Physical classroom environment affects students' satisfaction: Attitude and quality as mediators

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Boosting student satisfaction with courses is undoubtedly a key challenge for higher education institutions. Our research was designed to understand better the role of the physical classroom environment, attitude toward the course, and perception of the quality of the course in forming student satisfaction with the course. Responses to paper-based surveys were collected during classes from students majoring in hospitality and tourism in 5 high-level universities in South Korea. We analyzed 401 responses by using a series of multiple regression analyses based on forward selection. The results showed that air quality, odor, noise, and equipment/amenity are essential physical classroom environment factors in determining attitude, perception of quality, and satisfaction. Attitude toward the course completely mediates the effect of odor on satisfaction, and quality partially mediates the impact of equipment/amenity on satisfaction. Overall, in this study we identified the salient role of certain features of the classroom physical environment in building students' satisfaction with a course via attitudes toward, and evaluation of the quality of the course.

During the last decade, higher education institutions in South Korea have faced increasingly competitive markets (Han, Kiatkawsin, Kim, & Hong, 2018). Particularly, a remarkable decrease in the number of high school students in South Korea from 1.944 million in 2011 to 1.538 million in 2018 has resulted in a significant decline in college enrollment and has boosted competition among higher education institutions (Han & Yoon, 2015). In such a competitive environment, it is not surprising that university administrators are active in developing effective strategies and seeking possible ways to ensure that their institution has an advantage (Han & Yoon, 2015; K.-W. Lee, Yuan, Hwang, & Kim, 2012). In South Korea, identifying and fortifying the significant factors that induce student satisfaction is currently regarded by university operators as extremely important (Han et al., 2018).

In their endeavors to increase students' overall satisfaction with courses and college life, university operators actively enhance not only the quality of the education itself (e.g., courses, curriculum, and programs), but also the physical settings that are directly and indirectly related to education (e.g., facilities). Those in charge of the operation of the institutions take advantage of diverse attempts to increase student satisfaction with the courses (e.g., loyalty to the program, better relationships with faculty, higher graduate program enrolment rate, long-term relationship with the institution; Han et al., 2018). Given this, how to help university students have satisfactory classroom experiences and make them evaluate courses positively

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is undeniably critical for instructors and operators in higher education in Korea (K.-W. Lee et al., 2012; Madanoglu & Martin, 2003).

In many studies on consumer behavior, marketing, and tourism the findings have indicated that physical environment, customer attitude toward the behavior, and overall quality are crucial drivers of customer satisfaction (Bitner, 1992; Gremler & McCollough, 2002; Han & Yoon, 2015; Jani & Han, 2014; Oliver, 2010). Although these researchers have examined the individual role of each of these concepts that are vital in the student evaluation and decision-formation process, few researchers have investigated the intricate interrelationships among physical classroom environment, student attitude toward the course, and their perception of the quality, in the formation of student satisfaction with the course. Moreover, research to assess the mediating effect of attitude and quality in the higher education sector, taking a systematic approach, has been scarce (e.g., Baron & Kenny, 1986). With the aim of filling these gaps in the extant education literature, in the current study we proposed the following research objectives:

Objective 1: To investigate the role of physical classroom environment in influencing students' attitude toward, overall quality assessment of, and overall satisfaction with, the course.

Objective 2: To examine the mediating role of attitude toward, and overall quality assessment of, a course in the relationship between physical classroom environment and overall satisfaction with the course.

Objective 3: To identify the relative importance among the components of the physical classroom environment in generating students' attitude toward, overall quality assessment of, and overall satisfaction with, a course.

Literature Review

Influence of Physical Classroom Environment

Physical environment indicates the man-made atmospherics/physical surroundings in which a product/service is provided (Bitner, 1992). The major elements of the physical environment include: (a) ambient conditions, such as temperature, air quality, noise, music, odor; (b) spatial layout and functionality including room layout, equipment, furnishings, and (c) signs, symbols, and artifacts (Bitner, 1992). In their studies of service quality in higher education researchers (e.g., Han et al., 2018; Mansori, Vaz, & Ismail, 2014) have included tangible and intangible dimensions in the model, and have reported significant relationships to student cognition, affect, satisfaction, and future behaviors. Such dimensions of physical classroom environment comprise the tangible elements of equipment, amenity, furnishing, color and design, and room layout, and the intangible elements of air quality, temperature, odor, noise, and lighting. In the present study, these physical environment factors are, therefore, utilized.

