

Lunch Social Preferences and Students' Evaluations of Campus Dining Environments: Case Study of Howard's Cafe and Sun Center

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Abstract. The students eat in the school's dining area and take some time to socialise there as well. This paper studies students' social preferences for lunch and their ratings of two school dining areas: Howard's Cafe and Sun Center. Anonymous survey data were gathered from 183 students. The type of lunch company for students was divided into three categories: eating alone, in a small group, or in a large group. Ordinary least squares regression was employed to determine whether there were any differences in students' general assessments of the two spaces and their sense of the communication environment. Based on the results, the students who chose social and group-oriented lunches rated Howard's Cafe more favorably than Sun Center. Lunch social preference significantly predicted the total rating difference of the two places and was especially related to the ratings for communication and socialisation. Therefore, Howard's Cafe is more suitable for the demands of students who want to be more sociable during lunchtime. The design of the school's dining area should consider various demands from different groups of students.

Keywords: campus dining spaces, lunch social preferences, student social interaction, communication environment

1. Introduction

Social practice has gradually become an essential component of people's lives over time. Sociologists frequently refer to the physical locations where people gather to communicate as "third places". These places are undoubtedly very necessary for the development of humanity, and due to their exceptional position in society, people from all over the world with different cultures and backgrounds can come together easily. Campus cafés and dining areas designed with care in an educational environment serve several purposes beyond providing food; they also function as essential social spaces to promote the all-round development of students' social skills and a sense of community [1]. Learning how students with different social inclinations use these areas helps to better understand what students need and how campus life is experienced by all.

Although the need for a "third place" has been recognised, judging whether a dining area is suitable is still relatively difficult because it depends on social circumstances. Academic research on commensality, the practice of eating together, has shown that the company of one's dining

companions significantly affects one's satisfaction with meals and behaviour as a student [2]. Additionally, the places people choose to eat when dining with friends or family are different and often depend on the impression they wish to leave. Although there are many such factors, it is still not known why some people want to use certain campus facilities more than others. Howard's Cafe and Sun Center are not the same, and the two offer different dining environments that support different experiences and social behaviours for students.

Given this gap, the focus of this study will be on the intersection of students' desires and space design. Recently, studies have shown that the physical and built environment of a university significantly affects socialisation; areas that can provide people with close proximity and opportunities to meet others are likely to foster all kinds of social relationships [3]. Based on the above analysis, the main research problem of this paper is: How do students' lunch social preferences affect the discrepancy in their evaluation of Howard's Cafe and Sun Center?

Therefore, this paper will investigate whether students who prefer eating in large social groups are more likely to give Howard's Cafe a higher rating than Sun Center. A total of 183 students anonymously provided answers in a survey. The independent variable, lunch social preference, divides the responses into eating alone, in a small group, or in a large group to observe how much interaction the students wish to have. To investigate how the above desires relate to assessments of dining areas, ordinary least squares (OLS) linear regression models are used to quantify the rating differences between the two areas. A moderator analysis is used to determine whether the effect of changing lunch social preferences varies among different students, for example, based on the social circumstances of eating with parents or teachers.

The central thesis of this paper is that students who are fond of the social dining environment are expected to give Howard's Cafe a higher rating than that for Sun Center. It is expected that this connection will be relatively strong in areas such as communication, socialisation, comfort and physical facilities; this reflects the evolution of campus dining halls into multi-level spaces for students to eat, study and socialise together [4].

2. Hypotheses development

2.1. Social preference in the choice of lunch and evaluation of dining spaces

Nowadays, a good dining area is expected to be more than just a place to eat. As different students have different social desires at lunchtime, the assessment of these dining areas will vary according to how well the environment provides opportunities for students to gather socially.

Based on the previous research, there is a connection between the structure of the environment and its functions for socialisation and group communication. Ahn and Davis [5] have reported that the environment of the school affects students' social and learning behaviour and their sense of belonging.

According to the results of Ahn and Davis [5], students are very fond of interacting with others and, as they wrote, "At this first stage of analysis, it is notable that social engagement is one of the most conspicuous factors in students' sense of belonging." This result has been verified repeatedly in this study. Wu and others [6] have also found that students who use the on-campus public dining area to eat enjoy it more when they are with friends, and the size of the group also affects how much fun they have there.

Therefore, students who are more fond of socialising at lunchtime may be more sensitive to the differences in the environments under study due to the structure of the environment that promotes communication and social interaction.

