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An Analysis of the Co-working Space Industry in Stockholm from an Entrepreneurial Perspective

TIM A. HAUCKE

N. ALBIN ÖSTMARCK

KTH ROYAL INSTITUTE OF TECHNOLOGY
SCHOOL OF INDUSTRIAL ENGINEERING AND MANAGEMENT

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KTH Industrial Engineering and Management
Industrial Management
SE-100 44 STOCKHOLM

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Approved	Examiner	Supervisor
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Abstract

Co-working refers to two or more people that work in the same location but not for the same firm. This phenomenon has gained large momentum in the past years including growing demand in major cities around the world and prospects of further growth in the future. The characteristics of the firms located in co-working spaces seem to have changed over time, as nowadays also a growing number of large, non-tech firms choose this style of work. The research conducted in this thesis aims to investigate the entrepreneurial behavior and how it is affected by co-working. Special focus will be put on the collaboration and social interaction between co-working members. Our findings include a positive effect of co-working on entrepreneurial behavior, as well as on member interaction. Mixed results were found when regarding the perception of members towards other members' assistance within the co-working set-up. Also, the research suggests that, in general, a heterogeneous firm environment is more preferable, regardless of the firm's maturity stage.

Key-words

Co-working spaces, entrepreneurship, operators, commercial real estate, spill-over effects

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1. Introduction

The development of the internet has caused the world economy to change, and as an effect of this the phenomena of sharing assets between different actors have become more common (Puschmann & Alt, 2015). This phenomenon is often called the "sharing economy". The term, as referred to in this thesis, originates back from 2008 and is expressed as: "collaborative consumption made by the activities of sharing, exchanging, and rental of resources without owning the goods." (Lessig, 2008, p. 143). Before this era, it was more common that separate actors bought the full ownership of assets separately, even though the actual need of the specific asset did not justify full self-ownership (Puschmann & Alt, 2015). Consumer behaviors have now changed and it has become more common for actors to buy the usage rights for temporary ownership instead of full ownership (Matzler & Katahan, 2015). The development of social networks and electronical markets has linked users together that are willing to share their assets. These networks and markets then reduce the search and transaction costs and make it more accessable for the users to get in contact with each other, and therefore more convenient to share assets between each other (Puschmann & Alt, 2015). The platforms also create a trustworthy marketplace, were the users can read comments and reviews about each other and is connected to secure payment solutions (Puschmann & Alt, 2015).

Moreover, by the development and spread of mobile applications, the "app economy" has started and the phenomena of sharing assets has by this become more accessible (MacMillan, et al., 2009). More underlying factors for this evolution come from a

higher degree of convenience, ecological sustainability awareness and in some cases lower prices when it comes to temporary ownership instead of full self-ownership (Eckhardt & Bardhi, 2015). In recent time, it has also become more common to share not only specific assets but also workspace areas between different actors. The increasing demand for flexible and shared office space has proved itself to be a global phenomenon that has been on the rise for approximately two decades now, with major cities like New York, Berlin, London and Shanghai responding to the growing demand (DTZ, 2014). The first major transition took place in the 1980's when the idea of Business Centers emerged and companies started to shift from traditional office space to properties that offered professional workspace for multiple firms. This shift was partially a result of the rising demand for technology, especially personal computers (PC).

The core business idea behind the concept of the Business Center was mainly designed around the advantage of lower investment requirements for tenants. Instead of purchasing office hardware like PCs and signing long-term leases for traditional office space, which both required rather large up-front investments, Business Centers offered their tenants short-term rents and access to PCs, fax machines and telephones.

The idea of a monthly rent that includes the cost for usage of workspace and equipment later developed into what is now known as the phenomenon of co-working spaces, a trend that has gained global momentum since its origin during the dotcom bubble in the late 1990's and early 2000's. Especially after the burst of the bubble, a simple

workspace that is low in cost was appreciated by many members of the tech industry. In the evolution of co-working spaces, open spaces like cafés played an important role, as they symbolize an early form of the phenomenon that is now known as co-working spaces: “The Starbucks-type of co-working space […] can be regarded as a pioneer in the co-working movement.” (Leader to Leader, 2017, p. 62).

Although there are various definitions for co-working spaces as a style of work, the core idea behind it is represented by a certain location that is shared by two or more people who work together, but not for the same company (DTZ, 2014). It hereby combines two major advantages for its tenants: on the one hand, they avoid alienation and isolation that comes along working from home while on the other hand simultaneously encouraging networking and making new contacts (Gandini, 2013). Like Business Centers, co-working spaces combine all cost for their tenants in one rental payment, that is due on a daily, weekly or monthly basis commonly calculated per desk.

Since the 1980’s though, the requirements for a suitable workspace have developed further. Thus, co-working spaces not only offer the technological needs like wireless broadband internet connection but also put strong emphasis on the cultural aspect of working together. Besides the platform predestined for knowledge exchange between individuals of different companies in form of a shared workplace, operators of co-working spaces commonly offer their tenants a selection of educational and networking events. This encourages a sort of work culture that emphasizes collaboration and

teamwork. PwC's NextGen Study, conducted in 2013, contributes to the understanding of this trend, as they found out that 88% of the surveyed population favored the kind of collaborative culture offered by flexible working environments over competitive culture (Finn & Donovan, 2013). Part of this culture is diversity. As co-working spaces have consisted largely of young tech start-ups in the beginning years of the movement, it has become more diverse in recent years regarding the industry background of the tenants. It can be observed, that co-working spaces start to shift from rather homogenous to more heterogeneous workspaces. This can be seen regarding the sector the companies come from as well as the firm size. An analysis of co-working spaces that are located in London has shown that 51% of members are from the tech and digital sector, followed by the communication and media sector (21%) and the creative sector (10%) (DTZ, 2014).

Furthermore, firm size plays a role when it comes to diversity in co-working spaces. In recent years the distribution of firms using flexible offices has changed, as large corporations have realized the benefits that co-working spaces offer. Among a growing number of companies, incumbent firms like *KPMG*, *General Electric* and *Citibank* have moved parts of their team staff to co-working spaces in New York, Boston and London (Clark, 2016).

All the aspects mentioned above contribute to the rising demand of flexible work spaces and its positive effects. Considering those factors, this paper will investigate the link

between entrepreneurial behavior and co-working spaces, hence the research question and its sub-questions are conducted as follows:

- *How does co-working affect entrepreneurial behavior?*
    - *What is its influence on motivational factors, knowledge spillovers and professional collaboration?*
    - *When is a homogenous or heterogeneous firm environment preferable?*

The term *entrepreneurial behavior* shall therefore be defined as the characteristics of how employees or self-employed co-working members act and cooperate with each other in the closed setup of a co-working space. This is effected by how members socialize and interact with one another. The term *firm environment* is hereby defined as a specific setup of firms that a certain co-working space consist of. There are two possible alternatives how a certain site can be structured, either heterogeneously or homogenously. The first one, represents an environment where firms have a rather different and diverse background regarding its industry origin, while in the latter alternative the co-working member firms have the same or similar industry background.

Hence, the paper is structured as follows: At first, the theoretical framework will give an overview over what the literature that has been conducted on the topic, which will be followed by the methodology chapter that will present a qualitative and quantitative research approach about co-working spaces in relation to entrepreneurial behavior.

Chapter four will then show the results of the research, chapter five will show an analysis of the market and chapter six will consist of a conclusion.

2. Theoretical framework

The following chapter consists of previous studies within the fields of co-working spaces and factors of entrepreneurial behavior. This will be followed by the research gap, scientific contribution and research question presented.

2.1 Time intervals of development

The course that the concept of co-working has taken over the decades to the form as we know it today, can be divided into three intervals as Leclercq-Vandelannoitte and Isaac (2016) point out. The authors of the article determine the "three waves of virtualization": The first one ranged from the 1980's into the 1990's and is characterized by the increasing household availability of the PC, laying the groundwork for more flexible workspace opportunities. This was followed by the second wave, taking place in the 2000's, which centered around the increasing spread of mobile technology, which led to "spatial and temporal dispersal" allowing employees to work more flexible in regards to location and time. This has led to the third and final wave of virtualization, which describes the development of co-working spaces as technological progress allows an even higher level of flexible working.

Correspondingly, Johns and Gratton (2013) also describe the three waves of virtualization in their article, adding the projection that in a few years 1.3 billion people will work from a site of their choice. Similarly, Moriset (2014) investigate the theoretical background of co-working spaces. The author hereby indicates that the phenomenon of co-working consists of two economics trends – on the one hand, the

development of a knowledge economy that, on the other hand, emerges into a digital economy. Leclercq-Vandelannoitte and Isaac (2016) identify this relation as a knowledge economy connected with the substitution of cognitive for physical capital. To specify the background of this, they quote Derek Neighbors who was interviewed by Strauss (2013), who explains that the transition from cognitive to physical capital means a transition away from monetary capital, strengthening the importance of influence, social and human capital. Those insights effected the course of this paper in a way that they provided a conceptual frame of where the phenomenon of co-working stems from. Only with this background in mind, it is possible to understand its current state and analyze the market situation.

2.2 Sharing economy connected to co-working spaces

The phenomena of sharing assets and commodities between parties has over the time become more common and has evolved into what today is known as the sharing economy, i.e. people and organizations have started to collaboratively consume goods and services between each other (Belk, 2014). This is made possible mainly due to the development of internet (Belk, 2014). As for 2010, the sharing economy was estimated to be worth 100bn USD (Lamberton & Rose, 2012). The trend of sharing has subsequently also emerged into office spaces, to what today is known as co-working spaces.

2.3 Users of co-working spaces

Furthermore, in the study done by Foertsch (2011) the findings are that 54% of the co-working users are represented by freelancers, 20% of the representation comes from entrepreneurs and another 20% comes from dependent contractors. Moreover, in regards of new entrants and entrepreneurs is that working in a co-working space often is included in the organizations business model. Older and more established firms could also take advantage of the co-working space environment, in terms of increasing innovation and creativity (Capdevila, 2013; Gandini, 2015; Moriset, 2014; Pohler, 2012; Spinuzzi, 2012). Another essential point in regards of co-working spaces is that the level of administrative tasks tends to be less than in ordinary working spaces (Pohler, 2012).

As identified by Bouncken and Reuschl (2016) co-working spaces create a network for knowledge sharing and a source of inspiration that could drive organizations forward. However, these same factors also do become the Achilles heel of co-working spaces, hence unwanted spread of knowledge, self-exploitation, knowledge leakage and loss of social security could occur. For that reason, this knowledge will contribute to this paper with effects that come along with working in a co-working space as an entrepreneur.

2.4 Background on behavior and performance in relation to co-working spaces

Closely connected to the topic of workspaces is the issue of work environment and its effect on employees' work attitude. This is the research subject of a study conducted

by Spreitzer, *et al.* (2015) from the University of Michigan, in which they investigate the question of why employees thrive in co-working spaces. They hereby focus on qualitative research, using interviews and surveys, to collect data from multiple co-working space founders and managers and hundreds of workers from dozens of co-working spaces across the U.S. They evaluated the data then by running a regression analysis that led them to the conclusions of three main factors that predict thriving: Firstly, they found that members of co-working spaces regard their own work as purposeful. On the one hand, this is due to the fact that they do not feel the pressure to fit into a certain "work persona" due to lacking competition with fellow employees in a traditional office. On the other hand, co-working spaces offer their members an environment where one helps each other out. The authors note that this may be something where members derive meaning from – providing help to other fellow members based on their different abilities and being part of a social movement based on values like teamwork and collaboration.

A second factor boosting effectivity of co-working space members is the fact they can be in charge of their own time-management, giving them a form of autonomy. The researchers found that this is can be a double-edged sword though: They report that too much autonomy can have a negative effect on productivity for employees. In order to get an optimal level of self-control, the community of co-working spaces provides boundaries and creates structure for its members.

Furthermore, the authors present a third condition for a thriving work force, which is connected to the previous two aspects: being part of a community. The possibility to interact with other members is an important factor in the business model of co-working spaces and is a major reason why people are willing to pay money to be part of this. The authors note though, that it is important to stress out that interacting is voluntary and not required or compulsory at all. Their research has shown that even those co-workers who get in contact with others much less compared to the rest, still feel a "strong sense of identity with the community" (Spreitzer, et al., 2015, p. 4). They conclude, that this observation derives from the fact that members are aware of the possibility (but not the obligation) to interact whenever they feel the necessity.

Ultimately, they come to the conclusion that the two major reasons for a high degree of thriving are the autonomy that accompanies working in a co-working spaces and the freedom of being themselves when they work.

