

PATH MODEL LEADING TO INTENTION TO RECOMMEND CO-WORKING SPACES TO NEW CUSTOMERS: AN EMPIRICAL EVIDENCE FROM THAILAND

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Abstract. According to Global Co-working Growth Study 2020 (Coworking resources, 2020), the numbers of co-working spaces are growing. However, gaining new customers still is challenging, referring to the DeskMag's report (Kowrk Blog, 2017). From a practical standpoint, this is problematic. This research assumes that if current customers intend to recommend co-working space to new customers, the problem would become less problematic. However, there is no theoretical model that could explain the phenomenon of interest from previous researches. This is a problem from a theoretical standpoint. Therefore, a model, as such, is needed. Thus, this paper develops a conceptual model that could explain what factors drive intention to recommend. The model includes antecedents, overall satisfaction, and intention to recommend. Four statistical analyses were required to analyse the proposed model. Regression analysis was used to test all the relationships, all supported. This becomes a new model that could explain the phenomenon of interest. Then, path analysis was conducted to calculate direct, indirect, and total effects of paths leading to intention to recommend. Then, testing of the indirect effects were carried out to test the effects of antecedents on intention to recommend, all significant. Finally, the total effects were, then, ranked.

Keywords: path analysis, path model, antecedents, overall satisfaction, intention to recommend, co-working spaces.

JEL Classification: M53.

Introduction

According to Ivaldi et al. (2018), Co-working space started in San Francisco in 2005. Now, it spreads across the world. However, gaining new customers still is a challenge for a number of co-working spaces around the globe, referring to the DeskMag's report (Kowrk Blog, 2017). In 2019, a survey was conducted by a company called Statista found that 60 percent of the respondents indicated that they found it difficult to attract new members to their co-working space (Mazareanu, 2019). From a practical standpoint, this is certainly problematic, particularly for the managements of coworking spaces. However, current customers could help alleviate the problem by recommending co-working space of their choices to new customers, the more number of people recommending co-working space, the more people would visit co-working spaces. Thus, a study, such as this one, attempting to explain what factors lead to intention to recommend new customers by current customers is certainly needed.

From a literature standpoint, studies examining paths leading to intention to recommend new customers in the context of co-working space using path analysis approach are rare, if not none. This is a theoretical gap. As Jeong et al. (2019) pointed out, a number of studies placed focus on antecedents and consequences of satisfaction, because satisfaction is a crucial factor for assessing the success of companies' marketing strategies. In short, these studies modelled their studies in three sequential blocks: antecedents, satisfaction, and consequences. The three sequential blocks could be viewed as path model, and could certainly be applied to the study at hand. However, the three-block approach has two major problems literally for this study. The first problem is that the approach is rarely applied to the context of co-working space, if not none. The second problem is that specific antecedents have not been identified for the context of co-working space. These problems are deemed as missing gaps in co-working space literature. Thus, these gaps need to be fulfilled. To fill the first gap, this study has adopted the three-block approach in

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developing conceptual framework for this study: antecedents, overall satisfaction, and intention to recommend. The development of the three-block approach will be explained later. To fill the second gap, specific antecedents of satisfaction deemed appropriate for the study are identified. Following these methods of gap fulfilments, a conceptual model, again, is developed using the three-block approach for this study, and analysed using regression analysis, path analysis, testing of the indirect effects of the hypothesized model for the study, finally ranking of all paths leading to intention to recommend.

Given the theoretical gap in literature identified earlier in previous section, this study develops a conceptual framework drawing upon literatures on antecedents of satisfaction, satisfaction concepts, and Theory of planned behavioural (TPB) (Ajzen, 2020). The development of the conceptual framework for this study will be elaborated later.

Given the complex nature of the hypothesized path model (conceptual framework) of the study, multiple analyses are conducted; however, four analyses are the milestones of the study: regression analysis, path analysis, and testing the indirect effects, and ranking of all paths leading to intention to recommend. All relationships of the hypothesized path model of the study using regression analyses are all supported. For path analysis, the direct, indirect, and total effects are computed. In addition, rankings are assigned to all five paths, one being the heaviest. Testing the indirect effects are all significant. Please be advised that there is no relationship proposed directly from antecedents to intention to recommend. Finally, all paths leading to intention to recommend are ranked (see Table 5).

Both theoretical and practical contributions are offered. For theoretical contribution, a framework is developed to explain paths leading to intention to recommend new customers to co-working spaces of their choices. For practical contribution, the new conceptual model (lens) could help managers to understand factors and paths leading to intention to recommend.

1. Research objectives

This research study has four objectives. The first objective is to test the direct effects of all the relationships presented in the conceptual model of the study using regression analysis. The second objective is conduct path analysis of

the conceptual model of the study, no hypothesis testing involved. The third objective is to test the indirect effects of antecedents on the dependent variable of the study using testing the indirect effects statistical method. Finally, all paths leading to intention to recommend are ranked. The objectives of the study are as follows:

- Objective 1: To test the direct effects of all relationships presented in the path (conceptual) model of the study.
- Objective 2: To conduct path analysis of the path (conceptual) model of the study.
- Objective 3: To test the indirect effects of antecedents on intention to recommend.
- Objective 4: To rank all paths leading to intention to recommend.

