the modern' age workforce.

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## **Chapter 2: Organizership in Fluid Organizational Settings: Conceptualizing Findings from Coworking-Spaces**

### **2.1 Abstract**

The growing field of fluid and open work-spaces, as for coworking-spaces, nuances characteristics of post-bureaucratic organizations and polyphony leading to the question how to stabilize fluidity while not compromising it. Our empirical qualitative study applying a flexible pattern matching approach gains insights via iterations between theory and data. The analyzes on 19 cases of coworking-spaces support our propositions on the sense of community and partial organization as stabilizing mechanisms. Besides, serendipitous findings on participational permeability add to the understanding of fluidity and reveal, in a context that lacks formal authority, the possibility of acting and raising ‘your own organizer voice’. On this finding, we define organizership as autonomous, partial, and temporary organizational acts of socio-emotionally driven proactive actors. On these findings, we model mechanisms balancing fluidity and stability residing in regulative, normative, and activation domains. Further, we submit a process model on how organizership develops and manifests. Findings might inform fluid multi-local work arrangements proliferating in the Covid-19 era.

### **2.2 Introduction**

Recently, researchers have paid attention to the surfacing of different logics in behavior and conversations as different voices, the so-called polyphony (Gümüşay et al., 2019). Polyphony illustrates the “multiplicity of independent and unmerged voices and consciousnesses” (Bakhtin, 1984, p. 208). Open and fluid work-spaces, such as coworking-spaces (CWS) and makerspaces, have, compared to typical corporate organizations, a greater likelihood of diverse logics and different voices to appear while not being suppressed or converged to a dominant corporate institutional logic. Having characteristics of the post-bureaucracy (Bourgoin et al., 2020; Ahrne & Brunsson, 2010; Dobusch et al., 2019; Dobusch & Schoeneborn, 2015; Schreyögg & Sydow, 2010), these work-spaces depart from the ‘ideal’ bureaucratic organization (Weber, 1947), which resides on vertical chains of command (Barley, 1996), disciplinary power (Sewell, 1998), rules (March et al., 2000), and authorized standard practices (Kellogg et al., 2006). Organizational membership of these spaces can be unclear or contentious (Bourgoin et al., 2020). Settings with post-bureaucratic characteristics need a minimum of

stability and what constitutes an organization (Dobusch et al., 2015). Research on CWS has shown that these spaces might develop a work-related collective identification, indicated by a sense of community (SoC) or affective commons (Garrett et al., 2017; Waters-Lynch & Duff, 2019), and this transfers to the notion that social identification has the potential to balance fluidity (Schreyögg et al., 2010). Hence, how do these open work-space achieve stability without compromising fluidity and while being potentially affected by polyphony?

The current study aims to analyze mechanisms that back stability without compromising fluidity in CWS which are representative of the above indicated fluid workspaces and which, related to their openness, might allow for diverse institutional logics and polyphony. CWS offer the use of mostly shared office spaces and social spaces to largely autonomously working actors, often freelancers, entrepreneurs, and creative professionals who tend to have no shared affiliation (Spinuzzi, 2012). The open spatial design allows fluid exchanges, openness, autonomy, and low formality (Bouncken et al., 2020). The openness permits different voices to surface and not being suppressed by formal authority rights or by a corporate institutional logic.

We apply a flexible pattern matching research method where initial patterns are developed from theory and then are iteratively compared with qualitative case data (Gatignon & Capron, 2020; Sinkovics, 2018). Our empirical findings, derived from secondary data and multiple respondents of the provider- and user level in 19 CWS cases, support our expected patterns and also provide further insights to theory.

Findings, first, invoke our three-domain model. Its normative domain is mainly represented by the proposed and supported mechanism of a shared co-constructed sense of community (Garrett et al., 2017). It can develop even when users come from different backgrounds, follow diverse logics, and do not conceal their diversity, but raise their voice. In the regulative domain, we propose and gain support to minimal rules as a representative mechanism. Serendipitously, we found and framed participational permeability that relates to the porousness of the spatial and social boundary, e.g., areas or groups in these work-spaces. Participational permeability is only possible when authority and formal operational rules are low. It demands minimal rules in a regulative domain. Herein surfaces the potential of taking action, for example, finding teammates, forming projects, leaving teams, or just engaging in conversations which reveal standpoints. Second, our context discloses actively shown behavior and ‘raising your own organizer voice’, hence, proactively and freely taking initiative in organizing. This ‘organizership’ defines as autonomous, partial, and temporary organizational acts by actors

following some self-interest, but also being idea-driven, socio-emotionally motivated, and serving to some degree a collective with some altruism present. On the grounds of this proactive and autonomy-based behavior, we frame an ‘activation domain’. Combining the mechanism of SoC, polyphony, and permeability we suggest a process model on organizership.

Generally, our study contributes to research on the balance of fluidity and stability. Concerning our normative domain, we relate to research on the identification via a shared SoC in fluid contexts (Schreyögg et al., 2010; Garrett et al., 2017; Waters-Lynch et al., 2019). We specify research on the partial organization in our regulative dimension (Ahrne et al., 2010). We deliver new thoughts of stewardship theory, which is based on formal organizations (Davis et al., 2007; Le Breton-Miller & Miller, 2009), to fluid organizational settings via our activation domain and organizership. We contribute to research on polyphony studied in corporates (Gümüşay et al., 2019), linking it to fluid and open work-spaces and the SoC, participational permeability, and organizership. More far fetching, we put forward that contemporary organization resides on mixtures of instruments in regulative, normative, and activation domains and specifically on organizership.

## **2.3 Theoretical Background**

### **2.3.1 Open and Fluid Organization linked to Characteristics of Post-bureaucracy**

The rising demands of flexibility, speed, uncertainty, and manifold information flows in and between organizations convey characteristics of post-bureaucracy (Bourgoin et al., 2020) that commonly departs from the coordination mechanisms of the traditional ‘ideal’ bureaucratic organization (Weber, 1947; Bradach & Eccles, 1989). The bureaucratic characteristics reside in vertical chains of command (Barley, 1996), programmed routines (Kellogg et al., 2006), rules (March et al., 2000), and disciplinary power (Sewell, 1998). In an ideal bureaucracy, actors higher in the organization are assumed to have advanced expertise and, on this basis, devour higher formal power over their lower echelons. Lateral or horizontal recursive communication and collaborations among actors and groups then decouple the authority of a position from the authority of expertise (Barley, 1996).

Recent developments of post-bureaucracy pertain to crowd-workers, maker-spaces, CWS, and generally to the growing segment of independent work, where actors are selling their services to the market and/or are only loosely affiliated with an organization, e.g. by project work (Petriglieri et al., 2019). Post-bureaucracy uses coordination of mutual adaptation, which

describes the flexible recursive horizontal exchange among actors and teams (Mintzberg, 1981). Authorized institutional rules and norms tend to be only rudimentary, complemented, or even substituted by autonomous actions in post-bureaucracy (Sewell et al., 2012). The specific coordination and operational processes are rather emerging and changing than occurring as pronounced or authorized standard operating practices (Kellogg et al., 2006). Post-bureaucracy also appoints actors who are not formally affiliated with the organization (Dolan, 2010) so that membership and boundaries tend to be even rather unclear, open, and fuzzy (Schreyögg et al., 2010), allowing heterogeneous meanings and logics to surface. Hence, post-bureaucracy might allocate polyphony, recently discussed in a specific corporate context (Gümüşay et al., 2019). Polyphony defines the “multiplicity of independent and unmerged voices and consciousnesses” (Bakhtin, 1984, p. 208). The more characteristics of openness and fluidity, the more evolves the contextually dependent need of some other form of stability to avoid chaos, for example via identity in a social collective (Dobusch et al., 2015; Schreyögg et al., 2010) or a partial organization (Ahrne et al., 2010).

### **2.3.2 Contextualization: CWS**

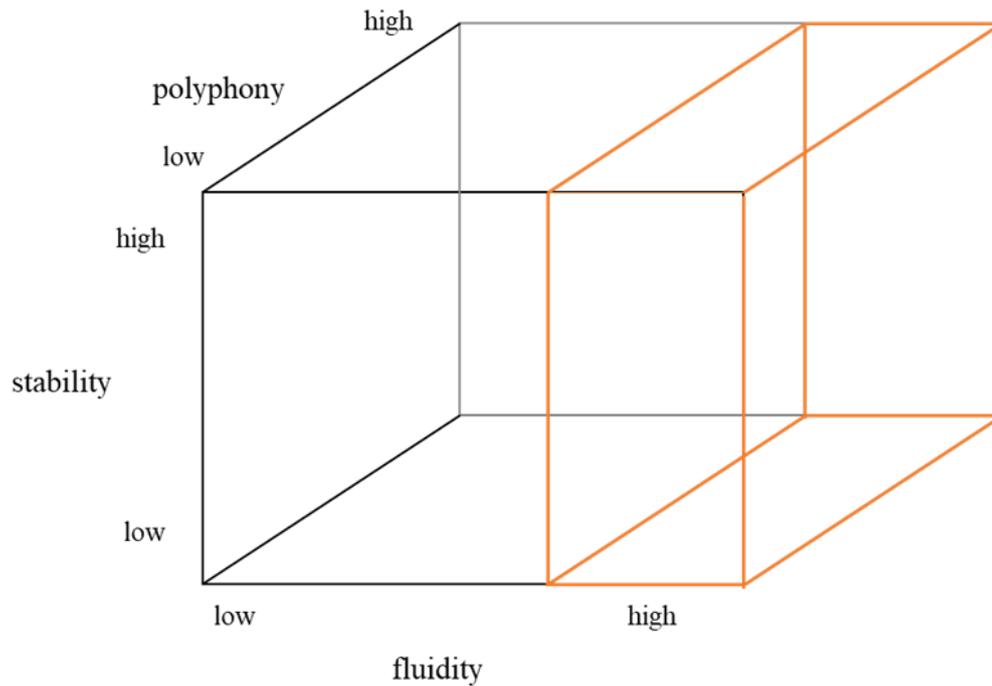
CWS are venues that host diverse users who follow different institutional and private logics while pursuing collaborative but also self-orientated work and autonomous collaboration (Bouncken & Reuschl, 2018). Typical to CWS is the provision of open office space and social space (e.g., common and individual offices, cafeterias, diverse forms of social areas, and functional elements of maker spaces) that permit numerous interactions and communication to lay a fundament for a SoC and affective commons (Cabral & Winden, 2016; Spinuzzi, 2012; Garrett et al., 2017; Blagoev et al., 2019; Waters-Lynch et al., 2019). CWS have a high variance in terms of ownership, membership, rules, and coordination (Spinuzzi et al., 2019). We use the term ‘actor’ in CWS as an umbrella term, which can be specified in users and providers of CWS. Users of CWS can largely follow their own logics, choose certain areas that serve their needs. They might keep their logics to themselves or allow them to surface. They might or might not raise their voice, for example in teams or social collectives. Users often have no shared affiliation, but also might form a venture team or work for the same employer. Providers of CWS can exist in different forms, e.g., companies, state or city councils, universities, or neighborhood initiatives (Capdevila, 2014). Specialized CWS providers (e.g., *WeWork*, *Impact Hub*, or *MindSpace*) rent out work- and social space to the public as the core of their business model. Corporate firms might run CWS for a more open, flexible, creative, and contemporary organization for parts of their employees (Bouncken et al., 2018). The firm can operate its

corporate CWS inside or outside its venue and be more, or less open to external (non-employed) users. CWS can be open to everyone, yet depend on admission rules, or be based on membership to a background organization as stated above (Bouncken et al., 2020). The frequency and duration of which actors use the CWS varies. Membership might be fluid but can converge to a constant membership body, which enhances feelings of belonging.

### **2.3.3 Conceptual Framework for Initial Theoretical Patterns of Balance and Fluidity**

Traditionally, membership of an organization is considered as an anchor of identity (Litchfield et al., 2020). In less formal and more fluid settings, identity might autonomously emerge by continuous demarcation and negotiation of identity within boundaries, e.g. within a team, a space, or a specific work context that allows actorhood (Dobusch et al., 2015). Actorhood results “from fusing people’s sense of self with the demands of the place or role they occupy in an institutional order so that each person experiences and expresses emotion in institutionally appropriate ways and, thus, inhabits an institutional order” (Voronov & Weber, 2016, p. 458). When actors mainly work alone and only spend limited time in the spatial setting, opportunities and needs for developing identity decline. Yet, actors will adapt to the context, demonstrating actorhood. The open, fluid, and entrepreneurial work-spaces will have, compared to formal organizations, a greater likelihood of diverse logics with different voices to appear in behavior and conversations and not being suppressed or managed by a corporate logic. Accordingly, actorhood might not necessarily transfer to a shared identification.

A partial organization of minimal rules might allow stability for the work of loosely connected actors as a substitute or complement to a shared identification. The partial organization might relate to spatial or temporal separation, for example defining the usage of private offices, teamwork offices, or other dedicated areas. For managing polyphony, Gümüşay et al. (2019) show that corporates can use spatial separation mechanism for allowing employees following their logics regarded to as polysemy (e.g. separate prayer rooms). While minimal rules and spatial settings might bring stability, the spatial/temporal separation might reduce the social interaction necessary for developing a collective identity and dampening the potentials of different logics and voices which could deliver a stimulating shared work environment. Hence, there are substitutive and complementary relationships of three dimensions (see Figure 2.1). In the following, we develop propositions incorporating arguments on polyphony in our context of high fluidity, low stability, and the existence of polyphony as indicated in Figure 2.1.



*Figure 2.1-Contextualization within three dimensions*

**The sense of community (SoC)** defines a collective identity evolving beyond a formal organization among different actors or groups of actors (Vidaillet & Bousalham, 2018; Bueno et al., 2018). SoC has shown strong in a social community of CWS and is further supported by affective commons by a physical interior (Waters-Lynch et al., 2019). Identification is supported by direct interactions because a shared environment makes work legible among actors (Kellogg et al., 2006). A SoC might occur among team members or some actors in the space that feel sympathy and have similar interests. CWS have different actors with different non-suppressed logics and intentions to raise their voice, because no hierarchy or corporate logics are limiting them. However, we assume that SoC can develop in CWS even if actors have diverse professional backgrounds and might not be united by affiliation with an organization. In this presence of (potential) polyphony, some stability is needed within subgroups of the space and on a collective level that spans the space. SoC demands social interactions and/or affective commons. We posit that CWS can develop a collective identity related to SoC when they allow for social interactions in common spaces, engage in socialization events, and/or have strong affective commons. Instead, when a CWS focuses on the offering of separate offices, has a rather standard architectural design, and/or hosts audience-specific events, then the likelihood of an SoC declines. Hence, considering the potential of diverse voices and fluidity in CWS, a collective level SoC can operate as a stabilizing mechanism, only when the CWS allows for social interactions in common spaces,

e.g. supported by socialization events, and/or allows for affective commons residing in the distinctiveness of the space's layout. Yet, how is a balance of fluidity and stability attainable, when the work-space centers on private offices, has low social interactions, low affective commons, and/or high polyphony, which complicates the development of a collective level identification when no shared affiliation is given? We assume that minimal organizational structures, as discussed in the partial organization (Ahrne et al., 2010), might serve as a second dominant pattern on the balance of fluidity and stability when there is high fluidity and strong different institutional logics offering a high polyphony potential.

**A partial organization** is described as only having access to a few of the elements of a complete organization (Ahrne et al., 2010). With respect to CWS, the partial organization typically relies on rules set by the provider. It can tie back to a corporate firm that owns the space or acts as a professionalized operator of the space and thus brings elements (memberships, work structures, rules, monitoring, and sanctions) but avoids direct control and formal authority to the space. When physical resources are involved, as in CWS and makerspaces, there will be the need of a partial organization for generally or temporarily setting admission rules, regulations, and schedules for coordinating the use of physical resources. The partial organization can balance fluidity. In workspaces, minimal rules are more important than in mainly virtual settings, for example, a 'hacker space' (Dobusch et al., 2015) or Wikimania (Dobusch et al., 2019). However, the partial organization needs to avoid hierarchical control and formal authority in physical work-spaces. If formalization overshoots and dampens the character of a minimal organization, it might reduce the merits of fluid team-work, social interactions, and fluid boundaries shaped by informal and autonomous interaction. The minimal organization of a partial organization might operate as a substitute to social identity when the work-space centers on private offices, has low social interactions, low affective commons, and high polyphony in this setting. A partial organization might also complement social identity as a background enabler when there are significant opportunities for the development of a SoC in the CWS.

**Pattern-Proposition 1.** *Sense of community: Fluidity in CWS can be stabilized by a shared sense of community on a collective level which demands socialization opportunities and affective commons, yet these become more challenging when there is high polyphony and high spatial separation.*

**Pattern-Proposition 2.** *Partial organization: Fluidity of CWS can be stabilized by a partial organization which avoids formal hierarchical authority, but uses rules that can complement or substitute the shared sense of community so depending on the potentials of social interaction and polyphony.*

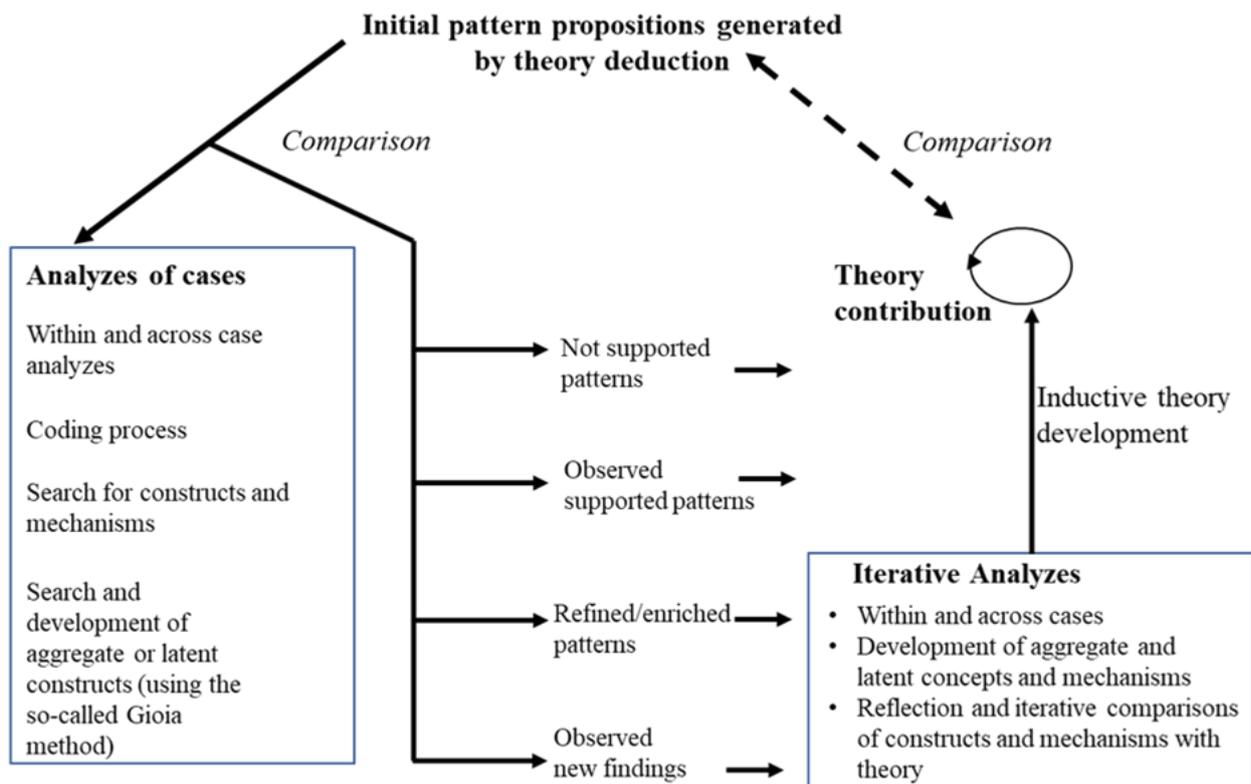


Figure 2.2-Research process related to the flexible pattern approach

## 2.4 Method

### 2.4.1 Pattern Matching with Qualitative Data

Qualitative research aims to understand novel phenomena embedded in social interactions (Graebner et al., 2012). We applied a flexible pattern matching approach that relies on “the comparison of a predicted theoretical pattern with an observed empirical routine” (Sinkovics, 2018: 468). First, it deduces an initial pattern from theory mapped out in propositions (see above). Second, the researcher iteratively compares if and how the data coheres with the initial patterns that might not be supported, partially supported, or fully supported by the data. The iterative comparisons describe the validity of the initial abstract patterns and bring new insights (Gatignon et al., 2020). This process helps to identify what is new about a theoretical twitch or the phenomenon in question (i.e., the challenge of fluidity and stability in CWS) and how it differs from current theories (i.e., attaining a balance in post-bureaucracy). When findings refine, enrich, or alter initial patterns they might lead to emergent patterns. Especially, changes that stand out will inform emergent patterns. In a third step, researchers compare the refined, enriched, altered, and potentially new findings with the initial patterns and emergent patterns towards inductive theorizing. Figure 2.2 shows our approach in overview. Table 2.1 portrays our initial patterns.

Table 2.1 - Expected Patterns of Balance and Fluidity in Coworking-spaces

Patterns	Dimensions	Expected Patterns	Expected Implications for Stability and Fluidity in Coworking-spaces
Sense of community	Collective identity	Low to High	Collective identity might be stronger when users have social interactions and networking opportunities in common spaces, socialization events, and/or have strong affective commons.
	Shared norms, values, and routines	High	Shared norms, values, and routines might strengthen the sense of community among independent professionals leading to stability in a high polyphonic and fluid setting.
Social exchanges		High	The shared working environment incites polyphony in coworking-spaces by allowing social interactions paving the way to learn, work, and grow together.
	Membership	Low to High	If membership is open to everyone without selection criteria (as in the case of independent coworking-spaces), it might create a high polyphony setting and can cause fluid usage patterns, e.g., users might use space more or less frequently, long or short, and might prefer one space or use several.
Partial organization	Work structures	Low	Membership based on selection brings stability and reduces the chances of polyphony.
	Rules	To emerge from data	Work structures and processes will be clearer and stable when users are company employees in a low polyphonic setting.
Sanctions	Monitoring	To emerge from data	Embedded rules by facilities, architecture, interior, and services or by general rules (access, opening hours, fees, etc.) manage fluidity.
		Low	Team structures, roles, and training to create organization outside a formal organization, yet managing polyphony with more fluid membership and loose boundaries among teams.
			Sanctions can be implemented in a low polyphony setting e.g. when users are company employees.

# Organizers in Fluid Organization Settings

Table 2.2- Case Descriptions

St No.	Space	Space Characteristics					Community Information			Stability-Formal Organization		Major Development since Inception		
		Country	Space organizer	Area of space (SQM)	No. of user/firms	Design of space*	Facilities of space*	Target users	Membership criteria	Community engagement	Clarity of roles/hierarchies	Rules, procedures, and guidelines	Changes in ownership, membership criteria, community, rules, and procedures	Addition of facilities or changes in space design, infrastructures
<i>Independent coworking-spaces</i>														
1	Mind	USA	Private individuals (franchise)	860	>150	T, O, P, S, Q	E	Entrepreneurs and firms working in sustainable sectors	Flexible membership plans	Social and networking events	Users define their own roles/hierarchies	Some rules are centralized guided by coworking company with local adoptions	Started with the sustainable development areas of education and health, which later added new areas, e.g., art and design, social justice.	Addition of new private offices, meeting rooms, and quiet areas to cater to the needs of users.
2	Serve	USA	Private individuals	929	130	O, P, S, Q	E	Open for everyone	Flexible membership plans	Direct involvement with the community members	ditto	Clear rules regarding usage of shared areas	New partnerships with universities to get interns for the firms.	Addition of a large event space and interactive directorates, enabling people to find specialties for enhancing collaboration.
3	Phoenix	USA	Private individuals	2780	450-500	M, O, S, Q	P	Open for everyone, mostly from the technological sector	Flexible membership plans, nonmembers can also participate	Social and learning events, Slack group, etc.	ditto	Shared norms and values govern the behaviors of community members	Change in ownership because the previous owners defaulted. Change in membership policy from startup to open-for-all.	Completely revamped the old space to modern open design with the addition of a state-of-the-art lab.
4	Place	Germany	Private individuals	170	15	O, S, Q	E	Open for everyone	No specific criteria	Social and networking events	ditto	Minimum explicit rules	Recently started day passes to bring new members.	Redesign layout to enhance the concentration of users.
5	Box	Germany	Private individuals	230	23	T, O, S, Q	E	Open for everyone	No specific criteria	Social and networking events	ditto	Shared norms and values govern the behaviors of community members	Eliminate the policy of fixed or assigned workplaces to enhance participation.	The addition of large meeting rooms, as previously, can only accommodate 4-6 persons.
6	School	Switzerland	Private individuals	650	100	O, S, Q	E	Startups, freelancers, and employees of companies	Flexible membership plans	Open offices and socialization areas	ditto	Shared norms and values govern the behaviors of community members	Recently started flexible membership plans to bring new members.	Slack for promoting communication among users.
7	House	Italy	Shared office space provider company	1100	>220	M, P, O, S, Q	P	Freelancers, micro-companies and corporations	Members of allied coworking-space can participate	Social and learning events	ditto	Clear rules regarding usage of shared infrastructure and resources	Introduced the policy of intensive community engagement to create horizontal and vertical collaborations among members.	Shared service department for managing memberships, services, access, and check-ins of users.
8	Vault	Italy	Private individuals	600	>100	M, O, S, Q	P	Freelancers and startups	Flexible membership plans	Socialization areas	ditto	Shared norms and values govern the behaviors of community members	Incentive offering policy for such members who can proactively involve with the community.	Addition of new lab, equipped with 3D printers
9	Farm	Italy	Single owner	350	80-100	T, O, S	B	Open for all professions	No specific criteria	Social and learning events	ditto	Shared norms and values govern the behaviors of community members	Recently signed an agreement with a coworking network, which allows the members of Farm to access other affiliated spaces.	The upper floor of the space is recently organized with proper desks, while the ground floor is available for digital nomads.
10	Station	Netherlands	Private individuals	500	40-50	O, S, Q	E	Open for all professions	No specific criteria	Open offices and kitchen	ditto	Minimum explicit rules	The reduced membership fee for professionals such as interior designers or architects	Additional of moveable partitions and complete mobile collaborative areas.

11	Tree	Spain	Private individuals (franchise)	1700	130	O, P, S	E	Professionals focusing on social impact	Businesses and startups focusing on social development	Social and networking events	ditto	Some rules are centralized guided by coworking company with local adoptions	Over the years, membership selection criteria have been broadened to diverse professions, e.g., marketing, communication, programming	The tremendously grew from 300 SQA with much focus on interior design, e.g., a wall with an agenda at the entrance, mixed-gender washrooms, etc.	
12	Lab	China	Coworking provider company	1072	129	P, S, Q	P	Mostly employees of big firms and entrepreneurial companies	Minimum 1-month membership plan	Kitchen and open spaces, online platform	ditto	Shared norms and values govern the behaviors of community members	Weekly events to enhance interactions among the members of the community.	Addition of different sized private offices to attract new users and to retain existing users for a longer duration	
13	Town	China	Coworking provider company	5793	913	O, P, S, Q	P	Entrepreneurs, freelance, startup teams and employees	Flexible membership plans	Social and learning events, online platform, electronic board	ditto	Clear instructions to follow in different zones	No specific changes in criteria	Installation of snacks and coffee machines at various offices and social spaces	
<i>Open corporate coworking-spaces</i>															
14	Hero	USA	Company-operated (franchise)	1300	>50	T, S	E	Partner coworking-spaces, firms and individuals	Members of franchise	Large scale social events	Users define their own roles	The company defines the rules.	Introduced a new council of mentors and advisors for the users of coworking-spaces.	Added a new hardware lab equipped with 3D printer	
15	Anchor	Germany	Company-operated (franchise)	\$30	10	P, S	E	Macro companies	Employees or clients of member companies with a long-term plan	Shared social areas	Companies have hierarchies	Users define their own rules and procedures	No specific changes in criteria	No specific changes in shared infrastructure and facilities.	
16	Jump	Germany	State-sponsored	4100	20	M, O, S, Q	P	Startups	Employees or clients of Startups	Learning and social events	Startups define their own roles	Management defines general rules for usage of space	No specific changes in criteria	Addition of new shared hardware lab and collaborative area	
17	Spot	Switzerland	Company-operated	3300	730	M, O, P, S, Q	P	Startups, freelance, and employees from corporate	Long term membership plan	Social and learning events and socialization areas	Hierarchies exist inside companies	Clear rules regarding usage of shared areas	Membership criteria have been relaxed over a period of time, and now Spots opened to independent individuals	Addition of operable partitions and multipurpose furniture.	
18	Suites	China	Company-operated	6200	843	M, O, P, S	E	Entrepreneurs, startups, and innovation department of some companies	Long term membership plan with specific criteria	Shared office and social areas, competition, etc.	Hierarchies exist inside companies	Shared norms and values govern the behaviors of community members	No specific changes in criteria	A new entry and exit system for users. A digitized quality monitoring system.	
<i>Closed corporate coworking-spaces</i>															
19	Port	Germany	Company-operated	600	40-50	M, O, S, Q	E	Employees and clients of port	Individuals affiliated with the parent company	Learning and social events	Management defines the roles and hierarchies	Management defines the rules and procedures	Development of new rules to enhance quality of working in open-plan offices, e.g., quiet time before 10 o'clock	Small phone booths for private and long calls.	

\*Design of space = Traditional design (T), Modern architecture (M), Open-plan offices (O), Private offices (P), Socialization areas (S), Meeting rooms and quiet areas (Q)

\*\*Facilities of space = Basic facilities such as office desks and computers (B), Extended facilities such as communal kitchen, sports equipment (E), Premium facilities to cater the need of community, e.g., a music room for the musician or a hardware lab for technicians (P)

2.4.2 Data

Our analyses of 19 cases reside on data from different sources for triangulation using primary data sources (e.g. observations and interviews) and secondary information of narratives and manifest data (e.g. occupancy rates, turnover of sales, turnover of customers). During our field visits from April 2016 to July 2017 and from November 2017 to August 2018 in the USA (mainly in California), Europe (in Germany, Italy, the Netherlands, Spain, and Switzerland), and China (in Beijing and Shenzhen), we purposefully selected and visited CWS that differ with respect to space organizer, size, type, facilities, target users, communities, and work practices (Morse et al. 2002).

Table 2.3-Descriptions of Data Sources

	Space	Observations	Archival Data	Interviews
Independent coworking-spaces	Mind	Participated in orientation and social events (2-3 hours)	Brochures of the space 59 reviews on Google 1 review on coworker forum	1 in situ interview with the program director
	Serve	Non-participatory observations in working days (6-7 hours)	Brochures of the space 42 reviews on Google 314 messages on Slack group	1 in situ interview with the director
	Phoenix	Participation in social events (4-5 hours) Non-participator observations (>30 hours)	Brochures of the space 49 reviews on Google 10 Reviews on coworker forum	2 in situ interviews with the founders 1 in situ interviews with community manager 18 in situ interviews with users
	Place	Non-participatory observations in working days (10-12 hours)	Booklet of the space 4 reviews on Google	1 in situ interview with the founder 11 in situ interviews with users
	Box	Participated in a community event (1 hour)	Website and description on coworker forum 3 reviews on Google	1 in situ interview with PR specialist 3 in situ interviews with users
	School	Visit of the space (1-2 hours)	Website and description on coworker forum 43 reviews on Google	1 in situ interview with facility manager 1 in situ interview with project coordinator
	House	Visit of the space (1-2 hours) Participation in a community event (1 hour)	Website and description on coworker forum 200 reviews on Google	1 in situ interview with the founder of the space
	Vault	Visit of the space (1-2 hours)	Website and description on coworker forum 77 reviews on Google	1 in situ interview with the co-founder and CEO
	Farm	Non-participatory observations in working days (4-5 hours)	Website and description on coworking forum 28 reviews on Google	1 in situ interview with the founder of the space
	Station	Visit of the space (4-5 hours)	Website and description on coworker forum	2 in situ interviews with co-founder and strategic partnerships manager
	Tree	Visit of the space (1-2 hours)	Website and description on coworker forum	1 in situ interview with research and analysis coordinator
	Lab	Visit of the space (1 hour)	Brochures and website of the space The description on google forum	1 in situ interview with the chief operating officer
	Town	Non-participatory observations in working days (7-8 hours)	The description on website and coworker forum	1 in situ interview with the manager of space 6 in situ interviews with the entrepreneurs 3 in situ interviews with the employees

Open-corporate coworking-spaces	Hero	Visit of the space (2-3 hours)	None	1 in situ interview with the liaison manager
	Anchor	Attended community event (1-2 hours)	The description on website and coworker forum 159 reviews on Google	1 in situ interview with the founder
	Jump	Visit of the space and allied firm offices in working days (>14 hours)	Brochures and marketing material of member companies	1 in situ interview with the manager of space 5 in situ interviews with the entrepreneurs or founders 9 in situ interviews with the employees
	Spot	Participation in a community event (2-3 hours)	Website of the company The description on coworker forum	3 in situ interviews with the co-founder, space curator, and program manager
	Suites	Visit of the space (2-3 hours)	Website containing information about the facilities, pricing, and community	2 in situ interviews with the founders
Close-corporate coworking-space	Port	Participation in social events (1-2 hours) Non-participatory observations (8-10 hours)	Company's website containing information about coworking-space A booklet containing objectives and purposes of coworking-space	1 in situ interview with the space manager 11 in situ interviews with company employees

We aimed for maximum variation while following the principles of appropriateness and adequacy to seek information not only about general population trends but also about data in contrasting cases (Seawright & Gerring, 2008). We first categorized our sample into independent, open corporate, and closed corporate CWS (Bouncken et al., 2020). Table 2.2 provides brief descriptions of the spaces' characteristics. We use serial numbers and pseudonyms for the CWS to ensure anonymity. Further, we deeply study each coworking-space and analyze the significant developments that took place in a coworking-space, since its inception, e.g., changes in ownership, membership criteria, community, rules, and procedures.

Table 2.3 provides a brief description of data sources of each CWS. During our visits to CWS, we attended workshops and social events and recorded our observations in our field notes (Neergaard & Ulhøi, 2007). We conducted semi-structured interviews with the founders, space organizers, and community managers of these CWS. We started with general questions about the philosophy of the space, spatial design and facilities, membership plans, and community. We then asked questions about the work structures of users and operational practices.

Interviews with users of CWS delivered in-depth insights of the user's viewpoints. We collected data from the users based on their affiliation, employment status, duration of their stay, and services used. We purposefully selected respondents from different occupational groups (e.g., full-time employees affiliated with large or small companies, freelancers, entrepreneurs, and consultants)

and industries (e.g., information technology, engineering, business consultancy, or media technologies). We interviewed only participants who had spent at least six months in a CWS to get accurate information (Seawright et al., 2008). Our diverse sample allows convergent and divergent views towards forming a holistic picture (Aguinis & Solarino, 2019). Our interview structure was iteratively modified per new insights gained. Our open-ended questions encouraged participants to share frank responses, personal stories, and honest opinions. Each interview lasted for 21 to 93 minutes and was recorded and transcribed on the same day. The transcripts of the interviews were shared with the respondents for validation (available in Appendix sources).

We also collected secondary data on narratives and claim making of the space by analyzing marketing brochures, websites, and workshop handouts for the categorization and contextualization of the spaces. We analyzed the websites of CWS since their inception via *archive.org* to analyze changes via narratives and claims of a CWS. We further ran computer aided text analyses (<http://www.catsscanner.net/dictionaries/>) for the social and economic orientation of the provider's narratives on their homepages (Moss et al., 2017). The economic and social value orientation values of each case are later integrated in a 2 dimensional Figure 2.5 in which we also marked cases in which we found stronger levels of stewardship behavior (see discussion) and which we paralleled with a figure containing permeability, polyphony, and organizership.

In addition, we considered reviews from *Google* and coworking forums, e.g., *coworker.com*, which provides detailed descriptions of space, amenities, and membership. Reviews from *Google* provide independent opinions of users of a CWS. Often organizers of spaces respond to the opinions of the user on the internet. These reviews cover a variety of topics, mostly relevant to our research agenda, such as the design of space, facilities, and communities. For example, one reviewer wrote, “[Phoenix] is a great coworking-space. We tested multiple different spaces in and near the city, but [Phoenix] is the winner—a great community and a great team that does their best to support the teams working in [Phoenix]. The open space with no walls helps communication between the teams. In the beginning, I was not sure if it will be noisy or distracting, but my team and I get our work done. Besides work, we find some good people and friends in [Phoenix]”.

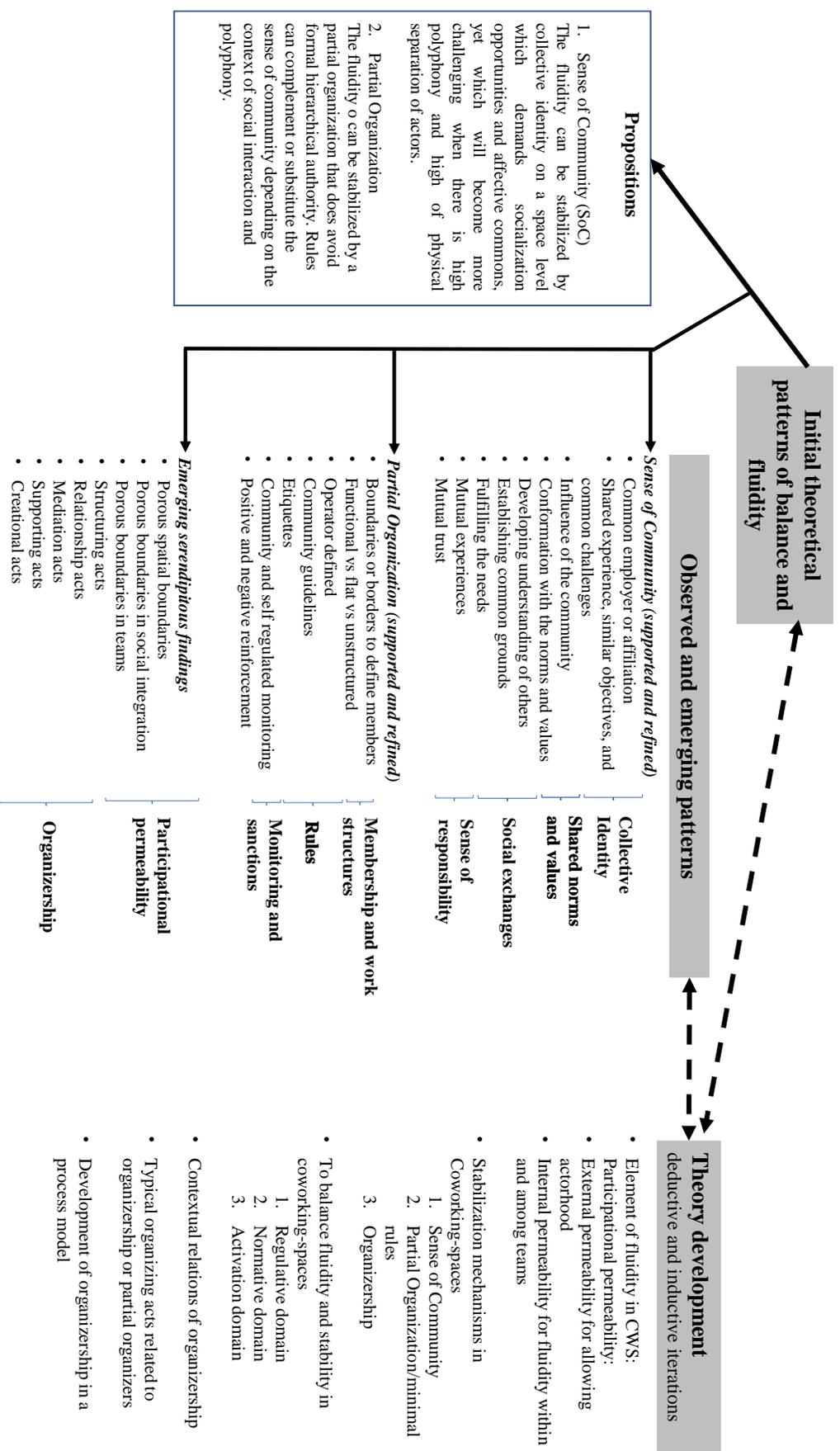


Figure 2.3- From initial patterns, to propositions, to observed and emergent patterns informing theory development

### **2.4.3 Data Analysis**

We used MAXQDA 12 to analyze our qualitative dataset consisting of around 3,500 pages, including field notes, interviews, reviews, and other archival data that facilitated the iteration process between theory and data during our analysis using a flexible pattern matching approach (Sinkovics, 2018). The aim was to (re)examine our data about its match or mismatch of the patterns for theorizing and potential breakdowns (Alvesson & Kärreman, 2007). At the beginning of the process, we identified the different patterns focusing on the SoC and partial organizations to answer our research question. For the pattern matching technique (Sinkovics, 2018), we developed a template (Table 2.1) highlighting relevant dimensions of patterns, expected empirical observations, and their potential relevance and implications for literature. In the next step, we coded our data and grouped relevant constructs, concepts, and patterns considering theoretical concepts in our template. Then, we compared these observed patterns from the data with theoretical patterns in our preliminary template. Throughout this process, we moved back and forth between data and theory and compared the similarities, shared patterns, and differences among different cases. Our template in Table 2.1 served as our initial node structures, which was later refined, updated, and extended with the progress of data analysis as suggested in the flexible pattern method (Sinkovics, 2018). As the flexible pattern matching approach uses rich qualitative interview data, we needed to find latent or second order and aggregate level constructs. Accordingly, we followed the suggestion of integrating the so-called Gioia method (Gioia et al., 2013) for understanding and developing concepts of the observed patterns (Bouncken et al., 2021). We holistically analyze the qualitative data on case to case basis and draw inferences only in those cases, where we get evidence from at least two different data sources.

### **2.5 Findings**

In the following, we report our findings on the expected patterns categorizing them into two domains, normative and regulative ones. We briefly mention new findings that we develop towards further theory in the later discussion part. Figure 2.3 provides an overview of how we approached findings in contrasting initial and observed patterns towards emergent patterns and theory development.

### 2.5.1 Normative Domain: Sense of Community and Stability

Our analysis supports that the SoC is a major stabilization element, especially when there is high autonomy, diverse institutional logics, and the potential for polyphony of independent social actors. The SoC becomes challenging when actors follow different logics that surface in diverse behavior and polyphony (cases: Serve, Phoenix, or Place). In CWS that mainly offer open-plan offices, e.g. SoC in Anchor (private office focus) seems weaker than in Jump, Box, or Place. In Port, stability comes in the form of a shared employment affiliation. The latter gets stronger when actors share office and social spaces. The coordinator of Port explained: “The sense of community is very important. Of course, this has increased considerably due to the open office concept. You come together more often, and the sense of togetherness has become much stronger and stronger than before” [2-Port]. The individual responsibility of a collective ‘good’ promotes the development of mutual trust at the community level, as our respondent further elaborated: “I have my laptop out at night, and I do not worry. I leave all my stuff there, even an iPad on the table. I trust this space and community. So, I contribute to keep it safe and clean” [3-Phoenix]. Trust-building takes time, as users “do not know each other. It is always that underlying relationship that brings that level of openness or trust to open up to in a way” [2-House].

In independent CWS, where users typically do not share a (background) affiliation, the SoC indicates a shared identity and develops a feeling of ‘belonging together,’ having similar objectives and shared challenges, as an entrepreneur described: “The other people around may be experiencing what you are experiencing” [19-Phoenix] and “being here in [Phoenix] helps you because there are many people that faced or tried to solve the same challenges that you want to solve” [3-Phoenix]. The SoC increases when users share offices and common areas with others. In independent CWS, the diversity and potential for polyphony is particularly high, but the shared affective commons of the physical interior and the SoC facilitate allow a shared identity creation among independent actors at a space level. It can evolve even if the user logics are different and not suppressed and when there are significant common areas (common offices areas, cafeterias, and makerspace areas) combined with the provision of single offices which allows spatial separation. The offer of a spatial separation for practicing different logics pertains to what Gümüşay et al. (2019) consider as polysemy. Hence, a shared co-created SoC and the possible, at least temporary, spatial separation can cope with the different voices and develop some common normative domain.

## Organizership in Fluid Organization Settings

Table 2.4- Sense of Community

Dimensions	Expected	Observed	No. of supported cases*	Implications	Representative Quotes
Collective identity	Low to high	Corporate coworking-spaces	4	In a low polyphonic setting, the shared employment affiliation of users in the form of a common employer in open-plan workspaces strengthens collective identity at the organizational level as compared to the team or departmental level and brings stability in corporate coworking spaces.	"When we moved into Port, there were really a lot of meetings/interactions. Not only within the team but also from the different departments... This has already emerged in a community process" [6-Port] ... This is also observed, for example, when going out to eat. It wasn't like that before. The whole floor went together. A kind of group formation has already developed here...." [9-Port].
		All type of coworking-spaces	12	The users working together in a high polyphonic setting, such as diverse in respect of professional backgrounds, affiliation, etc. can have a stronger collective identity leading to stability, as compared to a setting, where users have common profession, employer, or background, but are segregated through private offices.	"We use our community of freelancers and professionals to have them developing the communication site, the crowdfunding site, the whole capacity building of NGOs and nonprofit organizations. These are the three target groups. There are no real problems of noise or conflict. I mean they're always polite" [1-House].
		Independent and open corporate coworking-spaces	15	Shared experiences, similar objectives, and common challenges develop a feeling of 'belong together' and foster collective identity among actors without common affiliation in a high polyphonic setting.	"It's nice to see people of a similar or a high caliber come here... You get motivated by them. And they have good schedules that motivate you, and they do things that you motivate them, and we motivate each other, and it's a sense of identity or belonging or if it's not identity, if it's not belonging" [19-Phoenix]
Shared norms and values	High	All type of coworking-spaces	17	Following social norms and values in a polyphonic setting strengthens the sense of community among independents, employees, or other users, while allowing fluidity and stability.	"I think everybody that comes through the doors here, I feel pretty aligned in how they want to grow a community and work alongside other companies" [8-Town]
		All type of coworking-spaces	9	Community can reinforce norms and values, increasing stability in a polyphonic setting.	"... So there are five core values, and they actually reflect that pretty accurately... For example, if someone is not committed on the way, which is taken, because he says, he somehow does not want that, but the majority [community] then decides that this will be done" [1-Jump]
Social exchanges	High	Independent coworking-spaces	12	Social exchanges if not channelized effectively, can enhance fluidity to the extend of chaotic work or cacophonous setting.	"People joined spaces oftentimes for two different reasons. One is a quiet, focused place to work and the other is a network that they can connect with and that they can develop their business within, and in the same moment those two reasons are very much at odds with each other because it's very difficult to have a quiet, focused place to work and simultaneously a network you connect with" [1-Serve]
Sense of responsibility	-	All type of coworking-spaces	14	Individuals' sense of responsibility for the community strengthens the sense of community and brings stability in a high polyphonic setting.	"There needs to be a certain level like responsibility or respect for others, so for me, I try to be mindful of if I am using like a public space or space that's used by others, too, you know, leave it clean, to keep things neat and tidy" [4-Box]

\*Only those cases have been taken into account that have evidence from multiple sources.

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In contrast, closed corporate CWS scale lower on their diversity of institutional logics and for bridging the diverse voices, which might exist less in this context or might not surface because of the formal organization lingering in the background. The corporate firm in the background can reinforce, stretch, and leverage their corporate identity while linking to normative domain of the coworking-space. SoC facilitates shared norms and values, exchanges, and sense of responsibility among users in all types of CWS. Table 2.4 shows the different patterns and representative quotes concerning collective identity, shared norms and values, social exchanges, and sense of responsibility that bring stability while reducing fluidity in CWS through a SoC.

In addition, independent and corporate CWS have informal and autonomous gatherings of individuals or teams and autonomous team formations. We find activities that guide these ‘organizing acts’ base on provider personal but also users (see more detailed insights on organizership later). Users somehow raise their own organizer voice. Users are especially motivated and needed for these organizing acts, when there are high levels of diversity in institutional logics and polyphony. The proactively organizing actors might also facilitate the SoC, yet a higher level of SoC in the space is needed for encouraging the partially organizing actors. There is also a need of lower boundaries in the space. The director of Box described: “We wanted to create a sense of community, where people came together, shared ideas and collaborated... What we are particularly thinking is making connections between people that have shared values, goals, and a sense of responsibility” [12-Box]. An entrepreneur explained: “I make sure that I keep things nice and clean and I make sure that if I see something dodgy, or I see someone making problems, then I work against that or make people aware that something is not going the way since we want this place to be safe and clean” [3-Place]. The facility manager of School stated: “We set up meetings with groups of marketers or groups of founders, or we set up meetings with groups of growth hackers within School and ... telling them ‘some of you have more experience, some of you do not, but let us have a conversation about how we can help each other.’” [1-School]. We use these serendipitous findings for creating our model and concept of organizership in the discussion part.

### **2.5.2 Regulative Domain: Partial Organization**

The regulative domain relates to the finding that providers of a CWS can develop a partial organization by minimal rules. The partial organization, internal or external to the spatial space, is

based on incomplete forms of formal organization and cues for facilitating values, norms, and morals that stand for normative elements of the organization (Ahrne et al., 2010; Bitektine et al., 2020). Hence, rules suggest an overlap of the regulative and the normative domain. Table 2.5 presents different patterns in CWS related to membership, work structures, rules, monitoring, and sanctions. CWS linked to a corporate bring traces of its formal authority. For example, the community manager of Port explained: “Self-determined team building sounds a bit like a university where I can choose the people. In practice, this is not important, since the supervisor’s task is to decide who is working with whom on what activity. The superior knows the strengths and weaknesses of the employees and can assess who is suitable” [1-Port].

Coworking providers, e.g., Mind, Phoenix, and Place or franchise systems (Town, Lab, and House) might set the partial organization. The provider sets general rules, e.g. about the admittance of the space, and thus about membership (Ahrne et al., 2010). The partly codified and formally communicated abstract rules operate as enabling regulations of a minimal organization that rudimentarily influences the content of the work and govern general expectations of appropriate behavior (Adler & Borys, 1996). For example, CWS specify quiet areas, social spaces, and community guidelines: “...like no ping-pong before 5:00” [18-Phoenix]. CWS also regulate using shared infrastructure—for example, the facility manager of the space orients new and existing users about facilities and their usage policy. The community manager of Lab explained: “Though there is no restriction on the usage of hardware equipment such as 3D printers or virtual reality machines, people need to think about the other members of the community... we have this fair usage policy” [1-Lab]. CWS of incumbents apply elements of the ideal bureaucracy for the coordination of work-content (see Table 2.5 for examples). The background rules relate to ‘decided orders’ that have a minimum of organizational definitions (Ahrne et al., 2010). Furthermore, a partial organization pertains to the definition of membership influencing the demarcation and negotiation of organizational identity (Dobusch et al., 2015). We find the partial organization in all cases, only either more autonomously developed or inflicted by a background organization. In addition, we find rules occurring from users who take initiative and organize autonomously. Those partial organizers operate temporarily, but their regulations might linger. We theorize on this finding in our discussion on organizership.

Table 2.5- Partial Organization

Dimensions	Expected	Observed Patterns in Coworking-spaces	No. of supported cases*	Implications for Coworking-spaces	Representative Quotes
Membership	Low to high	All coworking-spaces	8	Those coworking-spaces which focus on the specific industry, such as tech (e.g., Mind, Tree), or professions, such as entrepreneurs, raise relatively stable communities and recognizable work routines.	“We do coworking for start-ups. We provide a membership. We don't provide desks. The desks are part of all of the memberships... When you are just giving a desk, it's just a piece of wood. But when you're giving a membership, it creates a sense that they are a member of a community [2-Jump].
Work structures	Low	Independent coworking-spaces	11	Coworking-spaces, open for everyone (e.g., Place, Box, Fann, Station) raise volatile communities and enhance fluidity.	“People come and leave. I mean, there are many people here... There is a community that is evolving, but the participants and their participation have fluctuated significantly many times here. I think right now the community is not very strong” [21-Phoenix].
		Closed corporate coworking-spaces	2	In closed corporate coworking-spaces, polyphony is low therefore, the work structures, task processes, and roles are clear and stable.	“They are rather permanent teams in which we work. There are working groups put together in a creative environment” [10-Port].
		Open corporate coworking-spaces	13	Polyphony arises when users have complete autonomy to define their tasks, work structures, and processes, however, it also increases fluidity.	“We can create our own workflow, or we can organize whatever we want. I see it as a positive to what's going on right now in terms of processes that we have and it's growing and it's ever-changing. I think everybody is open-minded about how things are done. There is no such intention of making things very strict and structured” [3-Vault].
Rules	To emerge from data	All coworking-spaces	15	The operator or owner of a coworking-space (especially independent) can set general house rules about the use of shared infrastructures and facilities (e.g., access, hours of openness, fees, etc.) to bring harmony.	“I have a really good example for strict rules/processes. I don't like and understand. That is like no ping-pong before 5:00” [5-House].



## 2.6 Discussion

The purpose of our study was analyzing the balance of fluidity and stability in a context of potential polyphony, studying CWS which nuance elements of post-bureaucratic organization and while being open to individuals with diverse logics that might surface and mingle. Upon our initial theoretic patterns, we framed a regulative domain and a normative domain informing the balance of fluidity and stability. Supporting previous research on partial organization (Ahrne et al., 2010) and extending the research on shared SoC and affective commons (Dobusch et al., 2015; Garrett et al., 2017; Waters-Lynch et al., 2019), we identify minimal rules in the regulative and SoC in the normative domain as key mechanisms. Our serendipitous findings invoke developing an activation domain that leads to a three domain model and organizership as a new concept on which we develop contextual conditions and a process model.

