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Beyond co-working: Drivers of collaboration in shared workspaces

Working Paper



IMPACT
HUB



IMPRINT**Authors**

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Executive Summary

- This paper explores **the role of collaboration in co-working spaces**. While such spaces have grown at unprecedented pace over the last two decades, little is still known about how and when they facilitate meaningful cooperation. Based on a unique data set of 2,336 members of 76 Impact Hubs as well as survey data from Impact Hub staff members, a longitudinal dataset and 10 qualitative interviews, we shed light on the prevalence of collaboration, its effects on performance and its antecedents.
- Results provide clear evidence that co-workers at Impact Hub are doing more than just “working alone together” (Spinuzzi, 2012). The vast majority of respondents interacts regularly with other community members and provides mutual professional support. **44% of members worked on joint projects** and almost one quarter of respondents reported having been hired by another member over the last year.
- We find that collaboration at Impact Hub is associated with increased work performance on a number of levels such as the recognition **of professional opportunities**, the **quality and quantity** of services, social impact, as well the access to support and investment capital. This effect is particularly visible in longitudinal analyses: Every additional professional contact made through Impact Hub in 2016 was associated with a gain of 2,000 USD in investment by the end of 2017.
- Some types of co-workers benefit particularly from collaboration, including **participants of Impact Hub programs** (e.g. incubation, acceleration) who were more successful than others in entering partnerships that were associated with the **creation of more jobs**.
- We identify numerous antecedents of collaboration on the individual, relational, socio-structural and contextual level, including **trust** and a **collective sense of community** as well as a diverse set of **community engagement practices** (e.g. member interviews, “initiation”).
- Based on our analyses, we derive **eight recommendations for practitioners**. Amongst them, we highlight the importance of using communities as a level of collaboration analysis rather than looking at individuals only. We also discuss the role of programs, space design and virtual membership in the promotion of collaboration as well as the limits of the “enforceability” of collective work.

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1. Introduction

In the last two decades, co-working spaces have experienced unprecedented growth. While virtually unknown in the early 2000s, their number across the world has mushroomed to over 19,000 by 2018, growing by 50% annually between 2013 and 2018 alone. Today, around 1.7 million workers are estimated to be “inhabitants” of such spaces (Deskmag, 2013; 2018; Morisete, 2014).

One driver of this development is a transformation of how work is organized. In OCED countries, the share of freelancers, independent contractors and micro-entrepreneurs in the overall workforce is rising¹. For them, co-working spaces frequently provide an alternative to working from home or a coffee shop. Being at a co-working space means having physical access to a desk, a Wi-Fi connection, and a printer, often in an open floor plan setting (Gandini et al., 2015).

1.1. FROM CO-WORKING TO COLLABORATIVE COMMUNITIES

The growing popularity of co-working spaces also has to do with the *social* spaces they create. Rather than just providing office infrastructure in which individuals can “work alone together” (Spinuzzi, 2012), they form an environment in which “independent professionals live their daily routines side-by-side with professional peers” (Gandini, 2015: 194). The social exchange helps freelancers, entrepreneurs and other members to overcome feelings of isolation and loneliness (Brown, 2017). The interactions in the shared space promote mutual social support as well as a sense of belonging, which can benefit workers’ wellbeing and perceived effectiveness (Garret et al., 2017; Gerdenitsch et al., 2016).

Physical co-location can furthermore provide access to networks and work-related information, as well as create opportunities for learning and professional collaboration (Gerdenitsch et al., 2016). In an explorative analysis of three US co-working spaces, Spinuzzi (2012:426) found empirical evidence of such collaboration between co-workers, ranging from receiving help from “brainiacs on spreadsheets and budgets” to establishing different forms of business collaboration and subcontracting.

Against this background, some authors have made the argument that many co-working spaces are in fact “working communities” rather than work spaces (Bouncken and Reuschl, 2018: 318; Garrett et

¹ An estimated 10.5% to 30% of the U.S. workforce are employed through independent contracts, call-on work or other temporary alternative work arrangements (Bureau of Labor Statistics, 2018; Katz and Krueger, 2015; McKinsey Global Institute, 2016). While the data is not fully conclusive, many observers see a marked increase of such forms of work over earlier years and expect a further increase of the share freelance and alternative work arrangement in the workforce (Edelmann Intelligence, 2017; Garrett et al., 2017; Katz and Krueger, 2016).

al., 2017; Moriset, 2014). Even though individual co-workers are usually neither part of the same organization and hierarchy, nor engaged in market relationships, they often build close ties and develop shared visions, routines and practices. Such practices can include intellectual, emotional and even financial support for each other as well as processes of collective action and decision making (Garrett et al., 2017).

The emergence of such communities is often aided by deliberate decisions by the creators of the space. The “Co-working Manifesto”, an early artifact of the co-working movement, emphasizes a collective and collaborative vision of co-working, being “a new economic engine composed of collaboration and community, in contrast to the silos and secrecy of the 19th/20th century economy” (Co-working Manifesto, 2011). Some large networks of co-working spaces have embedded this idea into their operative work. Their ambitions to create and cater to communities translate into a range of practices, from active member recruitment and onboarding activities, to organizing community events, training and acceleration programs, to active engagement in the ecosystem and market of their member community.

1.2. MORE THAN “WORKING ALONE TOGETHER”? THE GOALS OF THIS STUDY

In spite of the rapid rise of co-working as a phenomenon, relatively little is known about its value to those who inhabit these places. Extant research has predominately been exploratory and anecdotal (e.g. Brown, 2017; Garrett et al., 2017; Gerdenitsch, 2017; Spinuzzi et al., 2012). It has provided rich insights, but little solid empirical evidence as to how and under which circumstances co-working spaces contribute to collaboration and professional success (Colleoni and Arvidsson, 2014) or even to the emergence of communities.

At the same time, the beneficial effects of sharing a workspace are by no means self-evident. Open space designs, as employed by many co-working spaces can create noise and distraction. In fact, a study among Chinese service workers has associated working in open-plan offices with *lower* productivity than working from home (Bloom et al., 2014). Similarly, an analysis of companies moving from closed to open-plan office settings found the levels of face-to-face communication to decrease rather than increase in the new environment, as many co-workers reduce verbal communication to avoid disturbing others (Bernstein and Turban, 2018).

Also, not every intent of collaboration is necessarily leading to a relevant outcome. As Spinuzzi (2012) finds in his analysis of co-working spaces, many co-workers express the interest to find collaborators and clients in the space. However, only a minority manages to effectively do so. Most are “good neighbors” rather than “good partners” (Spinuzzi, 2012: 428). j

Against this background, this study aims to explore how and to which extent members of shared workspaces collaborate and whether this collaboration leads to positive work outcomes. We seek to understand the types of social interaction that take place and the degree to which such action indeed

leads to social support, professional collaboration and the emergence of federated projects and innovation. Furthermore, we seek to understand the determinants of collaboration on the individual (e.g. work experience), relational (e.g. level of trust), group (e.g. average age of members) and structural level (e.g. community-building practices). The following research questions are a result of these deliberations:

Research question 1: **What types of collaboration take place in shared workspaces?**

Research question 2: **(When) does collaboration lead to positive work outcomes?**

Research question 3: **Which antecedents on the individual, relational, socio-structural and contextual level lead to collaboration?**

1.3. SAMPLE AND METHOD

In order to investigate our research questions, a comprehensive quantitative online survey was conducted among the 16,000+ members of the **Impact Hub network**, “one of the world’s largest network focused on building entrepreneurial communities for impact at scale” (Impact Hub, 2019).

The following aspects make this sample a unique fit for our research questions. First, in contrast to traditional co-working spaces, Impact Hubs often engage in activities that aim at building communities and actively support their members. Accordingly, in addition to allocating shared workspaces, Impact Hubs offers programs, workshops, and events for members “to become inspired, connected and enabled to build a sustainable future for everyone” (ibid.). At the same time, not every Impact Hub engages with its members in the exact same way. Instead, community building, positioning and space design are often adapted to local needs, resources and strategies. This creates a unique opportunity to investigate the effects of different co-working configurations and practices which can influence collaboration between members.

Second, due to the size and global footprint of the Impact Hub network², our sample of Impact Hub members shows high variance in respect to several interesting individual characteristics, such as the

² At the time of data collection, Impact Hub was active in over 95 cities, of which 76 are represented in the sample.

time spent physically in an Impact Hub³, professional roles and activities, and orientation towards positive social and environmental impact.

The **survey** was available in eight languages and took place in March 2018. A survey communications campaign was designed to invite the 16,000 members worldwide to participate. 3,099 members submitted responses of which 2,336 cases could be included into final analyses⁴. In addition, data was also sourced from a second survey among 76 local Impact Hub staff members as well as from internal quarterly reporting of Impact Hubs in order to capture determinants of collaboration on the structural level (e.g. size of Impact Hubs, community-building practices).

To provide a more comprehensive picture, 10 interviews with executives of Impact Hubs in Austria, Venezuela, the Netherlands, Brazil, Mali, Italy, Taiwan, and the USA were conducted. Together with document reviews and examples of member collaboration, the analyses of these interviews were used to prepare two spotlight sections that illustrate and contextualize some key findings of this report (see pages 27ff. and 39ff.).

1.4. ANALYTIC FRAMEWORK AND VARIABLES

Given the above outlined research aims, our report follows a three-part **analytical framework**, putting collaboration at its center (cf. Figure 1). This model is based on Nahapiet and Ghoshal's (1998) seminal work on the role of social capital and collaboration in knowledge creation as well as Wood and Gray's (1991) theoretical framework on collaboration. The latter proposes three areas for examining collaboration practices: antecedents of collaboration, the process of collaboration itself, and the outcomes of that process.

The central part of the model is **individual collaboration** between members of an Impact Hub. Following Thomson and Perry (2006: 23), we define it as "a process in which autonomous actors interact through formal and informal negotiation, jointly creating rules and structures governing their relationships and ways to act or decide on the issues that brought them together; it is a process involving shared norms and mutually beneficial interactions". Whereas many scholars look at collaboration on an organizational level, our understanding builds on the notion of "interprofessional collaboration" between individuals "as a dynamic and interactive process" that involves the exchange of resources as well as shared risk and returns (D'Amour et al., 2005: 188ff.).

³ Impact Hub offers different types of membership: 31% of our respondents rent an office or fixed desk, 17% are working at their Impact Hub for 100+ hours per month, 14% for 40-99 hours, 12% for 20-39 hours, 17% for 1-19 hours, and 8% for 0 hours per month (virtual membership).

⁴ The section on collaboration was not shown to 219 survey participants who had inactive or undefined Impact Hub memberships. Another 518 cases were excluded because of incomplete responses in the section on collaboration which had been optional. Responses were considered as incomplete if survey participants provided no answers to more than one out of five items per collaboration instrument (cf. Chapter 1.4). Also, ten cases were excluded because participants clearly paid no attention to questions (e.g., extremely short time spend in the survey section), as well as 16 respondents who were Impact Hub staff members and thus not the direct target audience of the survey.

In the context of this study, the concept was operationalized in the form of two variables: *community interaction* and *co-creation*. In the survey, *community interaction* was measured through a scale consisting of the following five (7-point scaled) items: “engaged in small-talk with other members”, “had an informal meeting”, “took part in a community event”, “took part in a work-related event”, and “discussed work with another member”. This instrument is partly based on the community participation scale introduced by Peterson et al. (2008) and inquiries on social interaction and co-working by Gerdenitsch et al. (2016). For both scales, answer options ranged from 1 (“never”) and 2 (“once a year”) to 6 (“every week”) and 7 (“every day”).

Our second scale, *co-creation* captured forms of collaboration that can already be associated with a tangible outcome, such as the exchange of financial or human resources or risk sharing and involve a higher level of professional commitment. The variable consists of the average response to another five (7-point scaled) items that indicated the frequency with which the following activities occurred: “started a new project or organization together with another member”, “co-developed an innovation”, “worked jointly on a project or activity”, “got hired or contracted by another member”, and “received a financial investment from another member”⁵. These two variables allow us to investigate Research Question 1, which is concerned with the types of collaboration that take place in a co-working space.

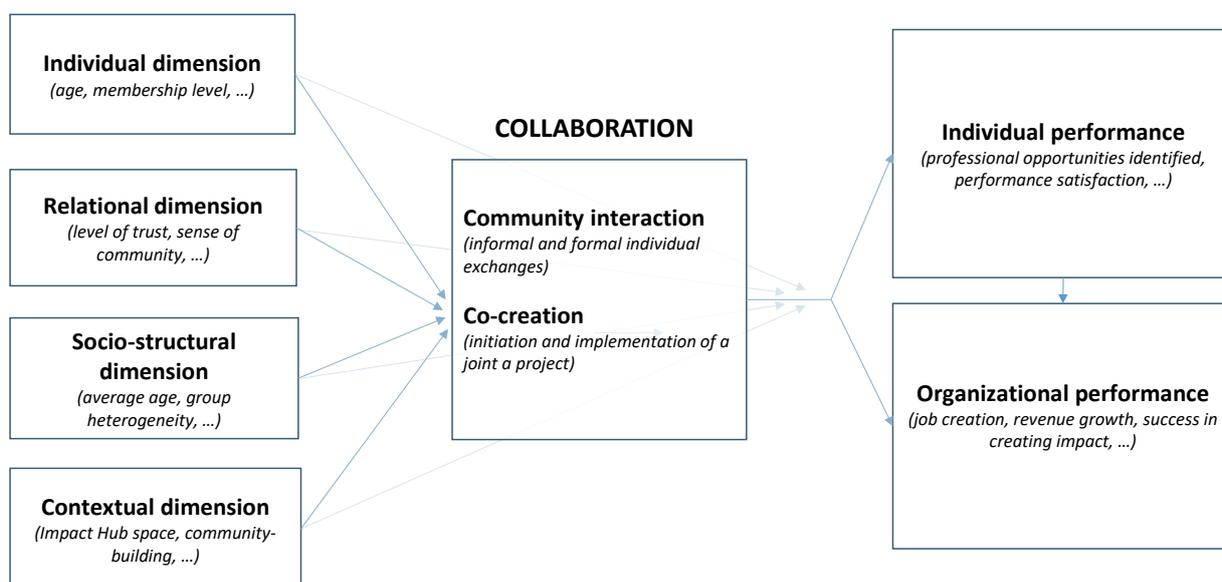


FIGURE 1: ANALYTICAL FRAMEWORK OF COLLABORATION, ITS ANTECEDENTS AND OUTCOMES.

The second part of the framework is concerned with the **outcomes of collaboration**. These include variables both on the individual level – such as social support, opportunity recognition, performance satisfaction, and success attribution – as well as performance and impact indicators on the level of the

⁵ The Cronbach’s alpha for the community interaction scale is 0.832 and 0.838 for the co-creation scale, which indicates high levels of reliability.

organization, including product or service quality improvement, investment, support, and venture growth (e.g. Gerdenitsch et al., 2016; Herman and Renz, 1997; Ucsbarasan, 2009). Together with the measures on collaboration, these variables allow us to examine whether collaboration results in improved work outcomes and performance increases (Research Question 2).

Finally, in correspondence with Research Question 3, the framework is also concerned with **antecedents of collaboration**. These variables are grouped in four dimensions: the individual (e.g., demographics, membership type), the relational (e.g., trust, sense of community), the socio-structural (e.g. average age in a local Impact Hub community), and the contextual dimension (quality and offers of a local Hub space)⁶.