2. Literature review

The purpose of the literature review is to describe co-working space in brief, and also capturing main constructs of the study. Based upon literature review, the hypothesized path model of the study is proposed. Constructs and their relationships in the hypothesized path model are explained. Later, these relationships are tested using proper statistical methods. These methods are explained later.

2.1. Definition of co-working space

Let's begin with a definition of co-working space. It is a place where people come from different organizations to work on their projects (Spreitzer et al., 2015). However, the definition could extend to cover people from the same organization. In Thailand, for example, co-working spaces could be places for personal and work meetings for people from the same and different organizations.

2.2. Number of co-working spaces and number of people using co-working spaces worldwide

According to Global Coworking Growth Study 2020 (Coworking resources, 2020), the numbers of co-working spaces are certainly growing. The numbers of co-working spaces from 2018 to 2020 are 16,599, 18,287, and 19,421 respectively. The projected numbers of co-working spaces are also presented from 2021 to 2024. The numbers of people are also growing, 1,650,000, 1,806,750, and 1,933,331.

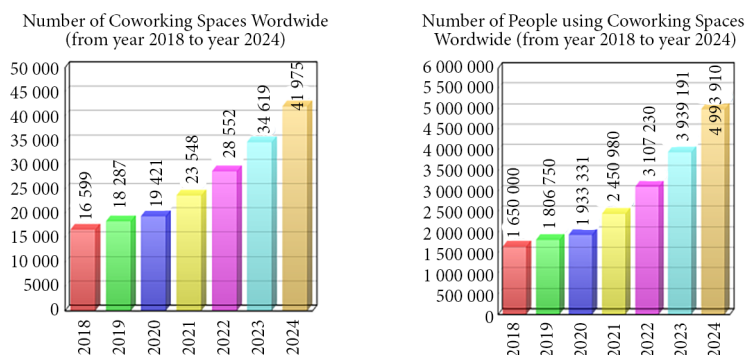


Figure 1. Number of co-working spaces (outlets) and customers from 2018 to 2024

The projected numbers of people are presented from 2021 to 2024. All these figures are presented in Figure 1. Abe and Uda (2016) separated co-working space into two critical terms: “co-working” and “space”. Following their definitions, “space” could be virtually anywhere. In this research, co-working space refers to a business that calls itself “co-working space”. Based on some operators’ comments, however, gaining new members/customers still is a challenge, as already mentioned.

2.3. Relationships among the main constructs, and hypotheses

Based upon existing literatures, previous studies propose antecedents and consequences of satisfaction in different contexts other than co-working space. The antecedents and consequences of (overall) satisfaction are different from context to context, but some are overlap. For example, Zhang et al. (2019) proposed antecedents and consequences of satisfaction in the context of animation industry. Another example is a work conducted by Wiardi et al. (2020). They conducted a study on the antecedents and consequences of (overall) satisfaction in the context of store in general (not being specific on what stores were targeted). The third example is a work conducted by Roberts-Lombard et al. (2019). They conducted a study on antecedents and consequences of (overall) satisfaction on business-to-business relationships in South Africa. Clearly, these three examples are in different contexts. Thus, there is a need for identifying appropriate antecedents and consequences of satisfaction for this study. The context of this study is clear; that is, co-working space. Given this need, the hypothesized path model was developed specifically for this study.

Seven main constructs were identified for this research study: facilities, atmosphere, employee, price, food, overall satisfaction, and intention to recommend. These main constructs serve as building-blocks of the hypothesized path model of the study (see Figure 2). Below describes relationship among these main constructs, along with their respective hypotheses.

Facilities effecting Overall satisfaction. Hanssen and Solvoll (2015) used facilities as one of main variables in their research study. They basically conducted a research on university facilities affecting student satisfaction. Basically, they hypothesized that facilities influence student satisfaction. In their study, facilities referred to a number of things, for example, library. In this research, facilities refers to, for example, internet access. In short, Hanssen and Solvoll (2015) proposed that there is a relationship between facilities and satisfaction. By the way, Mohd Isa et al. (2020) conducted studied on key drivers on overall satisfaction. Based on this study, overall satisfaction does exist. In the context of this research, overall satisfaction is treated as independent variable (see Figure 2). Thus, this research treats facilities as an antecedent of (overall) satisfaction. In addition, it also hypothesizes that facilities has a positive relationship with overall satisfaction.

H1: The effect of facilities on overall satisfaction is positively significant.

Atmosphere effecting Overall satisfaction. Marinkovic and et al. (2014) treated atmosphere as one of the antecedents of their study. They basically studied full-service restaurants. Atmosphere has a significant role in restaurant service as it fosters a strong sensational and emotional impact on the setting in which the service is provided and is also connected to purchasing habits on a particular purchase place. In short, Marinkovic and et al. (2014) proposed that there is a relationship between atmosphere and satisfaction. Thus, this research treats atmosphere as an antecedent of overall satisfaction. In addition, it hypothesizes that atmosphere has a positive relationship with overall satisfaction.

