The Effect of Workplace Design on Employee Engagement, Collaborative Capability, and on Perceived Work Performance in Coworking Spaces

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Abstract. Coworking spaces phenomenon is rapidly growing across the countries of North America, Europe, and Asia. Owing to its functional work environment, it offers co-workers a collaborative atmosphere that makes them more involved at work. The research study aims to describe the causal relationship of workplace design to perceived work performance through the mediating roles of employee engagement and collaborative capability with the use of Structural Equation Modeling (SEM). The total of 350 co-workers aged 18-60 years old, from 27 different co-working spaces in Metro Manila, Philippines participated in the study. The findings of this research revealed that workplace design has no direct effect on perceived work performance; however, perceived work performance improves when coworkers are more engaged and have better collaborative capability. Nonetheless, the rest of the hypothesized premises were affirmed in the result of this study. This paper can help the HR managers and the business centers to create a more flexible and constructive workplace setting for their employees. Further, the results can be used as a basis for the fundamental shift of the traditional workspace into a new creative workplace.

1. Introduction

With the arrival of millennial workers, the rise of startup businesses, and increasing number of freelancers, the work environment is indeed rapidly evolving. Changes in the labor market over the years yield a tremendous increase in contingent work. These changes paved the way to a so-called “creative class” of workers. These types of employees prefer to work independently and refuse to work in bureaucracies or traditional career paths [1]. This trend plays a vital role in redefining offices, particularly in the physical office structure. Employees’ performances nowadays are not only driven by compensation, rewards, and recognition, but also by workplace design [2]. Some workspaces focus on sustainability and impact of technology in their office. Some have forgotten that they should likewise give attention in designing a workspace for the employees that maximizes their potential, performance, and productivity. Coworking spaces, as defined by Fuzi [3], are creative and energetic places where individuals who have turned away from home offices and local coffee shops can interact, share, build and co-create with one another.

These spaces provide workers the discretion as to where and when to work. This allows them to manage their own time in doing other responsibilities [4]. It offers a broadened learning and networking opportunities that are hardly found within an organization [5] and a way to lessen work
isolation [3]. Employees coming from different organizations and industries can bring different resources to the coworking community. Likewise, workers can gain different takeaways from the community and they also feel more motivated since their jobs become less routinely [6]. There have been initiatives that explored artistic forms, aesthetics, and processes in the Philippine cultural office landscaped for and the materialization of these initiatives is the creative hubs or commonly known as coworking spaces [7].

These spaces are shifting towards a creative and collaborative work environment generally known as an office-renting space where employees and independent professionals pay for a desk and Internet connection to get their work done [8]. Spinuzzi [9] defined coworking spaces as an open-plan office environments and non-traditional work arrangement. Taylor [10] added the definition of coworking spaces by which employees work alongside other unaffiliated professionals. He further highlighted that those employees working in a more flexible environment perform better than when they do it alone.

The aim of this paper is to explore the coworking spaces’ structure and the interaction of people within in order to find out the effects on work performance. Additionally, the researchers aim to develop a model that describes the mediating effect of employee engagement and collaborative capability towards the relationship of workplace design and perceived work performance. Findings of this paper can help corporate offices to provide alternative workplace strategies and align its office with how their employees work. Moreover, the Human Resource Management can adopt this new office paradigm in order to see and find another way of forming better relationships and connections with the employees.

2. Methodology

2.1. Design
The study utilized a descriptive causal design, which uses Structural Equation Modeling (SEM) for data analysis. SEM is a statistical approach that tests hypothesized patterns of directional and non-directional relationships among a set of observed (measured) and unobserved (latent) variables. There are four latent variables and five hypotheses in the study. Among the latent variables, workplace design is considered an independent variable, perceived work performance as dependent variable and the remaining two, employee engagement and collaborative capability, as mediating variables.

2.2. Sample and Study Site
Twenty-seven (27) coworking spaces within Metro Manila were chosen as the locus of the study, and the three hundred fifty respondents were acquired from the said locus. According to Kline [11], a sample of at least 200 respondents is required or it may depend on the number of items in the questionnaire (5 cases per parameters). The number of respondents was determined by multiplying the forty-two (42) question items by five (5) which resulted to have at least 210 respondents for this study. This study is limited to respondents who were purposively chosen based on the following inclusion criteria: all coworker that works as freelancers, consultants, independent professionals, remote employees, entrepreneurs, and employees in small or large firms inside coworking spaces. Permission to conduct a survey was secured from the Community Manager with the assurance that the responses will be treated with utmost confidentiality and shall only be used for the purpose of this study. Data was gathered over a period of three weeks from October to November 2017. A total of four hundred (400) questionnaires were distributed and only three hundred fifty (350) were retrieved.