The physical environment of a place is considered to be a form of nonverbal interaction between patrons and place (Bitner, 1992), and these physical surroundings undeniably affect the patrons' cognition/perception relating to quality/image of the place, attitude/affect, and overall satisfaction evaluation of the place (Jani & Han, 2014). Indeed, much empirical evidence exists linking physical environment with consumer attitude, perception of quality, and satisfaction in many sectors of hospitality, tourism, and education, (e.g., Han et al., 2018; Jani & Han, 2014; Mansori et al., 2014). In each of the hypotheses that follow "a" represents the dimension of air "b" = temperature, "c" = odor, "d" = noise, "e" = layout, "f" = equipment and amenity, "g" = furnishing, "h" = color and design, and "i" = lighting. We hypothesized the following:

Hypotheses 1a, b, c, d, e, f, g, h, and i: Physical classroom environment will positively affect students' overall satisfaction with the course.

Hypotheses 2a, b, c, d, e, f, g, h, and i: Physical classroom environment will positively affect the students' attitude toward the course.

Hypotheses 3a, b, c, d, e, f, g, h, and i: Physical classroom environment will positively affect the students' perception of the overall quality of the course.

Attitude Toward the Course

Attitude toward an entity is described as a person's favorable or unfavorable behavior/tendency toward a certain entity based on his/her evaluation of the entity (Eagly & Chaiken, 1993). Similarly, in the education sector, Gremler and McCollough (2002) described *attitude* as students' general feeling toward the class (either favorable or unfavorable) based on satisfaction through their own efforts and the instructors' performance. Empirical cues in extant studies in diverse contexts have revealed that individuals' favorable attitude toward an object elicits satisfactory evaluation of it and a positive decision for it (Gremler & McCollough, 2002; C.-K. Lee, Reisinger, Kim, & Yoon, 2014). In the context of volunteers working in the tourism sector, C.-K. Lee et al. (2014) also found a positive association between attitude toward volunteering and satisfaction. Consistently, in the education context, Gremler and McCollough (2002) examined the outcomes of student attitude, and found that undergraduate students' overall attitude significantly contributes to enhancing their evaluation of the instructor and to satisfactory course evaluation. The findings in these empirical studies support the positive association between attitude toward an entity and satisfaction; therefore, we hypothesized the following:

Hypothesis 4: Students' attitude toward a course will positively affect their overall satisfaction with the course.

Overall Course Quality

Perception of overall quality refers to patrons' thought-based general assessment of the relative superiority or inferiority of a particular product or service and its key features (Yang & Peterson, 2004). Consistently, *perception of overall quality* of the course, in this study, can be described as college students' overall cognitive assessment/impression of the comparative excellence or mediocrity of a specific course and its main attributes. Because overall quality is critical in explicating individuals' satisfaction generation and decision formation, it is a factor often utilized in research conducted in the hospitality/tourism and education sectors. In explicating customer postpurchase behaviors, Yang and Peterson (2004) found that overall quality of a product/service significantly elicits patrons' satisfactory experiences with the product/service. In the tourism sector, Han (2013) found product quality and image were the major cognition dimensions contributing to increasing customers' level of product satisfaction. In his research, he found that indoor atmospherics significantly influenced quality perception. The results of these studies are in line with Oliver's (2010) notion that when customers assess the quality of a service to be high, they are more likely to feel satisfied with their service consumption experiences. Thus, we hypothesized:

Hypothesis 5: Perception of overall quality of a course will positively affect students' overall satisfaction with the course.

Overall Course Satisfaction

Satisfaction is a fundamental concept in consumer behavior, marketing, tourism, and education (Han & Yoon, 2015; McCollough & Gremler, 1999; Oliver, 2010; Yang & Peterson, 2004). One's overall satisfaction with a consumption experience reflects one's cumulative impression of the product/service performance (Yang & Peterson, 2004). In the higher education sector, treating college students as customers and satisfying their various wants and needs both in and outside of classes has also become a critical issue during the last 20 years (Han et al., 2018; McCollough & Gremler, 1999). We applied this tenet to the higher education context in our research, so that *overall satisfaction with the course* refers to students' overall evaluative summary of their experience with the course based on the difference between their prior expectation of the course and its actual performance.