H2: The effect of atmosphere on overall satisfaction is positively significant.

Employee effecting Overall satisfaction. Thusyanthy and Tharanikaran (2017) conducted a study titled “Antecedents and Outcomes of Customer Satisfaction: a Comprehensive Review. Hennig-Thurau (2004, as cited in Thusyanthy & Tharanikaran, 2017) stated that employees, consisting of employees’ technical skills, social skills, motivation, and decision-making power has a positive influence on customer satisfaction. Kattara et al. (2014) conducted a study titled “The Impact of Employees’ Behavior on Customers’ Service Quality Perceptions and Overall satisfaction.” They basically proposed that employees’ behaviour is effecting overall satisfaction. Thus, this research treats employee as an antecedent of overall satisfaction. In addition, it also hypothesizes that employee has a positive relationship with overall satisfaction.

H3: The effect of employee on overall satisfaction is positively significant.

Price effecting Overall satisfaction. Dai and Forsythe (2010) studied, “The Impact of Perceived Price Fairness of Dynamic Pricing on Customer Satisfaction and Behavioral Intentions: The Moderating Role of Customer Loyalty.” In their study, they proposed a relationship between price and customer satisfaction. Thus, this research treats price as an antecedent of overall satisfaction. In addition, it hypothesizes that price has a positive relationship with overall satisfaction.

H4: The effect of price on overall satisfaction is positively significant.

Food effecting Overall satisfaction. Kong and Jamil (2014) conducted a study titled, “Level of Satisfaction among Postgraduate Health Sciences Students on the Cafeteria Facilities in Universiti Kebangsaan Malaysia, Kuala Lumpur Campus.” They proposed that food was one of the determinants that makes students satisfied, or dissatisfied. In short, they proposed that there is relationship between food and satisfaction. Thus, this research treats food as an antecedent of overall satisfaction. In addition, it hypothesizes that food has a positive relationship with overall satisfaction.

H5: The effect of foods on overall satisfaction is positively significant.

Overall satisfaction effecting Intention to recommend. Finn et al. (2009) conducted a study titled “Attribute Perceptions, Customer Satisfaction and Intention to Recommend E-services.” Clearly, a significant part of their study examined the relationship between satisfaction and intention to recommend. Thus, this research hypothesizes that there is a positive relationship between satisfaction and intention to recommend. Al-Ansi et al. (2018) also proposed in their study that there is a relationship between overall satisfaction and intention to recommend.

H6: The effect of overall satisfaction on intention to recommend is positively significant.

2.4. Hypothesized path model

Hypothesized path model was developed based on literature reviews from the prior section. The model could be viewed as a conceptual framework of the study. This is captured in Figure 2. Basically, the path model organizes the relationships among the main constructs of the study into three sequential blocks: antecedents → independent variable (satisfaction) → dependent variable (intention to recommend). The first block comprises selected variables deemed appropriate to serve as antecedents of satisfaction for this study. The second block (independent variable) is established based upon the concepts relating to satisfaction. Finally, the last block (intention to recommend) draws upon Theory of Planned Behaviour (TPB) (Ajzen, 2020). As we know, TPB includes three components from left to right: pre-intention variables, intention variable, and behaviour variable. In short, the path model (conceptual framework) of this study only borrows the concept of TPB (intention variable) to serve as the dependent variable of this study. Given the complexity of the phenomenon under study, the conceptual framework, thus, is not developed based upon a single theory; rather, it integrates most relevant concepts and theory that could serve as lenses to examine the phenomenon of interest at hand. By the way, five antecedents are connected by covariances. The purpose is to remind readers that when carrying out the regression analysis these covariances have to be in place. In addition, these covariances are counted as part of the statistical parameters when determining the required minimum number of sample size for this study.

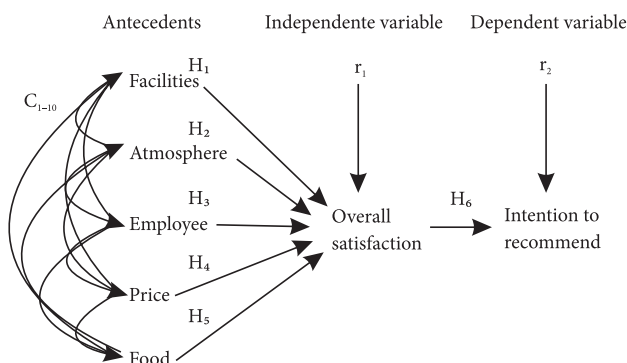


Figure 2. Hypothesized path model: Antecedents, independent variable, and dependent variable, c = covariances, r = residuals

3. Methodology

This section discusses population and sample, research instrument, and proposed data analysis.

