Post-Occupancy Evaluation

of the Sidney Smith Commons

ENV461/1103 Fall 2019

University of Toronto

Group 7

Acknowledgements

Thank you for the opportunity to work on this fascinating project, and for providing valuable guidance, resources and feedback throughout this process.

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1. Introduction

1.1 Background

In 2018, the east wing of Sidney Smith Hall was renovated into the Sidney Smith Commons (SSC). This redesign offered the opportunity to consider sustainability, which we define as the effort to enhance both ecological and human well-being (Robinson, 2019). Sustainable buildings have been shown to increase academic performance, quality of life, and satisfaction with the space (Muhammad, Sapri, & Sipan, 2014; Sirgy, Grzeskowiak, & Rahtz, 2007; Yu & Lee, 2008). Aspects of the indoor environment, such as thermodynamics, lighting, and noise, have the potential to act as stressors (Muhammad et al., 2014), the effects of which are associated with illnesses, productivity loss (Bluyssen, Janssen, van den Brink, & de Kluizenaar, 2011), and mental fatigue (Felsten, 2009).

Being the first of its kind on campus, the SSC was constructed as a learning commons where students can perform individual and collaborative tasks at a high-level of physical and psychological satisfaction. The SSC offers many features to facilitate a casual yet high quality learning environment: carpeted floors and wooden finishings dampen acoustics to accommodate moderate conversation in the same place as studying; technologies such as whiteboards and AV screens provide a variety of study tools; furniture is movable to suit different user spatial needs; student-staff, known as Commons Ambassadors (CA), are available for resources and guidance, among other factors.

It was found in a 2018 Post-Occupancy Evaluation (POE), conducted shortly after the SSC launch, that its design was resulting in positive feedback. Our clients, Heidi Pepper and Scott Clarke, assigned us with a POE to determine if the 2018 results were maintained one year later, and if so, which aspects of its design enable these results.

1.2 Topic Area

A POE is a building evaluation method which takes feedback from occupants in order to understand and improve the space. It helps determine whether the objectives of the project have been met. Evaluations are essential in producing high-quality buildings which satisfy both its users and the environment by identifying areas for change. A POE provides a means to develop an understanding of the social, cultural, and environmental impacts (Heerwagen & Zagreus, 2005) of architectural processes on client and occupant communities (RIBA et al., 2016).

1.3 Scope

A challenge commonly faced by higher education institutions is providing services that fulfill the needs and desires of its students (Sapri, Kakak, & Finch, 2009). This is important because facilities are correlated with student satisfaction; the better the facility, the more satisfied the students (Helgesen & Nesset, 2007; Sirgy et al., 2007; Yu & Lee, 2008). In the case of Sidney Smith Hall, it hosts multiple departments and is used by many students across the university. Since it is frequently visited, it is in the interest of our clients to ensure that the SSC is sustainably managed in a way that satisfies its users.

For the purposes of this study, we define sense of belonging as the experience of personal involvement in a system or environment so that people feel themselves to be an integral part of that system or environment (Hagerty, Lynch-Sauer, Patusky, Bouwsema, & Collier, 1992). We define well-being as the balance point between an individual's resource pool and the challenges faced (Dodge, Daly, Huyton, & Sanders, 2012). To put this in perspective, when individuals have more challenges than resources, there is an imbalance and and their well-being will decrease accordingly.

