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# Do Social Interactions Really Moderate Job Productivity in Coworking Spaces?

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**Abstract.** A coworking space is a setup of bringing together independent professionals who do not work for the same company. This study aims to determine the impact of the coworking space environment and of social interactions on the job productivity of coworkers, as well as the influence of social interactions in the relation of coworking space environment and job productivity. A positive significant relationship was found between the coworking space environment and job productivity as well as between social interactions and job productivity. Moreover, the moderating variable "social interactions" strengthens the relationship between coworking environment and job productivity. The findings of the study highlight the importance of coworking spaces as a source of social interactions among freelancers and entrepreneurs. Furthermore, human resource managers and corporate office managers can use this study to help their staff operate in a more flexible and productive setting.

**Keywords:** coworking, coworking spaces, coworking environment, job productivity, social interactions

JEL Classification: L20, M14

#### 1. Introduction

In the last few years, independent professionals, entrepreneurs, and freelancers would like to work in coworking spaces. The flexible office type will not only provide a resourceful environment for their coworkers but will also provide opportunities for social interactions (Gerdenitsch, Scheel, Korunka, and Christian, 2016). Coworking spaces are the temporary rental places which can be used for working, meeting, mini-seminars, or tutoring purposes. In the coworking

spaces, the owner will provide the necessary equipment such as tables, chairs, or meeting rooms. Some have projectors, printers, including free water and snacks for the coworkers. Coworking spaces are environments where freelancers and microbusinesses will coexist and collaborate on various tasks and actions. They can create a sense of community and trust among themselves by escaping the competitive framework. As a result, we may conclude that coworking spaces offer their institutional or individual users a high level of autonomy in both social and office spaces, influencing personal connections among coworkers for business, cultural, social, and learning-related purposes. Different intensities of social connection can lead to innovation, inspiration, and increased understanding among coworkers (Bouncken, 2018).

Hence, there is a development of a complex socio-economic organization where old and new organizational practices would leverage the social interactions among coworkers to access network resources with an expected economic return. These coworking spaces will help to improve the social interactions, collaborations, job satisfaction, learning, and job performance of the coworkers (Gandini, 2015). Hence, the phenomenon of management practice of sharing economy is introduced in this paper.

Despite the growth of coworking spaces worldwide, a few empirical studies were found on them, especially in the Indian context. Also, this study is different from previous studies, as those studies are related to only the benefits of using these coworking spaces and its factors (environment, cost, culture) that influence coworking (Leclercq-Vandelannoitte and Issac, 2016; Uda, 2013), while only a few explored the relationship between coworking space environment and social interactions with job productivity. So, this paper aims to fill this gap and serve as an addition to the existing literature.

This paper is organized as follows: Section 2 will set up the conceptual framework and formulate the hypotheses, section 3 presents the methods and procedures to be used for analysis, section 4 discusses the findings and results from the analysis, and section 5 offers conclusions and gives possible directions for future studies.

# 2. Conceptual Background

The idea of these coworking spaces was credited to Brad Neuberg, who launched the first coworking environment in San Francisco in 2005 with the name "Hat Factory", which was growing at a very rapid rate annually in the countries with advanced economies, and more than one million employees had already used coworking spaces by 2018 (Marzloff, 2013). These spaces are designed to host entrepreneurs and creative people, which helps to break isolation and favours collaborations and meetings (Moriset, 2014). Gandini (2015) and Garrett (2014)

classified coworking spaces based on participants (such as knowledge professionals, remote workers, freelancers, entrepreneurs, or peers), collaboration (such as social interaction, networking, side-by-side working, or work in parallel), infrastructure (such as Wi-Fi connection, kitchen, desks, office supplies, conference rooms), and community factors (such as sense of community, social environment, or daily routines) (Bouncken and Reuschl, 2016). Coworking space is based on the idea of a sharing economy consisting of two dimensions as follows: providing access to sharing intangible assets such as knowledge and information and physical assets such as office, cafes, infrastructure, etc.