The research questions were explored by using different **methods of analysis**. Depending on the question and variable, these included either descriptive statistical analyses (means comparisons, frequency distributions) or controlled multi-level models which account for the nested nature of the data (Heck et al., 2014). In the latter model, a number of control variables were included: On the micro-level, we added age, gender, and education. On the meso-level, a variable was introduced to capture the organizational lifecycle stage of each enterprise, with options including (1) intention formation, (2) idea development, (3) start-up, (4) established organization, and (5) scaling (Andersson et al., 2016; cf. Chapter 3 in more detail). On the macro-level, GDP per capita values were introduced for each country (World Bank, 2018c). It is important to note that, while many relationships are reported as means comparisons or with simplified models to allow visualization and readers' easier interpretation, all of the causal relationships were also tested in the above outlined controlled model. Furthermore, we would like to point to the fact that most variables in use (except those describing the contextual dimension and the macro-level indicators) are self-reported and therefore have to be interpreted with caution.

⁶ We will describe the single variables in use in more detail in the respective chapters.

2. Prevalence and limits of collaboration

In our first results section, we will start with describing the population of our sample – the membership base of Impact Hub. Hence, the demographic profile, professional roles and fields, impact orientation, and venture characteristics will be presented before we will outline their indicated motivations for entering a co-working space (2.1). In 2.2, we will respond to Research Question 1 and thus elaborate the various forms collaboration takes among the community of Impact Hub.

2.1. THE MEMBERS OF IMPACT HUB AND THEIR MOTIVATION

The Impact Hub network is spread globally and so is its membership base. The 16,000+ members are co-working in (at least) one of the 100+ local spaces in more than 50 countries and five continents. In spite of this diversity, the membership of Impact Hub shares a number of characteristics as the descriptive statistics on the following characteristics based on our survey reveal.

Demographic profile. More than 60% are less than 35 years old, among which 16% are even below the age of 26. Another quarter is younger than 45 years, leaving only about 14% of the members being 46 years or older. The vast majority of co-workers at Impact Hub are highly educated: with 51% having earned a graduate and 33% an undergraduate degree, more than 80% are academics. The gender distribution within Impact Hub is rather balanced: 56% of the members are male, 43% female, and 1% indicated other non-binary gender options (cf. Figure 2). These findings are comparable with other descriptive studies on the demographic profile of co-workers. Foertsch (2017), for instance, found that 43% of the respondents participating in the 2017 global co-working survey are below the age of 30, 44% women, and 85% among the same have finished an academic education.

Professional roles and fields. Impact Hub members display an entrepreneurial profile. Almost 60% of the respondents in our sample reported to be the sole or co-founder of the organization they are mainly working for. Employees, volunteers or interns make up about one third, whereas the majority holds a board or management function or is a freelancer (cf. Figure 2). Impact Hub members in the sample are active in 36 different industries, ranging from (information) technology and media, to consulting, business support, education, arts and culture. Moreover, our respondents show a focus on creativeness and innovation, with 60% having indicated to offer a somewhat unique product or service to an underserved group of beneficiaries. This underlines the positioning of Impact Hub as an entrepreneurial community and corresponds with an understanding of co-working spaces as “innovation hubs” (Friederici, 2018).

Social Impact. One main distinction between the Impact Hub community and other groups at co-working spaces is its commitment to impact and social entrepreneurship. This positioning is clearly reflected in the goals of the membership base. More than 80% of the survey respondents indicated to address a social or environmental issue based on the UN Sustainable Development Goals (SDGs) through their work. Most members aim to achieve improvements in the areas of education, decent work, social justice and health (cf. Figure 2). Accordingly, almost 60% of the members stated to take their social or environmental impact as the main measure of success⁷.

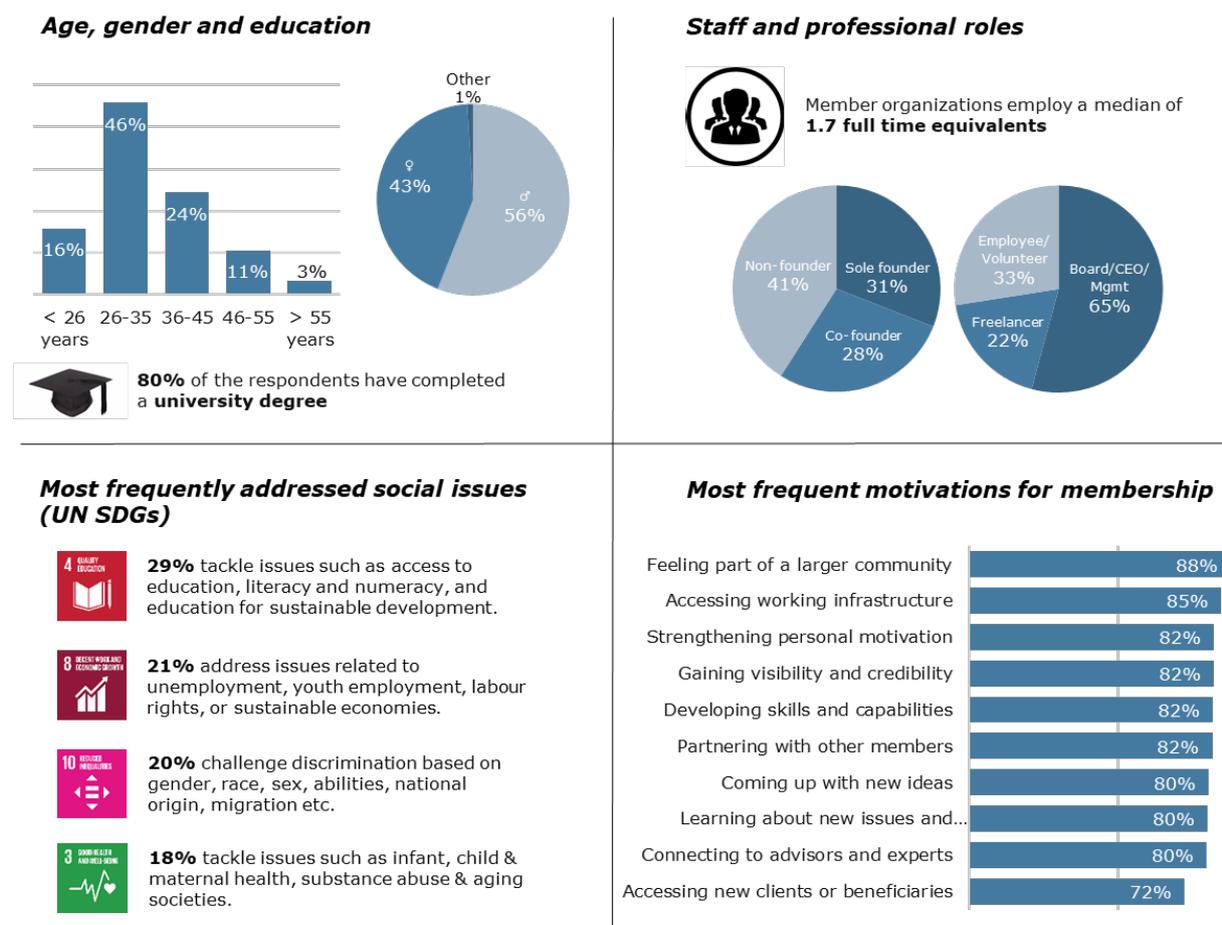


FIGURE 2: DEMOGRAPHICS, ACTIVITIES AND MOTIVES OF IMPACT HUB MEMBERS.

Ventures of co-workers. On average, those respondents who are managers and/or founders of an organization reported to employ a median of 1.7 full-time equivalents (FTEs), with the average reaching 5.1⁸. Ten percent of the respondents employ more than 10 FTEs, 1.5% over 50. About two thirds of the members employ three or less FTEs. Again, these findings mirror insights from studies in other co-working communities, in which ventures with more than five employees are very rare (Pohler,

⁷ The mission orientation of respondents was measured with an instrument which had been developed in the Global Entrepreneurship Monitor project (Lepoutre et al., 2013). Participants were asked to define what kind of value they aspired to create through their entrepreneurial activities and had to distribute 100 points to indicate their focus on three dimensions: financial value, environmental value and social value.

⁸ 10 outlier cases with more than 150 paid full-time equivalents were excluded for this calculation.

2012). The median founding year of the ventures is 2015, meaning that at the time of the survey, 60% of the respondents' organizations were 2 years old or younger. Accordingly, more than half of them self-identified to be in their start-up or pre-start-up phase⁹.

Motivations of Impact Hub members. In the survey, Impact Hub members were also asked to indicate their motives for joining Impact Hub. The desire to "feel part of a larger community and network" is the need ranked as most important, followed by the need of access to work infrastructure, "strengthening my personal motivation" and "partnering and collaboration with other members" – each indicated by more than 80% of the respondents. This confirms findings in literature that one significant demand met by co-working spaces is the possibility to overcome isolation (Gerdenitsch et al., 2016). Furthermore, it underlines the perceived importance of members to not only join a work space but a community (Garrett et al., 2017). Other very frequent motives included the desire to gain information and new skills, inspiration as well as increased visibility in the marketspace (Figure 2).

2.2. FORMS OF COLLABORATION

After having established that, in a nutshell, the members of the analyzed Impact Hubs are young, entrepreneurial and impact-oriented, we will turn our attention to the degree and form of their collaboration. As outlined in Chapter 1.3, we analyze two types of collaboration: *community interaction*, which encompasses a broader concept of informal and formal exchange (e.g., regular conversations, meetings, event participation), and *co-creation*, focusing on more concrete and operational forms of collaboration (e.g., co-developing an innovation, joint project or work).

Results suggest high levels of **community interaction** across the sample. Almost all respondents indicated to have engaged in a small-talk with other members at least once a year, 92% of the members recalled discussions about work, while 85% reported informal meetings and taking part in community events (cf. Figure 3). While some of these interactions took place with Impact Hub staff and co-workers of the same organization, more than 86% of the interactions happened with other peers. Interestingly, 60% of those were reported to operate in other fields or industries than the respondents themselves, implying that they used the space to connect with cross-sectoral networks. Many of these interactions took place much more frequently than once a year: 40% of the respondents reported taking part in at least one community event per month, 57% took part in informal meeting, and 76% engaged in small-talk with other members once a month or more often. On average, respondents estimated having had conversations with 29 different persons in Impact Hub over the year and could identify nine persons with whom they interacted frequently (at least once a week).

⁹ The high number of nascent organizations is likely an indicator for the attractiveness of co-working spaces in an early lifecycle stage. It does not necessarily mean that ventures stay small. As Foertsch (2017) points out, many co-workers leave the respective space once their venture has reached a certain level of maturity and size. In the context of Impact Hub, the majority of ventures has been found to experience considerable growth over time (Vandor and Leitner, 2018).

Much of this exchange takes place in a professional context. 69% indicated having had work-related conversations with other members at least once a month and overall, members also reported to having received an average of 3.3 hours of professional support (mentoring, coaching, feedback, etc.) from other members each month. Considering that a quarter of the respondents has memberships that allow them either no or only very limited access to the physical co-working space, this suggests that community interactions are very wide-spread and frequent among members of Impact Hub and that they encompass both informal as well professional dimensions.

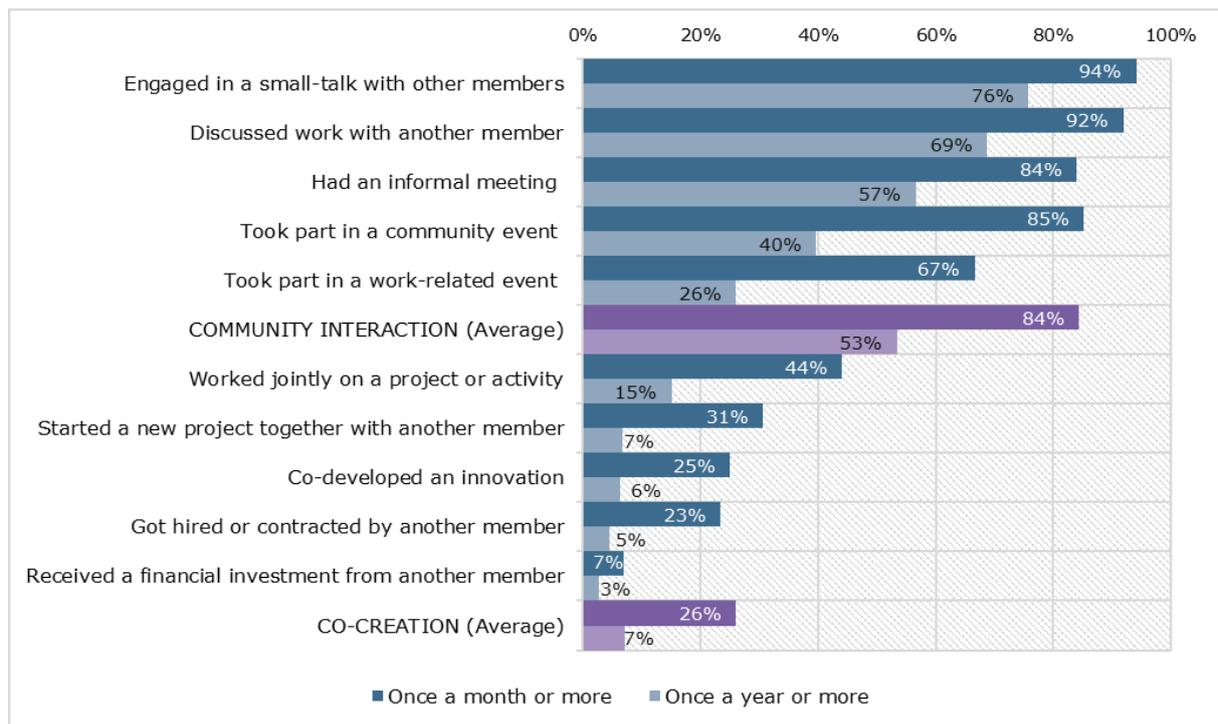


FIGURE 3: SHARE OF RESPONDENTS WHO ENGAGED IN DIFFERENT FORMS OF COLLABORATION (%).

Our data also shows high levels of **co-creation** among members of Impact Hub. 44% of the respondents indicated to have worked jointly on a project or activity with another member over the course of the last year. Almost one third started an entirely new project or organization together with another member, and about 25% each co-developed an innovation or got hired or contracted by another member. The least frequent way of co-creation is receiving financial investment from another member, which was reported by seven percent of the members during 2017 (cf. Figure 3).

Collaboration between members is not limited to interaction. Instead, many respondents declared to have an emotional connection to the group, a **sense of community**. Originating from community psychology, the latter describes an individual's experience of membership, influence, integration, and emotional connection within a collective (Chavis et al., 1986). The related measure in our survey is based on the brief sense of community scale developed by Peterson et al. (2008) – and yielded clear results: almost 70% of the respondents indicated to feel like belonging to the community of Impact Hub and thereby show a strong feeling of interpersonal relatedness. Also, 70% stated to "have a good

bond with the people here” which clearly speaks to a high level of emotional connection to the community.

2.3. SUMMARY OF RESULTS: PREVALENCE AND LIMITS OF COLLABORATION

Overall, our findings suggest that with respect to their demographics, work interests and motivations, members in the 76 analyzed Impact Hub are rather **representative of the general population** of entrepreneurs, knowledge workers and freelancers in co-working spaces that have been investigated in previous studies (Foertsch, 2017; Pohler, 2012; see Section, 2.1): They are characterized by a balanced gender distribution and the majority of the members is rather young, highly educated, and often run nascent small enterprises or operate as freelancers. The main notable difference to other co-working communities is the clear dedication to social and environmental impact and Sustainable Development Goals among most members of Impact Hub.