The social preference for lunch in this study will be represented by the preference of lunch partners. Students who prefer to have lunch with many people should focus more on the characteristics of communication and interaction. Therefore, it can be assumed that such students would give Howard's Cafe a higher score than Sun Center. Thus, the following hypothesis has been proposed:

Hypothesis 1: Students who are more fond of a social lunch environment will give a higher overall score to Howard's Cafe than to Sun Center.

2.2. Social preference in the choice of lunch and evaluation of communication environment

As the social preference for lunch choices has the strongest impact on people's perception of the environment, the most interesting results can be obtained from the assessment of communication-related features in these spaces.

Abu-Obeid and Atoun [7] have found that the environment can change people's feelings of social distance to a certain extent. In other words, students in areas with more diversity and opportunities for socialisation reported a higher level of socialisation than those in less open environments. Therefore, the structure of the environment will affect communication and interaction. Recent research on school cafeterias has also added to this; physical factors such as the arrangement of seats and noise levels directly affect the quality of students' social life [8].

Students who are very keen on having lunch with many people should pay more attention to the environment of the place, such as whether it is easy to talk to friends and what the general atmosphere of the space is like. Wu and others [6] have found that, in fact, the primary reasons for group diners' evaluations and behaviour within the public dining area of campus cafes are a desire for social interaction and mealtime conversation.

Thus, it can be assumed that the preference for lunch gatherings is more likely to affect people's sense of the communication environment and their willingness to communicate. Therefore, the following hypothesis has been proposed:

Hypothesis 2: Students who prefer a social lunch environment will give Howard's Cafe a higher score than Sun Center on the communication environment and social interaction.

3. Methods

3.1. Data collection

A total of 183 students participated in the survey for this study. A survey was carried out to find out what students think of the two school dining areas, Howard's Cafe and Sun Center, as well as with whom they prefer to have lunch gatherings and other relevant information. Participation was voluntary, and no one can be identified in the answers.

Some of the sections in the survey collected students' views on the two dining areas and with whom they prefer to eat lunch socially, as well as demographic data. The answers were collected and then a database was used for statistical analysis. Then, these data were used to build the independent, dependent and moderator variables in the study. It took about 4.5 weeks to collect, although it was made and finished before Spring break.

The participants are some older high school students at Saint Michael's University School; they are well educated and very eager to participate in this study. It is also where the author lives now, so it is relatively close to and frequently encountered by the group of interviewees. In addition, private school students with a similar level of education are more likely to respond in a generally

representative way, and it can also reflect the choices and behaviour of most high school students in modern society.

3.2. Independent variable

The independent variable of this study is Lunch Social Preference. Lunch social preference is shown in Question 9 of the survey: "Who would you like to spend your lunch time with?", and the standard method for research on commensality and social eating behaviour has been adopted for this question. Dunbar's [9] use of a similar survey is another example; it is also divided into categories to gauge the structure of social eating, and respondents need to indicate whether they eat alone or how large their dining group is. Based on the above approach, the responses to Question 9 can be divided into the categories of individuals, small groups (1–3 friends), and large groups, and thus a relatively accurate index of students' desire for social interaction during meals and their peer networks and social participation at lunchtime can be obtained [9].

The corresponding answers are shown in Table 1. A higher value indicates a stronger demand for a social-lunch setting.

Table 1. Response code and category

Code	Response Category
1	Prefer individual and quiet eating time
2	Prefer eating with 1–3 friends
3	Prefer eating with a large group

3.3. Dependent variables

Two regression models are employed to study students' evaluations of Howard's Cafe and Sun Center.

Model 1: Overall evaluation difference

The first dependent variable is the total difference in students' evaluations of Howard's Cafe and Sun Center. The variable is:

$$Y_1 = \text{Average Howard Rating} - \text{Average Sun Center Rating} \quad (1)$$

A positive value means the student thinks Howard's Cafe is better than Sun Center; a negative value means the student prefers Sun Center.

The model shows the students' general feelings about the two dining areas.

Model 2: Communication and social environment

The second dependent variable is, in fact, about communication and socialisation. The variable is:

$$Y_2 = \text{Average}(Q12, Q19) - \text{Average}(Q14, Q18) \quad (2)$$

The objective of selecting the above survey questions is to gather data on students' consciousness of communication and socialisation in different dining areas. Therefore, the model can also explain why students have different opinions on the social and communication environments at Howard's Cafe and Sun Center.

A positive value shows that the students are more fond of Howard's Cafe than Sun Center for communication and socialising.