A sense of coworking culture and community can be developed by attracting similar individuals, who can have shared sets of behaviour, norms, and rules. Coworking spaces is a setup of bringing together independent professionals who do not work for the same company. These are mostly used by freelancers, selfemployed, micro-enterprises, and entrepreneurs. Coworking spaces ensure the sharing of resources and a common area for working. It is an open environment that provides opportunities for coworkers to interact with members of other companies or request their help if necessary. It will help coworkers share more ideas and give participants a chance to expand their businesses. They can build partnerships with one another. Socializing with like-minded people or creative minds helps to increase the talent, skills and reach the goals easily, which results in high productivity, income, and growth rate. So, coworking spaces ensure a sense of community, collaboration, and belongingness (Garrett, 2014). In addition to these collaborations, coworkers can choose whether they need to work in a peaceful space so they can focus or in an increasingly synergistic space with shared desks where cooperation is encouraged. Coworking spaces provide an opportunity for minimum investment. Membership costs are flexible, entirely depending on the user's preference of shared desk or personal rooms. Coworking spaces are regularly open all day, every day. Coworkers can choose whether to put in a long day when they have a due date or need to show productivity or can choose to enjoy a long break amidst the day to go anywhere. Coworking helps to make a person successful both personally and professionally. Therefore, it can be said that coworkers will not only share a space or facilities but can also share and create new ideas (Bouncken and Reuschl, 2016). However, in spite of all these benefits, there are some concerns as well such as when coworking spaces are far from the participants' homes, which makes them lose valuable time. Moreover, overhearing coworkers' conversations about their new project that has not been launched yet is a privacy concern in coworking spaces. Although coworkers received more feedback when they discussed their projects with others, the risk of project leakage also increased. Further, the layout of the workspace may not always meet the coworkers' expectations. Some of them may want to work alone rather than share the coworking space. Entrepreneurs require different tools depending on the type

of their firm (e.g. a drawing board for designers). Further, as it is not their own office, the motivation to go to work is diminished (Leforestier, 2009). However, if a "critical mass" is not attained, the benefits of a collaborative environment are neutralized.

Also, as a coworking space is generally filled with people from various companies, there may be limited capacity to create or adjust the workplace culture to suit each company's particular value system. When employees work in multiple places with different atmospheres, it can be more challenging to retain a consistent team spirit. In a transitional coworking environment, the acoustical issues and visual distractions that might interfere with focus in any open plan room layout may be significantly more important. The diversity of enterprises, positions, and personalities that use these places can create an unpredictable environment that lacks the usual workplace courtesy.

However, it fosters a chaotic start-up culture, providing a safe environment for impromptu gigs as well as steady social networks and interactions that help people launch and promote new ideas and contacts. We also want to emphasize that coworking spaces give a lot of freedom. Access to and usage of the office infrastructure and amenities during self-regulated working hours is part of autonomy. Coworking users choose to avail themselves of the possibility – not thought of as a requirement – to connect with people on a casual or intense basis, to be honest about work and personal matters, to receive and provide feedback, and to deepen personal and professional relationships. Experimentation and inventiveness are also aided by autonomy. Furthermore, unlike shared office users, coworking users have less responsibility for administrative activities such as insurance, cleaning, or waste disposal. Users of coworking spaces are allowed to pursue both business and non-business goals. Despite the fact that the term coworking includes the word "work", customers of coworking spaces may be looking for leisure and social opportunities in addition to professional goals.

To sum up, the basic pros and cons of coworking spaces are listed in *Table 1*. So, in this study, we will see how these coworking space environments and social interactions help coworkers to enhance their productivity beyond all these limitations.

Dimensions	Pros	Dimensions	Cons
Flexible cost	It is a variable cost, thus it is flexible.	Lack of privacy	There is a threat for companies with a large amount of confidential data.
Cost Reduction	Renting an office desk is less expensive than establishing one's own business	Security	Many businesses are concerned about losing intellectual property, ideas, or other sensitive data

**Table 1.** Pros and cons of coworking spaces

Dimensions	D.,	Dimensions	C
	Pros		Cons
Collaborations	To avoid being lonely and unproductive at home, this is the ideal socializing experience.	Space adequacy	The layout of the workspace may not always meet the expectations of coworkers.
Community Development	Being part of a community, feeling important, and receiving support.		When employees work in multiple places with different atmospheres, it can be more challenging to retain a consistent team spirit.
Innovation	All aspects are available to stimulate innovation in a friendly, innovative environment: designs, lounges, and events.	Lack of attendance	Because it is not their office, the motivation to go to work is diminished.
Services	Coworking spaces provide a wide range of services, including everything an employee would expect from his or her employer in order to work under acceptable conditions. Supplies are not an issue for coworkers.	Lack of connection	Some coworkers may prefer to work alone rather than share the coworking space, thus resulting in a lack of teamwork.
Optimize productivity	Employees may also be able to save time by reducing the amount of time they spend commuting to and from distant company facilities.	Negotiate the public/ private divide	The more the projects are disclosed, the more feedback they will get, but the project will also become more vulnerable.