Method

Measures and Survey Development

In our study, we used well validated measures in the existing literature (Bitner, 1992; Han, 2013; Han &

Hwang, 2014; Han et al., 2018; Morrison, Gan, Dubelaar, & Oppewal, 2011; Oh, 2000; Oliver, 2010; Yang & Peterson, 2004), and modified them to fit the setting of our research. Multiple-item measures were utilized to assess all study constructs. In particular, we used 18 items (two for each dimension) rated on a 7-point scale ranging from 1 = e*xtremely disagree* to 7 = *extremely agree* to evaluate nine dimensions of the classroom physical environment. Attitude toward the course was assessed with six items using a 7-point semantic differential scale (e.g., "I think taking this course is..." with response options ranging from 1 = *boring* to 7 = *exciting*"). Perception of overall quality (e.g., "Overall, the quality of this course is great") and overall satisfaction (e.g., "Overall, I am satisfied with this course") were measured with two items and three items, respectively, rated on a 7-point scale ranging from 1 = *extremely disagree* to 7 = *extremely agree*. All measurement items were modified to be appropriate in a classroom setting. The survey comprising these measures was pretested and reviewed by two professors in the discipline of hospitality and tourism to improve the content validity as recommended (DeVellis, 2016; Lawshe, 1975) and provide the final version of the survey items.

Participants and Procedure

Before we commenced our study, we received ethical approval to conduct the research from professors at the five universities at which we conducted our study, which are situated in metropolitan cities in South Korea, and all of which have hospitality and tourism programs that are widely believed to be of a high quality level and reputation, and to have a relatively greater numbers of students compared to programs at other institutions in South Korea. To reduce a random effect among the universities, we selected universities that have a similar level of academic reputation. Survey forms were distributed during class periods to students majoring in hospitality and tourism. With help from the course instructor, the participants were given detailed information about the research objectives. All participants were requested to complete the survey on a voluntary basis. No extra credit or benefit was given for the survey participation.

The survey forms were returned to the instructor immediately after completion. Initial data were gathered from 425 responses. After the elimination of unusable responses and outliers, responses from 401 students (94.35%) were found to be suitable for data analysis. All respondents were undergraduate students majoring in hospitality and tourism. Of the 401 participants, 151 students were seniors (37.7%), 125 were sophomores (31.2%), 85 were juniors (21.1%), and 40 were freshmen (10.0%). Among them, 170 students were men (42.4%) and 231 were women (57.6%). The mean age of the respondents was 22.7 years (*SD* = 4.0), age range from 18 years to 29 years.

Results

Quality Testing of Measures

Prior to testing the proposed associations, we performed quality testing of the measures. A confirmatory factor analysis, measuring root mean square error of approximation (RMSEA), comparative fit index (CFI), incremental fit index (IFI), and Tucker–Lewis index (TLI) with AMOS 20 was run using a maximum likelihood estimation approach. Results of the assessment revealed that the model was an acceptable fit to the data (χ^2 = 894.51, *df* = 310, *p* < .001, χ^2/df = 2.89, RMSEA = .069, CFI = .94, IFI = .94, TLI = .92). All standardized loadings for research constructs were significant at the .01 level. Composite reliability was calculated to determine the internal consistency among the measures for each related construct (Hair, Black, Babin, & Anderson, 2010). The values of scale reliabilities ranged from .75 to .95 as follows: air quality = .95, temperature = .87, odor = .93, noise = .89, layout = .85, equipment and amenity = .75, furnishing =.81, color and design = .81, lighting = .75, attitude toward the course = .92, perception of overall quality of the course = .90, and overall satisfaction with the course = .91. These values all exceeded the threshold of .70 recommended by Hair et al. (2010).