3.1. Population and sample

This section describes population and sample of this research study. The target population of this research refers to customers who have already used services at the target co-working space service at one of the major shopping malls in Mahasarakham Province in Thailand, prior to, or at the time the data were collected for this research. For path analysis, it is recommended that at least 10 samples per one model parameter are recommended (Lani, 2021). Based on the hypothesized path model (Figure 2) of this research, there are 18 model parameters to be estimated. Thus, the required minimum of sample size is 180 samples (10 samples \times 18 model parameters). Model parameters come from 10 covariances, 2 residuals, and 6 regression weights, add up to 18 parameters all together (see Figure 2). This research study collected 400 samples. It surpassed the required minimum number of sample size for this research study.

3.2. Research instrument

The research instrument for this study is questionnaire (QN). To ensure the quality of questionnaire, three things were carried out. First, the questionnaire was developed based on the operationalized definitions of the seven main variables. Second, two experts were asked to review the questionnaire. Then, the tryout data collection began in January 2020. Finally, scale reliability was carried out to obtain Chronbach's alphas: facilities (internet, office supplies, space, tables and chairs, restroom, $\alpha = 0.73$), atmosphere (temperature, environment, decoration, music, cleanliness, $\alpha = 0.83$), employee (dressing, speaking, information, eagerness, respect, $\alpha = 0.76$), price (service suited, clear, image suited, $\alpha = 0.77$), food (varieties, taste, cleanliness, appearance, amount, $\alpha = 0.80$), overall satisfaction (facilities, atmosphere, employee, price, food, $\alpha = 0.80$), and intention to recommend (impression, worth, stories, $\alpha = 0.70$). Please note that all Chronbach's alphas are all above 0.70. In short, the scale reliabilities for individual variables do not have a problem. This implies that individual QN items under those main variables are appropriate.

3.3. Proposed data analysis

There are five main rounds of data analysis. The first round of data analysis is to analyse demographic data of respondents. The demographic data are analysed using descriptive statistics: frequency and percent. This is carried out by the Jamovi software (The Jamovi Project, 2020). It is an open-source software (free). The second round of data analysis is to analyse correlations among the main constructs of the study. This round of analysis is also carried

out by the Jamovi software. The third round of analysis is to conduct regression analysis to test the hypotheses relating to regression analyses. The regression analyses are carried out by Ω nyx software (freeware) (Brandmaier, 2020). The software is currently supported by the University of Virginia, USA and the Max Planck Institute for Human Development, Germany. The fourth round of the analysis is to conduct path analysis. This involves computations of indirect, direct, and total effects, using regression weights obtained from previous regression analyses. The fifth round of the analysis involves testing the indirect effects of all paths, from antecedents (through overall satisfaction) leading to intention to recommend co-working space of choice to new customers, by current customers. Finally, rankings are assigned based on the total effects of all paths leading to intention to recommend. By the way, testing of the indirect effects mentioned earlier are carried out by jAMM – advanced mediation models (a Jamovi library/module), in the Jamovi environment. For further information on the Jamovi software, please consult the Jamovi's official website at <https://www.jamovi.org/about.html> (The Jamovi Project, 2021). Likewise, Ω nyx is also a free software package, but not open source. For further information on the Ω nyx software, please consult the work of von Oertzen et al. (2015) in *A Multidisciplinary Journal*, or the Ω nyx's official website (<https://onyx-sem.com/>). Nowadays, it is not uncommon to use open-source and freeware software packages, due to the high costs of commercial statistics software packages.

4. Results

The overall objective of this research is to conduct path analysis on paths leading to intention to recommend co-working space to new customers. To satisfy the overall objective, five main rounds of analyses were carried out: descriptive analysis, correlation analysis, regression analysis (including hypothesis testing), path analysis, and testing of the indirect effects, and ranking all path leading to intention to recommend (see Table 5).

4.1. Demographic data

Table 1 summarises the demographic profile of the respondents. Four demographic variables were highlighted: gender, education, profession, and income. Let's begin with gender. There were two hundreds and twenty-five male respondents (56.3%), and one hundred and seventy-five female respondents (43.7%), four hundreds respondents (100%) all together. Apparently, there were more male than female respondents.

Education (currently holding) is divided into four levels: below Bachelor degree, Bachelor degree, Master's degree, and Doctoral degree. Top three levels of education in duration of study by respondents include levels are Bachelor degree, below Bachelor's degree, and Master's degree. Three hundreds and eighteen respondents holding Bachelor's degree (79.5%), sixty respondents possess

below Bachelor degree (15.0%), and nineteen respondents hold Master's degree (4.7%).

Respondents hold different professions: government officers, company employee, part-time employee, students, business owners, general jobs, and farmers. Top three professions include students, government officers, and company employees. Three hundred and forty-three respondents were students (85.7%). Twenty-three respondents were government officers (5.7%), and twenty respondents were company employees (5.0%).