Source: Roth and Mirchandani (2016), Leforestier (2009)

# 3. Hypothesis Development

# 3.1. Job Productivity in Coworking Spaces

As far as the study on the working environment is concerned, there are certain aspects that exert great influence on productivity (Maarleveld, Volke, and Voordt, 2009; Maarlevend and De Been, 2011). The environment and facilities available at a workplace can impact productivity. Elements of the infrastructure, such as ventilation system, heating, cooling, and office furniture, will affect the employees and in turn the productivity of their work. According to Haynes (2007b), the physical and behavioural characteristics of the office environment, i.e. comfort, office layout, interactions, and distractions, have a greater impact on productivity (Davis et al., 2011). In the opinion of Davis et al. (2011), Roelofsen (2002), Langston et al. (2008), Haynes (2007a), Hameed and Amjad (2009), Myerson (2009), and

Kahler Slater (2010), there are various attributes that contribute to influencing employees' attitude towards synergy and productivity, such as: proper lighting, artificial and natural; location and ambience of building, for example: distance from the city, proximity of shopping centres, ease of access through public transportation; physical environment of the workplace such as decoration, colour of the walls, arrangement of the furniture; premises and equipment, such as appropriate ICT, hardware and software, storage space; employees' ability to shift workspaces according to their personal needs; etc. Hence, according to these attributes, it can be argued that workplace environment is a dimension of great importance for an organization, which influences job productivity and satisfaction. Moreover, people frequently state that they prefer working in coworking spaces because they believe their productivity will rise more quickly than in a regular office setting or at home. Built-in peer accountability, a fast-paced environment, and flexible amenities are the major characteristics that contribute to their productivity. Individuals have more autonomy over their work in coworking facilities because they may select how, when, and where to work. This inbuilt flexibility adds to a judgment-free atmosphere in which work schedules are anticipated to be flexible and where there is no pressure from others to stick to a 9-5 work routine (Roth and Mirchandani, 2016).

According to Been and Beijer (2014), office types, such as individual and shared-roof offices, combi offices, and flex offices, influence job satisfaction and productivity. The physical environment can enhance coworkers' productivity and their experiences at the workplace. Also, the office layout can facilitate workplace satisfaction, social interactions, and teamwork effectiveness (Tucker and Smith, 2008). Further, working conditions and coworking had a significant impact on employee job satisfaction. Nurvitasari (2019) and Fassoulis and Alexopoulos (2018) examined the impact of the workplace on the productivity of the university staff of the National and Kapodistrian University of Athens (UoA). The study revealed that due to the lack of an appropriate working environment at the University of Athens (UOA), the staff's productivity is affected negatively. The internal environment of the office is the most important characteristic of the workplace, which can influence employee productivity. Moreover, coworkers may also be able to save time by reducing the amount of time they spend commuting to and from remotely located company facilities. Coworking spaces are good learning environments because of the diversity of people and available resources. Traditional seminars and presentations, as well as online coursework, peer-to-peer exchanges, and mentoring programmes, are all examples of knowledge-sharing opportunities (Roth and Mirchandani, 2016).

Hence, we can expect coworking space environments to have an impact on job productivity based on the above considerations. As a result, we propose in this study that coworking space environment is one of the most important elements determining productivity in coworking spaces. So, this study aims to explore the

impact of the coworking space environment on coworkers' job productivity. Hence the following hypothesis is proposed.