Next, the convergent validity using average variance extracted (AVE) values was checked. Our results

showed that the AVE values for our study variables ranged from .59 to .91 as follows: air quality = .91, temperature = .78, odor = .88, noise = .79, layout = .73, equipment and amenity = .59, furnishing =.68, color and design = .68, lighting = .59, attitude toward the course = .67, perception of overall quality of the course = .82, and overall satisfaction with the course = .77. These values were greater than the suggested cut-off of .50 (Fornell & Larcker, 1981). Thus, convergent validity for all study constructs was established. These AVE values were found to be greater than the squared correlations between a pair of variables, which retained discriminant validity (Fornell & Larcker, 1981). Overall, based on the results of the model evaluation, an adequate level of reliability and construct validity was established. Furthermore, multicollinearity among the variables of a classroom physical environment was examined using the values of variance inflation factor. The results showed that the concern of multicollinearity was absent as all the values, ranging from 1.38 to 2.68, satisfied the recommended threshold of 10 (Hair et al., 2010).

Hypothesis Testing

To test the hypothesized relationships and the proposed mediating impact, a series of multiple regression analyses were performed. We followed Baron and Kenny's (1986) guidelines, which constitute the most widely accepted mediation/moderation test. In the present study the following abbreviations were used: Air. = air quality, Temp. = temperature, EA = equipment and amenity, Furnish. = furnishing, CD = color and design, Light. = lighting, AC = attitude toward the course, OQC = perception of overall quality of the course, OSC = Overall satisfaction with the course. We formulated four regression equations.

The results of the series of multiple regression analyses are exhibited in Table 1 and Figure 1. In Equation 1-1, attitude toward the course was regressed on the factors of physical classroom environment. As seen, our results indicated that odor and equipment and amenity have a positive and significant influence on attitude toward the course, but air quality, temperature, noise layout, furnishing, color and design, and lighting did not have a significant impact on attitude toward the course. Hence, H1c and H1f were supported, but H1a, H1b, H1d, H1e, H1g, H1h, and H1i were not supported. A total of 13% of the variance in attitude toward the course was explained in this regression equation. These findings imply that odor and equipment/amenity in classrooms were essential in generating students' favorable attitude toward the course.

In Equation 1-2, overall quality of the course was regressed on the dimensions of physical classroom environment. These findings revealed that the students' perception of overall quality of the course was a positive and significant function of odor, noise, and equipment and amenity, but the air quality, temperature, layout, furnishing, color and design, and lighting were not significantly associated with students' quality assessment of the course. These findings supported H2c, H2d, and H2f, but did not support H2a, H2b, H2e, H2g, H2h, and H2i. This equation accounted for 18% of the total variance in overall quality of the course. The results showed that odor, noise, and equipment and amenity are statistically significant predictors of students' overall quality assessment of the course.

In Equation 2, overall satisfaction with the course was regressed on physical classroom environment. Our findings (see Figure 1) showed that students' overall satisfaction with the course was a positive and significant function of air quality, odor, and equipment and amenity among the physical environment dimensions, supporting H3a, H3c, and H3f. However, temperature, noise, layout, furnishing, color and design, and lighting were not significantly related to satisfaction. Thus, H3b, H3d, H3e, H3g, H3h, and H3i were not supported. This equation accounted for about 13% of the total variance in satisfaction. These results showed that air quality, odor, and equipment and amenity in classrooms appeared to be statistically significant determinants of students' satisfaction with the course.