This study is also connected to research conducted by Porath and Spreitzer (2012) investigating the theoretical background of thriving at work. It is based on three surveys investigating the correlation between thriving and certain criteria such as personality, health and the employees work lives. They define thriving as the experience of "growth and momentum", consisting of "feeling energized and alive (vitality)" and moreover a feel of improvement and "getting better at what they do (learning)" (Porath & Spreitzer, 2012, p. 1). What they found, amongst others, is that thriving is negatively correlated

to burnout, positively related to health and furthermore has a positive effect on career development initiative.

Noteworthy about the article by Spreitzer, *et al.* (2015), especially in regards to the importance of their research for this paper on hand, is the comparison between regular office spaces and co-working spaces. The researchers found out that the level of thriving is higher in co-working spaces than in regular offices spaces.

2.5 Co-working spaces connected to management

Bouncken and Reuschl (2016) examine the effects co-working spaces have on management of a firm. The model used claims that entrepreneurial performance and learnings improve by a closer working relationship among co-workers and people around, more in a co-working space than an ordinary office space. The concepts presented by the authors therefore have a positive relation between the two. However, due to opportunism, knowledge leaks could have a negative impact on entrepreneurial performance, hence it reduces the level of trust between the actors within the co-working space.

2.6 Behavioral classification

Another contribution to the topic was made by Spinuzzi (2012) who conducted the following research in the greater region of Austin, Texas: Over a period of 2.5 years, the author investigated the co-working sector, conducting quantitative research on members of co-working spaces as well as their proprietors. His methodology includes

the use of activity theory in order to analyze the co-working spaces industry in Austin in the period of July 2008 to February 2011, the time of his research.

Throughout his findings, he distinguishes between two contrasting set-ups of co-working spaces: the *good-neighbors* and the *good-partners configuration*. Both are based on collaboration between co-workers, but the first configuration is typically characterized by small-business owners and consultants providing service to consumers, whereas entrepreneurs and freelancers providing service to businesses as the actors in the *good-partners* configuration. While *good neighbors* rather work parallel, meet their customers in person and have a strong focus on sustaining their relationship as neighbors in order for the co-working space to be an optimal place for everyone's work (like face-to-face meetings with their customers), *good partners* put the emphasis on independent working, where only shared problems considering their work are tackled collaboratively. Their focus is more on momentary collaborations than on long-term teamwork.

Again, these findings highly contribute to the understanding of how the co-working trend has been shaped to what it is today and gives crucial insights to the investigation of how it works in Stockholm.

2.7 Spatial development

A constant quest for companies around the world is the challenge to attract talented work force. A global survey on this topic was conducted by Cushman & Wakefield

(2016) and involved 266 leaders of global and regional companies operating in the field of commercial real estate. As the research shows, this quest is one of the main influences on companies' location selection strategies, with a strong drive towards city centers: 43% of the participants indicated the intention of relocating their sites to more central locations. On the other hand, this is also connected to the cost aspect, as this also affects the choice of location companies make. Due to commercial real estate sites being more expensive to lease in city centers than in suburban locations outside the city, there is a difference in where companies aspire to be located (city center) and where capital restraints allow them to choose a site (towards the suburban are). This relates to the conceptual background of centripetal and centrifugal forces regarding the geographical concentration of firm's location strategy (Alcácer & Delgado, 2013). The first concept describing forces that promote the concentration towards the center of a city, while in contrast the latter one is characterized by forces that oppose the geographical concentration.

2.8 Industry Development

When perceiving the industry that has evolved around co-working spaces it seems appropriate to reflect on this industry against the background of an industry life cycle. This concept is based on the idea that every product that enters any kind of market will go through certain kinds of stages. Within those stages the products tend to follow a specific set of characteristic developments, which can be summarized by four stages. In the *Introduction stage,* new businesses are created who are in the phase of inventing, developing and eventually introducing their product to the market. Usually, firms at

this point are not profitable since demand is very low and costs for research and development occur (Levitt, 1965).

In the following stage, the *growth* phase, demand tends to increase rapidly as a rising number of consumer realizes the potential of the good or service. As research and development still is a large factor, businesses are usually still not being profitable, which at this point are also not a priority (Audretsch & Feldman, 1996). More importantly, players in the industry aim to secure a large market share and invest in expansion. Also, mergers and acquisitions within and from outside the industry can be observed.

A characteristic feature that occurs during the third phase, the *maturity stage*, is that the previously seen growth of demand slows down. As profitability becomes more of a priority, businesses put more focus on cutting costs and consolidation (Levitt, 1965). As a result, price competition becomes more important to the industry's players than to differentiate themselves via their products.

In the final phase of the industry life cycle, the *decline stage*, growth of demand eventually decreases, resulting in declining revenues for the industry's firms which in turn leads to a certain share of businesses to exit the market (Klepper, 1997).

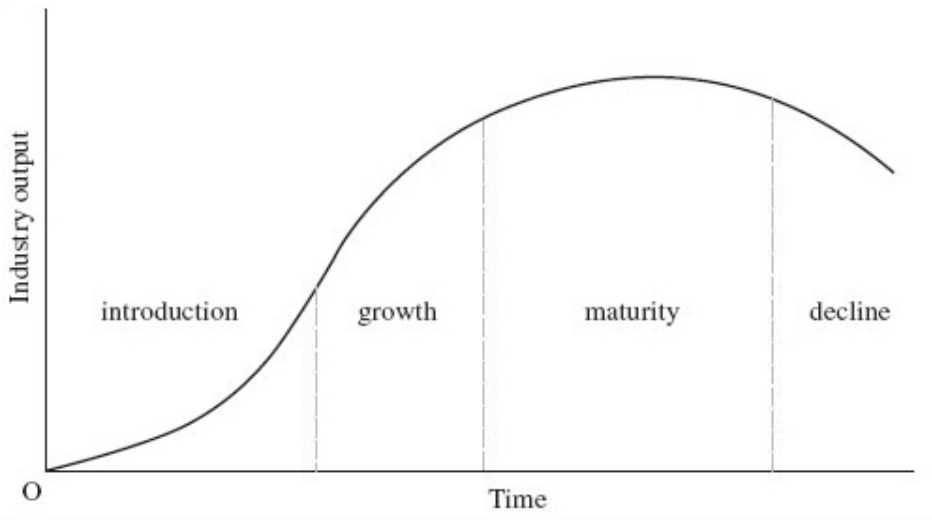


Figure 1 - Industry life cycle, (Besanko, et al., 2013)

2.9 Sustainability & Survival

Another essential aspect when investigating the relationship between the rise of co-working spaces and entrepreneurship is a question of sustainability. This applies especially to young firms, as they can be of significant importance for job creation Birch (1979), for technological progress Halvarsson (2015) as well as they also often account for a great share all of co-working members (Jacobs, 2016). Having this threefold importance of young firms in mind, especially with a tech background, an examination of the survival rate of such young and often small firms seems appropriate, particularly when intending to forecast a potential future path of the co-working industry. Research data on the survival rate, conducted from 1963 – 1982 in the US shows that young firms often struggle to surpass a period of 5 years, with approximately 60% of not being in business anymore (Geroski, 1995). It also shows that after a period of 10 years a mere 80% of young firms have not survived (Geroski, 1995).

Additionally, Boschma and Frenken (2009) have noted that there is an expectation that technological firms that have recently entered the market have a higher likelihood of surviving, when considering the first years of existence.

Another more recent study on the topic approves this trend (55% of failed businesses after 5 years, 71% after 10 years) and additionally points out the different causes that most often lead to business failure (Statistic Brain, 2016). Accordingly, the study identifies *Incompetence* as the major reason for business failure with a share of 46%, followed by *Unbalanced Experience or Lack of Managerial Experience* with 30% and *Lack of Experiences in line of goods or services* with 11% of all failures being due to this, respectively.

Related to this topic is the follow-up question about correlations with the survival rate, especially what effects the endurance of young firms positively. Additionally, it is of special interest if the co-working concept is in some way correlated with the survival rate of young businesses. While research that investigates the direct correlation between co-working spaces and firm survival rate is still lacking, there are indicators that point to a particular direction. Those includes the positive effect for young and small firms, that comes with working with a mentor, as a study conducted by UPS pointed out (UPS store, 2014). The research shows that after 5 years only 30% of small businesses fail (compared to failure rates of 55% and 60% as stated above) when the young companies collaborate with a mentor. Mentoring is hereby defined as a person who serves as a mentor or advisor to a young company, helping out with feedback,

networking and giving advice to the entrepreneurs (Rampton, 2015). This concept is closely linked to the idea of co-working spaces, a site that provides a platform to bring together freelancers, entrepreneurs, employees of young firms and incumbents, investors and business angels who help each other out in an environment made for giving advice to each other and collaboration.

2.10 Heterogeneous and homogenous environment

On the topic of heterogeneous or homogenous environment, Bittner and Leimeister (2014) indicates that the area is uncharted. Furthermore, Bittner and Leimeister (2014) claim that heterogeneity in work groups increases the challenge of incorporating understanding between varied group members. Perrone and Sedlacek (2008) have published their insights about when group cohesiveness and client satisfaction are peaking: either in homogeneous or heterogeneous groups. Their findings show that homogeneous counseling group lead to higher cohesiveness and satisfaction than heterogeneous. This is confirmed by Tajfel and Turner (1986). Furthermore, there is research conducted by Waglé (2013) on the heterogeneity in connection to the welfare state. According to the author, it is to expect that ethnic heterogeneity goes in accordance with welfare state policy-reducing effects, at least at a general level.

2.11 Location

On the topic of entry and exit levels on a regional level, various studies have been done. Braunerhjelm and Borgman (2004) conducted a study on the topic of entrepreneurship linked to regional growth. The study culminated in the finding that there is a positive

relationship between entrepreneurship and regional growth, particularly in the service industry. Within the field, Nyström (2007) also researched the topic what is determining entry and exit levels on a regional level, but at a finer sector decomposition, by using panel data i.e. using multi-dimensional data collected over time. Within the paper, Nyström (2007) presents the agglomeration effects i.e. the advantages firms get by locating close to each other, divided into the effects of localization economies and urbanization economies. Localization economies refers to the benefits firms in the same industry receives by location closer to each other, in comparison to not co-located firms. These benefits are spill-over and cost reduction effects, that both new entrants and incumbent firm can take advantage of. The latter of the two agglomeration effects presented is called urbanization economies, which refer to the advantages firms may receive from location close to each other, necessarily not from the same industry. Urbanization economies tend to lead to lower transportation costs and by the nearness of customers and suppliers also the quality of the goods or services produce becomes higher.

However, another essential point to take notice of is diseconomies of agglomeration, i.e. the negative effects that could occur when firms are location too close to each other. To elaborate this, such diseconomies might lead to increased rents, traffic congestion and increased labor costs. Furthermore, diseconomies of agglomeration are not expected to be unembellished, due to that positive externalities are dominant.

The conducted study has shown that level of aggregation influences the entry and exit levels, so does also the firm size. In addition to this, localization economies unequivocally have a positive influence on formation of new firms. However, it does not avert firms from exit in all cases.

2.12 Research gap and contribution

In conclusion, the current literature that examines the global trend of rising demand for co-working spaces is manifold and factors behind entrepreneurial growth and performance has previously been investigated at a wide range. However, there is a lack of studies that connects the two areas with expected factors and effects connected to entrepreneurial behavior in a co-working space. To further explore the area becomes interesting form an academic point since this thesis will serve as foundation between the two areas, on with further research could be added upon in the future. Therefore, the conducted research question, and its two sub questions are designed as follows:

- *How does co-working affect entrepreneurial behavior?*
    - *What is its influence on motivational factors, knowledge spillovers and professional collaboration?*
    - *When is a homogenous or heterogeneous firm environment preferable?*

3. Methodology

As a basis for constructing the different analysis about the young industry and in order to answer the research questions, this paper will employ a qualitative and quantitative research format, in form of direct observations, semi-structured interviews and a survey.

3.1 Motivation for qualitative study

A qualitative study opens up the possibility for providing complicated textual explanations of how individuals experience a particular research subject (Trochim, 2016). Correspondingly a qualitative study provides data about human factors of a subject i.e. opinions, beliefs and emotions (Grüne-Yanoff, 2016). This study will aim towards seeking explanations of phenomenon's rather than confirming hypotheses. In addition, since the phenomena of co-working spaces is a rather new occurrence, obtaining enough data for explaining and quantifying variation, predicting casual relationships and to explain the characteristics of a population at a statistically significant level required is unlikely or hard to obtain. Therefore, a quantitative study alone is not enough. On the contrary side, a qualitative study will bring explanation of the variation rather than quantifying it, which implicates for a qualitative study (Trochim, 2016). The interviews conducted in this study will predominantly be held in an open-ended manner. This is due to the lack of previous studies about the effects co-working spaces on entrepreneurial performance in Stockholm.