**H1.** The coworking space environment has a positive impact on job productivity.

#### 3.2. Social Interactions in the Coworking Spaces

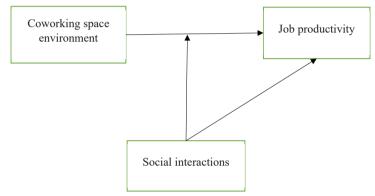
In addition to the basic corporate infrastructure, the main strength of coworking spaces is building a sense of community among the employees working there, as these spaces help them to transfer knowledge, promote cooperation, informal exchanges, and horizontal interactions with each other (Spinuzzi, 2012; Mariotti, 2017). Coworking spaces also provide opportunities for collaboration and community in flexible and furnished workspaces on a rental basis. Coworking spaces are designed to offer social interactions among coworkers, which can take the form of social support (Gerdenitsch, Scheel, Korunka, and Christian, 2016). Social interaction means the way people act and react to other people around them (Giddens, 2009). Social interactions can be positive or negative. When one or both parties get to benefit from social interactions, it will lead to social support (Shinn, Lehmann, and W., 1984). Social support is positively related to performance satisfaction. So, coworking space is an important factor in enhancing social interactions, which can enhance performance (Gerdenitsch, Scheel, Korunka, and Christian, 2016). This kind of service organization supports employees in their work by meeting their basic essential needs of working in a safe, risk-free environment (Leaman, 1995) and promoting interaction and communication among employees. As a result, coworking spaces are the best solution in terms of environment, social interaction, and work performance.

Cabral and Winden (2016) formulated the four strategies to maximize interactions and foster innovation among coworkers: coworking space management as a connector, interior design for interaction, tools for networking, and regulating the mix of workers. In coworking spaces, coworkers, such as freelancers, entrepreneurs, and independent professionals, can share knowledge, exchange ideas, build communities, cooperation, and have horizontal interaction with others (Akhavan, Mariotti, and Canevari, 2019). A model was designed by Bueno, Rodriguez-Balatnas, and Gallego (2018) to show the impact of the coworking environment and social interactions on coworkers' job productivity. They moderated this relationship with three demographic variables (age, gender, level of education) and found a positive significant influence of social interactions and the coworking environment on productivity.

Hence, we can propose that social interactions in coworking spaces are an important factor in determining job productivity. Further, this study will extend the literature by investigating if social interactions will moderate the relation

between the coworking environment and job productivity. So, the study aims to explore the impact of social interactions on the job productivity of coworkers working in coworking spaces and the moderating influence of social interactions between the coworking environment and job productivity. Hence the following hypothesis is proposed.

- **H2.** Social interactions have positive impact on job productivity.
- **H3.** Social interactions positively influence the relationship between the coworking space environment and job productivity.



**Figure 1.** Relationship between a coworking space environment, social interactions, and job productivity and their influence on each other

### 4. Materials and Method

# 4.1. Sample and Procedure

The study was conducted in the coworking spaces of two cities of India, i.e. Chandigarh and Mohali. Data were collected from the top 10 coworking spaces of these two cities with 10 respondents from each coworking space. The respondents of the study were independent professionals, i.e. freelancers, self-employed, micro-enterprises, entrepreneurs who were related to different companies such as Mapple, Topper, Study dekho, Stackgeeks, Clikpak, Hunt career abroad, Being Dad, etc. and who worked in these coworking spaces. A total of 100 sample population was collected, including 58% male and 42% female participants. Convenience sampling was used to select the respondents. The sample survey method was used to collect the data. The respondents of the study were contacted during their office hours.

#### 4.2. Measures

The study included four types of instruments assessing (1) coworking space environment, (2) coworkers' job productivity (3), social interactions among coworkers, and (4) demographic variables. All the instruments are self-constructed with the help of previous studies of Bueno, Rodriguez-Balatnas, and Gallego (2018) and Fassoulis and Alexopoulos (2015).

Coworking Space Environment: This instrument was measured by a self-created index based on three dimensions, namely: facilities available in coworking spaces, layout, and culture of coworking spaces consisting of ten items (e.g. "I feel coworking space provides better facilities than a normal setup." "I feel good about open and transparent spaces." I feel the culture of the coworking space is better than a normal company." – based on dimensions such as facilities). Coworkers' responses were scored on a 5-point Likert scale, where 1 is "strongly disagree" and 5 is "strongly agree". The index was reliable as the internal consistency coefficient of the scale was 0.824, which is more than the required threshold of 0.7 (Nunnally, 1978).