There are seven income levels: from below 10,000 Bahts to more than 50,000 Bahts. Top three income levels are 10,000 Bahts (or below), 10,001–20,000 Bahts, and 20,001 to 30,000 Bahts. Two hundred and forty-four respondents earn 10,000 Bahts) or below/month (61.0%), one hundred and twenty-two respondents earn 10,001 – 20,000 Bahts/month (31.0%), and twenty-two respondents earn 20,001–30,000 Bahts/month (5.5%).

Table 1. Demographic profile of the respondents

Variables	n	%
Gender		
Male	225	56.3
Female	175	43.7
Education (currently holding)		
Below bachelor's degree	60	15.0
Bachelor's degree	318	79.5
Master's degree	19	4.7
Doctor's degree	3	0.8
Professions		
Government officers	23	5.7
Company employees	20	5.0
Part-time employees	6	1.5
Students	343	85.7
Business owners	6	1.5
Farmers	1	0.3
Others	1	0.3

4.2. Correlation among main variables of the study

Correlations among main variables of this study were analysed. Again, there are seven main variables of the study, five antecedents, one independent variable, and one dependent variable. Please note that all correlations are all significant at three stars ($p < 0.01$), as summarized on Table 2.

4.3. Regression analyses

The regression analyses are required, if path analysis will be conducted, because path analysis relies on regression coefficients (path coefficients) for computation of direct and indirect effects. This is further discussed below. Path analysis could also, of course, be analysed by structural equation modelling (SEM), but it is beyond the scope of this paper. Therefore, the SEM approach will not be discussed. Thus, this section conducts regression analyses of the hypothesized model. The regression analyses are conducted by the Ω nyx software (see Figure 3). Based on the analyses, all regression coefficients (weights) are significant at the significance level of 0.05 ($p < 0.05$).

Table 2. Correlations among main variables

Variables	M	SD	1	2	3	4	5	6	7
1. Facilities	3.90	.56	–						
2. Atmosphere	3.73	.56	0.450*	–					
3. Employee	3.64	.64	0.570*	0.530*	–				
4. Price	3.60	.60	0.510*	0.480*	0.490*	–			
5. Food	3.69	.57	0.600*	0.550*	0.550*	0.600*	–		
6. Satisfaction	3.71	.56	0.610*	0.560*	0.630*	0.610*	0.720*	–	
7. Intention to recommend	3.67	.59	0.490*	0.480*	0.500*	0.490*	0.630*	0.710*	–

Note: *p < 0.05.

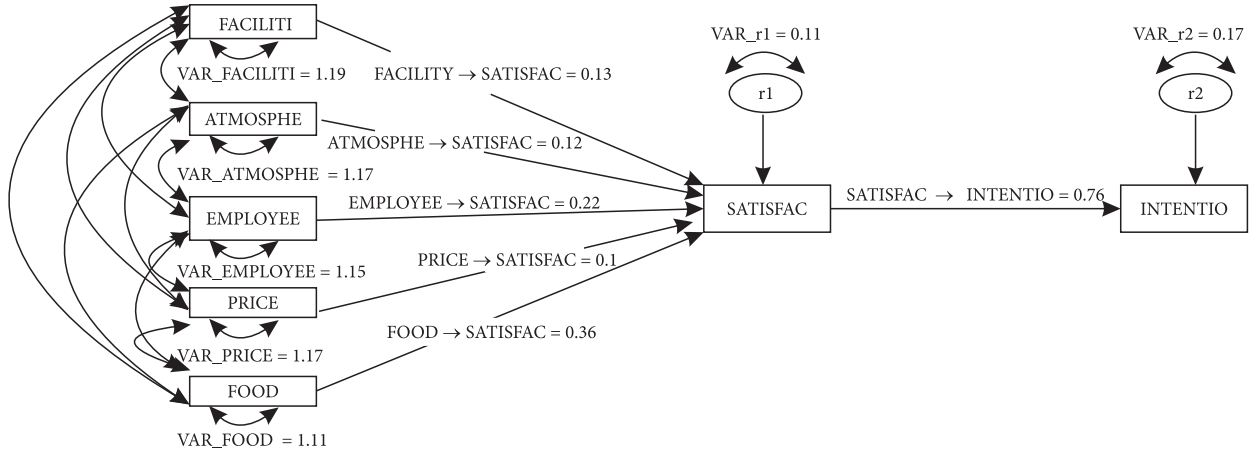


Figure 3. Path model output

4.4. Hypotheses testing results

Table 3 summarizes hypotheses testing results of the study. These regression analyses were carried out by the Ωnyx software. Furthermore, Table 3 is divided into 5 columns: hypotheses, regression weights, t-value, p-value, and results. In summary, all hypotheses were supported.

Table 3. Summary of hypotheses testing results

Hypotheses	β	t	p	Results
H1: Facilities --> Satisfaction	0.13	3.630	0.000***	Supported
H2: Atmosphere --> Satisfaction	0.12	3.060	0.002**	Supported
H3: Employee --> Satisfaction	0.22	5.480	0.000***	Supported
H4: Price --> Satisfaction	0.10	2.650	0.008***	Supported
H5: Food --> Satisfaction	0.36	8.210	0.000***	Supported
H6: Satisfaction --> Intention to recommend	0.76	20.100	0.000***	Supported

Note: R = 0.790, R² = 0.630, F = 134.31.