In regards of the flexibility of the study design, a qualitative study will contribute to the research topic rather well, hence the probability of that participant responses might affect how the succeeding interviews will be conducted. Moreover, in the early stage of the research, the study design is iterative i.e. the research questions and data collection process are attuned for future interviews based on the acquired knowledge (Trochim, 2016). However, at a later stage the interviews will lead to a semi-structured form.

3.2 Qualitative methodology

A qualitative research approach can be conducted in several different ways. To best fit the research area, the methods chosen are:

- *Direct observations*
- *Semi-structured interviews*

Direct observations are a well applicable method for studying the relationship of co-working spaces and entrepreneurship, hence, the method makes it possible in an easily accessible way to conduct knowledge about the culture within co-working spaces (Grüne-Yanoff, 2016).

Complementary to this, the semi-structured interviews are chosen since the interview format opens up the possibility of taking advantage of recent discovered awareness (Trochim, 2016). This is needed since the topic of co-working spaces effects in regards to entrepreneurship is uncharted area within the Stockholm market.

Based on the subject and the particular research question the sample size may vary. The sampling methods chooses for this study is:

- *Purposive sampling*
- *Snowball sampling*

Purposive sampling refers to when the sample group is selected by certain criteria's, therefore, this method becomes useful when analysis and data review are conducted in combination with data collection (Trochim, 2016). Connected to purposive sampling and an iterative process is snowball sampling. Snowball sampling is described as when the interview participants use their social networks in order to help the researcher finding new interview participants that could contribute to the study (Trochim, 2016). This method is used in this study due to the lack of previous studies within the specific area, so therefore in order to find new interview participants, the snowball sampling process becomes useful.

Henceforward, by the direct observations and semi-structured interviews in symbiosis, the results will culminate to an analysis of co-working spaces connected to entrepreneurial behavior at the Stockholm market.

3.3 Qualitative method

The selection of the sample took place on a rolling basis, where potential participants were contacted via phone or email and asked if they would like to contribute to research on the correlation of co-working spaces and entrepreneurship. The criteria they had to fulfill in order to be contacted was to be part of the co-working space industry in

Stockholm in order to have an adequate level of insights to add value to the research conducted in this paper. All of the 15 selected participants currently work for an organization that is involved in the co-working spaces industry or within Cushman & Wakefield.

In addition to the research, in order to find potential and relevant participants for this research, the method of *snowball sampling* was used. This is based by that the Stockholm co-working space industry is rather young and still relatively small regarding the number of relevant firms. Therefore, it is plausible that there are personal connections among the representatives of the firms, e.g. personal contact from industry events or advanced training. On this premise, this often leads to interviewees recommending other possible participants that can be of relevance for the conducted study.

The interviews will be composed out of six fixed questions and additional questions that do not follow the same structure in each interview but are rather flexible and dependent on the previous answers of the participants and the direction the interview takes. The fixed questions will be:

1 One can distinguish between two different kinds of co-working spaces: Heterogeneous and homogeneous. In your opinion, from what environment do startups profit most? What stage?

2 In terms of spill over effects, is it more beneficial to join an older co-working spaces?

3 What do you think are important factors for spill over effects to occor?

4 Do you think there is a need for more co-working spaces in Stockholm?

5 Do you think it is a potential risk for creative startups that more and more large firms enter co-working spaces?

6 In terms of Industry Life Cycle, in what stage would you consider the Stockholm co-working spaces Industry at the moment?

The interviews took between 30 and 60 minutes. All interviews were recorded or summarized in text form, since some interviewees did not want to be recorded. This method was chosen in order to guarantee a sufficient interaction with the interviewee at the time of the qualitative research.

3.3.1 Biases qualitative research

Due to the fact that many participants were representatives of organization that operate in the field of inquiry, there might be bias when questioning them on matters of the co-working spaces industry. Being a part of that industry, the interviewees representing operators might have a subjective perspective of the future path of the industry than someone who is not involved in the matter. Having that respondent bias in mind when analyzing the conversation held with the participants, answers involving firm-specific answer or too optimistic or pessimistic answers should be regarded critically or ignored. On the other hand, it should also be noted that the occurrence of researcher bias is

possible, especially in form of confirmation bias. This occurs when the researcher is seeking for evidence that could confirm his hypothesis and interpreting the evidence in a way where the researcher observes what he or she is expecting to happen (Grüne-Yanoff, 2016). Applied to the research conducted in this paper, this could mean that while interviewing the participants, searching for answers that confirm an expected outcome could occur, unconsciously.

Another aspect that can influence the research is the circumstance that people tend to behave differently when they know they are under observation – in this case during an interview. The so called *Hawthorne Effect* implies the possibility that the answers the participants give are influenced by their knowledge of being part of a research (Grüne-Yanoff, 2016). This includes that interviewees might give more positive answers when it comes to question about their personal opinion about the economic future of the industry. Their answer might be influenced by intentions fueled by self-interest in order to paint a more prosperous picture of the industry's future. Also, it is imaginable that participants will give unrealistic answers to questions regarding the benefits for start-ups (which represent potential customers for co-working spaces) when considering becoming a member of a co-working space as well as leaving such a site. This may be caused by the attempt to communicate co-working spaces as a more attractive site. In contrast, the research intends to find out what the interviewee's (as a part of the industry) experience has shown.

There are certain methods in order to minimize bias of that sort, such as the method of elimination which includes double- and single-blinding (Grüne-Yanoff, 2016). Nevertheless, neither single- nor double-blinding were possible options to realize in connection to the research question.

Furthermore, there are certain implications that come along the research method of direct observations. Those include biases concerning the fact that permissions from the co-working space operator to do research in his respective site for a certain time. This might influence the perspective of the topic in a way favoring the interests of the operators. In order to avoid such a bias, the observational research focuses on the behavior of the co-working spaces members only, therefore avoiding to come into conflict with any influence that operators may have on the observation.

Furthermore, due to the sampling methods chosen for this study, the snowball method could result in that interviewees have a tendency to know or recommended other interviewees with the same opinion or knowledge as themselves, and this could result in biased results due to that the sample population does not reflect the reality.

3.4 Quantitative research

A survey was designed in order to explore what members of co-working spaces appreciate within their respective space and what they benefit from. The survey will consist of 20 questions, 16 of which are mandatory to answer, leaving four questions optional. The complete list of questions can be found in appendix. The survey is

addressed exclusively to people that are currently a member of a co-working space in Stockholm. The survey serves as a complement to the already conducted qualitative studies, therefore adds an extra view of the industry, how the members them self experience the co-working space industry.

The method chosen to get in to contact with the members were via representatives of the co-working operators, who then in turn were asked to encourage their members to take part in this survey.

3.4.1 Biases Quantitative study

Via this indirect method of contact with the members of the Stockholm co-working space industry, no chance of direct contact with the members was possible. Therefore, the number of participants that will take part of the survey will be relying on how encouraged the representatives of each individual co-working spaces will be to share the survey with its members. Subsequently, as presented in the *biases of a qualitative study* chapter, similar biases such as the *Hawthorne Effect* could also occur. Furthermore, there could be an expectation that only members who have an either highly positive or in turn rather negative perception are the ones that take part in survey. This is due to the assumption that especially those have the incentive, based on their negative or positive experience, to share their opinions. In contrast, one can assume that members who have well-balanced experience have a lower incentive to criticize or reward their co-working space.

3.5 Market Segments

For the purpose of this study, the 18 main players in co-working market were divided into four groups. Operators are divided into the four different segments, that take price, design and service into consideration, in order to give a more precise answer to the above stated research question. The characteristics for the four distinctive segment groups consist of the following:

1. Premium Segment:

The co-working spaces in this segment are characterized by a rather central location, mostly in Stockholm's *central business district* (CBD), that is marked in light grey at the below presented map, *Picture 1 – Stockholm inner city map*. The premium segment is also characterized by having a high amount of members, compared to the co-working spaces in the other segments. The price level is in the upper range and the interior design is characterized by high-end furniture. Many of the co-working operators in this category feature additional services such as staffed reception, valet parking, events and a café/restaurant within the premises, that often include amenities like free coffee and snacks for the members.

2. Standard Segment:

This category includes co-working sites that are primarily situated outside of CBD but still within the *rest of inner city* (ROIC), marked in dark grey at the below presented map, *Picture 1 – Stockholm inner city map*. The interior design is focused on functionality but still provides a modern atmosphere. The price level of this category

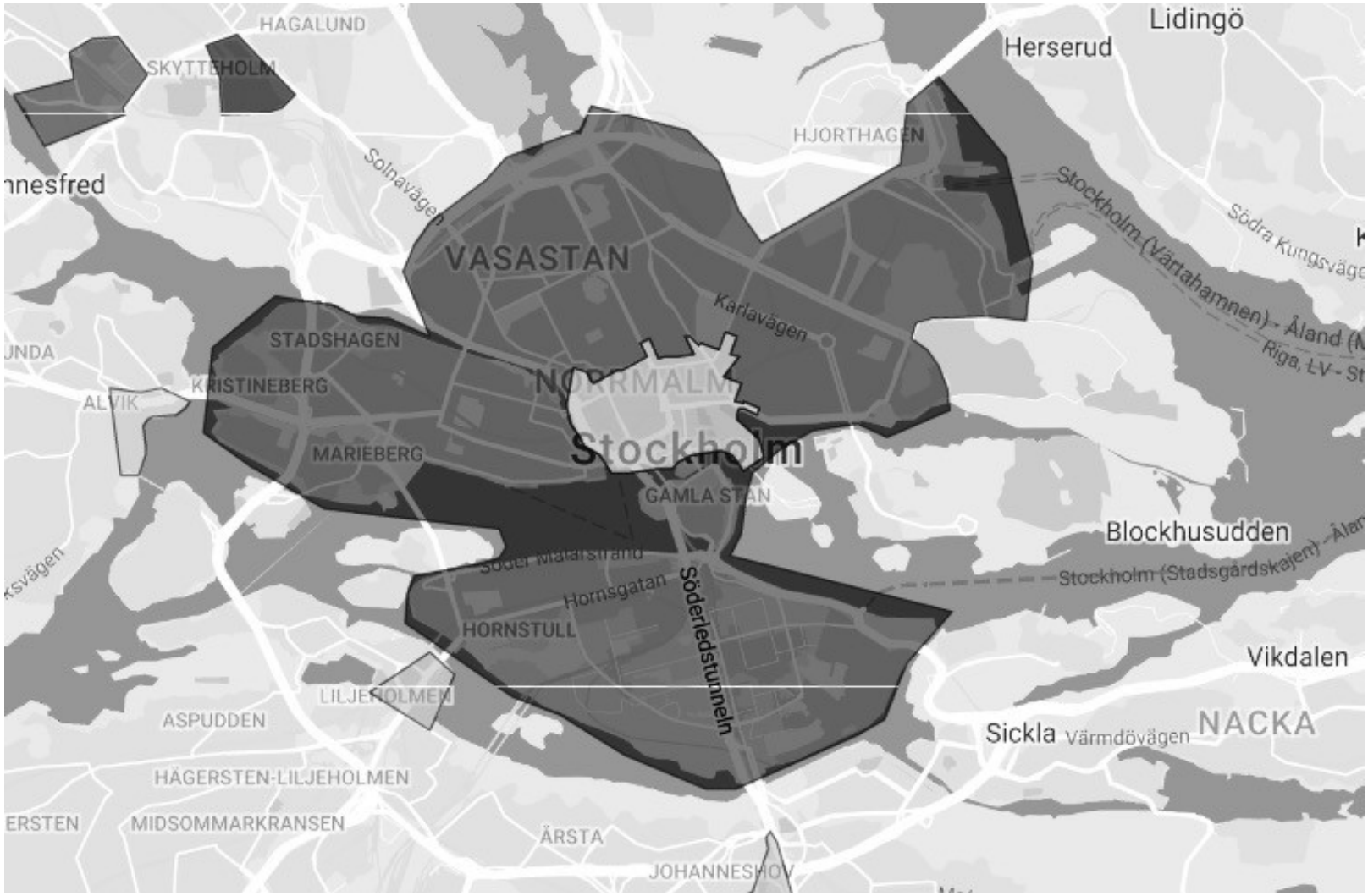
is competitive, therefore lower compared to the premium segment which is also due to fewer additional services being offered.

3. Incubator Segment:

Located both in CBD and ROIC. Characterized by the idea of connecting co-working members with each other, business angels, investors and mentors, the co-working spaces in this segment often serve as a hub for young firms. Focus is put on accelerating the growth of member firms. Oftentimes, there is a selection process in order to become a member, where a company needs to fulfill certain requirements (e.g. regarding performance figures or industry background). Also, there are cases where the operator imposes time restrictions among its members, providing them with a certain deadline when to exit the space – this can be a related to the member firm achieving prearranged milestones or reaching the end of a specific period of time.