### 2.6.1 Three Domain Model

Our qualitative data has demonstrated emergent patterns related to what we consider as participational permeability and organizership. These mechanisms inform an activation-domain, which contextualizes the autonomy to act but also to take the initiative to enter conversations, enter, form, or leave teams, and to organize tasks and relationships. We use the activation domain for theorizing about autonomy of organizing when formal hierarchies are not present and when no or few rules about work structure are present. We argue that the balance of fluidity and stability in organizations that have strong post-bureaucratic characteristics is shaped in a three-domain model. Figure 2.4 shows the model consisting of the regulative, normative, and activation domain for the fluid organizations of CWS. It states the key mechanisms (bold font) and typical examples of instruments (listed underneath). Mechanisms in overlaying frames relate to more than one domain. They appear as bridging instruments. The key elements that shape the balance of fluidity and stability pertain to porous teams, porous social integration, proactivity, and organizing acts. These elements allow dynamic processes in which new members, new ideas, and new temporary boundaries bring diversity and offer polyphony that is elastically integrated or disintegrated. The minimal rules in the regulative domain build the fundament on which shared normativity of the normative domain can develop freely within social interaction. A dynamic pull is contributed by the activation domain. Movements in the spaces and teams turn into chances, when combined with

proactivity and temporary organization acts. In the following, we describe the model, how it was informed from data and how it reveals the new concept of organizership.

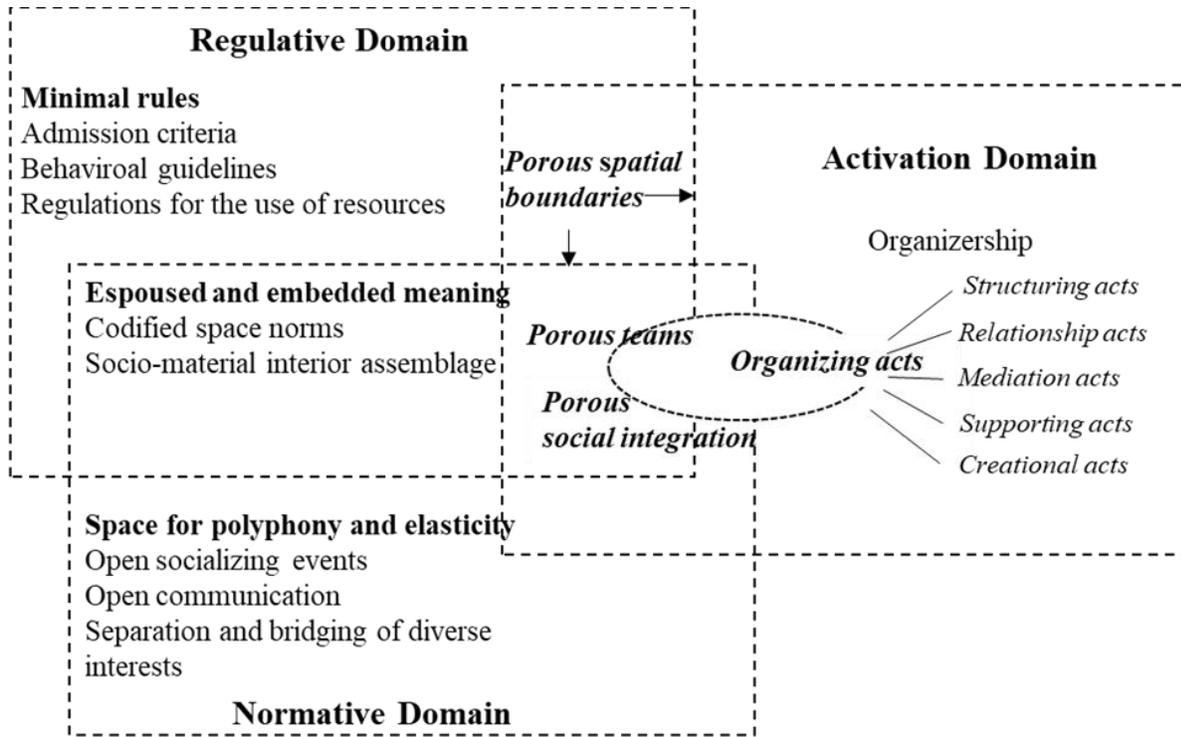


Figure 2.4- Theoretical Model on Domains and Organizership

### 2.6.2 Participational Permeability

While looking for stabilizing influences, we found fluidity from participational permeability which refers to porous boundaries that facilitate participation in spaces, social relationships, and teams. Organization is about boundaries, yet they might be open, unclear, or changing. Admittance of externals to the physical work-space shapes an outside boundary that becomes permeable when allowing participation of externals and actorhood. CWS differ upon this criterium, but once actors are admitted, the open facilities reduce spatial, functional, professional, and hierarchical boundaries allowing actors from diverse backgrounds and affiliations to participate in exchanges and demonstrating actorhood. Actors can transverse boundaries and participate in diverse exchanges, e.g., actors can walk in and out, participate in conversations, join in training, participate in a team, and leave the space and/or the social ties at their convenience. Participational permeability can provoke spontaneous interactions, bring in novel ideas, and promote users to adopt *ad hoc* and improvise processes. Actors can participate in flows of knowledge and resources beyond

conventional boundaries between units or levels in organizations. Actors may exchange unstructured and de-contextualized knowledge. An entrepreneur at Phoenix described: “I mean everybody kind of wanders around like to everybody else’s space... I ended up becoming friends with people that I would normally see up here on the floor for once a time... eventually, they invite you over and to show you what they are working on, and you show them what you’re working on” [6-Phoenix]. Users of Port are more likely to work in several teams simultaneously, as an employee responded: “In my old office, I used to sit next to the team assistant. Here I can have a desk next to a skilled worker who works in my domain ... It [referring to Port] strengthened our exchanges ... In the old office, I could not even know him, forming or entering a team or ... exchanging knowledge was difficult” [1-Port]. Table 2.6 shows representative quotes informing about different forms of participational permeability that also explain different activities of users in shaping organization, hence on the balance of fluidity vs. stability.

### *Porous spatial boundaries*

The outside boundary is regulated by the provider, for example corporate spaces concentrate on admitting their employees. Instead, independent CWS are generally open to anybody. Once admitted, actors gain access to fluidly shared infrastructures, work-spaces, social spaces, and facilities. They gain actorhood if they do not ignore the minimal organization including basic norms. Actors in CWS can easily switch from a working mode to a social mode. Typical bureaucratic organizations organize their units, departments, and hierarchical levels by using spatial borders of buildings, floors, or areas and defining breaks and social time. Phoenix, Station, Jump, and Port are typical examples that offer high inside spatial permeability to their users. For example, Phoenix consists of open-plan working and socialization areas on a single floor of an area of 2,780 sqm. It provides conference rooms and small cabins for meetings and telephone calls. Similarly, Station, Jump, and Port offer open-plan office spaces, where users accomplish office work, along with private rooms and social spaces. Private rooms are also accessible for meetings and conferences. If users rent private offices, they can partially personalize, design, and alter their work-space without asking for permission from their supervisor, thus creating an environment that fits better their key logics. They can design layouts, choose color schemes, and office furnishings.

## Organizership in Fluid Organization Settings

*Table 2.6- Participational Permeability in Coworking-spaces*

Dimensions	Observed Patterns in Coworking-spaces	No. of supported cases*	Implications for Coworking-spaces	Representative Quotes
Porous spatial boundaries	Independent coworking-spaces	8	Participational permeability in independent coworking-spaces reduces outside spatial borders and permits access to externals (non-members) of shared infrastructures, workspaces, social-spaces, and facilities resultantly enhancing polyphony.	"My coworking-space is big, beautiful, and clean. It is connected to many industries. We have connections to universities for getting interns for our companies" [13-Phoenix].
	Corporate coworking-spaces	3	In corporate coworking-spaces, permeability increases the porosity of borders to the outsider(s).	"External people who do not work for us, not even project-related ones, of course, do not sit in our office. But, if we have freelancers who are allowed to work with us on a project-by-project basis, they are always happy to get involved" [5-Jump].
	All coworking-spaces	16	Internal, participational permeability reduces barriers and permits users of all types of coworking-spaces to autonomously access shared infrastructures (e.g., computers, internet, desks), facilities (open spaces, café), and resources (financial, intellectual).	"The resources are good. They are pretty similar to all the other ones [coworking-spaces] in terms of like discounts or technology tools, sales products, and then the ability to connect you with mentors." [11-Place].
	All coworking-spaces	11	Coworking-spaces, through modern interior designs, reduce spatial barriers and support to traverse between working and socialization areas easily.	"I can focus on my work in this area [referring office spaces] ... You can see others working, but you don't want to disturb others, and if you need to talk with someone, you can go to that open area or in the café here. The ambience of the café is really nice for having a good conversation" [3-Lab].
	All coworking-spaces	7	Coworking-spaces that offer their users private office spaces allow them to personalize, design, and alter their workplace. Besides, in open-plan offices,	"They [users] rent space individually, and then they keep their stuff at their desks and then can [move] all around our areas, where they can work. There is like a communal kitchen area right next to there. There is another area where

Porous boundaries in social integration	All coworking-spaces	15	Users (especially new) easily make themselves home and fast onboarding due to modern interior designs, vivid communities, and an overall supportive climate.	“This is like instant culture, so you get to meet a lot of different people, and you get to see how they work, and so things are really convenient” [3-Spot].
	Independent coworking-spaces	9	In independent coworking-spaces, management supports easy social integration in the community.	“It depends on the person, but I think now we have a pretty vibrant community, and there is a good degree of collaboration. We facilitate it in three different ways: 1) by doing community events, 2) having Slack as a collaborative tool, and 3) a lot of ad-hoc connecting the teams” [13-Phoenix]
	Corporate coworking-spaces	5	Due to shared employment affiliation, integration of (new) users in the existing community is relatively more straightforward in corporate coworking-spaces.	“I feel responsible but not responsible. After all, the relevant superiors are responsible. We have no responsibility per se. Responsible in a collegial sense. It’s easy to make sure that everyone feels really taken along and that everyone gets all the necessary information” [11-Port].
	All coworking-spaces	14	Irrespective of the type of coworking-spaces, users can quickly participate in the knowledge exchange processes with the existing community.	“You don’t have to walk the extra mile in order to get more knowledge. Let’s say there is an event or something happening around you, and there is just unplanned learning. People are more open and communicate with each other. You don’t have to be so afraid to knock on the office door anymore. It’s open, and you can talk to people” [1-Station].
Porous boundaries of teams	All coworking-spaces	13	Loose boundaries between groups, teams, and workspaces enable linkages among teams in coworking-spaces.	“Definitely the potential relationships and partnerships that you can develop while working here... built so naturally and fluidly. As a new start-up, we have built some relationships that are very key to our business currently” [5-Phoenix].
	All coworking-spaces	13	Teams and individuals can decide and select the other individuals, groups, and teams freely to work with.	“I can decide relatively freely, whether I want to involve another team or not. But I think you have to involve as many teams as possible if you have any issues that are cross-team” [7-Port].
	Independent coworking-spaces	9	In independent coworking-spaces, the likelihood of an individual or team working in several teams or groups simultaneously high due to the open-work environment.	“Some of the teams here are really sociable, and they like to interact/work with a lot of the other teams or just with the individuals of another team. Some people and some teams are not ... but in general, people are really open to working together” [3-School].

CWS mostly offer unassigned workplaces in open-plan offices to their users, allowing them to choose their workplace. An employee of a company explains, “[We] do not have any walls” [3-Port] to describe the inside spatial permeability of Port. Open-plan offices reduce distances, enhance interaction, and increase efficiency as a founder of a web-based platform described: “In our projects... we can decide relatively quickly due to local composition. We just have to go to the next office [adjacent private room], can vote on something orally, then record it in writing. We do not have to call any special meetings. I see that as a definite advantage of us being faster” [3-Jump]. Shared infrastructures bring linkages among diverse users and encourage them to exchange direct and explicit knowledge. A user at Phoenix explained how a shared hardware lab brings knowledge exchange opportunities for them.

### *Porous boundaries in social integration*

CWS provide permeable boundaries and participation in social exchanges via fast onboarding in conversations, teams, social entities through vivid communities, and management support. A consultant at Phoenix said: “I am quite new here... It is so helpful to be in this environment. Here, I can see how other companies are doing things or talking to others and learning how they are doing things” [4-Phoenix]. The community activities at CWS facilitate (new) user integration. Some CWS such as Phoenix, House, and Tree provide online platforms for users’ interaction. Besides, community managers can integrate in direct interaction, as the director of the Serve suggested: “... every new team that comes in, we sit with them for about forty-five minutes with our whole team or like, ‘Tell us about you. Tell us about what you’re passionate about. Tell us what your company is doing’... We provide them a productive work-space. We connect them with mentors and investors so that they can get expertise. We provide them access to networking opportunities and educational workshops, and we provide them with a community” [1-Serve]. In company-operated CWS fast onboarding is eased by a shared affiliation. The international relations manager at Port stated: “When someone ‘new’ joins us... can be introduced with everyone here from the company and with the others... I imagine this environment is so beneficial for the members... We can interact more often” [6-Port]. Socialization declines when private offices dominate the layout of the space. An incumbent company as a background organizer might thwart autonomous interactions among users at space levels and decrease possibilities for knowledge exchange with the users who do not share the same affiliation.

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*Porous boundaries of teams*

CWS allow forming, joining, and leaving teams, thus enabling numerous connections among teams and actors from inside the space and from outside. Porous team boundaries allow actors to freely form, join, and leave a team without asking permission from an authority or adhering to organizational rules. Teams can consist of diverse and external partners. Teams might evolve from functional or social needs and are influenced by personal fondness. A Phoenix member said: “I would say maybe reaching out to somebody and asking like... ‘we just started, or we are having a problem’ ..., ‘who else has experience with this ads thing’ in [Phoenix], and then someone will probably..., ‘Oh I have used that,’ and then we will go and ask him questions or work together...” [7-Phoenix]. Organizers of independent spaces do not directly influence the formation of teams. However, the organizers of the space can indirectly facilitate the team process by offering socializing opportunities which stimulate collaboration of actors from diverse domains with complementary skills (e.g., social events, seminars, and workshops). Yet, the decision to form a team depends on the team or individual, not on a formal organizer, as the community manager of Place described: “Some of the teams here are really sociable, and they like to interact with a lot of the other teams... just with the individuals of another team... Some people and some teams are not as social, and they come here, work, and get out as soon as they are done with their work” [1-Place]. In independent CWS, participants from one team can contribute to others, and even the whole team can end up working for a client or employer: “People have conversations, and maybe some company goes down, and the employees end up working for another company in the space... stuff like that happens here” [14-Phoenix]. Independent CWS permit autonomy to their users to (re-)define their tasks, work structures, and routines. In company-operated corporate CWS, authorities of the space affect the teaming process.

### **2.6.3 Organizership**

*Conceptualization of Organizership*

In our context of low formality and fluidity, we find actors who freely and spontaneously perform organizing acts out of autonomous responsibility without having or needing the authority to do so, just acting on the *ad hoc* need that someone should do and to organize a problem or seize an opportunity. We develop our insights to such autonomous organization acts without needing authority and permission as ‘organizership’. Organizership as to take an

initiative for partial and temporary organizing acts might convey economic targets, but also feelings of altruism, social responsibility, or affective and instant action. Organizership appears by proactive and context-aware organizing acts. In other words, organizership is raising your ‘organizer voice’. A founder explained: “We could really, truly, genuinely assist and help each other in an action-oriented way. It is maybe activity surrounding, ‘Hey, how can I help you?’ and team A might not be able to help team B directly when team B has helped A, but you pay it forward. It is the culture, and it really brings itself up. So A can help C, C can help A, and I think that that would be amazing, how do you connect and help everyone” [19-Phoenix]. By actor, we refer to single actors or a group of actors.

Organizership coheres with the perspective on human behavior by stewardship theory in the way that individuals are not only driven by self-interest, but motivated by service to other individuals and social entities and to exposing altruism and generosity (Davis et al., 2007; Davis et al., 1997; Le Breton-Miller et al., 2009). Stewardship theory has been shown as a powerful theory to explain behavior in family firms, where actors identify with the values of the family and receive satisfaction from sharing, helping, and supporting the cherished family (Miller et al., 2008). Stewardship has also been associated with long-term relationships and high trust in a context organization that has more complete formal and bureaucratic structures and where principals orientate other actors toward a stewardship role instead of a self-interested agency action (Davis et al., 2010; Davis et al., 1997). Actors showing active organizership will be motivated by shaping coordination for themselves and for others even if they do not have a shared affiliation. Organizership demands that some are actively taking the initiative. Others need to accept and follow those active partial organizers. Hence, we separate active and passive organizership, being in a recursive relationship because active organizership will be strengthened when it is followed.

Organizership relates to performative and fluid informal authority that allows shaping a situation by “selectively relating to people, tools, and principles” (Bourgoin et al., 2020, p. 5). Organizership allows overcoming the boundaries between actors as givers or receivers of authority. Hence, it permeates the boundaries of a superior vs. subordinate (Bourgoin et al., 2020). Actors showing organizership plan and organize chores or events. Hereing they reach out to already involved but also potential new actors. The partial organizers related to organizership can try to balance different logics, viewpoints, and behavior. The partial organizers might help others in raising their voices. The space ‘curator’ of Spot explained: “We

offer the possibility to our members to arrange events. They can plan themselves their own events to strengthen the community [2-Spot]. The management of CWS might also get involved and support these actor-driven efforts by providing resources or infrastructures, as the community manager of Phoenix explained: “Events are great ways of networking for people. They are all open to all the members here, and they get free access to it. They have to take initiative and go and find people who are organizing the events. If we really feel like it is something that our members, particularly startups would benefit from, we’ll try to initiate that conversation. Still, startups here have to take initiatives of themselves. We can’t just direct them” [1-Phoenix].

### *Manifestations of Organizership*

Organizership might manifest in (typical) organizing acts. These can include elements of project management (e.g., planning, controlling) that explain coordination and planning, hence *structuring acts*. Actors might bring others together in *relationship acts*, e.g., joining a conversation and supporting inter-personal ties, as an entrepreneur working in Place explained: “If I have some kind of project, then, of course, the people here at [Place] would be the first address, where I would ask” [3-Place]. They might take the lead in shaping ideas, connect ideas or expertise, and/or help with advice in certain project or team stages, as a founder in Phoenix stated: “The relationships and partnerships build so naturally and fluidly here... and even now, we have some relationships here that are key to our business” [5-Phoenix]. CWS made this process very convenient, as a software engineer described: “We talked to our neighbors, and they were like, ‘Oh yeah, we’re looking for this kind of target customer,’ and I was like, ‘Oh send me an email.’ So, I helped someone when I think they might be interested in their product. There is a lot of such sort of collaboration already.” [7-Phoenix].

In Port, actors’ autonomous responsibility shows to be important for coping with the challenge of working together with different people from different teams, departments, and following diverse objectives and interests. Actors take responsibility and action to reduce conflicts. One explained: “A sense of responsibility is important to be able to work together sensibly... To be considerate of each other, to have fun together from time to time, and to always have an open ear for your colleagues ...” [3-Port]. Organizership might, by *mediation acts*, reduce conflicts among independent actors and thus reduce the tensions if polyphony is present when actors freely operate as mediators, even though they have no authority and just help. The Chief Operating Officer of Lab described handling the conflicts: “Basically, sometimes we go for

mediation. When we see two teams are fighting, we play our role as a mediator when teams are unable to reconcile” [1-Lab]. Actors might offer training or invite externals. Further, organizership encompasses offering help to others, e.g., by operating machines and by solving problems like for makerspace devices or workbenches. Organizership can also help others psychologically by listening and acting, giving advice, or providing contacts. Organizership contains the assistance to others in choosing what and how to do chores. It can relate to empowerment and teamwork (researched for formal settings) that supports fluidity and coordination among experts (Sewell, 2001). Actors can help others via one-to-one explanations or organizing trainings with several participants, indicating *supporting acts* for single or multiple individuals. *Creational acts* might be led by actor taking the lead in stimulating thoughts and synergizing the polyphony potential.

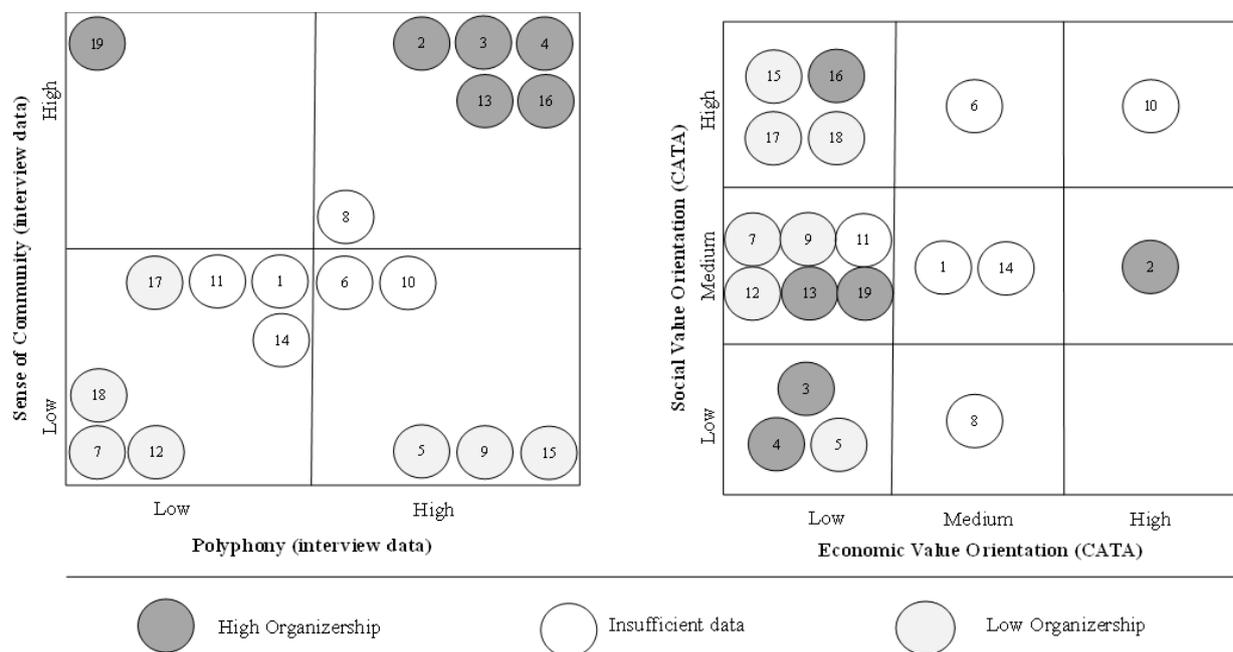
Hence, organizership manifests in organizational acts, which can range between small isolated acts, including advice or help, at the one end, and more complex or sequential acts, at the other end. While there is an overlap to the diverse management roles (Mintzberg, 1980), the specificity of organizership lies in the fluidity and the temporary occurrence in an absence of formal authority rights and appointed management roles. Organizership is autonomously demonstrated behavior and raising one’s organizing voice. As aforementioned, it does not reside on hierarchical power, on formal roles, of supervisor-follower relationships, or defined membership to an organizational unit. Organizership is based on the enabling conditions of fluidity and low bureaucracy.

### *Contextualization of Organizership*

Contextual aspects influence the occurrence of organizership. First, linking organizership to forms of CWS findings demonstrate that actively pursued organizership in independent CWS occurs when users are mostly young, motivated, and enthusiastic to fully harvest the potential of CWS. They are interested in new ideas from the community, new business contacts, potential teammates, and proactively more things forward, not necessarily for their direct own benefit. We reason that active and passive organizership will evolve recursively under these conditions. We further find that organizership in independent CWS is directly and strongly determined by the SoC. The stronger the community, the more likely users interact and support each other and show active organizership while accepting it also in passive ways. We also find active forms of organizership in corporate CWS when employee-users are looking for new teams or venture opportunities. While they help others, they also search for ideas and aim to improve their status.

A background company owner reduces the altruistic motivation. In open corporate CWS, organizership is mainly influenced by the physical layout of the space. If the space provides social or common areas along with the private offices, people are more likely to see, interact, and act as compared to if some CWS provide private offices with small pantry kitchens or lounge areas, then the employees of the startup firm are more likely to be housed inside their private offices. Hence, SoC might be an underlying enabling factor.

Second, we located the high organizership spaces within a 2 dimensional matrix (Figure 2.5) built by the positioning of the spaces using CATA narratives about economic and social value orientation and by the qualitatively derived measures of polyphony and permeability. The matrix on the right (Figure 2.5) indicates that most of the CWS are contextualized by the narratives of social values (e.g., emphasizing the values of help, welfare, freedom) instead of economic values (such as cost benefit, performance, efficiency, or growth). While we see no specific pattern of organizership in the matrix on the CATA values, we interestingly find that organizership occurs prominently under the condition of high polyphony and high permeability indicated by interview data (right matrix of Figure 2.5).



**Figure 2.5- Contextualization of organizership related to cases, measured by primary (interview) and secondary (CATA) data**

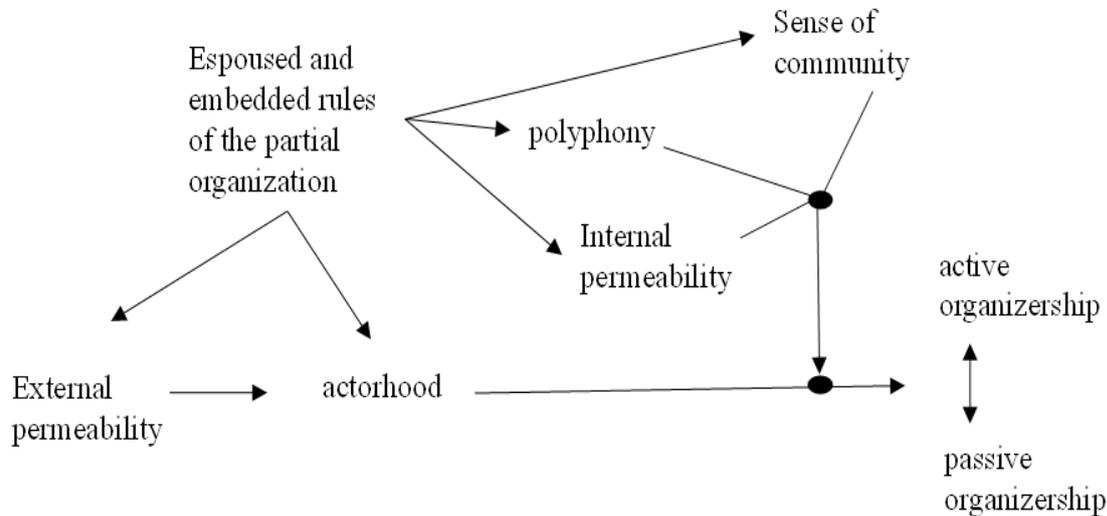
Organizership is facilitated by participational permeability because, otherwise, their boundaries would limit the scope of actions. Permeability allows actors to choose their micro-

audience while others can decide not to follow and leave. Organizership might occur temporarily, when actors organize only a few or single events, step back from leading a team, change roles in a team, leave teams, or stop participating in the work-space at some point. Organizership shows active behavior, but the actor might also have more passive times (Bourgoin et al., 2020). Organizership can be influenced by the physical outlet of the space and depends strongly on the (high) levels of SoC and the permeability which allows this fluidity. Actors showing organizership might demonstrate behavior, morals, and norms that other actors in the space sense, learn, and then share. It is about taking responsibility. Still, organizership means that, temporarily, actors have a more central role among others (*primus inter pares*), attract more attention, and for that moment, form the hook of organizing acts. This may be interpreted as informal hierarchy, which needs to be freely ascribed by others who accordingly are showing passive organizership. Organizership, by bringing ideas and by demonstrated initiative, inspires others and increases the activity when characteristics of post-bureaucracy are present. Others, even in different teams or working alone, observe the activity and energy of actors with high initiative and try to mimic the behavior, thus pushing further the vibe of the post-bureaucracy (see Figure 2.5 left). Although organizership is likely to occur in post-bureaucratic settings, it might also occur in other contexts. Organizership is a form of raising your own voice that demands high participational permeability and a high SoC. It might occur in contexts of low or high polyphony of institutional logics.

### **2.6.4 Process Model**

We suggest a process model extending the previous argumentations particularly on the contextualization of organizership. The model starts with the different rules on open admission to the space which forms the basis of actorhood. The partial organization by explicit and embedded rules will indirectly influence the likelihood of organizership to appear on the collective or individual level. The explicit and implicit partial organization will influence how strongly internal permeability is possible (e.g., team work tables or offices, onboarding events, and team forming events), shape underlying conditions for the development of a SoC (e.g., open spaces or socialization events), and it will also influence, via admission rules or implicit clues, the existence of potential polyphony. Yet, the intensity to which different voices are raised will also depend on the social interaction. Figure 2.6 suggests a model potentially to be tested via mediation and moderation analyses. There will be positive interaction effects of polyphony, SoC, and internal permeability that facilitate the occurrence of active and passive organizership. We also acknowledge that actor-specific variables might influence the

likelihood that an actor shows active or passive organizership but did not include them in the model. We further relate to the need to understand and test how specific instruments of the partial organization and forms of polyphony operate in this context.



*Figure 2.6- Proposed process model: Relationship between Polyphony, SoC, and Organizership*

## 2.7 Key contribution, Limitations, and Future Research

Our study contributes to research about stability and fluidity in organizations that have ‘post-bureaucratic’ characteristics and might encompass polyphony. We specify previous research about stability via social identification (Dobusch et al., 2019; Dobusch et al., 2015; Schreyögg et al., 2010), specifically via a SoC that unfolds in coworking spaces (Garrett et al., 2017). Our research further denotes origins of a partial organization from the background organization, the provider, or by internal processes from partial or temporary organizers that inform our concept of organizership. We propose a model on the balance of fluid organizations, which is shaped by the regulative, normative, and activation domains. Especially the activation domain is specific to balanced fluid organizations, which might tie in their actors into dynamical processes. We submit the concept of organizership, which might also activate dynamic processes and multiple voices in more bureaucratic organizations. Organizership might include economic targets but is strongly driven by community, social obligation, and proactiveness to take the initiative by organizing acts. Organizership responds to the call of new authority in post-bureaucracy that overcomes the dyad of supervisor and subordinate, complies with more temporary behavior (Bourgoin et al., 2020), and departs from traditional management roles (Mintzberg, 1980). Organizership transports freedom, is more altruistic, and shows less self-

interest motivations of stewardship theory to fluid organizations (Davis et al., 2010; Davis et al., 1997). Like every research, our study has limitations. The spatial setting of CWS shapes a boundary condition of our research. In CWS, the physical space builds a primary boundary for actorhood that facilitates communication and coordination through co-presence of actors (Weinfurtner & Seidl, 2019). The shared physical space increases the visibility of work, making it and the associated meaning and emotions more legible among actors (Kellogg et al., 2006). Organizership might be different in spaces that include more virtual work, which have a stronger interconnected decision-making on behalf of a collective. Hence, we especially motivate future research on other contexts of organizership that might also occur in traditional firms that have higher degrees of autonomy. Furthermore, even though we covered different forms of CWS, our findings are bound to this high fluidity context (cf. Figure 2.1) again. Future research might aim to test a contingency or process model on organizership (cf. Figures 2.5 and 2.6), using the manifestations of organizational acts as dependent variables. In particular, we encourage quantitative research that could test parts of our model, especially test the occurrence of organizership that manifests in different organizing acts or in mindsets of active or passive roles of organizership. Our manifestations in organizing acts could guide finding items for these second order conceptualizations. Especially for independent CWS and for other entrepreneurship spaces, future research could also consider their narratives and analyze how these directly or indirectly influence the occurrence of organizership. We encourage research on organizership in corporate contexts, helping those in the journey towards more fluidity, also encouraged by conditions of more homeoffice or coworking based work in post Covid-19 times.

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## **Chapter 3: Bringing the Design Perspective to Coworking Spaces: Constitutive Entanglement of Actors and Artifacts**

### **3.1 Abstract**

Different forms of coworking spaces have spread worldwide that use various artifacts (e.g., office settings, décor, furniture, equipment) to strengthen autonomy, flexibility, spontaneous interactions, and intrinsic motivation. However, the various manifestations of coworking spaces limit clearly defined boundary conditions for their successful implementation and demand a profound understanding of the interactions that take place among actors and artifacts. Using a flexible pattern matching approach, our study explains that artifacts can contour and create the possibilities for actors and define the borders, e.g., when, where, and with whom to communicate and work in coworking spaces. Our findings indicate that actors and artifacts are constitutively entangled in coworking spaces and play a key role in the community development process by fostering a shared understanding and identity, mutual interdependency, and common practices.

### **3.2 Introduction**

Today, organizations aiming at more creativity search for new ways that strengthen autonomy, flexibility, spontaneous interactions, and intrinsic motivation via more open workplace designs, often following the template of coworking spaces (Alexandersson & Kalonaityte, 2018; Bouncken et al., 2020; Jakonen et al., 2017; Khazanchi et al., 2018; Siggelkow & Rivkin, 2005; Waters-Lynch & Duff, 2019; Yoo et al., 2006). Different forms of coworking spaces have spread worldwide since they appeared in Silicon Valley a decade ago (Bouncken et al., 2017; Vidaillet & Bousalham, 2018). Coworking spaces use different artifacts and offer distinct physical settings (e.g., décor, furniture, hardware equipment), size, and community (Bouncken & Tiberius, 2021; Waters-Lynch & Duff, 2019). Users from diverse professional backgrounds (e.g., freelancers, remote workers, entrepreneurs, and employees affiliated with companies) choose to work alone or to get in contact with other community members in coworking spaces to gain outcomes in the form of collaboration, creativity, and innovation (Butcher, 2018; Spinuzzi, 2012; Vidaillet & Bousalham, 2018). We deduct that the common foundational characteristics of coworking spaces relate to the creation of a sense of community among users (Clayton et al., 2018; Garrett et al., 2017; Kojo & Nenonen, 2016) and/or using aesthetic and

playful office designs (Endrissat & Leclercq-Vandelannoitte, 2021; Waters-Lynch & Duff, 2019).

However, the various manifestations of coworking spaces limit clearly defined boundary conditions for their successful implementation. For example, a coworking space that hosts users from a specific professional background (e.g., IT professionals) or employees from a particular firm, with such office design that stimulates social interactions, perhaps does not help them to achieve creativity (Bouncken et al., 2020; Clayton et al., 2018). Similarly, a coworking space that offers private offices or few socializing areas may be unable to create a sense of community among users due to limited social interactions and inadequate networking and collaboration opportunities (Bouncken et al., 2020). Inversely, Irving and colleagues (2019) analyzed how collaboration can be avoided in a collaborative building via minimizing serendipitous encounters. Contrary to coworking space 'prototype' research, they argue that collaboration and interaction might distract users, harming their creativity and other autonomously set motives (Irving et al., 2019).

We assume that coworking spaces can be designed by physical, digital, and narrative artifacts that help users in achieving intended outcomes (Waters-Lynch & Duff, 2019). Outcomes might be the prototypical ones related to creativity, but alternatively, the design of a coworking space can assist users to concentrate on their work without being distracted by unwanted interactions. Especially when it comes to facilitating innovation, our assumption relates to the current trend of design perspective that explains how designs can trigger desired outcomes (Berglund et al., 2020; Gigerenzer & Todd, 1999; Lainer-Vos, 2013; Shepherd & Wiklund, 2019). In coworking spaces, this particularly asks the understanding of the interactions that take place between actors and artifacts that produce multiple, emergent, and capricious outcomes.

Therefore, our study aims to analyze how actors and artifacts interact within coworking spaces. Accordingly, we follow the theoretical background of the design perspective (Berglund et al., 2020). We applied the qualitative method of a flexible pattern matching technique (Bouncken et al., 2021; Sinkovics, 2018). Pattern matching involves the development of a set of patterns based on prior literature, viewing the qualitative data through the lens of these patterns, and then describing the extent to which observed patterns validated the initially formulated patterns (Gatignon & Capron, 2020; Greenwood et al., 1994) while allowing room for new patterns emerging from the data (Sinkovics et al., 2019). We collected data from ten different coworking

spaces. The objectives of these coworking spaces vary from providing a space to work in an efficient way to build a strong community.

Our findings point out artifacts and their role in community development in coworking spaces. As compared to existing studies (Blagoev et al., 2019; Garrett et al., 2017; Spinuzzi et al., 2019) that focus on actor centric views for community development in coworking spaces, our study explains that artifacts can contour and create the possibilities for actors and define the borders, e.g., when, where, and with whom to communicate and work. Actors can also perceive meaning about the same artifact according to their perceptions and beliefs and engage with artifacts (Ewenstein & Whyte, 2007; Våland & Georg, 2015), which might take an unwanted turn (Irving et al., 2019). Our findings indicate that actors and artifacts are constitutively entangled in coworking spaces that help develop a shared understanding and identity, mutual interdependency, and common practices.

In sum, the paper contributes to our understanding of the modern workspaces that rely heavily on aesthetics and collaborative design in three broad ways. First, it develops our empirical understanding of the artifacts and their role in expressing the identity of spaces and the shared identity of actors working therein (Byron & Laurence, 2015; Comi & Whyte, 2018). Second, our study contributes to design literature and provides insights into how artifacts can enable or restrain certain actors' behaviors and how actors can perceive, define, and redefine the affordance of artifacts according to their own perceptions and beliefs (Gibson, 1986; Jarzabkowski & Pinch, 2013; Norman, 1999). In doing so, we suggest that taking the inter-play of actors-artifacts together in theory and practices can help organizations make progressions towards effective organizational designs to improve the flow of communication, collaboration across boundaries, and architect innovation. Third, we contribute how do design choices and physical properties of artifacts (e.g., nature, color, size) build perception of actors and communicate cues of openness, autonomy, and creativity, create mutual interdependencies among actors to develop a shared understanding, meanings, and narratives familiar to the community.

### **3.3 Theoretical background**

#### **3.3.1 The Design Perspective**

The notion of 'design' has various connotations ranging from artistic and aesthetics work or creation to engineering structures, information systems, and architectures (Berglund et al.,

2020). Simon (1996) explains that design is the usage of existing knowledge to create a new or desired situation to achieve specific objectives. In organizations, designers generally aim to configure the structures in ways to elevate the organizational outcomes (Yoo et al., 2006). Thus, designs aim for a specific purpose and direct attention to the need of the artifacts with desired properties (Berglund et al., 2020).

However, the objectives of designs are not always obvious at the outset while being abstract ideas and vague concepts (Baldwin & Clark, 2000). All designs are structurally similar as they concern with the *interface* (artifacts and design rules) of *inner* (organized individuals) and *outer* (environment) systems that are gradually developed and frequently guided by general ideas, abstract goals, and vague notions of interestingness (Simon, 1996). For example, a knife as an artifact involves the material from which it is made of, the material it cuts, and the hand that holds it (Simon, 1996). The designer of the knife might start it with the vague idea of a new type of blade, which further instantiates it with the sketches, models, followed by seeking feedback and making progress (Vincenti, 1990). In design-oriented disciplines, movements between parts and whole are termed as *abstract artifacts*, which are often quite vague concepts or ideas and more *concrete instantiations* through which they are expressed and developed (March & Smith, 1995; Vincenti, 1990; Werle & Seidl, 2015).

Based on the work of Simon (1996), Berglund and colleagues (2020) present the design perspective, which resonates with the ideas of vast and varied literature and emphasizes that actions taken by the actors depend upon the social and material circumstances (Garud et al., 2008; Jelinek et al., 2008; Orlikowski, 2007; Romme, 2003; Weick, 2003; Yoo et al., 2006). The design perspective is based on the assumption that social interactions are complemented and augmented by design principles and artifacts (Berglund et al., 2020). Berglund and colleagues (2020) theorize the *interface* between organized *individuals* and their *environment* as *experimentation* and *transformation* design processes. The experimentation design process views the external environment as an independent existence (Milliken, 1987) where leaders lead and enroll subordinated stakeholders to overcome uncertainty by information gathering (Bremner & Kathleen, 2018; Burns et al., 2016). Experimentation design focuses on speed and flexibility in the organization thus relies on such artifacts that enable efficient execution of experiments (Berglund et al., 2020). Transformation design relies on heterarchies and enables heterogeneous actors to organically coordinate to create the environment anew, aiming to reduce uncertainties (Hedlund, 1986; Stark, 2009). Artifacts in transformation design facilitate as well as transform interactions among diverse actors (Ewenstein & Whyte, 2009; Kellogg et

al., 2006). Since the interface of organized individuals with the environment varies from one organization to the other, it is still unclear how to effectively design an organization and what implications would it have for the actors working therein (Berglund et al., 2020; Våland & Georg, 2015).

### 3.3.2 Coworking Spaces

Coworking spaces are contemporary workplaces that offer shared office facilities to different actors such as freelancers, remote workers, independent professionals, entrepreneurs, startups, and employees affiliated with companies (Bouncken et al., 2020; Waters-Lynch et al., 2016). Typically, independent individuals or service providers operate coworking spaces (e.g., Impact Hub, Knotel, Spaces). They offer shared offices along with work-related facilities (e.g., printers, scanners, and WAN) and social areas (e.g., cafeteria, bar, and kitchen) (Castilho & Quandt, 2017; Spreitzer, Bacevice, et al., 2015). While initially, coworking spaces occurred in the Garages in Silicon Valley, companies have started to imitate those spaces for greater social interaction, creativity, and self-efficacy of their employees (Gabor & Lindsay, 2018). Hence, companies ranging from large technology giants (e.g., Google, Microsoft, SAP), telecoms (AT&T), eCommerce (Amazon), automakers (MINI), and insurance companies (State Farm) are either designing their own coworking spaces (Gabor & Lindsay, 2018) or renting desks in other coworking spaces (Spreitzer et al., 2015).

The extant literature points out that coworking spaces stimulate interactions among different users (King, 2017; Waber et al., 2014), raise their productivity (Bueno et al., 2018), encourage collaborations (Bouncken et al., 2020; Garrett et al., 2017), and promote knowledge exchange (Bouncken & Aslam, 2019; Parrino, 2015). Though the coworking spaces differ in their operators, participants, and usage; they share the familiar image of modern, collaborative, and self-made aesthetic workspaces (Bouncken & Tiberius, 2021; Waters-Lynch & Duff, 2019). The aesthetic interior design adorned with artifacts appear as a prerequisite to promote communication, collaboration, and creativity (Bouncken et al., 2020). Yet, the design of coworking spaces may also create unintended outcomes, such as unwarranted distractions, competition, and stress (Bouncken et al., 2018, 2020).

Coworking spaces host actors from heterogeneous professional backgrounds with or without shared affiliations who follow their own objectives and pursue their own goals but are connected through multiple artifacts and architectural designs (Butcher, 2018; Garrett et al., 2017; Vidaillet & Bousalham, 2018). The interactions of heterogeneous actors in modern,

customized designed coworking spaces can bring interesting insights that can help extend the theory on the design perspective, especially its implications for the actors working therein.

Following a flexible pattern approach (Bouncken et al., 2021; Gatignon & Capron, 2020; Sinkovics, 2018), we first explain the patterns of artifacts and principles based on the literature (next chapter) and later compare it with the empirical insights in coworking spaces (findings/discussion).

### 3.3.3 Patterns of Designing a Coworking Space

Within the design perspective, artifacts and principles are essential drivers in designing an organization (Berglund et al., 2020). Following a flexible pattern approach, we first explain the patterns of artifacts and design principles based on the literature and later compare it with the empirical findings (Bouncken et al., 2021; Gatignon & Capron, 2020; Sinkovics, 2018).

**Artifacts** are core to coworking spaces considering the multiple and distinct design elements that might define the meanings for actors to achieve their diverse motives centered on autonomy, self-efficacy, social interaction, and creativity. Artifacts exist in many different forms, including *physical artifacts*, e.g., general physical settings of an office, paper, or product prototypes (Comi & Whyte, 2018; Lim et al., 2008; Pentland & Feldman, 2008); *digital artifacts*, e.g., PowerPoint for collaboration and negotiation (Kaplan, 2011), and *narrative artifacts*, e.g., written rules, procedures, and business plans (Demil & Lecocq, 2015). Artifacts may also take the form of “cognitive scaffolds where the main purpose is not to alter the world but the way we think” (Berglund et al., 2020: 16).

Designers script an artifact with a particular purpose that defines the sequence of actions and prescribes the possibilities of affordance (Latour, 2005). However, an artifact might afford multiple possibilities other than the purpose it is designed for (Faraj & Azad, 2012; Romme, 2003). Similarly, an actor can rescript the purpose of an artifact. For example, a chair is designed for sitting, but an actor can rescript its purpose to reach higher objects (Jarzabkowski & Pinch, 2013). Gibson (1986) suggested that artifacts (e.g., chairs, tables) have *affordances* that go beyond their physical properties, such as the material being made of, size, or density. Affordance is the “perceived and actual properties of a thing [artifact], primarily those fundamental properties that determine just how the thing [artifact] could possibly be used” (Norman, 1988:9). Affordance thus describes that all the artifacts can enable or restrict certain behaviors, which can be designed per se (Norman, 1988, 1999). The extant literature highlights

that the transformative role of artifacts in design processes can be better understood in context-specific studies, which explain the interactions of artifacts with actors instead of their innate physical properties (Berglund et al., 2020; Jarzabkowski et al., 2013; Pentland & Feldman, 2008). Coworking spaces use artifacts considering the need of their actors. These artifacts create different possibilities for actors, such as open-plan offices for collaboration, social lounges for interaction and relaxation, and private offices for concentration. By using the artifacts, coworking spaces can encourage the desired behaviors of actors. For example, those coworking spaces that aim to foster creativity among actors use artifacts like vivid color schemes, foosball, table tennis, and ceiling hammocks with plenty of seating options mimic café, coffee shop, or a friend's living room that take actors from traditional work environment to a fun and playful setting. In a similar manner, coworking spaces can use artifacts to suppress undesired behavior, such as house rules or community guidelines to decrease distortions. Thus, we propose the following:

*Pattern 1: Coworking spaces by using different artifacts can promote desired behaviors in the form of social interaction, collaboration, and sense of community while constraining unintended outcomes, such as social isolation, distraction, and/or knowledge leakage.*

**Design principles** are the heuristic rules that define how an artifact works in relation to the inner and outer systems (Simon, 1996). These rules are often simple, pragmatic, and context-specific that resonates with the practitioners (Gigerenzer & Todd, 1999). For example, a cricket player catching a ball while running toward it adjusts his speed and maintains his gaze (McLeod & Dienes, 1996), or a movie studio applies a few simple criteria to determine which film to make (Sull & Eisenhardt, 2015). Similarly, the owners or managers of coworking spaces use aesthetic, espoused, and latent design principles to model and design compelling experiences for the actors—by declaring zones of coworking spaces as working and casual or issuance of guidelines for actors for using shared infrastructure and resources (Bouncken et al., 2020). Design principles incorporate relevant and specific information, which are specifically useful in an uncertain or complex environment (Gigerenzer & Brighton, 2009; Mousavi & Gigerenzer, 2014).

Berglund and colleagues (2020) propose the principles of *adaptation* and *negotiation*. The principles of adaptation focus on seeking up-to-date and efficient gathering of information to reduce the environmental uncertainty that enables efficient and easier forming of hypotheses, measuring the results, and making decisions (Mcgrath & Macmillan, 1995; Sull & Eisenhardt,

2015). Organizations in such circumstances are the “keepers of the assumptions” that maintain and ensure that the next round of experiments is based on the most up-to-date information (Mcgrath & Macmillan, 1995). The negotiation emphasizes the interactions among heterogeneous stakeholders facilitated by ambiguous, abstract, and distinct artifacts (Carlile, 2004; Lainer-Vos, 2013). One of the requisites of the negotiation principle is to create the “zone of indeterminacy” (Lainer-Vos, 2013: 515), which allows shared ideas and differences to grow and cross-fertilize (Stark, 2009). Coworking spaces have diverse stakeholders and users who want to pursue their targets that might depend on others' targets and actions. The negotiation principles rely on the stimulation and growth of heterarchical networks, where heterogeneous individuals, based on their “interests and goals literally coordinate their resources, information, and perspectives” (Berglund et al., 2020: 14; Stark, 2009).

Different design principles govern different organizational designs (Berglund et al., 2020). Adaptation design principles are effective in organizations, focusing on enhancing efficiency (Sull & Eisenhardt, 2015). Negotiation principles are suitable for such organizations to enhance interaction and creativity among heterogeneous actors (Berglund et al., 2020; Lainer-Vos, 2013; Stark, 2009). We thus propose the following:

*Pattern 2: Design principles in coworking spaces define a sub-set of design options that govern how actors interact with each other and artifacts.*

### **3.4 Methods**

#### **3.4.1 Pattern Matching with Qualitative Data**

Qualitative research is especially useful to understand such types of issues involving novel phenomena embedded with complex and nuanced social interactions (Graebner et al., 2012). Thus, the richness of qualitative data is well suited to conduct this study.

We used a flexible pattern matching technique (Bouncken et al., 2021; Sinkovics, 2018). Pattern matching is the process used to compare a theoretical pattern with an observed pattern (Sinkovics, 2018). For qualitative data, pattern matching involves the development of a set of patterns based on prior literature (see Table 3.1), viewing the qualitative data through the lens of these patterns, and then describing the extent to which observed patterns validated the initially formulated patterns (Gatignon & Capron, 2020; Greenwood et al., 1994). The pattern matching approach has several advantages over other qualitative data analysis techniques.

However, most importantly, it helps to externalize the implicit assumptions of the study and enhance the readers' understanding of how and why a researcher reaches a particular conclusion (Sinkovics, 2018). Due to these advantages, many studies have recently started using a pattern matching approach (Bouncken & Barwinski, 2020; Gatignon & Capron, 2020; Sinkovics et al., 2019). In this study, we used a flexible pattern matching approach (Sinkovics, 2018). Flexible pattern matching focuses on the existing literature as well as the data that helps to understand practices in a specific context (Myers, 2019).

*Table 3.1- Expected Patterns of Design in Coworking Spaces*

Patterns	Dimensions	Expected Patterns in Coworking Spaces	Expected Implications for Design of Coworking Spaces
Artifacts	Purposiveness	High	The artifacts in coworking spaces are designed and arranged with multiple perspectives and usage in mind that fulfill the broad needs of heterogeneous actors.
	Affordance	To emerge from data	Each artifact in coworking spaces is usually prescribed (set down/laid down) with a sequence of actions that determine the possibilities for actors, such as open shared spaces for socialization and private offices for working.  The affordance of an artifact in coworking spaces determines the way, how the actors will interact with artifacts and the consequences they can afford, and constraints.
Design principles	Adaptation	Low	The adaptation design principle aims to provide a stable working environment for actors, usually arising from the shared background (e.g., employment affiliation, profession) in coworking spaces  Instead of the provision of a creative aesthetic workspace, coworking spaces following adaptation principle design and use such artifacts that enhance ingroup coordination while reducing outside influence, e.g., private offices for teams.
	Negotiation	High	The negotiation design principle aims to enhance interaction, collaboration, and creativity among heterogeneous actors in coworking spaces.  To enhance interactions, coworking spaces design and use such artifacts that bring together heterogeneous actors, e.g., open-plan offices or large socialization areas.

### 3.4.2 Data Collection

We collected data from three different data sources (observations, participation in online forums, and interviews) to triangulate evidence (Eisenhardt, 1989). First, we visited different coworking spaces in Munich and Berlin, Germany, to observe the work environment and social practices. Second, we joined and participated in online forums for developing a broader understanding of the utilization and management of coworking spaces from diverse users. Third, we interviewed founders and managers of coworking spaces, independent users such as freelancers and coaches, and entrepreneurs to gain more profound insights. Tables 2 provides brief descriptions of the cases concerning space characteristics, artifacts, and design rules.

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Table 3.2- Case Descriptions

Space	Space Characteristics					Artifacts			Design Principles		
	Space Operator	Area of space (SQM)	No. of user/ firms	Membership plans	Target Users	Community	Physical artifacts	Digital artifacts	Narrative Artifacts	Objectives	Examples
Bencher	Private individuals (franchise)	500	30-60	Flexible plans, e.g., daily, monthly	Open for everyone	Diverse community consists of international members	Modern architecture Simple elegant furniture Artworks on the walls Computers, photocopyers, scanners, etc. Plants	Wi-Fi Facebook page Smartphone application Web page	Membership plans Terms and conditions Event brochures	To develop collaboration among members	Open-plan offices Garden and open space Café
Garage	Private individuals	4200	200-220	Short- and long-term plans	Open for everyone, but mostly startups	Freelancers, startups, and employees associated with companies	Variety of large size office desks and chairs Stylized and casual furniture in social areas Foosball/ Tennis-table, etc. Locker, mailbox, reception	Wi-Fi Virtual office Stack group Facebook page	Membership plans Terms and conditions Event brochures 'Advise -to-go' events	To provide a space to work in an efficient way	Lage event space Common area with indoor sports facilities Different sized open and private areas
Dreamers	Single owner	400	30-45	Daily and monthly plans	Open for small teams and individuals	Startup teams and freelancers	Traditional office design Comfortable office chairs and desks Whiteboard, projectors, Artifacts strongly focus on	Ditto	Material from workshops, seminars, etc.	To provide office space	Small-sized team offices with basic furniture
Balcony	Private individuals	2500	60	Flexible plans, e.g., daily, monthly	Freelancers and digital nomads	Freelancers dealing with Arts	arts A large piano and other musical instruments	Ditto	Membership plans Terms and conditions Inspirational quotes on the walls	To build a strong community	Social areas like café, kitchen Music room
Drive	Office space provider company	500	40-50	Ditto	Startups	Community consists of employees of different startups	Modern post-industrial design Standardized furniture Lockers, mailbox, etc.	Ditto Videogames	Membership plans Marketing brochures	Efficient utilization of space	Usage of the meeting room as an office area for maximum utilization of space
Worklife	Single owner	500	30-35	Ditto	Open for everyone	Diverse community of different professionals	Modern architecture Simple, elegant furniture office furniture kitchenette	Ditto	Idea plans Event brochure	To provide office space	Open-plan offices Private offices for small teams
Republic	Private individuals	4500	235	Short- and long-term plans	Open for everyone, but mostly focus on startups and companies	Diverse community concerning age, gender, race, profession, and nationality	Modern architectural design Cool, bright, and casual furniture Different lighting zones Lockers, mailbox, etc.	Wi-Fi Online portal for users Slack channel Tools like Pitchbook	Idea plans Event brochures List of users and professions	To build a strong community	Completely open plan office areas Large corridor to connect different spaces
Haus	Private individuals	2350	30-40	Flexible plans, e.g., daily, monthly	Open for business in the social sector	Startups and businesses on the green economy	Traditional architecture of the 16 <sup>th</sup> -century mansion Vintage furniture and lighting styles	Wi-Fi Web page	Event brochures Green economy materials	To build a strong community of business owners working in social sectors	Large event space for seminars
Hive	Office space provider company	4000	300	Ditto	Open for all	Diverse community consists of independent professionals and businesses	Large industrial design Modern and casual furniture Hardware lab	Ditto Slack channel	Membership plans Terms and conditions List of participants Event brochures	To promote cooperation among community members	Large socialization zones for networking Community garden, kitchen, Terrace etc.
Warehouse	Private individuals	3000	150-180	Ditto	Open for all	Diverse community	Functional design Simple monotonous furniture	Wi-Fi Web page	Terms and conditions Event brochure	To provide office space	Functional design to use an old warehouse for providing office space

Our preliminary data consists of field notes collected during four months of field visits (February to June 2017) of ten different coworking spaces located in Munich and Berlin, Germany. Based on the principles of appropriateness and adequacy, we selected these cases, which differ in architect, design, and community (Seawright & Gerring, 2008). Table 3.3 shows descriptions of data sources from these cases. As non-participating researchers, we specifically paid attention to space designs and observed how actors interact with artifacts and how a specific artifact influences the behavior of actors. For example, observing the behaviors of actors around a coffee machine placed near working areas can provide insights such as how much time actors spend, do they interact with other people, and if yes, how long. We noted such observations and maintained records of informal discussions with users regarding their work, expert support, and available services in coworking spaces.