4.5. Path analysis

Path analysis was developed around 1918 by geneticist Sewall Wright. Path analysis is used to test a causal model. It is theory-driven idea. Thus, it is necessary to have a priori

idea of causal relationship of the study under consideration. In prior section, regression analyses were performed to obtain direct effects (path coefficients). In this section, path analysis relies on those path coefficients (Path Analysis, 2020). Path analysis uses (standardized) regress coefficients to compute direct, indirect, and total effects. The simple form of path analysis can be written as direct effect + indirect effect = total effect. Again, the direct effects (path coefficients) are obtained from regression analysis in the preceding section. The indirect effect could be computed by taking, for example, the standardized coefficient of facilities multiply by the standardized coefficients of satisfaction and intention to recommend.

- Path 1: Facilities --> Overall satisfaction --> Intention to recommend;
- Path 2: Atmosphere --> Overall satisfaction --> Intention to recommend;
- Path 3: Employee --> Overall satisfaction --> Intention to recommend;
- Path 4: Price --> Overall satisfaction --> Intention to recommend;
- Path 5: Food --> Overall satisfaction --> Intention to recommend.

4.6. Testing the indirect effects

As already mentioned, this study includes testing of the indirect effects. In so doing, it would test whether individual paths: antecedents (e.g. facilities) → (through) overall

satisfaction → intention to recommend new customers to co-working spaces of their choices are significant, or not. What is indirect effect? Memon et al. (2018) state that an indirect effect refers to the transmission of the X (independent variable) through M (mediator) to Y (dependent variable). Based on the conceptual framework of the study, there are five indirect effects, testing the indirect effects of the antecedents (facilities, atmosphere, employee, price, and food) on the dependent variable (intention to recommend). According to Zhang and Wang (2017), it is possible that an antecedent (e.g. facilities) may have an indirect effect on a dependent variable (intention to recommend), but no direct effect from antecedent to dependent variable (as demonstrated in Figure 4). As mentioned, the indirect effects are analysed by the Jamovi software. Figure 4 is generated by Jamovi. The direct effect from facilities to intention to recommend is intentionally left out to make the testing of indirect effect explicit for demonstration purpose.

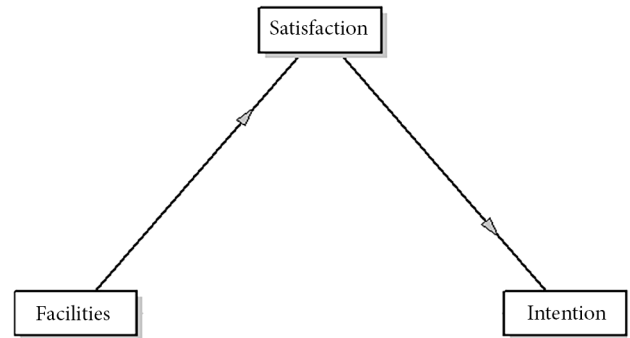


Figure 4. Indirect effect, facilities on the intention to recommend

- Indirect effect 1: Facilities --> Overall satisfaction --> Intention to recommend;
- Indirect effect 2: Atmosphere --> Overall satisfaction --> Intention to recommend;
- Indirect effect 3: Employee --> Overall satisfaction --> Intention to recommend;
- Indirect effect 4: Price --> Overall satisfaction --> Intention to recommend;
- Indirect effect 5: Food --> Overall satisfaction --> Intention to recommend.

Table 4 summarizes the results of hypothesis testing of the indirect effects, all significant. This implies that all antecedents have significant indirect effects on intention to recommend. By the way, the analyses of the indirect effects were conducted by the Jamovi software.

Table 5 summarizes all direct, indirect, and total effects of the five paths leading to intention to recommend. The analyses below rely on regression weights from Figure 3. In short, these regressions weights are properly computed to serve as bases for computations of direct, indirect, and total effects. In summary, there are five paths leading to intention to recommend (see Table 5). In addition, Table 5 provides ranking based on sizes of total effects of the five paths.

Table 4. Indirect effects

				95% C.I.					
Type		Effect	Estimate	SE	Lower	Upper	β	z	p
Indirect	1	Facilities ⇒ Satisfaction ⇒ Intention	0.3756	0.0350	0.30694	0.444	0.4034	10.72	<.001
Indirect	2	Atmosphere ⇒ Satisfaction ⇒ Intention	0.3800	0.0357	0.30650	0.453	0.3600	10.13	<.001
Indirect	3	Employee ⇒ Satisfaction ⇒ Intention	0.4370	0.0405	0.35757	0.516	0.4107	10.79	<.001
Indirect	4	Price ⇒ Satisfaction ⇒ Intention	0.3500	0.0345	0.28200	0.417	0.3550	10.14	<.001
Indirect	5	Food ⇒ Satisfaction ⇒ Intention	0.3980	0.0413	0.31700	0.479	0.3820	9.62	<.001