4. Community Segment:

Located particularly in ROIC, among the co-working sites of this segment, strong focus is put on collaboration between members and self-initiative by individuals, for example when setting up social events (seminars, guest-speaker lectures, after-works, breakfast meetings, etc.). The interior design is stylish and functional and member usually do not have to fulfill certain criteria in order to become a member. Although it is non-selective, there is a certain tendency towards charitable, non-profit and non-governmental organizations (NGOs) when it comes to the industry background of the members.



Picture 1 - Stockholm inner city map: CBD in light grey (center), ROIC in dark grey

4. Results

This section presents the results and insights of the co-working sector in Stockholm. The findings come from interviews, market investigation, direct observations and a survey.

4.1 Market Background

In order to understand the market around co-working spaces, to more precisely answer the research question, interviews about the market background were conducted with operator representatives from the Stockholm co-working space market, as well as experts within the field at Cushman & Wakefield's Stockholm and London office. Research has shown that even though the co-working market consists of multiple actors, the market structure is practically always the same. The co-working space market typically consists of three main players:

Landlord, Property Owner (PO)

- Leases space to one or multiple tenants over long-term periods

Operator

- Rents space long-term from PO
- Rents out short-term to members/sub-tenants

Members, sub-tenants

- Purchase membership on short-term basis

- Monthly, Quarterly, semi-annually

Generally, the leasing contract between landlord and operator contains a 5- to 15-year leasing agreement. This can include certain rules that apply to the operator regarding its member selection. Usually though, operators are rather independent when it comes to choosing their subtenants and do not encounter any influence from their landlord.

Naturally, many operators have certain requirements when deciding on who to sign a membership with, especially when considering that high-risk businesses, who are likely to struggle and/or fail pose a great threat to the prosperity of the operator. Subsequently, companies that are coming from industries that raise ethical questions, for example the gambling or weapon industry are currently hard to find in co-working spaces in Stockholm. This is mostly due to operators who are not willing to sign contracts with ethically questionable companies in order to not harm their reputation.

Furthermore, many operators focus on a certain industry background regarding their member selection. At Epicenter for example, the focus is put on firms operating within the digital sector. At THINGS on the other hand, only firms who develop hardware as part of their business solution can become members. Similarly, incubator, start-up hub and co-working space SUP46 has limited their focus on companies with a tech-industry background who also fulfill certain criteria regarding the operating figures. Another example is H2, a co-working space that has build a network of companies which focus on healthcare technology.

4.2 Interview results

The central purpose of the conducted questions was to gather data about the co-working space sector, and its influence on entrepreneurial behavior. More precise, the questions gather data about factors entrepreneurs will be facing when deciding to use a co-working space as an office space.

4.2.1 Heterogeneous or homogenous environment

Based on the conducted qualitative interviews, mix results occurred in terms of at what stage a firm profits from being surrounded by a heterogeneous or homogenous environment. Concluding the results from the interviews one can see that in hardware oriented co-working spaces, such as THINGS, an interviewee emphasizes that a homogenous co-working space is advantageous at an early stage.

"The earlier the start-up phase, the better the homogeneous environment"

-Interviewee 5

This is motivated by firms within this sector profits of having access to specific tools and equipment necessary for prototype development, such as 3D-printers. Having these specific resources available at a co-working space is motivated by the homogenous environment of hardware oriented firms, and therefore not found in a heterogeneous co-working space. Moreover, in hardware industries young firms also faces similar challenges, and by this interviewee' advocates that a homogenous environment is

advantageous, hence it makes the firms overcome challenges more efficiently by learning from each other.

Furthermore, for firms operating in other industries the conducted interviews advocate that a heterogeneous environment is advantageous for young firms. Hence, a heterogeneous environment helps young firms to increase the level of creativity, by benchmarking and learning from other industries.

"I always think that a not normative environment is preferable. In the very disruptive times, and the fast-changing environment we are currently in, if you are around a diversity of people and industries you will pick up trends, notions and your creativity will broaden when you meet different people with different needs and backgrounds. I think that will enhance your ability to be as fast changing and adoptive as you need in order to be competitive today."
-Interviewee 8

However, at a mature stage all the interviewees accentuate that a heterogeneous environment is advantageous for all type of firms, due to spillover effects.

4.2.2 Co-working space life span in relation to spillover effects

At the topic of how the life span of the co-working space is connected to synergies of spillover effects, the interviewees emphasize that an older co-working space is advantageous. One of the interviewees explains the phenomena by the principle of

Maslow's pyramid of needs. The interviewees advocate that older co-working spaces have reached a higher level within the pyramid, and have therefore fulfilled basic needs of survival. Consequentially, older co-working spaces could concentrate on development instead of survival. An example of this is that older co-working spaces often provide internal networks for communication between members, which younger ones tend to not, therefore the spillover effects increase in older co-working spaces.

4.2.3 Important factors for spillover effects

When it comes to factors for spillover effects at co-working spaces, the conducted interviews have shown that the most important factor for increased spillover effects is related the co-working spaces' culture and atmosphere. The interviewees mean that creating a culture at which it is acceptable to fail and a culture that is highlighting personal trust is important in order to accomplish a higher level of spillover effects.

"Hosting social events helps our members to connect with each other"

- *Interviewee 2*

By arranging events and building networking platforms the interviewees also advocate that they can influence the culture and atmosphere, and therefore increase the level of personal trust and consequentially increase the level of spillover effects.

4.2.4 Need of more co-working spaces in Stockholm

Analyzing the need for more co-working spaces at the Stockholm market one can conclude that the market is still growing. By interviewing operator representatives, one can tell that existing players are currently expanding to new locations, both in- and outside greater Stockholm areas. Moreover, new entrants have been seen entering the market, latest entrant is the internet focused co-working space Goto 10. They offer a free co-working space for everyone that has an idea related to the internet. Additionally, in recent time the health-tech focused co-working space H2 has also opened its doors.

Moreover, a majority of the interviewees advocate that there are three different kinds of co-working spaces that will survive in the future, co-working spaces with a certain client focus, such as a specific industry, price aggressive or premium labeled co-working spaces will survive.

"There is a threat for "stuck-in-the-middle" operators"

-Interviewee 1

Subsequently players operating without any specific focus or within the segment between premium or price aggressive co-working space will fail. Henceforth, it is possible that in the future less mid-ranged co-working space will be found on the market.

4.2.5 Potential risk for creative startups

By the increased popularity of co-working spaces, previous studies have brought up the topic that there is a potential risk of a decreased level of creativity within the co-working space if larger corporations are establishing departments within the space. However, conducted interviews indicate that the representatives of Stockholm based co-working space operators are aware of the potential risk, but see it more as an opportunity for interaction. A given example of this is when Astra Zeneca moved certain functions to a co-working space, and by the interaction between young and creative firms, Astra Zeneca later made an offer to buy the firms which they have interacted with. Therefore, the phenomenon of larger corporations moving into co-working spaces could also be seen as an opportunity for smaller firms to excel, and for larger corporations to increase creativity.

4.2.6 Industry Life Cycle

The co-working space industry in Stockholm could be seen as in its growing phase. This conclusion originates first from interviews conducted at Cushman & Wakefield's Agency Leasing department, where one interviewee said:

"The global phenomenon of co-working spaces is far beyond an emerging trend - it's here to stay. This is fuelled by an array of underlying factors: the paperless and wireless society, mature cloud services, the sharing society, the creative economy and the gig economy. The fierce war on talent among employers, new concepts for workplace design and the desire among occupiers to establish a more flexible tenant

situation are other important factors that contribute to the increased interest in co-working."

-interviewee 6

Correspondingly, as mentioned above market expansion by infant players and new entrants will happen over the following years. Interviews show that operators within the premium segment at the Stockholm co-working market have market expansion plans, while operators in other segments have not shown the same tendency.

4.3 Market investigation and direct observation results

The conducted interviews in combination of market investigation consequently also led to the outcome of a well-defined understanding of the mechanisms that operate the local co-working market. This includes the range of products that operators offer their members as well as the market background.

4.3.1 Range of Products

When exploring the different types of memberships offered, or products, it has been shown that different operators sell what could be seen as homogenous products under different names. Hence, the range of products that co-working spaces typically offer can be broken down and characterized into three main membership types, ranked by price, from lowest to highest:

Lounge

- Open area, often styled like a lounge, including seating possibilities ranging from sofas, coffee tables to desks
- Seating goes by the principle that the first one to allocate the space gets to right to remain seated.

Flexible desk

- Closed office area, equipped with desks
- Seating goes by the principle that the first one to allocate the desk gets to right to remain seated.

Private office

- Closed office room, usually comes with the ability to lock the room
- Suited for one or multiple members within the same organization

Moreover, many operators offer a number of additional services, that can range in price depending on the chosen membership package. In most cases, services like a Wi-Fi internet connection and unlimited coffee is included in all types of memberships. Other amenities often include access to conference rooms in different sizes, printers, a restaurant or cafe and gym/exercise facilities. Furthermore, another important aspect, contributing to the atmosphere of teamwork and collaboration, is the events that are hosted within the co-working space by the operator or by its members.

Many operators have lately also started to develop a wider product portfolio, but still based on three above presented products. The most common one is the fixed-flexible desk:

Fixed-Flexible desk

- Same working environment as Flexible desk, but not at a fixed position.
- Gives the member the opportunity to have the benefit of a stationary workplace, although take part of the atmosphere at the flexible seating area.

The last membership segment at the Stockholm co-working space market is the so called "community" membership:

Community

- The Community membership gives access to the co-working spaces' social network and events

4.3.2 Key figures for co-working spaces

The market investigation also resulted in an essential overview in terms of total area in square meters occupied by co-working spaces, the number of members they have and the different price levels of co-working spaces. Those first two figures can be seen in *table 1*, the figure price and its sub-categories in *table 2.*

Total area occupied, in m^2	37 810
Total amount of members	6 706

Table 1 - Co-working figures, Stockholm, May 2017

From *table 1* one can observe that the main[1] co-working spaces operate on over 37 000 m^2 in the within the city limits of Stockholm, providing space for approximately 6 700 members.

Segment	**Lounge,** price per person, per month, in SEK	**Private Office*,** price per person, per month, in SEK
Premium	3 948	8 208
Standard	2 300	3 500
Incubator	3 760	4 723
Community	1 598	n/a

Table 2 – Prices by segment (The prices for Private Office are derived from the price for a Private Office for four persons divided by four)*

The column *Lounge* refers to the most basic membership that co-working spaces usually offer. As described above, in section *Market Segments*, the Premium category is priced the highest. Ranked by price, the Incubator category is the second most

[1] This includes the 18 co-working sites that have been selected for the purpose of this research

expensive, followed by the Standard segment, resulting in the Community category being the most affordable.

This ranking sorted by price remains the same in the column *Private Office.* Referring to this, it shall be noted that the prices stated in *table 2* are per person. Since not all of the co-working spaces offer private offices for one person, the per-person prices are based on the price for a four-person private office within the co-working space, which is then divided by four in order to get comparable numbers. Moreover, the community segment does not offer the product option private office at all, therefore marked as *not available (n/a)* in *table 2.* A price comparison was also conducted with the co-working spaces' location in mind. Below stated is the co-working membership prices listed by location.

Segment	**Lounge,** price per person, per month, in SEK	**Private Office*,** price per person, per month, in SEK
CBD	3 824	7 490
Innerstaden	3 382	3 000
Hagastaden	1 300	4 500
Globen	n/a	0

Table 3 Prices by location (The prices for Private Office are derived from the price for a Private Office for four persons divided by four)*

4.3.3 Prices regular office space

In order to compare a co-working space to a regular office space, and therefore be able to compare the two alternatives, market rents for different areas around Stockholm were conducted by the web-service *Occupier* Metrics[2] provided by Cushman & Wakefield, in combination with expertise from the Occupier Services department at Cushman and Wakefield. All prices are presented by the industry standard of SEK/m^2/year:

[2] www.occupiermetrics.com

Location	Low (SEK)	High (SEK)	Average[3] (SEK)
CBD	3 900	6 300	4 900
Innerstaden	2 800	5 000	3 500
Hagastaden	1 900	3 500	2 700
Globen	1 900	2 800	2 300

Table 4 - Rent prices in Stockholm, ordinary office space (SEK/m2/year)

Noteworthy is the price difference between low and high, even within smaller areas such as CBD there is a 61% difference between the lowest level of rent and the highest.

Furthermore, since the standard industry price unit differs between a co-working office space and a regular office space, a transformation of the price unit for a regular office space were conducted in order to be able to compare the two alternatives. The comparison was done by the following steps by calculating:

1. Total seats
2. m^2/total seats at different location
3. Price/member/month
4. Price/member/month + add-on factor

For more exact information, see the page below.