2.3. Instrumentation
Survey questionnaires were adapted from similar literatures, articles, and other online survey materials. The survey was conducted to measure respondent’s perception of the importance of workplace design to employee engagement, collaborative capability, and perceived work performance.
in coworking spaces. All four variables were measured through a 6-point Likert Scale ranging from 6 (extremely important) to 1 (not at all important) and 6 (strongly agree) to 1 (strongly disagree).

2.4. Data Gathering
Considering the ethical aspect of this study, letters seeking permission to use survey tools were sent to the rightful owners of the survey items that we have adapted, assuring them that it will be acknowledged with appropriate reference. Letters of permission to conduct surveys were also sent to owners and community managers of coworking spaces before gathering the data. Upon approval, the questionnaires were given out to different coworkers available during the survey dissemination.

2.5. Data Gathering
Descriptive statistics were used to summarize the respondents’ demographic profile. Using SPSS ver. 22, exploratory factor analysis was employed to derive the underlying dimensions of the constructs. Likewise, AMOS ver. 24 was used to test the hypothesis in the conceptual model of the study using Structural Equation Modeling (SEM).

3. Result and Discussion
A sample of three hundred fifty (350) coworkers from twenty-seven different coworking spaces in Metro Manila took part in the conduct of this study to increase the research’s validity. Among the 350 respondents, 42.6% were male and 57.4% were female, and majority were aged between 18 and 29 years old (66.3%) whom were chiefly college graduates (78.0%). Many of them were full-time employees (77.7%), working between 1 and 8 hours on the daily average (68.9%), and who were mostly Associates (12.6%) and Managers (12.6%) from the IT (23.7%) and the Media & Marketing (12.9%) Industry. A handful of them (24.2%) responded that they chose to work at their respective coworking spaces because of the familiarity with the area, and 73.1% reported that they work at the coworking space on a daily basis. When it comes their preferred price breakdown of working at a coworking space, 39.7% attested that a rate between 50 pesos and 70 pesos per hour is more favorable. In addition to demographics, these coworkers attest that the most essential items they need in a coworking space are coffee, tea, and water as these are.

3.1. Exploratory Factor Analysis of the Study Construct
All items in the questionnaire were factor analyzed using principal component method and varimax rotation with Kaiser Normalization rotation. The results of 350 respondents were sufficient enough for factor analysis to be carried out. A reliability coefficient (Cronbach Alpha) of .80 and above for each dimension were considered acceptable in this study. As part of the decision rules, all items under the dimension with factor loadings of less than 0.40 were discarded along with factor dimensions with eigenvalues less than 1.00. Exploratory Factor Analysis (EFA) of the workplace design variable is shown in Table 1. The decision rules stated above resulted to the surfacing of four dimensions measuring the elements considered as important to a coworker as: 1. Physical layout elements which refer to the structure within the space that affects the experience of a coworker and it includes partitions, ceilings and floorings, worktops, and furniture; 2. Workplaces for teams which refer to the technology and noise devices, and meetings and shared spaces that help coworkers or teams to work effectively in private or group; 3. Work desk design which refers to the ergonomic chairs and tables, desk lighting, utilities and storage in a specific work desk that helps coworkers to be effective and satisfied; and 4. Office space design which refers to the zones, core area, windows and vistas, and office size.
Table 1. Exploratory Factor Analysis of Workplace Design

| Workplace Design Dimensions | Factor Loading | Eigenvalue | %Variance | Cronbach Alpha |
|-----------------------------|----------------|------------|-----------|----------------|
| Physical Layout Elements    | .74            | 5.90       | 32.81     | 0.86           |
| Workplace for teams         | .98            | 1.95       | 10.84     | 0.086          |
| Work Desk Design            | .77            | 1.72       | 9.60      | 0.86           |
| Office Space Design         | .53            | 1.07       | 5.95      | 0.86           |

Table 2. Model Fit Statistics

| Measurement                                              | Value | Interpretation |
|----------------------------------------------------------|-------|----------------|
| CMIN/df                                                  | 1.75  | Excellent      |
| Root mean square error approximation (RMSEA)             | .046  | Excellent      |
| Standardized Root Mean Residual (SRMR)                   | .062  | Excellent      |
| PClose                                                   | .704  | Excellent      |
| Goodness-of-fit index (GFI)                              | .93   | Excellent      |
| Comparative fit index (CFI)                              | .97   | Excellent      |
| Normed-fit index (NFI)                                   | .94   | Excellent      |