1.4 Study Area: Sidney Smith Commons

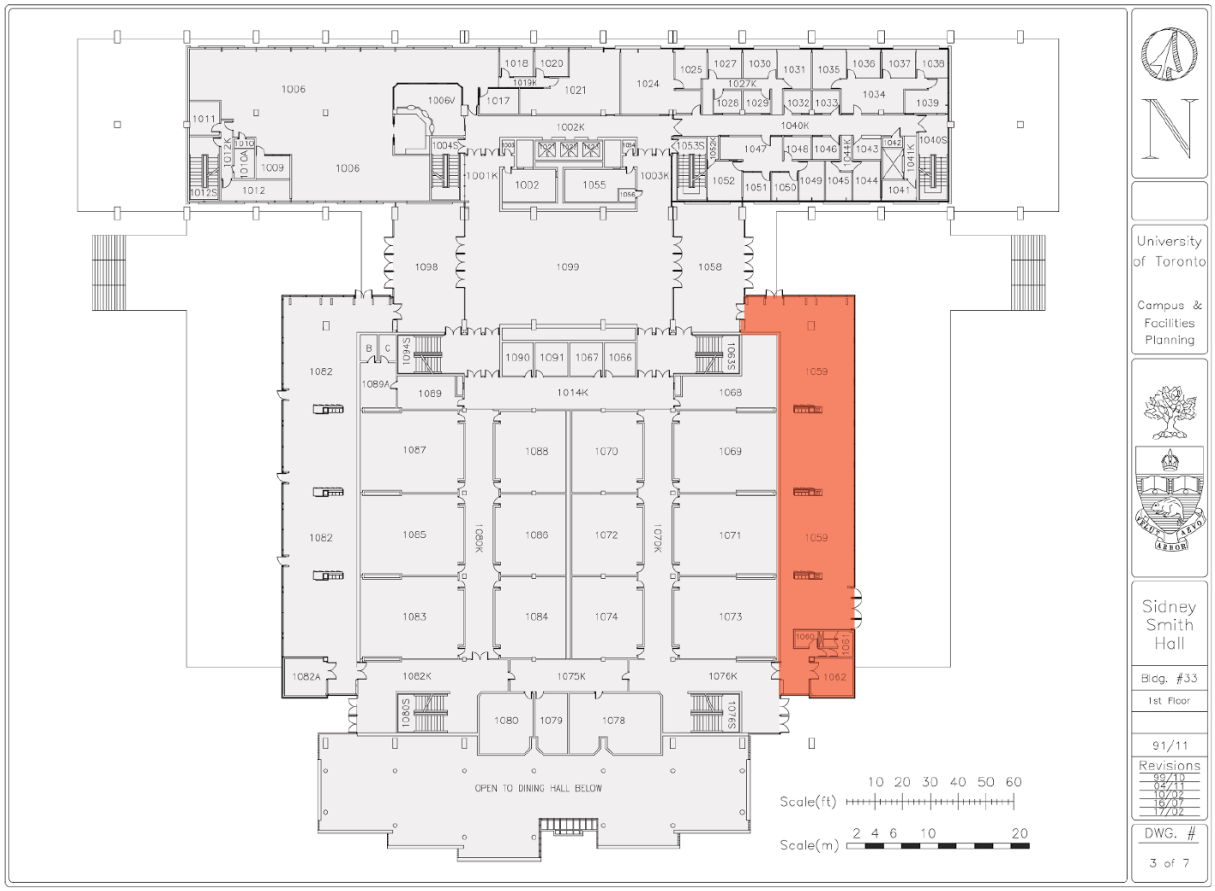


Figure 1. The Sidney Smith Hall is located on Saint George Street, between Harbord and Willcocks Street, and the SSC is located on the main floor on the east side of Sidney Smith Hall (highlighted in red). Source: The Evaluation of Student Use of the Sidney Smith East Learning Commons Report, 2017

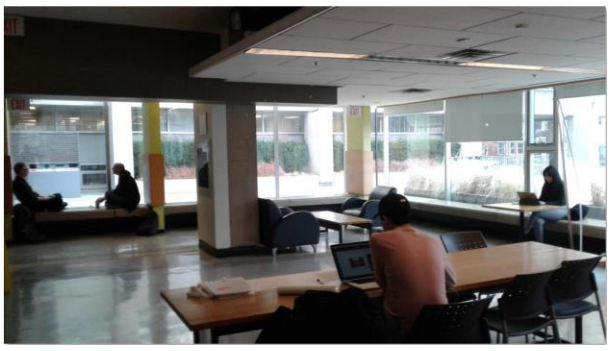


Figure 2. Sidney Smith Commons before renovation. Source: The Evaluation of Student Use of the Sidney Smith East Learning Commons Report, 2017