[3] Average rent price, also denoted as R

Operator	m^2	Members	Total Seats[4]	m^2/total seats	Location
1	*2400*	*300*	200	12,0	*ROIC*
2	*2000*	*500*	333	6,0	*CBD*
3	*3800*	*280*	187	20,4	*CBD*
4	*2500*	*470*	313	8,0	*CBD*
5	*260*	*40*	27	9,8	*ROIC*
6	*7000*	*1316*	877	8,0	*CBD*
7	*1500*	*273*	182	8,2	*ROIC*
8	*4000*	*600*	400	10,0	*CBD*
9	*1000*	*50*	33	30,0	*ROIC*
10	*2000*	*250*	167	12,0	*CBD*
11	*4500*	*2000*	1333	3,4	*CBD*
12	*2000*	*120*	80	25,0	*ROIC*
13	*n/d*[5]	*n/d*[3]			*ROIC*
14	*4000*	*420*	280	14,3	*Hagastaden*
15	*n/d*[3]	*27*	18		*Hagastaden*
16	*250*	*60*	40	6,3	*Globen*
17	*600*	*n/d*[3]			*ROIC*
18	*n/d*[3]	*n/d*[3]			*CBD*

Average m^2/total seats for specific location:

$\overline{CBD} = 9.7, \quad \overline{ROIC} = 17.0,$

$\overline{Hagastaden} = 14.3, \quad \overline{Globen} = 6.3$

Price/month/member:

$\frac{\overline{L} * R}{12} + A * \overline{L} = Price/month/member$

$\overline{L} = Average\ m/total\ seats\ for\ specific\ location$

$R = Average\ Rent\ price\ for\ specific\ location$

$A = Add - on\ factor$[6].

[4] In order to become more profitable operators of co-working spaces are providing less available seats then there are members, with the adoption that not all the members will be physically located at the co-working office space at the same time. Therefore, in order to calculate the average m^2/member, this has to be taken into consideration. Market research shows that the number of members is around 50% more than it is available seats, therefore the above specified member amount is first divided by 1.5.

[5] n/d is denoted as not disclosed

[6] The add-on factor becomes 380 SEK/m^2/member, conducted from interview with agency leasing partner at Cushman & Wakefield Stockholm office and by material from the co-working space Convendum.

By the above stated calculations, the prices that are comparable with *table 3* look as follow:

Location	Low (SEK)	High (SEK)	Average (SEK)
CBD	6 809	8 743	7 615
Innerstaden	10 411	13 528	11 403
Hagastaden	10 128	11 828	10 553
Globen	9 137	11 403	10 270

Table 5 - Comparable rent prices in Stockholm, ordinary office space (SEK/month)

However, prices presented above do not make up for a 1:1 comparison, due to the assumptions and approximations presented above. Interviews with Cushman & Wakefield Occupier Services department also state the fact that to find an office space for one single person, that is not a business hotel is unlikely within certain areas, such as CBD.

4.4 Survey results

The survey was conducted shortly after the interview phase started and has a total of 87 participants, who represent 9 out of a total of 18 different main co-working spaces. This means, there were 9 operators who did not take part in this research by not spreading the survey among their members. This was due to different reasons, although

not all of them were disclosed. One reason for not sharing the survey with the co-working members was internal policies, that would have been allegedly hurt. Another aspect was that some operators did not feel comfortable when their members would judge their current working environment, when there is a wide selection of competition listed in the survey (referring to question 1, which can be found in the appendix, where a list of all the main co-working spaces in Stockholm is presented to the participant).

4.4.1 Distribution

The survey includes members from 9 different operators, although the number of participating members is not equally distributed. About 43% of the participants are members of a single co-working space (United Spaces), followed by another premium-segment operator that accounts for a 13%-share (Convendum), followed by two operators from the incubator- and the community segment, both representing 12% of all participants (SUP46 and The Castle). The fourth largest share comes from yet another premium segment location, supplying over 8% of total participants (GT30). The other operators that took part are Open LAB (7%), The Park (2%), Impact HUB (2%) and THINGS (1%). Regarding the participation rate of the respective co-working spaces, represented by the ratio of the number of participating members divided by the total number of members, standard-segment operator Open LAB ranks highest with 12% of its members participating in the survey, followed by United Spaces with a share of 6.1%.

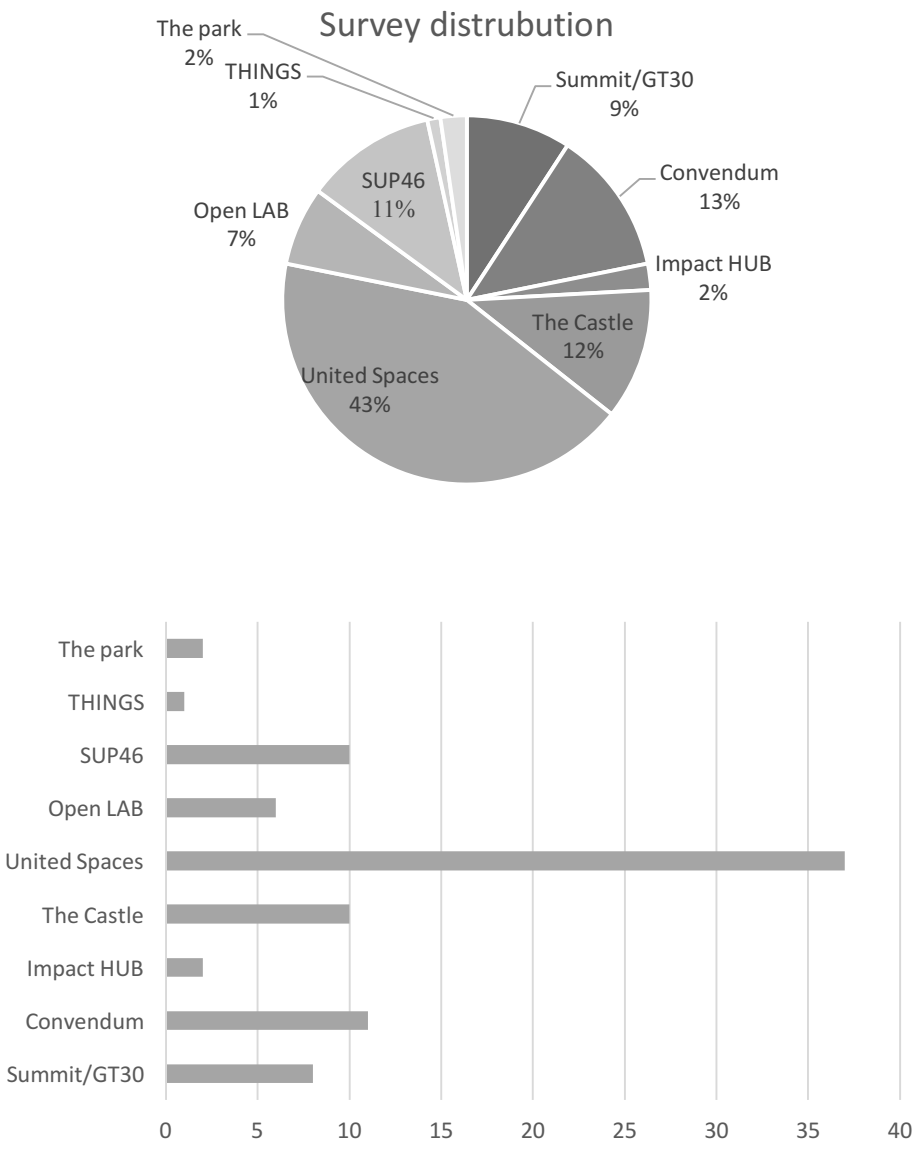


Figure 2 – Survey distribution

4.4.2 Participants' background

One can observe that, regarded by age, the co-working trend does not exclusively appeal to a certain age group. The survey results show that age groups between 20 and 50 are rather equally distributed, with roughly 25% of participants being in the age group between 20 and 30 years, a 27%-share is represented by the group of people aged

between 31 and 40, 23% of all survey participants are between 41 and 50 and the last 25%-share represents the over 50-years olds.

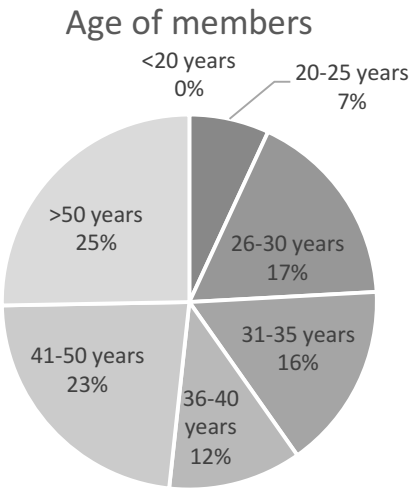


Figure 3 - Age of members

In contrast, the industry background of the participants' firms is much more asymmetrically distributed, confirming first impressions when dealing with literature from the field of inquiry (see literature review): the largest share among co-workers in Stockholm is working within Tech/IT (approximately 31%). This is followed by an industry background in consulting (28%) and sales and marketing (21%). Furthermore, media does not seem to be a major business field for Stockholm firms who work in co-working spaces, with only a 4%-share.

When it comes to firm age, the survey seems to go against the trend of primarily young firms using co-working spaces. It shows that over 53% of the participants work for firms that are older than 5 years.

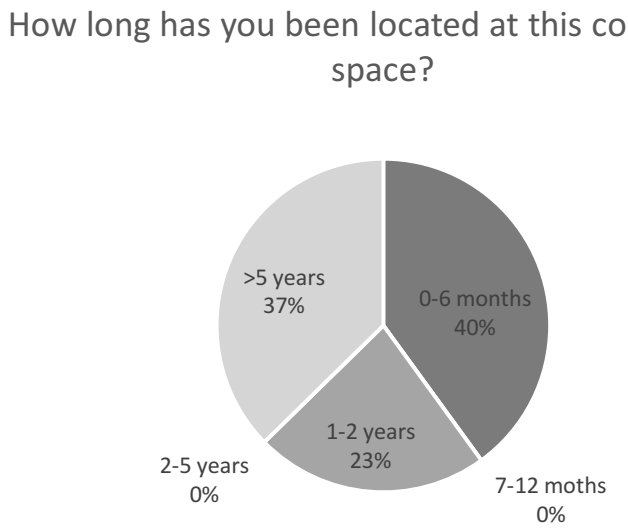


Figure 4 - Member time, how long have you been located at this co-working space?

Regarding the size of the firms that operate from within a co-working space with part of or all their staff, one can observe a large share of persons representing the only employee of the company, therefore working on their own. Approximately 23% of the participants state to be in this kind of work situation, whereas about 33% work for companies with two to four employees, 20% are part of a company with five to ten employees and the last 24%-share represents firms with a staff of more than ten people. This is connected to the amount of people who are employed by an external company versus the amount of people employed by their own company: 56% are self-employed whereas 44% of all participants are employed by another firm.