With regard to collaboration and in response to Research Question 1, we found strong evidence that members of Impact Hub are doing **more than just “working alone together”** (Spinuzzi, 2012). The vast majority of respondents attends community events, engages in personal and professional exchange as well as peer mentoring. This behavior mirrors the core motivations of Impact Hub members of which more than 80% join the space to build connections, learn and be part of a community. In many cases, interaction also translates into the co-creation of more complex joint work activities: members regularly work on joint projects, co-develop innovations or hire each other. Accordingly, the two types of collaboration covered in our analysis correlate strongly with each other. This implies that the more actively a member is present within the community, the more likely he or she is working on a joint task or project with another member.

Another aspect of collaboration between Impact Hub members is their shared **sense of community**, with a majority of respondents feeling part of a community rather than as mere customers of a co-working space. In many cases, this sense of community also translates directly into different forms of social support and professional success (see next chapter).

3. The outcomes of collaboration

In the preceding chapter we have learned that collaboration at Impact Hub takes many forms and occurs quite frequently. However, it remains unclear whether such collaboration also has positive effects on individual work quality and organizational performance. This question (Research Question 2) is addressed in the present chapter. First, we explore whether and how collaboration is associated with positive work outcomes on the individual level: the recognition of entrepreneurial opportunities, productivity, work quality and the experience of social support. Second, we present the effects of collaboration on organizational outcomes, including an explorative analysis of their long-term effects. Finally, we investigate which individuals and organizations benefit most from collaboration.

3.1. COLLABORATION AND INDIVIDUAL WORK OUTCOMES

Identifying **entrepreneurial opportunities** represents one of the first and most crucial steps in forming a new project or venture (Shane and Venkataraman, 2000; Stevenson, 1983). On average, respondents of our survey indicated that they identified 2.5 opportunities for creating a social or commercial venture during 2017 through or in the Impact Hub community. Our analysis shows that collaboration directly contributes to such discoveries. With each additional level of collaboration (on a 7-point scale for co-creation), an average respondent identified 1.2 opportunities more to start a project or venture, taking all control variables into account (cf. Figure 4, to the left).

A clear picture appears when we compare the number of opportunities identified by high versus low collaborators: the number of opportunities recognized by members who collaborated frequently is almost twice as high as the one of low collaborators (variable: community interaction). When looking at the co-creation variable, the difference is even bigger: members with high level of collaboration found 240% more opportunities than those who collaborated less (3.45 opportunities vs. 1.43 opportunities, see Figure 4, to the right). This indicates that, on the level of recognizing opportunities for forming ventures, collaboration plays a distinct role. An exemplification of this pattern is illustrated in spotlight no. 2 (page 27) which describes a venture foundation by three entrepreneurs working together at Impact Hub Caracas.

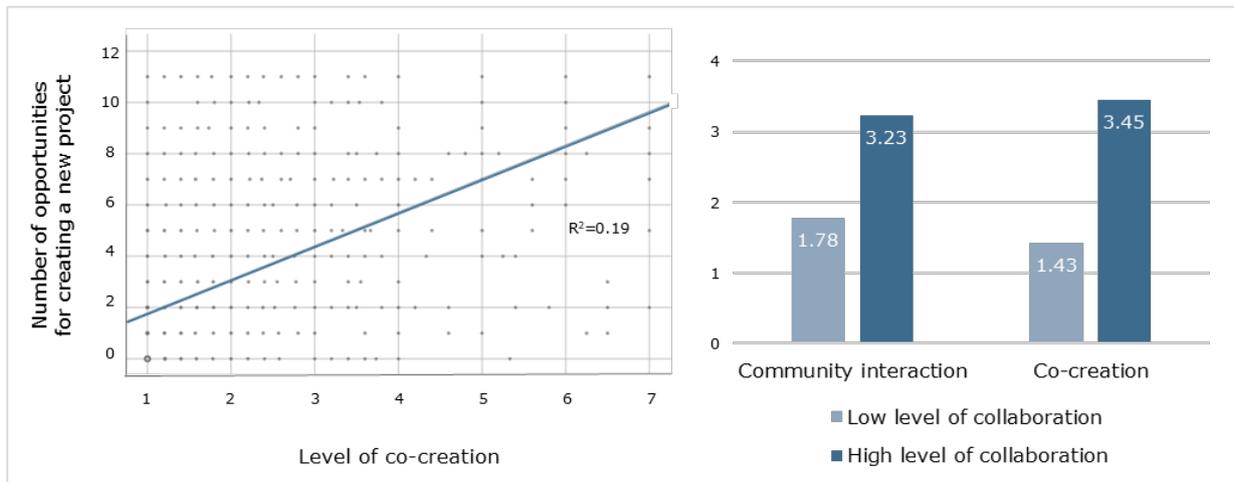


FIGURE 4: THE IMPACT OF COLLABORATION ON OPPORTUNITY RECOGNITION¹⁰.

Collaboration also has positive effects on individual **performance satisfaction**. This concept was operationalized in accordance with Gerdenitsch et al. (2016) who developed an item measuring the “participant’s satisfaction with the quality of their work” (ibid.: 6) and consequently used it as a proxy for objective job performance. We asked the members to indicate their satisfaction with the quality of their work as well as with their work goal achievements (on a 5-point scale each). Results indicate that community interaction increases members’ satisfaction with both their work and goal achievements and is highest for those who collaborate on a daily basis (cf. Figure 5). Similar effects were not found with regards to the co-creation variable, suggesting that these more complex types of collaboration are not associated with an immediate increase in satisfaction with one’s work performance.

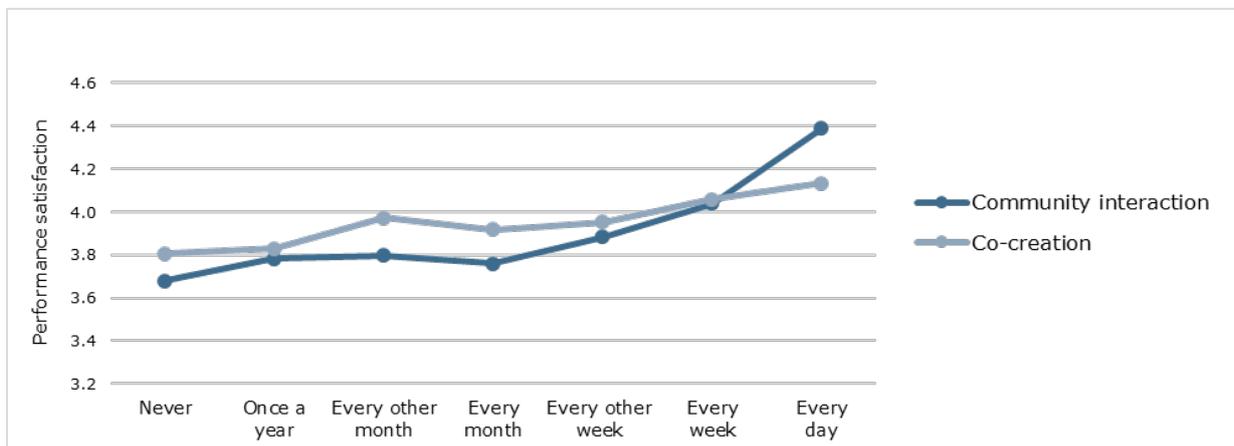


FIGURE 5: THE IMPACT OF COLLABORATION ON PERFORMANCE SATISFACTION.

Finally, we tested the effect of collaboration on the level of **social support** respondents receive from other members of Impact Hub. Building on a concept introduced by Frese (1989), we understand social

¹⁰ The figure to the left shows a binned scatterplot including a linear fit line picturing the regression between co-creation and opportunity recognition (without controls). The figure to the right shows mean comparisons. In order to compare high and low levels of community interaction and co-creation, the sample was divided via median split (high interaction: 3.8 and more; high co-creation: 1.2 and more).

support as direct, affective and affirmative behavior between two individuals. Accordingly, respondents were asked to answer four questions related to social support at Impact Hub, including whether other members supported them in “getting things done at work”, or if one could “rely on them when things get difficult at work” (Frese, 1989; Gerdenitsch et al., 2016).

Our model yielded clear and highly significant effects between collaboration and social support: More community interaction of a member is associated with higher levels of received social support. Such effects were found for both measures of collaboration, community interaction as well as co-creation. The effects become very clear when we divide the sample into frequent and rare collaborators along a median split: the average level of received social support differs by almost one full scale point (out of five), depending on whether the respondent has collaborated frequently or rarely (cf. Figure 6, to the left). Given that the time spent at Impact Hub accounts for a significant share of the members’ overall working time, peers thus seem to provide an important social support function (e.g., Gerdenetisch et al., 2016).

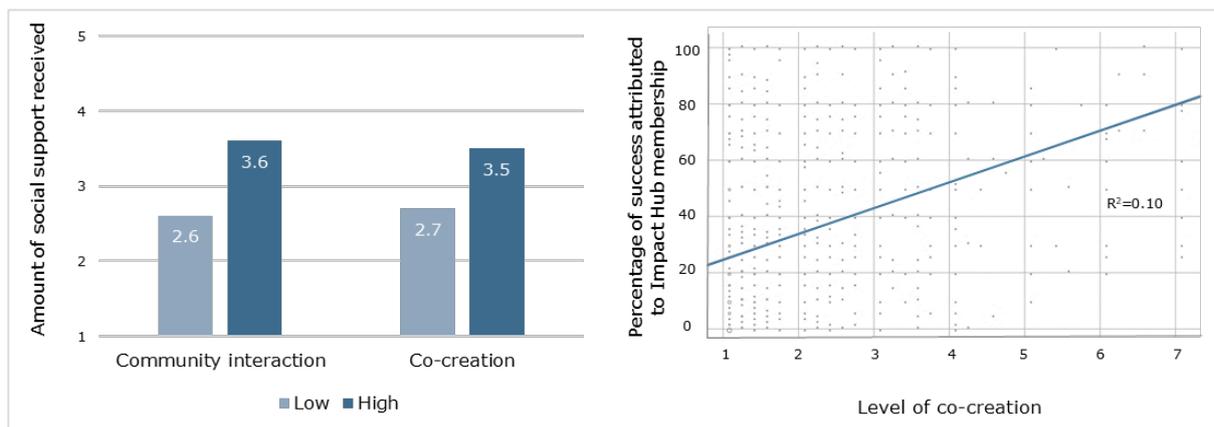


FIGURE 6: THE IMPACT OF COLLABORATION ON RECEIVED SOCIAL SUPPORT AND SUCCESS ATTRIBUTION.

As a next step, we investigated whether those who collaborate at Impact Hub also give the Impact Hub community more credit for their professional success. For measuring **success attribution**, we asked survey participants to estimate how much of their professional success in 2017 they would ascribe to being a member of Impact Hub (see also Rogoff et al., 2004). The results of our model show a positive relation between collaboration and success attribution: with every additional level of engagement in co-creation activities, such as hiring other members or starting joint projects (on a 7-point scale), respondents attributed 6.5% more of their professional success to the Impact Hub community (cf. Figure 6, to the right). In the case of community interaction, the increase amounted to 6%.

This pattern could also be found when looking at the likelihood of members to recommend Impact Hub to their friends. We operationalized **recommendation** by using the Net Promoter Score scale, a widely applied metric among marketing scholars and practitioners to assess an individual’s likelihood to recommend a certain product, service, or firm (Keiningham et al., 2007). Our model’s results show strong

and significant effects of both types of collaboration on how much members would recommend their community space. Together, these findings suggest that more collaboration is not only associated with better performance, but also with the individual perception that this increase is caused by being part of the Impact Hub community.

Lastly, and as some scholars have already noted, co-working and interaction potentially do not only yield positive work outcomes (Bernstein and Turban, 2018; Bloom et al., 2014). Instead, co-location in open space settings can create **distractions** and interfere with communication. Some of these effects were also found in our sample: for instance, almost half of our respondents indicated that they were distracted from doing their work at least once throughout 2017 and around ten percent reported having received at least one bad advice by another member over the last year.

Interestingly, these negative sides of collaboration correlate highly with a respondent's community interaction and co-creation frequency and even some of the positive outcomes related to performance. This suggests that while e.g. high levels of noise contribute to distraction, such interferences may to some extent also be unavoidable "unintended side-effects" of more communication and exchange. Their effects on collaboration seem to be quite limited though. While distraction is associated with significantly lower work performance and productivity among respondents, these effects are more than offset by the other, above beneficial effects of higher levels of collaboration they come with. Nevertheless, our findings suggest that distractions hinder the unfolding of the full potential of collaboration and decrease satisfaction with the membership experience.

3.2. COLLABORATION AND ORGANIZATIONAL PERFORMANCE

Our findings so far show that collaboration indeed supports Impact Hub members in increasing their individual work performance and social support. However, collaboration has also been argued to directly lead to positive effects on start-ups and other types of organizations (e.g., Arya and Lin, 2007; Marek et al., 2015). While most of these effects are likely to occur only in the long term (see also Chapter 3.3.) and are difficult to attribute to the actions of one member of an organization alone, some results of our cross-sectional analysis provide tentative support for the claim that such relationships might indeed exist.

First, we found that higher levels of collaboration are associated with a **higher number of supporters of a venture**¹¹. Both community interaction and co-creation significantly increased the number of support providers our respondents could access (cf. Figure 7). Members with low levels of community interaction or co-creation were on average supported by 2.6 different institutions or groups, as opposed to frequent collaborators who received support from three different sources. An example of how

¹¹ Respondents were asked to name institutions and individuals who had provided significant financial, intellectual or network support in 2017. Answer options included family and friends, foundations, incubators, and many others (see Vandor and Leitner, 2018).

Impact Hub Phnom Penh members got in touch with new partners and stakeholders and consequently built a successful venture is outlined in spotlight no. 4 (page 29).

Second, positive and significant effects were also found when testing the impact of collaboration on the **number of investment sources**. Based on relevant literature (Nicholls, 2010) a list of investor types was composed and presented to the survey participants, including banks, private commercial investors, foundations, and several others. Respondents were then asked to indicate the source(s) their organization received investment from over the course of 2017. Results show that more community interaction or co-creation is again associated with a higher diversity of a venture's investment sources. For instance, investees with low levels of collaboration acquired capital from 1.4 different sources as opposed to 1.7 for relatively frequent collaborators. This suggests that collaboration in a co-working space can help an entrepreneur expand her professional network in ways that increase her ability to access sources of critical resources, such as investment capital (cf. spotlight no. 3, page 28).