We collected data as participatory observers in online forums and discussions on Google and Slack forums in the next step. We followed and analyzed the discussions on these forums and posted our queries. Overall, 512 messages were exchanged on Google forums and 219 messages on Slack till June 2017. However, due to security and privacy issues, participants shared general information in online discussions. They quickly lost motivation and enthusiasm during discussions, and the expressed opinions often changed or aligned due to peer pressure. The experiences and observations in online forums and the field helped us define themes for semi-structured interview guidelines.

In the end, we conducted interviews with the founders or managers, independent users, and members of entrepreneurial firms located in coworking spaces. We asked the founders or managers of coworking spaces about their space designs, facilities, target users, and future goals regarding design improvements or expansion plans. Similarly, we asked users about their objectives, expectations, and motivations. They were asked questions about what features of the design of coworking spaces they do (not) like, why they do (not) like, and what changes or improvements they want in the design of their coworking spaces. We also asked how coworking spaces influence their work. The interview guidelines were semi-structured and depending on the initial response of a participant, we asked, rephrased, or dropped questions. Each interview lasted 53 to 96 minutes, with an average of 68 minutes.

### **3.4.1 Data analysis**

We used MAXQDA 12 to analyze our qualitative data consisting of field notes, online discussions, interviews, and archival data that support the iteration process between theory and

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data as we refined our analysis via a pattern matching approach (Sinkovics, 2018). This involves (re) examining our data to discern whether and if so, to what extent, patterns 1 and 2 (dis) confirm in coworking spaces.

**Table 3.3- Descriptions of Data Sources**

Space	Observations	Archival Data	Interviews
Bencher	<ul style="list-style-type: none"> <li>• Visit of the space (1-2 hours)</li> <li>• Participated in social events (1-2 hours)</li> <li>• Non-participatory observations (5-6 hours)</li> </ul>	<ul style="list-style-type: none"> <li>• Brochures of the space</li> <li>• Membership plans</li> <li>• Terms and conditions</li> <li>• Online data from website</li> </ul>	<ul style="list-style-type: none"> <li>• 1 in situ interview with the community manager</li> <li>• 3 in situ interviews with the freelancers</li> </ul>
Garage	<ul style="list-style-type: none"> <li>• Visit of the space (1-2 hours)</li> <li>• Participated in 'advise-to-go' event (2-3 hours)</li> </ul>	<ul style="list-style-type: none"> <li>• Brochures of the space</li> <li>• Membership plans</li> <li>• Event material</li> <li>• Slack discussion</li> <li>• Online data from website</li> </ul>	<ul style="list-style-type: none"> <li>• 1 in situ interview with the chief operating officer</li> <li>• 1 in situ interview with the coach</li> <li>• 2 in situ interviews with the founders of startups</li> </ul>
Dreamers	<ul style="list-style-type: none"> <li>• Participation in social events (1-2 hours)</li> <li>• Non-participator observations (&gt;4 hours)</li> </ul>	<ul style="list-style-type: none"> <li>• Material from workshops, seminars</li> <li>• Online data from webpage</li> </ul>	<ul style="list-style-type: none"> <li>• 1 in situ interviews with the founder</li> <li>• 3 in situ interviews with startups</li> </ul>
Balcony	<ul style="list-style-type: none"> <li>• Non-participatory observations in working days (10-12 hours)</li> </ul>	<ul style="list-style-type: none"> <li>• Online data from webpage</li> <li>• Marketing brochures of the space</li> </ul>	<ul style="list-style-type: none"> <li>• 1 in situ interview with the founder</li> <li>• 4 in situ interviews with freelancers</li> </ul>
Drive	<ul style="list-style-type: none"> <li>• Visit of the space (1 hour)</li> </ul>	<ul style="list-style-type: none"> <li>• Online data from webpage</li> </ul>	<ul style="list-style-type: none"> <li>• 1 in situ interview with founder</li> <li>• 1 in situ interviews with manager</li> </ul>
Worklife	<ul style="list-style-type: none"> <li>• Visit of the space (1-2 hours)</li> </ul>	<ul style="list-style-type: none"> <li>• Online data from webpage</li> </ul>	<ul style="list-style-type: none"> <li>• 1 in situ interview with founder</li> </ul>
Republic	<ul style="list-style-type: none"> <li>• Visit of the space (1-2 hours)</li> <li>• Participation in events (3-4 hours)</li> <li>• Non-participatory observations in working days (10-12 hours)</li> </ul>	<ul style="list-style-type: none"> <li>• Event brochures</li> <li>• Discussion on slack channel</li> <li>• Online data from webpage</li> </ul>	<ul style="list-style-type: none"> <li>• 1 in situ interview with the founder of the space</li> <li>• 3 in situ interviews with the startups</li> <li>• 2 in situ interviews with companies' employees</li> </ul>
Haus	<ul style="list-style-type: none"> <li>• Visit of the space (1-2 hours)</li> </ul>	<ul style="list-style-type: none"> <li>• Brochures of the space</li> <li>• Online data from webpage</li> </ul>	<ul style="list-style-type: none"> <li>• 1 in situ interview with the co-founder</li> <li>• 4 in situ interview with the employees of companies</li> </ul>
Hive	<ul style="list-style-type: none"> <li>• Non-participatory observations in working days (4-5 hours)</li> </ul>	<ul style="list-style-type: none"> <li>• Website and description on coworking forum</li> <li>• 28 reviews on Google</li> </ul>	<ul style="list-style-type: none"> <li>• 1 in situ interview with the community manager</li> <li>• 1 in situ interview with the co-director</li> <li>• 3 interviews with freelancers</li> </ul>
Warehouse	<ul style="list-style-type: none"> <li>• Visit of the space (1-2 hours)</li> </ul>	<ul style="list-style-type: none"> <li>• Terms and conditions of the usage</li> <li>• Event brochures</li> </ul>	<ul style="list-style-type: none"> <li>• 1 in situ interviews with the manager</li> </ul>

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At the beginning of the process, we identify and explain the patterns focusing on artifacts and design principles. In line with the pattern matching technique, we design a template (see Table 3.1) that indicates the dimensions, expected empirical patterns, and their potential and relevancy for coworking spaces (Sinkovics, 2018). In the second stage of the process, we carefully and independently read all the notes (online discussions and field observations) and interviews. Then, we coded the data line by line and grouped relevant constructs, concepts, and patterns considering theoretical dimensions in our templates (Sinkovics et al., 2019). At a later stage, we compared these empirical patterns with the theoretical patterns in our templates. We moved back and forth between data and theory throughout the process and compared the similarities, shared patterns, and differences among cases. Our initial template served as a primary node structure, which we later refined, updated, and extended with the progress of our data analysis (Sinkovics, 2018). This approach corresponds to the existing studies that used the pattern matching approach in qualitative data analysis (cf. Bouncken & Barwinski, 2020; Gatignon & Capron, 2020; Sinkovics et al., 2019).

We took several steps to ensure the validity of our analysis and results. First, we collected data from three different sources for the triangulation of evidence. Second, we shared the transcripts of data with the participants to establish confidence in the data. In the end, we corroborate our findings with the initial field notes from our observations and the information gathered in online group discussions.

## **3.5 Findings**

### **3.5.1 Actors-Artifacts Interaction in Coworking Spaces**

Our analysis elucidates that artifacts serve as an essential driver in the design process of coworking spaces. We identify that artifacts exist in physical, digital, and narrative forms (see Table 3.2). Physical artifacts mostly form the interior design of coworking spaces that include office settings, décor, furniture, plants, foosball, table tennis, music instruments, hardware equipment, etc. Coworking spaces through physical artifacts express their identity by projecting values that are important. For example, Balcony prefers freelancers dealing with arts, displays such artifacts that strongly focus on arts like paintings on walls in common areas or a large piano and other musical instruments in the music room. In contrast, Warehouse focuses on practicality and offers standardized office furniture. Digital artifacts offer virtual connectivity to the actors in coworking spaces, such as applications, software, and social

networking platform. Narrative artifacts generally provide information and guidelines by way of written plans, event brochures, workshop materials. For example, point 4 depicts the community rule of Worklife. Table 3.4 shows different patterns and representative quotes concerning the purposiveness, affordance, and meaningfulness of artifacts in coworking spaces while interacting with the actors.

**Table 3.4- Actors-Artifacts Interaction in Coworking Spaces**

Dimensions	Expected Patterns	Observed Patterns	Implications for Coworking Spaces	Representative Quotes
Purposiveness	High	High	<p>Coworking spaces that are open to everyone without specific criteria use standardized artifacts that fulfill the broad needs of heterogeneous actors.</p> <p>Some coworking spaces aim to attract actors from a specific profession (e.g., technology startups) to use more specific artifacts (e.g., hardware lab equipped with tools and equipment).</p>	<p>“I don’t think there’s anything super special. I think it’s pretty practical; there is nothing unique about this place versus another place. I think that most of what you would find here, you would find anywhere else [e.g.] technology, wifi, printer, call systems, or TV” [2-Hive].</p> <p>“We have an artistic platform, which holds the residency, studios, and workshops” [5-Balcony].</p>
Affordance	To emerge from data	High	<p>Each artifact in coworking space is prescribed with a sequence of actions that determine the possibilities that actors can (not) afford, such as open shared spaces for socialization and private offices for working.</p> <p>Actors can also rescript the purpose of artifacts according to their preferences and needs.</p> <p>Irrespective of the affordance of artifacts, different actors can perceive different meanings about the same artifact.</p>	<p>“I could go and take a nap if I want at the meditation corner. I can use a whiteboard or a white wall in the meeting room. It’s easier to brainstorm there” [3-Bencher].</p> <p>“We have this hub spot, which has a bunch of hardware tools for people to tinker around with, e.g., a VR station, some people really use it for their projects, other play VR games” [1-Garage].</p> <p>“Slack is a great opportunity, but I think for those of us that are extroverts, it would be nice if there was another opportunity to maybe experience knowledge share in a face-to-face manner” [2-Republic].</p>
Meaningfulness	Emerged from data	Medium to high	<p>Design, choice, and physical properties of the artifacts (e.g., shape, color, size, material, finishing) can visually convey the meanings to the actors.</p> <p>Artifacts in the form of inspirational and playful office settings bring a sense of openness, autonomy, and creativity for actors.</p> <p>Artifacts in the form of routinized interiors hint typical office environment for the actors.</p>	<p>“It’s a very colorful place with open areas. Everybody that gets in says that it has a special energy that inspires them” [1-Worklife].</p> <p>“I get into this productive environment, and also, I get creativity from that place” [4-Hive].</p> <p>“What’s important to me is the environment. It is pretty bad at it. There are not many coworking spaces, which you really get a sense of wow when you really go in” [4-Warehouse].</p>

**Purposiveness:** Coworking spaces vary; some provide services to specific professionals, e.g., freelancers, entrepreneurs, startups, corporate employees. Others are open to everyone (Bouncken et al., 2017). Our data analysis informs that coworking spaces, which offer their services to everyone use standardized artifacts that fulfill the broad needs of heterogeneous actors. Such coworking spaces provide office settings in different formats like office desks in open-plan offices with or without workplace assignments, private offices with lock and key, and small cubicles for a person or small teams. These spaces offer socialization areas in the form of cafeterias, bars, kitchens, lawns, or lounges and provide support structures in the form of receptions, locker rooms, and storage areas. Bencher, Worklife, Hive, and Warehouse are some of the coworking spaces in our study that use these standardized artifacts to fulfill the need of heterogeneous actors. Coworking spaces that offer their services to specific



concerns over the open-plan office, claiming to be the cause of noise and distraction. Most of the time, the affordance of an artifact to foster a particular behavior among actors can constrain or restrict other behaviors as an entrepreneur while discussing the benefits of open-plan office spaces describes: “In this open office, you can talk to each other. Then basically, everyone knows, what do you do, which is good for business... but you don’t have any privacy” [4-Republic].

**Meaningfulness:** The choice, design, and physical properties of the artifacts visually convey the meanings of the artifacts through the general ambiance of the space. The ambiance describes the ethereal features, e.g., lighting, color schemes, furniture designs, and general look and feel (Allen & Henn, 2007). An inspiring ambiance promotes serendipity and brings cues for openness, autonomy, and creativity for the actors. Therefore, coworking spaces use colorful walls, sofas, and funky stuff in socialization or common areas that foster spontaneous interactions and creativity among actors, as a freelancer described: “I think the cool design of café in Balcony plays a very big role. It has an aha effect and wow effect on people. I get into this productive environment and I get creativity from the place ”[3-Balcony]. In contrast, routinized or standard interiors with general physical settings hint at another place to work. For example, an entrepreneur working in Drive described: “They have standardized facilities that are available anywhere else. We have basic office furniture, Wi-Fi, coffee machines, etc.” [2-Drive].

### 3.5.2 Principles Governing Design Process in Coworking Spaces

Design principles in coworking spaces are simple heuristic rules that model the behaviors of actors. They need to become more sophisticated when actors are heterogeneous, e.g., different professions, objectives, and goals as in our cases of coworking spaces. We find different principles of adaptation and negotiation in coworking spaces. Table 3.5 shows the patterns of adaptation and negotiation with representative quotes.

**Adaptation:** Coworking spaces use the adaptation principle to provide a stable working environment for the actors who are primarily associated somehow in a hierarchical manner, e.g., employees associated with the firms or small teams. However, coworking spaces do not exert control or centralized authority on actors. The primary aim of those coworking spaces is to enhance efficiency among the teams working therein by reducing environmental uncertainty and distortion. Therefore coworking spaces use such artifacts that enhance efficiency as the founder of dreamer described: “Our coworking space is [offering] the design line and the

facilities—everything you need to work in a very efficient way” [1-Dreamers]. Such artifacts include private offices for teams or firms where internally they can collaborate without being distracted from the outsiders. Coworking spaces can also employ digital tools, such as a Slack channel or a customized digital platform indicating the current users of a space, their area of interests, and their availability.

**Table 3.5- Principles Governing Design Process of Coworking Spaces**

Dimensions	Expected Patterns	Observed Patterns	Implications for Coworking Spaces	Representative Quotes
Adaptation	Low	Low	Coworking spaces that host the actors associated with hierarchies (e.g., teams associated with the corporation), use the adaptation design principle that aims to provide a stable working environment to actors.	“Our focus is on companies that have something in common with our views and missions. They always need to have their own privacy and usually don’t like to stay in common areas while they are working. So, we build private offices” [1-Haus]
			Instead of the provision of creative aesthetic design, coworking spaces following adaptation design logic uses such artifacts that enhance efficiency.	“You know everyone is got to have a CRM, that they have to set up, so if you want to complain about cloud computing provider, you just go next door, well next table, there are no doors here, and talk...” [3-Hive]
Negotiation	High	Medium	The negotiation design rule aims to enhance interaction, collaboration, and creativity among heterogeneous actors in coworking spaces.	“Design is important. The Interior is important because it supports people. So, physical things, we have nice tables and chairs and a nice natural wood floor ... We think about how people feel when they are here for such a long period of time. They are facing each other. Most of the time, the tables and chairs that we are sitting on now face each other. So, people can see each other. They can build that trust build that relationship, which is important.” [1-Dreamer]
			To enhance interactions, coworking spaces design and use such artifacts that bring together heterogeneous actors, e.g., open-plan offices or large socialization areas.	“...What always works is having either a kitchen, a café or a coffee machine or something where it’s kind of natural for people to gather around and that’s where the magic happens most of the time” [4-Garage].
			Coworking spaces enhance inspiration and creativity by offering inspirational design (e.g., aesthetic interior, stunning settings, colorful walls).	“The design here is also very different. Somehow I do now even better as I get new innovative input and feel not so stuck anymore. I’m not sure how can I describe that. I’m just more creative here in this space” [6-Drive].

The coworking spaces that use this adaptation principle are Drive, Worklife, and Warehouse. These coworking spaces focus more on the functionality of artifacts rather than the aesthetic valences. Actors can also demand such efficiency-centered artifacts, as a founder of startup explained: “You don’t want these new-age chairs. You need comfortable chairs because physically you are in here for ten hours. Most of us are in more permanent offices. It is not an open room, a big table, where ten people really just rent their seats. This is, you rent a room concept, and for us, it’s what we want” [4-Dreamers]. Meaning thereby, some actors want a place to work and are more interested in the practicality of space. Thus, some coworking spaces instead of experimenting with new and unique, use typical artifacts that are more viable for their target audience.



*Figure 3.2- View of a lounge area*

**Negotiation:** Most of the coworking spaces host actors from diverse professional backgrounds who have distinct objectives. To align actors and or to harmonize their targets, coworking spaces use mutable artifacts that facilitate as well as transform interactions (Berglund et al., 2020). Figure 3.2 shows the lounge of Worklife, which is decorated with vibrant wallpapers on the walls, tiled floor, vivid color schemes, different arrangements of desks, tables, and chairs. Points 1, 2, and 3 show different sitting arrangements. Point 1 indicates calm and relaxed sitting arrangements. A big table with six chairs at point 2 is an ideal spot for group discussions, whereas actors can focus on their work individually at point 3. Apart from that, point 4 indicates the entrance of the lounge area, which is scripted with the following community rules: “Always

tell the truth; keep your promises; use kind words; do your best; say please and thank you; laugh often; try new things; show respect; take care of stuff; love no matter what.” On the right side of the door, it says: “In this house... We are real; we make mistakes; we say I’m sorry; we give second chances.; we have fun; we give hugs; we do really loud; we are patient; we love”.

Worklife is using physical artifacts, e.g., a large table with chairs, to enhance the interactions among actors. In most cases, common areas enable actors to interact and socialize with each other. Actors can instantaneously move from the work area towards the socialization area without leaving the space premises. Resultantly, actors can directly interact with other internals, new, or atypical users (e.g., consultants, field experts, talent hunters, or investors). For example, an entrepreneur described how an open-plan office changes the way he interacts with others: “You do not need to make an appointment or knock on the door, you can just turn towards the person nearby and ask for help directly without any formalities” [3-Republic]. Digital artifacts are also an integral part of coworking spaces that enhance linkages. Software, such as Habu, Drop Dex, Cobot, Optix, and Coworkify enable actors in a coworking space to perform different tasks, e.g., monitoring the billing, booking a meeting or conference room, requesting an event or mentor, or connecting with another professional in the space. Narrative artifacts in the form of family rules at Worklife provide a guide for actors to behave in a shared working environment. These rules underscore the importance of the individuality of the actors and guide how to master an untoward situation by behaving politely, accepting each other, and moving forward.

### 3.5.3 Artifacts in Community Development in Coworking spaces

Our study provides new findings on the role of artifacts in community development in coworking spaces. Our findings suggest that artifacts have the power to develop a shared understanding and identity, mutual interdependency, and common practices among the members of the community in coworking spaces. Table 3.6 shows the patterns of artifacts in community development along with the representative quotes.

**Shared Understanding and Common Identity:** Coworking spaces model the behaviors of actors by developing a shared or common understanding of artifacts. For example, Garage designates certain rooms as quiet zones by posting signs such as ‘Silence please’. Republic builds open spaces so that people can directly see and interact with each other. Artifacts, such as shared printers, coffee machines, table tennis, foosball, etc., are deliberately and strategically placed in coworking spaces so that actors can collaborate, or at least can get in contact with

one another, as a freelancer in Republic reported: “I think the center of Republic and all of the coworking spaces, in general, is the coffee machine or the kitchen. So all the folks surround it and a lot of collaborations take place there” [5-Republic]. Artifacts help to create harmony among heterogeneous actors by defining boundaries e.g., when and where to play ping-pong. Using narrative artifacts (e.g., instructions manuals, signs, or quotes), coworking spaces can directly communicate their expectations to develop a common understanding among actors. For example, a coworking space can expound the values of the community as Worklife depicts the expected expectations from community members by narrating the values of integrity (tell the truth, keep your promises), respect (use kind words and show respect), and excellence (do your best). The artifacts thus help to develop a shared understanding among actors (see point 4 in Figure 3.2).

*Table 3.6- Patterns of Artifacts in Community Development in Coworking Spaces*

Dimensions	Expected Patterns	Observed Patterns	Implications for Coworking Spaces	Representative Quotes
Shared understanding and common identity	Emerged from data	High	Artifacts, e.g., physical office settings, can manifest or convey shared understanding and the meanings familiar to the community among actors, e.g., how to use shared resources, what behaviors to exhibit in common areas, etc.	“It’s an open space, it’s a huge floor, no walls, no glass in between and you can easily connect to people that you want, to other companies from all kind of fields, which makes it really interesting” [3-Republic].
			The physical settings and choice of artifacts can personify a vibe of coworking spaces or actors working therein, e.g., a community of digital nomads	“This is a funky space with a really cool design. You walk in and feel this space for digital nomads, programmers, and technology guys” [2-Balcony].
Mutual interdependency	Emerged from data	Low to medium	The use of shared resources and infrastructure creates interdependency and a feeling of shared commitments common to the project of the community.	“67 percent of the whole space have already participated in an event organized by us for members, 58 percent have shared resources with other members and 55.5 percent have given feedback or advice to another member, which is very, very good for us. We try to connect them and the host has a <b>big, big</b> role in this” [2-Garage].
Common practices	Emerged from data	Medium to high	Artifacts can lower physical barriers, e.g., walls in offices, and provide direct access to each other, thereby energizing interactions among heterogeneous actors.	“Open offices, shared knowledge, shared resources... it’s benefitting my company a lot, especially in the event space... Even volunteers, they have helped volunteer for our stuff too” [5-Haus].
			Shared resources and infrastructure can make the work of others comprehensible and encourage the users to communicate and bring creative ideas into action.	Republic can organize something collectively with other startups. I also go to others and say, ‘Hey, this is a great app, and do you want some help to localize this to Arabic? And we can directly work together [7-Republic].

Artifacts can directly manifest and transfer the meaning familiar to the community among actors. Positive or negative vibes come from the design, color, size, arrangement, and other physical properties of artifacts (Waters-Lynch & Duff, 2019). The vibe of a coworking space can help to develop a collective identity of the actors. For example, Balcony intensively uses artifacts that are strongly focusing on arts, such as walls with many paintings, classic lighting style, and wood racks with abstract artifacts. The choice of artifacts in Balcony personifies the actors as artists. However, the coworking spaces that use standardized artifacts unable to create a collective identity of the actors and clue just another place to work. Therefore, most of the coworking spaces emphasize the design to create a unique collective identity of heterogeneous actors working therein.

**Mutual Interdependency:** The presence of actors with different skills and shared resources helps to create mutual interdependency. The purposiveness, affordance, and meaningfulness of the artifacts can enable or constrain certain behaviors of the actors, which might create ambivalent emotions among the actors (Waters-Lynch & Duff, 2019). Our findings suggest that the mutual interdependency of the actors can augment the shared commitments common to the project of the community and helped to foster the affective commons in coworking spaces. Mutual interdependence can be developed via artifacts in the form of shared resources, e.g., white spaces, cafés, kitchens, 3D printers, VR tools. Likeminded actors with different skills can also help to develop mutual interdependence, as the Founder of Drive explained: “In the beginning, we were limited to creative people. When we start, we thought maybe we limit the whole thing first to the creative industry. But then, I have quickly realized that this does not help because it is just this heterogeneous, which is cool. Well, that is just someone next to you, who may manage any parking systems and then responds with a graphic designer and replace the two mutually and say, okay, cool, we could either make it so we can do a project together or something.” [1-Drive].

**Common Practices:** Coworking spaces can lower physical barriers through artifacts, e.g., open plan office settings can enhance face-to-face interactions and can bring opportunities for feedback, mutual support, and cooperation. Actors can feel the motivation of other collocated professionals and directly seeing them getting successes, stir their morals to keep working towards achieving their goals. as an entrepreneur describes: “It is so exciting to be in this coworking environment... It’s like how cool when you have a blank sheet of paper and you are trying to do something new. The positive feedback, I get from people drives me to do more” [4-Republic]. Due to a reduction in physical barriers, actors can directly access other potential

collaborators, such as employers, investors, and consultants. Actors can also choose not to get involved in a formal working relationship with others. They can opt to stay independent but still acquire the benefits of knowledge sharing and mentoring opportunities by consciously and unconsciously exchanging information in a friendly and casual environment. For example, a founder of a startup in Hive described: “This mostly happens in kitchen... People come in and ask, what are you doing and then they start discussing... I can ask him if they need anything from me... Otherwise, you can ask, if anyone can help me with this VR equipment or program. You can also ask others about finances or taxes” [3-Hive]. Artifacts thus help to create an environment, which helps to build common practices among actors.

### **3.6 Discussion**

This paper aimed to analyze how actors and artifacts interact within coworking spaces? We conclude that actors and artifacts are constitutive entangled that shape different design possibilities for coworking spaces. Our findings point out the role of artifacts in the development of communities in coworking spaces. Going beyond the existing studies (Blagoev et al., 2019; Garrett et al., 2017; Waters-Lynch & Duff, 2019) that take actor-centric approaches to explain the development of communities in coworking spaces, we emphasize the importance of artifacts. We first explain the constitutive entanglement of actors and artifacts, followed by the role of artifacts in coworking spaces.

#### **3.6.1 Constitutive Entanglement of Actors-Artifacts for Effective Designing**

Our study highlights the importance of artifacts-centered design and resonates with the ideas of *constitutive entanglement* or *inseparability of* social and material elements (Dale, 2005; Leonardi, 2012; Orlikowski, 2007; Orlikowski & Scott, 2008). Building on the concepts of affordance, our study is aligned with the design literature and concludes that artifacts in coworking spaces can enable or constrain certain behaviors (Gibson, 1986; Norman, 1999). Our findings support that, to some extent, the affordance of the artifacts can be designed (Norman, 1979, 1988). For example, physical settings or arrangements of desks in a coworking space shape the orientation of space from singular to multifaceted, sparse to concentrated, and can increase or decrease interactions. Artifacts thus can contour and create the possibilities for actors in coworking spaces and can define the borders, e.g., where, when, and with whom to communicate or interact. However, our findings also suggest that irrespective of the affordance of an artifact, actors can perceive different meanings about the same artifact. They can define

or redefine the affordance of artifacts according to their own perceptions and beliefs. The change of perception of affordance also influences the way an actor engages with a particular artifact. Resultantly, the outcome of the actor-artifact engagement would be different from the original script of the artifacts. For example, Figure 3.1 shows the image of a wall of a meeting room, which was initially designed to provide aural and visual privacy. The actor's perception of a wall as a writing board completely changed its usage and turned it into a brainstorming tool.

Similarly, an artifact can also have multiple affordances, while actors depending on their perception, can appreciate one or other purposes of their choice and ignoring or not using others at all. For example, open-plan offices—some coworking spaces strictly use them for work. Others might use them as event spaces in the evenings or during a large gathering. Irrespective of their usage, people can work, directly see, and interact with each other. Some actors appreciate the usage of open-plan offices; other complaints about their non-personalization, continuous distortion, and disturbance. Therefore, the artifacts (depending on how affordance is perceived) offer different proposed paths in design progression. Simultaneously, it might also cause ambiguity, confusion, and uncertainty, as it would be challenging to know in advance the outcome of actors-artifacts engagements, which might take an unexpected turn. Hence, artifacts play an essential role in the design process of organizations, which are and always constitutively entangled with actors. Taking the inter-play of actors-artifacts together can help organizations progress towards effective designs that can improve the flow of communication, collaboration across boundaries, and architect innovation (Bouncken et al., 2020).

### **3.6.2 Constitutive Entanglement of Actors-Artifacts for Community Development**

Extant literature on coworking spaces emphasizes creating a sense of community (Blagoev et al., 2019; Garrett et al., 2017; Spinuzzi et al., 2019). These studies mostly take actors centric views without giving due consideration to artifacts and design of coworking spaces. For example, Garrett and colleagues (2017) explain that the collective actions of endorsing, encountering, and engaging help actors co-create a sense of community.

Our study suggests that design choice and other physical properties of artifacts (e.g., size, style, color, material, and density) can visually convey the meaning to the actors (Våland & Georg, 2015). The physical characteristics of an artifact can build its perception of affordance and can demonstrate aesthetic knowledge and knowing that goes beyond words in

*experiential* and *symbolic* forms (Ewenstein & Whyte, 2009). Our findings suggest that inspiring and playful office settings communicate the cues of openness, autonomy, and creativity. These experiential and symbolic forms of learning might help form shared understanding, common meanings, and collective identity among actors in a coworking space (Harquail & King, 2010). Shared artifacts can create a situation of *mutual interdependency* that can form shared commitments and narratives familiar to the community members. The findings of our study are in line with the study of Waters-Lynch and Duff (2019) that considers *commons* as the collection of human [actors] and non-human [artifacts] elements. We extend this understanding by providing empirical evidence, how the collection of actors and artifacts interact, encounter, and transform interactions to develop practices among heterogeneous actors common to the community.

### **3.7 Conclusion**

Today's organizations are changing their designs to cater to the need of the modern age's workforce. This study explains how to effectively design an organization and what are its implications for the actors. Based on the design perspective and data from coworking spaces, we conclude that artifacts are essential drivers in the organizational design process. Design principles govern the actor-artifacts arrangement and shape their behaviors and lead to design progression. Our study brings new insights to understand the black-box of the design process, especially in contemporary shared workspaces and their implications for the actors. We hope our study would spur the interest of other scholars to look for other interesting contexts to understand the role of design in work.

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## **Chapter 4: Coworking-Spaces: Understanding, Using, and Managing Sociomateriality**

### **4.1 Abstract**

Companies increasingly embrace the new work forms associated with coworking-spaces. Coworking-spaces started with the idea of a melting pot of open social interaction, collaboration, entrepreneurship, and innovation for freelancers, new ventures, or solo-entrepreneurs. Companies may use coworking-spaces for invigorating targets and for further motivating and inspiring their employees. Fundamental to achieving those targets is the coworking-space's interior design and architecture, thus its materiality that incorporates emotional and social meanings which might further revive companies. Our sociomateriality perspective helps to analyze conditions in coworking-spaces and guides suggestions on how companies revitalize by using coworking-spaces. Purposeful design of the different social and work areas in coworking-spaces can improve communication, collaboration, and innovation in companies.

### **4.2 Introduction**

For the last two decades, companies have increasingly been changing their physical office designs from traditional cellular structures towards new and more contemporary designed open-plan offices. Companies so intend to enhance the flow of communication, the collaboration across boundaries, and innovation stimulated by design and architecture (Allen & Henn, 2007; Doorley & Witthoft, 2011; Khazanchi et al., 2018). The changes in companies tie in with general societal trends of sharing and the post-bureaucratic turn (Waters-Lynch & Duff, 2019). Companies might use ideas that come with the emergence of accelerators, fab labs, and coworking-spaces where freelancers, entrepreneurs, startups, and employees (even of different companies) share stimulating social and professional exchanges (Bergman & McMullen, 2020; Bouncken & Reuschl, 2018; Kohler, 2016). Companies employ coworking-spaces for facilitating not only internal interactions but also the those of their employees with talent or expertise outside their boundaries (Gabor & Lindsay, 2018; Spreitzer, Garrett, et al., 2015).

Companies from diverse industries, including technology giants (Microsoft, Google, SAP), telecoms (Orange, AT&T), e-commerce (Amazon), automakers (MINI), and insurance companies (State Farm), have been investing to design own mostly internal coworking-spaces (Gabor & Lindsay, 2018). Companies are also renting desks from independent coworking-spaces for their employees (Spreitzer, Garrett, et al., 2015). The global survey on coworking-spaces by Deskmag shows that out of two million people, working in more than 22,000 coworking-spaces, every fourth member is employed whose membership fee is being paid by their respective employers or clients (Foertsch, 2017, 2019).

Yet, besides the obviously key role of coworking-spaces there is still little knowledge about how to best use and how to design coworking-spaces. In accordance with this void, studies and general media news indicate disappointment of companies and of users with the coworking-space trend (Barrett & McCarthy, 2018; Seet, 2018; Symons, 2017). It is not only that targets are not met. Not well managed coworking-spaces increase in social isolation and stress (Bouncken et al., 2018). For example, Shopify (a multinational e-commerce company) built a coworking-spaces to increase collaboration among different partners. Soon, after a few months, it closed the coworking-space because it failed to attract sufficient partners. The marketing manager of the company described: “What we learned, though, is that there is more to a coworking space than the actual physical space. It’s a motley blend of many different elements that need to come together just right in order to really and truly provide a great coworking experience for residents” (Symons, 2017).

Our study argues that, in essence, coworking-spaces need to facilitate inspiration and serendipity by open interaction and collaboration in a stimulating interior and architecture. As outset the sociomateriality approach (Leonardi, 2012; Orlikowski, 2007), the design of the interior and architecture comes with socio-emotional meanings that can facilitate the openness, inspiration, collaboration, and serendipity.

The term sociomateriality highlights the importance of the interconnectedness of social and material elements that shape the practices (Leonardi, 2012; Orlikowski, 2007). The materiality in coworking-spaces consists of spatial aspects (e.g., spatial design, physical layouts, color schemes), visible artifacts (e.g., shared infrastructure including office desks, chairs, computers), and less visible artifacts (e.g., information systems, online forums). The actions and interactions of people with materiality in coworking-spaces facilitate or restrict sociomaterial practices (e.g. collaboration, creativity, and innovation). Materiality in

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coworking-spaces defines social actions, and changes in materiality lead to changes in work practices. For example, employees of a company sitting and working together in an open-plan office of a coworking-space can not only directly see and contact each other but can also interact with other independent professionals. They can discuss their queries, share their knowledge, and solve their problems together. In contrast to that, the interactions and knowledge sharing patterns would be different among the same employees when they would be sitting alone in their private offices or cubicles.

We propose that utilizing the learnings of sociomateriality, coworking-spaces might better facilitate creativity and innovation rather than just providing cost reduced office spaces or alternative office rent models, as we see with the reorganization of WeWork. The challenge for companies is to understand and accordingly adapt the effects of the material interior design and its socio-emotional effects (sociomateriality) in coworking-spaces. Hence, this study will explain how companies can better use coworking-spaces by following the insights from sociomateriality.

In this article, we explain materiality in coworking-spaces and how it can shape work practices assisted by two case studies. The unique spatial architecture sets the ‘body language’ of the coworking-space. It develops the culture, behaviors, and practices of users. Our results direct attention of managers to the ambiance, proximity, connectivity, and privacy by sociomateriality in coworking-spaces. It is shaped in:

*Working areas:* The places where users can work in a professional working environment.

*Socialization areas:* The shared spaces for users to interact and have a break from work.

*Support structures:* The places that provide services for the users of coworking-spaces.

Our findings show companies can improve the flow of communication by using multiple functional areas to enhance face to face interactions, diligently designing the space layouts for spontaneous encounters, and employing digital tools for disseminating information. For example, to enhance collaboration among employees and with the externals, companies should spatially collocate individuals with complementary skills. Companies can foster innovation by designing such coworking-spaces, where people can develop affiliations with space, can interact and share ideas with others, and can have infrastructures, resources, and technologies

for the realization of their ideas. Our study also lists guidelines for companies to leverage sociomateriality at coworking-spaces.

### **4.3 What are Coworking-Spaces?**

Coworking-spaces describe various forms of contemporarily designed open workspaces that provide shared office facilities and infrastructures to people from diverse professional backgrounds, such as freelancers, entrepreneurs, startups, micro-enterprises, and employees of Fortune 500 companies (Bouncken & Reuschl, 2018; Waters-Lynch et al., 2016). Often coworking-spaces follow self-made or posh interior design logics (Waters-Lynch & Duff, 2019). Most coworking-spaces run by service providers (e.g., Impact Hub, Office Evolution) are open to all professions and businesses. Apart from the provision of shared office facilities, independent coworking-spaces aim to enhance flexibility, networking, collaboration, and creativity (Clayton et al., 2018). In addition, companies (e.g., Google, SAP) and consultancy agencies (e.g., PWC) take on this trend and run their coworking-spaces to enhance coordination in projects as well as to expand their innovation pipeline (Bouncken & Reuschl, 2018). Such corporate coworking-spaces can be used by other professionals who do not necessarily work for the same company. For example, freelancers can work alongside the employees of Orange telecom in its coworking-space, namely Villa Bonne Nouvelle or VBN. Other companies' operated coworking-spaces can be restricted to their employees and clients (e.g., TenneT).

Despite their differences in operators, participants, and business models, coworking-spaces share the image of modern design-oriented collaborative workspaces often following self-made aesthetics (Waters-Lynch & Duff, 2019). Table 4.1 lists the characteristics of the coworking-spaces distinguishing them from traditional offices.

Architectures of coworking-spaces consist of open-plan offices, quiet and private areas (e.g., phone booths, private offices, meeting areas) and common areas (e.g., café, kitchen, bar lounge). More aesthetic logics, architectural oriented, and the serendipitous working environment of coworking-spaces shall sway away the image of traditional dull and monotonous offices. It turns towards stylish settings that brings ties among users to promote inspiration, productivity, and creativity (Marchegiani & Arcese, 2018; Spreitzer, Bacevice, et al., 2015). Coworking-spaces have complex and interweaving relationships of modern architectural designs and the practices of users (Allen & Henn, 2007; Doorley & Witthoft, 2011; Khazanchi et al., 2018). For example, a coworking-space might have multiple layouts,

themes, designs, facilities, technologies, which can influence interpersonal distance, density, and communication patterns among collocated users. In essence, architecture and its meanings in coworking-spaces matters for companies to obtain desired outcomes, thus materiality and its meaning matters as set out in the sociomateriality perspective.

*Table 4.1- Design Differences between Coworking-spaces and Traditional Offices*

	<b>Coworking-spaces</b>	<b>Traditional Offices</b>
Layouts	<ul style="list-style-type: none"> <li>- Open-plan and private office spaces with multiple socialization and networking areas</li> <li>- Options to have assigned and unassigned workspaces</li> </ul>	<ul style="list-style-type: none"> <li>- Enclosed office layouts</li> <li>- Mostly private offices and cubicles with assigned workspaces</li> </ul>
Design styles	<ul style="list-style-type: none"> <li>- Innovative interior designs with saturated color schemes, stylized furniture, and multifaceted seat arrangements</li> <li>- Aesthetic and playful office settings</li> </ul>	<ul style="list-style-type: none"> <li>- Usually dull and monotonous working environment</li> <li>- Orderly work settings</li> </ul>
Functional areas	<ul style="list-style-type: none"> <li>- Diverse functional areas to create a flexible and motivational working environment</li> <li>- More common areas spread around the working areas to promote spontaneous interactions</li> </ul>	<ul style="list-style-type: none"> <li>- Focus on working areas and support structures with very few recreational areas</li> <li>- Department based working areas that concentrate on one function to ensure efficiency</li> </ul>
Facilities	<ul style="list-style-type: none"> <li>- Basic facilities are always included in the membership (e.g., desks, internet)</li> <li>- Additional facilities on payment (e.g., gym, cafeteria)</li> </ul>	<ul style="list-style-type: none"> <li>- Ownership of facilities and infrastructures</li> </ul>
Digital tools	<ul style="list-style-type: none"> <li>- To support space functions, e.g., booking of meeting room</li> <li>- To support communication among users</li> </ul>	<ul style="list-style-type: none"> <li>- To support work and projects</li> </ul>

The sociomateriality perspective emphasizes that work practices in organizations are always and everywhere sociomaterial due to the ‘constitutive entanglement’ of social and material elements (Orlikowski, 2007). The term constitutive entanglement refers to the notion that social and material elements are inseparable (Orlikowski, 2007). It means that all the practices in any organization, which generally considered as social (e.g., decision making, strategy making, creativity), are results of some sort of materiality.

The literature on sociomateriality defines social as the human agency (e.g., individuals, groups, teams, and firms) (Leonardi & Barley, 2010). Materiality in workspaces consists of all the visible (e.g., desks, chairs, computers, printers) and less-visible (e.g., electricity, Wi-Fi

networks) artifacts. Materiality and social interactions can form practices, which describe a set of coordinated activities of individuals or groups in doing work in a particular organization or group context (Leonardi, 2012). Practically, sociomaterial practices in organizations cover every action and interaction that take place inside organizations. Practices guide the way tasks are performed, objects are handled, or interactions take place all come under the umbrella of sociomaterial practices (Bjørn & Osterlund, 2014; Reckwitz, 2002). Leonardi (2011, 2012) proposes that understanding sociomaterial practices demands empirically observing the interactions of human and material agencies. Effective use of coworking-spaces demands a better understanding of their sociomateriality.

#### **4.4 Materiality in Coworking-Spaces**

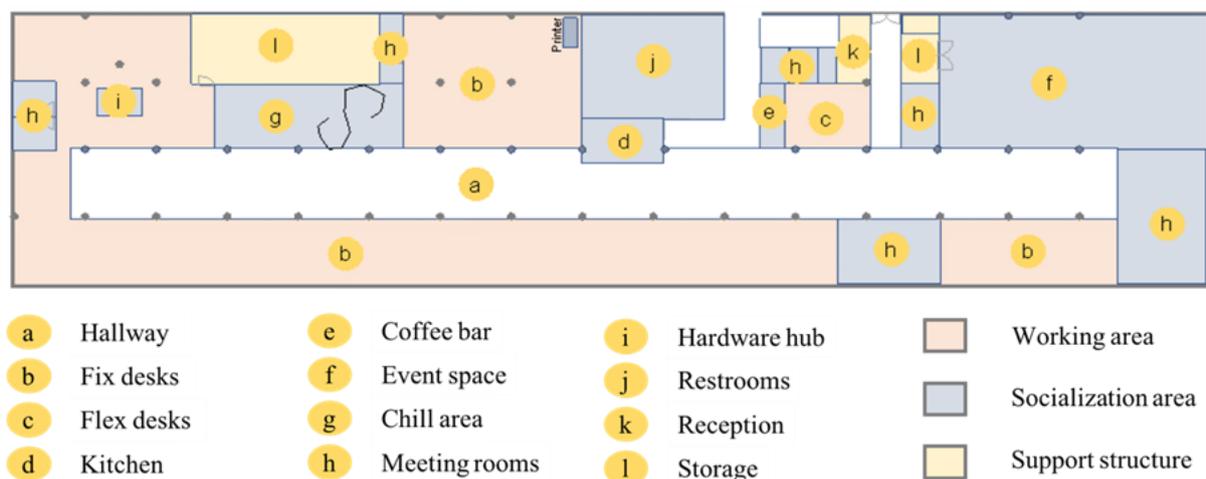
To map the sociomateriality and implications for the use of coworking-spaces, we employ two contrasting cases of coworking-spaces. Both are located in the central business district of Beijing, i.e., Design-studio and Focus-point (pseudonyms). We purposefully selected these coworking-spaces: First, a majority of companies, instead of building their own, rely on independent coworking-spaces for establishing linkages with the talent outside their companies' boundaries. Design-studio and Focus-point are both independent coworking-spaces and host not only independent professionals such as freelancers or entrepreneurs but also several startups, small firms, and employees of Fortune 500 companies. Second, despite similar characteristics of users, both coworking-spaces differ greatly in material aspects, i.e., interior designs, layouts, functional areas, and facilities. We believe the distinctiveness in materiality and homogeneity in the characteristics of social actors present them as two excellent cases to understand sociomateriality and its influence on the work practices.

Design-studio is a large coworking-space spread over an area of approximately 1500 sqm. on the top floor of a 28-story building. Design-studio hosts around 200 users ranging from independent professionals or entrepreneurial teams to large companies. Design-studio does not provide any private offices neither to independent professionals nor to companies. Focus-point is also situated in the same locality and spreads over four floors of a multistory building with an area of 1300 sqm. Unlike Design-studio, Focus-point offers a wide range of work and social spaces for users. Focus-point offers two medium-sized open-plan offices on each floor, where users from diverse backgrounds can work together. A small socialization area is available on each floor. Focus-point also offered 14 different-size private offices to small teams and companies. All these open, private, and social areas are connected with the long narrow

corridors on each floor. Design-space focuses on the provision of an open environment and aims to foster interaction, collaboration, and innovation. Though Focus-point also aims to achieve the aforementioned objectives, it also gives a lot of importance to the privacy of its members. By using the example of these two different coworking-spaces, we explain how different sorts of materiality shape the ambiance, proximity, connectivity, and privacy of the users that facilitate or restrict work practices such as communication, collaboration, and innovation. We begin with the materiality of coworking-spaces, followed by how materiality shapes the work environment. Then, we explain the formation of work practices.

#### 4.4.1 Spatial Architecture

Spatial architecture is mostly considered from an aesthetic view. We define the spatial architecture in a coworking-space as a physical space as well as ‘social fact,’ which throws light on how people fit together with space (Allen & Henn, 2007). In each coworking-space, the unique spatial architecture sets the ‘body language’ of the space. People develop their culture, behaviors, and practices by inspiration from the spatial architecture of their coworking-space. Thus, companies can, by tweaking the architecture of coworking-spaces, bolster their desired outcomes (Doorley & Witthoft, 2011). We divide the physical design of a coworking-space into three different zones, i.e., working areas, socialization areas, and support structures.



*Figure 4.1- The Layout of Design-studio*

Figure 4.1 shows the layout of Design-studio. Its working areas feature open-plan offices. These open and interactive working areas broaden the visual fields of users and facilitate mutual awareness. Socialization areas define the unique identity of coworking-spaces. Typical examples of socialization areas are event spaces, labs, lounges, kitchen, cafés, and meeting

rooms. Design-studio also offers support structures, including a reception, storage areas, and locker rooms. In contrast, Focus-point is spread over four floors with different sizes of shared and private offices for individuals and teams. These offices are connected at each floor through long corridors attached to small socialization rooms.

#### **4.4.2 Shared Facilities and Infrastructures**

Shared facilities and infrastructures offer accessibility to all or eligible members of coworking-spaces. Through sharing, users reduce cost, gain flexibility in work style, and increase interactions with other individuals. Coworking-spaces offer three types of shared facilities and infrastructures:

- *Utilities*: The essential office equipment and infrastructures that almost every coworking-space provides to all users, including desks, computers, photocopiers, and the internet.
- *Luxuries*: Extra facilities that coworking-spaces offer to the users to create an enjoyable atmosphere. For example, fully equipped and serviced kitchen, indoor sports facilities, free food, and drinks.
- *Specialties*: Specific spaces and equipment for a group of users in a particular profession. For example, hardware labs for technological users, studio for photographers.

Design-studio offers all three types of facilities, especially the presence of a hardware lab that enables users with a technology background for joint experimentation. Focus-point relies mostly on utilities. Spontaneous, unplanned, and face to face interactions happen more frequently in the places of shared infrastructure, e.g., near printers, photocopiers, or coffee machines. These zones facilitate brief and casual interactions among independent users and offer opportunities to get to know each other. Materiality affects the working environment of a coworking-space and facilitates or restricts what people do.

### **4.5 Materiality Shapes the Work Environment**

#### **4.5.1 Ambiance**

The ambiance describes the ethereal features of an environment, e.g., lighting, walls color, furniture, and general look and feel (Doorley & Witthoft, 2011). In coworking-spaces, spatial architecture and amenities are key factors that set the ambiance. To provide a creative work environment for users, coworking-spaces use unique spatial layouts, saturated color, stylized furniture, and multifaceted seat orientation. Figure 4.2 shows a glimpse of the inspirational

architectural design of a lounge in Design-studio. Points 1, 2, and 3 in Figure 4.2 depict multiple schemes of decorations in the space catering to various needs of users. Points 1 and 3 indicate bright colors and unique designs in the lounge, creating an inspirational ambiance. Point 2 shows a more modest lighting scheme in the working area to balance interaction and distraction. Point 4 presents comfortable, cozy, and casual chairs and sofas for getting rest.



*Figure 4.2- Ambiance of Design-studio*

Points 5, 6, and 7 present different working situations. At points 5 and 6, two users are working alone on desks, locating and facing away from the common area. While a group is involved in collaborative work at point 7, just next to the socialization area. Design-studio, thus, through spatial architecture, manages all these different situations skillfully. Any change in the spatial architecture of Design-studio might lead to changes in the work practices of users. For example, if at Point 6, suitable working chairs or desks are not available, then it would restrict people from working in the lounge of Design-studio.

#### **4.5.2 Proximity**

Proximity describes the physical closeness or distance between two individuals. Coworking-spaces, in general, provide great physical proximity and create functional heterogeneity due to the provision of shared facilities as well as infrastructures in socialization areas. Coworking-spaces that have open-plan offices offer more face to face communication opportunities for the

users with different professional backgrounds as compared to those spaces which offer cubicles or private offices. Proximity directly influences density inside coworking-spaces and further defines the sparse or crowded feeling of a space when users act, interact, and communicate.



*Figure 4.3- Socialization and Working Areas of Focus-point*

A sparse environment provides freedom in movement. Whereas a concentrated environment eases the process of collaboration but can also lead to crowding. Figure 4.2 shows the sparse environment of Design-studio, while Figure 4.3 indicates the crowded working environment of Focus-point. Point 1 in Figure 4.3-b exhibits that the horizontal distance between desks is approximately 1.5 meters, while Point 2 shows the vertical distance is around 1.2 meters. Seven people in this room size of 15 to 18 square meters might be useful for working on a joint project, which requires intensive mutual dependence as proximity is very high. However, such high proximity is counterproductive for creative thinking as the images, sounds, and working of other surrounding people will saturate the thinking. Design-studio provides a sparse environment where users of the space can change the proximity from high (point 7) for collaboration to low (point 5) for concentration.

### **4.5.3 Connectivity**

Connectivity in coworking-spaces refers to the link established between individuals and collectives (e.g., groups, teams, and firms) through materiality. The spatial architecture enables physical connectivity, while integrated technology creates virtual connectivity. Physical connectivity promotes face to face communication. This type of close contact plays a crucial

role in developing interpersonal relationships. Virtual connectivity enables efficient information search and exchange. The connection in the virtual world provides a more relaxed and efficient way to build contact with potential partners. In joint working, both types of connectivity contribute to communication and coordination.

Spatial architecture and integrated technology can influence different levels of connectivity among individuals, groups, organizations, or within a team. Design-studio only consists of a large-scale working area in the form of open-plan offices (see Figure 4.1 for the layout plan). In this case, all the shared working and social structures are on the same floor, which maximizes opportunities for users to have unplanned encounters. In contrast, the working areas in Focus-point consist of private team offices (see Figure 4.3-b) that increase connectivity within a team but restrict linkages with other users. Virtual connectivity in coworking-spaces takes place through integrated digital technology. Social media platforms, like Slack, enable members of a coworking-space to interact and share knowledge.

#### **4.5.4 Privacy**

Privacy protects the unwarranted accessibility of information and regulates the boundaries between self and others. The spatial design and facilities in coworking-spaces have significant effects on the privacy of users by deciding what is exposed to the others. Users tend to communicate and share more insights with other individuals when their desired privacy is protected.

Each coworking-space offers a varying degree of aural and visual privacy. Transparent meeting rooms and small booths with low partition provide only auditory or visual privacy. They can provide private offices. Figure 4.3-b shows an extremely protected working environment in Focus-point. Coworking-spaces can provide a combination of open and private offices so that users can choose their work environment. Adding operable partition in shared spaces also enables control of visual privacy.

#### **4.6 Formation of Work Practices**

Companies should understand that the interaction of social actors with material artifacts can lead to perplex and capricious outcomes. For example, open spatial architecture can facilitate the flow of communication but can also lead to distractions. Table 4.2 briefly outlined how sociomateriality in coworking-spaces shapes favorable and unfavorable consequences for

users. We further highlight the key points in Table 4.3 that companies should consider while designing and nurturing or selecting their coworking-spaces for fostering communication, collaboration, and innovation.

**Table 4.2- Formation of Work Practices in Coworking-spaces**

Work Practices Inter-weave Materiality	Communication	Collaboration	Innovation
Spatial architecture	<p>Interactions vs. distractions</p> <ul style="list-style-type: none"> <li>- Open-plan offices induce face to face interactions among users through enhancing proximity and connectivity</li> <li>- Overstimulation of interactions can be distracted</li> <li>- Multiple functional areas create flexibility and provide privacy control</li> </ul>	<p>Diverse vs. like-minded connections</p> <ul style="list-style-type: none"> <li>- The collocation of users with diverse skills backgrounds fosters the connections with complementary skills</li> <li>- Sharing an office with the same team or firm reduce novelty and promote like-mindedness</li> <li>- Skills diversity enhances the chances for collaboration</li> </ul>	<p>Focus vs. flare</p> <ul style="list-style-type: none"> <li>- Serendipitous environment boost creativity and imagination</li> <li>- A continuous stream of new ideas and inspiration in the environment might be challenging to focus on one idea at a time</li> </ul>
Shared facilities and infrastructure	<p>Encounters vs. distortions</p> <ul style="list-style-type: none"> <li>- Shared facilities and infrastructures engender spontaneous interactions</li> <li>- Shared facilities near working areas can bring distortions</li> <li>- Diligently designing of layouts and careful placement of shared resources can reduce distortions</li> </ul>	<p>Joint experimentations vs. tensions</p> <ul style="list-style-type: none"> <li>- Shared facilities and infrastructures promote joint experimentation among different individuals, groups, and teams</li> <li>- Unwanted tensions might arise due to the non-availability of shared resources, e.g., waiting time to access resources</li> </ul>	<p>Inspiration vs. realization</p> <ul style="list-style-type: none"> <li>- Cozy social areas evoke inspirational conversations around new ideas</li> <li>- People can get feedback from other users of the same facilities</li> <li>- Non-availability of shared resources and technologies could thwart the realization of new ideas</li> </ul>

### 4.6.1 The Flow of Communication

Coworking-spaces facilitate communication among individuals, groups, and teams through spatial architecture, shared facilities, and digital technologies necessarily. A simple greeting or a handshake works as an icebreaker in socialization areas of coworking-spaces for possibly fruitful conversations later. The materiality in coworking-spaces influences the flow of communication. We outline three major insights leading to suggestions for coordinating, informing, and inspiring communication.