Table 5. Path analysis results

Paths	Path analysis			Ranking
	Direct effects	Indirect effects	Total effects	
Path 1: Fa --> Sa --> In	–	(0.13)(0.71) = 0.10*	0.10	3
Path 2: At --> Sa --> In	–	(0.12)(0.71) = 0.09*	0.09	4
Path 3: Em --> Sa --> In	–	(0.22)(0.71) = 0.17*	0.17	2
Path 4: Pr --> Sa --> In	–	(0.10)(0.71) = 0.08*	0.08	5
Path 5: Fo --> Sa --> In	–	(0.36)(0.71) = 0.27*	0.27	1*

Note: * p < 0.05, Fa = Facilities, At = Atmosphere, Se = Service, Pr = Price, Fo = Food, Sa = Overall satisfaction, In = Intention to recommend.

5. Discussion

As mentioned at the onset, gaining new customers for co-working spaces is still challenging for many co-working space operators from around the globe. This reflects a problem from a practical standpoint. Thus, this research attempts to address this practical problem by developing a hypothesized path model, capturing paths leading to intention to recommend co-working space to new customers by current customers, serving as a conceptual framework of the study and as new lens for the management of co-working space to see what factors leading to intention to recommend more clearly. This thought is developed based on the premise that, if current customers recommend co-working spaces of their choices to new customers, the problem of gaining new customers would, likely, be less problematic. However, from a theoretical standpoint, there is not a model readily available that could explain the phenomenon of interest, paths leading to intention to recommend new customers to co-working spaces. This reflects a problem from a theoretical standpoint. Below provides discussions on how these problems from both theoretical and practical standpoints are addressed, in the context of theoretical and practical implications.

5.1. Theoretical implication

For theoretical contribution, this study developed a new model that supported by empirical data to capture the phenomenon of interest at hand. Initially, there is not a theoretical model that could explain the phenomenon of interest. Thus, a conceptual (hypothesized) path model is needed. Given this need, the hypothesized path model was developed particularly for this study, and tested against the research data. Based on the results of the regression analyses, the hypothesized path model was significantly supported by the empirical research data of the study.

Regression analysis, the first stage of the regression round, is to obtain regression coefficients. This is mandatory, if using the regression approach to conduct path analysis, because path analysis, again, relies on the regression coefficients for computations of the direct, indirect, and total effects. The second stage is to conduct path analysis (using regression coefficients from the first round). The third (final) stage is testing of the indirect effects of the hypothesized paths in the hypothesized model of the study. This is to test whether the antecedents have significant (indirect) effects on intention to recommend (dependent variable), or not. In the context of this study, significant indirect effects are desirable. Based on the analyses, all indirect effects are all significant. Finally, all paths leading to intention to recommend are ranked (see Table 5).

This section compares the regression analysis results of this research study (see Table 3) with the results of previous research studies relevant to this research study. First, regression analyses were undertaken to test six direct relationships in the hypothesized path model of the study. Six hypotheses were proposed and tested. Based on the results of the regression analyses, the first hypothesis is to test

the effect of facilities on overall satisfaction. This is significant at 0.05 level of significance ($p < 0.05$). This result is consistent with the work of Sia et al. (2018). They conducted a study titled "Facilities and Maintenance Services for Sustainable High-Rise Living", and founded that better facilities lead to higher satisfaction. The second hypothesis is to test the effect of atmosphere on overall satisfaction. The result is also significant at 0.05 level of significance ($p < 0.05$). The result is consistent with the work of Oztas et al. (2016). They conducted a study called "The Relationship of Atmosphere, Satisfaction, and Loyalty: Sample of a Fitness Center." They proposed the effect of atmosphere on satisfaction in their study, and found that the effect is significant at 0.05 level of significance ($p < 0.05$). The third hypothesis is to test the effect of employee on overall satisfaction. Based on the result of this study, the effect is significant at 0.05 level of significance ($p < 0.05$). This is consistent with the work of Kattara et al. (2014). They conducted a study titled "The Impact of Employees' Behavior on Customers' Service Quality Perceptions and Overall satisfaction." They discovered that employee had a positive effect on satisfaction. The fourth hypothesis is, the effect of price on overall satisfaction. Based on the result, the relationship is significant at 0.05 level of significance ($p < 0.05$). This is consistent with the work of Ding and Jian (2010). They conducted a study on "Perceived Price Fairness Based on the Attribution Theory and the Influence to Customer Satisfaction and Loyalty," and found that price was one of the determinants of satisfaction. The fifth hypothesis is, the effect of food on overall satisfaction. The relationship is significant at 0.05 level of significance. This is consistent with the work of Rashid et al. (2014). They studied the "Impact of Service and Food Quality on Customer Satisfaction among Generation y for the Fast Food Restaurant in Malaysia." The last hypothesis is, the effect of overall satisfaction on intention to recommend. The result is significant and consistent with the work of Casaló et al. (2017). They found that satisfaction had a positive effect on intention to recommend. In short, they found that a satisfaction on Instagram account had a positive effect on intention to recommend other (new) customers to use Instagram. Overall, all hypotheses are significant and consistent with previous researches. It basically means the path model for explaining paths leading to the intention to recommend are successfully built. However, the data analysis does not stop here. There are two major analyses: path analysis and testing of the indirect effects.