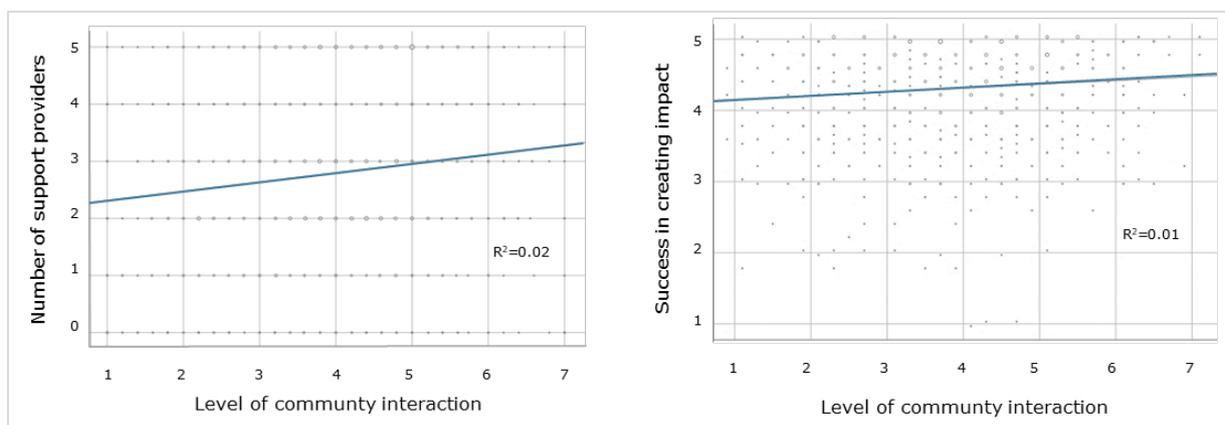


FIGURE 7: THE EFFECT OF COLLABORATION ON SUPPORT PROVISION AND SUCCESS IN CREATING IMPACT.

Third, we explored the influence of collaboration on the organizations' **success in creating impact**. This indicator's survey instrument was based on Herman and Renz' (1997) study of the effectiveness of non-profit organizations and asked the respondents to assess five of their ventures' impact outcomes on a (five-point) Likert scale. The results of our model show that community interaction significantly improves a venture's success in creating impact on *all* five surveyed levels: the more an Impact Hub member engages in community interaction, the more his or her venture was able to increase the number, quality and effectiveness of programs and services offered, the higher was their beneficiaries' satisfaction, and, lastly, the more successful was the organization as a whole. This increase in impact success also appears when testing the effect of community interaction on the average scale composed out of the five above named items, taking all control variables into account (cf., Figure 7, to the right).

3.3. LONG-TERM EFFECTS OF COLLABORATION ON PERFORMANCE

To complement above-mentioned findings, according to which certain outcomes of collaboration – in particular those on the organizational performance level – might become noticeable in the long term

only, we conducted an additional explorative longitudinal study with a subset of the data. For this, we merged the cases of those respondents who participated both in our main online survey in 2018 (cf. Chapter 1.3) with data from an earlier version of the survey conducted in 2017, which had already contained some questions regarding co-working and collaboration¹². This resulted in a new dataset consisting of 399 responses from 57 Impact Hubs, with each being represented once for two consecutive years. Through that, we were able to track whether and how collaborative activities in 2016 resulted in organizational performance in 2017.

Such a comparison is useful since some outcomes of collaboration – in particular those on the organizational performance level – can require time to materialize (e.g. attracting investors or implementing an innovation). Results of the explorative longitudinal study confirmed several of the above-mentioned findings with three particularly noteworthy results.

To begin with, we found a relative increase in the **amount of investment raised** (by late 2017) among those respondents in the sample who had indicated a higher number of professional connections throughout 2016. Every additional professional contact that a member had made through Impact Hub in 2016 leads to a gain of 2,000 USD in investment by the end of 2017 (cf. Figure 8, to the left). The relationship remains significant when we control for the amount of investment already raised in 2016, the maturity of the venture, its financial-profit orientation, as well as for the individual demographic profile. When dividing the sample via median split, it turns out that respondents who had established many connections throughout 2016 had received 17,300 USD more in investment by late 2017 than participants with a low number of connections.

Furthermore, the number of new professional relationships with other Impact Hub members, in particular with members from a different professional field, result in a higher likelihood of **creating new paid jobs**. To measure job creation, survey participants were asked to indicate whether their venture had created at least one full time paid staff positions over the past year or not. Our model yielded that, on average, ten additional contacts to a professional from a different field established in 2016 correlated with an increase of 1.3 new paid staff positions in 2017. Since we did not directly observe collaboration in the longitudinal data set and used the number of new contacts as a proxy, the exact nature of this relationship is not clear. Nevertheless, the findings suggest that collaboration in the community of Impact Hub facilitates the emergence of cross-sectoral partnerships and that such partnerships enable members' organizations to grow and create jobs. Such an interpretation is in line with previous research that has associated sector-spanning collaboration with innovation and higher levels of performance (Marek et al., 2015; Powell and Grodal, 2005).

¹² Amongst others, the survey asked participants to indicate the number of individuals with whom they had built a professional connection in Impact Hub throughout the year. We used this metric as a proxy for community interaction in our analyses for this section.

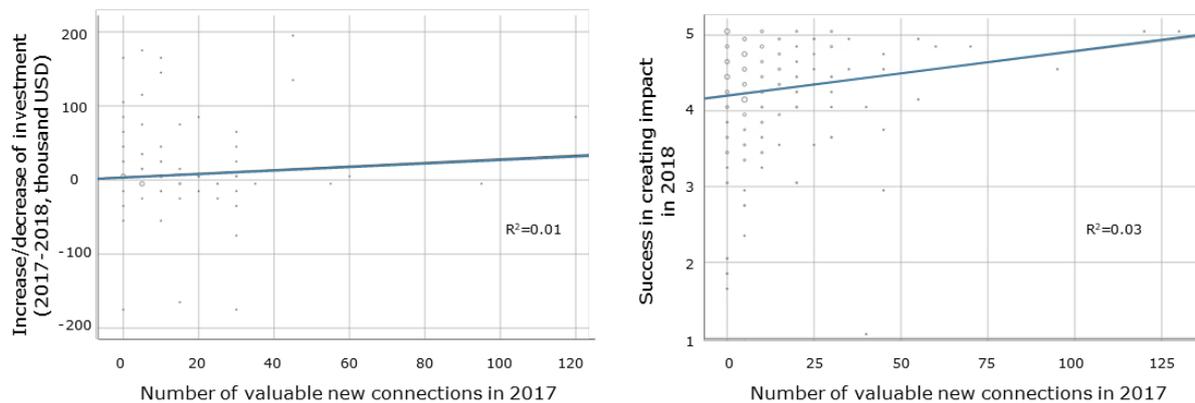


FIGURE 8: COLLABORATION AND ORGANIZATIONAL PERFORMANCE INCREASE IN THE LONG RUN¹³.

Finally, members who had established more new contacts throughout 2016 were also significantly **more successful in creating social and environmental impact** in 2017, as expressed in the number and quality of impact-related programs and services, their outreach, and beneficiary satisfaction (cf. Figure 8, to the right). While only explorative, these findings provide some support for the claim that collaboration may indeed precede and cause some of the described professional work outcomes. Moreover, they indicate that some beneficial outcomes of collaboration might only unfold over time.

3.4. WHO BENEFITS MOST FROM COLLABORATION?

In spite of its beneficial effects on individual and organizational performance indicators, collaboration is by no means a panacea for organizational growth and individual performance. With respect to some “hard metrics” such as revenue and staff growth, our analyses suggested no universally positive effects of collaboration. Instead, these effects seem to occur only under certain conditions and more for some particular actors than for others¹⁴. Three of the most interesting influences on the relationship between collaboration and organizational performance are presented in the following section.

3.4.1. Program participants

One characteristic feature of the Impact Hub network is the provision of *programs* to their members which provide support for their professional development. Across the network, more than 180 programs are available to members, including venture incubators, accelerators, investment readiness and scaling trainings as well as programs focused on institutional innovation and ecosystem development

¹³ 13 Outlier cases with an increase or decrease in investment of 200,00 USD and more were excluded.

¹⁴ The results in this chapter are based on moderator analyses, which examine whether the relationships between two variables is influenced by a third variable (the moderator). We explored these effects within the data set using the PROCESS macro for SPSS developed by A.F. Hayes and ordinary least square and logistic regression path analysis (Hayes, 2018).

(Impact Hub, 2019). For our analyses, we coded for each member whether they had taken part in any of these programs or not¹⁵.

Results of our model suggest that participating in a program at Impact Hub not only increases the likeliness to engage in collaboration (cf. Chapter 4.4.2) but also reinforces the effect collaboration has on organizational performance outcomes – most notably, on whether a venture **creates new jobs**. While the short-term effect of collaboration on job creation is small and insignificant among members who did not participate in programs, those who took part in programs were indeed found to benefit from collaboration (cf., Figure 9). For every additional scale point a respondent had co-created (on a 7-point scale) his or her venture was approximately 5% more likely to create an additional paid position. Similar effects were found when looking at the second operationalization of collaboration, namely community interaction.

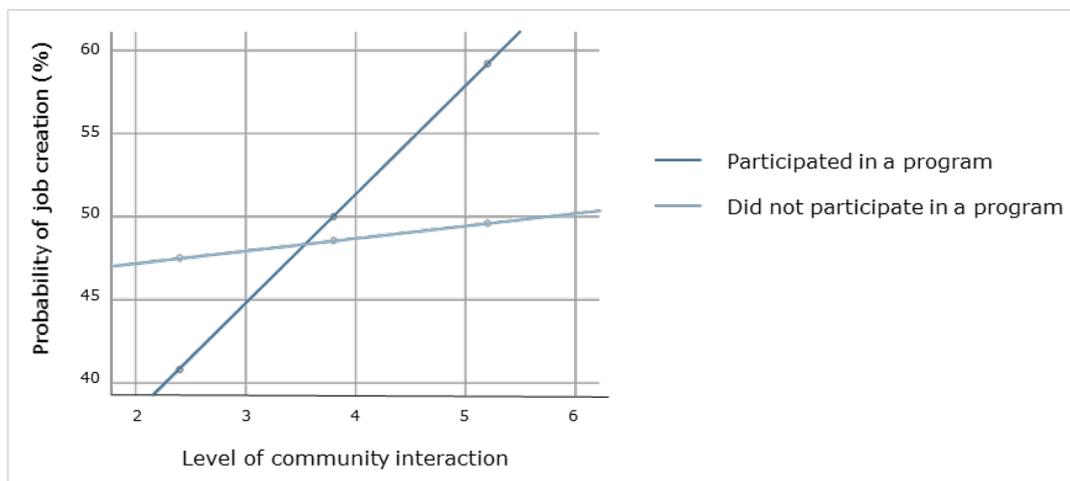


FIGURE 9: PROGRAM PARTICIPATION AND COLLABORATION OUTCOMES¹⁶.

Participation at an Impact Hub program has a similarly beneficial effect on the relationship between collaboration and certain indicators of a venture's success in creating social and environmental impact, such as a **faster growing number of programs and services provided**. Overall, this implies that participating in an Impact Hub training program helps members to effectively channel their collaborative activities into organizational outcomes and impact.

In addition, the strongest increase was found for co-workers who took part in more than one program. This suggests that there is a **cumulative benefit in taking part in different programs**. This might be due to the fact that Impact Hubs offer programs along the entrepreneurial journey and therefore members are likely to make use of several acceleration programs as they grow. By accessing more programs, they do not only benefit from new skills but also gain a broader understanding on what topics and issues they can (and maybe should) collaborate with other members of the community.

¹⁵ While the scope of programs of Impact Hub is very broad, the majority of members in our sample indicated taking part that focused on venture incubation, acceleration or individual professional skill development.

¹⁶ Figure 8 shows the moderating effect a member's participation in an Impact Hub program has on the job creation likeliness of his or her venture.

3.4.2. Physically present members

Another group that seems to benefit disproportionately from collaboration are Impact Hub members who spend more time at Impact Hub. Impact Hub offers its members different options to physically access the shared workspace, ranging from virtual memberships (which include only access to events and selected meetings and workshops), to memberships that allow spending several days a month, a week or even the full working week at the space. Results of our model suggest that respondents who spend more time at Impact Hub are not only more likely to collaborate more but also more likely to translate their collaboration efforts into **revenue growth**. While community interaction as such (e.g. participating at events, discussing with selected members) does not per se lead to higher revenues, the frequency of physical presence at a local Hub *and* interaction does. Accordingly, revenues for members with little access to the workspace were found to remain stable, regardless of their degree of collaboration. Respondents with a physical presence of at least 40 hours per month *and* frequent collaboration could however increase their firm's revenues by 15%, taking all control variables into account. We did not find similar effects for other measures of performance such as job creation or work performance but results suggest that – at least in the case of revenue growth – individuals who spend more time at the shared workspace form more effective collaborations than those who visit the physical space only infrequently.

A similar effect was found when looking at the number of hours that all members of an Impact Hub spent in the shared workspace on average. This number provides a proxy for the likelihood of repeated interactions with the same person. In Impact Hubs with high averages, members are more likely to encounter the same individuals again and again, which can be beneficial for building and maintaining business relationships. Consistently with this argument, we found that collaboration in Impact Hubs with higher averages of physical presence yields better results than in Impact Hubs with low averages. In these environments, collaboration leads to the recognition of more business opportunities, significantly higher revenue growth and more diverse investment sources than in Impact Hubs with low average levels of physical presence.

Overall, these findings suggest that physical presence in Impact Hubs, and in particular in Impact Hubs in which *other* members are also frequently present, can make collaboration more effective.

3.4.3. Later stage organizations

Finally, the benefit of collaboration is also influenced by the lifecycle stage of the organization that is represented by a member¹⁷. Our results suggest that for entrepreneurs, managers and CEOs who are active in more developed and established organizations, collaboration is associated with more organizational growth and other performance outcomes than for leaders of nascent ventures and start-ups. Amongst others, these benefits materialize in **increased revenues**. Our model revealed that every

¹⁷ The organizational lifecycle stages presented to our survey participants are: (1) intention formation, (2) idea development, (3) start-up, (4) established organization, and (5) scaling (Anders-son et al., 2016; cf. Chapter 1.4).

additional step of community interaction by respondents representing an organization in its post-start-up phase is associated with an increase of 9% in revenues. Respondents with more developed businesses were also found to disproportionately benefit from collaboration when it comes to improved **service quality**. We found that both the quality of provided services and its perceived impact on beneficiaries improved significantly when collaboration was reported by a more mature organization.

At the same time, respondents in later stage organizations less frequently engaged in collaboration with other members. Together, this suggests that their collaboration may be more “efficient” in generating performance outcomes. Members with young ventures, on the contrary, collaborate more frequently but are less likely to enjoy such outcomes from collaboration. This is not surprising, as the early stage of establishing an organization often requires experimenting and testing products, behaviors and relationships (e.g. Ries, 2011), which inevitable also creates “dead ends”. Only once there is a clear understanding of viable operational and business models, an organization can start becoming efficient and focus on the most impactful or profitable types of collaboration.

3.5. SUMMARY OF RESULTS: OUTCOMES OF COLLABORATION

Concluding this chapter and responding to Research Question 2, we found that collaboration in our sample is clearly associated with **better individual-level work outcomes**. We discovered significant positive effects of collaboration frequency on the number of professional opportunities recognised by members, as well as on their individual work performance and the likelihood to receive social support. Frequent collaborators are also more likely to give credit to Impact Hub and its community for their own success than co-workers who interact little with others.

We also found some evidence for **positive outcomes** of collaboration **on the organizational level**: members who collaborate more with others gain access to a larger network of supporters and are able to access more diverse sources of investment. Furthermore, the (self-assessed) impact success of an organization, operationalized as the number, quality and effectiveness of the programs and services offered as well as the perceived impact on beneficiaries increases significantly when members collaborate more. Exploratory analyses of a longitudinal subset of our data suggests that these effects materialize in more tangible performance outcomes in the long run. Here, more collaboration is associated with an increased amount of investment and the creation of more new jobs in the subsequent year.

Lastly, we found that **four groups are particularly likely to benefit** from collaboration: participants of support programs (e.g. acceleration programs or trainings), individuals who physically spend more time at Impact Hub, individuals who spend more time at Impact Hubs in which *other members* are also frequently present, and individuals representing more mature organizations. Co-workers with these characteristics seem to gain an “additional boost” from collaboration for some outcomes, such as increased revenue and organizational scale.