**Social Interactions:** This instrument was measured by a newly developed scale consisting of 4 items based on two dimensions, i.e. communications and team work (e.g. "I feel that in a coworking environment I have better communication opportunities than in a normal environment." "Due to the coworking set-up, I feel that I can relate to my team better than in a normal environment."). Participants rated the statements on a 5-point Likert scale, where 1 is "strongly disagree" and 5 is "strongly agree". The index was reliable as the internal consistency coefficient of the scale was 0.908, which is more than the required threshold of 0.7 (Nunnally, 1978).

**Job Productivity:** The instrument was a self-structured scale consisting of 2 unidimensional items (e.g. "I feel I can perform better in a coworking space than in a normal company set-up." "I feel I am able to perform my work much faster in coworking spaces than in a normal office setting."). Participants rated the statements on a 5-point Likert scale, where 1 is "strongly disagree" and 5 is "strongly agree". The index was reliable as the internal consistency coefficient of the scale was 0.817, which is more than the required threshold of 0.7 (Nunnally, 1978).

#### 4.3. Analysis

The data was analysed using various statistical tools such as reliability measures, correlation, and regression analysis in SPSS. Also, Process macro version 3.4 in SPSS was used to check the moderation influence (Hayes, 2017). Cronbach's alpha value was computed to check the reliability of the statements in the questionnaire. Then linear correlation was applied to find out the relationship between the

items of the scale and, finally, regression analysis was used to find the cause and effect relation between coworking environment, social interaction factors, and job productivity.

#### 5. Results and Discussions

#### 5.1. Descriptive Statistics

A sample of 100 participated in the study. *Table 2* displays the characteristics of a representative sample of the population. The number of males working in coworking spaces (58%) is more than the number of females (42%). The education level of the participants shows an almost equal distribution between undergraduates (52%) and postgraduates (48%). The distribution of participants based on their experience was as follows: 0–2 years (37%), 3–5 years (31%), 6–10 years (23%), and 10–15 years (9%).

	Categories	Frequency	Percentage	
Gender	Male	58	58%	
	Female	42	42%	
Education	Undergraduate	52	52%	
	Postgraduate	48	48%	
Experience	0–2 years	37	37%	
	3–5 years	31	31%	
	6–10 years	23	23%	
	10–15 years	9	9%	

# 5.2. Reliability Analysis

Reliability measure is used to check the reliability of items used in the questionnaire. The value of the Cronbach's alpha is .810, which is greater than the standard value of 0.7 (Nunnally, 1978). So, the statements used in the questionnaire were considered as reliable and thus as providing reliable results.

# **5.3.** Correlation among Coworking Environment, Social Interactions, and Job Productivity

Pearson's correlation coefficient (PCC) between coworking environment and coworkers' job productivity was 0.608 at p < 0.01, and between social interactions

and job productivity it was .500 at p < 0.01. So, coworking environment and social interactions have a positive significant relationship with coworkers' job productivity (see *Table 3*).

Table 3. Correlation analysis

	Job Productivity	Social interactions	Coworking environment
Job Productivity	1		
Social interactions	.500**	1	
Coworking environment	.608**	.724**	1

<sup>\*\*</sup> Correlation is significant at the p < 0.01 level (2-tailed).

#### 5.4. Regression Analysis

Linear regression analysis is used to analyse the cause and effect relationship between the dependent and independent variables.

Linear regression was applied by taking social interactions and coworking environment as independent variables and job productivity as the dependent variable, as shown in *Table 4*.

Coworking space environment has a significant relationship with job productivity, as indicated by  $\beta$  = .608 in the coefficient table, with t-value = 7.590 at the .000 level of significance. The independent variable "coworking space environment" explained 36.4% of the variance in the dependent variable "job productivity". So, a significant cause and effect relationship was found between coworking space environment and job productivity. Hence H1 is confirmed.

**Table 4.** Results of the regression analysis between job productivity as a dependent variable and other factors as independent variables

Independent variable	Dependent variable	Adjusted R <sup>2</sup>	β	T-value	Supported
Coworking space environment	Job productivity	.364	0.608	7.590	yes
Social interactions	_	.242	0.578	5.709	yes

Significance levels: \* p < 0.05, t(0.05;1) = 1.9670; \*\* p < 0.01, t(0.01;1) = 2.5904; \*\*\* p < 0.001, t(0.001;1) = 3.