- *Use multiple functional areas to enhance social interactions:* Open-plan offices increase physical proximity among users, enabling them to communicate with other professionals within walking distance for coordinating the activities. However, it can also distract users

from focusing on their work due to the overstimulation of interactions. In contrast, private offices offer more privacy control and enable strong coordination among the members of a team. However, as in Figure 4.3-b, private offices restrict interaction with the other users. We suggest that coworking-spaces can offer multiple functional areas (e.g., a combination of open-plan offices and private offices) to enhance communication as well as privacy control.

*Table 4.3- Do's and Don'ts towards Communication, Collaboration, and Innovation*

Work Practices	Do's	Don'ts
<b>Flow of communication</b>	<ul style="list-style-type: none"> <li>• Use multiple functional areas to enhance social interactions</li> <li>• Design layouts diligently to promote spontaneous encounters</li> <li>• Employ digital tools for disseminating information</li> </ul>	<ul style="list-style-type: none"> <li>• Overstimulation of interactions can be distracted</li> <li>• Shared facilities near working areas can cause distortions</li> <li>• Overemphasis on a digital tool might reduce face to face communication</li> </ul>
<b>Collaboration across boundaries</b>	<ul style="list-style-type: none"> <li>• Place individuals with diverse skills to foster complementarity in connections</li> <li>• Use shared infrastructures to promote joint experimentation</li> </ul>	<ul style="list-style-type: none"> <li>• Sharing office with the same team reduce novelty and promote like-mindedness</li> <li>• Unavailability, inadequate maintenance, or malfunctioning of infrastructure might invite unwanted stress.</li> </ul>
<b>Architecture of innovation</b>	<ul style="list-style-type: none"> <li>• Allow people to develop affiliations with space through personalization</li> <li>• Create a balance between focus and flare by offering different working and socialization areas</li> <li>• Provide infrastructure, resources, and technology for the realization of ideas</li> </ul>	<ul style="list-style-type: none"> <li>• Personalization of shared resources can cause conflicts.</li> <li>• A continuous stream of ideas might be challenging</li> <li>• Unavailability of technology or support structures can hinder the realization of ideas</li> </ul>

- *Design layouts diligently to promote spontaneous encounters:* Shared infrastructures and facilities temporarily converge users from diverse disciplines and promote spontaneous interactions. For example, people can casually interact near the coffee machine or photocopier. The presence of shared facilities and infrastructures nearby offices might also be annoying and a source of continuous disturbance for the people working therein. Therefore, coworking-spaces need to diligently design office layouts for promoting encounters among different users while simultaneously taking steps to avoid distractions, e.g., use of sound-absorbing materials.
- *Employ digital tools for disseminating information:* Coworking-spaces can use digital tools (e.g. Slack, Facebook groups) for distributing information and can facilitate users to interact with others (later) regardless of the constraints of time and space. However, coworking-space should not over-emphasis on social media platforms for spreading messages and information, as it might reduce face to face communication among users.

#### 4.6.2 Collaboration Across Boundaries

The opportunities for collaboration among users from different professional backgrounds without any shared employment affiliation distinguishes a coworking-space from a conventional workspace. The sociomateriality in coworking-spaces influences communication patterns (e.g., face to face or virtual, communication duration, and content of communication) among users and determines the scope of collaboration. We suggest:

- *Place individuals with diverse skills to foster complementarity connections:* Open-plan offices in coworking-spaces provide more physical proximity and connectivity as compared to private offices. At a team level, open-plan offices reduce hierarchies and engender flatter structures. The reduced layers and barriers increase the flow of communication across hierarchies and encourage employees to openly share their ideas (Hua, 2010; Peponis et al., 2007). At an individual level, sharing an office with the people from different organizations or backgrounds enhance the chances for collaboration to one fourth more than those who do not (Agrawal et al., 2008). Similarly, the co-presence of users at socialization and service areas encourages communication, enhance the chances for the exchange of ideas (Kabo et al., 2015).
- *Use shared infrastructures to promote joint experimentations and skills sharing:* Shared infrastructures (e.g., hardware lab) in a coworking-spaces encourage users from diverse firms or backgrounds for joint experimentation, mutual learning, and skills sharing. However, the unavailability of shared infrastructure due to the malfunctioning of shared resources (e.g., 3D printers) or long waiting time to access the resource due to multiple users—can invite unwanted stress and tensions. Therefore, coworking-spaces shall ensure that all these shared resources are readily available or adequately maintained for the users.

#### 4.6.3 Architecture of Innovation

Spatial architecture or settings incite various actions among individuals (Doorley & Witthoft, 2011). For example, collaborative and serendipitous working areas promote inspirational conversations. The presence of large social areas with cozy furniture, proper lighting, and fully equipped kitchens or cafés support long sittings and discussions. To stimulate creativity, companies can take the following steps in their coworking-spaces:

- *Allow people to develop affiliations with space through personalization:* Most people have a strong desire for ownership, and they want to exhibit their ownership by personalizing

their workspaces (Byron & Laurence, 2015). Coworking-spaces offer two types of shared workspaces, i.e., assigned and unassigned desks. Assigned desks or workplaces fulfill the psychological ownership of the users, allowing users to personalize their workplaces for maximized inspiration by placing pictures, diplomas, or certificates. Unassigned workplaces or offices restrict users to customize the workplaces and reduce users' ability to develop affiliation or belongingness with the workspace (Khazanchi et al., 2018).

- *Create a balance between focus and flare:* coworking-spaces need to create a balance between focus and flare, which require a balance between collaborative and private spaces. In collaborative areas, users can brainstorm, share, and exchange ideas and can come up with a novel solution. In private areas, users can concentrate or focus on their work alone or with other team members.
- *Provide infrastructures, resources, and technology for the realization of ideas:* Realization is the process of bringing ideas into reality. Coworking-spaces through support structures can enable users to develop their ethereal ideas to physical shape. Support structures, e.g., a hardware lab inside a coworking-space, can help users to build their prototypes through 3D printers, seek feedback from other users and refine their finish products.

#### **4.7 Leveraging Sociomateriality at Coworking-Spaces**

Large companies start making or sending their employees to other independent coworking-spaces to improve collaboration and broaden their innovation pipelines. By understanding and managing sociomateriality, companies can better design their coworking-spaces or select such a coworking-space that fits their demands. Table 4.4 highlights managerial guidelines to leverage sociomateriality in coworking-spaces.

- *Consider all the Work Practices as Sociomaterial:*

Companies should consider all the work practices as the consequence of the intermingling of social and material elements. This understanding is essential, as it puts materiality in the limelight, which most of the managers ignore when considering to develop practices that are mostly misunderstood as only social. For example, sense of community is a prominent feature of coworking-spaces. Many companies send their employees to independent coworking-spaces with the expectations to establish linkages with the communities of coworking-spaces. The first step towards building a community in a coworking-space necessitates—people get to know each other. To achieve this purpose, community managers rely heavily on social events such

as community breakfast, meal sharing, or beer evening. However, these events are less likely to get the interests of the people, if managers fail to consider material aspects such as the area of the event space, overall ambiance, or arrangement of tables and chairs. Considering and viewing material attributes as an integral part of social aspects would reinforce the idea in managers' minds that materiality is a part of everyday organizing.

*Table 4.4- Managerial Guideline to Leverage Sociomateriality in Coworking-spaces*

<b>Points to consider to leverage sociomateriality at coworking-spaces</b>	
Consider all the work practices as sociomaterial	<ul style="list-style-type: none"> <li>• View all the work practices (e.g., communication, collaboration, and innovation) as the consequence of the interaction of social and material elements.</li> <li>• Consider the positive and negative consequences of materiality — for example, the pros and cons of open-plan offices.</li> </ul>
Create a fit between users' need and material aspects of space	<ul style="list-style-type: none"> <li>• Observe and understand users' practices when they interact with materiality in the workspace — for example, users' behavior near the coffee machine.</li> <li>• Collect and analyze insights from digital tools — for example, casual online discussions among users about space facilities.</li> <li>• Compare and evaluate the value promise and value delivery of a coworking-space — for example, the number of successful ventures over a year or the number of patents filed by the users of a space.</li> </ul>
Do not hesitate to experiment with small changes in materiality	<ul style="list-style-type: none"> <li>• Understand that materiality engenders different practices when it comes in contact with different people — for example, open-plan offices might attract users who look for social interactions but could be distracting for others who want to work.</li> <li>• Start with the small changes in materiality and ask for users' feedback— for example, changing in color scheme.</li> <li>• Stay abreast of the changes in materiality and their consequences on the work practices for desired results — for example, the reaction of people in response to a new artifact such as operable boundaries.</li> </ul>

Secondly, we advise companies to consider the positive and negative consequences of materiality. Table 4.2 explains how spatial architecture, shared facilities, and infrastructures influence the patterns of communication, collaboration, and innovation. Most companies focus on a positive aspect and do not consider the negative consequences of materiality. For example, some coworking-spaces try to create a very inspiring design by using different color themes, casual furniture, and multiple lighting arrangements for fostering creativity. However, focusing on aesthetics without considering the comfort of users might fail to deliver the desired results.

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Therefore, considering both sides of materiality and its role in shaping work practices might help companies to select such a coworking-space that effectively serves their objectives. It might also help companies in accordingly designing or changing their coworking-spaces, e.g., layouts, arrangements of desks, placement of shared infrastructure, or employing new technology.

- *Create a fit between users' needs and material aspects of space:*

The spatial architecture intentionally or unintentionally sets the body language of the space. The designs of working and social areas, space layouts, and arrangements of desks facilitate people to develop their cultures, behaviors, and practices. The shared facilities and infrastructures provide a support structure while the implementation of digital tools enhance efficiency. We suggest that creating a fit between social and material aspects would enable companies to foster positive consequences. This fit can be achieved through three different means: First, by observing and understanding the users' behaviors and practices in their workspaces when they come in contact with materiality. For example, managers can observe the practices of users near coffee machines—how often they use the machine, how long they need to wait, do they interact, and how long. All these observations would help managers to decide the changes or improvements in materiality as if there is any need for another coffee machine or if there needs to place some chairs if people want to talk longer. Second, digital tools can be specifically helpful for managers in this quest. Social networking forums, e.g., Slack or Facebook group and coworking management tools, e.g., Optix or Coworkify, can provide specific insights about the aspects in which a particular space is lacking. Third, companies can compare the value promise and value delivery of their coworking-space. For example, if a company wants to send their employees to a coworking-space for fostering innovation, then managers can analyze the work environment if it is serendipitous enough or the availability of shared infrastructures and technology for the realization of ideas.

- *Do not hesitate to experiment with small changes:*

Companies need to understand that there is no one size fits all when dealing with the sociomateriality. The same materiality engenders different practices when it comes in contact with different people. For example, an open-plan office might attract such users who are looking for new social connections, but it could be distracting for others who want to focus on their work. Therefore, companies can diligently choose such coworking-spaces, which might

help them to achieve their objectives. In the same way, companies can continuously invoke experimentation with the physical designs of coworking-spaces. Companies can make only small changes that can bring more significant results. For example, the availability of operable partitions can use to provide visual privacy or might declare certain open-plan offices as quiet zones. Alternatively, managers can foster certain norms and values in their coworking-space, such as a quiet period during the morning or clean desk policy. Nevertheless, managers should stay abreast of the changes in materiality and their consequences on the work practices of the users to know if the desired results are achieved. Managers can also seek feedback from the users and can directly effectuate the changes desired by users.

### **4.8 Summary**

Coworking-spaces, as a new spatial solution, bring materiality in workplaces into the spotlight. Companies can use materiality in coworking-spaces of spatial architecture (working, social, and support structures) and shared facilities and infrastructures (utilities, luxuries, and specialties). The synergic interaction of sociomaterial elements influences the properties of the spaces by influencing the ambiance, proximity, connectivity, and privacy. Changing the materiality in coworking-spaces can improve communication, collaboration, and innovation. We suggest that companies can leverage from coworking-spaces by considering all work practices as sociomaterial, achieving a fit between users' needs and materiality, and endeavoring experimentation with the small changes.

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## **Chapter 5: The Role of Sociomaterial Assemblage on Entrepreneurship in Coworking-Spaces**

### **5.1 Abstract**

**Purpose:** Coworking spaces are considered as a new formula to facilitate autonomy, creativity, self-efficacy, work satisfaction, and innovation, yet they also might overburden their users who in that course intend to limit social interaction and collaboration in the workspace. Thus, the question is how coworking-spaces shape entrepreneurial ventures.

**Methodology:** We used an inductive research methodology based on data from three different data sources, including observations, archives, and interviews from managers and entrepreneurs.

**Findings:** The findings suggest that the materiality in the form of spatial architectures (working, socialization, and support structures), shared facilities and infrastructures (utilities, luxuries, and specialties), and integrated digital technologies (applications and platforms) influence the flow of communication, internal and external linkages, as well as functional uniformity and distinctiveness. However, there exists an inherent dualism in sociomaterial assemblage in coworking-spaces, which can lead to instrumental and detrimental outcomes for entrepreneurs.

**Originality:** This study explains the role of sociomaterial assemblage on the working of entrepreneurs in shared workspaces..

### **5.2 Introduction**

Coworking-spaces are proliferating globally and offer affordable workspaces with inspirational and playful work environments to more than two million people (Clayton et al., 2018; Foertsch, 2019; Waters-Lynch & Duff, 2019). Professionals, such as freelancers, remote workers, and employees of firms use coworking-spaces to raise their productivity (Bueno et al., 2018), optimize work-life balance (Orel, 2020), and expand their social networks (Rus & Orel, 2015; Spreitzer, et al., 2015). Companies are also participating in coworking-spaces to get themselves connected with the local talent and broadening their innovation pipelines (Bouncken & Reuschl, 2018; Gabor & Lindsay, 2018). Yet, how coworking-spaces shape entrepreneurial ventures.

The extant literature points out that coworking-spaces combat the feelings of social isolation and promote communication, collaboration, and co-creation among spatially collocated entrepreneurs (Bouncken et al., 2020; Clayton et al., 2018; King, 2017). The underlying assumption in most of the studies is based on the notion that socialization is the key to productivity (e.g., Blagoev et al., 2019; Bouncken and Reuschl, 2018; Garrett et al., 2017) while omitting the role of spatial and physical aspects of coworking-spaces. Spatial aspects (e.g., spatial designs and physical layouts), visible facilities (e.g., office desks, chairs, and computers), and less visible components (e.g., information systems and online forums) form the materiality inside coworking-spaces. We argue that the practices, which the existing studies term as 'social' (e.g., collaboration, creativity, and innovation) are the results of the 'constitutive entanglement' of social and material elements. Constitutive entanglement means the social and material aspects are always and everywhere inseparable in all the practices in any organization (Orlikowski, 2007). This entanglement creates a unique organizational design that promotes entrepreneurship by connecting entrepreneurs with other entrepreneurs, startups, and innovators through physical spaces, shared infrastructures, and digital technologies (Nambisan, 2016).

The purpose of this study is to analyze the social and material environments in coworking-spaces that contribute to entrepreneurship. The theoretic background is the sociomateriality theory (Leonardi, 2013; Orlikowski & Scott, 2008), explaining how the social and material environment shapes entrepreneurial ventures. We collected primary data through observations, participation in online forums and groups, and interviews with the founders, managers, and users of coworking-spaces. In line with the principles of grounded theory (Corbin & Strauss, 1990; Mäkelä & Turcan., 2007), we conducted an inductive data analysis in two stages (Miles & Huberman, 1994). We conclude that the materiality in the form of spatial architectures (working, socialization, and support structures), shared facilities and infrastructures (utilities, luxuries, and specialties), and integrated digital technologies (applications and platforms) influence the flow of communication, internal and external linkages, as well as functional uniformity and distinctiveness. Our study further points out the duality of sociomaterial assemblage in coworking-spaces that leads to instrumental (relational and behavioral slacks) and detrimental (territorial and defensive behaviors) outcomes for entrepreneurs.

The paper is structured as follows: We begin with a brief description of entrepreneurship in coworking-spaces and sociomateriality perspective to build our theoretical foundation. We then describe the research methodology and findings section, followed by a discussion section.

## **5.3 Theoretical Background**

### **5.3.1 Entrepreneurship in Coworking-Spaces**

Coworking-spaces are modern, aesthetically designed workspaces that offer shared office facilities to people from diverse backgrounds (Clayton et al., 2018; Spinuzzi, 2012). Aesthetic and playful office settings inside coworking-spaces develop a serendipitous climate that stimulates communication and collaboration among diverse professionals (Gregg & Lodato, 2018; Orel & Almeida, 2019; Waters-Lynch & Duff, 2019).

Entrepreneurship flourishes in Coworking-spaces (Bouncken, Kraus, et al., 2020). Firms, entrepreneurs, and startups use coworking-spaces to connect with the local talent (Bouncken & Aslam, 2019; Rese et al., 2020). The direct interactions can develop a sense of community which underlies many collaborative and motivational advantages (Garrett et al., 2017; Rus & Orel, 2015; Spinuzzi et al., 2019). Entrepreneurs can learn from each other's experiences and share knowledge (Bouncken & Aslam, 2019), facilitating the initiation of joint projects (Cabral & Winden, 2016; Waber et al., 2014). The knowledge sharing process in coworking-spaces can use the 'wisdom of the crowd' (Bouncken & Aslam, 2019; Schopfel et al., 2015) to solve complex problems (Bizzarri, 2014; Rus & Orel, 2015). Resource sharing in coworking-spaces allows to overcome resource bottlenecks and enable entrepreneurs to work on novel and innovative ideas (Capdevila, 2014; Moriset, 2014). The serendipitous working environment of coworking-spaces promotes creativity and innovation (Bilandzic & Foth, 2016; Bizzarri, 2014; Orel & Almeida, 2019) through connecting entrepreneurial spirit with the dynamic demands of the external environment (Schuermann, 2014). Large multinational companies can also profit from the innovative atmosphere in coworking-spaces (Bouncken & Reuschl, 2018). Corporates such as Google, Microsoft, SAP, etc., establish their coworking-spaces for connecting themselves with local talents and broadening their innovation pipelines (Bouncken, et al., 2020; Gabor & Lindsay, 2018; Spreitzer et al., 2015).

Spatial designs of coworking-spaces vary from private offices to cubicles to open-plan offices (Davis et al., 2011). Spatial parameters such as open vs. closed offices, size of the office spaces, density inside office spaces, and interpersonal distances influence communication patterns

among incumbents and can lead to perplexing, capricious, and complicated outcomes for the individuals, groups, and teams working in organizations (Khazanchi et al., 2018; Peponis et al., 2007; Rashid et al., 2006). For example, spatial collocation of users enhances face-to-face communication, facilitates sharing of ideas as well as joint exploration, and increases individuals' task as well as group performance (Bouncken & Aslam, 2019). However, shared facilities (e.g., photocopier, coffee machine) near open-plan offices can bring unwanted distractions (Bouncken et al., 2018). The existing studies indicate an essential yet understudied role of complex and interweaving relationships of coworking-spaces on entrepreneurs. Through this inductive research, we aim to address the question: How do coworking-spaces form and how do they influence the outcomes for entrepreneurs? We employ the lens of sociomateriality to understand the role of coworking-spaces on entrepreneurs. In the next section, we explain how this perspective provides new insights into the interaction of social and material aspects, which helps to frame our analysis.

### **5.3.2 Sociomateriality Perspective**

The concept of 'sociomateriality' (Leonardi, 2013; Orlikowski, 2007; Scott & Orlikowski, 2014) highlights the importance of the interactive effect of social and material elements in the emergence of organizational structures and behaviors. Orlikowski (2007, p. 1437) contends that "the social and material are considered to be inextricably related—there is no social that is not also material, and no material that is not also social." The domains of social and material cannot be separated, as materiality is created through social processes, and it is understood in social contexts, whereas all social actions comprise some materiality (Leonardi & Barley, 2010). Sociomateriality refers to the recognition of materiality taking a meaning when entangled with a phenomenon considered as 'social,' such as decision making, strategy formulation, or categorization (Leonardi, 2013).

Orlikowski (2007) proclaims that "...dealing with materiality in organizational research is critical if we are to understand contemporary forms of organizing that are increasingly constituted by multiple, emergent, shifting and interdependent technologies" (2007:1435). Coworking-spaces represent a contemporary form of organization that influences entrepreneurial processes and creates numerous entrepreneurial opportunities (Bouncken & Reuschl, 2017, 2018). For instance, the membership of Copass (copass.org) provides flexibility to the entrepreneurs and companies to carry on their business activities anywhere within the pool of 788 coworking-spaces located in 476 cities of 81 countries. Copass offers its services

to individuals, startups, and companies and accommodates geographically distributed teams located in different proximities. On the one hand, Copass provides flexibility to the independent professionals, entrepreneurs, and companies to carry on their business operations from separate locations. On the other hand, it increases the profitability of coworking-spaces by sending new members. Similarly, other companies, such as International Workplace Group (IWJ), WeWork, Onecocoworking, and Coworker also offer freedom to their users to work at the place of their choice.

The sociomateriality perspective (Leonardi, 2013; Orlikowski, 2007; Orlikowski & Scott, 2008) can explain new forms of collaborative workspaces that are influenced by architectural factors. Sociomaterial elements and their assemblage in emerging work environments explain how social interactions take place. In addition, it elaborates the meanings of these interactions for the users; how these meanings become available to other users; and how the meanings and uses of these interactions change with the change in materiality. The use of the concepts of sociomateriality to understand the shared routines or practices inside collaborative workspaces can address two crucial research goals. First, it responds to the call of research in the domain of performativity of the sociomaterial assemblage that produces fleeting, fragmented, intended, and unintended outcomes (Leonardi, 2013; Orlikowski, 2007; Orlikowski & Scott, 2008). Second, we contend that the change in work practices is continuously shifting the existing structural boundaries, leading to flexible, inconsistent, and unsteady routines (Marchegiani & Arcese, 2018). Therefore, the understanding of constitutive entanglement of social and material elements can provide useful insights into the emergence of new social practices in a shared workspace.

#### **5.4 Research Methodology**

Our study is based on an inductive research methodology (Corbin & Strauss, 2012; Mäkelä & Turcan., 2007). We collected data from different data sources (observations, archives, interviews from managers and entrepreneurs) for the triangulation of evidence (Eisenhardt, 1989). First, we visited different coworking-spaces in Germany to observe the work environment and social practices. Second, we collected data from online archives such as coworking forums, slack channels, google groups, etc. Third, we interviewed founders and managers of coworking-spaces as well as entrepreneurs working therein to gain more profound insights into the sociomaterial designs and practices. Tables 5.1 and 5.2 describe the characteristics of the respondents and coworking-spaces.

## Role of Sociomateriality on Entrepreneurship

*Table 5.1- Characteristics of respondents (Managers) and coworking-spaces*

ID	Gender	Profession of the Respondent	Target Users	Area of Space (SQM)	Total No of Users	Characteristics of the Space
P-1	F	Community manager	Entrepreneurs and freelancers.	500	more than 60	Open-plan working area with simple and elegant chairs and tables. Two small meeting rooms and a café. Artwork on the walls for inspiration. Basic office facilities with printer and internet. Flexible membership plan, assigned and unassigned workspaces.
P-2	F	Chief operating officer	Diverse users e.g., freelancers, bloggers, entrepreneurs, corporations.	4200	200-220	Large coworking-space spreads over three floors containing open-plan offices, private working areas, and socialization areas. Contemporary office designs with rearrangement options. Flexible membership plans, assigned and unassigned workspaces, and private offices.
P-3	M	Founder	Open for startups teams.	400	50-60	Small coworking-space provide open-plan working area with comfortable and cozy furniture, four private areas for meetings, and a café. Memberships for small startups only.
P-4	F	Managing director	Creative freelancers e.g., artists, musicians and digital nomads	2500	60-70	Medium size coworking-space spreads over different floors containing open-plan offices, private offices for teams, and socialization areas.
P-5	M	Expansion Liaison	Social Entrepreneurs	3000	150-180	Large coworking-space build on a warehouse with functional design.
P-6	M	Founder	Freelancers, startups, entrepreneurs, and firms with 3 to 15 employees working in the social sector.	4300	150-200	Large coworking-space build on a large warehouse spreads over three connected buildings. It consists of maker space, workshop space, open-plan office spaces, private offices, kitchen, and library.
P-7	M	Co-founder	Open for all users.	600	40-50	Small size centrally located coworking-spaces consists only on open-plan offices without workplace assignment, a small private space, a hardware lab, and a pantry kitchen.
P-8	M	Founder	Startups and businesses on the green economy.	350	30-40	Coworking-space is built in an old convent mansion from sixteenth century. It consists of working areas on the ground floor while meeting and socialization areas on the first floor.
P-9	M	Co-founder	Open for all users.	500	40-50	Small size coworking-spaces provide open-plan working areas, private spaces, hardware labs, kitchen, and café. Lively and vibrant ambience with comfortable furniture.
P-10	M	Founder and Manager	Startup working in the technological sector.	500	50	Modern small coworking-space with open-plan working areas, socialization areas, and support structures. It offers flexible membership plans.

Table 5.2- Characteristics of respondents (Entrepreneurs) of coworking-spaces

ID	Focus Area	Venture Phase	Membership Status	Expectations from Coworking-spaces	Services Acquired from coworking spaces	Challenges in Coworking-spaces
E-1	Marketing services	Startup	Monthly subscription	Networking, creativity, and accessibility to resources, e.g, human resources	Assigned desks in an open-plan office, seminars, social events, and get-togethers.	Lack of a diverse community.
E-2	Enterprise management	Growth	Personal coworking space	Direct access to co-workers and evaluation of their products in real-time.	Private office, meeting rooms, and café.	Distraction due to noise.
E-3	Venture development	Startup	Yearly subscription	Affordable private office space, direct access to a broad audience, and a creative work environment.	Private office, unassigned desks, meeting rooms, and social spaces.	Distraction and unavailability of meeting rooms and shared resources.
E-4	Innovation consultancy	Pre-startup	Multiple coworking-spaces	Socialization with other entrepreneurs for partnership and other business opportunities.	Unassigned desks and social space.	Hygienic factors and poor infrastructure.
E-5	Public relations	Growth	Daily subscription	Training, learning, as well as networking opportunities for business deals.	Assigned desks, social spaces, and meeting rooms.	Improper layout of coworking-space thwarts networking opportunities.
E-6	IT solution provider	Growth	Yearly subscription	Affordable workspace and direct access to customers.	Private office, shared desks, social spaces, and meeting rooms.	Lack of structure, distraction, and unsolicited socialization.
E-7	Online solution provider	Startup	Monthly subscription	Affordable workspace to perform office in a creative work environment.	Assigned desks in an open-plan working area.	Lack of creative atmosphere.
E-8	Big data	Pre-startup	Weekly subscription	Affordable workspace with networking opportunities.	Unassigned desks in an open-plan working area.	The location is far away from city center.
E-9	Ecommerce	Startup	Monthly subscription	Flexible workspace.	Assigned workspace in an open-plan working area.	Distraction and privacy issues.
E-10	Film and documentaries	Growth	Monthly subscription	Networking with diverse professionals.	Unassigned workspace and socialization area.	Noise.
E-11	Ecommerce	Startup	Annual subscription	Shared infrastructure and facilities at an affordable price and direct accessibility to versatile professionals.	Private office and socialization area.	Dull ambience, lack of natural light, and uncomfortable chairs.
E-12	Online music store	Startup	Monthly subscription	Affordable and flexible workspace with networking opportunities.	Unassigned desks in an open-plan working area, socialization area.	Unavailability of shared infrastructure and resources.
E-13	Tech platform	Startup	Monthly subscription	Flexibility with networking opportunities.	Assigned workspaces, hardware lab, and socialization area.	Noise, distraction, privacy, lack of shared infrastructure.

### **5.4.1 Data Collection**

We collected data based on the principles of appropriateness and adequacy (Gaskell, 2000; Guest et al., 2006). Our preliminary data consists of field notes collected during our field visits (February to June 2017) of various coworking-spaces located in Germany. We spent on average 8 working days in a coworking-space. As non-participating researchers, we observed the work practices and attended training programs and social events arranged by coworking-spaces. Most of the field observations consist of informal discussions with entrepreneurs regarding their work, area of interest, and available services in coworking-spaces. The notes already showed that most of the coworking-spaces provide similar services but vary a lot in respect of size, structure, design, and the local community. For example, some coworking-spaces focus on particular user groups like artists, consultants, or freelancers. Others provide hosting to (social) entrepreneurs, startups, or knowledge professionals.

In the next step, we collected data from online forums on coworking-spaces. In line with the principles of inductive research, we followed and analyzed the discussions on these forums and also posted our queries until a consistent theme started to emerge (Corbin & Strauss, 1990; Glaser, 1965). Our field observations and online archival data helped us to define themes for semi-structured interview guidelines.

In the end, we conducted interviews with the founders or managers, independent users, and members of entrepreneurial firms located in coworking-spaces. We adopted a purposive sampling technique (Williams, 2007). To attain a sample based on maximum variation, we selected our participants (entrepreneurs) based on the following criteria: (1) participant must represent an entrepreneurial firm in a coworking-space, (2) participant must be incumbent in coworking-space for at least six months, and (3) in case of a firm consisting of multiple partners, the respondents must be active business partners. Interviews were used for data collection due to three reasons. First, in-depth interviews are beneficial in areas of research where the domain of knowledge is new (Eisenhardt & Graebner, 2007). Second, interviews are more flexible than surveys, allowing spontaneous discussions and follow-ups on the topics that arise during interviews (Neergaard & Ulhøi, 2007). Third, entrepreneurs prefer to talk about their experiences—sharing their success stories as well as challenges (ibid). We started with two semi-structured interview guidelines to collect data from the managers as well as entrepreneurs of coworking-spaces. We asked the founders or managers of coworking-spaces about their space designs, facilities, target users, and their future goals. At the beginning of

each interview with the entrepreneurs, we asked questions about their motivations, expectations, and goals they want to pursue in coworking-spaces. They were asked to explain their working environment and how it influenced their work. Further questions referred to their business models, processes, product or service development, involvement to work on innovative ideas, and available techniques and technologies. Participants were also questioned about the nature of personal and professional relationships with other users.

### **5.4.2 Data Analysis**

We collected and analyzed data simultaneously by using a constant comparative method of qualitative data analysis (Strauss & Corbin, 1998). In line with the principles of inductive research, we conducted a two-stage inductive analysis of the data (Cassell & Symon, 2004). The procedure started with the data collection, followed by an iterative process of step-by-step data reduction until the emergence of common themes, which we verified through feedback loops (Miles et al., 2014; Strauss & Corbin, 1998).

We carefully and independently read all the notes (online discussions and field observations) and interviews. Then, we coded the data line by line akin to the notion of open coding of Strauss and Corbin (1998). These codes were proposed by the data rather than following any existing literature or theory (Strauss & Corbin, 1998). We compared our codes and clustered them based on emerging ideas and relationships between data to define first order concepts (Gioia et al., 2013). These concepts were further used to create aggregated second order themes. We continually considered existing literature and related our second order themes with the existing literature. Finally, higher-level dimensions were defined based on emerging relationships between themes. Figure 5.1 depicts the analytic coding process to induce the theoretical dimensions.

We took several steps to ensure the validity of our analysis and results. First, we shared the transcripts of data with the respondents to establish confidence in the data. Second, two independent outsiders assessed our codes and coding scheme. The initial consensus on the codes was 62 percent. The codes were discussed, revised, and developed further until we reached a consensus on the coding scheme. In the end, we corroborate our findings with the initial field notes from our observations and archival data.

## Role of Sociomateriality on Entrepreneurship

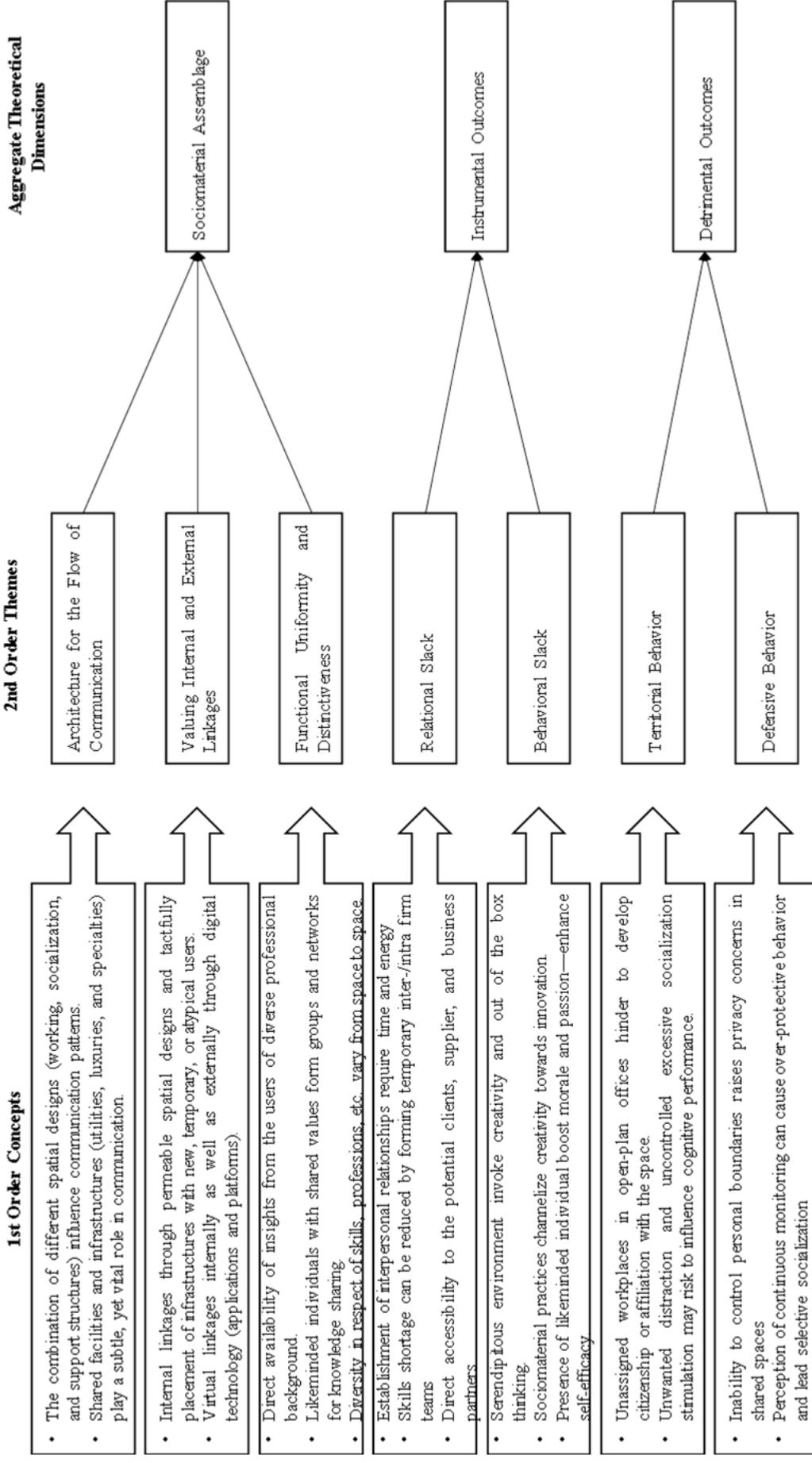


Figure 5.1- Analytical Coding Process to Induce Theoretical Dimensions

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## 5.5 Findings

Our findings suggest that spatial architectures, shared facilities and infrastructures, and integrated digital technologies form the materiality of coworking-spaces. The imbrications of social actors with material elements form the sociomaterial assemblage in coworking-spaces and influence the flow of communication, internal and external linkages, and functional uniformity and distinctiveness. This sociomaterial assemblage shapes the contours and possibilities for entrepreneurs and leads to instrumental and detrimental outcomes. In the following, we explore sociomaterial assemblage in coworking-spaces, followed by their instrumental and detrimental outcomes.

### 5.5.1 Sociomaterial Assemblage in Coworking-Spaces

#### *Architecture for the Flow of Communication*

Coworking-spaces vary across spatial designs, shared facilities, and infrastructures. The spatial design of a coworking-space consists of working, socialization, and support structures. The working area offers users professional office environments with desks in different formats, mostly in the form of open-plan offices with or without workplace assignments, private offices with lock and key, and small cubicles for a person or small teams. The socialization area includes cafeterias, bars, kitchens, lawns, lounges, and other common areas for socializing. Coworking-spaces also offer support structures to entrepreneurs in the form of receptions, locker rooms, and storage areas. Three types of facilities are being offered to users of coworking-spaces, i.e., utilities, luxuries, and specialties. Utilities are the necessary facilities relating to the work of users, and almost every coworking-space provides, e.g., desks, computers, printers, and internet access. Luxuries are those facilities that are not directly related to the work of users but enhance users' efficiency, e.g., fully serviced kitchens, secretarial services, or memberships of fitness studios. Some coworking-spaces are highly specialized and keep in view the needs of target users, e.g., by offering specialized services, e.g., hardware lab equips with tools and equipment for professionals in technological sectors.

The spatial design of a coworking-space plays an essential role in the communication of users, as it influences the ambiance of the space. The ambiance describes the ethereal features of a coworking-space, e.g., lighting, color schemes, furniture designs, and general look and feel. An inspiring ambiance promotes serendipity and fosters spontaneous interaction. Coworking-spaces studiously make efforts to create a balance between working, socialization, and support

structures that provide autonomy to users to work independently or along with others. Users can focus on their work without being distracted or can interact with other users of coworking-spaces in a less formal and causal environment of common areas. A founder of the space described: “The interior is important because it supports people [in communication]. We have nice tables and chairs and a nice natural wood floor—a good balance between new materials and an old feel [referring to the ambiance of coworking-space]. We have a good balance between inside space and outside space [referring to common areas for outdoor and indoor activities]. We also have open spaces and close team rooms and conference rooms [to create a balance between working and socialization]” [P-3]. In contrast to that, an uninspiring spatial design can create a dull or monotonous ambiance and might thwart communication. An entrepreneur working in a coworking-space exemplified: “What people are missing in x-coworking [pseudonym] is a big kitchen or big table, where all people can sit and eat together—because this is a big building divided into floors”[E-5]. This example portrays how the absence of facilities or physical layouts of the spaces influence the perception and communication pattern among users.

The Chief Operating Officer of a coworking-space stated: “Our coworking-space is [offering] the design line [spatial arrangement of infrastructures] and the facilities—everything you [users] need to work in a very efficient way. But also connecting those people [users]...we put some effort into connecting people” [P2]. The availability of socialization areas enables users of coworking-spaces to interact and socialize with each other. Users can switch between the working area and the socialization area and do not need to ask for permission or obey formalities when moving towards the social or inspirational space. This autonomous traversing within and across working and socialization environments enhances immediate inspiration, feedback, and serendipity.

### *Valuing Internal and External Linkages*

Coworking-spaces connect users through spatial designs, shared infrastructures, and digital technologies. Permeable spatial boundaries allow linkages of internal users with new members or temporary or atypical users, who are often professionals from incumbent firms that give presentations, search for experts, technologies, ideas, or investments in coworking-spaces. Externals might also connect with users when they use the infrastructure of the coworking-spaces. Shared printers in open-plan offices, availability of coffee machines, table tennis, foosball, etc., are deliberately and purposefully placed in social spaces to connect and promote

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social interactions among users. An entrepreneur in coworking-spaces reported: “You go to the kitchen to get coffee and you met with someone, and you talk... that is why coffee is so important for networking because in front of a coffee machine a lot of things happened” [E-5].

Technology is also an integral part of coworking-spaces. Digital technology enhances linkages of users within and outside of coworking-spaces through applications and platforms. Applications are the software that facilitates users in a coworking-space to perform different tasks, e.g., monitoring the billing, booking a meeting or conference room, requesting an event or mentor, or connecting with other users of a particular profession. Our respondents reported the use of the following software for their respective coworking-space: Optix, Coworkify, and Cobot. Coworking-spaces also offer digital platforms to facilitate communication and collaboration among their users. Some coworking-spaces employ group chat tools, e.g., Slack, Microsoft Teams, and Cisco Webex Teams, to enhance interaction and collaboration among teams. P-5 uses community management software, which displays the personal and professional profiles of users physically available in their coworking-space to other users and eases the process of social connectivity. Digital technology not only enhances the connectivity within space but also connects other coworking-spaces. The expansion liaison officer of P-5 stated: “We are a part of the coworking-space network. There are eighty-five locations around the world—our members have access to them over an online portal” [P5]. Coworking-spaces thus help users to break down the existing temporal and spatial boundaries and, by this, source knowledge and resources. For example, E-6 is a firm located in a coworking-space. It has 235 member communities in around 100 countries and uses the pooled demand of the whole network (consisting of 18,959 members) to retain a business solution at bulk-buying prices.

Connectivity in coworking-spaces thus refers to the link established between individuals and collectives (e.g., groups, teams, and organizations) through materiality. The spatial architecture enables physical connectivity while integrated technology creates virtual connectivity among users. Coworking-spaces connect their typical users (freelancers and startup members) with externals, even temporary users. The shared facilities and infrastructures (e.g., open-plan offices, shared desks, or foosball) enable collaboration, knowledge sharing, and learning among users and provide opportunities to interact and develop social and professional networks. The facilities and the value set in coworking-spaces connect users with other like-minded individuals, possibly from different function domains, who can learn from each other’s experiences, share knowledge, and improve entrepreneurial activities.

*Functional Uniformity and Distinctiveness for Innovation*

Coworking-spaces host users of distinct disciplines. Interactions among users from diverse backgrounds in the professional and social spaces transport fuzzy as well as specific insights, which inflame idea generation or encourage users to discuss their ideas with other users constructively. For example, entrepreneurs can connect with other entrepreneurs or professionals. The collocation of users with diverse functional backgrounds and shared values helps to develop relationships while also promoting mutual learning and knowledge exchange. Planned and unplanned interactions, discussions, and gatherings of members bring conscious and unconscious input to creative processes, as a respondent stated: “When you go to coworking [space], it helps you because you can talk to people [other users] about your plans and share it” [E-5].

The presence of other users, especially entrepreneurs or startups who are also struggling, creates synergies and provides learning and knowledge exchange opportunities. An entrepreneur describes this phenomenon in the following words: “It is nice to be in an environment [referring coworking-spaces] where you got like-minded people, who think the same way or who are trying new things. Great things happen when you [users] are surrounded by other innovators and creative thinkers” [E-4]. Another respondent working in a venture development firm explained how the presence of individuals from diverse functional backgrounds helps them to create and improve new products and services: “Sometimes, for us, it is nice to have direct access to users or potential users. Ask the engineers for their opinions on certain things. Access to that kind of feedback on our products is very useful” [E-3].

The direct availability of the insights from different professional backgrounds and skillsets is augmented by the shared values which advance creativity and entrepreneurship. Idea generation and opportunity assessment improve by the multiplex feedback on new business ideas, changes in products or services, or improvements in business processes. Coworking-spaces allow users to create and participate in networks for sharing skills and helping each other in their projects. A ‘culture of openness’ encourages users to share their ideas, experiences, and feedback. A respondent explains this phenomenon by citing her example: “I joined a group, it says productivity entrepreneurship group, where we [referring other users of the space] essentially meet four times a week, and we share skills. We help each other with projects. We share knowledge, and we help each other to stay productive and on task with their goals. People here share knowledge and all willing to help each other out for no cost” [E-1].

Feeling the motivation of others, seeing others as role models, and potential success boost creativity and entrepreneurial behaviors. Additionally, the collocation of highly motivated individuals and the sharing of mindsets provide knowledge sharing and mentoring opportunities. Coworking-spaces thus allow advantages for idea creation and evaluation from conscious and unconscious information exchange among users from diverse backgrounds eased by shared mindsets and motivational infection.

### **5.5.2 Instrumental Outcomes**

#### *Relational Slack*

We define relational slack as the resource available to the entrepreneurs by establishing and maintaining interpersonal relationships with other users. Our respondent dealing with public relations explained how establishing interpersonal relationships with other users of coworking-spaces could help: “If you want coworking-space to make your business grow—you have to invest time and energy into knowing the community... So, they can know you and they can refer people to you. Saying, Ah! Yeah, the team for PR ... However, this needs time and energy” [E-11].

Relational slack can be supportive in a variety of ways. Entrepreneurs can reduce their skills shortage gap by forming teams with other users in coworking-spaces. Several skilled professionals, including designers, lawyers, architects, consultants as well as financial- and marketing experts use coworking-spaces. Users, especially entrepreneurs, can hire these independent professionals for a specific project for a certain period. They do not have to pay a fixed salary or any other benefits to the freelancers. Thus, coworking-spaces not only enable entrepreneurs to attain human resources but also help them to optimize their resource allocation, as an entrepreneur explained: “I do not have to hire [employees on] fixed cost. I have many freelancers around. When I have a project, I can hire them, and when the project is finished, I do not have to pay them a fixed salary. This is very good for my business because it is flexible” [E-5]. Coworking-spaces attract highly skilled professionals. Entrepreneurs can approach the skilled workforce and can reduce their skills deficits by forming teams and collaboration or can seek help and guidance from other skilled professionals.

Relational slack also enables entrepreneurs to acquire information, skills, and resources from their networks. The presence of like-minded individuals assists entrepreneurs with mutual learning and sharing resources and skills. Entrepreneurs share their expertise and knowledge

with other like-minded persons and hold implicit expectations that other individuals in their network will also reciprocate the favor. This cooperation is not limited to the sharing of information, ideas, or resources, but entrepreneurs look for common grounds for establishing long-term relations. An entrepreneur working in the eCommerce sector elaborated: “I have access to a network of highly skilled people in different aspects of my business that if I need help or input, I can find someone very easily... So, be resourceful is one of the largest benefits of being working in a coworking-space” [E-1].

Our findings suggest that spatial architectures, communities, social events, and gatherings enable entrepreneurs to develop social ties with other users of coworking-spaces. These social ties help entrepreneurs to find their potential team members, clients, investors, and business partners. This configuration helps to fill skills shortages while offering the chance to create new avenues for creativity, innovation, and venturing.

### *Behavioral Slack*

We define behavioral slack as the resource (e.g., financial, human, or intellect) available to the entrepreneurs for experimentation that enables them to pursue novel and innovative ideas. Individuals in isolation cannot afford much experimentation, as they have limited skills and resources. However, porous structures in coworking-spaces can help entrepreneurs to overcome this barrier and to gain new skills and expertise from interpersonal relationships as well as mutual learning and knowledge sharing opportunities. Porous and fluid boundaries of coworking-spaces make the process more straightforward compared to the traditional office structure, where the boundaries are definite and stable, thwarting the process of creativity or innovation. Entrepreneurs can inspire each other and discuss their ideas in a friendly and informal environment, as one participant explained: “If I have to do something that I really need to focus on, I would probably do it in office [working area of the coworking-spaces]. If I need some sort of creativity to guide me, then I would rather go in a social or common area of the space”[E-7].

Nevertheless, spatial architecture is not the only factor in coworking-spaces that promotes creativity. Porous structures and collocation of users from diverse functional backgrounds broaden users’ ambitions, especially entrepreneurial attitude and vision. While the collocation of different users and their different viewpoints bring insights into diverse approaches to work and problem-solving techniques, it encourages failure tolerance and strengthens

experimentation. Entrepreneurs do not have to rely on their resources and skills to pursue their novel ideas, but they can seek help in or outside of the coworking-space. Entrepreneurs can also work on joint projects with team members from other participants. The permeable boundaries enable entrepreneurs to look inside and beyond the boundaries of their space to find potential team members, investors, and business partners. Coworking-spaces can also connect entrepreneurs with potential partners to channel creativity towards innovation; as a founder of a coworking-space stated: “Our space is like a marketplace, where you can sell your idea and a place where you can find collaboration for expanding and scaling your business. We facilitate all this by proposing teams consisting of people that have a common goal, like reaching this project, bidding for this, or making this out of joint projects” [P-8].

### **5.5.3 Detrimental Outcomes**

#### *Territorial Behavior*

Unlike traditional office space designs, coworking-spaces specifically aim for social interaction and collaboration in open-plan shared offices. Such shared office spaces without workspace assignment can be challenging for the users of coworking-spaces, who want to have a personalized touch or sense of ownership in their workplaces. For example, an entrepreneur reported his personal experience: “I need a space to visualize my work. I need a wall to stick poster notes on it. I need to have a business canvas. It is hard to find that in a coworking-space” [E-4]. However, most of the coworking-spaces offer private offices, desks, or cubicles to their members at extra charges, but these decrease physical proximity and compromise the chances for interactions and collaborations.

Excessive social interactions or ‘crowding’ is another concern, which can constrain the interaction process in coworking-spaces. Entrepreneurs can sometimes get too involved in social interactions and can end up wasting most of their time socializing rather than work. E-5 recorded her concerns in the following manner: “Coworking may be time-consuming because when you work on networking—you spent time with people. [For example,] you meet people and just entering the cafe or let’s say ... reception, kitchen, and you say hello to everybody, and it can take one hour...” [E-5]. Apart from such crowding, coworking-spaces can also cause unsolicited socialization and unwanted distractions from other users. Our respondent elaborated: “[It is] sometimes time-consuming in such a way that I am working, and someone will arrive and say hello, and I sit back, [want] to say I am really busy but ...” [E-5].

In the sociomaterial assemblage of coworking-spaces, the size of the community is a decisive factor for fostering or constraining interpersonal relationships. Small size communities are usually easier to handle, and the members of the community inside a coworking-space are more likely to form shared routines and observing social norms. The likelihood of interaction and collaboration among smaller communities is usually high as compared to large communities. An entrepreneur stated: “Small coworking is not a problem when you are small, you interact and know a lot of people, even [through] word of mouth. In big coworking-spaces like x-coworking [pseudonym], it is very difficult to find the right people” [E-2].

### *Defensive Behavior*

Open-plan shared office spaces brought the challenge of privacy, which is generally important for all the users of coworking-spaces. However, it is a paramount concern for the entrepreneurs working on the novel idea. Privacy is not only the concern for such entrepreneurs who work in shared spaces without workspace assignment, but it is also a point of concern for such users who work in their private offices inside coworking-spaces. For example, an entrepreneur who holds a private office inside a coworking-space stated: “Concentration can be a problem, especially when you are dealing with the hardware. You do not want people to be wandering around like taking pictures” [E-3]. The word ‘concentration’ here depicts a state of alertness or concern which users have to mind during their venture in a coworking-space. This defensive behavior can lead to a lack of social interaction and collaboration with other users of coworking-spaces.

A lack of privacy also thwarts the process of knowledge sharing among entrepreneurs. Our respondent shared her privacy and knowledge protection concerns in the following words: “People seeing what we are working on... It is something we are worried about, and that is one of the challenging beings in coworking-space” [E-3]. However, the presence of private offices under lock and key can be a possible solution for entrepreneurs, as our respondent further described “...but we have a locked room, where we put a lot of our stuff there” [E-3].

Whereas the presence of like-minded individuals brings several opportunities, it can be challenging if entrepreneurs are working in the same domain or field. Diverse communities inside coworking-spaces bring synergetic effects. However, homogeneous communities aggrandize the challenges of privacy and knowledge protection issues. In such cases, entrepreneurs exhibit defensive behavior and become overprotective, as the following example

suggests: “So sometimes meeting an important client in a coworking-space is not the best thing. It is like a potential big client that is going to give you much money for something—you do not want to meet him in the presence of other” [E-1]. This defensive behavior in entrepreneurs leads to trust issues with other members and gainsay the shared norms and values of coworking-spaces.

## **5.6 Discussion**

Our study aimed at understanding the attributes of coworking-spaces and their influence on the work of entrepreneurs. We conclude that spatial architectures, shared facilities and infrastructures, and integrated digital technologies are directly related to the ambiance, proximity, connectivity, and privacy of coworking-spaces. This sociomaterial assemblage in coworking-spaces influences the flow of communication, internal and external linkages, and functional uniformity and distinctiveness. Our results indicate the ‘duality’ in the sociomaterial assemblage of coworking-spaces that determine the positive and negative consequences for the entrepreneurs.

### **5.6.1 The Duality of Sociomaterial Assemblage in Coworking-Spaces**

The perspective of sociomateriality highlights the importance of materiality to understand the routines in contemporary forms of organizing that are constituted by loosely coupled social actors in an emerging, shifting, and fluid working environment (Dale, 2005; Leonardi, 2012; Orlikowski, 2007; Orlikowski & Scott, 2008). In coworking-spaces, artifacts (e.g., desks, chairs, computers, projectors, and coffee machines), visible and invisible infrastructures (e.g., working spaces, hardware labs, internet networks, and slack) form the materiality. Broadly, we categorize materiality in coworking-spaces to spatial architectures, infrastructures and facilities, and technologies.

Materiality influences the routines (behaviors and attitudes) of entrepreneurs. These routines can be observed in the form of collaboration, knowledge sharing, and community building in workspaces. However, these routines are neither solely dependent on materiality nor the social configurations or their interactions, rather sociomaterial due to imbrication of social and material elements (Leonardi, 2012), which alter the specific aspects for entrepreneurs and spaces. The ambiance, proximity, connectivity, and privacy in coworking-spaces can be changed by changing the spatial architectures, the arrangement of shared facilities and infrastructures, or technologies. For example, changing the layouts or arrangements of desks

in working areas of a coworking-space can change the orientation of space from singular to multifaceted, sparse to concentrated, and can increase interactions (or distractions) among users. Changing the color scheme on walls of a coworking-space changes the ambiance and can elevate or descend the mood of entrepreneurs. Materiality in coworking-spaces with the social actors thus determines the properties and shapes the affordances and constraints (routines) for the entrepreneurs.