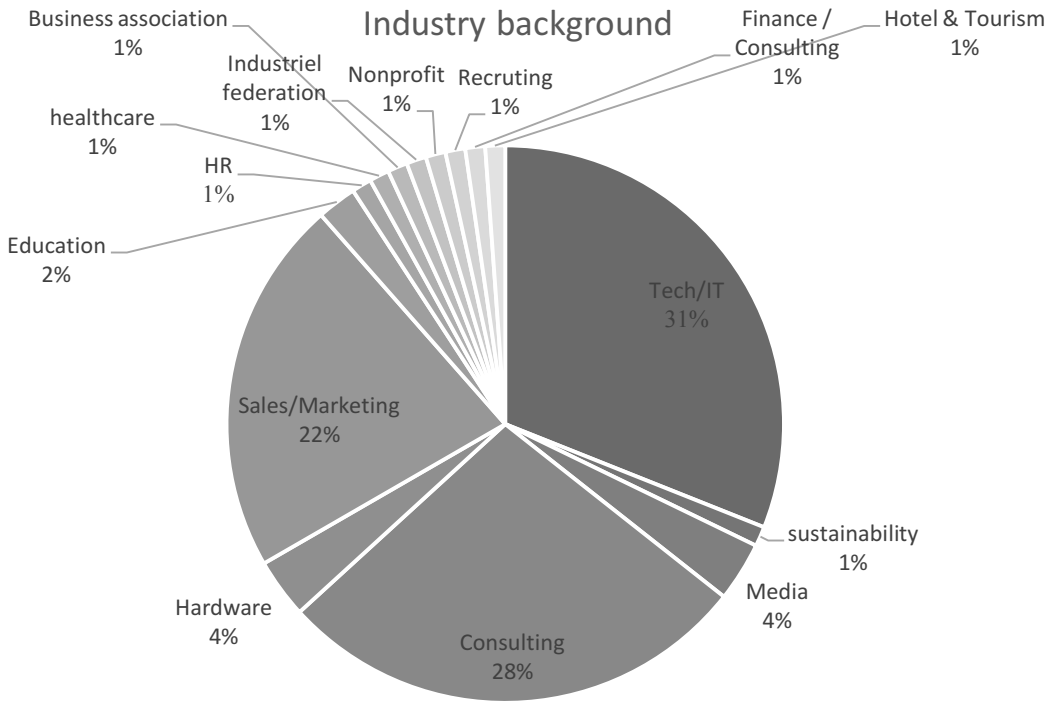


Figure 5 - Industry Background,, Stockholm co-working space industry

4.4.3 Motivation

One of the main ideas behind the concept of co-working is the community aspect, providing entrepreneurs and also large-firm-employees an option to working alone and therefore giving an alternative to professional isolation. Consistent with this background, the survey shows that the social aspect and the exchange of knowledge and creativity are among the main reasons for Stockholm members, for why they have joined a co-working space in the first place. In the respective question where

participants could check multiple answer possibilities, approximately 52% have included *Social* as one of their main reasons, while 47% chose that *Exchange of knowledge, creativity* is among the major motivations. Moreover, members seem to appreciate the level of service that co-working spaces oftentimes offer, especially compared to a regular or home office: 58% included *Service/Comfort* within their range of answers. Another important aspect for why members have chosen to join a co-working space is the spatial aspect, as co-working spaces are often situated conveniently throughout the city, often near areas that are easily reachable, e.g. via public transport. This can be observed on the map that can be found in the appendix, showing how multiple co-working operators have situated themselves at advantageous city points, like the area around Stockholm's central station or Stureplan. As the survey shows, many members seem to appreciate this, as about 60% have choses *Location* among their answers.

4.4.4 Member Interaction

Social aspects like collaboration and teamwork are essential factors that contribute to the increasing demand for co-working. Referring to the research question, this is an important aspect to investigate in order to find out how co-working members interact and collaborate.

This implies that co-working members take initiative and actively participate in socializing with fellow members. The majority of members states that they get in contact with other members ten times or more per week, which was the maximum

amount to answer on the interval scale of this question: 27% of participants chose this answer.

When it comes to evaluating knowledge spillovers between members, collaborating by exchanging knowledge is an important factor. 68% of participants stated that they have provided assistance to other members with their professional expertise. This majority can be divided into three sub-groups, with 22% of them stating that have given assistance once, 38% have supported others multiple times and 8% have assisted others with their professional expertise on a regular basis.

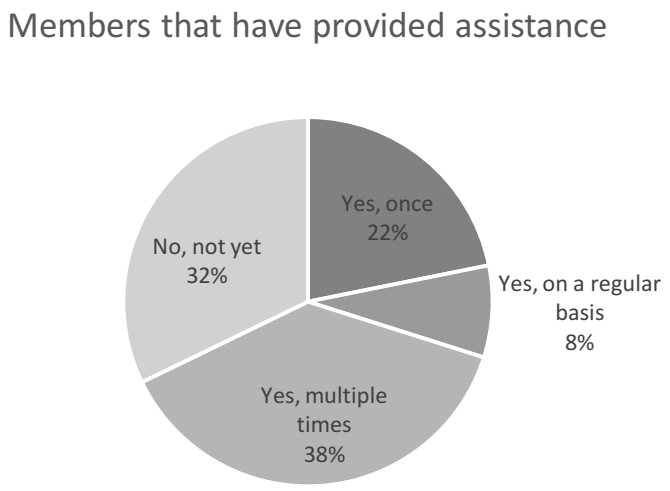


Figure 6 - Members that have provided assistance

In return, the survey also gives insights to if and how strongly co-working members have profited from the knowledge of others that they have been in contact with. On an ordinal scale, ranging from 0 ("Not at all") to 10 ("Very much"), members shared their experience with how they benefitted from other's expertise. The average (weighted arithmetic mean) of the answers on this scale is 4.9, suggesting a rather balanced result

with a slight tendency towards not having profited from other's knowledge. The tendency towards a rather well balanced result is supported when considering the median, which is equal to 5. The median provides the value in the middle of the observations, splitting them in the smaller and greater half. The mode, the value of observation that appears the most often, on the other hand contradicts this balanced picture: it is equal to 0 ("Not at all"). These findings can be observed in *figure 8.*

Figure 7 - Representation of how members benefit from interaction between each other

Continuing the analysis on how members benefit from each others' knowledge, one can also divide the representation by market segments, as shown in *figure 9.* It indicates that the members of the incubator segment profit the most from interacting with each other. This confirms the main characteristics of this segment, which has the main goal of accelerating firms by bringing the members into contact with investors, business angels, mentors and one another.

Figure 8 - Segment representation of how members benefit from interaction between each other

4.4.5 Firm Growth

From an entrepreneurial point of view, an essential question is concerning the relation between the success of a firm and joining a co-working space: Does being a member of a co-working operator influence the firm's growth positively, negatively or not at all?

Within the survey, participants were asked to specify their firm's tendency regarding growth into four sub-sections: the firm's revenue, profit, number of employees and its client base. They could choose between four answer options that give direct information about how firm growth has behaved since joining a co-working space and one answer option that does not disclose any information.

- Revenue: While 28% of participants did not know or were not able to tell, 36% stated that their revenue has increased since being a co-

working member. This is in contrast to the 5%-share that has experienced a decrease in revenue, while 31% identified it as the same as before.

- Profit: A very similar distribution can be seen when it comes to the development of firm profits: 29% of participants did not know or were not able to tell, 30% saw the profit increasing, 9% saw it decreasing and 32% stated it did not change.
- Number of employees: Again, with a large share of participants experiencing growth (24%), the majority stated there has been no change in the number of employees (46%). Approximately 24% did not disclose any information and 6% saw the number decreasing.
- Client base: Noteworthy about this figure is the large majority of participants who have encountered an increasing number: A share of 54% saw their number of clients growing, while 16% saw it stagnating, 6% experienced a decrease and 24% did not give any information.

4.4.6 Young[7] firms in comparison to market[8], members' perception of growth

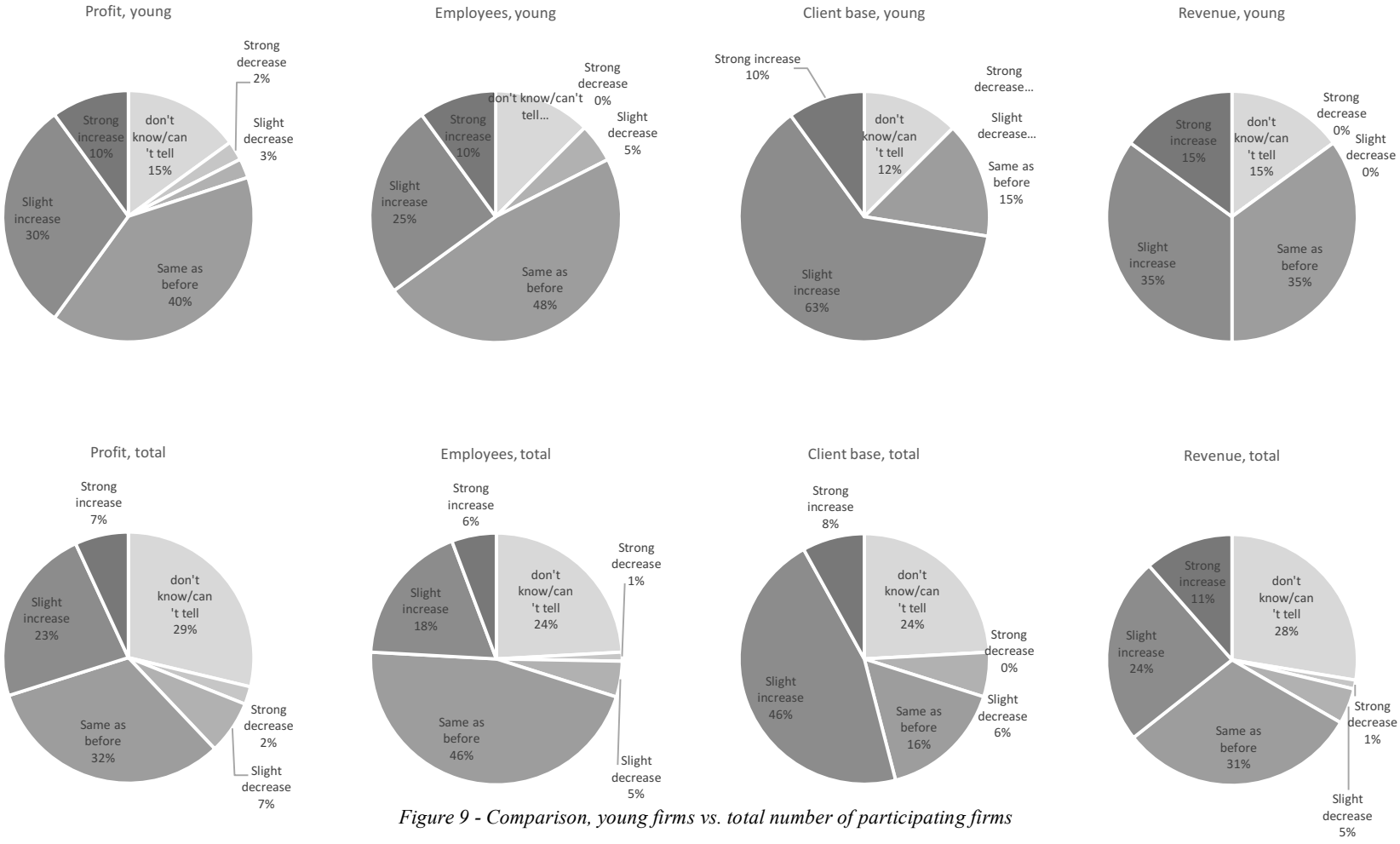


Figure 9 - Comparison, young firms vs. total number of participating firms

[7] Young firms are denoted as ≤5 years old
[8] Labeled *total*

In the above presented graphs, where young firms are compared to the total market, one can see that in all the presented areas *profit, number of employees, client base and revenue,* young firms in a co-working space have since they joined experienced a higher increase in all the sectors presented than the total co-working market. Looking at profit, for young firms 40% have answered either that they have seen a slight increase or a strong increase, in comparison to the total market which answer corresponds to 30%. Subsequently, in terms of growth in number of employees, 35% of young firms have experienced either high or slight increase, the corresponding market number is 24%. However, looking at the section *same as before*, there is a 2 % difference, 48% young and 46% at the market.

In comparison to profit and number of employees, at the section of client base, a significantly higher number of members has experienced either strong or slight growth, 73% for young firms and 54% at the market. At the last section, revenue, 50% of the young firms answer that they have experienced either strong or a slight increase, 35% for the market.

4.4.7 Efficient environment

Alongside firm growth, the survey also investigated the surrounding that co-working space members think they strive the most. The question asked for two different maturity stages in what environment the participant believes his/her firm will benefit the most. This refers to the industry background of other companies that the firm of the participant is surrounded by – in case the other companies have the same or similar

background, it is referred to as a homogenous environment, if they operate in diverse and unrelated industries, it is referred to as a heterogeneous environment.

In the first part of the question, it was asked what kind surrounding is most beneficial in an early stage of a firm. To this, 55% answered that a heterogeneous environment and 22% that a homogenous environment is best, whereas 23% stated that is does not matter. In the next stage, a *mature stage*, the share of participants who think that a heterogeneous surrounding is most beneficial increases to 64%, decreasing the percentage of persons who believe in homogenous environment to a mere 11.5%-share. This leaves 24% of participants who consider it to be nothing that matters.

4.4.8 Overall perception

The survey was also set out to examine the overall perception of *"How beneficial has working in a co-working space been for you/your company?"*. On an ordinal scale, ranging from 0 ("Not at all") to 10 ("Very much"), members of co-working spaces had to estimate a number that is representing their overall perception of how advantageous a co-working membership is.