Then social interactions were taken as an independent variable and job productivity as the dependent variable. Social interactions have a significant relationship with job productivity, as indicated by  $\beta$  = .578 in the coefficient table, with t-value = 5.709 at .000 level of significance, as shown in *Table 3*. The independent variable "social interactions" explained 24.2% of the variance in the dependent variable "job productivity". So, a significant cause and effect

relationship was found between social interactions and job productivity. Hence, H2 is also confirmed. So, coworking environment and social interactions among coworkers have a significant cause and effect relationship with job productivity.

#### 5.5. Moderating Analysis

The moderation hypothesis was verified by using the Process macro version 3.4 in SPSS, in which the independent variable, the moderating variable, and the interactive effect variable (independent variable\* moderating variable) were inserted to predict the dependent variable (Hayes, 2017).

**Table 5.** Moderating analysis

Model	Coeff.	T-value	p	LLCI	ULCI	R <sup>2</sup>	Supported
Job productivity	1.444	3.604	.0005	.6490	2.2402	.6267	yes
= coworking							
environment*social							
interactions							

Significance levels: \* p < 0.05, t(0.05;1) = 1.9670; \*\* p < 0.01, t(0.01;1) = 2.5904; \*\*\* p < 0.001, t(0.001;1) = 3.

The influence of social interactions was computed in the relationship of coworking environment and job productivity (see *Table 5*). The results are significant, as the confidence interval range lies between 0.64920 and 2.2402 (lower level and upper level). Also, the t-value is 3.604 at the .005 significance level. So, H3 is also confirmed, which means that social interactions positively moderate the relation of coworking space environment and coworkers' job productivity.

#### 6. Discussions

Coworking offices can be efficient in terms of the environment, culture, and the facilities available, which will be the consequences for job productivity. Organizations can use the idea of coworking spaces to promote collaborations and social support among coworking users by weighing costs and benefits against each other (Been and Beijer, 2014). This study paid attention to how the coworking space environment will create a better working environment and how the changing face of office spaces concept can be a good source of social interactions and productivity support for the employees. The purpose of our study is to investigate the relationship between coworking space environment, social interactions, and job productivity in the coworking spaces. The questionnaire revealed the main patterns in coworking spaces i.e. job productivity and social interactions. So, the following hypotheses were proposed.

- **H1.** The coworking space environment has a significant positive impact on job productivity.
- H2. Social interactions have a significant positive impact on job productivity.
- **H3.** Social interactions have a moderating effect on the relationship between coworking environment and job productivity.

Our study contributes to the phenomenon of coworking spaces, which allows for social interactions and serves as a source of productivity. Previous research on coworking has conceptually explained its underlying concepts and formation processes (Uda, 2013). This study is one among the few to empirically investigate the content and configurations.

In line with the previous findings of Bueno, Rodriguez-Balatnas, and Gallego (2018), this study also found a positive significant relationship between coworking space environment, social interactions, and job productivity – as shown in *Table 3* – at the p < 0.01 significance level (2-tailed).

Also, the results in *Table 4* have shown that there is a significant cause and effect relationship between coworking space environment and job productivity and social interactions and job productivity, with coworking space environment explaining 36.4% of the variance in the dependent variable "job productivity" while social interactions explaining 24.2% of the variance in the dependent variable "job productivity", which is consistent with the previous study of Gerdenitsch, Scheel, Korunka, and Christian (2016). Hence, H1 and H2 are confirmed. So, the results of the study indicated that an equipped and resourceful coworking space environment is a motivating tool to increase coworkers' productivity. In addition to this, coworking spaces are a source of social interactions among coworkers, which will lead to better performance (Robelski, 2019). Coworkers can form communities and share ideas, which will help them to grow professionally as well as personally.

Furthermore, the influence of social interactions (moderating variable) on the relationship of coworking environment (independent variable) with job productivity (dependent variable) was measured by the Process macro version 3.4 in SPSS (Hayes, 2017), which is also positively significant, as shown in *Table 5*, where the t-value is 3.604 at the .005 significance level. Based on the results, H3 is also confirmed. So, the findings indicated that a coworking environment will provide opportunities to coworkers for social interactions, which will enhance their productivity.