3.4. Moderator variable

To determine whether the association between students' lunch social preference and their assessments of these places varies according to different groups of students, a moderator was added. Based on the results of the first regression, the following moderator variable was selected.

Preferred Dining Place with Parents or Teachers (Q10). Question 10: "If you are visiting with your parents or teachers, where would you prefer to eat?" is used to collect data for the moderator variable, and due to the uncertainty and complexity of determining a suitable dining place, it has been chosen as the moderator. In fact, the assessment of dining spaces is also very much related to the social environment. According to research in academia on commensality, the presence of other diners affects one's satisfaction with eating and behaviour [10, 11]. Also, the places people choose to eat with a companion differ based on what kind of impression they hope to make. It will be different if they are with friends or family [12]. Therefore, a student's social preference for a dining area, such as Howard's Cafe or Sun Center, should be moderated based on the different social styles of communication with teachers and parents, or with friends.

3.5. Moderator analysis

To see if the effect of lunch social preference is different for different groups of students, the following regression model was used to conduct a moderator analysis.

$$Y = a + bX + cM + d(XM) \quad (3)$$

Y is the dependent variable; X is lunch social preference; M is the moderator variable; XM is the interaction term of lunch social preference and the moderator variable; a is the intercept; b is the coefficient of lunch social preference; c is the coefficient of the moderator variable; and d is the interaction coefficient.

The interaction term (XM) is added to determine whether the effect of lunch social preference on dining-space evaluation varies by level of the moderator variable.

A statistically significant interaction coefficient shows that the effect of lunch social preference is not the same for all groups. On the other hand, a non-significant interaction coefficient indicates that the relationship is relatively the same in both groups.

Ordinary least squares (OLS) regression was employed to explore the effect of lunch social preference on dining-space evaluation. According to the p -values of the regression models, it was determined whether they were statistically significant.

4. Results

4.1. Model 1: Overall evaluation difference

To test hypothesis 1, OLS linear regression was used to determine whether students' preferences (X) affect the total evaluation difference of Howard's Cafe and Sun Center (Y_I). The dependent variable (Y_I) is set as the difference between the mean scores of Howard's Cafe and Sun Center, so a larger positive value indicates that Howard's Cafe is more popular.

Based on the results of regression analysis, the main effect of lunch social preference on the total dining space evaluation was statistically significant ($p < 0.05$). The model had a positive slope coefficient of $b = 0.391$. The positive coefficient indicates that, with an increase in a student's preference for a social lunch environment, their assessment of Howard's Cafe will be relatively

higher than that for Sun Center. That is, at each level up in a student's social preference group (from preferring to eat alone, to small groups, and then to large groups), the rating difference favouring Howard's Cafe is about 0.39 points larger.

To determine whether this phenomenon varies across different social environments, Question 10, "Preferred dining location when visiting with parents or teachers", was added as a moderator in a moderation analysis. The interaction term (XM) had a p -value of 0.0981 and was thus considered marginally or weakly statistically significant. A serious data deficiency of this model is that, among all the students in the sample, only three selected Sun Center as their preferred dining place when eating with their parents or teachers. Given that most of the responses favoured Howard's Cafe, this particular interaction analysis is not statistically significant and thus less useful.

4.2. Model 2: Communication and social environment

The second regression model focused only on communication and the social environment to examine how lunch social preference (X) affects students' sense of opportunities for social interaction (Y_2). The second dependent variable (Y_2) is the difference in the average communication ratings of Howard's Cafe and Sun Center.

OLS regression shows that the variable is significantly positively correlated ($p = 0.0017$). Based on the above analysis, students who prefer a social eating environment believe that the opportunities for communication and interaction at Howard's Cafe are significantly better than those at Sun Center. Students who are outgoing pay more attention to the environment of social interaction, and according to the statistical strength of this model, Howard's Cafe meets their needs for communication better than Sun Center.

5. Discussion

The above verified results fully support the hypotheses put forward earlier and reveal how students' lunch social preferences affect their satisfaction with the campus dining facilities. Hypothesis 1 was that a stronger preference for a social lunch would lead to higher overall scores for Howard's Cafe over Sun Center, and this was supported by a statistically significant positive slope in Model 1 ($p < 0.05$, $b = 0.391$). Hypothesis 2 expected that this relationship would be more prominent in the assessment of communication and the social environment. Model 2 showed strong support for this hypothesis and had a relatively small p -value ($p < 0.01$).

Given that Model 2 has achieved a much higher level of statistical significance than Model 1, it is in line with what has been theoretically expected. As the independent variable directly relates to how much students wish to communicate closely during lunchtime, it is reasonable to expect that this sense of social closeness will have the strongest effect on their perception of communication quality, such as the ease of speaking and the general atmosphere.