The findings of our study suggest that materiality channelizes social interactions, e.g., where, when, and with whom to communicate or socialize, or where and with whom to collaborate or shared knowledge. The sociomateriality in coworking-spaces contours and creates possibilities for utilization, interaction, and collaboration of users—especially entrepreneurs who need more than they currently have at hand, e.g., search for inspiration, idea generation, experimentation, and implementation, and access to resources. The spatial designs of coworking-spaces play a significant role in the development of social ties and interpersonal relationships among entrepreneurs. These interactions help users in collaborative workspaces to build relational slack. We deliberately use the term ‘slack’ to define auxiliary resources that are not required for day-to-day business operations but can contribute significantly to the success of any venture (Dolmans et al., 2014; Iyer & Miller, 2008). Our results suggest that entrepreneurs develop relational slack with the expectations to seek support (Gerdenitsch et al., 2016), information (about ideas, opportunities), team members, clients, and business partners.

Spatial proximity in the form of open-plan offices with shared infrastructures reduces distances between entrepreneurs and enhances social interactions and collaborations (Spinuzzi, 2012; Spreitzer, Bacevice, et al., 2015). Permeable structures regulate the information flow and intensity, horizontally and spatially (Saebi & Foss, 2015; Workman, 2005). Internally, permeability defines the perceived possibility to move from one team, group, or network to another (Ellemers et al., 1988). Several studies conclude that permeability positively influences spatial design and promotes decentralization in the organizational structure (e.g., Colignon, 1987; Jacobides & Billinger, 2006). An increase in permeability in the vertical architect of workspaces can provide efficient and effective operational capabilities, intensify communication, and nurture innovations (Jacobides & Billinger, 2006; Workman, 2005). Coworking-spaces that are based on an open system improve the flow and exchange of information in and outside of these spaces that make the creative process more accessible and easier. Entrepreneurs with diverse professions inside the permeable boundaries of coworking-

spaces enhance strategic capabilities and develop behavioral slack, which nurtured creativity and innovations. Behavioral slack is thus based on the skills, competencies, and capabilities developed by entrepreneurs during work that encourages experimentation and enables them to pursue novel and innovative ideas.

Undoubtedly, sociomaterial assemblage in collaborative workspaces supports entrepreneurs in developing relational and behavioral slack. However, entrepreneurs can also exhibit defensive and territorial behavior in response to their inability to control the circumstances in coworking-spaces. Our results show that over stimulus of social interaction, lack of privacy control, and unwarranted distractions are the significant factors that might raise the feeling of crowdedness or be continuously monitored by others. Resultantly, entrepreneurs might avoid interacting with other members of the spaces. Similarly, permeable boundaries of collaborative workspaces might bring in new talent, enhance the collaboration among teams in and outside of collaborative workspaces, intensify communication, and foster innovation (Jacobides & Billinger, 2006; Taylor & Levitt, 2007). However, porous boundaries, flexible structures, and a lack of institutionalizing mechanisms limit the use of this knowledge to a particular time. Permeable boundaries continuously change the groups, teams, and space dynamics bring fluidity instead of stability in workspaces (Faraj et al., 2011). Communities thus remain growing or shrinking—influencing interpersonal dynamics, respectively. The excessive permeability inside group boundaries can enhance upward mobility from low- to high-status groups and can reduce or augment in-group identification in low- or high-status groups, respectively (Ellemers et al., 1988). We thus contend that there is an inherent duality in the sociomaterial assemblage design of coworking-spaces, which determines the positive and negative consequences for the entrepreneurs.

Contrary to existing studies (Bouncken et al., 2017; Clayton et al., 2018; Spinuzzi, 2012), we argue that coworking-spaces are more than provisioning of office and social spaces for entrepreneurs. The duality in the sociomaterial assemblage of a coworking-space can be addressed by taking into account the role of materiality on the social phenomenon. The merely spatial collocation of diverse users in open-plan office spaces might not lead to communication, collaboration, or knowledge exchange. Instead, it might create challenges. Therefore, owners, managers, and designers might consider factors like individuals' need for privacy, personal preferences, group dynamics while designing contemporary workspaces. At the same time,

researchers might also need to consider the role of materiality while describing the routines inside shared workspaces.

### **5.6.2 Theoretical Contributions and Directions for Future Research**

Our study contributes to the literature of contemporary workspaces (Bouncken & Aslam, 2019; Clayton et al., 2018; Garrett et al., 2017; Khazanchi et al., 2018; King, 2017). We use the sociomaterial perspective to analyze the mechanisms and processes in coworking-spaces. Existing studies on the concept of sociomateriality are either focusing on the theoretical development of the concepts (Jones, 2014; Lee & Amjadi, 2014; Leonardi, 2012, 2013; Orlikowski, 2007; Scott & Orlikowski, 2013) or taking technology or information systems as the main concept of materiality (Cecez-Kecmanovic et al., 2014; Hultin & Mähring, 2014; Jones, 2014)—taking organizations as a ‘practice’. Our research fills this gap by introducing the dimensions of spatial architectures, shared facilities and infrastructures, and digital technologies that shape the routines of entrepreneurs in coworking-spaces. Furthermore, this study has two significant theoretical contributions to the existing literature of sociomateriality and entrepreneurship.

First, this study explains how sociomaterial assemblage in coworking-spaces influences the working of entrepreneurs (Bjørn & Osterlund, 2014; Davidson & Vaast, 2010; Nambisan, 2016). We define sociomaterial assemblage based on spatial designs, permeable structures, and the collocation of users from diverse functional backgrounds. The existing studies on spatial designs or workplace relationships indicate the potential advantages and disadvantages for employees (Hua et al., 2011; Khazanchi et al., 2018; Pillemer & Rothbard, 2018; Rashid et al., 2006). Our study extends this argument further and underscores the interactive role of sociomateriality in entrepreneurship. We specifically define the role of spatial architectures, communities, social events, and gatherings that enable or constrain entrepreneurs to find their potential team members, clients, investors, and business partners. Advancing the findings of Irving and colleagues (2019) that describe the strategies employees use to avoid future collaboration and reinforcing their group boundaries, our study suggests that entrepreneurs may also avoid interactions in coworking spaces when they feel crowding, unwanted spillovers, or potential competitors.

Secondly, our study explains how entrepreneurship can flourish in shared workspaces, e.g., in incubators, accelerators, and maker spaces which are proliferating worldwide. The extant

studies mostly highlight the benefits of shared workspaces for entrepreneurs, such as affordability, new contacts, knowledge exchange, mutual learning, and joint experimentation (Bouncken et al., 2020; Clayton et al., 2018; Cohen et al., 2019). Our study extends this understanding by explaining how and under what circumstances shared spaces help to foster entrepreneurship, such as the presence of like-minded individuals, interactive design baked with digitized technologies, or permeable structures.

There are also certain limitations associated with our research. First, coworking-spaces are not the only form of shared workspaces, other contemporary organizations such as incubation centers, accelerators, innovation hubs, fab labs also host entrepreneurs. Coworking-spaces have some advantages over other forms of shared spaces, such as flexible plans and membership criteria. Therefore, future research on sociomateriality in other forms of shared workspaces can also bring interesting insights. Second, we collected cross-sectional data from entrepreneurs who have established their businesses in coworking-spaces. We include participants from different venturing phases, yet, a longitudinal data set over a period might bring some additional insights. Finally, our study suggests that architecture, especially the interior design of a coworking-space can facilitate or restrict desired outcomes for the entrepreneurs. Therefore, future research, specifically focusing on the architectural designs of coworking-spaces and their role in the work of various actors can be promising for in-depth understanding.

## **5.7 Conclusion**

Different sorts of organizations, such as coworking-spaces, accelerators, startup hubs, etc., are providing shared workspaces for entrepreneurs. These organizations not only provide an affordable workspace to the entrepreneurs but also offer socialization and interaction opportunities which lead to creativity and innovation. However, how can the best results for entrepreneurs from the shared workspaces be achieved? Our study responds to this question by employing the sociomateriality perspective, which focuses on the social and material environment of workspaces to understand the entrepreneurial routines. Our study is the first step to look through the lens of sociomateriality at the shared workspaces that foster shared routines and practices among entrepreneurs. We hope that our study inspires other entrepreneurial scholars to look beyond the traditional structures towards modern and contemporary workplaces.

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## **Chapter 6: Audience Diversity and Co-legitimization of Ventures: Insights from Coworking-spaces**

### **6.1 Abstract**

Coworking-spaces attract entrepreneurs and startups by offering lower costs of doing business, knowledge sharing opportunities, and direct access to financial and human capital. To get benefit from these opportunities, entrepreneurs need to conform to the expectations of the collocated users of the coworking-spaces, as well as exhibit and maintain the distinctiveness of their ventures. We conducted inductive research based on data from new ventures establish in three distinct coworking-spaces. Findings suggest that coworking-spaces have instrumental and symbolic functions, which enable entrepreneurs to attain optimal distinctiveness. Entrepreneurs co-legitimate their ventures with collocated diverse users through associative and identity mechanisms.

### **6.2 Introduction**

Shared workspaces are new forms of service providers, which offer shared office facilities and infrastructure to the users from diverse professional backgrounds (Clayton, Feldman, & Lowe, 2018; Waber, Magnolfi, & Lindsay, 2014). Affordability, flexibility, and modernity are the prominent features of these shared workspaces that specifically attract entrepreneurs (Bouncken & Aslam, 2019; Castilho & Quandt, 2017; Giudici, Combs, Cannatelli, & Smith, 2018; Vidaillet & Bousalham, 2018). Incubators, accelerators, and coworking-spaces are all primary examples of such service providers, where entrepreneurs can interact, socialize, and share their knowledge with other entrepreneurs and independent knowledge professionals (Chan, Beckman, & Lawrence, 2007; Clayton et al., 2018; King, 2017).

On the one hand, entrepreneurs exhibit equifinality to ‘conform’ to the expectations of different stakeholders, including entrepreneurs, institutions, and customers in shared workspaces (Suddaby, Bitektine, & Haack, 2017). On the other hand, entrepreneurs use ‘differentiation’ strategies to avoid competition (McKnight & Zietsma, 2018) and to attract customers, resources, and support from different stakeholders (Barney, 1991; Michael Lounsbury & Glynn, 2001; Navis & Glynn, 2011). Maintaining conformity (at least symbolically, if not substantially) and attaining distinctiveness is challenging, as conformity restricts the entrepreneurial ability to deviate from the norm and pursue novel or creative ideas (Navis &

Glynn, 2011; Suddaby et al., 2017; Zimmerman & Zeitz, 2002; Zott & Huy, 2007). Therefore diverse studies underscore the importance of ‘optimal distinctiveness’ by achieving a balance between ‘conformity’ and ‘distinctiveness,’ e.g., (Barlow, Verhaal, & Angus, 2019; Deephouse, 1993; Durand & Khair, 2016; Haans, 2019; Navis & Glynn, 2010; Zhao, Fisher, Lounsbury, & Miller, 2017).

Earlier studies focus on a convergence point, where entrepreneurs can maximize optimal distinctiveness, e.g., (Deephouse, 1999; Martens, Jennings, & Jennings, 2007; McKnight & Zietsma, 2018; van Werven, Bouwmeester, & Cornelissen, 2015). Yet, a single balancing point might be less reachable in a highly fragmented and dynamic environment (Zhao et al., 2017), where ventures need to meet the multiple and often conflicting demands of diverse stakeholders (Fisher, Kotha, & Lahiri, 2016; Fisher, Kuratko, Bloodgood, & Hornsby, 2017; Navis & Glynn, 2011). For example, entrepreneurs in workspaces have to resonate with the multiple collocated stakeholders who have heterogeneous preferences and multiplex legitimacy expectations (Aldrich & Fiol, 1994; Fisher et al., 2016; Zhao et al., 2017).

Our aim in this research is to explore and analyze the role of shared workspaces in pursuance of optimal distinctiveness for new ventures. We specifically focus on the interplay among collaborative workspace design, the presence of multiple stakeholders and their heterogeneous legitimacy expectations that influence entrepreneurial actions for gaining legitimacy of their ventures. We inquire how entrepreneurs define, redefine, and align their products, work procedures, and processes to achieve optimal distinctiveness while garnishing support from diverse audiences in shared workspaces. In line with the principles of grounded theory, we collected data from three distinct coworking-spaces which host entrepreneurs working in multiple sectors (Strauss & Corbin, 1998; Yin, 2009). Coworking-spaces provide an intriguing context for this study, offering workplaces to entrepreneurs and other self-employed professionals in a shared office environment with the possibilities of social interactions and collaborations (Bouncken & Reuschl, 2018; Garrett, Spreitzer, & Bacevice, 2017). We employed a constant comparative method of data analysis (Glaser, 1965).

Our findings highlight that coworking-spaces provide autonomy to entrepreneurs to exhibit self-identity and affirm individual distinctiveness and their status as a community member. Entrepreneurs can co-legitimate their ventures through developing personal and business ties with the collocated users in coworking-spaces and can also employ symbolic actions and impression management strategies. Through this study, we make three theoretical

contributions. First, we contribute to the growing literature of entrepreneurship in shared workspaces (Bøllingtoft & Ulhøi, 2005; Fuzi, 2015; Garrett et al., 2017). Specially, we illuminate the role of coworking-spaces that influence legitimacy building strategies of entrepreneurs. Second, our study contributes to the debate on conformity and distinctiveness. Our study elaborates the role of coworking-spaces that help entrepreneurs to co-legitimate distinctiveness of their new ventures with collocated users through associative and identity mechanisms (Fisher et al., 2017; Navis & Glynn, 2011; Williams Middleton, 2013; Zhang, Wang, & Zhou, 2019). We provide empirical evidence that coworking-spaces support creative processes and promote distinctiveness rather than sameness. Third, our study provides empirical evidence that legitimacy building is not a static binary process (Aldrich & Fiol, 1994), where entrepreneurs need to attain a certain ‘legitimacy threshold’ for survival and growth (Zimmerman & Zeitz, 2002). We agree with Tracey and colleagues (2018) about the ‘gradated nature of legitimation’, where entrepreneurs continuously define, redefine, and continuously adjust their new ventures to find a point of optimal distinctiveness where they are able to conform with the demands of their audience while maintaining their distinctiveness (Fisher et al., 2016; Navis & Glynn, 2011; Zhao et al., 2017).

### **6.3 Optimal Distinctiveness of New Ventures**

Suchman (1995) defines legitimacy as “a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions” (1995:574). Legitimacy has been conceptualized as cognitive (knowledge about venture), sociopolitical or moral (appropriateness of a venture), pragmatic (interest of audiences in a venture), and regulative (establishment of venture according to rules and law) (Aldrich & Fiol, 1994; Scott, 2008; Suchman, 1995). Legitimacy overcomes the ‘liability of newness’ and increases the ‘limited survival chances’ of new ventures (Aldrich & Fiol, 1994; Suchman, 1995; Zimmerman & Zeitz, 2002). Legitimacy research grows rapidly and in various directions (see recent review articles on the subject: Fisher et al., 2017; Suddaby, Bitektine, & Haack, 2017; Überbacher, 2014). We confine ourselves on the recent developments on the subject, i.e., the challenge of ‘conformity’ and ‘distinctiveness’ that entrepreneurs face to gain optimal distinctiveness, while starting a new venture (McKnight & Zietsma, 2018; Tracey et al., 2018; Zhang et al., 2019).

Entrepreneurs interact with other entrepreneurs, institutions, and customers to understand their expectations and exhibit equifinality to conform to the expectations of different stakeholders

(Suddaby et al., 2017). At the same time, entrepreneurs choose differentiation strategy to avoid competition with the larger rivalries (McKnight & Zietsma, 2018) and exhibit innovativeness of their new ventures to attract customers, resources, and support (Barney, 1991; Deephouse, 1999; Navis & Glynn, 2011). Lounsbury and Glynn (2001) emphasize the importance of distinctiveness for new ventures and suggest that distinctive identity attracts unique resources and leads to competitive advantage (see resource-based view). However, gaining legitimacy is difficult (Zimmerman & Zeitz, 2002; Zott & Huy, 2007) facing competing demands of conformity and distinctiveness (Fisher et al., 2016; Kostova & Zaheer, 1999; Singh, Tucker, & House, 1986; Zott & Huy, 2007). New ventures that deviate too much from established norms, rules, and standards are less likely to be considered as ‘legitimate’ in the eyes of decision-makers as compared to those ventures, which conform with their perception of legitimacy (Michael Lounsbury & Glynn, 2001; Zhao et al., 2017). For example, Elsbach and Kramer (2003) in their study of creativity assessment of Hollywood pitch meetings observed that the works of those screenwriters were discarded quickly, which do not fit in the perception of decisions makers at the first place. Conformity and novelty are thus the essences of entrepreneurial ventures (Delmar & Shane, 2004; Navis & Glynn, 2011; Tracey et al., 2018).

Diverse studies emphasize a balance between conformity and distinctiveness to achieve “optimal distinctiveness” (Zhao et al., 2017). For example, Deephouse (1999) suggests that new ventures strive to be as different as legitimately possible and emphasize to gain a “strategic balance” to address the tension between differentiation and conformity. Navis and Glynn (2010) use a similar notion of “legitimately distinctive” and highlight the importance of audiences who judge the legitimacy of a venture. Some scholars focus on the role of emerging and established markets in the process of distinctiveness and legitimation (Barlow et al., 2019; Durand & Khaire, 2016; Glynn & Navis, 2013; Haans, 2019). Accomplishing a balance between ‘conformity’ and ‘distinctiveness’ is challenging, what is optimally distinct varies from industry context, technological stage, and venture stage (Fisher et al., 2017; McKnight & Zietsma, 2018; Zhao et al., 2017).

The pursuit of optimal legitimation plays a critical role for ventures. Earlier studies focus on a single convergence point where legitimate distinctiveness of a venture is maximized (Deephouse, 1999; Martens et al., 2007; McKnight & Zietsma, 2018; van Werven et al., 2015). However, most new ventures work in a highly fragmented, dynamics, and permeable environment (Zhao et al., 2017). To move beyond this single balancing point, new ventures

need to meet the multiple and often conflicting demands of diverse stakeholders (Fisher et al., 2016, 2017; Navis & Glynn, 2011). Existing studies along this line either do not directly address the problem of optimal distinctiveness (Bøllingtoft & Ulhøi, 2005; Zhao et al., 2017) or looked into the ventures that deals in a specific environment such as ventures dealing in a technological domain (Lounsbury and Rao 2004; Fisher et al. 2017). Yet, what about the ventures which operate in a highly complex environment, where entrepreneurs collocated with multiplex stakeholders with different preferences and legitimacy expectations? We focus on new ventures which start their operations in a highly competitive shared working environment and face the challenge to meet the demands of diverse audiences. Our study peculiarly responds, how entrepreneurs interact and act with diverse audiences to gain co-legitimation of their new ventures.

#### **6.4 Audience Diversity and Co-legitimacy**

The survival of new entrepreneurial ventures depends on the resources and support from the audience, including individuals, institutions, and communities (Aldrich & Fiol, 1994; Liao, Welsch, & Moutray, 2009). Different audiences have different legitimacy judgments based on their different norms, values, and standards (Fisher et al., 2016; Zhao et al., 2017). Since legitimacy assessment of new ventures is not entrepreneurial dependent but ultimately ‘resides in the eyes of the beholder’ (Suchman, 1995), an audience-focused positive image and credibility are required at every stage of a venture (Zimmerman & Zeitz, 2002). New ventures thus need to conform with the cognitive institutions (such as taken for granted beliefs and values considered as normal or standard) as well as evaluative institutions (such as government authorities, financial institutions, and industry associations) to ‘acquire’, ‘maintain’, or ‘restore’ legitimacy (Delmar & Shane, 2004; Meyer & Rowan, 1977; Suchman, 1995).

Earlier studies describe that entrepreneurs use mechanisms for legitimacy of their new ventures (Delmar & Shane, 2004; Tracey et al., 2018; Zott & Huy, 2007). Überbacher (2014) categorizes these existing audience-centric studies of new ventures on the macro and micro level. Studies on macro institutional environment look into the legitimation of new ventures in industry or market context (such as positive media coverage), broader movements or social groups (such as social entrepreneurs) (Tornikoski & Newbert, 2007; Überbacher, 2014). The micro-level studies look into individual entrepreneurs who act to seek legitimation of their new ventures from diverse audiences using different mechanisms such as story-telling (Aldrich & Fiol, 1994; Michael Lounsbury & Glynn, 2001; Martens et al., 2007), symbolic management (Pollack,

Rutherford, & Nagy, 2012; Zott & Huy, 2007) as well as associations and ties development (Kistruck, Webb, Sutter, & Bailey, 2015; Zimmerman & Zeitz, 2002). Überbacher (2014) describes that the existing research on new ventures either unable to systematically distinguish the legitimacy judgments of different audiences (Zott & Huy, 2007) or focus on one particular audience (e.g., investors) and generalize the findings theoretically on other types of audiences (Martens et al., 2007). This deficiency calls for further research about legitimacy judgment across various audiences contexts (Navis & Glynn, 2011; van Werven et al., 2015). Fisher and colleagues (2017) describe that legitimacy criteria vary across audiences and entrepreneurs. We argue that legitimation of new ventures is a social collective process, which is mediated by the perceptions and behaviors of entrepreneurs at the local level (Johnson, Dowd, & Ridgeway, 2006; Überbacher, 2014). Entrepreneurs pursue legitimacy of their new ventures not only from resource holding audiences but also from other stakeholders.

Our study is based on coworking-spaces which offer shared workspaces to entrepreneurs, startups, and creative thinkers –where they can interact, collaborate, and exchange knowledge as well as work alone-together (Bouncken & Aslam, 2019; Fuzi, 2015; Garrett et al., 2017). In coworking spaces, entrepreneurs continuously conform their ventures with the demands of co-located entrepreneurs, startups, and investors as well as exhibit novelty to remain distinctive. We inquire how different stakeholders' behavior and interaction with entrepreneurs in shared workspaces influence their perception about optimal distinctiveness of new ventures (Fisher et al., 2016; Navis & Glynn, 2011; Zhao et al., 2017).

## **6.5 Research Methodology**

### **6.5.1 Research Design**

The context of coworking-spaces provides a novel and increasingly important research setting to understand optimal distinctiveness, audience diversity, and co-legitimacy. Coworking-spaces provide workplaces to entrepreneurs and other independent professionals, including freelancers, consultants, designers, and journalists (Spinuzzi, 2012). Extant literature highlights that coworking-spaces flourish creativity and innovation while proposing the values of community and co-creation (Bouncken & Reuschl, 2018; Garrett et al., 2017). This unique combination of creativity and conformity incites us to address our research quest in coworking-spaces.

Inductive research based on a multiple-case study approach is an appropriate methodology to understand the concepts of legitimacy building mechanisms in a novel research setting (Cassell & Symon, 2004). This research approach permits to collect context-specific rich data and facilitates to develop theory in a relatively uncharted area (Strauss & Corbin, 1998).

### **6.5.2 Sampling and Data Collection**

First, we visited different coworking-spaces in the U.S. and Germany from October 2016 to Feb 2017. As participatory observers, we attended social events and gatherings and participated in learning and training events. During field visits, we were involved in informal discussions with the community managers, entrepreneurs, self-employed professionals, and investors in coworking-spaces (Lee, 1998). We took several field notes based on our observations, which helped us to develop two semi-structured interview guidelines—one for the providers and the other for the users of coworking-spaces. At a later stage, we used the interview guidelines for data collection from the providers and users of (other) coworking-spaces.

Our earlier observations show that coworking-spaces vary in size, design, and community. In an entrepreneurial context, some coworking-spaces host specific group of entrepreneurs (e.g., social entrepreneurs) and some others are open to all professions (e.g., freelancers, entrepreneurs, and micro-enterprises). In this way, audiences and coworking-spaces' support system also vary from one space to the other. Based on our observations, we divide coworking-spaces into two different categories: ventures centric (coworking-spaces that offer their services for only entrepreneurs) and users centric (coworking-spaces that are open for all users irrespective of their profession).

In the second stage, we shortlisted three different coworking-spaces based on the principles of appropriateness and adequacy (Gaskell, 2000; Guest, Bunce, & Johnson, 2006). All these three coworking-spaces differ in their size, membership criteria, focus area, and services offered to the users. This diversity in coworking-spaces facilitates us to accomplish our purpose of seeking maximum variations among the cases (Seawright & Gerring, 2008; Yin, 2009). Table 6.1 provides a brief overview of the sample coworking-spaces. First of all, we started collecting data from Tech-hub (pseudonym) –a sizeable privately-owned coworking-space situated in San Francisco, which only host entrepreneurs, startups, and corporates that deals in the technological sector. At the time of this study (i.e., July 2017 to November 2017), Tech-hub was hosting around 56 startups besides eight large corporations.

## Audience Diversity and Co-legitimization

Table 6.1- Description of Coworking-spaces

	Tech-hub	Innovation-studio	Social-impact
<b>Description of the space</b>	Large privately-owned coworking-space situated in San Francisco, U.S.A., which only host entrepreneurs, startups, and corporate ventures.	Large coworking-space in Munich, Germany which provides open-plan office space to freelancers, entrepreneurs, and startups.	Medium size coworking-space located in the suburbs of Munich, Germany, which provides open-plan office and social spaces to entrepreneurs and startups.
<b>Membership criteria</b>	Only entrepreneurs, startups (who have at least series A financing), and corporations can work in Tech-hub.	Innovation-studio is open for all users, including freelancers, entrepreneurs, and startups.	Social-impact only hosts freelancers, entrepreneurs and new startups that establish venture around social entrepreneurship.
<b>Focus area of the space</b>	Tech-hub only hosts entrepreneurs, businesses, and startups that are dealing in the technological sector.	Innovation-studio has users from varied industries such as engineering services, editorial services, or media technologies.	Social-impact has 17 priority sectors. Five basic focus areas are poverty, education, health, climate, and green technologies.
<b>Services offered to users</b>	<b>Workspaces</b>	Tech-hub offers dedicated desks and private offices.	Social-impact offers only hot and dedicated desks.
	<b>Social areas</b>	A large kitchen, common areas and lounges, tea and coffee machines.	A small kitchen equipped with all utilities and a community area.
	<b>Other services</b>	Hardware lab equipped with state-of-the-art technologies, e.g, 3D printers Streamlined billing process, printing, cleaning services, mail & package handling, front-desk & guest reception	Two large spaces for social events and conferences.
	<b>Specific services for entrepreneurs</b>	Tech-hub connects entrepreneurs with investors, legal advisory, human resource experts. Tech-hub also connects start-ups with big corporates for investment purpose.	Social-impact provides coaching and consultancy services for entrepreneurs working in the social sector. It also connects social entrepreneurs with CSR department of large corporations.
	<b>Mode of data collection</b>	Interviews from the directors of Tech-hub= 2 Interviews from the corporate ventures = 4 Interviews from the founders of new ventures = 6 Total hours of observations = 54 hours Archival data consisting of marketing brochures of products from the ventures, events invites, and workshop materials.	Interviews from the manager of Innovation-studio = 2 Interviews from the founders of new ventures = 11 Interviews from the founders of early stage ventures = 4 Total hours of observations = 73 hours Archival data consisting of marketing brochures of products from the ventures, events invites, and workshop materials.

In the beginning, we conducted interviews with two directors of Tech-hub. We asked questions about the purpose of the space, membership criteria, focus areas, and services offered for the users, especially for entrepreneurs. Then, we sought a list of users of Tech-hub that contains the information about the founder, startup establishing date, and the number of team members. We contacted the founders of the startups by email and described the objectives of the study. On getting a response from the interested participants, we used the following three points criteria for shortlisting the ventures. 1) The respondent must be an entrepreneur and must represent an early-stage venture, 2) Respondent must establish his or her venture in Tech-hub, and 3) The respondent must be an active business partner (in case of more than one partner).

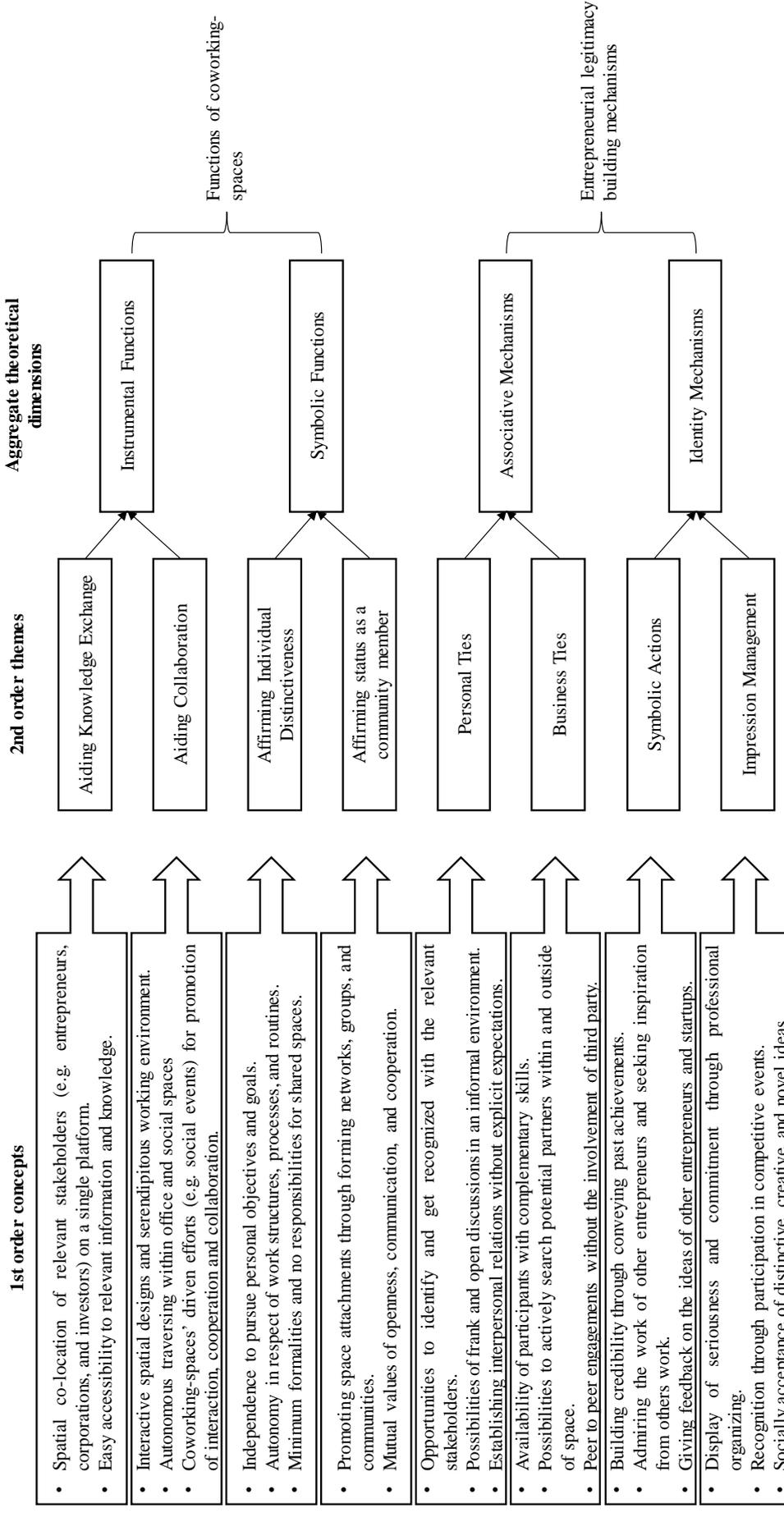
We conducted face to face interviews with our respondents for data collection. Respondents also share additional material such as marketing and product brochures which we used as additional notes in our analysis. We also collected data from corporate ventures during our casual interactions and through semi-structured interviews. We continued the data collection process until reaching a certain saturation point where further data collection was not bringing any additional insights (Eisenhardt, 1989). After Tech-hub, we used the same procedure for collecting data from innovation-studio (pseudonym and a user-centric coworking-space in Germany) and social-impact (pseudonym and an entrepreneurial-centric coworking-space for social entrepreneurs in Germany).

On the whole, we collected data from two directors, three managers, and four corporate ventures of three coworking-spaces. Similarly, we collected data from 24 new ventures, including four early-stage ventures. Primarily, we collected data through interviews, but we also utilized secondary data sources such as publicly available social and print media data and ventures' websites for the triangulation of evidence (Williams, 2007). On average, interviews lasted from 40 to 90 minutes. All the interviews were recorded and transcribed verbatim on the day of interviews.

### **6.5.3 Data Analysis**

Our data set consist of field notes, interviews, and publicly available data (e.g., marketing brochures, ventures profile, brochures of events). We employed the constant comparative method of qualitative data analysis (Miles & Huberman, 1994). This process started with the data collection followed by step-by-step data reduction until the emergent of common themes and finalized by verification (Glaser, 1965; Miles & Huberman, 1994).

## Audience Diversity and Co-legitimization



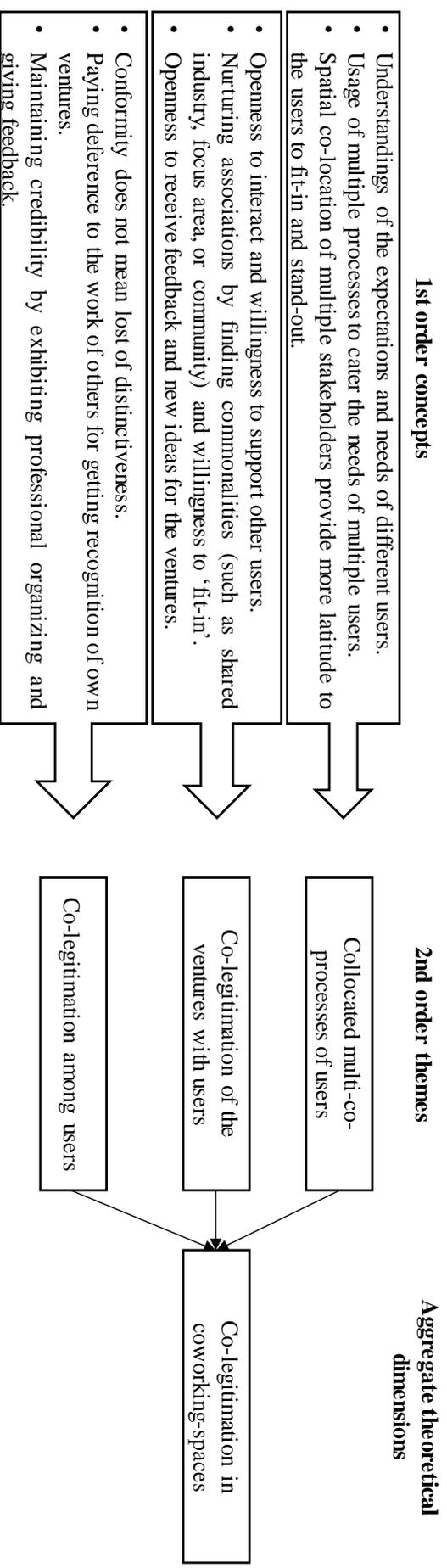


Figure 6.1-Analytical Coding Process to Induce Theoretical Dimensions.

In the first stage, two researchers independently and carefully read all the interviews and field notes and coded the transcripts line by line (Strauss & Corbin, 1998). These codes were akin to the notion of open coding technique, which were suggested by the data rather than any existing theory or literature (Böhm, 2004). Open codes were used to define first order concepts (Gioia, Corley, & Hamilton, 2013; Langley & Abdallah, 2011). In the second stage, we identified the similarities and differences in first order concepts and defined second order themes (Gioia et al., 2013). In the third stage, we aggregated second order themes to define the higher order theoretical dimensions. Throughout this process, we continuously consulted existing literature and refined our second order themes and theoretical dimensions accordingly (Mäkelä & Turcan., 2007; Strauss & Corbin, 1990). Figure 6.1 depicts the structure of our data analysis.

We took several measures to ensure the reliability and validity of our findings (Golafshani, 2003; Morse, Barrett, Mayan, Olson, & Spiers, 2002). First, we collected data from various primary (such as providers of coworking-spaces, users of coworking-spaces, and investors) and secondary sources for triangulation of evidence (Yin, 2013). Second, we shared transcripts of the interviews with the respondents for seeking confirmation on their responses and to enhance the validity of our data (Golafshani, 2003). Third, we assessed inter-coder reliability (Morse et al., 2002). Codes were mutually discussed and revised until reaching a point of consensus.

## **6.6 Findings**

Our findings consist of three major parts. First, we explicate audience diversity and heterogeneity of the services offered by coworking-spaces. Then, we elaborate the role of coworking-spaces in the legitimacy building process. Second, we explain associative and identity mechanisms that entrepreneurs adopt for legitimacy building. Third, we explain three forms of legitimacy that help entrepreneurs to gain optimal distinctiveness in the face of heterogeneous preferences and multiplex legitimacy expectations of a diverse audience.

### **6.6.1 Audience Diversity and Services in Coworking-spaces**

To gain legitimacy of new ventures, entrepreneurs have to conform with the multiple and often conflicting demands of diverse audiences (Fisher et al., 2017; Navis & Glynn, 2010; Zhao et al., 2017). Most of the coworking-spaces host users from all professional backgrounds. For example, Innovation-studio hosts big corporations, small and micro enterprises, nascent entrepreneurs, and freelancers. These diverse users form the local audience for new ventures

in coworking-spaces. Entrepreneurs must comply with the norms and values with the existing community to get resources. A manager of Innovation-studio explained: “There are many coworkers [users of Innovation-studio] from different countries and industries, e.g., entrepreneurs, startups, web designers, graphic artists or coaches... We also have venture capitalists, angel investors... and sometimes financial institutions also join in... We do not get involved directly but like a control center, facilitate interactions... if you [entrepreneur] need support [financial, human, or intellectual] or you [entrepreneur] want your business to grow...more customers, ideas, etc. –you need to involve with the community” [1PI]. Some coworking-spaces host users from a particular profession or entrepreneurial group. For example, Tech-hub only hosts entrepreneurs and corporations that work in the technological sector and Social-impact hosts freelancers, entrepreneurs, and startups that establish their ventures around social entrepreneurship. Unlike Innovation-studio, these coworking-spaces prefer those entrepreneurs or startups that already work in the domain of the existing community. A founder of retail analytics described: “I feel, we are not a tech company, so we are always a little bit on the outside of how we do things” [3UT]. 3UT works in exclusive digital technologies, while most of the other ventures deal with the combination of hardware and digital technologies such as working with the 3D printers or augmented reality. Therefore, the founder of 3UT feels that their venture does not fit well with the other ventures in Tech-hub. He further explained his struggle to join tech-hub: “I remember when I applied here [in Tech-hub], it was very difficult... I was trying to make sure I was a candidate that has been taken seriously and they were like, ‘We are looking for three virtues for the tenants in Tech-hub.’ One was, you have to have a great idea (obviously) a cool product. Two, an interesting network like a network that brought something else to the community, and then the third was, behave friendly” [3UT].

The adoption of specific criteria helps coworking-spaces to offer services according to the need of the users. For example, Tech-hub offers services keeping in view the needs of startups. Co-director of Tech-hub stated: “For start-ups, our goal is to help them grow their businesses by providing them with a productive workspace and services including office hours with investors, legal advisors, human resource experts and providing them a strong community for learning, motivation, and connections. We help corporates to identify start-ups to partner with or invest in. We help them grow their brand in Silicon Valley” [7UT]. Tech-hub also offers a big hardware lab equipped with all equipment (such as 3D printers, virtual reality tools, etc.) for its members that mostly deals in such technologies. Similarly, Social-impact offers services

that support ventures in social areas. Manager of Social-impact described: “We are a nonprofit social enterprise that allowed us to raise grants for the project development phase of new ventures. Besides, we offer them mentoring; we offer them free meditation classes, and a lot of events for free or discounted access to the event” [1PS]. In contrast to that, Innovation-studio offers its services for the broad audience rather than specific services for entrepreneurs.

A criterion also helps to build a more collaborative community that have certain shared aspects such as industry, technology, or focus area. In this way, entrepreneurs can better understand and learn about the demands and expectations of each other. As an entrepreneur stated: “That is like a two-way process, so it is like you share something, they share something. It is not just then telling you what they are doing and not asking what you are doing...” [2UT].

### **6.6.2 Functions of Coworking-spaces**

Coworking-spaces offer its users the opportunity of ‘working alone together’ (Spinuzzi, 2012). Entrepreneurs can maintain their self-identity and distinctiveness by staying independent while simultaneously taking the advantages of a large community. Flexible memberships, absence of formalities, and lack of physical and nonphysical boundaries offer autonomy to entrepreneurs in respect of self-selection of tasks, teams, work structures, and routines. At the same time, coworking-spaces promote space attachments through forming networks, groups, and communities and induce values of openness, communication, and cooperation.

#### *6.6.2.1 Affirming Individual Distinctiveness*

Most of the coworking-spaces (especially medium to large size) does not have any fixed membership criteria. They allow members to be part of the coworking-spaces irrespective of the professions, age, gender, race, or nationality. Similarly, some coworking-spaces offer their services only for a particular group of users, such as social or tech entrepreneurs. Regardless, whether coworking-spaces host entrepreneurs from a particular profession or have ‘open for all’ policy, they do not influence internal work structures and processes of entrepreneurs. Coworking-spaces play the role of an intermediary or facilitator. This impartiality and objectivity of coworking-spaces enable entrepreneurs to pursue their objectives and goals while getting advantages of interactions outside of their domain. Manager of Innovation-studio defined the objectives of the space: “Our coworking-space is about ... the design line and the facilities ... everything you [referring entrepreneurs] need to work in a very efficient way” [1PI]. Another entrepreneur described what brought him to start his venture in this coworking-

spaces: “The biggest thing is flexibility when you are a startup... I can grow as my team grows, that is the biggest thing” [11UI]. We further asked how the presence of other entrepreneurs or users influences their working. Our respondent replied: “You have your own life and everything –you just want to come to your job...We all meet each other randomly walking, and we all say hello...” [11UI].

Spatial co-location in open-plan offices does not necessarily mean that entrepreneurs have to involve in social interactions and collaborations. Spatial layouts, architectures, and shared infrastructures are designed in such a way that entrepreneurs can easily traverse in between the office and social environment. In office spaces, entrepreneurs can concentrate on their work while in social spaces, entrepreneurs can interact and socialize. For example, one of the entrepreneurs exemplified how they balance their work and social life in coworking-space: “We have a kitchen, where everyone can talk [with other entrepreneurs] but when we want to work alone on our start-up, we work on the second floor, in our team-offices, where we can sit together with our colleagues” [5UI]. Coworking-spaces affirm individual distinctiveness and do not interfere in the internal work processes of their entrepreneurs. Entrepreneurs can independently choose their work structures, task processes, and work routines. Entrepreneurs do not have any obligations regarding coworking-spaces. An entrepreneur stated: “I have one ready-made kitchen, always filled with drinks and everything is there. I just do not have to take care, clean, shop. You just go and work and do not have to worry about anything” [2US].

#### *6.6.2.2 Affirming Status as a Community Member*

Inducing the sense of community among entrepreneurs depends on the efforts and objectives of a coworking-space. The coworking-spaces which proactively pursue community objectives are more likely to construct the community as compared to such coworking-spaces which do not put efforts to bring together professionals from diverse domains. For example, Tech-hub tries to establish a strong sense of community among their ventures, work in the technological sector. Director of Tech-hub described: “We wanted to create a sense, where all entrepreneurs regardless of if they have started a hundred-million-dollar company or if they just started their first startup. They should all feel as being equal, and they all should feel like they are working towards something bigger than themselves” [1PT]. This task is challenging in Innovation-studio due to diverse users and their multifaceted objectives.

The first step towards building a sense of community is to provide a serendipitous atmosphere in a coworking-space. As one of the entrepreneurs described: "...often times, we cook together [in the shared kitchen], and that really helps for the feeling of belonging together, and of course, entrepreneurs can get to know each other on a private level while eating" [5UI]. The second important principle which contributes to reaffirming the status of users as community member lies in the shared values of openness and cooperation, as another entrepreneur explained: "Well, the surrounding here really does play an important role... It [shared values of openness and cooperation among the members of the community] only works by creating an atmosphere that encourages people to exchange... [For example] people can say, let's have coffee... or I just want clarification or can you explain how I can register the trademark" [12UI]. Third, the role of management of a coworking-space is significant. Facility coordinators or managers can arrange the community events for their members to interact and communicate, or they can directly introduce the new entrepreneurs with their existing community. Facility coordinators can also guide the new members with the existing routines of coworking-space, as an entrepreneur working in e-commerce sector elaborated at length: "I think, it is imperative that the coordinators take the time to help you... orient you... How can you do everything? What can bring more possibilities for you?... They can also introduce you to the people and can arrange get-togethers. So, I think the role of the coordinator is incredibly important" [9U1]. The manager of Innovation-studio also agrees that coworking-spaces play a vital role to reinforce community membership. Therefore, Innovation-studio offers regular events for social get-togethers and also offers mentoring opportunities for the members. The manager stated: "We also offer things like advise-to-go which essentially is running once per month or once every two months (when there is not much time), where we connect lawyers, accountants, marketers to our people for free. So those people (those professionals) come here, give slots of like 20 to 30 minutes at a time to our members to help them. So that is a service that we offer them together" [2PI].

### **6.6.3 Legitimacy Building Mechanisms**

Our analysis of data further suggests that entrepreneurs strategically use coworking-spaces to establish, manage, and restore the legitimacy of their ventures. We classify legitimacy building mechanisms in coworking-spaces into two sub-mechanisms, i.e., associative and identity mechanisms.

### 6.6.3.1 Associative Mechanisms

Associative mechanisms involve the linkages and relationships that entrepreneurs form in coworking-spaces for deliberately or unintendedly managing the legitimacy of their ventures. Coworking-spaces host independent professionals, small and micro enterprises, venture capitalists, angel investors, and employees of large corporations. This great mix of professions and ventures provide an excellent opportunity for entrepreneurs to develop connections inside these spaces and leverage these social ties to raise financial and human resources.

*Personal Ties.* Personal ties are formed at a private and individual level. Entrepreneurs meet with other users in the social places of coworking-spaces (e.g., kitchen or café). These meetings take place in the serendipitous and informal environment without any fixed agenda. An entrepreneur stated: "... in the kitchen... we meet most of the users here, and they are great people. You just have a coffee together, or you go to lunch with them, but there is nothing formal" [11UI]. Entrepreneurs do not need to leave the space, and they can walk directly from their offices to the kitchen inside the space where they can meet other members of the community. Coworking-spaces thus help entrepreneurs to combat the feelings of social isolation and support them to develop ties and relationships at a personal level.

Similarly, coworking-spaces often arrange social events (e.g., ping pong tournament, community breakfast) for the community members. These events bring together people from diverse professional backgrounds. The manager of Innovation-studio described: "We offer wine evenings, running together, football tournaments, beach volleyball, bowling...where people get to know each other at a more personal level" [2PI]. Entrepreneurs use these social events to get introduced with the relevant stakeholders (e.g., entrepreneurs work in their area of interest). Getting recognition and finding the right contacts might require time and energy, especially in a large coworking-space with a large community. Therefore, entrepreneurs need to invest much time in socializing and networking. An entrepreneur working in Innovation-studio elaborated: "I think, it is nice... people have so many different professions [in Innovation-studio], and maybe it is one of the characteristics of coworking-space...and by being here, people should be very clear about their businesses. This means you know very well... who can support the development of certain stuff? What kind of experiences someone has? and again what kind of insights someone has in the network..." [3UI].

*Business Ties.* Entrepreneurs actively pursue networking opportunities in coworking-spaces to establish personal ties and develop them towards business linkages. Coworking-spaces can play an intermediary role and connect the relevant individuals or businesses for cooperation and collaboration. Manager of Innovation-studio described: “Sometimes they [entrepreneurs] seek out specifically... Most of the time, it happens through the community manager, who is Lisa [pseudonym] here and she is the one who knows everyone, and people come to her ... ‘Hey, I am looking for this’ or ‘I am looking for a copywriter’. The guy, working for the blog... does he have a few minutes? Can you connect me?’ ... So, that is how ... we create those connections ” [1P1]. An entrepreneur who establishes a startup in Tech-hub described the personal experience: “It was earlier this week, we just talked about our business strategy, what we are building, their [other entrepreneurs in the space] strategy and how we might all work together” [1UT].

Similarly, employees of big corporations also use coworking-spaces. They create linkages with startups and innovations for broaden their innovation pipeline and connect with the local talent of a coworking-space. The manager of Innovation-studio explained this sort of linkages in the following example: “We have a company which is a big player in the automotive industry. ...They are talking with a whole bunch of our startups here that are into either trucks, logistics, deliveries and that kind of stuff ... So, for them, it makes sense to talk. That is one of the reasons why they actually did decide to come on board to have access to those startups” [2PI]. She further explained how the ties between big corporations and startups help both parties: “...It is a two-way stream with big corporations. They both want to take from the community like ‘Hey I want you, I want to recruit you, I want to partner up with you because you have something I want,’ but on the other side they are also willing to sponsor, to support startups, to open their resources to the young guys” [2PI].

Individual businesses also have their objectives which they want to pursue through developing business-level relationships. First, entrepreneurs expect to seek skills, knowledge, and resources from other entrepreneurs or independent self-employed professionals as an entrepreneur stated: “I too nowadays use a personal consultant who is also a coworker. I also use marketing consulting from coworking. He is from a network of coworking” [4UI]. Second, some entrepreneurs use coworking-spaces for potential investors and partners from coworking-spaces. An entrepreneur in the founding phase said: “We are sitting here for at least half a year... in the pre-phase, we are testing a beta [version] with users... so looking for investors

within coworking... We also approached some personal contacts for investment” [5UI]. Third, novice entrepreneurs, especially part-timers, use coworking-spaces to establish relationships for their potential venture, as a nascent entrepreneur described: “Since I have been here, I am already getting a lot of orders. I already work for around 70 percent of the people who worked here. I like that because somehow we all sit in the same boat [referring shared values]” [2US].

### 6.6.3.2 Identity Mechanisms

Coworking-spaces promote creativity and innovation through interactive spatial designs, serendipitous working environment, and functional heterogeneity. The synergies inside coworking-spaces stimulate out of the box thinking and provide necessary resources (e.g., human, intellectual, and financial) to pursue novel business ideas. Entrepreneurs can thus use coworking-spaces to build their means but also their reputation as an innovator or creative thinker. Our findings suggest that entrepreneurs use symbolic actions and impression management in coworking-spaces to build legitimacy.

*Symbolic Actions.* Entrepreneurs invest a lot of time and energy in coworking-spaces for establishing and maintaining their favorable image in their network and community. A favorable business image is essential for all entrepreneurs, but it is of utmost importance for nascent entrepreneurs who recently started working on new business opportunities and strived for achieving legitimacy in existing entrepreneurial circles.

Coworking-spaces host events such as idea competitions where they invite internal members and external investors. Entrepreneurs use such forums to present their novel startup ideas. These events serve two purposes. First, entrepreneurs use these forums to get resources from investors. Second, entrepreneurs exhibit their passion and confidence in their innovative ideas and promote them in front of relevant audience. An entrepreneur explained: “We have an event where entrepreneurs present innovative or new projects. They bring new things or trying to inspire other people, who [other entrepreneurs or investors] are interested in doing the same... Others are interested in seeking inspiration for themselves, or they are interested in getting in touch with those innovative projects [8UT].

Coworking-spaces bring together creative thinkers and innovators where they learn through collaborations and collective experiences. An entrepreneur described: “We have social events once a month. People are always allowed to introduce their new ideas ... I was very often there, so in principle, people are very happy to participate. I think it is very important for the people

who are just beginning that you get such a feedback” [9UI]. At an informal level, the presence of other entrepreneurs, startups, and innovators provide an alternate forum to entrepreneurs for skillfully displaying symbolic actions. Entrepreneurs can participate in informal discussions and random get-togethers. They used to share their success stories, personal capabilities, and novelty of their business models in a casual environment. For example, an entrepreneur explained: “People are going to tell you many stories about how awesome it is and how painful it is and how great they are and like how cool the last book from Elon Musk was and the quotes from here and there on creative stuff...” [4UI].

*Impression Management.* Traditionally, novice entrepreneurs start carrying out their business operations from home or small-scale offices and meet investors in restaurants, cafés, or hotel lobbies. Coworking-spaces provide office spaces where entrepreneurs can start their business in a professional working environment. Open-plan offices, casual and comfortable furniture, and aesthetic architectural and interior designs present not only a positive outlook of the space but also entrepreneurs working therein. This professional working environment, among other things, primarily portrays the seriousness and commitment of the entrepreneur towards the establishment of a new venture, as an entrepreneur described: “Working in a coworking-space reflects the efficiency of your own processes” [3UI]. Another entrepreneur further elaborated: “Startup needs financial support, and a right place to develop ...what we noticed, you cannot convince someone in Starbucks and you cannot work forever from home or in a team and meet somewhere... In the first place, you need a good room to work professionally...” [10UT].

The shared value of ‘openness’ in coworking-spaces also prevails towards new and distinct ideas. Coworking-spaces affirm individual distinctiveness and provide a platform where entrepreneurs can use their imagination and creativity to carve out a novel solution. At the first place, entrepreneurs can seek support, guidance, and feedback from the communities of coworking-spaces. Secondly, communities can connect entrepreneurs with potential investors through their vast networks. An entrepreneur described this process: “It is good to have other entrepreneurs around you. The reason why it does not work for you...often you come in; you go to work and shut the door. So you do not actually interact with them... but if you are in the kitchen for coffee... You can interact with others, and they introduce you to an investor, or they can help you with the distribution problem or something” [11UI].

#### 6.6.4 Co-legitimation in Coworking-spaces

To seek support and resources from the audience, entrepreneurs have to comply with the norms and expectations of resource holding audience (e.g., angel investors, venture capitalists) and other users (e.g., entrepreneurs, mentors). In contrast to the typical working environment, entrepreneurs in coworking-spaces have two primary advantages: First, creativity is a fundamental value of coworking-spaces, which gives more latitude for entrepreneurs to work on creative and novel ideas. Second, legitimacy building in coworking-spaces is not a static or one-way process. Entrepreneurs interact and discuss their ideas with the audience, ‘get feedback, and provide feedback’ while creating a win-win situation for all the stakeholders. We posit the notion of ‘co-legitimation’ to describe the legitimation building process of a venture with other users of coworking-space. We derive the following three different forms of co-legitimation in coworking-spaces.