# 7. Conclusions, Limitations, and Future Research

To sum up, coworking spaces are the most preferred spaces among independent professionals, entrepreneurs, and micro-enterprises. The findings of the study highlight the importance of coworking spaces as a source of social interactions among freelancers, entrepreneurs, and independent professionals. Moreover, this

study was conducted to analyse the impact of coworking space environments and social interactions among coworkers on job productivity. Correlation and regression analysis were used to interpret the results. The results of the study showed that coworking environment and social interactions have a positive relationship with job productivity. Also, coworking environment and social interactions in coworking spaces had a positive cause and effect relation with coworkers' job productivity. Hence, these two constructs, coworking environment and social interactions, positively influence job productivity in coworking spaces.

Besides all these findings, this study has some limitations. First, this study has been carried out only in two cities of India (Chandigarh and Mohali), thus having a narrow scope. Therefore, future studies need to be conducted in different cities of India for the generalization of the findings. Second, the research is limited to the variables selected for inclusion. We especially encourage studies on exploring some other aspects of the work environment and ergonomics to create health-promoting and satisfying workplaces (Robelski, 2019). Other specific antecedents (availability of training, community set-up, availability of diverse skills, infrastructure or knowledge sharing) and consequences (new product development, entrepreneurial success, self-efficacy) can also be used to provide additional insights into the context of coworking spaces. Other studies can consider the risk and challenges of coworking threatening social security and job security (Bouncken and Reuschl, 2016). Moreover, other demographic characteristics can also be considered in future studies. However, this paper can help the corporate offices to create a more flexible and constructive work environment for the coworkers. Also, freelancers, independent workers, and companies will benefit from the findings of the study and can promote collaborative connections and networks.

# References

- Akhavan, M.; Mariotti, I.; Astolfi, L.; Canevari, A. (2019). Coworking spaces and new social relations: A focus on the social streets in Italy. *Urban Science* 3(1): 2.
- Bouncken, R.; Ratzmann, M.; Barwinski, R.; Kraus, S. (2020). Coworking spaces: Empowerment for entrepreneurship and innovation in the digital and sharing economy. *Journal of Business Research* 114: 102–110.
- Bouncken, R. B.; Clauss, T.; Reuschl, A. J. (2016). Coworking-spaces in Asia: A business model design perspective. *SMS. Hong Kong*.
- Bouncken, R. B.; Reuschl, A. J. (2018). Coworking-spaces: How a phenomenon of the sharing economy builds a novel trend for the workplace and for entrepreneurship. *Review of Managerial Science* 12(1): 317–334.
- Bueno, S.; Rodriguez-Balatnas, G.; Gallego, M. (2018). Coworking Spaces: A new way of achieving productivity. *Journal of Facilities Management* 16(5).

- Cabral, V. A.; Winden, W. V. (2016). Coworking: An analysis of coworking strategies for interaction and innovation. In: *Regional Studies Association Annual Conference*. Graz, Austria.
- Cornelissen, T. (2016). Do social interactions in the workplace lead to productivity spillover among co-workers? *IZA World of Labor*.
- Davis, M. C.; Leach, D. J.; Clegg, C. W. (2011). The physical environment of the office: Contemporary and emerging issues. *International Review of Industrial and Organizational Psychology* 26: 193–235.
- De Been, I.; Beijer, M. (2014). The influence of office type on satisfaction and perceived productivity support. *Journal of Facilities Management* 12(2): 142–157.
- Fassoulis, K.; Alexopoulos, N. (2018). The workplace as a factor of job satisfaction and productivity: A case study of administrative personnel at the University of Athens. *Journal of Facilities Management* 13(4): 332–349.
- Gandini, A. (2015). The rise of coworking spaces: A literature review. *Ephemer Theory Polit. Organ.* 15: 193–205.
- Garrett, L. E.; Spreitzer, G. M.; Bacevice, P. A. (2017). Co-constructing a sense of community at work: The emergence of community in coworking spaces. *Organization Studies* 38(6): 821–842.
- Gerdenitsch, C.; Scheel, T. E.; Andorfer, J.; Korunka, C. (2016). Coworking spaces: A source of social support for independent professionals. *Frontiers in Psychology* 7: 581.
- Giddens, A. (2009). Sociology.  $6^{th}$  ed. Polity Press.
- Hameed, A.; Amjad, S. (2009): Impact of office design on employees' productivity: A case study of banking organizations of Abbottabad, Pakistan, Public Affairs. *Administration and Management* 3(1): 1–9.
- Hayes, A. F. (2017). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. Guilford publications.
- Haynes, B. P. (2007a). Office productivity: A theoretical framework. *Journal of Corporate Real Estate* 9(2): 97–110.
  - (2007b). The impact of the behavioural environment on office productivity. *Journal of Facilities Management* 5(3): 158–171.
- Kahler, Slater (2010): White paper what makes a great workplace? Learning from the best place to work companies. Available at: www.kahlerslater.com/content/pdf/What-Makes-a-GreatWorkplace-white-paper.pdf (Accessed on: 19 January 2014).
- Langston, C.; Song, Y.; Purdey, B. (2008). Perceived conditions of workers in different organizational settings. *Facilities* 26(1): 54–67.
- Leclercq-Vandelannoitte, A.; Isaac, H. (2016). The new office: How coworking changes the work concept. *Journal of Business Strategy* 37(6): 3–9.
- Leforestier, A. (2009). *The co-working space concept CINE Term project.* Indian Institute of Management (IIMAHD): Ahmedabad, India.