SPOTLIGHTS A: EXAMPLES OF COLLABORATION AT IMPACT HUB

Spotlight #1 - aWATTar: Finding a co-founder and starting up with the help of acceleration programs

aWATTar is an Austrian start-up aiming to transform the energy industry by linking energy consumption to when sun, wind, and other green energy sources are at their peak. By passing on hourly exchange prices to customers, aWATTar has lessened the need for energy storage by shifting energy usage to when it's being produced.

aWATTar's co-founder Simon Schmitz had worked as a corporate strategist in the energy industry for years, but wasn't satisfied with the industry's pace of transition to clean energy.

"I was fed up with endless decision-making processes and the situation where new business ideas would not get started because they might hurt the 'existing portfolio'" (Simon Schmitz, CEO and Co-founder)

To activate his innovative energy ideas, Simon left his job and joined Impact Hub Vienna. Simon was looking for a technical co-founder, and was introduced to Peter Votzi. Peter worked in tech and at the time supported Impact Hub Vienna as a member-host, i.e. a member helping to host the community and space for roughly one day a week in return for a membership. The two joined forces and started aWATTar.

"We have been Hubbers from the start. From finding ourselves as co-founders to winning Impact Hub Vienna's "Social Impact Start" pitching competition and later benefiting from their accelerator membership package."

Impact Hub Vienna's Social Impact Start program, supports social start-ups grow from idea to market and features a pitching event. The accelerator membership is a tailored support package for social entrepreneurs comprising of workspace, expert consulting, workshops, and peer support.

At the end of 2018 aWATTar got a strategic investment from Fronius and is now expanding to the German green energy sector.

<https://www.awattar.com/>

Spotlight #2 – CityWallet: An all-around collaboration experience

CityWallet is a fintech start-up that grew out of Impact Hub Caracas. Due to hyperinflation, cash payments have become risky and often inefficient. CityWallet digitalizes micropayments by transforming small sums of cash into stickers, which can then be safely used as a payment method and swiped over a bank payment terminal.

CityWallet co-founders Ramón and Félix were friends from college and joined Impact Hub Caracas with the idea of developing a digital payment method for parking spaces and other everyday micropayments. At Impact Hub Caracas they met Atilana, who had come to Impact Hub looking for mentorship for a similar idea. Atilana's mentor at Impact Hub connected the three entrepreneurs and they started working together to found CityWallet. Shortly after they met Liesl, an Impact Hub Caracas member with complementary skills, who shared their passion, started working with them, and became partner at CityWallet. As the venture developed, Impact Hub Caracas supported them with mentorship, networking, and created connections with experts and potential staff. First focus groups were held at Impact Hub Caracas, and prototypes tested in the building that housed Impact Hub. Impact Hub also helped CityWallet build their support network, access accelerators, and scale to other countries. Furthermore, collaborations with other organizations at Impact Hub helped CityWallet expand their customer base, e.g. they helped provide payment services to fellow Impact Hub Caracas' members Arepa Musica and Paix Festival, when poor banking infrastructure and lack of internet threatened the logistics of the event. The founding team of CityWallett attributes their success to their membership and the community at Impact Hub.

"The ambiance of Impact Hub Caracas contributes to create an energy that Venezuelans are looking for: people that help each other achieve their goals and even find common ground to make them a reality. It is a ray of hope in an atmosphere that is plagued with difficulties and that helps you dream and improve your community". (Atilana Piñon, CFO and Co-founder)

CityWallet now has more than 12,000 active users and has carried out more than 500,000 transactions. The app is available for Android and iPhone. CityWallet has ongoing partnerships with parking spaces and malls in Venezuela and through its successful participation at Startup Chile, now also is offering micropayment services in Chile.

<https://www.citywallet.cl/>

Spotlight #3 - CoVadem: Accessing diverse investment sources through programs

CoVadem is a transportation and big data start-up that participated in Impact Hub Amsterdam's Investment Ready Program.

"By combining a 'sailing network' – vessels who share their depth metrics – with the latest big data technology, we created a smart, cloud-hosted cooperative platform that is always up to date. It helps all ship owners optimize their cargo loads, sail more efficiently, save fuel, and reduce their CO2 emissions." (Meeuwis van Wirdum, Co-founder and Executive director)

CoVadem stated in 2010 "after realizing that there was a lot of room for innovation to make the shipping industry more efficient". After developing a consortium of industry players and research institutes in 2012 and testing the platform's feasibility, the company was started.

"But to always provide sufficient actual data, we needed investment to scale up to at least 250 measuring vessels in the next two years. Through the Investment Ready Program, we established a network of over 20 interested investors, including Change Club, our first external funder. And in December 2018, we signed a €1,5 million investment deal with PDEHand Forward.one, which will help us to achieve our goals."

Investment Ready Program is a 5-month acceleration program offered by Impact Hub Amsterdam that supports social entrepreneurs with strategy and fundraising and investment. Investment Ready Program helped CoVadem manage the shift from research institute to venture with a solid business case.

"We found it inspiring to exchange knowledge with entrepreneurs from completely different fields and to see them pivot – everyone's here to make it work! During our investment negotiations, I could call the Investment Ready Program Manager, for quick chats about deal terms. It's these little things that make the program great. You could try writing strategies on how to build this kind of supportive, friendly environment, but Investment Ready does it very well."

<https://www.covadem.org/>

Spotlight # 4 – Little Scientists Magazine: Learning from peers and creating mutual business opportunities

Little Scientists Magazine is a monthly bilingual magazine for children 8-14 fostering STEM education in Cambodia. It is the brainchild of Anaïs Pages and Julie Gacon, members of Impact Hub Phnom Penh.

In 2016 Anaïs shared her idea of starting the 1st magazine for youth about science and technology in Cambodia with Impact Hub Phnom Penh's community director. The community director subsequently connected her to Julie, another member and experienced graphic designer looking to expand her portfolio to more impact-driven initiatives. Together, Anaïs and Julie designed and published 17 editions of the magazines over 2 years.

At Impact Hub Anaïs also met Sarath Uch, a Cambodian entrepreneur starting up a local delivery company, Rushero. Little Scientists became Rushero's first customer and allowed Sarath to test, pilot, and improve his service before going fully to market 6 months later. Together with Sarath 6000 copies of the Little Scientists Magazine were distributed every month to local and international schools and NGOs all across the country.

<https://littlescientists-mag.com/>

4. Antecedents of collaboration

After having discussed the different forms of collaboration at Impact Hub as well as their effect on individual and organizational performance, we will now turn our attention to the determinants of collaboration itself. Following the framework established in Chapter 1.4, we investigate determinants on four dimensions: (1) the level of the **individual** member, (2) the **relationships** between members, (3) the **socio-structural composition** of Impact Hub communities, and (4) the **context**, i.e. the physical and social space in which collaboration does or does not take place.

In this section, the frequency of collaboration functions as the outcome variable of our controlled model, whereas the above named predictor variables will be described in more detail when introduced.

4.1. THE INDIVIDUAL LEVEL: WHO ARE THE COLLABORATORS?

To begin with the sociodemographic profile, we found that **younger members** of Impact Hub are significantly more likely to collaborate. This trend is valid for both community interaction and co-creation. The only exception are respondents above the age of 55 who tend to engage in collaboration activities slightly more often than the age bracket of 46-55 years (cf. Figure 10, to the left)., neither the educational level nor gender makes a significant difference with regard to collaboration likeliness and frequency within our sample. Similar observations can be made in regard to the **lifecycle stage** of respondents' organizations. The more recently the organizations in which a member worked had been founded, the more likely he or she engaged in community interaction and co-creation.

The number of **hours physically spent in the shared workspace** also has an impact on whether and how much they engage in collaboration: As stated before (Section 3.4.2), we found that members who physically spend more hours in the shared workspace are significantly more likely to engage in community interaction. Respondents with "100+ hours memberships" (i.e. allowed to work at the shared space for 100 hours per month or more) indicated to interact at the level of 4.2 (on a 7-point scale), whereas respondents with a "virtual membership" (0 hours per month) reach a community interaction level of only 3.1 (cf. Figure 10, to the right).

Interestingly, this relationship cannot be found for the co-creation variable, which is concerned with the more complex types of collaboration. This suggests that, while all types exchanges increase for members who are physically present in the shared workspace more frequently, the extent to which new collaborative projects, innovations or mutual investments occurred is rather equally distributed over "virtual" members and physically present co-workers. This highlights that virtual membership in

co-working spaces can provide a surprisingly effective way to build and maintain professional collaboration (see also discussion in Section 5.3.). However, as our analyses in Section 3.4.2 have shown, a venture's financial performance associated with these more demanding types of collaboration tends to be higher for respondents who physically spend more time in the Impact Hub community. This suggests that physical co-location has a positive effect on collaboration *quality* rather than quantity.

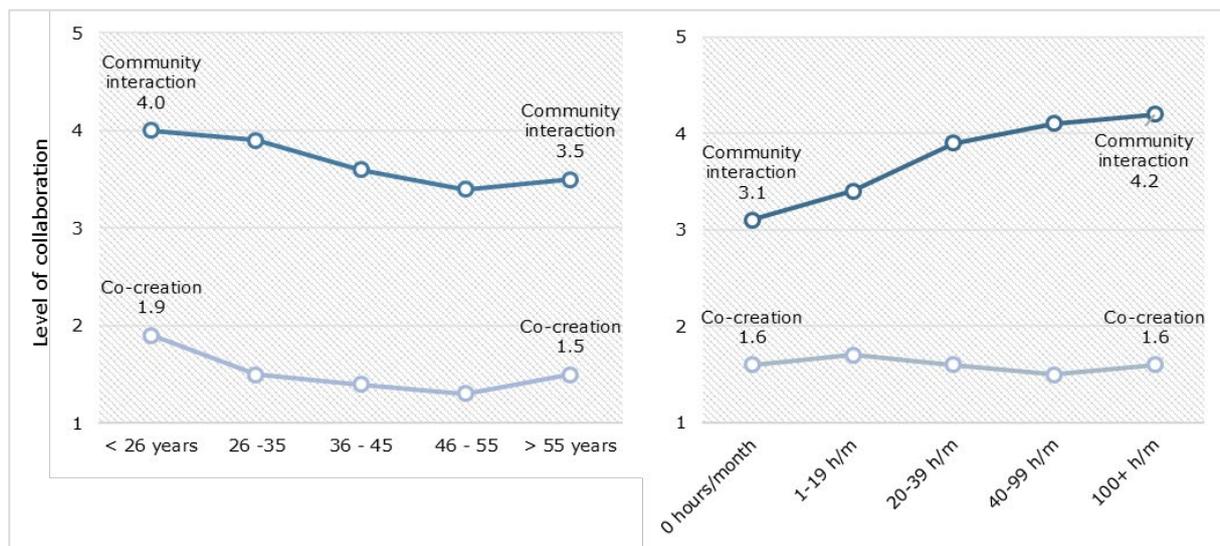


FIGURE 10: INDIVIDUAL DETERMINANTS OF COLLABORATION: AGE AND PHYSICAL PRESENCE AT IMPACT HUB.

Furthermore, we found that respondents who self-identify as **social entrepreneurs**¹⁸ were more likely to engage in collaboration. This result is also supported by the finding that respondents who worked for organizations incorporated as a hybrid¹⁹ or non-profit legal entity – typical entities chosen by entrepreneurs who seek to address social or environmental issues – are more likely to collaborate as well. Overall, it underlines the positioning of Impact Hub as an impact-oriented community and suggests that it has been successful in attracting a critical mass of social entrepreneurs that seek to collaborate on related societal issues.

4.2. THE RELATIONAL DIMENSION: NORMS FAVORING COLLABORATION

As we have demonstrated before, collaboration can be associated with numerous positive outcomes. Entering a professional partnership is however also associated with significant risks and negative consequences, from opportunity costs to a damage of reputation and financial loss. The extent of this risk is often difficult to assess, as it depends on unknown event probabilities and intentions. Decisions

¹⁸ Survey participants were presented a number of professional role identities and asked to identify those that describe them best. Answer options included "freelancer", "entrepreneur", "social entrepreneur", "activist", "academic professionals" and many others.

¹⁹ Hybrids are types of organizations that mix for-profit and non-profit sector elements (e.g., L3C, community interest company, incorporated as benefit corporation etc.). Whether and how they are legally incorporated largely differs between countries.

under such circumstances have been found to be strongly influenced by the perception of social norms, i.e. whether cooperation represents an appropriate behavior under a given circumstance (Chatman and Flynn, 2001; Fehr and Fischbacher, 2004; Thomson and Perry, 2006). The potentially most important norm to enable collaboration is trust. High levels of trust “lubricate cooperation, and so reduce transaction costs between people. Instead of having to invest in monitoring others, individuals are able to trust them to act as expected” (Pretty, 2003).

Our analyses revealed that shared norms play a crucial role as an antecedent of collaboration in our sample. Collaboration is much more likely to occur when the involved individuals show **high levels of trust**. The latter was measured based on the widely used generalized trust scale (Miller and Mitamura, 2003), and on Chen and Hung’s (2010) interpersonal trust operationalization. Answers to both trust instruments had strong influence on the frequency to which respondents engage in community interaction and co-creation with other members of Impact Hub. For instance, with every additional point of higher average trust our respondents indicated (on a 5-point scale), they collaborated 0.5 points more frequently, taking all control variables into account (cf. Figure 11, to the left).

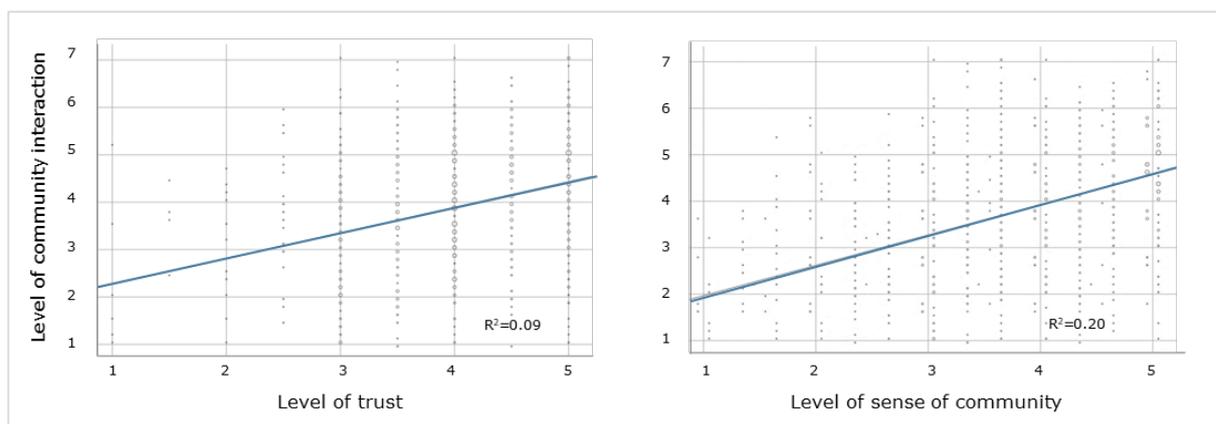


FIGURE 11: NORMS FAVORING COLLABORATION: TRUST AND SENSE OF COMMUNITY.