3.2. The emerging Model

The study purported to test a hypothesized model that shows the effect of workplace design on employee engagement, collaborative capability, and on perceived work performance in coworking spaces. Structural equation analysis of the hypothesized model accepted the hypothesis that employee engagement and collaborative capability mediates the relationship between workplace design and perceived work performance as depicted in Figure 1. An in-depth description of such relationship is seen wherein workplace design positively affects employee engagement, however, such relationship is said to be weak ($\beta = .13$) and collaborative capability of such relationship is said to be moderate ($\beta = .51$). Employee engagement moderately affects perceived work performance ($\beta = .50$) and collaborative capability positively affects perceived work performance, however, the relationship is weak ($\beta = .23$). Contrary to the hypothesized model, the findings revealed that there is no direct
relationship between workplace design and perceived work performance as depicted in Figure 2. However, it was found that collaborative capability has a weak effect on employee engagement ($\beta = .28$) which supports the hypothesis of the study.

Table 3 illustrates that coworkers were committed to their job and to continuous improvement of their work while meeting their expectations has a strong positive effect for the mediator employee engagement ($\beta = 0.88$) and ($\beta = 0.87$). Thus, employee engagement statements 3 and 4 contribute strong positive effect on the coworkers perceived work performance.

Table 4 depicts that workplace design passing through the mediating variables increasingly affect the factors that coworkers mostly meet the requirements of their outputs and see quality on it ($\beta = 0.90$).

**Figure 1.** Emerging Model of the effect of workplace design on employee engagement, collaborative capability, and on perceived work performance in coworking spaces.
3.3. Overall Discussion
Findings of the study confirmed that workplace design affects the employee engagement of the coworkers. This is brought by the conducive and flexible workplace design such as ergonomics of work surface, spaces for flexible equipment to sit or stand, and thermal comfort that can improve employee engagement as affirmed by [12]. The study also confirmed that these coworkers’ perceived work performance increases to some degree when they are considerably engaged with their work while meeting the requirements of their outputs and seeing quality on it with a sense of fulfillment upon accomplishing their work. It is evident in coworkers’ way of working and their output that they perform better when given a choice of how, where and when to work [13]. Similarly, the coworkers’ collaborative capability towards other coworkers positively affects their perceived work performance. One factor that has contributed to this is the coworking space’s ability to acquaint and socialize coworkers together, thereby defying the culture of Filipinos to be hesitant in initiating interaction with other coworkers.

Major findings of study surprisingly revealed that workplace design does not have an effect on perceived work performance. It was found that a number of coworkers in the Philippines are not after the physical setup of the space; rather they are after the interaction with other coworkers to share insights with them. Since most of them are working professionals, making connections and increasing their business networks are the vital activities for their career. Nonetheless, through the mediating roles of collaborative capability and employee engagement, perceived work performance increases in a greater degree. The study also discovered that collaborative capability has an effect on employee engagement. As evidently seen inside the space, coworkers collaborate with one another and support each other in accomplishing their tasks through the aid of open workspaces and flexible floor plans, thereby making them feel more committed with their work since some coworkers have the competencies or specialties related in the field of their work.

Clearly, the Motivation-Hygiene Theory tends to prevail in examining the workplace design to employee engagement and collaborative capability relationships [14]. Also, Yerkes-Dodson Theory supported the study even if there is no direct relationship between workplace design and perceived work performance because it creates an indirect relationship through mediating variables, which will lead to a better work performance [15]. This study helps the organization to provide office solutions and strategies on how to elevate the work performance of its employees in order to gain more profit. The coworking space setting is an opportunity for the HR to redefine their traditional workspaces and how they infuse diversity and innovation by having an easy flow of exchanging ideas and knowledge. It fosters better social support that will help the HR to create a work environment for the employees to work at their best by taking into account the coworking space set up.

4. Conclusion
This study attempted to examine the relationship between workplace design and perceived work performance, as mediated by two other variables, employee engagement and collaborative capability upon using Structural Equation Modeling (SEM). This study is the first in the Philippines that explored the said topic and relationship and it indicates that coworking space setting helps the coworkers be motivated to accomplish their tasks alongside with collaborating and discussing with others in relation with their work. The researchers want to point out that coworking space is not in competition with a typical office, but an alternative for an individual to maximize fully his/her skills and way of thinking. Coworkers find meaning in their work because they do not have to live up to the persona expectations of a traditional corporate setting that usually has direct competition between one employee to another or internal politics in the organization. Another thing is that they have a control on their jobs in terms of how they will finish their work on time. They also affirm that they perform well in the space they get to multiply their connections with talented individuals as opposed to working at the corporate office or at home.
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