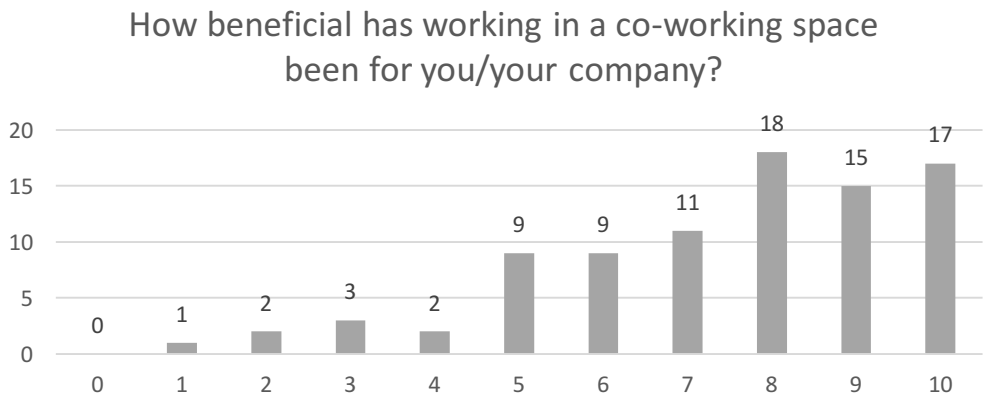


Figure 10 - Overall perception, number of answers

Noteworthy is that there were no participants that answered zero, and that 9.2% answered the question at an alternative below 5. The weighted arithmetic mean for this question equals 7.46, the median becomes 8 and the mode is also 8. Subsequently, the answers were divided into groups, based on the member's industry background. To sum up, the industry backgrounds *tech/it, consulting and sales/marketing* together adds up to 80% of the respondents, and within those one can see that the average of the three is ranging from 7.33 to 7.53. Calculations for other categories have not been conducted, due to low response rates.

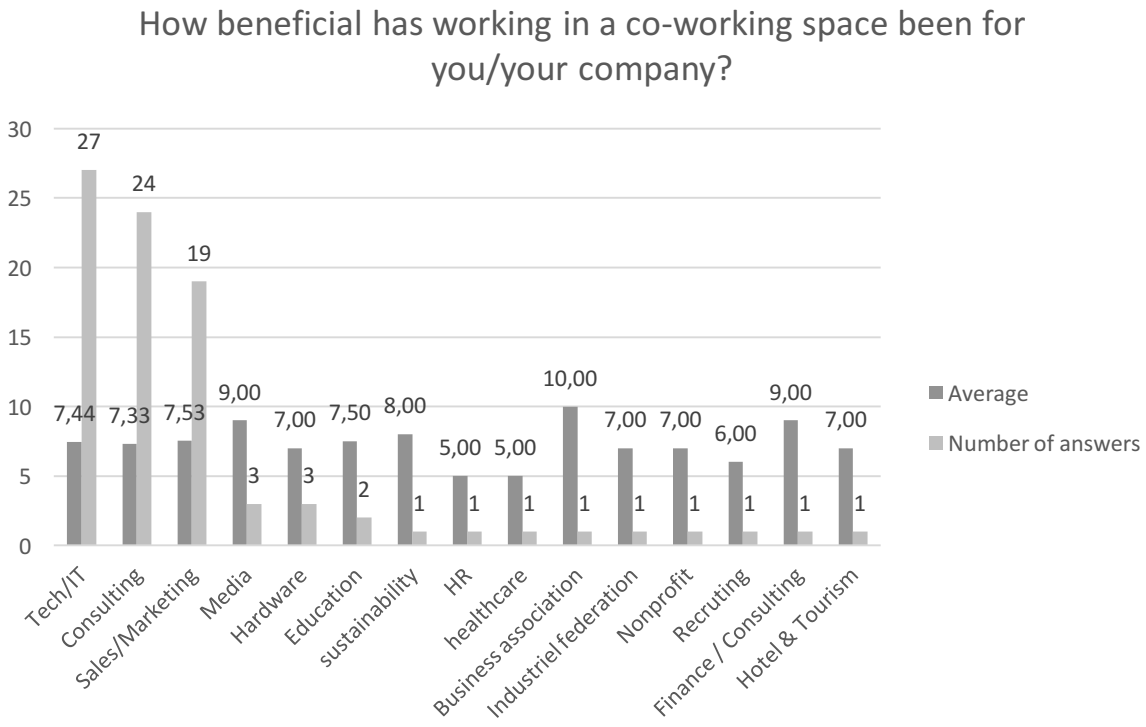


Figure 11 - Overall perception, by industry background

To sum up the chapter, a representation on the above stated question in regards of the categorization of the co-working space were also conducted. Just as shown in *4.3.3 Motivation,* the premium segment is the least satisfied.

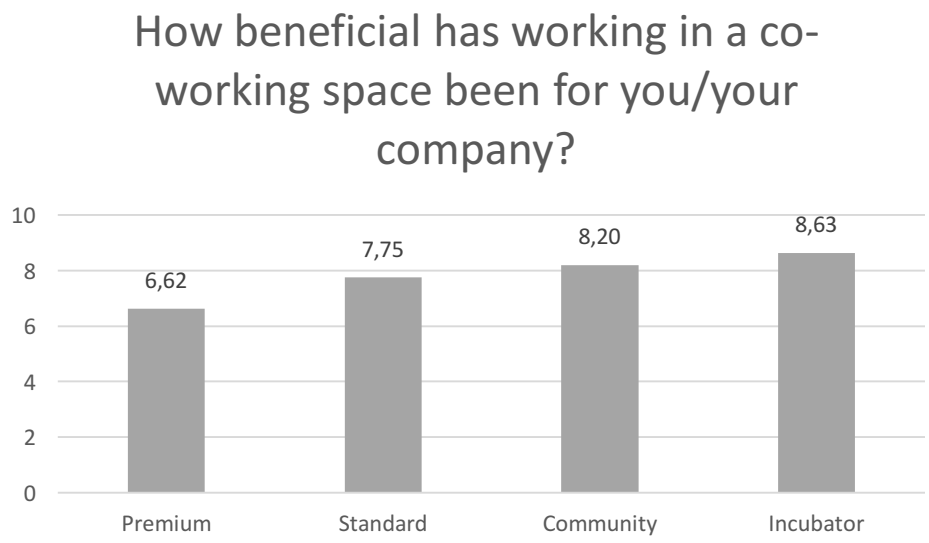


Figure 12 - Overall perception, co-working space segment

5. Analysis

Presented is the analysis, made when comparing the above presented theoretical framework in comparison to the results presented in chapter four.

5.1 Limitations of this thesis

In general, when referring to the results from the quantitative research, i.e. the survey, it is to clarify why the number of participants is at a mere level of 87 out of 6 706, which represents the total amount of members of the main co-working space in Stockholm. This is equal to a participation rate of 1.3%. One reason for this percentage level is the fact that the conducted survey was based on an indirect approach to its participants. As explained above, in order to approach the co-working members, the representatives of the different operators throughout Stockholm were contacted and then asked if they would contribute to this research by spreading the survey. This did not allow it to market the concept of the survey directly the potential participants. In retrospect, one can argue this has been a disadvantage as potential participants were approached with this research by persons (the representatives of the operator) who arguably had no incentive to get as many participants involved as possible. As it was attempted to create an incentive for the representatives, two measures were undertaken: First, it was stated from the beginning that the results of the survey will be shared with the respective co-working space, as market data can be of great use for them as well. Especially in regards to understanding what their members appreciate and benefit from, the survey results are potentially a great help to improve the co-working site or use the data for marketing purposes. Secondly, as this thesis was written in collaboration with

a commercial firm, *Cushman & Wakefield*, it was determined that for every person participating in the survey, the firm made a donation to a charitable organization. Both measures were disclosed to the representatives when they were approached. One can argue, that both of them helped to achieve this number of participants as there were representatives who have agreed on contributing to this research only on the terms of receiving the result data afterwards. This demonstrates that they have understood the value that this survey may add to their knowledge base. Unfortunately, this has not been the case for all the co-working spaces that were approached with this topic. This can be seen in the high number of spaces that were approached but who decided to not take part in this research. Another known aspect for the relatively low participation rate is that certain operators did not feel comfortable when their members would be confronted with a list of all main co-working spaces in Stockholm, regarding them as competitors. In an industry where the notice period of canceling is usually not more than a month, moving to another co-working space is a decision that can be made rather quickly and therefore the switching costs for members are rather low. This justifies the reason for operators to not want their members, which are their customers, to be shown an almost complete list of all the competing co-working spaces in the area. Again, in review this issue could have been prevented by designing a unique survey for each co-working space, in order to not disclose a list of all the possible locations for the members.

5.2 Employment background

As was stated in chapter two, *theoretical framework,* previously conducted research by Foertsch (2011) has found that 54% of co-working space members are represented by freelancers. This finding can be compared to the results received by the research conducted within this paper. It found that 55.2% of all Stockholm based participants are self-employed. A result that seems to be affirmative of the findings found by Foertsch (2011), as the numbers are similar and only differ slightly. Another aspect where the conducted survey seems to point in the same direction as previous literature, has been discussed by Pohler (2012). The literature points out that the level of administrative tasks tends to be lower in a co-working spaces compared to a regular office space. Complementary to this is the result of the survey question, that investigated the main reasons to join a co-working space. As multiple answers were possible to check parallel, 58% stated that service and comfort that come along the membership of a co-working space were among the major reasons to join. This indicates that the survey seems to endorse what Pohler (2012) had pointed out earlier.

5.3 Spillovers and collaboration

Furthermore, as presented in chapter two, Spreitzer, *et al.* (2015) inquired why people strive in co-working spaces. They came up with a range of potential answers, amongst others is the aspect of collaboration. The fact that one helps each other out within the setting of a co-working site is one of the reasons why employees strive there. This can be connected to the results of the survey, as they show different outcomes regarding the collaboration aspect: On the one hand, it is to observe that the large majority of

participants has provided assistance to other fellow co-working members. Most of those ones help out others multiple times or even on a regular basis. The interview results are showing a similar picture. As Spreitzer, *et al*. (2015) have argued co-working spaces are a place where members do not have to fit into a certain work persona in order to keep up an image in front of other employees who might act as a peer group. They state that in order to strive, the members should feel encourage to help each other out. Correspondingly, the conducted interviews indicate that Stockholm co-working sites serve as a place where members should be allowed to fail in order to establish trust between members.

This is backed up by the result of another survey question, which asked for the quantity of getting in contact with other members in general: The majority of participants chose the maximum of ten times or more, again, indicating that collaboration seems to be in fact an essential aspect of co-working. In contrast to this, the survey has also found that co-working members tend to not profit from getting assistance they receive from others, as the majority of people have answered *not at all* when they were asked if they had profited from the knowledge of other members. The seems to be a contradictive finding, not only to what Spreitzer, *et al.* (2015) found, but also what other results from the survey indicate. The reason for this contradiction may vary. First, when deconstructing the survey result for the question that measures how much participants profit from other members' knowledge, one can observe that there was a majority of 19 participants who have answered *not at all*, coming from five different co-working spaces. Noticeable about this is how those 19 participants are distributed over the five different operators:

14 out of 19 are coming from two sites, both belonging to the premium segment and making up for 73% of all participants who felt that they do not profit from others' assistance. Once again, the discrepancy between members from the same co-working space seems to be quite large, in this premium co-working space, six members answered the question 0 ("*not at all")* and six members who reflected rather positively, choosing 9 and 10 ("*very much")* on the scale. This can be seen in *figure 8* and *figure 9.* Another reason for the contradiction of this survey result compared to previous research and other survey findings may become more obvious when observing the results for another survey question. When asked "*How many times do you get into contact with other members per week?"*, the majority of 28% of the participants answered 10 times or more. On average, a member gets in contact with others approximately 6 times per week.

When looking at the group of 19 members who answered they not at all profit from other members' assistance, is to notice that they get in contact with others considerably fewer – on average only about 4,3 times a week. This indicates that there seems to be a correlation between the perception of profiting from others' knowledge and getting in contact with them. The more a member thinks that he/she will profit from other co-working members' expertise, the more he/she will get in contact with them. The survey also shows a positive correlation: the lower the perception of profiting, the fewer times a person gets in contact with others. Another aspect that can be noticed about the group of participants who stated to not profit from others' knowledge, is that 16 out of this total of 19 participants are members of a premium segment co-working space. In

connection to this, one can observe from figure 12 that the premium segment members are also the ones that state to benefit the least from co-working in general.

Regarding this, the conducted interviews are supportive of the survey results as they indicate that social events are a measurement to establish trust between co-working members. This in turn, leads to them understanding and appreciating the benefits each of them can gain from the interaction with other members.

5.4 Survival rate and sustainability

While there is a vast amount of literature about survival rate and the importance of young firms, Birch (1979); Halvarsson (2015); Jacobs (2016) yet there seems to be a lack of research on how young firms sustain in the environment of a co-working space. The conducted survey sets out to investigate how well Stockholm co-working members perform within their respective site. This is shown in the results chapter, *4.3.6 Young firms in comparison to market,* which also deconstructs the survey findings in order to provide a ground to compare them to the findings of Birch (1979). The four major performance numbers that the survey found out are compared between the firms that are five years or younger and the total amount of firms that participated in the survey. The results show that young firms seem to perform better than the average of all firms, on the basis of more young firms stating they have increased their performance numbers since joining a co-working space than the average of all firms.