Table 1. *Results of Multiple Regression Analysis*

Constructs	Beta (*t* value)	Constructs	Beta (*t* value)
Equation 1-1 (Adjusted R^2 = .13): AC = β_0 + β_1Air. + β_2Temp. + β_3Odor + β_4Noise + β_5Layout + β_6EA + β_7Furnish. + β_8CD + β_8Light. + ε		**Equation 1-2** (Adjusted R^2 = .18): OQC = β_0 + β_1Air. + β_2Temp. + β_3Odor + β_4Noise + β_5Layout + β_6EA + β_7Furnish. + β_8CD + β_8Light. + ε	
H1a: Air. → AC	.14 (1.90)	H2a: Air. → OQC	.12 (1.69)
H1b: Temp. → AC	.09 (1.22)	H2b: Temp. → OQC	.12 (1.82)
H1c: Odor → AC	.15* (2.25)	H2c: Odor → OQC	.17**(2.61)
H1d: Noise → AC	.10 (1.77)	H2d: Noise → OQC	.14* (2.52)
H1e: Layout → AC	.04 (0.71)	H2e: Layout → OQC	.05 (0.83)
H1f: EA → AC	.25**(4.04)	H2f: EA → OQC	.22**(3.78)
H1g: Furnish. → AC	.04 (0.58)	H2g: Furnish. → OQC	.03 (0.56)
H1h: CD → AC	.08 (1.09)	H2h: CD → OQC	.02 (0.32)
H1i: Light. → AC	.08 (1.06)	H2i: Light. → OQC	.02 (0.25)
Equation 2 (Adjusted R^2 = .13): OSC = β_0 + β_1Air. + β_2Temp. + β_3Odor + β_4Noise + β_5Layout + β_6EA + β_7Furnish. + β_8CD + β_9Light. + ε		**Equation 3** (Adjusted R2 = .71): OSC = β_0 + β_1 AC + β_2 OQC + ε	
H3a: Air. → OSC	.16* (2.09)	H4: AC → OSC	.16** (5.02)
H3b: Temp. → OSC	.10 (1.35)	H5: OQC → OSC	.76** (24.48)
H3c: Odor → OSC	.14* (2.17)		
H3d: Noise → OSC	.10 (1.80)		
H3e: Layout → OSC	.04 (0.68)		
H3f: EA → OSC	.14* (2.29)		
H3g: Furnish. → OSC	.05 (0.74)		
H3h: CD → OSC	.01 (0.15)		
H3i: Light. → OSC	.03 (0.39)		
Equation 4 (Adjusted R^2 = .72): OSC = β_0 + β_1Air. + β_2Temp. + β_3Odor + β_4Noise + β_5Layout + β_6EA + β_7Furnish. + β_8CD + β_9Light. + β_{10AC} + β_{11OQC} + ε		**Results of the mediation test**	
Air. → OSC	.04 (0.94)	Fulfilling Baron and Kenny's (1986) conditions, the magnitude of the relationship strength between odor and OSC (β =.14, *p* < .05) and between EA and OSC (β = .14, *p* < .05) in Equation 1 were considerably decreased to .01 (*p* > .05) and .07 (*p* < .05), respectively in Equation 4. Therefore, (a) AC and OQC are complete mediators in the Odor–OSC link; and (b) AC and OQC are partial mediators in the EA–OSC link (note that the Air.–OSC relationship, which was significant in Equation 1, did not satisfy Baron and Kenny's [1986] conditions).	
Temp. → OSC	.01 (0.35)		
Odor → OSC	.01 (0.24)		
Noise → OSC	.02 (0.62)		
Layout → OSC	.01 (0.09)		
EA → OSC	.07* (2.01)		
Furnish. → OSC	.03 (0.74)		
CD → OSC	.01 (0.16)		
Light. → OSC	.03 (0.72)		
AC → OSC	.16** (5.06)		
OQC → OSC	.77**(23.37)		