##### 6.6.4.1 Collocated Multi-co-processes of Users

The convergence of different stakeholders on a single platform of coworking-spaces help entrepreneurs to understand the expectations of different stakeholders. In coworking-spaces, gaining legitimacy of ventures is not limited to the resource holding audience, but entrepreneurs involve with other stakeholders such as industry-specific entrepreneurs, domain-related experts (e.g., industry leaders or mentors), and other members of the community (e.g., freelancers and independent professionals). All the distinct coworking-spaces in our study employ different mechanisms and provide different support systems that enable entrepreneurs to gain maximum benefits in terms of resources, support, and new knowledge as well as expertise. For example, Tech-hub focuses on bringing technology-oriented entrepreneurs and corporations for joint experimentation in their hardware lab equipped with state of the art equipment. Innovation-studio focuses on shared infrastructures and social spaces for building cooperation. Social-impact focuses on providing funding opportunities for the development of joint projects. Director of Tech-hub described: “It is vital to bring together all the different necessary pieces –the corporate, the start-ups, the accelerators. We have the corporates, the start-ups, the investors, the domain experts, and mentors. Those are all the people that you need. We can bring them together [on a single converging point] for innovation” [1PT].

Spatial co-location of entrepreneurs with other stakeholders gives more latitude to entrepreneurs to ‘fit-in’ and ‘stand-out’ as compared to the typical work environment.

Entrepreneurs are usually self-motivated to understand the needs and expectations of the stakeholders in coworking-spaces, as a founder in Tech-hub stated: “ We meet folks in the space to understand how we can support one another” [1UT]. Coworking-spaces also play an active role and use different mechanisms to understand the needs of entrepreneurs. Director of Tech-hub described: “When [entrepreneurial] teams join Tech-hub, typically we have a meeting with them to understand better what their needs are” [2PT]. After identifying the needs of entrepreneurs, coworking-spaces offer their services to fulfill their needs. For example, if an entrepreneur needs financial resources, coworking-spaces can connect them with potential investors. Then the entrepreneur and investor can chalk out their plan mutually. Director of Tech-hub explained: “We do a lot of ad hoc connecting. We know entrepreneurs in Tech-hub, and we know a lot of potential investors. We can make connections, where there seems relevance or need” [2PT].

### *6.6.4.2 Co-legitimation of the Ventures with Users*

Legitimation of ventures in coworking-spaces is a dynamic process. Entrepreneurs in coworking-spaces can interact with other users, understand their expectations, learn new skills, and develop their ventures that fit well in the realm of conformity and distinctiveness. A founder of a venture in Tech-hub described: “There are office hours with venture capitalists, I could learn how to pitch to venture capitalists who come to Tech-hub. There are always other people coming visiting Tech-hub, get a chance to meet industry partners or business angels or other companies with whom you can work or exchange ideas” [4UT]. Coworking-spaces thus challenge the concept of ‘minimum threshold’ for venture survival and growth and put forth the graded nature of legitimation, where entrepreneurs from idea conception to development continuously define, redefine, and align their products, work procedures, and processes to achieve optimal distinctiveness.

The sense of community among users of coworking-spaces eases the process of co-legitimation for entrepreneurs through ‘fitting-in.’ The domain-specific coworking-spaces provide an excellent opportunity for entrepreneurs to come in contact with the entrepreneurs working in their area of interests. For example, Social-impact only hosts users and entrepreneurs in the area of social entrepreneurship. Users work for the social causes that bring development in the area of poverty, education, climate, and sustainable technologies. In Tech-hub, users are mostly startups, corporations, and venture capitalists that work in the technological sector. Due to the shared area of interests, domain-specific coworking-space creates a strong sense of community

among the entrepreneurs. A founder in Tech-hub stated: “That is why we are in the space [referring Tech-hub] because we wanted to be surrounded by technology. We wanna know what is like the latest technology, what is happening, how we can incorporate that into sustainability and conservation” [1UT].

Engagement of entrepreneurs with the users of coworking-spaces is the key to get resources, supports, and potential collaborative partners. Entrepreneurs can get some new ideas about their new ventures, as a founder stated: “This device was proposed by a guy, who has a pretty good brand and communications team. You get that kind of spontaneity as connections that you can not predict. I would not have been working on this cool product unless I was here” [4UT]. If entrepreneurs do not engage with the users, then they would be alone working on their ideas and unable to get any support. Users of the coworking-spaces can directly advise entrepreneurs about the new business or investment opportunities, or they can connect entrepreneurs to some other users in coworking-space. An entrepreneur described the personal experience: “Last week, we talked to our neighbors, and they were like, ‘Oh yeah we are looking for this kind of target customer,’ and I was like, ‘Oh send me an email.’ So, I help someone when I think they might be interested in their product” [9UI].

#### *6.6.4.3 Co-legitimation among Users*

Entrepreneurs also maintain the distinctiveness of their ventures. Engagement with the users might risk entrepreneurial unique identity and peculiarity, which is also necessary for ventures to attract interests and resources. Coworking-spaces provide a unique platform, where entrepreneurs engage with the users of coworking-spaces and also exhibit their distinctiveness through identity mechanisms. Creativity and distinctiveness are the characteristics which coworking-spaces encourage among users. A venture capitalist in Tech-hub described: “We are looking for unique products, and most of all we are looking for very novel ideas with strong teams for investments” [4UT].

Nascent entrepreneurs pay deference to the work of other users (especially to experienced entrepreneurs or innovators) in coworking-spaces for getting recognition of their own ventures in entrepreneurial circles. Social and training events of coworking-spaces provide one of such forums where entrepreneurs can present their work and can get feedback on their ideas. A founder working in audio and visual technologies explained: “I got different social events to go, two or three per week. I go to pitch nights and learn about that stuff” [7UT]. Entrepreneurs

present their creative and novel ideas in front of broad audiences (e.g., investors, venture capitalists, angel investors) for getting repute as an innovator and creative thinker. Entrepreneurs also use such forums to discuss the problems of their ventures with other colleagues and mutually solve it. As the founder further described the outcomes of such events in the following: “They put together founders from very different start-ups or very similar start-ups, and you talk about this, or you solve a problem together” [7UT].

Experienced entrepreneurs can establish their credibility by exhibiting professional organizing and giving feedback on new ventures ideas. A founder of cloud computing stated: “You give people feedback, or people ask about venture capitalists, about tips how to find the right lawyer, how to find the right marketing tool, how somebody is implementing cloud computing provider” [4UI]. The feedback from the users always helps to improve the venture and eventually leads to success. For example, an entrepreneur described: “I figured out new things to do and since I have been here. I have gone from just working on the site trying to get to a point that I could use it, like it, nothing was awful to going on, talking to lots of artists, talking lots of venture capitalists. So, I am adding more business...” [8UT].

### **6.7 Discussion**

Through this inductive research, we aimed to analyze the interplay among collaborative workspace, the presence of multiple stakeholders and their heterogenous legitimacy expectations that influence entrepreneurial actions for gaining optimal distinctiveness of their ventures (Fisher et al., 2017; Vidaillet & Bousalham, 2018; Zhao et al., 2017). Based on our study in coworking-spaces, we propose the notion of ‘co-legitimation’ that defines the involvement of an entrepreneur with the collocated multi-co-processes of users through associative and identity mechanisms.

In the following, we articulate the theoretical underpinnings of our findings and propose a model of audience diversity and co-legitimation in coworking-spaces.

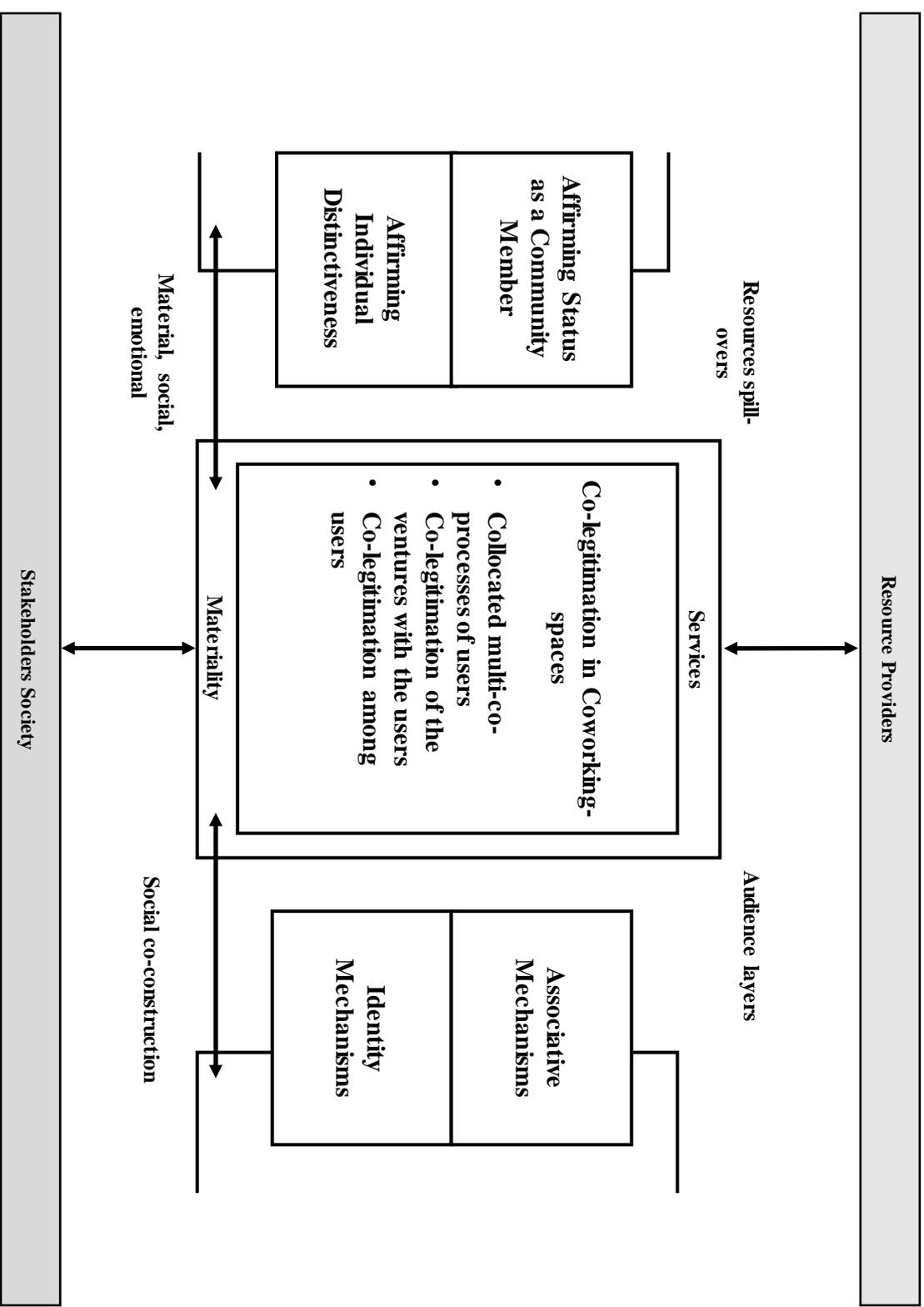


Figure 6.2- A Model of Audience Diversity and Co-legitimation of a Venture in Coworking-space.

### **6.7.1 Audience Diversity and Co-legitimation of Ventures in Coworking-spaces**

Coworking-spaces attract entrepreneurs and startups by lower costs of doing business, knowledge sharing opportunities, and direct access to financial and human capital (Bouncken & Reuschl, 2017; Goswami, Mitchell, & Bhagavatula, 2018; Weele, Steinz, & Rijnsoever, 2014). To retrieve resources and support from the users of coworking-spaces, entrepreneurs need to conform to the expectations and demands of the collocated users (Fisher et al., 2016, 2017; Zhao et al., 2017). At the same time, entrepreneurs need to exhibit and maintain the unique identity of their ventures to attract customers, resources, and support (Barney, 1991; Deephouse, 1999; Navis & Glynn, 2011). Figure 6.2 presents the model explaining how entrepreneurs achieve optimal distinctiveness by building legitimacy from diverse stakeholders in a coworking-space.

Coworking-spaces aid in collaboration and knowledge exchange (Bouncken & Aslam, 2019; Castilho & Quandt, 2017; Parrino, 2015). Collaborative environment in coworking-spaces helps entrepreneurs to understand and converge mutual expectations, interests, and goals of different stakeholders, e.g., large corporations, small and micro-enterprises, venture capitalists, angel investors, entrepreneurs, startups, or independent professionals (Barinaga, 2017; Bouncken & Aslam, 2019; O'Mahony & Bechky, 2008; Vidaillet & Bousalham, 2018). Entrepreneurs can interact freely with other entrepreneurs and resource holding audiences (e.g., investors and venture capitalists), gain knowledge about new technologies and processes (Cabral & Winden, 2018; Parrino, 2015), and find mutual areas of interests for collaboration (Cabral & Winden, 2018; Waber et al., 2014). Open interactions and closed collaborations among different partners specifically help new ventures to gain legitimacy, especially when entrepreneurs are pursuing distinctiveness objectives (McKnight & Zietsma, 2018; Provan, Kenis, & Human, 2008). Coworking-space also affirms distinct entrepreneurial identity as well as shared identity as a member of an entrepreneurial community (Capdevila, 2019; Elsbach & Bechky, 2007; Garrett et al., 2017). Entrepreneurs can autonomously define the identity of their ventures as an imitator or innovator, without any influence of coworking-space (Clercq & Voronov, 2009; Michael Lounsbury & Glynn, 2001). Yet, entrepreneurs can benefit from the communities inside coworking-spaces consisting of entrepreneurs, innovators, independent professionals, corporations, and investors (Blagoev, Costas, & Kärreman, 2019; Garrett et al., 2017; Spinuzzi, Bodrožić, Scaratti, & Ivaldi, 2019).

Entrepreneurs use associative and identity mechanisms to co-legitimize their ventures with the resource providers and other resource holding society. Entrepreneurs develop personal and business ties with the other users of coworking-spaces (Singh et al., 1986; Stuart, Hoang, & Hybels, 1999; Zimmerman & Zeitz, 2002). Social events provide opportunities for entrepreneurs to identify and get recognition with the relevant stakeholders (Blagoev et al., 2019; Spreitzer, Bacevice, & Garrett, 2015). Entrepreneurs can discuss frankly and openly in the serendipitous and casual environment of coworking-spaces, with the implicit expectations of developing their personal ties towards business ties (Bouncken & Aslam, 2019). These ties are not limited to the internal members of the community, but external corporate partners or financial institutions can also participate (Nagy and Lindsay 2018). Coworking-spaces provide several platforms such as ideas competition, hackathons, or startups evenings for entrepreneurs to showcase their credibility in front of broad audiences –mainly targeting angel investors and corporate ventures (Spreitzer, Garrett, & Bacevice, 2015; Waber et al., 2014). Entrepreneurs also take symbolic actions to exhibit their professional organizing and past achievements (Starr & Macmillan, 1990; Zott & Huy, 2007). In coworking-spaces, entrepreneurs admire and give feedback on the work of other entrepreneurs and also seek inspiration and new ideas for their ventures (Bouncken & Aslam, 2019). In the process of legitimacy building, the image of an entrepreneur also plays a crucial role (Parhankangas and Ehrlich 2014; Benson et al. 2015; Nagy et al. 2012). Establishing a new venture in coworking-spaces (instead of home or other such places) can signal seriousness and commitment of an entrepreneur towards its endeavor (Fuzi, 2015; Spreitzer, Bacevice, et al., 2015). Coworking-spaces are the places where creativity and innovation flourish (Clayton et al., 2018). Therefore, entrepreneurs can better convince investors to get resources for new ventures based on their innovative ideas using the platform of coworking-spaces.

### **6.7.2 Implications for Research on Optimal Distinctiveness**

Previous studies suggest that increased interactions among entrepreneurs restrict entrepreneurial ability to deviate from the norms and lead to conformity and sameness among ventures (Barreto & Baden-Fuller, 2006; Davidsson, 2006; DiMaggio & Powell, 1983; Zimmerman & Zeitz, 2002). We argue that coworking-spaces provide a unique institutional context, which promotes shared values of openness, cooperation, and collaboration among entrepreneurs (Castilho & Quandt, 2017; Garrett et al., 2017; King, 2017). They bring multiple stakeholders at a single setting who have heterogeneous preferences and diverse legitimacy expectations (Zhao et al., 2017). The spatial co-location of entrepreneurs and resource holding

audiences (e.g., angel investors, venture capitalists, financial institutions) provides an excellent opportunity to understand different expectations of both parties (Fisher et al., 2016; Spinuzzi, 2012; Zhang et al., 2019). Entrepreneurs can interact with the relevant stakeholders through open and frank discussions in the serendipitous environment of shared workspaces (Irving, Ayoko, & Ashkanasy, 2019; Spreitzer, Bacevice, et al., 2015). Expansive access to the facilities, shared infrastructures, and resources encourage entrepreneurs for experimentation in their new ventures and learn ‘what is achievable and what is not’ (Bouncken & Aslam, 2019). Legitimacy building in new ventures in shared workspaces is not a static binary process (Aldrich & Fiol, 1994), where entrepreneurs need to attain a certain ‘legitimacy threshold’ for survival and growth (Zimmerman & Zeitz, 2002). We agree with Tracey and colleagues (2018) about the ‘gradated nature of legitimation.’ The boundaries in shared workspaces are not clearly defined rather permeable (Bouncken & Aslam, 2019) where entrepreneurs have more latitude in positioning their ventures (Durand & Khair, 2016). Expectations of the stakeholders change with the changing times, and entrepreneurs adopt such mechanisms for the legitimation of their ventures that fit with the audiences (Fisher et al., 2016; Zhao et al., 2017). Resultantly, entrepreneurs continuously define, redefine, and continuously adjust their new ventures to find a point of optimal distinctiveness where they are able to conform with the demands of their audience while maintaining their distinctiveness (Fisher et al., 2016; Navis & Glynn, 2011; Zhao et al., 2017).

Coworking-spaces support creative processes and promote distinctiveness rather than sameness (Clayton et al., 2018; Marchegiani & Arcese, 2018). Entrepreneurs can work either in isolation or in collaboration with other entrepreneurs on their creative and novel ideas (Clayton et al., 2018). Different stakeholders (particularly resource holding such as venture capitalists) deliberately work and participate in the shared workspaces to remain involved with the innovation happening in new ventures (Spreitzer, Garrett, et al., 2015). For example, many large corporations hold their departments or employees in coworking-spaces, where they sponsor new ventures to work on innovative ideas (Nagy and Lindsay 2018). Thus we argue that coworking-spaces effectively support entrepreneurs to mitigate the challenge of conformity and distinctiveness. An entrepreneur can gain legitimacy by establishing and maintaining relationships with other actors such as entrepreneurs, investors, or corporate heads (Kistruck et al., 2015; Williams Middleton, 2013; Zimmerman & Zeitz, 2002) and can still maintain his or her identity as an ‘innovator’ or ‘creative thinker’ by seeking inspiration from

the work of others or providing feedback on their ideas (Parhankangas & Ehrlich, 2014; Zott & Huy, 2007).

### **6.7.3 Limitations and Future Research Agenda**

There are certain limitations associated with our research. First, coworking-spaces is not the only form of shared workspaces; other contemporary organizations such as incubation centers, accelerators, innovation hubs, fab labs also host entrepreneurs (Bøllingtoft & Ulhøi, 2005; Clayton et al., 2018; Goswami et al., 2018). Coworking-spaces have some advantage over other forms of shared spaces. For example, coworking-spaces are open for everyone while other forms of shared workspaces, e.g., accelerators, only offer their services to entrepreneurs, and they have fixed policies and less flexibility than coworking-spaces (Bouncken & Reuschl, 2018). Therefore, future research on the legitimacy building process in other forms of shared workspaces can also bring interesting insights. Second, we collected cross-sectional data from three different coworking-spaces and built our model based on that. However, legitimacy building process does not take place in a particular timeframe. Therefore, a longitudinal data set over a different span of time may bring some additional insights (Tracey et al., 2018; Zhao et al., 2017). Different audiences in shared workspaces have different expectations, and these demands might be conflicting with each other (Fisher et al., 2017; Zhao et al., 2017). We argue that entrepreneurs use multiple mechanisms and strategies to fulfill those demands for gaining legitimacy of their new ventures. However, we did not look at these conflicting demands. Future research in this direction would bring valuable insights. Finally, we recommend the empirical testing of this model through a quantitative data set.

### **6.8 Conclusion**

Our study based on coworking-spaces explicates how shared workspaces enable entrepreneurs to tackle the challenges of conformity and distinctiveness. We argue that entrepreneurs in coworking-spaces have a better chance for building legitimacy of their new venture than they would have in traditional office spaces. Coworking-spaces open numerous social and learning opportunities which help entrepreneurs to get in contact with the professionals from diverse domains. On the one hand, entrepreneurs can gain new knowledge across different domains and through different mediums or can collaborate with the potential partners, clients, or investors. On the other hand, entrepreneurs can maintain their individual identity through self-selection of work structures, task processes, teams, and work routines.

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## **Chapter 7: Understanding Knowledge Exchange Processes Among Diverse Users of Coworking-spaces**

### **7.1 Abstract**

**Purpose:** Coworking-spaces use the idea of spatial co-location that improves communication and knowledge sharing among independent knowledge professionals. Fluid work structures and a sense of community can facilitate work satisfaction, creativity, and entrepreneurship. Fundamentals to those positive outcomes are the knowledge sharing processes between users of coworking-spaces. The purpose of our study is to explore the knowledge sharing processes in this setting where researchers still have very little understanding.

**Methodology:** Based on an inductive research methodology, qualitative data was collected through observations and interviews with a variety of users (including freelancers, entrepreneurs, and firms) incumbent in various coworking-spaces in Germany.

**Findings:** Co-location of individuals in coworking-spaces is first about physical proximity but second about socialization and collaboration opportunities, which then advance cognitive proximity. Thus, co-location can facilitate tacit knowledge exchange, ignite the social disembodiment of ideas, synthesize domain related knowledge sharing, and promote inter-domain learning. The institutionalization of knowledge management services will allow coworking-spaces to increase these positive outcomes.

**Originality:** This paper sheds light on the role of spatial co-location in knowledge sharing processes among independent knowledge professionals in shared office spaces. Thereby, this study provides valuable insights to a phenomenon, which received little attention even though its practical importance is already high.

**Practical Implications:** Findings of this study are interesting for managers of shared spaces and traditional firms that use spatial co-location. We propose institutionalized knowledge management services to enable multifaceted and multidisciplinary knowledge creation in organizations.

### **7.2 Introduction**

Advancement in organizational structures, business models, information and communication technologies have raised interdependent, flexible, and competitive work forms (Davenport &

Prusak, 1998; Hua, Loftness, Heerwagen, & Powell, 2011). Accordingly, physical office spaces have evolved from traditional cellular type structures to open-plan offices (Khazanchi, Sprinkle, Masterson, & Tong, 2018; Peponis et al., 2007). Quite recently, coworking-spaces (CWS) are established and to date, more than one million knowledge professionals from diverse background (such as freelancers, remote workers, entrepreneurs, small and micro enterprises, etc.) work in shared office spaces across the globe (Bouncken & Reuschl, 2018; Foertsch, 2016; Spinuzzi, 2012). Coworking-spaces allow co-location, promote direct communication, and facilitate knowledge transfer among individuals (Coradi, Heinzen, & Boutellier, 2015; Khazanchi et al., 2018; Parrino, 2015).

Sharing office space or spatial co-location enhances the collaboration among the members of teams, groups, and departments of an organization and reduces knowledge sharing boundaries (Peponis et al., 2007; Song, Berends, Van Der Bij, & Weggeman, 2007). Spatial co-location facilitates the smoother and cross-functional flow of knowledge while opening up horizons for creativity and innovation (Coradi et al., 2015). Only few studies looked at knowledge sharing dynamics among spatially co-located organizations working in small firms districts (Balestrin, Vargas, & Fayard, 2008; Chan, Oerlemans, & Pretorius, 2010). So far we lack understanding of knowledge sharing mechanisms among co-located independent knowledge professionals, who share office spaces.

Our research thus addresses the following research question: how does knowledge sharing take place among spatially co-located knowledge professionals in coworking-spaces (CWS), who have no shared employment affiliations? Drawing on an in-depth qualitative study from multiple members of CWS, our research identifies and unfolds knowledge sharing mechanisms and processes that support knowledge professionals, entrepreneurs, and firms in CWS.

We used the grounded theory methodology (Strauss & Corbin, 1990, 1998). We collected qualitative data from diverse users in different CWS in Germany between 2016 and 2017. The inductive data analysis uses the constant comparative method (Cassell & Symon, 2004; Miles, Huberman, & Saldana, 2014). Findings indicate that the physical and cognitive proximity within shared spaces facilitate the exchange of tacit knowledge among users arise from diverse functional backgrounds. Co-location of independent knowledge professionals eases the process of socialization. The spatial co-location of naïve and experienced coworkers, simple procedures of inquiry and feedback, as well as collaborative and supportive environment create a climate of trust, openness, cooperation, and community. This climate facilitates knowledge sharing.

Shared spaces' institutionalized learning opportunities (such as workshops, seminars, trainings, etc.) along with the possibility of interpersonal mentoring support the combination and recombination of knowledge, which in turn lead to de-contextualization of ideas. It can nurture domain related knowledge, and promote inter domain learning.

## **7.3 Theoretical Background**

### **7.3.1 Spatial Co-location and Knowledge Sharing**

Knowledge sharing refers to activities and processes for transmitting and receiving knowledge (Coradi et al., 2015; Saifi, Dillon, & McQueen, 2016). Knowledge related to skills, expertise, or judgements can flow among colleagues, clients, suppliers, or business partners (Bouncken, Pesch, & Reuschl, 2016; Ikujiro Nonaka, Von Krogh, & Voelpel, 2006). Recent studies suggest that the spatial characteristics of an organization play a fundamental role in the sharing of knowledge (Coradi et al., 2015; Spreitzer, Bacevice, & Garrett, 2015). Spatial density (e.g. crowding), spatial layout (e.g. cubicle, open-plan offices), and distance from other incumbents influence occupants' positive and negative reactions (Bouncken, Aslam, & Reuschl, 2018; Oldham & Kulik, 1991). Spatial co-location promotes communication between different actors (Coradi et al., 2015) and influences the communication content, the face to face communication frequency, and the communication duration (Khazanchi et al., 2018). Spatial co-location facilitates knowledge sharing through the process of socialization (Chan et al., 2010; Desrochers, 2001). It helps to reduce syntactic (language), semantic (meaning), and pragmatic (practice) boundaries, which thwart knowledge sharing process inside organizations (Carlile, 2002, 2004; Coradi et al., 2015). Collaboration among co-located members in organizations further drives the combination of knowledge (Davis, Leach, & Clegg, 2011) and helps to solve complex problems (Song et al., 2007). Spatial co-location of members from different teams enhances unplanned interactions and leads to faster and cross functional knowledge sharing in organizations (Bouncken & Teichert, 2013; Coradi et al., 2015). Some studies (e.g. Bulte and Moenaert, 1998) argue that the effect of co-location on knowledge sharing depends on the content and medium of communication flow. Spatial co-location helps joint projects by providing opportunities to explore, interpret, and transform knowledge (Peponis et al., 2007). Therefore, it is not surprising that the spatial design of contemporary workplaces have evolved from traditional cellular designs to open-plan offices (Allen, 2007; Davis et al., 2011; Spreitzer, Bacevice, et al., 2015). Yet co-location can also evoke several challenges that can hinder the knowledge sharing processes among co-located members (Hua et al., 2011).

Existing studies discuss the role of spatial co-location on knowledge sharing among members of organizations (e.g. Balestrin et al., 2008; Chan et al., 2010; Saifi et al., 2016). However, these studies have two major limitations: First, for inter organizational knowledge sharing, researchers consider the geographic proximity of firms rather than the spatial co-location of organizational members (e.g., Balestrin et al., 2008; Fredrich et al., 2019; Saifi et al., 2016). Similarly, some studies (such as Coradi et al., 2015; Peponis et al., 2007; Rashid et al., 2006) focus on the role of spatial co-location of teams and groups within a specific organization rather than on individuals from different organizations or self-employed individuals. Secondly, socialization and the development of formal and informal ties have been treated as the course for knowledge sharing while ignoring or downplaying the role of spatial settings (Parrino, 2015). Therefore, we focus on the influence of spatial co-location on knowledge sharing among independent professionals and employees working in shared spaces. This micro level analysis helps us to elaborate how knowledge sharing takes place among independent knowledge professionals, remote workers, and firms that share office spaces without any shared affiliation. We use the ‘practice lens’ to fulfil our quest to unfold the knowledge sharing mechanisms and processes inside shared office spaces (Feldman & Orlikowski, 2011; Orlikowski, 2010).

### **7.3.2 Toward a Practice Lens**

We adopt the practice lens that provides a contemporary and dynamic view of organizing at the workplace (Feldman & Orlikowski, 2011; Orlikowski, 2000; Schatzki, 2005, 2006). Practice theory argues that the situational activities are consequential in the production of social life (Feldman & Orlikowski, 2011; Orlikowski, 2000). Orlikowski (2000) argues that the actors do not form structures in a vacuum. Prior knowledge of the given situation, available facilities (such as space, technology), and social norms guide actors to reconstitute the rules and resources that structures their social actions (Orlikowski, 2000). Practice theory views actions as happening or taking place through a network of connections rather than static or stable entities (Blackler, 2004; Gherardi, 2000; Orlikowski, 2000).

The practice perspective views knowledge as a consequential activity grounded in everyday social life (Orlikowski, 2002). Gherardi (2009a) posits that “knowledge should be defined as an activity, as a collective and distributed ‘doing’, lead to its consideration as an activity situated in time and space, and therefore as taking place in work practice” (2009: 353). In practice theories, researchers shift their focus on the action verb for knowledge—presenting it as ‘knowing in practice’ (Blackler, 2004; Gherardi, 2000; Orlikowski, 2002). The action verb

‘knowing’ challenges the embedded static nature and emphasizes the ongoing social interactions among actors that constitute and reconstitute knowledge in practice (Orlikowski, 2002). Knowing in practices focuses on the ongoing activities (such as face to face interactions, sharing, learning, or participating) that produce collective ‘knowing how’ across boundaries (Corradi, Gherardi, & Verzelloni, 2010). Studies extend the concept of knowing in practice beyond the human actors towards the material artifacts (such as space, time or technology), which influence the ‘doing’ of the actors (Kemmis, 2014; Leith & Yerbury, 2018; Orlikowski & Scott, 2015).

Getting inspiration from the wide range of implications, we use practice lens in this study for two major reasons. First, the role of spatial co-location and its influence on the knowledge sharing in shared workspaces requires a deep understanding not only about the social actors and material artifacts but also their interrelatedness. The use of the practice lens helps us elaborate the interrelatedness of work and organization and has the ability to explain “how practitioners do what they do and what doing does; how working and organizing practices become institutionalized?” (Gherardi, 2009b: 124). Secondly, practice based theorists (such as Feldman and Orlikowski, 2011; Gherardi, 2000; Tsoukas, 2005) accentuate the need to study knowledge sharing processes in concrete context using practice theories to understand ‘knowing in practices’. By examining the CWS, we shed light on the processes of knowledge sharing among spatially co-located independent professionals, and thereby explain how traditional organizations can learn from shared spaces.

## **7.4 Research Methodology**

### **7.4.1 Research Setting**

Coworking-spaces are continuously growing around the world since their inception around a decade ago (Foertsch, 2016; King, 2017). Currently about one million people are working in 12,000 CWS around the globe (Foertsch, 2016). Users of CWS come from diverse functional, hierarchical, and cultural backgrounds. Users are employees of incumbents, startups, and individuals—not being limited to freelancers, independent knowledge professionals, entrepreneurs, small and micro enterprises, business consultants, designers, writers, and artists (Bouncken, Laudien, Fredrich, & Görmar, 2017). Users of CWS have different motives, objectives, and goals, who can be grouped in utilizers, learners, and socializers (Bouncken & Reuschl, 2018; Garrett, Spreitzer, & Bacevice, 2017).

Coworking-spaces provide an interesting context for this study, where users from diverse background share office spaces. Use of the context of CWS in this study is also important from practice theory perspective, which urges to use a concrete context to understand the knowledge sharing processes (Feldman & Orlikowski, 2011; Gherardi, 2000). Our research question (i.e. how knowledge sharing takes place among spatially co-located knowledge professionals?) can be well addressed in the context of CWS.

#### **7.4.2 Sample Selection**

Our sample selection criteria was based on the principles of appropriateness and adequacy (Gaskell, 2000). We employed purposive sampling technique and selected cases, which best represent the research topics (Morse, Barrett, Mayan, Olson, & Spiers, 2002) and continued the data collection until attaining a thematic saturation point, where further data collection was not providing any additional insights (Guest, Bunce, & Johnson, 2006). First of all, we visited different CWS in Munich, Berlin, Nuremberg, Potsdam, Mainz, and Saarbrücken in Germany from November, 2016 to May, 2017. Then, we formed a list of interested participants for this study (Cassell & Symon, 2004). We used the following three points criteria for the formation of a list of eligible cases: (1) respondent must be user of the CWS (we did not include data from the owners/managers of CWS), (2) respondent must be incumbent in CWS for at least six months, and (3) respondent must not be employed anywhere else (Seawright & Gerring, 2008). This list consisted of 83 interested participants featuring their basic profiles such as gender, age, education, profession, and total duration as since when they are in the CWS. We also took additional notes regarding community size as well as services offered by the CWS (Bouncken, Clauß, & Reuschl, 2016; Fuzi, 2015). Based on the maximum variation sampling technique, we were able to shortlist 43 eligible cases. After going through the iterative process of data collection and analysis, we collected data from 26 respondents. Table 7.1 represents the gender, country of origin, profession, educational background, and area of interest of the participants. In order to ensure anonymity of the cases, we have used serial no. instead of the name of the participants.

#### **7.4.3 Data Collection**

We used inductive research methodology (Gioia, Corley, & Hamilton, 2013; Strauss & Corbin, 1990), which is a widely accepted approach in research, where the study is new and lack in substantive theory (Strauss & Corbin, 1990). We collected data for this study through observations, reviewing literature relevant to CWS, and interviews to triangulate the evidence

(Eisenhardt, 1989). We collected the preliminary data during our 6 months' field visits in different CWS in Germany. We observed the working environment, work practices, and social practices. We also attended social and training events organized by the CWS. We were involved in informal discussions with the users as well as managers of CWS during these events and took field notes. These field notes consist primarily of the services offering by CWS and involvement of users in the social and training events backed by the informal discussions (Lee, 1998; Strauss & Corbin, 1998). These field notes also helped us to develop our semi-structured interview guidelines for this study (Neergaard & Ulhoi, 2007).

*Table 7.1- Interviewee Characteristics*

Serial No.	Gender	Country of Origin	Coworking place	Profession	Educational Background	Area of Interest
1	F	Germany	Munich	Entrepreneur	Doctorate	Statistical analysis
2	M	Germany	Munich	Entrepreneur	Doctorate	Engineering
3	M	Germany	Munich	Employee	Masters	Economics
4	M	Germany	Munich	Consultant	Masters	Business consultancy
5	M	Israel	Munich	Entrepreneur	Masters	Environmental sciences
6	F	Germany	Munich	Entrepreneur	Doctorate	Artificial Engineering
7	M	Germany	Munich	Entrepreneur	Diploma	Software development
8	F	Germany	Munich	Freelancer	Masters	Editorial Services
9	F	Spain	Munich	Employee	Bachelor	Environmental sciences
10	M	Germany	Munich	Freelancer	Masters	Television editorial services
11	F	Spain	Munich	Freelancer	Masters	Trademarks and patents
12	M	Germany	Munich	Entrepreneur	Bachelor	Coworking-spaces
13	M	USA	Munich	Entrepreneur	Masters	E-commerce
14	M	Germany	Munich	Student/Intern	Masters	Business administration
15	F	Sweden	Berlin	Coach	Masters	Psychotherapy
16	M	Germany	Berlin	Freelancer	Masters	Corporate communication
17	M	Netherlands	Munich	Consultant	Masters	International Business Development
18	M	Germany	Nuremberg	Coach	Masters	Managerial Training
19	M	England	Potsdam	Entrepreneur	Masters	E-commerce
20	M	England	Potsdam	Employee	Masters	Project management
21	F	Germany	Berlin	Freelancer	Diploma	Graphic and motion designing
22	M	Germany	Berlin	Entrepreneur	Masters	Animal feed
23	F	Germany	Mainz	Entrepreneur	Bachelor	E-commerce
24	F	Germany	Saarbrücken	Freelancer	Masters	Designer
25	M	Germany	Saarbrücken	Entrepreneur	Masters	Internet services provider
26	M	Germany	Saarbrücken	Freelancer	Bachelor	Computer programming

In the next step, we collected data from our respondents in face to face interviews. We used interviews for three major reasons: First, our research problem demands detailed discussions on the emerging phenomenon of knowledge sharing among coworkers and in-depth interviews are promising source of data for such studies (Strauss & Corbin, 1998). Second, interviews are more flexible compared to surveys. Interviews give respondents the opportunity to speak at length, lead to spontaneous discussions, and instant feedback on the emerging issues (Eisenhardt, 1989; Neergaard & Ulhoi, 2007). Third, our respondents include freelancers,

independent knowledge professionals, and entrepreneurs, who prefer to talk about their experiences, success stories, failures, and challenges (Cassell & Symon, 2004; Neergaard & Ulhoi, 2007). Face to face interviews enabled us to observe the body language and emotions of the respondents, which we recorded as additional notes (Neergaard & Ulhoi, 2007; Strauss & Corbin, 1998). The interviews lasted on average 60 to 90 minutes. All the interviews were recorded and transcribed verbatim. The interviews were conducted in German, except from those respondents in English, whose country of origin was not Germany (see table 7.1). A bilingual researcher then translated the German interviews to English. We started with the general questions such as motivation, objectives, and goals of the respondents. Secondly, we asked what features of CWS are important and the challenges they wanted to overcome while working in the CWS. Third, we asked about their working routines and how CWS support or restrict their working. We also asked about the knowledge exchange processes and how they are using CWS to exchange knowledge. Our interview questions were open ended and flexible enough to generate a constructive discussion. We followed Eisenhardt's (1989) advice and continued the data collection process, until we reached the point of saturation and further interviews were not generating any additional insights. We conducted one interview per participant, however, in some cases, we sought additional clarification in response to some self-contradictory responses of participants. Therefore, follow ups were sought through emails and telephone calls.

### **7.4.4 Data Analysis**

The combined data-set consists of more than 400 pages of interview transcripts and field notes. We managed this data using MAXQDA 12, a software for assisting qualitative data. We analyzed the data throughout the data collection process, as advised by Miles and Huberman, (1994) and Strauss and Corbin (1998). We used the constant comparative method for qualitative data analysis (Glaser, 1965), which started with the phase of data collection and step by step data reduction until the emergent of common themes, followed by feedback mechanisms (Miles et al., 2014; Strauss & Corbin, 1998).

First of all, we typed all the field notes during our visit, which provide a holistic picture of the CWS, in which our respondents were incumbent. Secondly, we carefully and independently read the interviews and the corresponding field notes. Third, we used the open coding technique (Strauss & Corbin, 1998) and coded every interview and corresponding field notes line by line. Initially, 890 codes emerged, which were proposed by the data rather than the existing literature

(Corbin & Strauss, 1990; Strauss & Corbin, 1998). We employed the constant comparative method (Glaser, 1965), to define our first order concepts, which were based on the ideas and relationships emerge from the data. After that, we used the axial coding technique (Strauss & Corbin, 1998) to identify the similarities and differences in the first order concepts, and aggregated them to second order themes. We constantly consulted the existing literature to interpret our findings with the prior work. Finally, we aggregated second order themes to define higher order theoretical dimensions (Gioia et al., 2013). Figure 7.1 summaries the structure of our data analysis.

To ensure the validity of our findings, we shared the transcripts with our respondents. Interview transcripts were also compared with the field notes for reliability. Codes were discussed internally and an independent coder also assessed our codes. Initial consensus on the codes was 65 percent, which were discussed and revised, until we reached a consensus.

## **7.5 Findings**

Knowledge sharing in CWS is an elusive concept. One of the major reasons behind the elusiveness of knowledge sharing is the spatial co-location of members from diverse professional backgrounds. Members have various overlaps of shared norms and values while also having independent objectives and goals. For example, a freelancer may be interested in solving a contemporary problem, an entrepreneur may be looking for a new and viable business idea, and a firm may be struggling in developing a new product. The synergies within CWS help to synchronize these diverse objectives and facilitate mutual learning and knowledge sharing among diverse users working in various domains.

To elaborate our findings, we first explain the role of institutionalized knowledge management services in CWS. Next, we analyze the role of physical and cognitive proximity of users inside shared spaces that promote fast and tacit knowledge exchange. Finally, we elaborate interpersonal relationships in CWS that lead to social disembodiment of ideas and collaboration among users promote mutual learning and knowledge sharing.

## Knowledge Exchange Processes

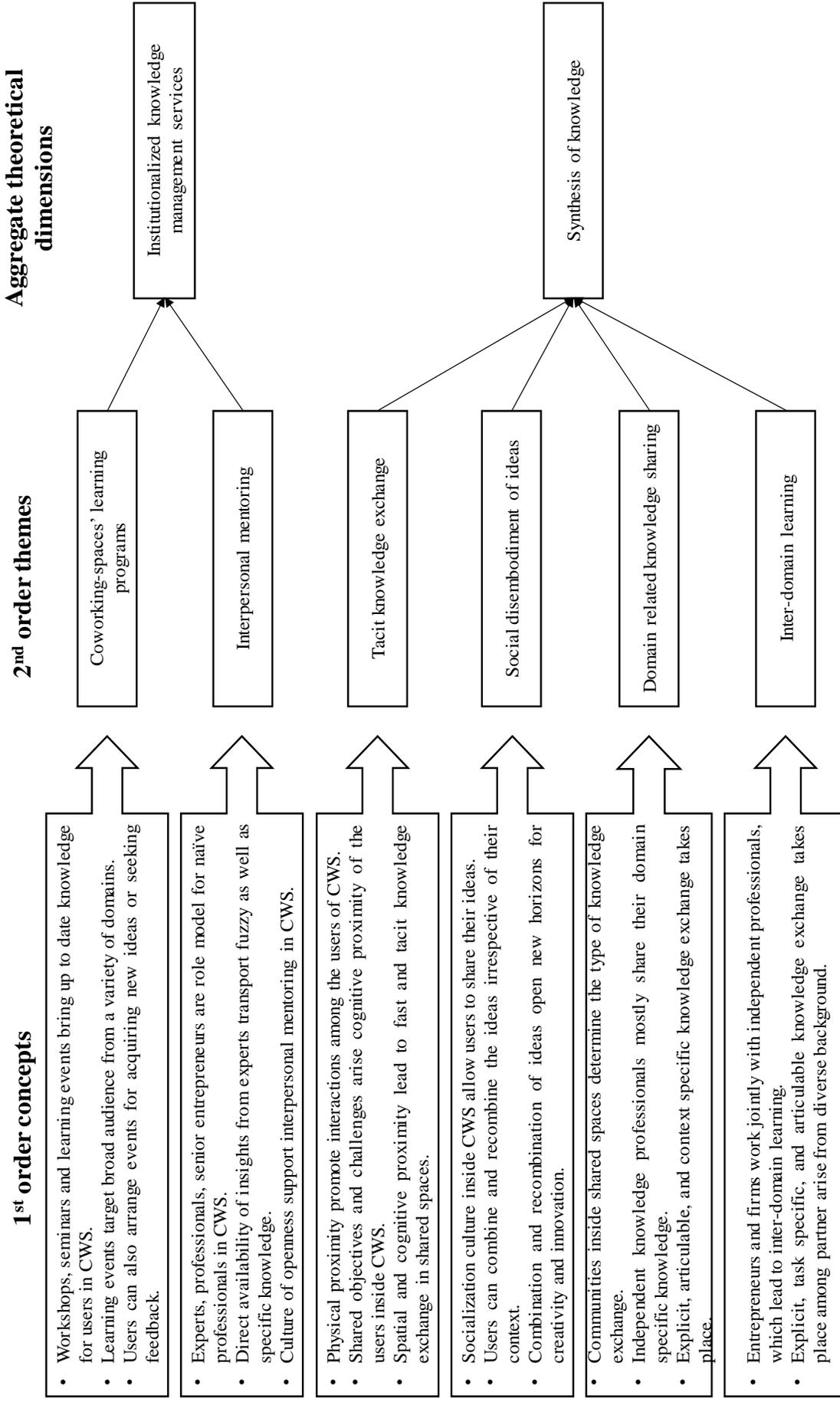


Figure 7.1- Analytical Coding Process to Induce Theoretical Dimension

### 7.5.1 Institutionalized Knowledge Management Services

Institutionalized knowledge management services improve mutual learning and knowledge sharing opportunities available for the users of CWS. Coworking-spaces can facilitate learning by workshops and seminars. These events provide direct learning opportunities about contemporary technologies, state-of-the-art techniques, and sustainable processes. Another opportunity available for the users of CWS is to learn directly from experienced professionals through interpersonal mentoring.

#### *7.5.1.1 Coworking-spaces' learning programs*

Coworking-spaces host workshops, seminars, and courses for their users. These events target broad audiences and cover a wide range of topics e.g. business management, legal and financial consultancies, creative and innovative techniques, stress management exercises, personal and professional life management, etc. An entrepreneur explains the potential benefits of attending the learning events at CWS in the following statement: “There are a lot of events... to free your mind a little bit... or just try to talk with people to know if the work that you are doing is actually going in the right direction or not” [22M]. These learning events provide direct learning opportunities for the users of CWS to learn and update their knowledge about innovative business models, technologies, techniques, and processes.

Coworking-spaces also allow users to arrange events on their own—where users can share their experiences, stories, and ideas with other individuals in the CWS, as [11F] states “So we have events once a month. People are always allowed to introduce their new ideas”. Such events provide an opportunity to establish the linkages with other users or participants of the events as [10M] describes by quoting an example: “I attend most of the learning events and they are very interesting...Few days back, my producer was also telling me that she attended an event of a company here. She was there and made interesting contacts with a few startups ...So, I could go to events here, to stay up to date in the field”.

The learning events do not have any fixed agenda as [14M] describes “...that’s like an open format thing, if someone has an idea or someone would like to share something on which they are working on... or I am assuming, that maybe from outside... if someone has an idea to bring an outside speaker...”. Some coworkers also present their business ideas in these events to seek feedback

from other entrepreneurs, startups, and industry specialists, as another respondent states “Mostly it is anything new...also most of the time has challenging ideas. We can approach and support you then, partly on the conceptual level, like is she going in the right direction?” [3M].

### *7.5.1.2 Interpersonal mentoring*

Experts such as consultants, coaches, or experienced business professionals in CWS are role models for the naïve professionals and startups. They can guide or mentor other users during their stay in the CWS. One professional [3M] explains this feature of CWS in the following words: “...and as very important element, the think-tanks here [referring to experienced professionals, trainers, etc.] ...you can see that .... This supports the entire working atmosphere”. The direct availability of insights from the experts bring fuzzy as well as specific knowledge for the coworkers, which help them to carve out solutions for their problems, as explained by 11F: “I always got a lot of support to do online marketing in the beginning and there was always someone... If I have a programming problem with the website, someone always helped.”.

Freelancers and entrepreneurs share their problems with other experienced professionals in their community and exchange valuable inputs to solve their task related problems. The culture of openness supports this interpersonal mentoring process in CWS as a respondent explains “I think people really like to help each other, that is always been relatively harmonious” [11F]. This process starts with the very specific and minor problems. It can be feedback on some ideas or a troubleshoot with the software, as an entrepreneur describes his personal experience “there are always small things; I just ask somebody, if he has an idea, how to optimize this and that..., or asking someone about our company logo that how it works, whether we can go in this direction or in that direction. So, simply catch up with feedback” [7M].

Entrepreneurs can seek guidance from the experienced entrepreneurs on the specific issues such as registration, taxation, accountancy, etc. An entrepreneur describes this phenomenon in the following words: “problems can be technical or it can be like something that you don't know how to solve immediately or like lack of experience, which is very common because like there are a lot of start-up people here or a lot of you know freelancers. So they might need to solve something on the spot or like... just take the seat, take decisions or you know just, you just have also the opportunity to go to a coworking event” [22M]. Users of CWS do not have to operate in accordance

with an organizational structure and with an organization structure and formalities. They can just go to the next table and can ask other members of the space for their guidance or seek solution for the problem, as an entrepreneur who deals in the ecommerce area shares her personal experience “I once by chance met with another coworker, who uses exactly the same software that I used for my online shop. He was using it for completely different goods, So I asked certain questions and clarified certain things. Otherwise, I would have had to pay for support or something like that” [23F].

### **7.5.2 Synthesis of Knowledge**

Factors such as spatial co-location of naïve and experienced coworkers, simple procedures of inquiry and feedback, collaborative and supportive environment create a climate based on trust, openness, cooperation, and community to exchange knowledge. Entrepreneurs and firms bring forth and share their knowledge with other independent knowledge professionals, receive feedback, and work jointly to pursue their creative and novel ideas. Coworking-spaces support the combination and blending of ideas through social interactions, which lead to the de-contextualization of ideas and open up a new horizon for creativity and innovation. Working in collaboration with other users of CWS leads to the transmission of tacit knowledge and creates explicit, context specific, and articulable knowledge.

#### *7.5.2.1 Tacit knowledge exchange*

The physical proximity in CWS such as open-plan offices enables coworkers to interact and seek support immediately from their community inside the CWS. The open plan offices along with the shared facilities provide accessibility and acquaintanceship opportunities to the knowledge professionals arise from diverse functional background in a single space. An employee of a firm, who works in a shared space with his colleagues and other coworkers in a CWS explains the potential benefits of plan-offices in the following words: “Sitting together supports a project—so short distances, fast communication, easy exchange, and the availability of shared resources, such as projector, multimedia, etc.” [3M]. Shared spaces such as a café, kitchen, etc. provide interactive and serendipitous atmosphere in CWS, where members can interact with each other in an informal and casual settings. An entrepreneur describes the interactive environment of CWS as “That’s the place where you can meet... where you are just not on the phone, not writing emails, or

concentrated but where you can take a quick break ... it is easier to have a conversation there” [26M]. In CWS, “there are people who network and directly try to bring together the people who could complement each other” [7M]. The community manager or the owner of the CWS can also introduce the new members in their CWS to existing community members. Some CWS also have information systems that display the profile of their members and their availability and facilitate the process to locate the potential knowledge exchange partners.

The shared objectives and challenges originate cognitive proximity among the users of CWS, enabling mutual learning and knowledge sharing. A freelancer illustrates how cognitive proximity in CWS influences her knowledge sharing behavior: “So I think you can always perceive it, just as many people come to me and ask, you 11F [pseudonym], how can I register this brand or so... I think that ‘person just started and determined with little resources’ and then I sit down and explain how he can register a brand online and I think as soon as you're ready to help others, then you always get help from the other in areas, where you yourself do not know so well. That works in principle by itself, when the people are reasonably nice to each other” [11F]. Entrepreneurs and independent knowledge professionals can relate their endeavor with other users inside CWS. Therefore, they interact and try to discover the mutual areas of interest where they can cooperate and exchange their expertise.

### *7.5.2.2 Social disembodiment of ideas*

Social disembodiment of ideas or ‘de-contextualization’ refers to the notion that the ideas, which are shared and created in a particular context can be used independently in a new or completely different context. The ‘socialization’ culture inside CWS inspires ‘individuals’ such as freelancers, consultants, and entrepreneurs to interact and exchange ideas with each other. For example, respondent 25M explains: “I use that coworking-space to come in contact with other people or to exchange ideas with other”. Interactions among individuals from diverse professional backgrounds bring multifaceted inputs and provide multidisciplinary knowledge, as an employee incumbent in a CWS reported: “... this exchange of communication is always good because you will be updated about different areas. So you also know about the different areas” [9F].

Users of CWS combine and blend ideas and use them irrespective of their context, in which ideas were originally created and shared. Our respondent elaborates this process in the following words:

“Yesterday, I was talking with my colleagues about a logo development and I was thinking about a handicraft in my logo... which I was thinking impossible... I ask the graphic designer, what do you think? and then he just went upstairs and asked... this is what you want... completely uncomplicated and I like that ...” [16M]. In this example, the graphic designer did not draw an image of a handicraft for 16M. However, after interacting with 16M, he gave his input in the form of an image of a handicraft and 16M used that image to develop the logo. This example illustrates, how spatially co-located people cooperate and share their specific domain related knowledge and come up with a novel solution. Coworking-spaces allow integration and combination of knowledge from different sources and open new horizons for creativity and innovation. General discussions among coworkers on issues such as current affairs, technologies, stories, and life experiences lead to passive knowledge exchange that is mostly unstructured, less embedded, and lacks in specific context. Coworker [18M] describes this “...rather less professional exchange”. During interactions and knowledge exchange processes, coworkers do not have a specific issue to discuss or a fixed agenda. They interact in the serendipitous environment of CWS and try to find mutual areas of interests to exchange knowledge. The co-location of users in the plan-offices of the CWS provide an opportunity for the users to learn from each other. Users can interact and discuss their ideas with each other. They can even get a broader prospective or a holistic picture about their domain that how people are doing in the same field differently. For example, an entrepreneur explains how CWS allow to combine ideas in the following words: “what is extremely helpful...is to see what other people are doing and also get to know in which areas, others are working. Because, mostly everyone is using somehow same methods, techniques, etc. but in a different way...so you can get a whole picture, which actually goes over your own area” [7M].

### *7.5.2.3 Domain related knowledge sharing*

Coworking-spaces vary a lot in respect of size and community. Some CWS host communities of specialized domains such as social entrepreneurs, artists, writers, consultants, startups, etc. The purpose of such CWS is to provide domain related specific knowledge sharing opportunities while many other CWS prefer to develop a community consisting of members from diverse professional backgrounds. The idea here is to allow sharing in a specific knowledge domain. For example, an entrepreneur provides her personal example “coincidentally, other coworkers who are active in online trading [who are working in her area of interest], Um, always come up with one or the other

tips [exchange domain related knowledge], you could do that or here you go, try this, etc. So there are a lot of good ideas” [23F]. This is the flexible arrangement of knowledge sharing among different partners of CWS, where they collaborate with each other while keeping their autonomy and independence, as clarified by one of the freelancers in the CWS "...Individuals who bring expertise and know-how with them, who work together here and if necessary combine expertise... but also to remain independent and self-responsible" [16M].