Another set of norms that is strongly associated with collaboration is **sense of community** (Peterson et al., 2008; cf. Chapter 2.2). We found that the more respondents indicate to “feel like they belong to the community of Impact Hub” and to “have a good bond with people here”, and the less they “felt disconnected from the Impact Hub community”, the more likely they are to interact and co-create with others. With every additional point of the average sense of community scale (which is based on the three named items), community interaction increases by 0.6 points (cf. Figure 11, to the right). Strong and significant effects were also found when analyzing co-creation as a dependent variable. A more pronounced sense of community also increases the effectiveness between some types of collaboration and their outcomes. For instance, several aspects of co-creation improving a venture’s (self-assessed) success in creating impact are enforced by a strong sense of community. Also, the effect of co-creation on individual work satisfaction increases when Impact Hub members have a good connection to each other.

Apart from individual-level community norms we also investigated whether the extent of those **norms on the group level** influence the individual likeliness to collaborate. This distinction is highly important, since social norms are typically only enforced in groups if there is a certain level of consensus about them (Fehr and Fischbacher, 2004). We found strong and significant effects of both the average amount of trust and sense of community in an Impact Hub on the amount of individual community interaction. With every point a local Impact Hub community is more trusting on average (on a 5-point scale) an individual member collaborates 0.5 points more. For sense of community, the coefficient is even 0.75. This means that irrespective of someone's own level of trust and perception of community – and even if he or she has little trust or does not feel a bond with the community – the perception of these norms by other members of the group increases the individual likeliness to engage in interactions with the community.

Interestingly, the effect of group level norms does not exist for co-creation, our second group of more complex types of collaboration activities. While individual perceptions of trust in a community do increase the likelihood of engaging in co-creation, it is not increased by group-level norms alone. This finding invites the conclusion that the unequalled strong effect of norms on collaboration has some limitations: group norms enable discussion, information exchange and mutual support even for those who do not “believe” them. However, when it comes to more costly and risky types of collaboration such as hiring another member or starting a business, most respondents prefer to rely on their own judgement.

4.3. THE SOCIO-STRUCTURAL DIMENSION: GROUP COMPOSITION AND COLLABORATION

Another type of influence on collaboration in a group is the structure of the group itself. Clearly, whether a group consists of completely uniform or very different individuals can influence how, how frequently and with which consequences collaboration emerges in the group. Research on the topic has however not been particularly conclusive on what types of effects one should expect. McPherson et al. (2001), for instance, presented an extensive list of studies who have found tendencies of so called “homophily” in several social networks. The authors conclude that “similarity breeds connection” is a principle that “structures network ties of every type, including marriage, friendship, work, advice, support” (ibid: 415) and so forth. Such relationships have also been found in the work context with e.g. Chatham and Flynn (2001) who identify a negative effect of demographic heterogeneity on the emergence of collaborative group norms. Other studies have however disputed this assumption and found mixed or positive effects of demographic group heterogeneity on collaboration and performance (King et al., 2009; Horwitz and Horwitz, 2007).

One relationship we found in the context of co-working is that the **average individual age in an Impact Hub** does indeed influence the degree of collaboration. Our model yielded that the younger the respondents from a particular Impact Hub are on average, the more co-creation occurs among them (cf. Figure 12, to the left). At the same time, age heterogeneity does not significantly influence

collaboration. This extends the insights we gained in Chapter 4.1 according to which age – on the individual level – increases collaboration: while young members are more likely to collaborate, members of communities with more young people are also more likely to collaborate. At the same time, we could not find biases in respect to age distribution in the data. Collaboration is just as likely in Impact Hubs in which members belong to very heterogeneous age cohorts as in those in which they all are about the same age.

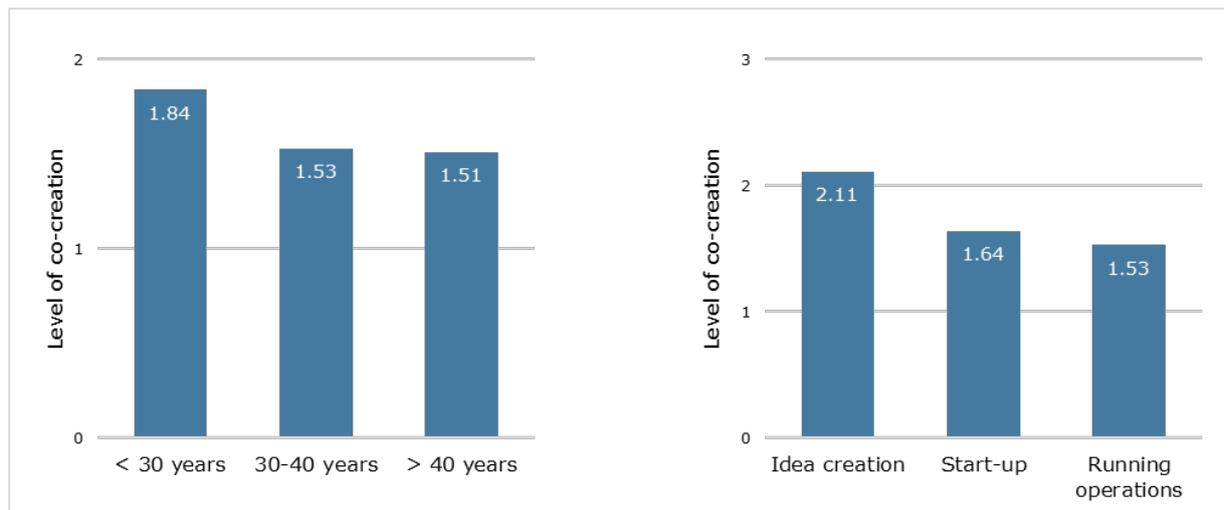


FIGURE 12: AVERAGE INDIVIDUAL AGE, ORGANIZATIONAL LIFECYCLE STAGE AND COLLABORATION.

The same holds true when looking at the **average organizational lifecycle stage in an Impact Hub**: our model shows that with every additional stage the organizations grow on average, the individual members co-create 0.3 scale points less. Impact Hubs predominately hosting early-stage organizations (idea creation) face 0.5 scale points lower co-creation rates than spaces with mainly start-ups (cf. Figure 12, to the right). Yet, members of Impact Hubs dominated by younger individuals and organizations engage in collaboration *more frequently*, members of Impact Hubs with more mature organizations collaborate *more efficiently*. For instance, collaboration in such Impact Hubs is more likely to lead to the identification of more entrepreneurial opportunities, mutual social support, increases in customer satisfaction and social impact.

Preliminary findings on **group heterogeneity** point to further interesting insights: on the one hand, heterogeneity with regard to socio-demographic characteristics among the members of an Impact Hub shows no significant effect on the extent of collaboration among its individual members. We found no evidence of any explicit or implicit “homophily bias” in the sample (McPherson et al., 2001), meaning that group-level differences with regard to member’s age, gender, educational level, and geographic origin have no particular effect on the likelihood of engagement in community interaction and co-creation.

On the other hand, homogeneity matters in our sample in one aspect: it influences whether members and their organizations are impact-oriented or not. We found that Impact Hubs in which members were more homogenous with respect to their **social and environmental mission-orientation** were

somewhat more likely to see collaboration between their members. Similar findings were made with respect to the homogeneity of organizations with hybrid legal forms (e.g. benefit corporations, which are typically used by social entrepreneurs). Together, these findings paint a picture of well-functioning communities in which collaboration is not hampered by biases, but rather groups are formed along shared values and professional interests.

4.4. THE CONTEXTUAL DIMENSION: CAN COLLABORATION BE ENGINEERED?

Last but not least, we will respond to the question whether collaboration can be “engineered” and how. In this section, we focus on the qualities of a co-working space that can be influenced by the creators and managers of a space as well as the community itself. These include physical aspects of the space like design, functionality or the noise-level – its “hardware” – as well as practices and events that are taking place in it – its “software”.

4.4.1. Space design (“hardware”)

Our results show a consistent and strong influence of the design of the space on members’ likelihood to collaborate. In the survey, respondents were asked to indicate their satisfaction with a number of fundamental qualities of their co-working space, including the design and aesthetics of the shared workspace, its functionality and atmosphere, the level of noise, the internet connection, and opening hours.

Individual satisfaction with **space aesthetics, atmosphere, and opening hours** of the respective Impact Hub was associated with a significant increase of community interaction. More strikingly, the results of our model shows that these variables also exerted a positive effect on community interaction when not measured as individual responses but as the average of responses across an entire Impact Hub (see Figure 13 for selected items). Some of these effects are quite pronounced. For instance, in the case of atmosphere, we found that with every additional point on the 5-point satisfaction scale, respondents’ interaction frequencies increased by 1.1 points on a seven-point scale – e.g. an increase from interacting every other month to every month. Positive group-level effects were also found for the **level of noise** and **the functionality of the space**. Hence, even if someone’s own perception of noise did not affect his or her likelihood of collaboration (i.e. because of excellent noise-cancelling headphones) a widespread perception of noise in the community lead to lower collaboration as such (i.e. because not everybody has such headphones).

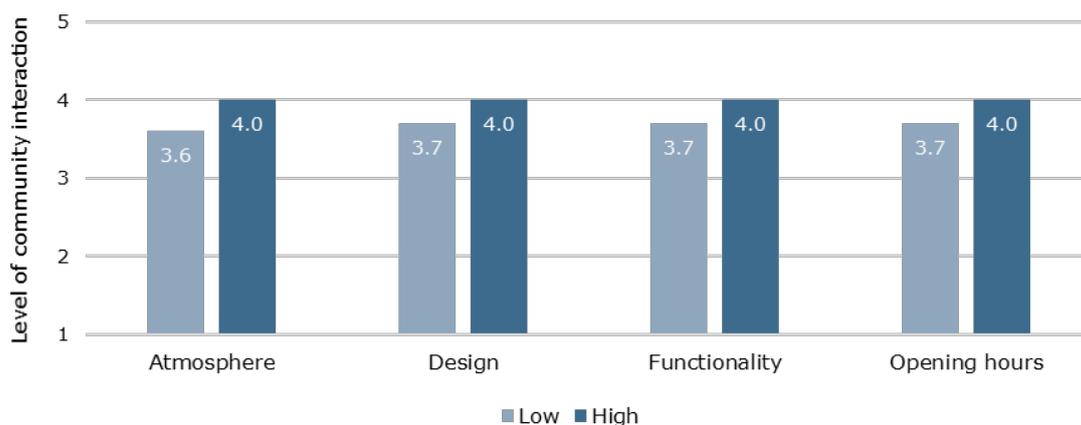


FIGURE 13: SATISFACTION WITH SPACE DESIGN AND COLLABORATION.

Direct effects for co-creation were not observed for these variables. Similarly, first analyses showed that general qualities of a shared workspace, most notably its size or the number of members did not have a direct effect on collaborative activities. However, they were associated with some of the above described qualities, and i.e. Impact Hubs with physically larger workspaces (in m²) were more likely to see satisfaction with respect to noise.

Furthermore, it was found that the **age of an Impact Hub** has an effect on the occurrence of collaboration in the same. Impact Hubs that had been founded more recently seemed to benefit from a “honeymoon” effect, in the sense that members are more likely to engage in community interaction and co-creation than those in older Impact Hubs. Consistently, respondents who had joined Impact Hub more recently were also more likely to collaborate. What is more, we found that the positive effect of community interaction on job creation, as well as the effect of community interaction on a venture’s success in creating impact is even more pronounced in young Impact Hubs. This confirms and extends insights from a recent study of Garret et al. (2017) who found that new members in co-working spaces are characterized by an increased “excitement to be part of a community” and that this excitement is reinforced by the novelty of the community itself. Our data extends this finding by highlighting that this excitement translates into different forms of professional collaboration.

4.4.2. Community building (“software”)

Of course the value of co-working spaces can go beyond the provision of the above-described physical factors such as an aesthetically pleasing shared workspace or a fast internet connection. The managers of a community or the community itself can start to develop shared rules, practices, and activities to improve its functioning (Garrett et al., 2017). In the case of Impact Hub, these activities can involve a number of activities which are undertaken to make sure that members become part of a community rather than of just an office space, including onboarding practices for new members as well as different activities for existing members.

Our results show that these efforts had considerable effects on members' collaboration engagement. First, **new member onboarding practices** at the very beginning of a member's stay at Impact Hub turned out to affect subsequent collaboration. Generally, the more and more diverse onboarding activities were offered in an Impact Hub²⁰ the more members interacted with each other. Specifically, we found that an explicit introduction of a new member to the values and rules in a local Impact Hub as well as a face-to-face assessment interview with potential members increase the amount of interaction. The presentation of new members to the extant member base through virtual channels, such as newsletters and social media also increased their community interaction in the long run (cf., Figure 14). The effect of onboarding also extends to members' success in gaining support from each other. The more and more diverse practices for new members are offered at an Impact Hub, the more community interaction was later associated with the attraction of support providers. This suggests that onboarding practices help new members to understand and navigate the architecture and norms of the community better and more effectively.

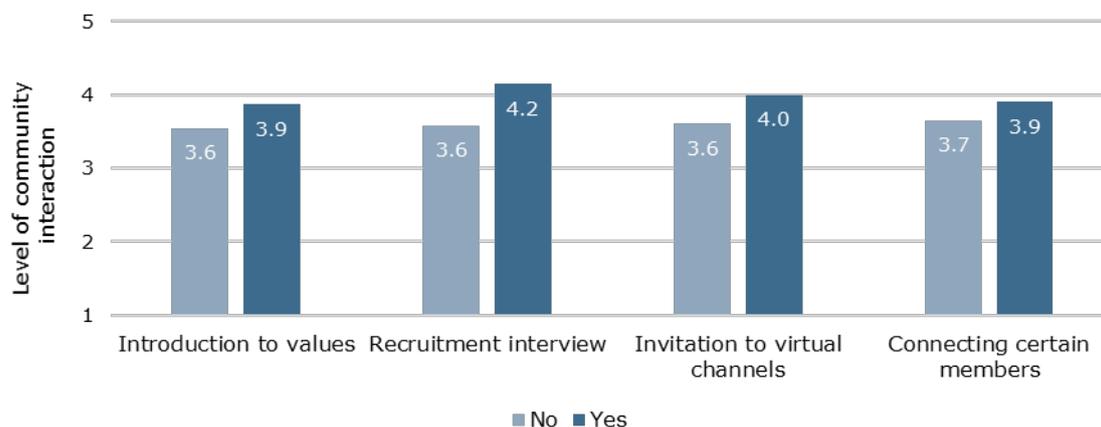


FIGURE 14: OFFER OF COMMUNITY BUILDING PRACTICES AND COLLABORATION.

A second group of services that were found to foster collaboration include **practices for ongoing member involvement**. Such practices include the regular presence of "hosts", who keep members updated about news, help navigate the place but also provide professional support and referrals to other members. The perceived quality of hosting – both as individual-level and group-level assessments – was positively associated with community engagement. Overall, regular updates and clear communication structures were also positively related with the interaction frequency

Another key element are **community events**, which can include informal gatherings such as parties but also conferences and workshops. The effect of events was among the most robust in our data. The perceived quality of events exerted a positive influence on both community interaction and co-creation, regardless of whether we looked at individual perceptions or the average perception of events in an

²⁰ In our survey among the local Impact Hub staff members (cf. Chapter 1.3), participants were asked to indicate which onboarding practices and activities their local Hub space offers. The nine answer options were analyzed individually and also as an additive (9-point) scale.

Impact Hub. Furthermore, members were significantly more likely to interact with others when Impact Hubs offered a wider range of such events, in particular informal get-togethers (e.g. lunches, after work meet-ups), outside events (e.g. sports) and networking events that were open to external guests (i.e. pitch nights, issue-based meetups, round tables).