The above results are in line with the previous research results on the socio-spatial changes of campus areas. Model 2 has good significance and supports the results of Wu et al. [6], who believe that the desire for social interaction and mealtime conversation are the main reasons why group diners judge and behave in public dining areas. Students who are highly social in their lunch preferences are more sensitive to the environment for group communication.

In addition, the results support the conclusions of Ahn and Davis [5], that is to say, the physical and educational environment of a university can affect students' social behaviour and sense of belonging to an extent. Howard's Cafe has been given good ratings by socially-minded students and is now thought to have a relatively good atmosphere for making friends and participating in various

social activities. Abu-Obeid and Atoun [7] have found that open environmental structures with many opportunities for interaction directly promote favourable outcomes of socialisation, and Caruso and Rosenthal [8] have also shown that a particular cafeteria arrangement can directly affect the quality of students' experiences.

In addition, the moderator analysis of Question 10 also presents a problem of social context. Commensality has been studied before; that is, the presence of different dining companions can change one's expectations of a meal and impression management, as well as the degree of satisfaction [10-12]. Although the interaction term in Model 1 was near significance ($p = 0.098$), this was mainly due to data limitations, and it does not mean that there is no theoretical moderation. Because most of the students surveyed chose Howard's Cafe for visits with parents or teachers, and only three chose Sun Center, there was little variation in dining companions to study how they might affect the evaluation of space in a regression model. The data are extremely skewed; thus, there is likely a problem with the research methods, and it is necessary to collect more balanced samples to observe whether different dining companions affect this phenomenon differently.

6. Conclusion

This paper investigates how students' desire for lunchtime socialisation affects their assessment of the campus dining environment at Howard's Cafe and Sun Center. Two ordinary least squares (OLS) regression models were used in the study to examine the difference in general evaluation (Model 1) and the explicit perception of communication and social opportunities (Model 2).

Theoretically plausible outcomes supported both hypotheses. Model 1 shows that, for students with a higher desire for a social lunch environment, their overall evaluations of Howard's Cafe are significantly higher than those for Sun Center ($p < 0.05$, $b = 0.391$). Model 2 showed an even stronger statistical relationship ($p < 0.01$), and thus highly social students were more likely to have a positive attitude towards the communication and social environment at Howard's Cafe compared with other students. Additionally, Question 10 was added as a moderator in Model 1 to explore whether the dining context changed based on company (i.e., whether it was with parents or teachers); however, this relationship was not statistically significant under the sample constraints ($p = 0.098$). Collectively, the data show that Howard's Cafe has served as a social support base and met the space-and-communication needs of highly socialised students successfully.

At the same time, this study also adds to the body of research on environmental psychology and design of educational spaces. Directly linking the individual's social orientation with a comparative spatial evaluation provides support for the frameworks proposed by Wu et al. [6] and Ahn and Davis [5]. Thus, the physical dining area is not merely for eating; it should be regarded as a "third place" that actively offers social infrastructure and a sense of belonging for students.

The above results can help high school administrators, facility managers and campus planners in their actual work. Because students want to work in groups, and this desire shapes how they use and judge the school's buildings, the cafeteria design should also consider this. Given that Howard's Cafe is very popular among sociable students, it is suggested that the environment of Howard's Cafe, with many open-plan seats and tables for groups, be replicated if the school aims to foster peer interaction. On the other hand, the results suggest that places such as Sun Center may need structural or environmental modifications if they are to attract and please students with high collaboration needs successfully.

Although there have been some good results in this study, there are also some defects in the method that need to be rectified in the future. The first is that the data in the moderator analysis are severely skewed. Since most of the participants selected Howard's Cafe as the place for visits with

parents or teachers, there was little variability in the interaction model; thus, it was not suitable for testing whether changing dining companions modified the effect on space evaluation. In addition, the quantitative method only used survey data from a small sample of students in a specific area and school, so the results may not be generalizable.

In the future, more studies will be conducted based on this framework to expand the sample size and diversity by collecting data from various high schools and colleges across the country to build a more comprehensive spatial preference database. In addition to collecting some quantitative data, qualitative research can be conducted at the same time to add more depth and diversity to the data; for instance, one could organize some interviews or focus groups with students in the dining hall to find out why they think about the environment in this way. Based on the above shortcomings, future studies will continue to explore the deep relationship between students' social psychology and the structure of campus life.

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