- Maarleveld, M.; De Been, I. (2011). The influence of the workplace on perceived productivity. In: *EFMC2011: Proceedings of the 10<sup>th</sup> EuroFM research symposium: Cracking the productivity nut, Vienna, Austria, 24–25 May 2011.* EuroFM.
- Maarleveld, M.; Volker, L.; Van Der Voordt, T. J. (2009). Measuring employee satisfaction in new offices The WODI toolkit. *Journal of Facilities Management* 7(3).
- Mariotti, I.; Pacchi, C.; Di Vita, S. (2017). Co-working spaces in Milan: Location patterns and urban effects. *Journal of Urban Technology* 24(3): 47–66.
- Marzloff, B. (2013). Sans bureau fixe: transitions du travail, transitions des mobilités. Vol. 5. Fyp éditions.
- Moriset, B. (2013). Building new places of the creative economy. The rise of coworking spaces. *Territoire en Mouvement* December.
- Myerson, J. (2008). Power of the network: Transitions in working life from Taylorist time and motion to networked space. In: *Networks of Design: Proceedings of the 2008 Annual International Conference of the Design History Society (UK)*. Falmouth: University College Falmouth. Universal Publishers.
- Nunnally, J. C. (1978). Psychometric Theory. New York: McGraw-Hill.
- Nurvitasari, F. (2019). The effect of working conditions and coworking on employee job satisfaction. *INOVASI* 15(2): 135–141.
- Robelski, S.; Keller, H.; Harth, V.; Mache, S. (2019). Coworking spaces: The better home office? A psychosocial and health-related perspective on an emerging work environment. *International Journal of Environmental Research and Public Health* 16(13): 2379.
- Roelofsen, P. (2002). The impact of office environments on employee performance: The design of the workplace as a strategy for productivity enhancement. *Journal of Facilities Management* 1(3): 247–264.
- Roth, K.; Mirchandani, N. (2016). The rise of co-working: A growing workplace movement. *Corporate Real Estate Journal* 5(4): 314–328.
- Shinn, M.; Lehmann, S.; Wong, N. W. (1984). Social interaction and social support. *Journal of Social Issues* 40(4): 55–76.
- Spinuzzi, C. (2012). Working alone together: Coworking as emergent collaborative activity. *Journal of Business and Technical Communication* 26(4): 399–441.
- The benefit of coworking. (n. d.). Retrieved from: coworkingmag: https://coworkingmag.com./blog/benefits-of-coworking/.
- Tucker, M.; Smith, A. (2008). User perceptions in workplace productivity and strategic FM delivery. *Facilities* 26(5/6): 196–212.
- Uda, T. (2013). What is coworking? A theoretical study on the concept of coworking. *Discussion Paper, Series A*.
- Yang, C. K.; Inrahim, F. I.; Zubir, Z. (2020). Analysing spaces for social interaction in coworking space: A case study on Common Ground Damansara Heights. *Environment-Behaviour Proceedings Journal* 5(13): 379–386.