Note. Air. = air quality, Temp. = temperature, EA = equipment and amenity, Furnish. = furnishing, CD = color and design, Light. = lighting, AC = attitude toward the course, OQC = perceived overall quality of the course, OSC = overall satisfaction with the course. All beta values are standardized.
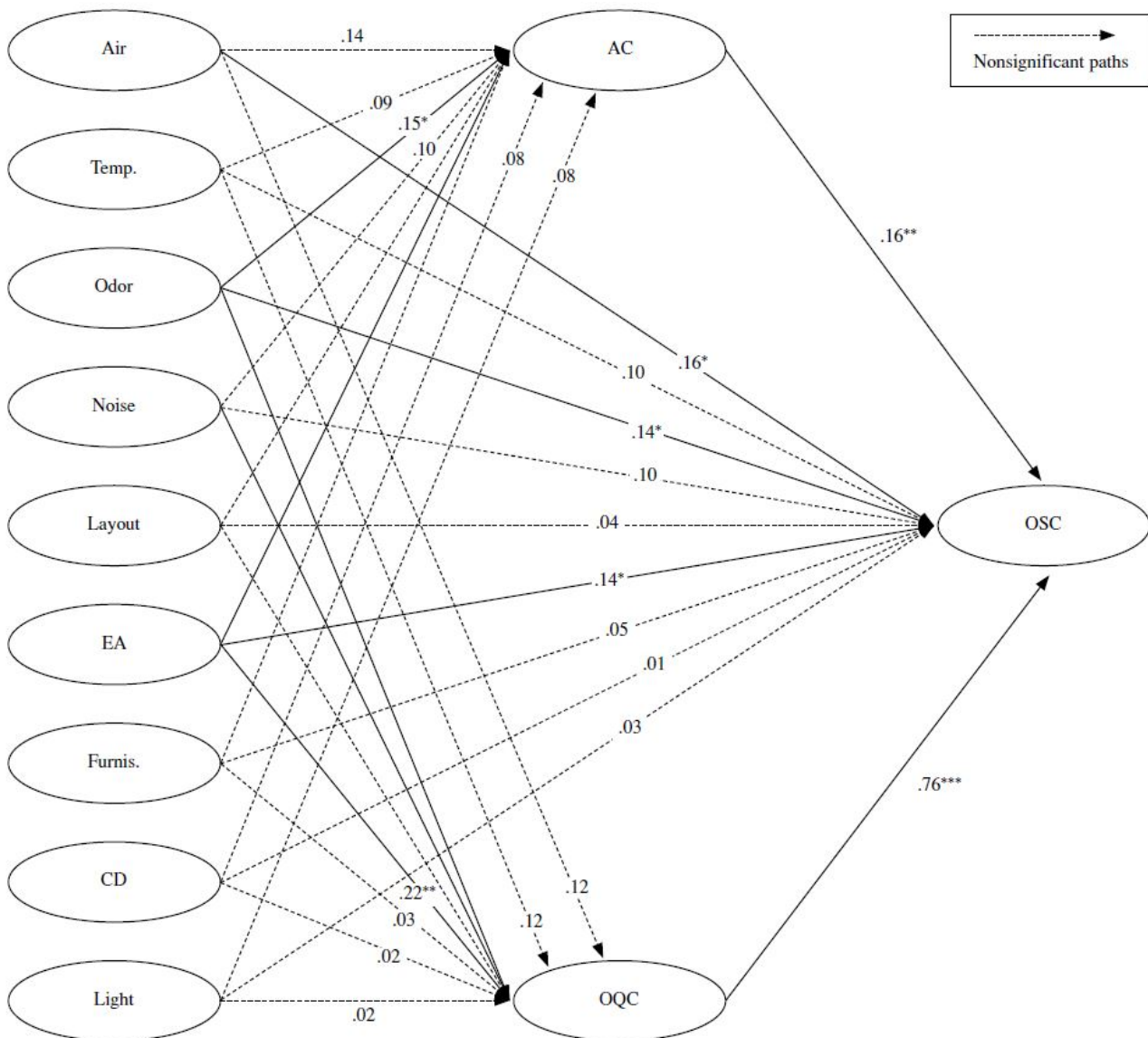* *p* < .05, ** *p* < .01.

Figure 1. Estimation of the structural model. Air. = air quality, Temp. = temperature, EA = equipment and amenity, Furnish. = furnishing, CD = color and design, Light. = lighting, AC = attitude toward the course, OQC = perceived overall quality of the course, OSC = overall satisfaction with the course.
* $p < .05$, ** $p < .01$.

In Equation 3, overall satisfaction with the course was regressed on attitude toward the course and overall quality of the course. As we expected, our results (see Table 1) showed that both attitude toward the course and perceived overall quality of the course positively and significantly affected overall satisfaction with the course. Therefore, H4 and H5 were supported. In this equation 71% of the total variance in satisfaction with the course was explained. These outcomes showed that students' attitude toward the course and their perception of the level of quality of the course positively influenced their level of satisfaction with the course.

In Equation 4, overall satisfaction with the course was regressed on both physical classroom environment factors and mediator variables (attitude and perceived quality). Our findings (see Table 1) revealed that the two mediators, namely attitude toward the course and overall perception of quality of the course, had a significant influence on overall satisfaction with the course, and equipment and amenity exerted a significant impact on satisfaction. However, air quality, temperature, odor, noise, layout, furnishing, color and design, and lighting no longer exerted a significant impact on overall satisfaction with the course.

Thus, only two components of the physical classroom environment, odor and equipment/amenity, satisfied the requirements suggested by Baron and Kenny (1986). Fulfilling Baron and Kenny's (1986) conditions, the magnitude of the strength of the relationships between odor and satisfaction and between equipment/amenity and satisfaction in Equation 2 were both considerably decreased in Equation 4. These results indicated that attitude toward the course and perception of overall quality of the course completely mediated the impact of odor on satisfaction. Attitude and perception of quality partially mediated the influence of equipment and amenity on satisfaction because the equipment/amenity–satisfaction influence weakened but was still significant in Equation 4.