Highly specialized independent individuals can share their domain specific knowledge with other users. Coworkers can find other relevant individuals in CWS, as an entrepreneur describes: “There are many coworkers from different countries and industries. If you need web designer or one graphic artist or a lecturer... You just have to go to that one and talk to people or to ask” [1F]. Users do not need to be associated with a particular profession or community to share knowledge—spatial co-location of diverse professionals reduces boundaries and values of openness, collaboration, and community enable users to find the solution of their problem through interaction with the professionals, who have relevant domain specific knowledge. For example, an employee working in a CWS highlights this fact in the following words: “There, you have a lot of people who are self-employed and who actually have all the same problems ...e.g. with taxes or finances and stuff like that... We are all self-employed...but he is a PR man and I'm doing business development, someone else is working in some other domain... but we have certain common things... We all need to file taxes, which we can ask here” [3M].

### *7.5.2.4 Inter-domain learning*

Knowledge sharing among knowledge workers varies across different professions. Freelancers, remote workers, and independent consultants are more likely to discuss and exchange knowledge in their particular domains. Instead, entrepreneurs are more likely to discuss and exchange knowledge across different domains such as new business opportunities, latest techniques, and processes. For example, we asked a graphic designer what sort of knowledge, she can exchange with other coworkers? She spontaneously replied: “...the technical exchange, of course... So, basically everyone works on their own projects. Most are coming here and know what they are doing” [21F]. However, this is not the case with the entrepreneurs, they want to socialize and learn across domains, as an entrepreneur explains: “Yes, so communication with people always helps—

no matter, whether they say what you want to hear or whether they say the opposite. But feedback always helps” [19M].

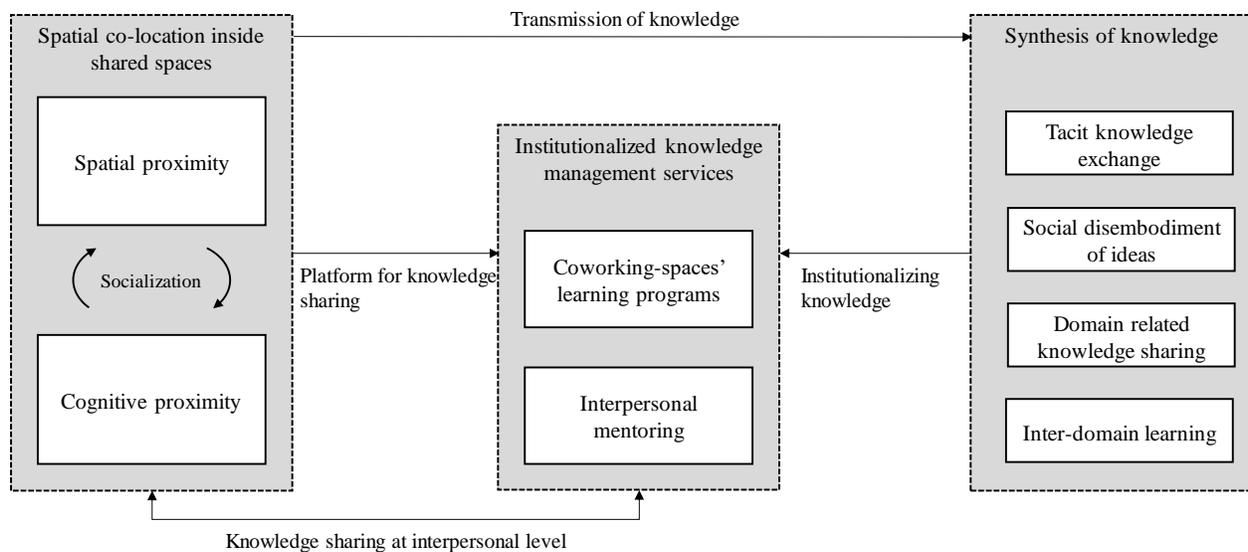
These inter-domain learning opportunities especially attract the naïve entrepreneurs and startups, as an entrepreneur elaborates “Simply the know-how of more experienced people, be it in the software or in marketing or in general at starting a business. As a beginner, you can really benefit from it” [22M]. They can learn from other professionals, business consultants, and startups incumbent in CWS. As 22M further explains “So when you... start a new project you need to take into consideration a lot of stuff and here [referring coworking-space] you can actually meet a lot of different personalities from PR, lawyers, business related people or marketing people, designers, and developers. They can give you a lot of inputs [inter-domain learning opportunities] and so you can actually... take a lot from the people [other coworkers]”.

Coworking-spaces not only allow to exchange knowledge among their members in this flexible fashion but it can also take a more formal shape, where entrepreneurs or firms collaborate with other firms, entrepreneurs, or self-employed individuals. In this case, knowledge exchange takes place between partners having diverse specialties, while each partner shares explicit, task specific, and articulable knowledge to accomplish specific objectives. An entrepreneur elaborates the process of collaboration and knowledge exchange between different partners by sharing the following example: “There is a company, who specialize in sustainable travel and there is one who owns and has built a small travel portal...So, one was already a group [firm] and the other had actually the program [entrepreneur] for it ... and as I have learned, they have something built together, because they had a common goal” [7M].

## **7.6 Discussion**

The purpose of this study was to analyze the role of spatial co-location in knowledge sharing process among independent professionals. We follow the practice lens conducting an in-depth study in CWS to find answers to our research question. From the data, we propose a process model explaining how spatially co-located independent knowledge professionals share and create knowledge in shared office spaces (see Figure 7.2 for a graphical depiction of model). In particular, our model aligns with the notion propound in knowledge sharing research that spatial proximity promotes social interactions and is the key in the process of knowledge sharing among users of

shared workspaces. It also floats the idea that the spatial proximity is important to develop cognitive proximity among individuals who have no shared employment affiliation. Spatial as well as cognitive proximity through the process of socialization allow fast and tacit knowledge exchange, bring social disembodiment of ideas, synthesize domain related knowledge, and promote inter-domain learning. The spaces we look at are coworking-spaces. These are institutions which provide a physical platform to their users for knowledge sharing triggered through learning programs as well as mentoring opportunities. Mentoring opportunities specifically provide support in the process of knowledge sharing at an individual level. Cognitive proximity between mentor and mentee is necessary for the transmission of task specific articulable knowledge at interpersonal level. The knowledge synthesized at space level includes tacit knowledge, social disembodiment of ideas, domain related knowledge, and inter domain learning become institutionalized and are collectively shared among users.



**Figure 7.2- A model of knowledge sharing in shared office spaces**

Spatial co-location of knowledge professionals in shared office spaces influences social dynamics. Our study supports previous studies, which suggest that the spatial co-location promotes social interactions (Coradi et al., 2015) and reduces organizational boundaries (Carlile, 2002, 2004) which otherwise might thwart knowledge sharing process in organizations. The findings of our research explain that the spatial co-location reduces physical distances between users and eases the process of socialization (Parrino, 2015). Our research also confirms the findings of studies (such as Balestrin et al. 2008) based on Nonaka and Takeuchi's (1995) theory of knowledge

creation, which claims that socialization leads to the exchange of tacit knowledge (Ikujiro Nonaka & Toyama, 2003; Ikujiro Nonaka et al., 2006). Spatial co-location of naïve and experienced users along with the simple procedures of inquiry and feedback, collaborative and supportive environment create the climate based on trust, openness, cooperation, and community (Garrett et al., 2017; Spreitzer, Bacevice, et al., 2015) to exchange tacit knowledge among independent professionals.

Our study results also underscore the importance of an institution supporting the knowledge sharing process. There are several learning and knowledge sharing opportunities available to CWS users at the community level. Events (e.g. workshops, seminars, trainings) provide up-to-date knowledge. Other learning events arranged by coworkers such as startup events, idea competitions, entrepreneurial development workshops provide alternate learning opportunities. The spatial co-location of freelancers, entrepreneurs, and firms provides an excellent opportunity to observe as well as socialize and interact with each other. Coworkers can identify themselves with other coworkers working in their own or different domains. They can directly learn from each other through the process of behavioral modeling (Wood & Bandura, 1989). The shared values inside CWS such as mutual support (Gerdenitsch, Scheel, Andorfer, & Korunka, 2016; Spreitzer, Bacevice, et al., 2015) evoke mutuality and altruistic behavior in coworkers, which encourage them to share knowledge. Experienced coworkers can serve as role model for naïve and nascent coworkers mentoring them by guidance for their work-related problems. Institutionalized knowledge management services are thus CWS' learning programs and interpersonal mentoring opportunities that enhances mutual learning and knowledge sharing at space level. Our study supports existing studies which claim that the lack of rigid structures, absence of formalities, and permeable boundaries facilitate interpersonal relationships and augment knowledge sharing with other members in their networks (Balestrin et al., 2008; Bouncken, Aslam, & Goermar, 2018; Ikujiro Nonaka et al., 2006).

Our study further extends the understanding that knowledge exchange relationships in CWS promote domain related knowledge sharing among freelancers or other independent professionals, whereas they enable inter-domain learning for entrepreneurs and firms, who collaborate with multiple knowledge sharing partners across different domains. Domain related knowledge sharing and inter-domain learning in CWS are the result of formalized knowledge sharing processes, in

which users of the CWS such as entrepreneurs, firms, or other self-employed individuals work jointly to create context specific, articulable, and explicit knowledge. However, CWS also facilitate autonomous free flowing knowledge sharing. The serendipitous environment inside shared spaces, social and learning events, and interpersonal mentoring encourage users of CWS to interact and share their ideas with other users. The ideas and knowledge flow during informal and casual interactions among users of CWS become independent of the original source or context in which the idea or knowledge was originally created and shared. The research refers to this as ‘social disembodiment of ideas’ or ‘de-contextualization’ (Faraj, Jarvenpaa, & Majchrzak, 2011). Our study supports the notion that CWS allow the combination and recombination of ideas and open new horizons for creativity and innovation (Bouncken, 2018; Clayton, Feldman, & Lowe, 2018).

### **7.6.1 Theoretical Implications**

Adopting a practice lens helped us to theorize the concept of knowledge in shared office spaces, which claims that the social norms guide actors to constitute and reconstitute the structures that influence social actions (Feldman & Orlikowski, 2011; Gherardi & Miele, 2018). The findings of our study support the argument that knowledge sharing takes place by participating in social practices and leads to ‘knowing in practice’ (Corradi et al., 2010; Gherardi, 2000; Orlikowski, 2002). Our study elaborates the role of interrelatedness of social actors and material artifacts (Feldman, 2000; Orlikowski, 2010). The findings clarify that the spatial co-location of independent professionals allows to interact in open-plan offices and that social places provide socialization, institutionalized learning, and interpersonal mentoring opportunities which bring multifaceted inputs and multidisciplinary knowledge.

Studies (such as Pyöriä, 2005; Smith and Rupp, 2002) highlight the importance of knowledge workers and their role in the process of open innovation (Bouncken & Kraus, 2013; Scuotto, Del Giudice, Bresciani, & Meissner, 2017). However, no attempts have been made to understand the role of knowledge professionals independent of their employment affiliation. Most studies discuss knowledge sharing mechanisms and processes at individual, groups, teams, and inter-organizational level (Parrino, 2015; Saifi et al., 2016). Our study extends this understanding by analyzing how knowledge sharing takes place among independent knowledge professionals in ‘shared spaces’ that have low levels of hierarchy and instead permeability. Most of the previous

studies highlight the role of inter-organizational linkages and their effect on the knowledge exchange process (Balestrin et al., 2008; Collins & Smith, 2006; Vaccaro, Parente, & Veloso, 2010). The findings of our study explains knowledge exchange relationships among self-employed professionals, entrepreneurs, and firms incumbent in shared spaces. We elaborated how users arise from diverse professional backgrounds having versatile objectives regarding knowledge acquisition participate jointly in the process of knowledge sharing and creating in shared office spaces.

Quite recently theoretical studies (such as Clayton et al., 2018; Khazachi et al., 2018; Rouse, 2018) elaborate the role of spatial design of workplaces on, inter alia, knowledge sharing behavior and jointly knowledge creation. Our study provides empirical evidence that open-plan offices foster knowledge sharing among independent professionals through interpersonal relationships and conclude that porous and permeable organizational structures support the flow and diffusion of knowledge. Our study also validates the claim that spatial co-location promotes communication among different actors (Coradi et al., 2015) and supports this assumption that the spatial co-location influences communication contents (Khazanchi et al., 2018). Findings of our study further elaborate that the distinct communication patterns generate de-contextualized knowledge, domain related knowledge sharing, and inter domain learning.

### **7.6.2 Managerial Implications**

The findings of our study provide valuable insights to understand the knowledge sharing mechanisms in shared office spaces (e.g. incubators, accelerators, and coworking-spaces), where a numbers of independent professionals share office spaces (Clayton et al., 2018). Our study elaborates that merely spatially co-location of independent professionals in open-plan offices is not enough to induce knowledge sharing in shared spaces. Here community managers should take a lead role by organizing spaces' driven learning and knowledge sharing events. Besides, community managers can arrange social and networking events to connect the likeminded individuals in their spaces, which can help their users to find the right contacts to establish interpersonal relationships and to pursue common areas of interest.

Spatial designs of contemporary organizations are evolving from traditional cellular structures to cubicles to open-plan offices (Davis et al., 2011; Spreitzer, Bacevice, et al., 2015). The underlying

assumption behind the changes in spatial design is to evoke creativity and promote knowledge sharing among spatially co-located individuals (Khazanchi et al., 2018; Peponis et al., 2007; Rashid et al., 2006). Our research findings can guide managers that how spatial co-location of employees from different departments in open-plan office can socialize in shared office spaces and can exchange domain related knowledge and synthesize inter-domain learning. Our micro level analysis explicates that the presence of nascent and experienced coworkers in shared spaces can foster interpersonal mentoring. Managers can pay attention on the spatial settings at their workplaces and can purposefully select and place the right persons together to foster interpersonal mentoring. Our study also emphasizes on the role of independent knowledge professional in the knowledge sharing and creating process. Managers can enhance the knowledge base of their firms for innovative projects by creating teams consisting of members from their (internal) organizations and from external knowledge partners such as freelancers, consultants, etc. who could then synthesize inter-domain knowledge.

### **7.6.3 Limitations and Future Research Agenda**

The knowledge exchange relationships among entrepreneurs, firms, and independent self-employed individuals led to domain related knowledge sharing and inter-domain learning. However, these knowledge exchange relationships can raise the issue of 'knowledge protection'. Issues such as intellectual property rights, copyrights, and patents can also emerge, which we did not cover in this study and can be explored in upcoming studies. Although, we used a rigorous research methodology and collected data in a possible fair and transparent manner, however, the model proposed during this study requires further empirical testing through a quantitative study. Many large firms and companies (e.g. Google, Microsoft, IBM) are either moving in shared spaces or building their own CWS to participate in knowledge creation processes at micro level and broaden their innovation pipeline (King, 2017; Spreitzer, Garrett, & Bacevice, 2015; Waber, Magnolfi, & Lindsay, 2014). Therefore, further studies to understand the knowledge dynamics among spatially co-located large firms with independent professionals can bring valuable insights for the companies outside of shared spaces.

## 7.7 Conclusion

The role of spatial co-location for knowledge sharing has been extensively studied in extant literature (Coradi et al., 2015; Hua et al., 2011; Rashid et al., 2006). However, most of the studies have considered the spatial co-location of teams, groups, or departments of the same organization. Our study extends this understanding and elaborates the role of spatial co-location on the knowledge sharing dynamics in shared spaces among independent professionals who have no shared affiliations. Based on the practice lens, our qualitative study shows that the institutionalized knowledge management services along with the spatial co-location bring physical and cognitive proximity among users of shared spaces that promote the exchange of tacit knowledge. Our study supports this assumption that spatial co-location influences communication patterns, which breed decontextualized knowledge, promote domain related knowledge sharing, and synthesize inter domain learning. The findings underscore the interrelatedness of actors and material artifacts that form socialization routines and generate multifaceted inputs to develop interpersonal relationships. However, these relationships can be positive or negative and can influence knowledge outcomes for independent professionals accordingly. Further studies on negative interpersonal relationships and their potential challenges for independent professionals in knowledge exchange process can bring valuable insights to a holistic understanding about spatial co-location inside shared spaces. Similarly, the trend of shared spaces is likely to rise, as many large companies are already planning to move in or build their own CWS. These spaces will challenge the existing stable spatial and temporal boundaries and steep hierarchies of traditional organizations and promote connectivity and flexibility. Our study is a first step to understand this emerging phenomenon. We foresee a big potential to learn from this new spatial form of working, which calls for more theoretical and empirical studies.

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## **Chapter 8: Permeability in Coworking-Spaces as an Innovation Facilitator**

### **8.1 Abstract**

Contemporary organizations develop porous structures and permeable boundaries to employ external knowledge and resources. On the one hand, permeability in organizations engenders fluidity which increases organizational capabilities through adaptability, diversity, and speed. On the other hand, organizations continuously redefine and reinvent their boundaries to remain stable and to exhibit self-identity. These two competing demands of organizations to simultaneously become fluid as well as stable are evident in modern shared workplaces where organizations share offices with other organizations and professionals. The purpose of this research is to analyze how permeability in shared office spaces influence the internal work structures and processes of members' organizations who have relatively fixed memberships, stable structures, and steep hierarchies. We collected qualitative data based on an inductive research methodology from the providers and users of a coworking-space. Our study concludes that participational autonomy, spatial and virtual connectivity and interrelational heterogeneity determine the level of permeability in a coworking-space. The space level permeability influences the work structures and task processes of members' organizations. Changeability in organizational processes engenders structural differentiation, decentralization, and ad-hoc work processes, which provide autonomy to the organizational employees or other independent users to define their work structures, task processes, and work routines. Organizations though maintain their rudimentary structures and permeable boundaries through self-regulatory resources. In this way, permeability enables organizations to leverage the differentiated capabilities of members within and outside of the space and facilitates knowledge exchange across boundaries and hierarchical levels that lead to innovative outcomes.

### **8.2 Introduction**

In recent years, contemporary organizations deviate from the formal form of organizing, consist of loosely coupled social actors (Dobusch & Schoeneborn, 2015). Hackerspaces, fab labs, accelerators, and coworking-spaces are all primary examples of such organizations where different actors (e.g., firms, entrepreneurs, and independent professionals) share office spaces without any shared affiliations (Cabral & Winden, 2018; Clayton, Feldman, & Lowe, 2018).

These modern forms of organizing have one thing in common, i.e. ‘fluidity’ that arises due to flexible memberships and permeable or open boundaries (Dobusch & Schoeneborn, 2015; Ringel, Hiller, & Zietsma, 2018). Permeability positively influences organizational design, enhances communication, and nurtures innovation (Colignon, 1987). In inter-organizational networks, permeable boundaries between partner firms improve in-and outflow of knowledge and contribute to faster diffusion of innovations (Saebi & Foss, 2015; Taylor & Levitt, 2007).

Some modern organizational theorists believe that fluidity downplays the role of boundaries in organizations’ processes and engenders spontaneous interactions, temporary and ad-hoc teams, and improvised processes instead of coordinated rules, specialized departments, and structured processes (Faraj, Jarvenpaa, & Majchrzak, 2011; Schreyögg & Sydow, 2010). Many organizational scholars even coined notions such as ‘blurred boundaries’ (Sorge, 1991) or ‘boundaryless’ organizations (Ashkenas, 1999) to describe the contemporary form of organizing. However, these notions contradict the fundamental definition of organization and were subsequently challenged (Heidenreich, Hiller, & Dörhöfer, 2018; Schreyögg & Sydow, 2010). For example, Schreyögg & Sydow (2010) state that the boundaries separate the organizations from relentlessly changing environment and organizations without boundaries are not conceivable (Leifer & Delbecq, 1978; Santos & Eisenhardt, 2009). On the one hand, contemporary organizations continuously redesign and reinvent their boundaries to cope with the challenge of environmental uncertainty (Santos & Eisenhardt, 2005). On the other hand, fluidity enhances flexibility in organizations through the increase in adaptability, diversity, and speed (Schreyögg & Sydow, 2010). Organizations thus continuously struggle to remain fluid through opening up their boundaries alongside maintain stability through forming rudimentary structures (Barberio, Höllerer, Meyer, & Jancsary, 2018; Dobusch & Schoeneborn, 2015; Schreyögg & Sydow, 2010). These two competing demands, i.e. ‘fluidity’ and ‘stability’ are evident in the phenomenon of coworking-spaces (CWS), which provide shared office spaces to a variety of users such as firms, entrepreneurs, and freelancers (Bouncken & Reuschl, 2018; Clayton et al., 2018). Coworking-spaces are formed and operated on the principles of community building (Garrett, Spreitzer, & Bacevice, 2017). Flexible memberships, lack of formalities, and shared values of openness, cooperation, and collaboration engender volatile and fluid communities in CWS (Castilho & Quandt, 2017; Clayton et al., 2018). The users inside CWS mutually participate in the process of constructing the sense of community in shared spaces, yet maintain their autonomy and self-identity (Garrett et al., 2017; Spinuzzi, 2012; Spinuzzi, Bodrožić, Scaratti, & Ivaldi, 2019).

Our aim in this research is to analyze the role of permeability on work structures and processes of different actors in shared office spaces. Specifically, our research addresses following research question: how shared office spaces with porous structures and permeable boundaries influence the internal work structures and processes of members' organizations who have relatively fixed memberships, stable structures, and steep hierarchies? Thereby, our study explains how permeability effects outcomes for the users of CWS.

Based on an inductive research methodology, we collected qualitative data from the providers as well as users of a single CWS (Corbin & Strauss, 1990; Strauss & Corbin, 1990). We employed the constant comparative method for qualitative data analysis (Miles & Huberman, 1994). Our findings indicate that participational autonomy, spatial and virtual connectivity, and interrelational heterogeneity determine the space level permeability of CWS. Permeability in CWS brings changeability in the processes and work structures of members' organizations and other independent professionals to define flexible work routines and task processes. Organizations and other users in CWS also use self-regulatory mechanisms to exhibit their self-identity and representations. The findings of our research suggest that the permeability enables users of CWS to leverage differentiated capabilities of members in- and outside the space for inter-functional knowledge transfers, joint experimentations, and collaborations that lead to innovative outcomes.

### **8.3 Theoretical Background**

#### **8.3.1 Organizational Boundaries and Permeability**

Organization's boundary is "the demarcation line or region between one system and another, that protects the members of the system from extrasystemic influences and that regulates the flow of information, material, and people into or out of the system" (Leifer & Delbecq, 1978: P. 41). The concepts of organizational boundaries are widely debated in view of different theoretical lens (Dobusch & Schoeneborn, 2015; Jacobides & Billinger, 2006; Santos & Eisenhardt, 2005, 2009; Schreyögg & Sydow, 2010). For example, (Santos & Eisenhardt, 2005) theorize organizational boundaries based on the conceptions of efficiency, power, competence, and identity. This classification explains the dimensions of organizational boundaries by governance mechanisms, institutions and facilities, bundles of resources and competitive advantages, and social contexts (Santos & Eisenhardt, 2005). Similarly, some

researchers, e.g. (Bucher & Langley, 2016) categorize the concept of organizations' boundaries into social, physical, temporal, and symbolic mechanisms. Boundaries were long considered as 'metaphorical walls around organizations'—act as a barricade or fortress that protect organizations from the external environment (Ringel et al., 2018). Later, with the increase in research on the influence of environment on organizations, scholars shifted their focus towards permeable organizational boundaries (Heidenreich et al., 2018; Jacobides & Billinger, 2006).

Permeability defines the degree to which an organization is open to influence from the external environment (Colignon, 1987; Leifer & Delbecq, 1978). Extant literature highlights that appropriately designed permeable boundaries in organization strongly and positively influence the organizational design, promote decentralization in structure, enhance strategic and productive capabilities, and improves the intensity of communication (Colignon, 1987; Jacobides & Billinger, 2006). Especially, opening up boundaries in the vertical architect of organizations enable efficient and effective operations, leverage differentiated capabilities, and nurture innovations along the value chain (Jacobides & Billinger, 2006). In inter-organizational relationships, boundaries of firms play a key role in sharing of resources or exchange of knowledge (Borys & Jemison, 1989; Saebi & Foss, 2015). For instance, (Taylor & Levitt, 2007) during their study on project networks conclude that permeable organizational boundaries between firms in a project network lead to faster innovation diffusion rate as compared to those project network, where boundaries between firms are impermeable. Permeability inside organizations regulates the information flow and intensity horizontally and spatially (Moran & Workman, 2005). Permeability effects not only procedural and political structures of the organizations but also influences interpersonal and inter-organizational relationships (Workman, 2005). Permeability thus promotes elimination of rigid and steep boundaries and encourages decentralization of decision making, occupational heterogeneity, mutual collaboration, and innovation (Colignon, 1987; Taylor & Levitt, 2007; Workman, 2005).

It is thus quite unsurprising that contemporary organizations are evolving towards permeable or porous boundaries, deviating from stable structures and steep hierarchies (Puranam, Alexy, & Reitzig, 2014). New forms of organizing such as coworking-spaces (CWS) is an extreme example of a modern form of organizing that consists of loosely coupled social actors. Lack in bureaucratic hierarchies, the absence of formalities, and permeable boundaries are the primary characteristics of these spaces that distinguish them from traditional organizations (Clayton et

al., 2018). These spaces provide shared office facilities to a variety of users, especially entrepreneurs (Bouncken, Aslam, & Goermar, 2018). Flexible membership plans, autonomy in respect of work structures and processes, and broad autonomous access to the shared facilities and infrastructure diminish boundaries and enhance communication, collaboration, and knowledge exchange (Bouncken & Reuschl, 2018). Lack of firm boundaries and absence of hierarchies and formalities form volatile routines and engender fluidity inside these spaces (Bouncken & Reuschl, 2018; Dobusch & Schoeneborn, 2015; Ringel et al., 2018). In the next section, we explain the concept of fluidity and what does it mean for contemporary organizations.

### **8.3.2 Fluidity in Contemporary Organization**

Dynamic markets, change in work structures, and development in information and communication technologies have dramatically influenced modern forms of organizing (Ringel et al., 2018). Contemporary organizations develop and design their competencies, structures, and work processes that enable fluidity and continuous change (Puranam et al., 2014; Schreyögg & Sydow, 2010). Many organizational scholars, e.g., (Eisenhardt & Brown, 1998; Puranam et al., 2014; Schreyögg & Sydow, 2010; Siggelkow & Rivkin, 2005) now focus on the organic fluidity which promotes networks, spontaneous interactions and improvise processes instead of hierarchies, formal rules, and specialized departments. The emphasis on becoming fluid organizations revolves around the idea of the increase in organizational capabilities through adaptability, diversity, and speed (Schreyögg & Sydow, 2010). The notion of fluidity challenges the concept of boundaries that separate the organization from its environment (Barberio et al., 2018; Schreyögg & Sydow, 2010). Even, some organizational scholars used the term ‘blurred boundaries’ (Sorge, 1991) or even ‘boundaryless’ (Ashkenas, 1999) to explain the contemporary forms of organizing. However, these terms contradict the fundamental definition of organization and were subsequently challenged. For instance, (Schreyögg & Sydow, 2010) explain based on system theory that the basic premise of a social system is its interaction with the environment. Boundaries segregate the system from its environment and organizations are also a form of social system and “are simply not conceivable without... boundaries” (P: 1253).

Fluidity enables organizations to quickly respond to the changing environment (Barberio et al., 2018). At the same time, organizations continuously redesign and reinvent themselves, causes

‘fuzzy or eventually dissipating boundaries’ (Schreyögg & Sydow, 2010). Some scholars also claim that due to changing or blurring boundaries, sometimes it becomes difficult to distinguish organization with the environment (Barberio et al., 2018; Dobusch & Schoeneborn, 2015; Schreyögg & Sydow, 2010). For instance, (Dobusch & Schoeneborn, 2015) present the case of ‘Anonymous’ in online communities, where on the one side, Anonymous acts on behalf of the community hold an identity whereas, on the other hand, boundaries between Anonymous and community are not obvious and clear. Online communities are the extreme form of fluidity in organizations, which have been investigated by various scholars (Dobusch & Schoeneborn, 2015; Faraj et al., 2011). However existing literature unable to explain how fluidity works in shared office spaces, where people from different walks of life share office and social spaces without any shared employment affiliation, communicate, collaborate, and form communities.

Coworking-spaces (CWS) are one of the extreme case of such volatile communities, which arise due to open access to a variety of users including firms, entrepreneurs, and freelancers (Clayton et al., 2018). Our study based on CWS explores and analyzes the role of permeability on work structures and processes of different actors. We specifically focus on the debate of ‘fluidity and stability’ in modern form of organizing (Dobusch & Schoeneborn, 2015; Faraj et al., 2011; Schreyögg & Sydow, 2010) and analyze how shared office spaces with porous structures and permeable boundaries influence the internal work structures and processes of members’ organizations having relatively stable boundaries by means of fixed memberships, hierarchies, and structures.

## **8.4 Research Methodology**

### **8.4.1 Research Design and Setting**

Coworking-spaces (CWS) provide an ideal setting for addressing our research quest of permeable boundaries in shared office spaces, where many organizations share offices and social spaces with independent professionals (Vidaillet & Bousalham, 2018; Waber, Magnolfi, & Lindsay, 2014). This contemporary form of organizing brings together people from diverse personal and professional background (King, 2017; Spreitzer, Bacevice, & Garrett, 2015). Flexible membership plans, lack of formalities, and broad access to the facilities are major characteristics associated with CWS that distinguish them from the earlier form of shared office spaces such as incubators (Bouncken & Reuschl, 2018; Clayton et al., 2018). Coworking-

spaces are also unique in this respect, as they converge businesses based on the principles of community building and cooperation while providing full autonomy and flexibility in respect of their internal business operations (Bouncken & Reuschl, 2017; Garrett et al., 2017). Membership of CWS is not limited to a particular organization or profession (e.g., entrepreneurs) but independent professionals (e.g., freelancers, consultants, or artist) or externals (organizations or individuals outside of CWS) can also join and participate in these spaces (King, 2017; Nagy & Lindsay, 2018; Spreitzer, Garrett, & Bacevice, 2015). According to a recent survey, more than one million people consisting of different professional background are working in 12000 CWS all around the globe (Foertsch, 2016). On the one hand, this unique combination of various professions creates synergies for users (Vidaillet & Bousalham, 2018), while on the other hand, it creates fluidity in organizing (Spinuzzi, 2012). We argue that the fluidity in CWS arises due to the permeable boundaries and porous structures. Though extant literature indicates the fluidity in CWS (Fuzi, 2015; Reuschl & Bouncken, 2017; Spinuzzi, 2012), yet it is unable to explain how fluidity emerges in the first place and how organizations enact in the permeable environment.

We employ inductive research methodology which is a widely accepted research approach in such cases that lack substantive theory (Corbin & Strauss, 1990). Our research is based on a single case study (Cassell & Symon, 2004). An in-depth study is an appropriate approach to study a specific and complex phenomenon within a real-world context (Strauss & Corbin, 1990; Yin, 2013).

Our study is based on Deltaspaces (pseudonym), a CWS located in San Francisco, northern California United States. Deltaspaces started its operations at the beginning of 2013 on an area of 30,000 square feet in the technological center of San Francisco. At the time of this study, Deltaspaces accommodates members of around 56 organizations consisting of employees from Fortune 500 companies, startups, entrepreneurs, venture capitalists, and industry experts. Deltaspaces offers open plan offices with (or without dedicated) desks, social spaces (kitchen and café), conference rooms, and large event space. It also offers fixed telephone lines, high-speed internet, and secretarial services (e.g., post boxes, receptionist). Since 2016, Deltaspaces also builds a separate hardware lab equipped with 3D printers, computerized numerical control (CNC) machines, virtual reality and augmented reality equipment and other useful devices. Two directors, three venture analysts, a relationship manager, and a facilities coordinator form the core team of Deltaspaces. Deltaspaces has flexible membership plans starting from daily

passes to monthly and yearly packages. Deltaspaces provides an interesting context for our study, as the entire space consists of only open plan offices along the hallway with a diverse community.

### 8.4.2 Sample Selection

We adopted a purposive sampling technique for selecting the respondents for our research in Deltaspaces (Morse, Barrett, Mayan, Olson, & Spiers, 2002). We considered the principles of ‘appropriateness’ and ‘adequacy’ (Gaskell, 2000) while seeking ‘maximum variation’ in sample selection (Seawright & Gerring, 2008). Unlike random sampling, this approach is more effective, as it not only provides the information about the general trends of the population but most importantly also inform about the contrasting cases (Guest, Bunce, & Johnson, 2006).

*Table 8.1- Interviewees’ Characteristics*

<b>ID No.</b>	<b>Age</b>	<b>Gender</b>	<b>Occupation</b>	<b>Industry</b>
1P	28	Male	Facility Coordinator	Coworking-space
2P	28	Female	Co-Director	Coworking-space
3P	29	Male	Co-Director	Coworking-space
4U	29	Female	Journalist	Media
5U	28	Male	VP of Product Management	Engineering
6U	29	Male	Innovation Consultant	Health Care
7U	32	Female	Account Manager	Big Data
8U	33	Male	Software Engineer	Information Technologies
9U	28	Male	Software Engineer	Information Technologies
10U	30	Female	CEO/ Co-Founder	Business Consultancy
11U	32	Male	Co-Founder	Business Consultancy
12U	38	Male	Director/Founder	Media Technologies
13U	42	Male	CEO/ Co-Founder	Information Technologies
14U	27	Male	CTO	Artificial Intelligence
15U	33	Female	CEO	Film
16U	28	Male	Co-Founder	Communication Technologies
17U	29	Female	Relationship Manager	Human Resources
18U	35	Male	Founder	Web Development
19U	24	Male	Marketing Manager	Marketing
20U	32	Male	Founder	Financial Services
21U	31	Female	Customer Services	Software Development
22U	34	Male	Founder	Hardware

At the start of this process, we formed two groups of respondents. The first group consisted of the managers and facilitators at Deltaspaces while the second group consisted of the users of

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Deltaspaces. Out of total 23 informants, three informants were from the Deltaspaces including director, venture analyst, and facility manager. User group was very diverse including employees of fortune 500 companies, venture capitalists, entrepreneurs, and freelancers. We deliberately selected the extreme cases that provide supporting and diverging pieces of evidence to contribute to our theory building approach. Table 8.1 provides the characteristics of interviewees. To ensure anonymity, we used ID number ('P' indicates provider while 'U' indicates users of Deltaspaces) instead of real names of the respondents.

### 8.4.3 Data Collection

To examine the permeability and its role on the mechanisms and processes on the organizations incumbent in Deltaspaces, we collected primary data through observations and semi-structured interviews (Corbin & Strauss, 1990; Lee, 1998). We also collected secondary data from websites, companies' brochures, or other relevant material such as newspaper articles for developing a more profound understanding of the cases as well as for triangulation of the evidence (Golafshani, 2003; Yin, 2013).

During our six months stay at Deltaspaces, we observed and analyzed the working practices as participatory observers (Neergaard & Ulhoi, 2007). We attended social events and training programs arranged in the event space of Deltaspaces. We informally participated in discussions with the participants, trainers, and coaches and recorded their comments and feedback in our field notes. In the second stage, we developed two semi-structured interview guidelines based on our observations and existing literature (Guest et al., 2006). In the first place, we conducted interviews from the management of Deltaspaces. Interviews were conducted individually, and informants were asked several questions on different subjects such as their philosophy behind Deltaspaces, expectations from the community, spatial design and facilities of the space, future extension plan. Secondly, we conducted interviews with the users of CWS including mostly founders and CEO of ventures, entrepreneurs, employees, and freelancers. We began with the general questions such as their profession, services rendering from Deltaspaces, business models and then started digging deeper about the role of permeability and how it influences organizational level mechanisms and its subsequent influences on the outcomes of their businesses. Questions were very open-ended, which encouraged interviewees to speak at length (Cassell & Symon, 2004).

All the interviews were recorded and transcribed verbatim on the day of the interview. Interviews record were also shared with the respondents to seek their confirmation on responses. Overall, the interviews lasted between 40 to 90 minutes with an average duration of 56 minutes.

#### **8.4.4 Data Analysis**

We collected and analyzed the data simultaneously adhering to the guidelines of the constant comparative method (Glaser, 1965; Strauss & Corbin, 1990). This approach is based on the iterative process of data collection, comparison, reduction, conclusion, and subsequent verification (Miles & Huberman, 1994; Strauss & Corbin, 1998). We managed our field notes and interviews transcripts through qualitative data analysis software, i.e. MAXQDA 12.

In the first stage, we carefully and independently read all the field notes and interviews to identify the similarities, shared patterns, and differences among informants. Akin to the notion of open coding techniques (Strauss & Corbin, 1998), two researchers separately started coding all the field notes and interviews. Our data suggested these codes rather than inspired by any existing theory or literature (Miles & Huberman, 1994). These codes were used to define first order concepts (Gioia, Corley, & Hamilton, 2013; Langley & Abdallah, 2011). Concurrently, based on the similarities and differences among first order concepts, we defined second order themes (Strauss & Corbin, 1990). Based on the emerging relationships between data and existing theoretical concepts, we aggregated second order themes to define higher order theoretical dimensions (Gioia et al., 2013). Figure 8.1 depicts the structure of the data analysis process.

We took several measures to ensure the validity and reliability of our findings (Morse et al., 2002). For example, transcripts of the interviews were shared with the respondents for confirmation. Secondly, codes were internally discussed and revised, after that, an external outsider coder separately evaluated our coding schemes. We also pay particular attention among the relationships and linkages between emerging concepts, themes, and dimensions. The outcome of our data analysis is a model explaining how organizations and independent users enact in the permeable environment of CWS.

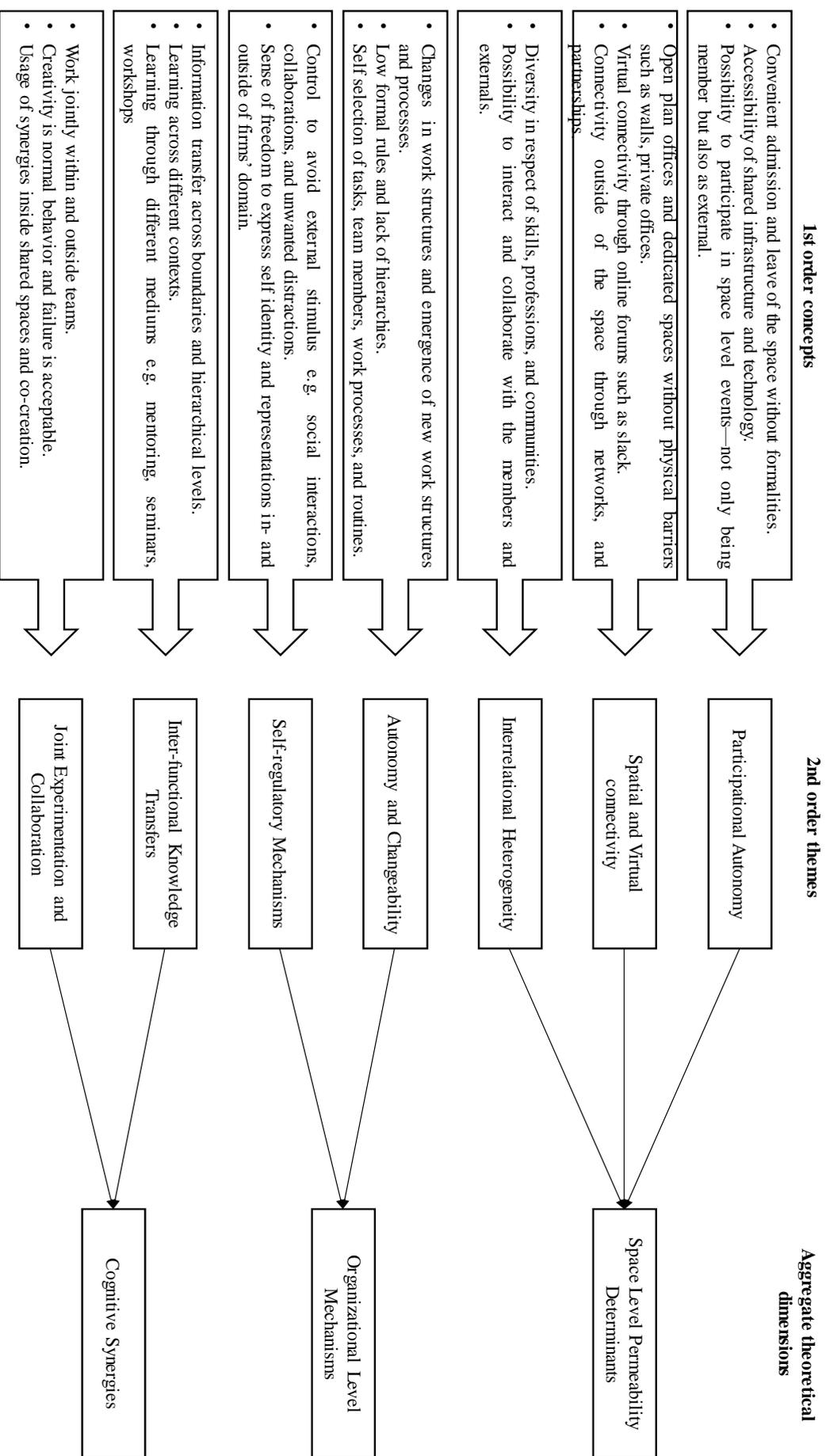


Figure 8.1- Structure of Data Analysis Process

## 8.5 Findings

Our findings indicate the specific mechanisms that how permeability in Deltaspaces and its members' organizations create cognitive synergies for the actors inside the space. First of all, we identify the determinants of permeability in Deltaspaces and how these determinants engender fluidity. Second, we explicate that how organizations inside Deltaspaces maintain the balance between fluidity and stability. Lastly, we highlight the role of permeability and its influence on cognitive synergies that lead to innovation.

First, we present our findings in detail in the following section, then we explain our main contribution in the form of a process model.

### 8.5.1 Space Level Permeability Determinants

Participational autonomy, spatial and virtual connectivity, and interrelational heterogeneity are three major factors which determine the permeability in CWS. Delta space promotes diversity by providing autonomous access to a variety of users including teams from large organizations, entrepreneurs, venture capitalists, and freelancers. On the one hand, this broad autonomous access to space induces participational autonomy among members, while on the other hand, it develops occupational heterogeneity. Interactive spatial design and Slack group enhance spatial and virtual connectivity of the users of Deltaspaces, which help to build organic and natural relationships.

#### *Participational Autonomy*

Deltaspaces are open to everyone. There are no restrictions on entry or admission of individuals from a specific industry, profession, age, gender, or race. Facility coordinator of Deltaspaces explained: "We are pretty open to anybody coming into space. It is just... Do they fit into the community, are they respectful individuals. It comes down to like almost personality. If the people are considerate of each other" [1P]. The formalities to join the Deltaspaces are very limited, and there is no minimum contract period to stay in the space. Users can even get a day pass and can benefit from the serendipitous environment of the space. Similarly, users who have long-term contracts with the Deltaspaces can also leave the space easily. For example, we asked one of a senior employee of an organization in Deltaspaces that 'how easy or difficult or even possible for them to leave the space'? Our informant responded: "That is basically so

flexible. So, if we want it, we could leave next month like get a proper office space, like a normal office or as mentioned we just get more tables” [U3].

Members of Deltaspacespace can also benefit from the shared facilities and infrastructures such as printers, scanners, and fax machines. Deltaspacespace also has a separate hardware lab where members can use the latest equipment. A software engineer in Deltaspacespace explains how facilities offer in Deltaspacespace matters to him: “for example, they have the 3D-printers, I have never used them, but I see them and I could use them, I guess if I want to... They have like the virtual reality set up here which I had not used before, and I was kind of addicted to it for about six months. They also have electronic setups over here as well, and I certainly get into kind of doing little hobby electronics, and it is cool to have access to all that” [6U]. Deltaspacespace also ensures that these shared resources are available for everyone in the space. We asked facility coordinator in Deltaspacespace that how they ensure the proper usage of resources? He explained: “since all the resource that we have are available to everybody, it is important, that people recognize that although they have unlimited access to everything that we offer, they are shared and they are limited resources. So, they cannot just be using all resources for themselves. If somebody were not acting that way, we would not be able to operate within this place” [1P]. Therefore, Deltaspacespace guides their members to proper handling and usage of resources and induce the strong idea of community.

Deltaspacespace provides social opportunities by arranging events in their 9000 square feet event spaces where users can participate in informal gatherings. These social events provide an opportunity to connect internal users of Deltaspacespace. They can also involve with the externals inside the space, as Director of the space explained: “...Something else that is helpful is that we have tables, where people with their guests can work and then everywhere else most members have dedicated desks, and there are a few members that have just flexed desks because they are only here a couple of times a month.” [13P]. Deltaspacespace thus offers participational autonomy and seamless process to join or leave the space to its members as well as externals.

### *Spatial and Virtual Connectivity*

Spatial design of Deltaspacespace is based on the philosophy of ‘openness’. Deltaspacespace only consists of open plan offices aligned in a horizontal layout. Facility coordinator explains the design of the space in the following words: “It is a completely open floor plan. There are no private

offices. We do have conference rooms for like meetings, and if people need to make calls and if they need a little more privacy, we do have that. But all the desks are open, so there are no walls to block anybody's views from each other" [1P]. Open plan offices bring productivity and efficiency of incumbent organizations, as they reduce physical barriers and enhances face to face communication. We also ask from our informants about their views on large open plan offices without private offices. Most of the users like the layout for better coordination and efficiently work processing. However, some of the users also highlight the noise and distortions. For example, one journalist in the space said "I like the open space here in Deltaspacespace. I like that there are no doors. I also think one of the things that sometimes we need to think about...sound, because it is all so open" [2U]. To solve the problem of noise, Deltaspacespace has two large designed areas, which are relatively quiet as compared to general open plan offices. Facility coordinator reported on the functions of these areas: "There is another area, where anybody could work, long desks, and couches [for joint working]. We have a giant indoor space. A lot of teams work there, if they cannot book a conference room, (if it is like too busy or if they just need a little privacy), they go to that space, so that is also a communal area. The zen area is for everybody's use, although that is for like quiet working. So, it is supposed to be like working by yourself or just taking a nap, but it is not for like socializing" [1P]. In this way, Deltaspacespace provides a professional working environment in the form of open plan offices which enhances spatial proximity among users.

Externals such as organizations operate outside of Deltaspacespace (e.g., corporations, venture capitalists, financial institutions, universities) can also connect with the community in two different ways. First, Deltaspacespace arranges social and learning events, where externals can participate and share their knowledge from outside. Director of the space explained: "In the event space, there are events that we host because people from outside the community come into the office and so that is where they can chat with people, who are not part of Deltaspacespace, who are externals" [13P]. Second, universities' students can also participate and work in Deltaspacespace, as venture analyst explained: "We worked with a couple of universities. We worked with Miami University, and what's the other one, I cannot remember the name, but it is a pretty big business university. So, we collaborate with them...we provide interns from those universities to our start-ups, and they get free space here if they use those interns, and then we also host events for those universities in the coworking space" [16P].

Besides spatial connectivity, Deltaspaces also connects the members of incumbent organizations virtually. The prime example of users' connectivity is through 'Slack' group of Deltaspaces. One of the CEO of a company in Deltaspaces highlighted the benefits of using Slack and other tools for communication in the space: "We never used Slack until here. So that was one of the new introductions of how to make communication more efficient and in one place versus just emails, communicating through emails...then just being open to the different ways of conferencing, video things like that has helped. Now we have a 'conference call provider', that we use from time to time for meetings with our side partners" [12U].

### *Interrelational Heterogeneity*

Deltaspaces hosts diverse community in respect of age, gender, race, and profession. There are also a considerable amount of internationals working in the space, as a journalist from Egypt rightly pointed out: "I like that there are people from all over the world in here, like international members, so that is great as a foreigner" [2U]. Another founder of a company explained the diversity at length in Deltaspaces: "It is quite diverse. I think ...that is what coworking spaces attract...Generally speaking in tech and the Silicon Valley, there is still like male dominance, but if you look at the coworking space here, there is a good amount of female entrepreneurs as well, which I think is great... and then, I have also seen people with disabilities... For example, we have a company, where we have deaf people working. What is also nice from a certain content and company standpoint, there is a lot of diversity. You have companies who do something around weed ...and then there is a company that does wedding dresses and like so... There are more focused on tech start-ups and stuff like that and then just a very wide range of companies... I think there is a good mix, so I would say that [diversity] is actually quite well established here at Deltaspaces in San Francisco." [14U].

On the one hand, this great mix of professions provides an excellent opportunity for users to interact, collaborate, and learn from each other. On the other hand, the task of bringing together people from diverse background and induces the shared norms and values to form community is also challenging. Deltaspaces uses three different types of mechanisms to develop community and promotes collaboration inside their space. Managing partner of Deltaspaces explained these three mechanisms: "...I think now we have a pretty vibrant community and there is a good degree of collaboration. Now the way that we facilitate collaboration is in three different ways. One is by doing community events so that people can just interact and get to know each other.

The second thing is having Slack as a collaborative tool so that people can reach out and get help from one another. Third, we do a lot of ad-hoc connecting. Deltaspaces' team knows other teams well and can make connections, where there is relevance or need, and so that is primarily how we are doing it. When teams join Deltaspaces, we sit down with them, typically when we have a meeting with them to understand better what their needs are, and then we try to stay abreast of their needs by meeting with them like every six months or so" [13P]. Our informants also agree with the community logic and interrelational possibilities that Deltaspaces offers to its members. For example, one informant remarked "I think, it [referring Deltaspaces] is very open like the way that this space is set up, I know different ones who have like offices, or it is more like secluding, it is more excluding in other ones. I think Deltaspaces is good...because... first people there are very, very friendly and helpful [referring community and team] and then second like just the way that it is set up. I think it encourages more collaboration and more talking to other people" [11U]. Open and collaborative environment, social events, along with the proactive approaches of Deltaspaces provide socialization and networking opportunities. However, establishing relationships and collaborations is entirely dependent on the users. Some users are very active in participating in community events for socializing and networking while others focus on their tasks. The flexible working environment of Deltaspaces provides autonomy to their users to work and socialize without any external pressures.

### **8.5.2 Organizational Level Mechanisms**

In space level analysis, we explicate and analyze how Deltaspaces provides participational autonomy, spatial and virtual connectivity, and provides opportunities to develop heterogeneous relationships. In this level of analysis, we dig deeper and analyze how permeability at space level influence organizations' level mechanisms in shared office spaces. Our organizations' level analysis explains how space level permeability determinants influence organizational level permeability, and then we highlight how organizations control their boundaries in a permeable environment.

#### *Autonomy and Changeability*

The permeable environment of Deltaspaces shapes internal work structures and processes of incumbent organizations. The inherent fluidity in Deltaspaces influences the organizations to change their work structures or the emergence of new work processes. We use the term changeability to define the flexibility and adaptability of organizations to survive and excel in

emerging fluid work environment. For example, we asked CEO of an organization that how much their work practices changed and influenced by the environment of Deltaspaces since they moved here? She replied "... a lot. Everything changes. Actually, I feel that everything changes every two to three months..." [12U]. Another relationship manager elaborated the change in work processes in the following manner: "Things are changing pretty often, whether it is bringing on new team members or focusing on different goals... It is definitely kind of a dynamic environment, where you are changing them, always trying to keep up" [15U]. While working in the presence of other teams in open plan offices, employees inside these organizations also get influence, learn, and adopt the behaviors from the serendipitous working environment of Deltaspaces. For example, an innovation consultant working in an organization explained: "I think with the mindset of being considerate with shared spaces and shared places ... I just had to be a little bit more observing about how others behave and again adapt to that" [4U].

Changeability in organizational processes engenders structural differentiation, decentralization, and ad-hoc work processes. It provides autonomy to the users of organizations to define their work structures, task processes, and flexible working routines. For example, a Journalist from a media organization stated: "In my company, no one tells me what to do, and no one tells me when to come. I have my own task, and I have my own deadlines to meet it, and I just need my tasks and deadlines, that is it" [2U]. The flexible work environment of Deltaspaces encourages organizations to adopt flexible routines and work structures for their employees. For example, a product manager of an engineering team elaborated how they start with the formal processes with the new employees and when they learn, they can decide their work processes: "We are not as formal but currently we have to build a bit more formal processes. Because we hire people and they need to quickly learn of how to do things and... we just make people understand the way we think and then once people understand the way we think then they know how to act and that is the process. They can figure the process out all by themselves, but that takes time..." [3U]. Unlike traditional organizations, contemporary organizations have flexible routines, as a software engineer elaborated: "It definitely makes me happy that I have a boss that does not care, 'what time I work'... If I want to start coming in and doing 9:00 to 5:00 or whatever, he usually does like 10:30 to 6:30. If I want to come in earlier and leave earlier... I am glad that it is an option. It definitely adds some satisfaction" [7U].

Open plan office environment of Deltaspaces enhances communication within and outside of the team. It eliminates the communication barriers and challenges the thick bureaucratic hierarchies and firm boundaries. For example, one of the employees of a firm stated: "...I sit ... next to my VP, which is a really cool way to have access to someone ... 15U further explained her working in other organizations, which do not offer open-plan offices: "I worked at companies before, where you are very separated, and I think things take longer to get done. You might not be able to accomplish things that you want, and it frustrates you quickly". Moreover, she reported that how efficient and useful is it to directly access each other "In that free forming environment... I have my entire company sitting right there on the floor; it is pretty cool that you can go to anyone at any time" [15U]. Space level permeability thus influences organizations level processes and engenders autonomy in respect of flexible routines, work structures, and task processes.

### *Self-regulatory Mechanisms*

Deltaspaces provides platforms (e.g., social events, open-plan offices, social spaces) for the organizations to enhance inter- and intra-teams' communication and collaboration. This collaborative and highly permeable environment can also be challenging, as employees or teams of one organization are sharing the office and social spaces with the members of other organizations. Excessive exposure to the environment can create situations like distractions, distortions, knowledge leakage, and mobility of employees from one organization to other. To avoid situations like such, organizations use self-regulatory mechanisms to defend their autonomy and independence. Deltaspaces also offers control environment (such as meetings and conference rooms) to their users for discussing the internal functions and processes where they can isolate themselves to avoid social interactions and distractions. For example, a founder of an organization stated: "I think that you have to really shun people to stay focused, like for me, I will get into a zone [quiet area]. If I really need to get something done, someone will come up to or you are kind of specifically play introverted, which I hate doing, but everyone does it here" [19U].