Equally, **programs organized by Impact Hub** were found to increase the likelihood to interact and co-create among participants. For instance, an Impact Hub offering community practices that connect certain members with each other is more likely to see increased member interaction. In particular, our model yielded results according to which matchmaking and connecting of members based on specific support needs, skills, interests or offerings raises the subsequent community interaction. The same holds true for the offer of specific support programs for entrepreneurial opportunities (see also Spotlights B on page 40ff. for more detailed elaborations on community building practices at different Impact Hubs).

4.5. SUMMARY OF RESULTS: ANTECEDENTS OF COLLABORATION

Throughout this chapter we have identified a number of different determinants of collaboration in co-working spaces. With regard to **individual characteristics**, we found that younger members of Impact Hub and representatives of newer organizations collaborate more, whereas the educational level or gender does not make a difference. Also, respondents who spend more time at their shared workspace were more likely to engage in community interaction and were somewhat better at finding lucrative forms of co-creation. Interestingly, (self-identified) social entrepreneurs as well as representatives of corresponding organizational types (non-profits and hybrids) are among the frequent collaborators.

Findings in literature according to which **shared norms** are of particular importance for mutually beneficial collaboration (Thomson and Perry, 2006) were also confirmed within our sample. We found that high levels of individual trust and a sense of community facilitate collaboration among the respective members. These positive effects apply even to members who themselves do not adhere to these norms and values, as long as a majority of the community does.

Turning to the **socio-structural dimension**, we found that Impact Hubs with a predominantly young member base and younger organizations see higher levels of collaboration. At the same time, members of Impact Hubs with a higher share of more established organizations experienced “more efficient” collaboration with respect to performance outcomes. Moreover, we learned that heterogeneity regarding age, gender, education, geographic origin and the likes present no barriers for collaboration in Impact Hub communities. Homogeneity only seemed advantageous with respect to the characteristic of impact-orientation: Impact Hubs with more homogeneous values and goals (e.g. social or environmental value creation) and with hybrid enterprises were somewhat more engaged in collaboration.

Finally, our analysis of the **contextual dimension** highlighted the importance of both the physical space as well as the practices taking place in it for the facilitation of collaboration. Impact Hubs with

a better atmosphere, a more beautiful interior design, higher space functionality, more attractive opening hours and less noise saw significantly more community interaction. Furthermore, Impact Hubs that had opened more recently seem to profit from a certain “honeymoon effect” in the form of more collaboration. However, the most important driver of community interaction and co-creation on the contextual dimension is the “software” – the way a local Impact Hub team enacts the space and creates opportunities for meeting and exchange. Here, onboarding procedures for new members (e.g., introduction to values, face-to-face recruitment interviews) and practices for ongoing member involvement (e.g., hosting, events, communication structure) were found to be crucial.

SPOTLIGHTS B: ANTECEDENTS OF COLLABORATION AT IMPACT HUB

Spotlight # 5 – Onboarding: Welcoming new members into the community

New member selection

Impact Hubs put a lot of effort into onboarding new members into the community. Many Impact Hubs meet with potential members to screen for a fit in terms of values, impact ambition, and community.

"After applying online, Impact Hub Caracas team members meet with interested members for an interview to understand their motivations for joining and the impact they want to create. The positioning of Impact Hub Caracas is very clear and we usually don't have to decline people. When we started however, this selection process was very helpful in shaping an aligned community". (Claudia Valadares, Co-Founder and Director Impact Hub Caracas)

"We have an in-person meeting with any interested entrepreneur or venture in order to better understand better what they are working on and what social or environmental issues they address. We select teams that address Sustainable Development Goals and that are open to collaborate. Entrepreneurs in Taiwan tend to want to protect their IP and many people are still getting used to co-working. We support new members to move into Impact Hub and introduce them at community events in order to build trust and to facilitate collaboration." (Oliver Chang, Co-Founder and Director Impact Hub Taipei)

Other Impact Hubs approach it from an "opt-in" perspective - they try to clearly communicate mission and values of the community through all touchpoints, but allow potential members to self-select. This can be particularly useful for very large communities.

"Of our 300 members, two thirds work out of Impact Hub Boston, and one third uses the Impact Hub solely for the purpose of community. We found a market of people working on social impact that were not necessarily looking for work-space. Community members need to fill in an application. It is important to us that the community members are aligned with social impact. Co-working members do not have to apply, membership is rather self-selecting, members are opting into the community. We do make sure though that it becomes clear from our website, positioning and existing membership that the community is focused on creating positive social impact. It's about being welcoming but being clear of who we are." (Katie Shultz, Director Impact Hub Boston)

Introduction to community norms and practices

Regardless of a member selection, what successful Impact Hubs do have is an in-person onboarding meeting with new members. These orientation meetings allow new members to meet and connect with a staff member and learn about the community norms and rules. The vast majority of Impact Hubs provide onboarding booklets or handbooks outlining vision, mission, values, and accepted community

norms and behaviors, which usually will encourage interaction, participation, and collaboration. Explicitly outlining these values and norms makes it easier for new members to engage in the community.

"As part of the onboarding, new members have to read and sign Impact Hub Caracas' community protocol which outlines the values, ways of interaction, what is expected of members, and any rules. A team member explains how everything operates and introduces new members to the community at a monthly impact breakfast or lunch". (Claudia Valladares, Co-Founder and Director Impact Hub Caracas)

It is not so much an individual onboarding practice that makes the difference but the sum of practices. The more onboarding touchpoints new members have, the more likely they will be to interact in the community, and the more diverse will be the pool of supporters that they can draw on. Nearly all Impact Hubs offer tours through the space and introduce practices and the community.

"New members are introduced to Impact Hub Boston through tours in groups of 6-7 people in order to learn together with new people. In addition, we have a 30-minute orientation meeting that introduces new members to community norms, resources, the team, etc. Tours and orientation meetings are done by different staff members, so members establish relationships with more than one staff member. Next, new members get their picture taken and put on a member wall, a picture wall of all members in the space. Members are also encouraged to tag themselves according to affinity groups, which are sub-communities based on interest or sector". (Hilary Ippolito, Community Manager Impact Hub Boston)

Needs- and interest-based matchmaking

In addition, the goal of these meetings is to learn about new member's support needs and interests and then effectively introduce them to existing members. Putting effort into introductions early on, helps new members show up and participate in the community and increases interactions. Two thirds of Impact Hubs make introductions between new and existing members based on shared interests and activities.

"Upon joining, new members meet with the community manager and other members who joined that week. The meeting covers how to take the most advantage of the community of members, the importance of giving at least one hour a week for the community, our global network and orientation towards the SDGs, and upcoming events. In addition, new members have the chance to present themselves and learn about what others do and need. At the end, our community manager has the responsibility to generate at least one key valuable connection for each new member within 24 hours". (Gabriela Werner, CEO Impact Hub Florianopolis)

"Each member has an account manager as a go-to person. The account manager is responsible for welcoming the new members via email. He or she gives personalized recommendations on things the new member can do at Impact Hub, events to join, and members to connect with based on interest and needs. The account manager then follows up with the new member after 1 and 3 months. We

found that the first three months are critical in order to engage members in the community". (Dušan Janković, Community Manager Impact Hub Vienna)

Spotlight #6 – Events and networking: Convening the community around content and people

Community events

Once a new member has been onboarded, interactions with other community members are facilitated by a range of community events. Nearly all Impact Hubs offer casual events, often centered around food, such as community lunches or wine-downs, to allow members to connect.

"We offer regular opportunities for the community to come together. Weekly member lunches are hosted that are usually attended by 20-30 members, as well as happy hours and wine downs. We also celebrate the birthdays of all members in a given month at the 1st lunch of the month with free dessert and birthday songs." (Hilary Ippolito, Community Manager Impact Hub Boston)

"We work a lot on convening people around food. Our main community event is called 'Sexy Salad'. We host it once a month and it is an opportunity to introduce new members to the community. Existing members cook for the new ones and are also responsible for facilitating interactions. We always have 40 to 60 people attending. We even started a 'Sexy Salad Challenge' - we give a prize to the team that organized the best lunch in the past year." (Riccardo Luciani, Co-Founder and Director Impact Hub Florence)

Entrepreneur support

In addition, Impact Hubs offer learning and acceleration services to social entrepreneurs such as skill-building trainings and acceleration programs, expert advice, mentorship, and peer support.

"Impact Hub Caracas helps members meet and create personal and professional relations. This ranges from bringing in experts in accounting, finances, etc., to helping entrepreneurs deal with the ever changing political and economic environment, and celebrating together." (Claudia Valladares, Co-Founder and Director Impact Hub Caracas)

"We design, develop, and manage programs that provide capacity building, acceleration, and impact scaling to social enterprises in Central and Eastern Europe. Our programs address specific needs at all stages of the entrepreneurial journey: from intention, to startup, and scale." (Lena Gansterer, Managing Director, Impact Hub Vienna)

"We have many corporate partners and connect our members with them. For example, we developed an award and program for social enterprises working on the future of food together with Carrefour. After the award we run incubation and acceleration trainings for the selected social enterprises. We

also engage existing members as facilitators, and as such create wider business opportunities for the community.” (Oliver Chang, Co-Founder and Director Impact Hub Taipei)

Networking

Two thirds of Impact Hubs organize networking opportunities such as pitching events, theme-based meetups, or round tables. These events are usually open to the public.

“We try to engage members in activities, projects, and events. For example, we host the event series ‘FuckUp nights’²¹. We always make sure one Impact Hub member is part of the panel. Storytelling and opening up about failure creates trust and a lot of interaction.” (Riccardo Luciani, Co-Founder and Director Impact Hub Florence)

“In addition to a weekly community coffee we offer events such as ‘Business Matchmaking’, ‘FuckUp Nights’, ‘Finance Circle’, and ‘Pitch Night’. Increasingly we see members starting to offer content that addresses specific pain points that are shared by 20-30 members. These include a social businesses help circle, new programming trends, a people management tribe, fintech for good, and more.” (Gabriela Werner, CEO Impact Hub Florianopolis)

Impact Hubs with large communities have started to organize in sub-communities that are interest or theme based.

“We host several theme-based communities, for example on Zero Waste. These vertical communities are member-led. They create leadership and ownership among our membership. In order to be successful, the community leaders need to be organized, committed, and reliable. We encourage and support them with our own community building expertise.” (Dušan Janković, Community Manager Impact Hub Vienna)

Spotlight #7 - Hosting: Matchmaking and the power of connection

Hosts are at the heart of Impact Hub communities: they ensure that co-working and events spaces run smoothly, welcome guests and members, make intentional introductions between members, and connect them to resources and events. They represent and care for the community and its health. Hosts set the atmosphere and culture for interaction and collaboration. Starting with onboarding they help members engage with the community, encourage them to participate at events and programs, spur them to take leadership by sharing their skills and expertise with the community, and invite them to collaborate.

²¹ “Fuckup Nights” is a global movement and event series started in Mexico that shares stories of professional failure.

“Collaboration is not an inherent quality in any collective. Hosts create the conditions for this to be a quality present in each Impact Hub. You do this by setting and maintaining the right culture and value exchange among people, so that collaborating is recognized and rewarded to ensure it happens again and again. New members are the ones that see and sense this quality the minute they join.” (Tatiana Glad, Co-Founder and Director Impact Hub Amsterdam in “Community Development and Member Experience - A How-to Guide”)

Enabling collaboration starts, among other things, with making meaningful connections and connecting members to resources. Hosts help shape these connections through intentionally introducing members to one another based on support needs and interests.

“Hosts are a kind of ‘light house’, giving orientation and building bridges between people and organizations that wouldn’t ordinarily have made a connection.” (A host in “Impact Hub Practice Guide - Community Hosting”)

In all member case studies above, hosts and community team members have played a vital role in connecting members to find co-founders, team members, resources, supporters, and investors. Through knowing members and their ventures, spotting opportunities, and creating valuable connections, hosts help members and member businesses thrive, and grow in impact.

“Hosts need to make valuable introductions for new members to the existing community. That means they need to know who the members are, what they are doing, and their needs, as well as knowing the existing community inside out. Impact Hub Boston has worked to set the culture of collaboration and community. The team, hosts, as well as long-term members feel pride in knowing members and making valuable introductions. After this initial culture setting, also new members are comfortable reaching out to other community members.” (Katie Shultz, Director Impact Hub Boston)

“We regularly survey our members. This gives our team a holistic overview of what is going on in the community, which needs are surfacing, and how members develop. From the data we learned that members who collaborate more are more satisfied. From this insight, our question now is how to enable collaboration at scale. We run several initiatives and the team is very intentional about fostering collaboration and cooperation among members. The amount of meaningful connections that team members make has turned into an organizational and personal key performance indicator that is being tracked through a hashtag. We also try to track whether those connections turn into something meaningful such as new start-ups founded or hours of peer-support.” (Gabriela Werner, CEO Impact Hub Florianopolis)

“Everyone on our team has to be a host. We are in constant conversations with the teams at Impact Hub Taipei to see what their needs are and how we can help. We also try to connect our social entrepreneurs to public resources as well as corporate partners.” (Oliver Chang, Co-Founder and Director Impact Hub Taipei)

However, hosting does not have to mean that hosts are always responsible for making connections. Instead, they can create an environment that facilitates interaction and in which members can take community ownership.

"We use the principle of 'intentional inefficiency': rather than providing all information to members upfront, we build in small inefficiencies that get people to interact. For example, we have a complex coffee machine. Instead of providing a step-by-step description on how to make a coffee, a prompt is given to ask other members for help. These small inefficiencies stimulate interactions." (Hilary Ippolito, Community Manager at Impact Hub Boston)

Spotlight #8 – Enabling collaboration: Building trust and community belonging

Collaboration is enabled through a culture of trust, a sense of belonging, and strong community norms. Tatiana Glad, Co-Founder and Director at Impact Hub Amsterdam and expert on the "Art of Hosting" describes:

"Culture is emergent, and is the result of interactions, behaviors, artifacts and stories that members build up over time. It is not something that can be managed, which is exactly why at Impact Hub we prefer to call our community team hosts 'catalysts', or 'mobilizers', instead of managers. We can, however, design an environment, decide on principles and create interventions which nurture trust between people. And trust, with a combination of the right interventions, can lead to collaboration."

Trust, belonging, and community norms are not shaped by an individual intervention alone, but rather a result of how interactions and connections are made, how space and events are hosted, and the way entrepreneurial support is provided.

"The success of members is as important as how they get there. The team is very intentional about building trust among members in every interaction and activity. This spans from the way contracts are being written and them containing the Impact Hub values trust, courage, and collaboration, to membership rules and guidelines that focus on collaboration and cooperation. Trust is also built by paying attention to needs of members, asking them for feedback, and then offering services and connecting them to other members based on their needs. Apart from building beneficial business relations, we also try to create opportunities for member engagement that are not necessarily business related, but can create impact for the wider local community." (Gabriela Werner, CEO Impact Hub Florianopolis)

"We offer our services unmetered and as community resources. Members do not pay per printed page or hour of meeting room space usage. Instead they are encouraged to use resources in a respectful way, and share with the community." (Katie Shultz, Director Impact Hub Boston)

When trust is strong, interactions and collaboration are more likely to happen and a sense of belonging can form. This sense of belonging can also be strengthened by, for example, celebrating community and member successes.