Discussion

Our research was an empirical endeavor to explicate how student satisfaction with a course increases by centering the role for the students of the multiple dimensions of physical classroom environment, attitude toward the course, and their perception of overall quality of the course. A quantitative approach with a field survey was used. We identified physical classroom environment factors that were important in determining overall satisfaction, and identified the roles of attitude toward the course and perception of overall quality of the course as mediators. In addition, the utmost importance of course quality in increasing satisfaction was uncovered. The conceptualization of the present research covering all research variables was generally supported. Moreover, the proposed theoretical framework sufficiently accounted for student satisfaction with the course. Overall, in the present research we have successfully advanced knowledge about the physical classroom environment and its role in the process of generating student satisfaction with the course.

In this research, we found that attitude toward the course and perception of overall quality of the course acted as significant mediators within the proposed theoretical framework. Particularly, these variables completely mediated the effect of odor on satisfaction, and partially mediated the influence of equipment and amenity on satisfaction, as the effect of certain physical factors in the classroom became nonsignificant or noticeably weakened. This finding is theoretically meaningful in that, recognizing the significant mediating nature of attitude and quality perception, researchers should theorize using these factors as partial/complete mediators when developing a conceptual framework (or theory) for explicating students' decision-making process and behaviors. Our results also included an important practical aspect. Specifically, the findings of this research have provided higher education practitioners with critical information about the magnitude of the effect of physical classroom environment factors of odor in the classroom, electronic/electrical amenities, and basic amenities such as projector, television screen, audio system, black/whiteboard, and air-conditioning/heating system, on student overall satisfaction with a course, with the level of satisfaction depending significantly on the mediators of attitude toward the course and perception of overall quality of the course.

Our investigation of the relative criticality among study variables based on the result of the regression analysis indicated that the students' perception about the overall quality of the course played a prominent role in determining course satisfaction. Indeed, the result of the Fisher test, which is regarded as a precise method of comparing the strengths of regression paths, also indicated the impact of perceived overall quality on satisfaction was significantly greater than other study variables. From a practical standpoint, and reflecting the findings about the criticality of this cognitive factor, higher education practitioners should make every effort to boost students' perception regarding the overall quality of the course.

Our examination of the direct impact of physical classroom environment factors on subsequent variables revealed that equipment/amenity and odor significantly affect students' attitude toward a course. In addition, equipment/amenity, odor, and noise were identified in our study as significant drivers of students' perception of the overall quality of the course. Moreover, air quality, equipment/amenity, and odor were found to be significant direct determinants of overall satisfaction with the course. Recognizing the criticality of these physical classroom environment factors, staff of higher education institutions need to allocate financial and nonfinancial investments/resources toward increasing the classroom air quality, equipment/amenity, and pleasantness of odor, and toward decreasing noise level. Ultimately, this endeavor would contribute toward inducing college students' cognitive belief that overall quality of the course is high, eliciting their favorable attitude toward the course, and eventually enhancing their level of satisfaction with the course.

The present research had several limitations. First, the proposed theoretical framework was evaluated by using convenience samples of college students at five universities in South Korea. Hence, the generalizability of our research findings can be somewhat limited. To substantiate the generalizability, adopting a broader range of sampling is recommended in future research. Second, although the explanatory power of the proposed framework for overall satisfaction was strong, it can be further strengthened by integrating affective and social concepts such as emotional responses and perceptions of interactions with peers or with instructors, which can also be important in college classrooms. It could be meaningful for future researchers to broaden our theoretical framework by incorporating such variables.

Undeniably, maximizing student satisfaction with a course is one of the important challenges for every higher education practitioner. Given that, currently, little is known regarding the combined role of physical classroom environment, attitude, and quality perception in forming student satisfaction, in this study we addressed this lack by utilizing an empirical quantitative approach. In this study we have provided an increased understanding of physical classroom environment factors and their influence on consequent constructs and satisfaction with the course, while extending the existing literature, to build a meaningful theoretical framework and offer a clearer comprehension of the intricate process for generating students' satisfaction with courses.

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