The permeable environment in Deltaspaces provides the opportunity for collaborations while at the same time provides autonomy and independence by incorporating processes such as 24/7 hours' accessibility, autonomous selection of tasks, teams, and work processes. As a CEO of a company pointed out: "I mean I control my whole work environment and space and how I do

my schedules here and things like that. I mean even though it is a coworking space and shared space (I mean it is a different environment), I come and go as I please. I do not report to anybody here anything, I report to myself” [12U]. Deltaspaces also provides freedom to their organizations to express self-identity and representation in and outside of their domain. An employee of a large company explained how they collaborate while at the same time maintain their self-identity by focusing on their work: “No, we are pretty independent. We are a small team...here in San Francisco. There is about twenty of us. I would say that people like to like network and learn about each other’s companies and I think even one of our account executives on the sales team has like chatted with other teams about maybe using our product, but we work pretty independently. I would say if people have questions, our team is more than happy to kind of like jump in and assist, but we are pretty heads down, focused on our own company and our own clients” [15U]. Despite sharing work and social spaces, organizations also have their own rules regarding what to discuss or share with the members outside of their teams. For example, we asked a software engineer what sort of information he can share with other users outside of his team; he replied: “I think I would share everything besides certain things that are considered secrets ... [e.g.,] I would exchange everything in terms of like what tools we use, which tools have been successful...There is certain stuff ...that I cannot share like...secrets from running on different ad networks that I feel like I should not reveal [7U].

The environment in shared spaces is highly permeable, and it influences the work structures and task processes of the organizations. There is also inherent volatility and fluidity which continuously brings change in the environment in respect of the community, cooperation, and collaboration. Organizations thus maintain and protect their boundaries and exhibit self-identity and representations through self-regulatory mechanisms. These boundaries are strong enough to maintain their internal rudimentary structures, yet sufficiently permeable to seek knowledge and resources from the environment.

### **8.5.3 Cognitive Synergies**

Cognitive synergies are generated through collaboration among users within and outside their teams. Deltaspaces provides a serendipitous working environment in the form of shared offices and social space where users can directly interact with their team members and members of other organizations, socialize, collaborate, and learn from each other. This serendipity enhances their creativity and boosts their morale and vision to work on creative and novel areas. Lack of

physical and cognitive barriers and absent of formalities and hierarchies enhance inter-functional knowledge transfers and open horizons for joint experimentation and collaboration.

### *Inter-functional Knowledge Transfers*

Deltaspaces acts as an intermediary between different stakeholders (such as firms, entrepreneurs, freelancers) and provides them with a platform to interact, collaborate, learn, and co-create. Director of the Deltaspaces described this fact in the following way: “I think we are at the intersection of coworking spaces and innovation advisory firms and accelerators because we do all those things [13P]”. Venture analyst of Deltaspaces further explained how they offer different sort of learning opportunities for different users: “For start-ups, our goal is to help them grow their businesses by providing them with a productive workspace, by providing them ... office hours with investors, legal advisors, human resource experts, and to have them a strong community... and community is important for pure learning, for staying motivated, for connections [16P]. Deltaspaces also offers services to employees affiliated with large corporations and act as a bridge between startups and corporations. Venture analyst explained: “For corporations, we help them to identify start-ups to partner with or invest in..., we help them to stay updated on what is happening in different industries by doing industry reporting, and we help them grow their brand in Silicon Valley, so that start-ups will use their technology or will go to them with an investment opportunity” [16P]. Such services are also available for other users such as freelancers or independent professionals.

Deltaspaces offers the environment of openness and collaboration for their users. Space provides a big kitchen, and social areas equip with long tables and chairs where people can interact and socialize in a stress-free environment. This environment helps to share ideas and transfers learning across different context. For example, an employee of a company described how they could learn and share knowledge: “...It is kind of organic when you go to the kitchen and then have lunch with someone and meet them and talk a little bit about their background and things like that...I am definitely having awesome discussions and learned a little bit more about things...I am personally interested in just more organically in the space” [15U]. Similarly, the management of Deltaspaces is also active in community building activities. They arrange community lunches, dinners, and social events where people can discuss their ideas, issues, and problems in an informal and casual environment. These opportunities provide a useful environment for all the users but especially attract nascent and members from small teams, as

highlighted by an employee of a company: “You have a coffee, or during the Wednesday bagel breakfast or the Thursday happy hour, then you have a conversation with someone, and they might give you a good idea of how you can solve the problem differently. Some conversation that you might not have had, in case you only had your small team in an office... it is a kind of shut off from everyone else” [3U].

Independent freelancers or members who just started their businesses can especially benefit from the shared learning experiences of a large community. They can share knowledge and learn across different contexts or through different mediums such as mentoring, workshops, and seminars. The environment itself plays an active role for knowledge sharing across boundaries and hierarchical levels, as described by an innovation consultant: “It is very important for me personally as I begin a new direction in my career in this industry. So being able to see how other companies are doing things or talking to other team members and learning how they are doing things is really helpful and is providing me with some direction, ideas in terms of how things can be incorporated into my team...” [4U]. In contrast to the traditional working environment of an organization where employees can only interact with their team members, Deltaspaces provides a diverse working environment to its users. It opens horizons for its users to interact and exchange knowledge with different teams which bring new knowledge and learning. The serendipitous environment of the space evokes creativity while social and learning events provide opportunities to share and transfer knowledge across boundaries.

### *Joint Experimentation and Collaboration*

Start-ups, corporations, accelerators, domain related experts, investors, and mentors all congregate in Deltaspaces for innovation. Deltaspaces converges all these different stakeholders on a single platform and creates the opportunities for cooperation and collaboration. Venture analyst of Deltaspaces stated that collaboration in Deltaspaces arises synthetically and spontaneously. Synthetically, the team of Deltaspaces introduce and bring together relevant stakeholders where they can discuss their mutual areas of interests. While spontaneous collaboration arises due to the synergetic climate of the space (such as meetups, community events, and learning workshops) where relevant stakeholders interact and find their own ways for mutual collaboration.

Shared office spaces, diverse community, and open door policy provide easy access to the users to approach and discuss ideas, problems, and feedback. Deltaspaces opens horizons for creativity and reduces the knowledge and skills constraints. As a marketing manager explained: “It is a really innovative space, and then there are people from all over the world (diversity) ... and then it is really easy to ask people that are not from your team and your company about something. It is really helpful to have people from outside of the company to ask about something specific, because the people within the company, they already have a really narrow-down view on it...” [18U].

Collaboration in Deltaspaces arises at different levels. First, users can collaborate and can formally involve with the teams of other organizations in the process of co-creation. Organizations reduce their skills shortage by collaborating with other partners from the space. As an account manager of a company stated: “I think the biggest benefit of the space is the ‘relationships’ that you establish and that lead to the partnerships with the people outside of the company” [5U]. Even, Deltaspaces can help members to form a connection from the firms outside of the space, as facility coordinator reported: “There is also the network that we have... and our co-directors are all over the place like traveling, going to different conferences and meeting with different founders and starters. Their network is extensive. We also worked with corporations as an innovation partner. So, we create decks for... mutual collaboration” [1P]. Secondly, users can jointly work to solve a problem which is an informal arrangement, as a software engineer exemplified: “The typical collaboration is kind of like somebody bringing over their laptop to somebody else’s desk or somebody going over to somebody else’s desk...saying, ‘this is what I am doing, this is what I am working on,’ at least with me, because I do software development, so many times there is other software developers that are working on similar things, or I am...So, if I have a problem, I have him co-worked or checked it out, or I look at something that he is working on, so it is just kind of getting up and walking around at their workspace [6U]. Third, users can seek ideas, comments, or feedback from their diverse community. For example, another software engineer explained: “One example of the collaboration that happens ..., some company is doing user testing, and they want people to come to test it, and so they ask and then, you know, the people who test can give feedback...” [7U]. Deltaspaces invokes the values of creativity and innovation. Presence of users from different background who are also struggling with novel ideas join hands together. They can share their knowledge, skills, and resources to work on creative and innovative projects.

### 8.5.4 A Model of Permeability in Shared Spaces

In the findings section, we explain different concepts, emergent themes, and dimensions based on the data of Deltaspaces (see Figure 8.1). Our framework further elaborates the linkage and relationships between themes and dimensions. Figure 8.2 depicts a skeletal process explaining how permeability in shared spaces leads to innovative outcomes for the organizations and independent professionals.

Our analysis based on the data from Deltaspaces shows that permeability in shared spaces exists at two levels. First, space level permeability can be determined through participational autonomy of the users, their spatial and virtual connectivity, and space-driven efforts to create heterogeneous relationships among users. Deltaspaces offer flexible membership where members can conveniently participate and leave the space without involving in many formalities. Being a member of the space, users can use a full range of facilities and shared infrastructures — this open access to space as well as its allied facilities and shared infrastructure help to develop a diverse community in Deltaspaces. Spatial connectivity in the form of open-plan offices without any physical barriers and linkages with external partners (including corporations, financial institutions, and universities) also bring relevant stakeholders together. Online forums such as Slack virtually connect members of the Deltaspaces. This physical and virtual connectivity offer an open corridor to different members and externals of the Deltaspaces to share information, ideas, and problems. Diversity in respect of skills, professions, groups, and communities and possibility to interact and socialize help members to develop relationships within and outside of the space.

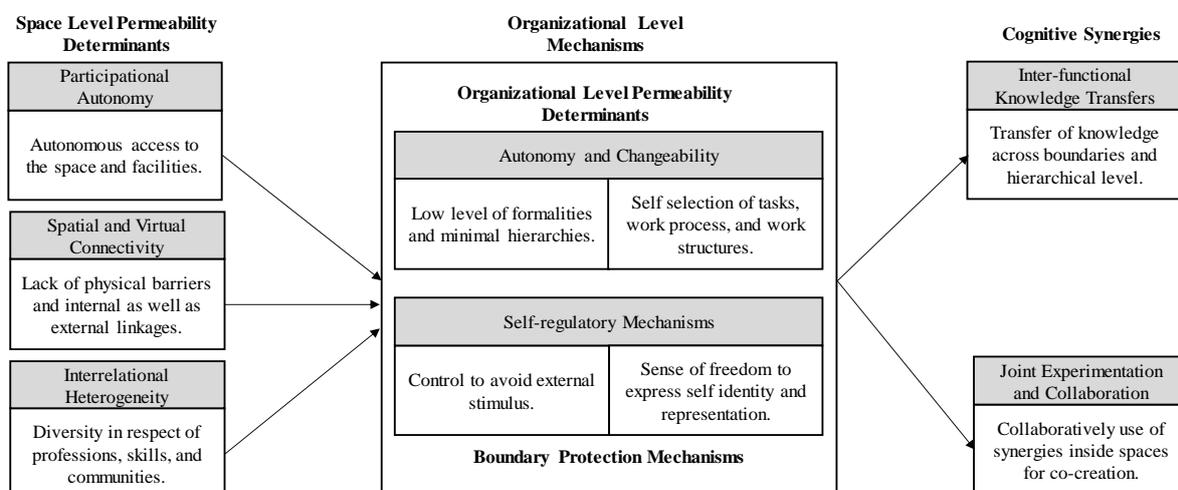


Figure 8.2- A Model of Permeability in Coworking-spaces

Second, space level permeability influences the work structures and processes of organizations working in shared spaces. Organizations in shared spaces have less formal rules and regulations, low level of hierarchies and provide autonomy to their employees for self-selection of routines, tasks, team members, and work processes. Organizations inside shared spaces also maintain their boundaries to protect self-identity through self-regulatory mechanisms. Our analysis highlights that space and organizational level permeability determinants enable transfers of knowledge across boundaries and hierarchical levels and provide learning opportunities to the users across different contexts and through different mediums. Permeable boundaries and highly porous environment support users of the shared spaces to work jointly within and outside their teams for collaboration and co-creation. Learning and knowledge sharing opportunities along with the synergetic climate of joint experimentation and collaboration lead to innovative outcomes.

## **8.6 Discussion**

Our analysis identifies the role of permeability on work structures and processes of different actors in contemporary organizations. Based on an inductive research approach, our findings explicate different factors that determine the permeability in CWS and also answer the question that how permeability impacts the internal work structures and processes of members' organizations. The findings suggest that permeability is a driver for innovation in CWS. Participational autonomy, spatial and virtual connectivity, and interrelational heterogeneity determine the permeability at space level. The permeability in CWS influences the work structures and task processes of members' organizations. This changeability in organizational processes engenders structural differentiation, decentralization, and ad-hoc work processes. It provides autonomy to the organizations' employees or other independent users to define their work structures, task processes, and work routines. In this way, porous structures enable users to leverage differentiated capabilities of member in-and-outside of the space and facilitate knowledge exchange across boundaries and hierarchical levels that lead to innovative outcomes. In this section, we share the specific insights gained from this study.

Our first insight highlights the role of permeability on innovations in CWS. There are several studies in the context of CWS, e.g., (Bouncken & Reuschl, 2018; Clayton et al., 2018; Marchegiani & Arcese, 2018; Schmidt, Brinks, & Brinkhoff, 2014) that contend that shared spaces foster innovations. These studies have one shared assumption that interaction and

collaboration among members of diverse communities bring knowledge exchange opportunities that lead to creative and innovative outcomes for the members in CWS (Castilho & Quandt, 2017; Parrino, 2015). Our study provides the fundamentals that permeability in respect of convenient admission and leave of the space, broad autonomous access to the infrastructures and shared facilities, opportunities to participate in social events and to be a member of the community attract a wide range of users. Spatial and virtual connectivity in the serendipitous environment of CWS, as well as CWS' driven social events, offer opportunities for establishing relationships in- and outside of the CWS. Similarly, space level permeability also influences structures and processes of members' organizations. We call these changes and emerges of new work processes as changeability (Ross, Rhodes, & Hastings, 2008) in organizations which arise autonomy in respect of selection of tasks, teams, and routines of employees of organizations as well as independent professionals. We thus argue that the permeability in spaces and organizations create opportunities for inter-functional knowledge transfers and lead to joint experimentations and collaborations, which are requisite for innovative outcomes. The role of permeability to fosters innovations has been studied earlier, e.g., (Colignon, 1987; Saebi & Foss, 2015; Taylor & Levitt, 2007). However, existing researchers either study permeability in a single organization, e.g., (Colignon, 1987) or focus on interrelational permeability in between groups, and teams of different organizations who are formally connected in form of joint ventures, mergers, or partnerships (Saebi & Foss, 2015; Taylor & Levitt, 2007; Workman, 2005). Our contribution in this research is the analysis of the modern form of organizing which consists of different actors (such as firms, entrepreneurs, freelancers) who have no shared affiliations. Our multilevel analysis points to a fresh understanding of permeability and its role in the development of cognitive synergies.

The second insight relates to the debate of duality of organizational fluidity and stability in a complex and relentlessly changing environment (Faraj et al., 2011; Schreyögg & Sydow, 2010). Modern organizational theorists suggest that permeability in organizations influences the competencies, structures, and processes, which brings volatility and fluidity (Barberio et al., 2018; Puranam et al., 2014; Schreyögg & Sydow, 2010). The concepts of fluidity downplay the role of boundaries which separate organizations from its environment (Leifer & Delbecq, 1978; Santos & Eisenhardt, 2005). On the one hand, permeability challenges the stable hierarchies and formalized structures of organizations and engenders ad-hoc and improvised processes to cope with the ever-changing environment (Dobusch & Schoeneborn, 2015; Schreyögg & Sydow, 2010). On the other hand, organizations maintain their boundaries by

forming rudimentary structures and processes to exhibit self-identity and representations (Dobusch & Schoeneborn, 2015; Ringel et al., 2018). Consequently, contemporary organizations continuously struggle to maintain a balance between two competing demands of stability and fluidity (Schreyögg & Sydow, 2010). Our study contributes to the existing literature and provides empirical evidence that the fluid environment of CWS influences the work structures of members' organizations and independent users. Changeability in the work structures and task processes lead to autonomous work structure, task processes, and routines. Whereas, organizations maintain their boundaries using self-regulatory mechanisms to avoid excessive exposure to the external environment.

We believe that our study is not confined to the shared spaces but has broader implications for modern organizations that rely strongly on creativity and innovation. Our study highlights that accelerating knowledge development makes it difficult for organizations to get breakthroughs and innovate in isolation (Saebi & Foss, 2015). Organizations need to open up their boundaries to let knowledge flow inside of the organizations (Gassmann & Enkel, 2004). Knowledge sharing and use of collective wisdom is an essential element to solve complex problems and to generate practical and novel ideas (Chaston & Scott, 2012). Our model of permeability exhibits that organizations can conjoin internal and external resources to broaden their innovation pipelines while at the same time can also maintain their independence and autonomy by using self-regulatory mechanisms.

## **8.7 Conclusion**

High R&D cost, shorter product life, and increasing global competition compel organizations to look beyond their internal talent and resources for innovation. They have to open up their boundaries to find and collaborate with the relevant knowledge from the individuals or other firms to sustain their innovation process. Coworking-spaces challenge the stable and discrete boundaries of members and bring together organizations and independent professionals from different walks of life. The case of Deltaspaces shows how permeability in CWS influences the work structures and task processes of members. Permeability in Deltaspaces gives rise to fluid communities by offering participational autonomy and spatial and virtual connectivity to their users. Space driven efforts (such as social and learning events) converge different stakeholders and help members to develop heterogeneous relationships. Changeability in work processes provides autonomy to the members of an organization to self-selection of routines, work

structures, and task processes. Organizations in shared spaces can also express their identity and representations through self-regulatory resources. We argue that organizations cope with the challenge of fluidity and stability through forming boundaries that are strong enough to maintain their identity but sufficiently permeable to freely traverse of knowledge and resources across hierarchies. We contend that permeability is thus an innovation driver in shared spaces that enable organizations and independent professionals to leverage their differentiated capabilities by collaborating and co-creating within and outside of the space. Our research is a first step to explore permeability as an innovation facilitator in contemporary organizations. We hope that this research inspires other scholars to explore the concept of permeability in different contexts.

## 8.8 References

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## **Chapter 9: The Dark Side of Entrepreneurship in Coworking-Spaces**

### **9.1 Abstract**

Entrepreneurs act as an economic engine by creating new businesses and new jobs, intensifying competition and enhancing productivity through creative and novel methods of production and service delivery. Entrepreneurs are characterized as unique personalities with the ability to innovate, start firms, create value, profitability and growth. Coworking-spaces provide a creative and innovative atmosphere to entrepreneurs and working space to run their business operations while interacting and collaborating with other entrepreneurs. However, the professional and social dynamics in coworking-spaces bear the risk of stress, exploitation, conflicts and distrust, which negatively affect entrepreneurial self-efficacy and passion, undermining the advantages of coworking-spaces and leading to withdrawal of entrepreneurs. We argue that coworking-spaces can support entrepreneurs in facing these challenges by developing entrepreneurial communities, providing mentoring, coaching and social support to nascent entrepreneurs.

### **9.2 Introduction**

Coworking-spaces (CWS) offer a novel concept for entrepreneurs (Cabral & Winden, 2016; Moriset, 2014) by creating a community, based on shared values of collaboration, openness, trust, accessibility, and sustainability (Capdevila, 2014b; Fuzi, 2015; Waters-Lynch, Potts, Butcher, Dodson, & Hurley, 2016). The social and professional spaces in CWS help entrepreneurs to interact, socialize (Bilandzic, Schroeter, & Foth, 2013; Cabral & Winden, 2016; Capdevila, 2014a), build social ties for knowledge sharing, and to acquire information (Gerdenitsch, Scheel, Andorfer, & Korunka, 2016). Coworking-spaces connect entrepreneurs from diverse backgrounds at one physical space (Spinuzzi, 2012; Surman, 2013) and provide a creative and innovative space to entrepreneurs, who can perform their business tasks in a professional office environment while collaborating and co-creating with others (Capdevila, 2013; Spinuzzi, 2012).

However, ‘dark’ personality traits of entrepreneurs (e.g. high need for control, distrust, and desire for attention) cause difficulties in social and professional interactions (Vries, 1985, 2003). Entrepreneurs build relationships with powerful individuals to improve their own position and to use opportunistic strategies (Morck & Yeung, 2003, 2004; Wright & Zahra, 2011). Entrepreneurs continuously pursue their personal and professional goals, however

failure in achieving the desired results cause stress, exhaustion and self-exploitation (McKenna, 1996; Osborne, 1991). Studies also suggest that entrepreneurs don't hesitate to exhibit scheming and exploitative behaviors to overcome competition (McKenna, 1996; Vries, 1985; Wright & Zahra, 2011). Pohler (2012) highlights the exploitation of nascent entrepreneurs in CWS due to asymmetrical power relation between established and nascent entrepreneurs. Furthermore, the 'open for all' policy of CWS may provide the important impetus for creativity and innovation, but it also has several dark sides such as distrust and conflicts (Chowdhury, 2005; Larson, 1992; Wright & Zahra, 2011).

This paper aims to conceptualize the effect of the dark side of entrepreneurship in CWS. First, we review the literature on CWS (Bouncken & Reuschl, 2018; Gandini, 2015; Spinuzzi, 2012; Surman, 2013), the dark side of entrepreneurship (McKenna, 1996; Morck & Yeung, 2004; Osborne, 1991; Wright & Zahra, 2011), and social capital theory (Kim & Aldrich, 2005; Lin, 1999; Obstfeld, 2005; Wellman & Frank, 2001). Next, we explain the impact of social isolation, stress, exploitative behavior, conflicts, and distrust on CWS. Building on this knowledge, we develop strategies for CWS to cope with the dark side of entrepreneurship through mentoring, coaching, community management, and strengthening the entrepreneurial spirit.

### **9.3 Theoretical Background**

#### **9.3.1 Entrepreneurship in Coworking-spaces**

Coworking-spaces provide an alternate work environment equipped with all office amenities and flexible pricing without special requirements or duties. This presents users an ideal space for social and professional interaction (Bouncken & Reuschl, 2017; Uda et al., 2015). The salient features of CWS include provision of open-plan offices (Spinuzzi, 2012), shared resources (Capdevila, 2014a) and learning opportunities (Waters-Lynch et al., 2016). Coworking-spaces help to develop a community of independent professionals (Bouncken, Clauß, & Reuschl, 2016; Gandini, 2015) including freelancers, entrepreneurs, small and micro enterprises from all industry sectors (Gerdenitsch et al., 2016; Spinuzzi, 2012) to pursue social interaction, learning, cultural and business related interests (Bouncken & Reuschl, 2018).

Boyd and Vozikis (1994) suggest that entrepreneurial self-efficacy increases through interaction and collaboration with likeminded entrepreneurs. Coworking-spaces provide opportunities for interaction and collaboration, boosting entrepreneurial self-efficacy (Cabral & Winden, 2016). These spaces enable entrepreneurs to form groups or teams to work on

creative and novel projects, which they could not complete on their own (Spinuzzi, 2012). Creative and purposeful serendipitous environment provided by the CWS (Surman, 2013) help entrepreneurs to share knowledge and to solve complex problems with minimum efforts in novel ways (Bouncken et al., 2016).

Coworking-spaces not only enable collaboration, knowledge sharing and learning among entrepreneurs but also provide opportunities to interact and develop social and professional networks (Capdevila, 2014a; Choen, 2011). Entrepreneurs can profit from this opportunity, breaking their isolation, and seizing new ideas (Capdevila, 2013). Innovations flourish in CWS, as these spaces connect entrepreneurial spirit with the dynamic demands of the external environment (Moriset, 2014; Uda et al., 2015). Workshops, conferences and seminars offered by CWS provide training and development opportunities for the entrepreneurs to acquire new knowledge and skills (Bouncken, 2018; Fuzi, 2015).

### **9.3.2 Social Capital Theory**

Social capital theory provides a framework for understanding the relationship outcomes around the dark side of entrepreneurship. Social capital theory states that the analysis of relationships is based on economic and social dimensions (Lin, 1999; Wellman & Frank, 2001). Entrepreneurs engage in interaction and social networking for gaining support, acceptance and credibility (Lin, 1999). They expect to save money by avoiding costly, time consuming errors, and unnecessary research (Obstfeld, 2005; Wellman & Frank, 2001). Studies suggest that entrepreneurs work together in more efficient and effective ways when they have strong social ties, mutual trust and shared values (Bolino, Turnley, & Bloodgood, 2002; Kim & Aldrich, 2005).

Social ties and networks help entrepreneurs to gain access to other entrepreneurial networks for knowledge sharing and acquisition of information (Aldrich & Wiedenmayer, 1993). Interaction among entrepreneurs in networks leads to exchange of information, advice, resources, or services (Emerson, 1976; Larson, 1992). Entrepreneurs provide resources and information voluntarily and usually unsolicited, based on the mutual trust with implicit expectations of the return (Kim & Aldrich, 2005). Entrepreneurs continuously try to reciprocate the favors and build equitable relationships. If profits from the interactions are high, then entrepreneurs remain satisfied and continue to contribute in their networks. If the profitability is lower than their expectation, entrepreneurs are likely to leave the network (Kim & Aldrich, 2005).

Coworking-spaces provide the opportunities to entrepreneurs to build social capital and strong social ties through interaction based on their individual timing and preferential space settings (Capdevila, 2014b; Gerdenitsch et al., 2016). These spaces also help entrepreneurs to improve their profitability by working on mutual and joint projects. However, the social interaction and collaboration among entrepreneurs always bears the risk of opportunistic behaviors. In Figure 9.1, we summarize the dark side of entrepreneurship and strategies to confront the dark side of entrepreneurship in CWS.

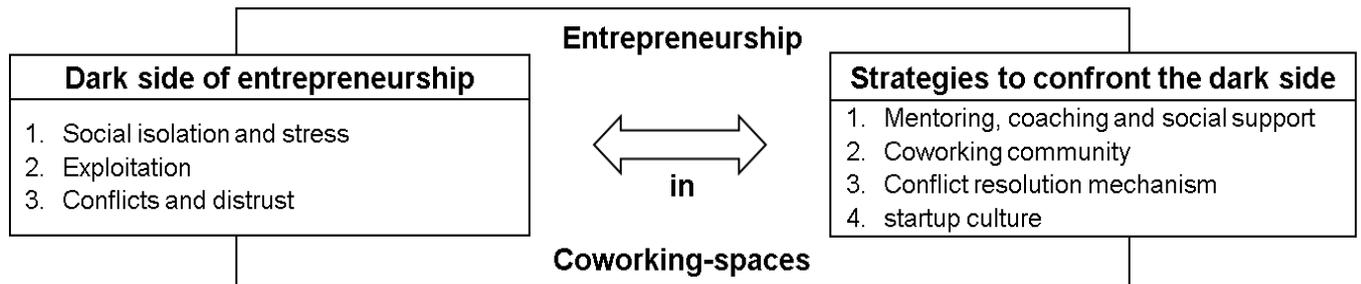


Figure 9.1-: Strategies to Confront the Dark Side of Entrepreneurship

## 9.4 “Dark side” of Entrepreneurship in Coworking-spaces

### 9.4.1 Social Isolation and Stress

Entrepreneurs face difficulties in social and professional interactions due to their personality traits (Beaver & Jennings, 2005; Osborne, 1991; Vries, 2003). Research conducted on a longitudinal dataset spanning 37 years depicts systematic antisocial tendencies (including rule breaking behavior) in entrepreneurs’ biographies (Obschonka, Andersson, Silbereisen, & Sverke, 2013). While only a small number of studies address the dark side of entrepreneurs and entrepreneurship (McKenna, 1996; Osborne, 1991; Vries, 2003), results show that entrepreneurs use their authority and wealth to monopolize their market position and undermine fair competition by exploiting social ties with political elites (Morck & Yeung, 2003; Wright & Zahra, 2011). Entrepreneurs’ stamina and excessive commitment with their business can create tensions in relationships (family and friends) which often lead to social isolation (Wright & Zahra, 2011). Entrepreneurs who operate their businesses from home face high level of social isolation (Ross & Ressia, 2015). Social isolation causes anxiety, stress and depression in entrepreneurs (Baron, Franklin, & Hmieleski, 2016; Ruef, Aldrich, & Carter, 2003). Coworking-spaces offer a solution for social isolation to entrepreneurs, by providing opportunities to interact with other like-minded individuals (Bouncken & Reuschl, 2018; Gandini, 2015; Gerdenitsch et al., 2016). However, associating with other entrepreneurs or

finding the right community or network is challenging. The findings of Ruef et al. (2003) show that minorities in their network or individuals with a low social status face social isolation.

Stress is the inability of an individual to exhibit an appropriate response in a threatening and demanding situation (Cohen and Wills 1985). Stress does not arise due to a single stressful event. It arises, when individuals have to face accumulating problems without appropriate coping strategies (Cohen and Wills 1985). Entrepreneurs face high levels of stress during their exposure to an unpredictable and rapidly changing environment (Baron et al., 2016). In CWS, entrepreneurs have to balance their activities between collaborating with a defined social network and being open to diverse new contacts, between exploiting the chances for interaction and being distracted, and between their investments and value appropriation (Reuschl & Bouncken, 2017).

*Diversity vs. community:* The ‘open for all’ policy of CWS creates a working environment for a diverse community based on a shared culture and working values. Entrepreneurs have to find a CWS with the appropriate community, culture, and values, and adapt to the changes induced through the exit of old members and the entrance of new members. The existing community is a major reason to joining a particular CWS (Fuzi, 2015). Being part of the wrong community with a mismatching culture or inappropriate work values causes dissatisfaction and stress (Cohen 2016).

*Interaction vs. distraction:* Coworking-spaces design open office layouts to support and encourage casual interactions (Bouncken & Reuschl, 2018; Capdevila, 2014a). On the downside, this set-up causes noise through talks, phone calls, and meetings in the open space, leading to distractions. Such an environment can make it difficult for co-workers to focus on their work (Cohen 2016). While CWS are providing space and triggers for the open and joint discussion of creative ideas, entrepreneurs trying to get work done are interrupted, disturbed, and easily frustrated. As CWS purposefully try to foster interaction, it is very likely that one or more individuals use the space for socialization and networking and entrepreneurs have to bear the personality traits of other co-workers just like in traditional offices.

*Cost vs benefits:* Entrepreneurs have to pay for accessing CWS. The price is usually low compared to maintaining their own office space. In addition to fixed costs, entrepreneurs also pay a fee for accessing other facilities such as meeting room, events, etc. (Bouncken & Reuschl, 2018; Waters-Lynch et al., 2016). Besides the monetary costs, entrepreneurs also have to invest time and energy into the creation of social networks. While CWS can provide a very helpful

environment for new ventures and start-ups, nascent entrepreneurs without a customer base have to gain a position in the networks (Baron et al., 2016). Entrepreneurs have to invest continuously into their network positions while facing uncertain benefits and even the risk of being member of a community that cannot provide advantages anymore.

Spinuzzi (2012) defined working in a CWS as “combining social networking and working in a laid-back environment where the stress is gone” (p. 417). However, being unable to find the right community and bearing interruptions, distractions, annoying coworkers, and unhealthy competitions are causing stress for entrepreneurs in CWS. Hobfoll (1989) suggests that a high level of self-efficacy helps to cope with stressful situations. Most of the stressors in CWS that cause negative emotions such as frustration, or dissatisfaction, are beyond the entrepreneurial control and reduce entrepreneurial self-efficacy.

### **9.4.2 Exploitation**

Entrepreneurs engage in different social groups or networks for exchanging information (ideas or advices), resources (financial and non-financial), and getting support (acceptance or status) (Emerson, 1976; Lin, 1999). Strong social ties, mutual trust, shared values and common social norms help entrepreneurs to perform efficiently and effectively (Bolino et al., 2002). Therefore, entrepreneurs continuously try to establish and maintain their networks (Larson, 1992). Coworking-spaces provide an innovative environment for nascent entrepreneurship, new ventures, and start-ups. However, entrepreneurs in CWS have to face relationship-based challenges like conflicts, distrust, or uneven returns that can ruin the whole idea of CWS.

Many nascent entrepreneurs aim to use the equipped offices, networking and business opportunities of CWS to establish their own business. Pohler (2012) highlights the risk of exploitation in CWS due to asymmetrical power relations between nascent and established entrepreneurs. Coworking-spaces provide the opportunities for collaboration and interaction that can lead to business deals. Established entrepreneurs subcontract some of their engagement to nascent entrepreneurs if their business opportunities surpass their production capacity (Spinuzzi, 2012). Nascent entrepreneurs have to negotiate for a reasonable margin (Pohler, 2012). During the start-up phase, nascent entrepreneurs often lack both resources and clients. They depend on projects from established entrepreneurs to make a profit. These projects come with closed deadlines, leaving no time to evaluate the advantageousness for their own business. Instead of developing their own business, entrepreneurs remain dependent on partners. The

autonomous and flexible environment of CWS helps to overcome the barriers of limited resources and skills but exposes nascent entrepreneurs to the risk of exploitation.

### 9.4.3 Conflicts and Distrust

Mutual collaboration in CWS help entrepreneurs to utilize the knowledge and skills of each other. Lechler (2001) states that entrepreneurial teams tend to be more successful compared to single entrepreneurs. Entrepreneurs with diverse backgrounds, values, and goals join teams in CWS. Conflicts in entrepreneurial teams can be divided into cognitive and affective conflicts (Ensley, Pearson, & Amason, 2002). Cognitive conflicts are considered positive when they lead to effective strategic decision making. Affective conflicts are based on interpersonal disliking and personality based disagreement (Ensley et al., 2002). Cognitive conflicts lead to affective conflicts, and conflicts can deteriorate decision making and even lead to departures of team members if not managed effectively (Collewaert, 2012; Higashide & Birley, 2002). Conflicts arising in entrepreneurial teams in CWS are likely to be affective conflicts. Task related conflicts are less likely to occur in entrepreneurial teams as they usually consist of members with a high specialization (Collewaert & Sapienza, 2016). Entrepreneurial teams working on joint projects in CWS have low or only implicit hierarchies. Trying to take the project lead could lead to conflicts or even to entrepreneurs withdrawing from the group (Carmeli & Abraham, 2005).

Vries (2003) argues that the entrepreneurial 'need for control' leads to suspicious thinking based upon a permanent fear of being exploited. The collaboration of entrepreneurs in joint projects builds on common targets and values. These values include information sharing, mutual learning, cooperation and trust (Gerdenitsch et al., 2016; Letaifa & Rabeau, 2013). Breaking the common values can lead to the early break-up of projects. Sensing distrust in the team climate results in decreasing team morale, dissatisfaction and poor productivity (McKenna, 1996). Designed as 'open office spaces', CWS expose entrepreneurs to the risks of an external environment. Coworking-spaces try to compensate this disadvantage by offering limited private spaces like traditional offices. However, even when working in private offices, entrepreneurs share places like a kitchen or conference rooms, making it difficult to protect knowledge and secrets. Therefore, entrepreneurs hesitate to share their prospective plans with team members, causing insecurity and a sense of distrust. Entrepreneurs working in creative industries are especially at risk of imitation by competitors.

## **9.5 Confronting the ‘Dark Side’ of Entrepreneurship in CWS**

### **9.5.1 Mentoring, Coaching, and Social support**

The desire to control, risk-taking proclivity, decision-making, leadership, creativity and several other characteristics are associated with the personality of entrepreneurs (Ricketts, 2009). In the previous section, we explained how a variety of challenges and risks for entrepreneurship challenge the idea of coworking. The effective management of a CWS contributes to the creation of a positive community that helps to realize the potentials and to avoid the dark side of entrepreneurship.

First, CWS can provide training opportunities for their users by arranging workshops, events, seminars, etc. (Bouncken & Reuschl, 2018). Trainings help to broaden the vision of entrepreneurs, to acquire new skills, and to create a positive community in their spaces. Training programs cater to the needs of wide variety of users. The CWS management could easily develop a special program to introduce nascent entrepreneurs into the community, and established entrepreneurs could take the role of mentors or coaches (Bouncken, 2018). Gerdenitsch et al. (2016) empirically show that the interactions and collaborations in CWS provide social support that helps to develop entrepreneurial self-efficacy. Moreover, interactions among entrepreneurs and social support directly helps to buffer negative effects of stress (De Clercq, Dimov, & Belausteguigoitia, 2016). It is possible to create a work environment in CWS that enhances mutual learning, cooperation, and collective growth instead of competition, animosity and hostility.

### **9.5.2 Coworking Community**

Coworking-spaces have diverse range of users from students to micro enterprises (Bouncken & Reuschl, 2018) with their independent motives, objectives and targets to pursue (Green, 2014; Spinuzzi, 2012; Uda, 2013). Therefore, it is compulsory to communicate the norms and values of CWS with every stakeholder. Manager in CWS can play their role and communicate the expectations at the start of membership whereas, establish entrepreneurs can contribute by developing a climate based on trust, mutual respect and equitable relationships (Gerdenitsch et al., 2016).

Culture based on shared norms and values can only be created by developing a community in CWS (Butcher, 2013; Rus & Orel, 2015). Community of any CWS can be a major motivational factor for freelancers, start-ups, and entrepreneurs to join a CWS (Fuzi, 2015). Coworking-

spaces that fail to develop a community are less likely to communicate shared norms and values (Foertsch, 2015). Establishing a community in a CWS is a two-dimensional process, where the users participate alongside the owners or managers who can employ community managers to take care of the community (Bilandzic et al., 2013). The owner or manager of a CWS has the chance to influence the development of the community by offering trainings, closely monitoring of community dynamics, and by collecting the feedback of new or leaving members.

### **9.5.3 Conflict Resolution Mechanisms**

Coworking-spaces provide opportunities to create positive ties and networks between autonomous and independent members (Bilandzic et al., 2013). Differing opinions among individuals are a usual cause for conflicts in CWS (Chowdhury, 2005). Lack of conflict resolution mechanisms lead to withdrawal of entrepreneurs from CWS and undermine the whole value system of CWS. Therefore, it is necessary to incorporate conflict resolution mechanisms at CWS level.

Entrepreneurial teams should also work side by side with the management of CWS for establishing conflict resolution mechanisms. Standard operating procedures and guidelines for members of CWS can be communicated by the management of respective CWS at the beginning of membership. In the same way, entrepreneurs at the beginning of any joint project can clarify the mutual duties and responsibilities to avoid task related conflicts (Higashide & Birley, 2002). Committees formation consisting of different members from the same CWS can also be a good strategy to resolve conflicts inside entrepreneurial teams.

### **9.5.4 Startup Culture**

Coworking-spaces provide an ideal platform, where entrepreneurs can play a role model for young coworking users and support their intentions for establishing startups (Fuzi, 2015). According to Foertsch (2015), startups in CWS are four times more likely to be successful compared to stand-alone start-ups. This can be possible, if the communities of likeminded people in CWS support ventures of nascent entrepreneurs (Rus & Orel, 2015). A coworking-space and its inherent startup culture can help nascent entrepreneurs to cope with the dark side of entrepreneurship by creating a culture based on mutual respect, trust and collective growth. Coworking-spaces shall nurture start-ups by offering trainings, legal, financial and business guidance (Fuzi, 2015; Surman, 2013; Uda et al., 2015). These spaces can also play their role by connecting nascent entrepreneurs with other like-minded individuals who aim for establishing

startups in CWS (Bouncken & Reuschl, 2017; Rus & Orel, 2015), helping them to strengthen their entrepreneurial passion and self-efficacy.

## 9.6 Conclusion

Coworking-spaces offer a high potential for promoting entrepreneurship. Entrepreneurs can easily develop social ties through interaction and networking opportunities provided by these spaces. Coworking-spaces also offer development opportunities by arranging trainings, seminars, conferences, or workshops. Entrepreneurship flourishes when CWS provide a climate for creativity, serendipity, and novelty. While there are many studies and articles discussing the chances and opportunities of CWS, the dark side of entrepreneurship in CWS has been ignored. We make a first step to fill this gap by pointing at the potential risks of and for entrepreneurship in CWS. The behavior of entrepreneurs can seriously affect the very basic values of CWS and entrepreneurship itself. The 'open for all' policy creates the strongest opportunities for CWS by increasing the diversity of available knowledge, extending the scope of networks and driving the development of a rich community. At the same time, this policy creates social dynamics that lead to an ever-changing community requiring continuous investments of entrepreneurs in their social position. For entrepreneurs, it is challenging to identify a fitting community. Nascent entrepreneurs have to develop strategies to handle asymmetrical power relations within entrepreneurial teams as their dependence on established entrepreneurs bears the risk of exploitation and entering unequitable relationships. We summarize the risks for nascent entrepreneurs as exploitation, the occurrence of conflicts, and the climate of distrust that decrease self-efficacy and entrepreneurial passion as the dark side of entrepreneurship. Mentoring, coaching and community management in CWS provide the possibility to avoid the emergence of the depicted risks and challenges. Interaction and collaboration in CWS also lead to the evolution of social and professional ties, relationships, and networks. Building these relationships on equitable manners creates a serendipitous working environment in any CWS. Finally, communities based on shared values, mutual respect, and trust emerge from the social relationships and create a climate for entrepreneurial passion, self-efficacy, and start-up ventures.

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## Chapter 10: Conclusion

### 10.1 Summary and Contributions

This thesis consists of eight research articles that shed light on the structures, processes, and potentials of coworking-spaces. Research papers one and two focus on the structures of coworking-spaces. The first one implies the importance of the fluid work structures and elaborates the mechanisms to bring stability through normative, regulative, and activation domains, without compromising their fluidity. The latter underscores the importance of designs and provides suggestions on how to design coworking-spaces to achieve the desired outcomes while avoiding or at least minimizing the fleeting, fragmented, or capricious outcomes. Research papers three and four present the constitutive entanglement of social and material elements that shape the work practices in coworking-spaces. By employing the data from distinct coworking-spaces, these studies elaborate the importance of sociomateriality for companies as well as for entrepreneurs. Coworking-spaces have multiple stakeholders (e.g., potential partners, clients, or investors) who have their heterogenous legitimacy expectations. In this context, research paper five examines the role of multiple stakeholders that influence entrepreneurial actions for gaining optimal distinctiveness of their ventures in coworking-spaces. Research papers six and seven substantiate the role of coworking-spaces on the knowledge sharing dynamics and innovation. In the end, research paper eight draws attention to the asymmetrical power relations among entrepreneurs and other stakeholders that can weaken the sense of community in coworking-spaces.

Each research article has its individual theoretical and practical contributions. The first research article contributes to the research on the balance of fluidity and stability (Dobusch & Schoeneborn, 2015; Faraj, Jarvenpaa, & Majchrzak, 2011; Schreyögg & Sydow, 2010). Based on the data from various coworking-spaces, this study proposes a three-domain model to achieve the balance. The normative domain suggests achieving a balance in fluidity through a shared sense of community (Garrett, Spreitzer, & Bacevice, 2017; Schreyögg & Sydow, 2010; Waters-Lynch & Duff, 2019). The regulative domain is in line with the research on the partial organization that proposes the balance based on rudimentary rules and certain formalization of tasks (Ahrne & Brunsson, 2011). The activation domain encourages actors to raise and act autonomously in coworking-spaces to achieve balance. The activation domain extends stewardship theory based on formal organizations to fluid organization settings (Cruz et al., 2013; Le Breton-Miller & Miller, 2009). This article also contributes to the study on polyphony

in corporations (Gümüşay, Smets, & Morris, 2019) and links it with the sense of community, organizership, and fluidity in shared workspaces.

The second research paper contributes to the understanding of the contemporary workspaces that rely heavily on aesthetic and design elements. In contrast to the studies that take actor centric approach to explain social phenomenon e.g., social interaction, collaboration, and community building (Blagoev, Costas, & Kärreman, 2019; Garrett et al., 2017; Spinuzzi, Bodrožić, Scaratti, & Ivaldi, 2019), this research article underscores the role of artifacts (Berglund, Bousfiha, & Mansoori, 2020). It specifically contributes to the design literature and provides insights into how artifacts can enable or restrain certain actors' behaviors and how actors can perceive, define, and redefine the affordance of artifacts according to their perceptions and beliefs (Gibson, 1986; Jarzabkowski & Pinch, 2013; Norman, 1999). The findings of this study suggest that taking the inter-play of actors-artifacts together in theory and practices can help organizations make progressions towards effective organizational designs to improve the flow of communication, collaboration across boundaries, and architect innovation.

The third and fourth research articles emphasize the role of materiality that shapes the routines (behaviors and attitudes) of users. Based on the sociomaterial perspective (Leonardi & Barley, 2010; Orlikowski, 2007), these studies argue that the routines, such as communication, collaboration, and community building, which are considered as social are in actual results of the interactions that take place between social and material elements (Orlikowski, 2009). Existing studies on sociomateriality are either focusing on the theoretical development of the concepts (Cho & Lee, 2014; Scott & Orlikowski, 2013) or taking technology or information systems as the main concept of materiality (Cecez-Kecmanovic, Galliers, Henfridsson, Newell, & Vidgen, 2014; Hultin & Mähring, 2014; Jones, 2014)—taking organizations as a ‘practice’. These articles fill this gap by introducing the dimensions of spatial architectures, shared facilities and infrastructures, and digital technologies. Research paper three specifically highlights the role of sociomateriality for companies revitalizing, while research paper 4 provides helpful suggestions for entrepreneurs.

To retrieve resources and support from multiple stakeholders who have heterogenous legitimacy expectations, entrepreneurs need to conform to the expectations as well as maintain their distinct identity (Deephouse, 1999; Fisher, Kotha, & Lahiri, 2016; Fisher, Kuratko, Bloodgood, & Hornsby, 2017; Navis & Glynn, 2011; Zhao, Fisher, Lounsbury, & Miller, 2017). In this backdrop, research paper five presents the model explaining how entrepreneurs achieve optimal distinctiveness (Bouncken & Tiberius, 2021; Zhang, Wang, & Zhou, 2019).

The research concluded that the unique institutional settings of coworking-spaces promote distinctiveness rather than sameness that help entrepreneurs to co-legitimize the distinctiveness of their ventures with multiple stakeholders through associative and identity mechanisms. The article is also in line with the previous studies (e.g., Tracey, Dalpiaz, & Phillips, 2018) about the gradated nature of legitimation, where entrepreneurs continuously define, redefine, and adjust their new ventures to find a point of optimal distinctiveness.

Drawing upon the practice lens (Feldman & Orlikowski, 2011), research paper six theorizes the concept of knowledge sharing in contemporary organizations. The findings suggest that knowledge sharing takes place by participating in social practices and leads to 'knowing in practice' (Gherardi, 2000; Orlikowski, 2002). Minimal hierarchies and instead permeability facilitate professionals with distinct backgrounds to participate jointly in the process of knowledge sharing and creating. Spatial collocation of users provides socialization and interpersonal mentoring opportunities that bring multifaceted inputs and multidisciplinary knowledge which breed decontextualized knowledge, promote domain-related knowledge sharing, and synthesize inter-domain learning.

Research paper seven also argues that permeability is the facilitator of innovation in coworking-spaces. Permeability and its mechanisms shape boundary conditions (Ringel, Hiller, & Zietsma, 2018). This research paper adds permeability as a multifaceted organizational concept related to work structures, task processes, and relational dynamics. Permeability influences job satisfaction, learning, work efficacy, and innovativeness of a team, project, innovation, and venture. In coworking-spaces, permeability enables users to leverage their differentiated capabilities by collaborating and co-creating within and outside of the space (Jacobides & Billinger, 2006). The findings, however, suggest that permeability in coworking-spaces can also create fluidity. Users can cope with the challenge of fluidity by forming boundaries that are strong enough to maintain their identity but sufficiently permeable to allow freely traversing of knowledge and resources across boundaries and hierarchies.

Despite several advantages for the users, coworking-spaces can also be challenging. Research paper eight focuses on the challenges that can potentially be detrimental for the users of coworking-spaces. Mainly, these challenges arise due to spatial collocation and asymmetrical power relations that can cause the withdrawal of users from coworking-spaces. Yet, developing a sense of community, providing mentoring and coaching opportunities, as well as social support, can help users to cope with these challenges.

## 10.2 Avenues for Further Research

A considerable part of this thesis (especially research papers in chapters 2 to 5) argues about the permeability in coworking-spaces that creates various opportunities for independent professionals, e.g., learning, knowledge sharing, and innovation (Bouncken & Aslam, 2019; Bouncken, Aslam, & Qiu, 2020). For organizations, permeability enhances team, work, and innovation performance (Bouncken, Aslam, & Brem, 2019). However, increasing the permeability can create fluidity and enhance complexity (Dobusch & Schoeneborn, 2015; Faraj et al., 2011; Schreyögg & Sydow, 2010). The first research paper contributes to research about the mechanisms that bring stability without compromising fluidity via social identification (Dobusch & Schoeneborn, 2015; Schreyögg & Sydow, 2010), especially through the sense of community that unfolds in coworking spaces (Garrett et al., 2017). The study further denotes the origins of a partial organization from the background organization, the provider, or by internal processes from partial or temporary organizers that inform the concept of organizership. Organizership responds to the call of new authority in post-bureaucracy that overcomes the dyad of supervisor and subordinate, complies with more temporary behavior (Bourgoin et al., 2020), and departs from traditional management roles (Mintzberg, 1980). The spatial setting of coworking-spaces shapes a boundary condition of this research. In coworking-spaces, the physical space builds a primary boundary for actorhood that facilitates communication and coordination through the co-presence of actors (Weinfurter & Seidl, 2019). The shared physical space increases the visibility of work, making it and the associated meaning and emotions more legible among actors (Kellogg et al., 2006). Organizership might be different in spaces that include more virtual work, which has stronger interconnected decision-making on behalf of a collective. Thus, future research in other contexts, such as in traditional organizations in post COVID 19 times that aim to enhance autonomy, decentralization, ad-hoc structures, and improvised processes by encouraging homeoffice or remoteworking can bring new insights.

This thesis also explains the potential of coworking-spaces for entrepreneurs or startups. The research paper in chapter six suggests that the coworking-spaces attract entrepreneurs and startups by offering lower costs of doing business, knowledge sharing opportunities, and direct access to financial and human capital. To get benefits from these opportunities, entrepreneurs need to conform to the expectations of the collocated users of the coworking-spaces, as well as exhibit and maintain the distinctiveness of their ventures (Tracey et al., 2018; Zhao et al., 2017). This study explains how entrepreneurs interact and involve other stakeholders in coworking-

spaces for gaining legitimacy of their ventures by employing associative and identity mechanisms. However, this study has two major limitations: First, this study does not look at the conflicting demands of different stakeholders. For example, an innovator might want to invest in a venture with a novel idea, while an angel investor might appreciate a venture with swift returns. How entrepreneurs meet these conflicting demands in a work environment with collocated diverse stakeholders having conflicting demands (Fisher et al., 2017; Zhao et al., 2017) is not only a relevant but an important research question. Secondly, coworking-spaces have a lot of potential for entrepreneurs. This study just looks into one process i.e., legitimacy building. Further investigations on the topics of entrepreneurial communities, opportunity recognition, co-creation, and entrepreneurial ecosystems would bring relevant and significant contributions to the field of entrepreneurship.

Knowledge sharing in coworking-spaces is one of the most discussed and least understood advantages (Ricarda Bouncken & Aslam, 2019; Parrino, 2015; Rese, Kopplin, & Nielebock, 2020). Research paper six of this thesis describes that spatial collocation and institutionalized knowledge management services in coworking-spaces facilitate the knowledge sharing process among independent users and entrepreneurs. However, this research is unable to explain the role of large corporations in the knowledge sharing process, that are either moving into or building their coworking-spaces (Gabor & Lindsay, 2018; Spreitzer, Garrett, & Bacevice, 2015). Similarly, the issues of knowledge protection (e.g., intellectual property rights, copyrights, and patents) can also emerge. Therefore, further studies on the dilemma of knowledge sharing (among entrepreneurs, independent professionals, and companies) and knowledge protection in the permeable working environment can bring valuable insights.

Coworking-spaces are one form of shared workspaces that developed in the wake of technological advancements, complexity of business operations, and changing lifestyles (Clayton, Feldman, & Lowe, 2018; Orlikowski, 2007). Hacker labs, fab labs, and maker spaces are all more specialized shared workspaces that emerged after coworking-spaces (Cabral & Winden, 2018; Clayton et al., 2018). Even in typical hierarchical organizations, individuals demand more autonomy in selecting their work settings, places, and routines (King, 2017; Puranam, Alexy, & Reitzig, 2014). Similarly, the interaction of contemporary organizations with independent professionals is growing, and retaining the nomad workforce is also challenging. Therefore, modern organizations are changing their spatial designs to cater to the needs of the modern age workforce (Khazanchi, Sprinkle, Masterson, & Tong, 2018). However, these changes are continuously shifting the stable and impermeable organizational

boundaries making it difficult to understand the shared routines and practices in organizations (Dobusch & Schoeneborn, 2015; Faraj et al., 2011; Schreyögg & Sydow, 2010). Organizational scholars thus should shift their focus towards the social and material environment of workspaces to understand the new and complex routines in relentlessly changing environments.

During the COVID-19, an abrupt halt in the growth of coworking-spaces was observed (Amador de San José, 2021). Yet, the studies show that the owners or managers of coworking-spaces are optimistic that things will return to normal (Ceinar & Mariotti, 2021). Especially, with the rise of remote work during the pandemic, many large corporations are considering alternate work arrangements away from large urban areas, which might cut their real estate cost and might open a new window of opportunity for rural coworking-spaces (Tomaz, Moriset, & Teller, 2021).

Summing up, the phenomenon of coworking-spaces is here to stay, and more new shared workspaces form would emerge. This thesis provides the fundamentals to look at the context, structures, processes, and potentials of shared workspaces. I hope this thesis will inspire other organizational scholars to look beyond traditional organizations towards modern and contemporary workplaces that bring together people from different walks of life.

### **10.3 Concluding Remarks**

These are strange times when on the political spectrum, countries are building walls to maintain their national identity. Businesses are focusing on permeability, connectivity, and sense of community to harvest the benefits from diversity rather than sameness. This research thesis emphasizes the importance of breaking down walls and building bridges between different actors to seek the benefits (e.g., knowledge exchange, social support) from spatially collocated diverse users with distinct professional backgrounds. In the end, I would like to conclude this thesis with the following slogan of a coworking-space: “ We breakdown walls so we can get breakthrough in our businesses” [Cynthia Chiam].

## 10.4 References

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