Naturally the research did not set out to verify the answers given by members, so the accuracy of their performance numbers cannot be guaranteed. However, under the assumption that these numbers are correct, one can conclude that young firms, 5 years

or younger, are performing reasonably well. This can be observed when looking at the increase in the four main performance numbers (Profit: +40%; number of employees: +35%; client base: +73%; revenue: +50%), as shown above in *figure 10*. Furthermore, this is also evident when comparing the performance of young firms to the market performance, again shown in *figure 10,* from which it is to notice that in all four categories young firms outperform the market. At this point, there seems to be a contradiction between the survey conducted and previous research on the topic of young firm's performance and survival rate. As e.g. Birch (1979) and Geroski (1995) suggests, the survival rate of young firms is fairly low, implying rather poor performance numbers. As this contradicts the findings of this thesis, it seems plausible that the difference in findings occurs from the different setting of young firms that are located in a co-working space in the research on hand. Again, assuming accuracy and significance, this would indicate that the membership of a co-working spaces affects the performance and survival rate in a positive way, and therefore also entrepreneurial behavior as this is based on a long-term unfolding of a firm's entrepreneurial potential.

6. Conclusion

While the effects that co-working spaces have on the modern way to work are potentially manifold in the future, the impact that co-working has on entrepreneurial behavior is visible already. Within the research on hand, particular emphasis has been put on the influence of co-working spaces on motivational factors, knowledge spillovers and professional collaboration. From the results presented previously, it is observable that in general Stockholm co-working members tend to interact with each other, as nearly 30% of participants stated they get in contact with other members over ten times per week. This overall tendency towards socializing and interacting with fellow co-working members shows the positive effect on entrepreneurial behavior. Another aspect that roots from being situated in a co-working space, is the opportunity to take part in various social events that are frequently hosted by many local co-working operators. Many of them have focused strongly on providing their members with regular events in order to boost social interaction among them. Furthermore, from the results of the conducted interviews, we conclude that co-working members would perceive social events as a beneficial factor regarding their behavior. This can be seen in an interview with *interviewee 2*, as stated in section 4.1.

Approving this, the survey paints a rather similar picture: The results of the question that asked for how beneficial the social events have been for the participants are pointing towards the same direction. On a scale from 0 (“Not available”) to 10 (“Very much”) the average was 5.8, the mode 8 and the median equals 6. It is to add, that there were six participants who stated that social events are not available within their

respective co-working space. Remarkable about this fact is, that the perception about the availability seems to differ strongly, as multiple participants from the same co-working space have answered this question in favor of social events when parallel some of their fellow co-working members stated that there are no social events available. Those six participants are members of three different operators all of which are belonging to the premium segment. In one case, there are four members of the same co-working space, who have answered 10 ("Very much") on how beneficial social events are when parallel there is two members that answered 0 ("Not available"). The results show a slight tendency towards appreciation of social events as the majority of members seem to feel that they are benefitting from taking part in social events that encourage networking, socializing and other collaborative interaction that can lay the groundwork for future cooperation between members that they can benefit from. Although those results point in the same direction , there is also results that indicate opposite perceptions. This applies to the survey result of the question regarding the participants' opinion towards benefitting from other members' knowledge, as discussed in the analysis chapter.

6.1 Firm environment

Another noteworthy aspect is the insights obtained on the topic of firm environment. From the results of the interviews, one could conclude that firms from a hardware-focused co-working space, a homogenous environment is preferable in the early stage of a firm, while a heterogeneous environment is to recommend in a more mature stage as the firm evolves. From interviews with more open-access, non-selective co-working

space representatives, it is to conclude that in both maturity stages of the firm a heterogeneous, therefore diverse, environment is preferable. This is backed up by the survey result which also suggest this set-up. In the early stage, 55% of participants chose a heterogeneous over a homogenous environment (23%) while 22% stated that it does not matter. In a more mature stage, on the other hand, 65% were in favor of a diverse firm background of the surrounding firms, whereas a minority of 11.5% believes that a similar firm background is most beneficial. 24% stated that it does not matter. A reason for this could originate from the assumption that selective co-working spaces with a narrow focus on a specialized target group of firms (e.g. hardware, …) primarily share tangible assets with each other. This is in contrast to companies with firm backgrounds in consulting, media or digital sectors: Often, their primary object to share is not specific physical assets like printers or tools, but rather intangible assets like knowledge. This can be shared much more broadly and easily across all kinds of industries and therefore justifies a rather diverse environment in order for firms to strive.

6.2 Price comparison

Regarding price comparison, as discussed in chapter 4.2, it is to notice that for the case of CBD (where the majority of co-working spaces are located) the differences in rent prices[9] for co-working spaces compared to regular office space is rather small, as shown in *table 3* and *table 5.* Therefore, since the price difference is not significant,

[9] also denoted as membership price

one could argue that it is beneficial to located in a co-working space in CBD instead of a regular CBD office because of positive spillover and collaboration effects.

6.3 Summary and suggestions for further research

Overall, one can observe from the interviews, observations and survey that from an entrepreneurial perspective, being located in a co-working space in Stockholm affects the entrepreneurial behavior in a positive way. This is based mainly on positive spill-over effects and collaboration across professions within a co-working space, that especially young firms profit from.

Naturally, the research conducted on hand has does not raise the claim to be complete – especially regarding the fact of a constantly growing numbers of co-working spaces in Stockholm that open on a frequent basis. This thesis can be regarded as a basis to inspire further research on the topic. For this, it is to suggest to put more emphasis on raising more long-term data on key figures, e.g. number of co-working members, square meters occupied and price development. Furthermore, as brand recognition will become more important over the next years (as the product life cycle suggests), it will be interesting to study how certain Stockholm-based operators will develop and what reputation comes along that development. Additionally, it would be interesting to investigate the comparison between co-working spaces and regular office spaces in terms of long-term entrepreneurial behavior, perhaps with a focus on survival rate and financial performance.

Eventually, an essential aspect of the topic is the investigation of survival rates and sustainability. A development that will be of great interest to maintain focus on.

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Appendix

Survey questions

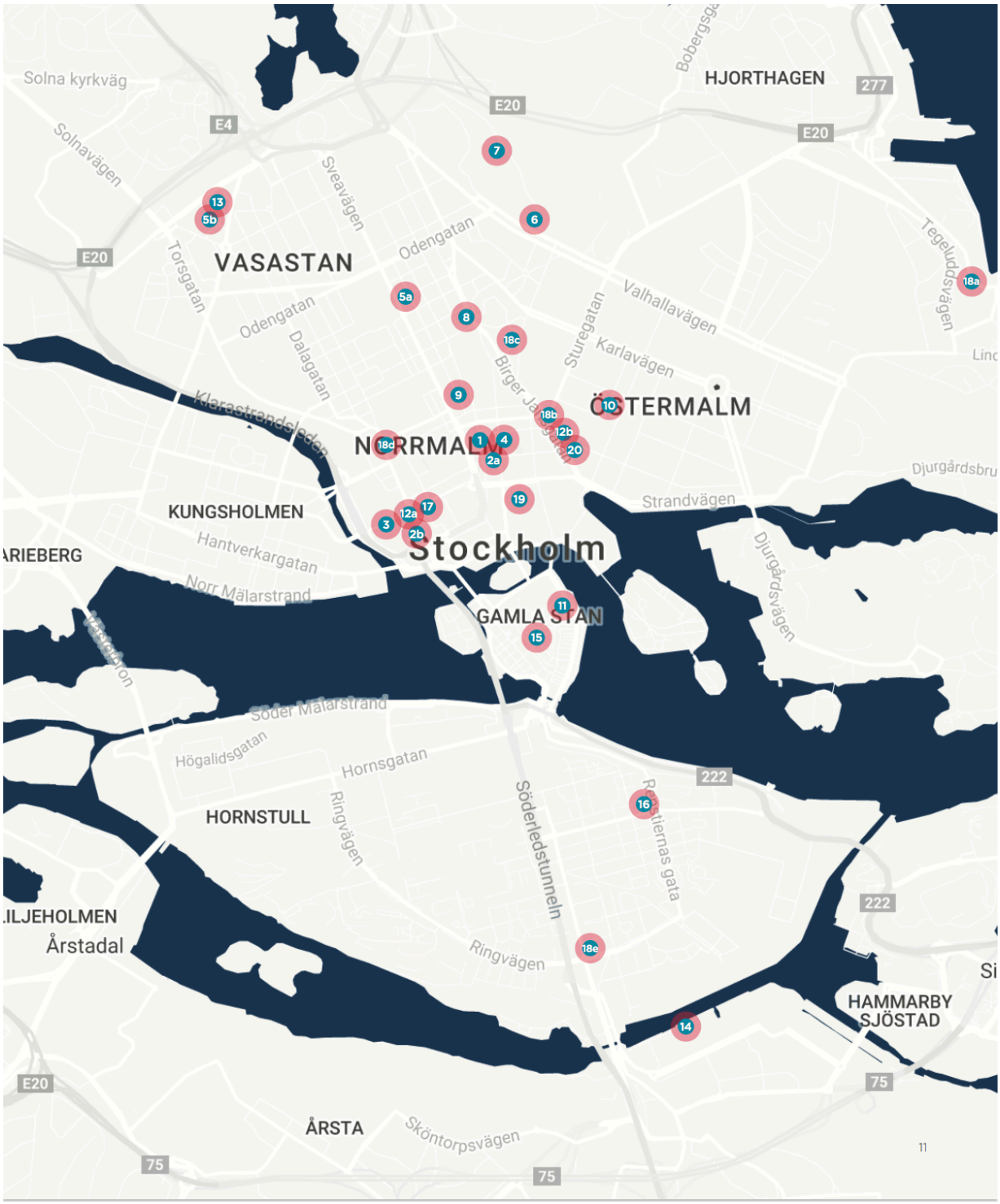
1. In which Co-working space are you located?
2. For how long have you been located in this Co-working space?
3. How beneficial has working in a Co-working space been for you/your company?
4. If your Co-working space offers an internal social network, how beneficial has that been for you/your company?
5. What are the main reasons you joined a Co-working space?
6. Have you provided assistance to other members with your professional knowledge?
7. How beneficial have social events provided by your Co-working space operator been for you/your company?
8. How many times do you get into contact with other members per week?
9. Have you profited from the knowledge of other members you been in contact with?
10. What is the tendency regarding your firm's growth since joining the Co-working space?
11. Industry background?
12. How old is your firm?
13. How old are you?
14. In which environment do you believe you're your firm benefits the most?

a. Early stage

b. Mature stage

15. Do you currently have plans to move to a different office space?
16. Are you self employed?
17. How many employees does your firm have?
18. Would you recommend Co-working spaces over other workspace solutions?

Stockholm map



1 Epicenter Mäster Samuelsgatan 36

- 2 000 members
- 4 500 m^2

2 Convendum a) Regeringsgatan 48 b) Vasagatan 16

- 280 members
- 3 800 m^3

3 United Spaces Klarabergsviadukten 63

- 600 members
- 4 000 m^2

4 SUP46 Regeringsgatan 65

- 200–300 members
- 2 000 m^2

5 The Park a) Sveavägen 98 b) Hälsingegatan 49

- 420 members
- 4 000m^2

6 Open LAB Valhallavägen 79

- 50 members
- 1 000 m^2

7 THINGS Drottning Kristinas väg 53

- 120 members
- 2 000 m^2

8 Norrsken House Birger Jarlsgatan 57 c

- 300 members
- 2 400 m^2

9 Impact HUB Luntmakargatan 25

- 40 members
- 260 m^2

10 GT30 Grev Turegatan 30

- 500 members
- 2 000 m^2

11 The Castle Slottsbacken 8

- 270 members
- 1 500 m^2

12 No18 **a)** Centralplan 15 **b)** Birger Jarlsgatan 18

- 470 members
- 9 500 m^2

UPCOMING AND OTHER PLAYERS

13 H2 Hälsingegatan 45

14 Goto 10 Hammarby kaj 10D

15 Knackeriet Svartmangatan 9

16 Hour office Folkungagatan 93

17 Stockholm Fintech HUB Centralplan 15

18 Regus **a)** Tegeluddsvägen 67 **b)** Stureplan 4C **c)** Engelbrektsgatan 9–11 **d)** Olof Palmes gata 29 **e)** Ringvägen 100

19 Tändstickspalatset Västra Trädgårdsgatan 15

20 Alma Nybrogatan 8

21 Kolonien Dialoggatan 16, Hägersten (outside map)