Given the successful development of the path model, path analysis can automatically be conducted, because the (standardized) regression coefficients are needed in path analysis. Again, these regression coefficients are used to compute direct, indirect, and total effects of individual paths leading to intention to recommend co-working space to new customers by existing customers. The results of path analysis will not be compared with the results of prior researches, because, there is not a similar study. However, path analysis (Table 4) could help manager see clearly the total weights of critical paths leading to

intention to recommend co-working spaces of choices to new customers by current customers. Testing of indirect effects are all significant. The indirect effects on antecedents on intention to recommend are all significant. Like path analysis, the results of the indirect effects will not be compared to previous researches, because no study has conducted a similar model. Finally, all paths leading to intention to recommend new customers to co-working space of their choices are ranked. It could be seen clearly from Table 5 which path is most significant, and vice versa.

5.2. Practical implication

For practical contribution, this paper develop what antecedent variables affect overall satisfaction, in turn, intention to recommend. There are five variables affecting overall satisfaction: facilities, atmosphere, employee, price, and food. Thus, it is important that managers pay attention to these antecedents leading to overall (customer) satisfaction, in turn, to intention to recommend. A combination of facilities, atmosphere, employee, price, and food have to be just right in order to make customers satisfied overall. Overall satisfaction is only the means, not an end in itself. Based on the data analysis, overall satisfaction leads to intention to recommend new customers by current customers to co-working space of their choices. To gain new customers, intention to recommend to new customers, overall satisfaction must occur on the minds of customers first, and never forget that antecedents make customers satisfied (based on the analyses). This research study has discovered pathway leading to intention to recommend. Thus, co-working space managers should foster these pathways in such ways that current customers would recommend co-working spaces of their choices to new customers. In addition, managers should be reminded that paths leading to intention to recommend have different levels of effects on the minds of the customers. Based on the research findings (ranging from the highest to lowest effects), food, employee, facilities, atmosphere, and price have positive effects on customers' overall satisfaction. Thus, managers should always keep up their food services to par, or beyond customers' satisfaction, because food is ranked no. 1 in the minds of the existing (Thai) customers, but not to say that the rest of antecedents are not important.

Conclusions

As mentioned at the beginning of the paper, this research is motivated by two major standpoints. The first is from a practice standpoint. Research on co-working space points out that attracting new customers posts a great challenge to many co-working space operators around the globe. This is certainly problematic in practice. Given this practical problem, this research postulates that if current co-working customers recommend co-working of their choices to new customers, the problem of not being able to attract new customers would be alleviated. However, previous researches do not offer a (theoretical) model that could

explain what factors and paths leading to intention to recommend new customers to co-working spaces by current customers. Thus, there is a gap in previous research. This becomes a second gap. Thus, this research develops a path model, leading to intention to recommend, based upon exiting literature, to fill the second gap.

Given the development of the hypothesized path model, the overall research objective is set to conduct path analysis on paths leading to intention to recommend co-working space to other new customers. To satisfy the overall objective, five main analyses are carried out: correlation analysis, regression analysis, path analysis, testing the indirect effects of antecedents on intention to recommend new customers by current customers to co-working spaces of their choices, and ranking all paths leading intention recommend. If regression approach is taken to analyse path analysis, regression analysis is required, because path analysis relies on regression coefficients for computations of direct, indirect, and total effects of paths leading to intention to recommend.

For regression analyses, six hypotheses are tested. The results are all significant. The regression weights, obtained from regression analyses, are required to serve as direct and indirect effects in further analysis, path analysis. The total effects are computed based on the direct and indirect effects. Testing of the indirect effects of individual paths are tested, all significant. Rankings on individual paths leading to intention to recommend are assigned. This is very helpful for managers of co-working spaces.

Why path analysis? Path analysis could help co-working space managers to see more clearly on what paths leading to intention to recommend new customers by current customers. In addition, path analysis could also help managers to see total weights of individual paths leading to intention to recommend, through the rankings of the (individual paths') total effects. As a result, the co-working space managers could be more effective in terms of prioritizing and fostering paths leading to intention to recommend new customers by existing customers. Thus, it is recommended that managers of co-working space should develop strategies for fostering paths leading to intention to recommend new customers to their co-working spaces, based on the results discovered in this study.

A co-working space, where this research is conducted, is heavily populated by students. This could be viewed as a limitation. Thus, this research recommends that a similar research should be carried out at co-working spaces in other areas; where, there are more working adults, rather than students. It would provide opportunities to test whether the results of this research would hold true where population contexts are differed in further studies.

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