"We have a success board in the space on which we highlight and celebrate success stories from the community. We also share these stories online. This creates motivation for members, optimism, and a positive community culture." (Dušan Janković, Community Manager Impact Hub Vienna)

"We share success stories of our members and program participants with the world through our social media channels. We are very active on social media and this creates general energy and excitement for our programs and community." (Mohammed Keita, Founder and CEO Impact Hub Bamako)

Ultimately, it is the sum of all practices described above that builds trust and belonging, enables interactions and spurs collaboration for impact.

"We really have a culture of openness and trust at our Impact Hub. Members feel comfortable leaving their personal belongings in the space and they set an example and role model this culture of trust. For me, achieving this is the essence of community building." (Dušan Janković, Community Manager Impact Hub Vienna)

"People pay attention to each other. They check-in on each other during protests and help out with personal, not just professional matters. This creates a safe space during the political and economic chaos. People who join Impact Hub Caracas think positively, they don't allow themselves to go down into the desperation and frustration that is so common here. The community here is totally different from society. When people visit, they can't believe that there are so many people working on sustainable entrepreneurship and innovation. It is an oasis of hope." (Claudia Valladares, Co-Founder and Director Impact Hub Caracas)

5. Conclusion

In this paper, we have set out to explore the role of collaboration in co-working spaces. While such spaces have grown at unprecedented pace over the last two decades, little is known about how and when they facilitate meaningful cooperation (Brown, 2017; Colleoni and Arvidsson, 2014; Garrett et al., 2017; Gerdenitsch, 2017; Spinuzzi et al., 2012). Based on a unique data set of 2,336 members of 76 Impact Hubs as well survey data from 76 Impact Hub staff members, a longitudinal dataset and 10 interviews, we shed light on the prevalence of collaboration, its effects on performance and its antecedents.

5.1. SUMMARY OF RESULTS

First, our results provided clear evidence that co-workers at Impact Hub are doing more than just “working alone together” (Spinuzzi, 2012). The vast majority of respondents attends community events and engages in personal and professional exchange at least once a month, while members estimate to receive an average of **40 hours of peer mentoring** over the year. In many cases, interaction with others also translates into the co-creation of more complex joint work activities: **44% of members work on joint projects** and almost one quarter of respondents reported having been hired by another member over the last year. At the same time, the majority of respondents identify strongly with Impact Hub as a community and credit a considerable part of their own professional success to it. These findings provide support to the claim that many co-working spaces are in fact “working communities” that build close ties and provide a shared collective vision and structure (Bouncken and Reuschl, 2018; Garrett et al., 2017; Moriset, 2014).

Second, we found that collaboration at Impact Hub is associated with better work performance on a number of levels. Members who collaborate more frequently identify a **higher number of professional opportunities**, are more satisfied with their work performance and receive more social support. Moreover, they reported better progress in terms of the development of the **quality and quantity** of their services, as well as client satisfaction and their social impact. Frequent collaborators are also able to access a broader pool of **supporters and investors**. This effect was particularly visible in our analysis of longitudinal data: Every additional professional contact made through Impact Hub in 2016 was associated with a gain of 2,000 USD in investment by the end of 2017.

However, not every collaboration is equally beneficial. Exploratory analyses point at some characteristics that make successful collaborations more likely: **Participants of programs** (e.g. incubation, acceleration) were more probable to enter collaborations that were associated with better progress of their ventures and the **creation of more jobs**. Similarly, members who worked in more developed

organizations were more likely to enjoy higher revenue growth and increased service quality through collaboration. At the same time, we also found some evidence for occasional negative effects of community interaction, such as **distraction and bad advice**. However, these effects did not seem to limit positive outcomes of community interaction on performance indicators and were in some cases even positively correlated. This suggests that they mainly represent unintended side effects of interaction.

Third, we explored the conditions that benefit collaboration. With regard to supportive individual characteristics, we found that **younger members** of Impact Hub, representatives of **early-stage ventures**, and social entrepreneurs tend to collaborate more frequently. High levels of individual trust and a sense of community are exceptionally strong drivers of collaboration. Their effects appear to be also relevant on the group level rather than just an individual perception: even co-workers who themselves did not perceive particularly high levels of trust or a sense of community were more likely to collaborate, when a majority in their Impact Hub community experienced high levels of trust and strong community values. These results confirm the **pivotal role of social norms for cooperation** also in the case of co-working spaces (Fehr and Fischbacher, 2004; Pretty, 2003).

Finally, the context of social interactions also shapes their frequency and form. Our analyses reveal that both the “hardware” (e.g. **space design, space functionality, noise**) and the “software” (e.g. **number and types of events, hosting practices, onboarding**) of a co-working space have a crucial influence on the emergence of collaboration. These characteristics are particularly interesting, as they represent factors that can be designed and changed deliberately by the community and its managers (see also Section 5.3).

5.2. DISCUSSION AND LIMITATIONS

Returning to our research problem outlined in Chapter 1, we believe that this empirical study of 2,336 members of 76 Impact Hubs yields some **contributions to existing research**. We have found clear evidence that co-working spaces create an environment in which freelancers, entrepreneurs, and other individual professionals do not only work next to each other, but get involved in frequent social interactions and feel part of a greater community (cp. Garret et al., 2017). We extend the work of Gerdenitsch et al. (2016) by finding that such interactions do not only promote social support and performance satisfaction but are also associated with improved opportunity recognition, higher raised investments and other indicators of performance. Moreover, we identify types of co-workers and shared workspaces in which collaboration yields particularly beneficial outcomes. This is noteworthy as earlier studies have also shown that many attempts at collaboration in co-working spaces seem to fail to deliver positive outcomes (Spinuzzi, 2012). Finally, and most importantly, our study follows the repeated call to deepen our understanding of the circumstances in which co-workers interact (e.g. Brown, 2017; Colleoni and Arvidsson, 2014; Gerdenitsch et al., 2016) and identifies individual, relational, socio-structural and contextual drivers of collaboration. These findings imply that collaboration in co-working spaces has some notable “screws” which one can adjust to increase both the extent of collaboration itself, and the outcomes it provides (e.g., Colleoni and Arvidsson, 2014).

Of course, the study is subject to a number of **noteworthy limitations**. For one, in many cases the cross-sectional study design only enables us to establish correlations but does not prove a causal relationship. This opens the door for alternative explanations. A devil's advocate might for example develop an alternative reading of results: collaboration may have no positive effect on performance but instead co-workers with better-going businesses may simply have more time to afford themselves the pleasant experience of co-working and enjoying lunches and parties. We have tried to address this challenge in the following ways: All presented relationships were analyzed in multi-level models accounting for nested data and also including a number of control variables. Also, our results on success attribution (Section 3.1.) corroborate the interpretation that collaboration leads to performance, by suggesting that members who collaborate more also give more credit to the Impact Hub community for their professional success. Furthermore, we conducted an explorative longitudinal study with a subset of the data which provides additional backing for a causal logic of some of our findings (Chapter 3.3).

Another limitation concerns the sample itself, which consists of members of the Impact Hub network. While being one of the globally most renowned and largest network of co-working spaces, Impact Hub is somewhat distinct from other spaces in that it puts an emphasis on social and environmental impact and offers a wide range of community-oriented events, services and programs. To account for this characteristic, the impact-orientation of members was included as a control variable into all models. Moreover, the availability of programs and community practices is not identical in all Impact Hubs but varies according to strategic decisions of founders, the needs of the community, available resources and other factors. In fact, this variance is what allows us to compare effects of programs and different types of configures, e.g. in Section 3.4.1 and 4.4. Nevertheless, we clearly encourage caution in extrapolating our results into other contexts and further research to examine our preliminary findings in a more rigorous manner.

5.3. PRACTICAL IMPLICATIONS: HOW TO MOVE BEYOND CO-WORKING

For potential freelancers and entrepreneurs, our study provides evidence that co-working spaces provide a powerful alternative to working from home, rented offices or coffee houses with professional benefits that go beyond infrastructure and social interaction (Gerdenitsch et al., 2016) A similar conclusion can be drawn for representatives of organizations who seek to build new contacts to e.g. supporters or investors or want to accelerate their development.

Our findings, however, also allow us to draw a number of conclusions for practitioners on the "other side" of the co-working space – those who build, manage or seek to improve the value provided by their shared workspaces and communities:

- **Implication 1: It pays off to facilitate collaboration**

Our results show that collaboration with other members is a key motivation for the vast majority of Impact Hub members. 88% express the motivation to “be part of a community” while 82% explicitly seek collaborators. Findings suggest that this is a very sensible demand, as their interactions are associated with a range of positive professional outcomes. This gives managers and hosts of co-working spaces a strong mandate to encourage collaboration. Results suggest that co-workers will be grateful for such efforts: members who collaborate more give Impact Hub more credit for their own success, are more likely to recommend Impact Hub to others and are even more satisfied with the price of their membership.

- **Implication 2: Make communities your unit of analysis**

While most co-working spaces have transactional relationships with their members (members pay a fee to access the space and services), the proponents of the co-working movement have made clear from the beginning that this should be only one part of the story. Rather than only focusing on the physical space they emphasized that co-workers should be part of communities and provide mutual support (Co-working Manifesto, 2011). Our data supports that this is a valid assessment – at least in the case of Impact Hub. Most members regularly attend or even host events themselves and identify with the group. This creates and reinforces trust and a sense of community which in turn are among the most powerful drivers of collaboration in our data.

Of course, trust and a sense of belonging are emergent norms and cannot be prescribed. Our data suggests however that they might to some extent be “contagious” within the group. High average levels of trust in an Impact Hub increased interaction even among those who were not particularly trusting themselves, encouraging them to engage and form a bond with the group. This suggests that founders or managers of such communities might be able to “imprint” these values in the community at the time of its foundation, e.g. through team building or by carefully selecting a group of founding members that already have a strong bond with each other.

- **Implication 3: Beauty and functionality matter**

An aesthetically pleasant and functional work environment is not only important for wellbeing, it also promotes collaboration. Our results show a consistent effect of satisfaction with space aesthetics, the atmosphere and functionality of the space and opening hours on the frequency of interaction. At the same time, higher levels of noise were associated with lower levels of collaboration and increased the risk that members would feel distracted from work.

Paradoxically, improving the functionality of the space can in some cases also mean to make it deliberately less functional. As the example of Impact Hub Boston highlights (see Spotlight no. 7, page 43), cleverly designed “intentional inefficiency” can function as nudge to encourage interaction between

members. Designers of co-working spaces can make use of such “water cooler effects” (Davenport and Prusak, 1998) and design areas that facilitate contact and exchange in a natural way.

- **Implication 4: Bring communities to life through events and orientation**

If the physical space provides the stage, joint activities and events are the play that promotes collaboration. Our analyses identified a rich toolkit of instruments and practices that can be implemented to foster social exchange. On the one hand, these include “onboarding activities” for new members. Among the most effective practices were mandatory member interviews, in which mutual expectations and fit were determined, as well as different forms of “initiation”, such as the presentation of new members to existing members through a newsletter or social media. On the other hand, ongoing events and gatherings are also important. Our data suggests that both informal (e.g. parties, excursions) and formal (e.g. pitching nights) types of events effectively promote collaboration.

Offering events also allows addressing the different needs and collaboration preferences among members. For example, members of more established organizations were found to be less likely to attend community events but more likely to interact with hosts. Given that later-stage organizations often also have different needs in terms of support and learning (Vandor and Leitner, 2018), this suggests that targeted events as well as a stronger emphasis on quality hosting and community management (cp. Brown, 2017) might be the best way to serve this group.

- **Implication 5: Use programs to increase collaboration efficiency**

Another powerful instrument to enable collaboration is the introduction of entrepreneur support programs. In the context of Impact Hub, programs are being offered along the spectrum of the entrepreneurial journey, from idea to start-up and growth and scale. Programs can include a range of services such as mentorship, peer support, business skill development, expert advice, and more.

While we have already seen in earlier analyses that program participation is associated with increased organizational performance (Vandor and Leitner, 2018), the results of this study show that programs also increase the likelihood to interact and co-create among participants. Moreover, our findings suggest that programs can increase the “efficiency” of collaboration for participants. For program participants, interaction with others was associated with the creation of more new jobs and better progress in growing their services. This suggests that programs – in addition to learning and development – expose entrepreneurs to relevant peers and experts, while simultaneously helping them to better understand in which areas they should seek collaborators.

- **Implication 6: Create interfaces to “unlikely allies”**

Innovation theorists have long argued that ground-breaking ideas often emerge from the combination of unlikely, often distant concepts and actors (e.g. Dahel and Moreau, 2002; Enkel and Heil, 2014).

Some of our findings underline the value of particularly distant actors or “unlikely allies” for the creation of effective collaborations also in the context of co-working spaces. For example, networking events that included individuals from outside the Impact Hub community were particularly strong drivers of collaboration. Moreover, our explorative longitudinal analysis suggests that Impact Hub members who collaborated with persons from a *different* professional field than their own were more likely to create new jobs than those who collaborated only within their own industry.

- **Implication 7: A community does not always need a physical space**

In some instances, a particularly effective way to connect “unlikely allies” within the co-working community may be to decouple community membership from the physical workspace. Many Impact Hubs have started to do so and offer “virtual memberships” that grant access to events, workshops, and information channels of the community but not the shared workspace. This way, they argue, virtual members can tap into the communities and benefit from the close ties and the activities co-created by the physically present community.

In our analyses, we saw that physically spending more time at Impact Hub was clearly associated with more collaboration. Also, physically present members were more likely to enter collaborations that benefitted them financially. While this generally underlines the importance of co-location for collaboration, the more unexpected finding was that the difference between virtual and co-working members was not particularly big. Virtual members interacted with and in the community quite often: About half of them discussed their work with other members at least once a month and attended six or more community events over the year. More strikingly, 29% reported having started a new venture and 45% having worked on projects with other members in the course of 2017. Overall, while they were less likely to interact with others their frequency to engage in professional co-creation with other members in form of projects, shared work, mutual hiring, etc. was not lower than for full-time co-workers.

Together, this suggests that virtual memberships present a viable option to expand a community beyond the physical co-working space and thereby enable collaboration with a much larger and diverse group of individuals.

- **Implication 8: Leave room for serendipity**

Throughout this chapter, we have identified different ways in which collaboration can be enabled. At this point it is also important to highlight that there are some limitations to the “enforceability” of collaboration. The identification and development of opportunities to collaborate is a complex process with inherently serendipitous characteristics. The outcomes also depend to some degree on chance and timing. This makes it difficult to “plan to have a chance encounter” that provides a great idea for working together and even more to facilitate this as a third person. Thus, in addition to the actions

outlined above, a useful approach to enable collaboration might also be to increase the number of situations that allow undirected informal exchanges.

The important role of undirected interaction was also supported by our data, in which the more general and unspecific community interaction variables often displayed a stronger effect on performance than the more specific co-creation variables. Communities and hosts in the Impact Hub network seem to have understood this pattern earlier and undertaken different measures to facilitate social interaction among participants (see spotlights B, page 40ff.)

Finally, collaboration is of course no panacea. Not all the collaborations in our sample lead to positive outcomes and at times, interaction with the community is instead associated with distraction and receiving bad advice. Thus one needs to keep in mind that meaningful collaboration often also requires a space for “deep work” (Newport, 2016) in a functional and not distracting environment. Impact Hubs have found different ways to create such spaces, from offering free earplugs and headphones to the tactical placement of the coffee machine, designated “quiet zones”, meditation rooms and private office rooms. These places acknowledge that for the implementation of all the great ideas gained through collaboration, collaborative work spaces also require space for quiet, focused work.

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