A Pre-Occupancy Evaluation was conducted in 2017. The images in Figure 2 used in the 2017 report showcase the space before renovation. The 2017 POE study of the SSC found that this space offered little to enhance student learning and engagement, offering limited options to students. Users could not move tables and chairs, thereby restricting collaborative learning and personalization. It lacked outlets and other technological resources that are pertinent to students in a digital age. The space was also frequently used for eating and sleeping.

Figure 3. Sidney Smith Commons after renovation. Source: A Post-Occupancy Evaluation of the Sidney Smith Student Commons Report, 2018

The recommendations of the 2017 study were considered and the space underwent renovations for the 2018 year, as shown in Figure 3. The space was redesigned to suit both independent and group study, with various uses and options to move furniture depending on user preferences. More electrical outlets were installed, with innovative technological equipment offered to students to allow visual projection of work, facilitating group collaboration and discussion. The ability to book spaces was implemented, and a team of CA's was hired to ensure a comfortable and welcoming learning commons for the users of the space.

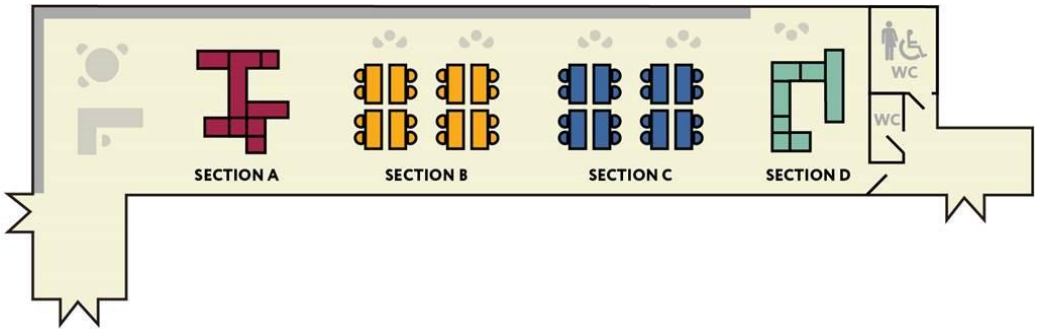


Figure 4. Layout of the space. Source: Client

The 2018 study concluded that the SSC served a therapeutic function; users reported a high sense of personal well-being, sense of belonging and academic productivity in comparison to other study spaces and the 2017 findings. The 2018 POE made recommendations which were soon after implemented, including an increase in room temperature and an extension of the hours of operation.

2. Objectives

2.1 Primary Objectives

- Does the SSC continue to successfully contribute to user sense of belonging, personal well-being, and academic productivity?

  In other words, is the 2019 POE consistent with the 2018 POE? Our clients expressed a strong interest in this question, as they suspect that the 2018 results were overwhelmingly positive because the SSC was new and very different from what existed previously. One year later, users have had time to develop more comprehensive opinions.

- Which elements of the SSC are influencing belonging, well-being and productivity?

  The SSC is a unique and innovative space. Therefore, there are elements of its design that are not fully understood in the U of T context. Regardless of whether these three experience measures have increased or decreased from last year, our clients would like to know why. This allows them to pinpoint the successes and shortcomings of the space.

2.2 Secondary Objectives

- How do users experience the SSC over the course of a semester?

  From the 2018 POE, the clients hypothesize that WHO-5 Well-being Index responses will become more negative throughout the semester, whereas user

experience (belonging, well-being, productivity) will remain constant. This is based on their hypothesis that the SSC offers certain benefits on the well-being of users while in the space, even if their general well-being has declined.

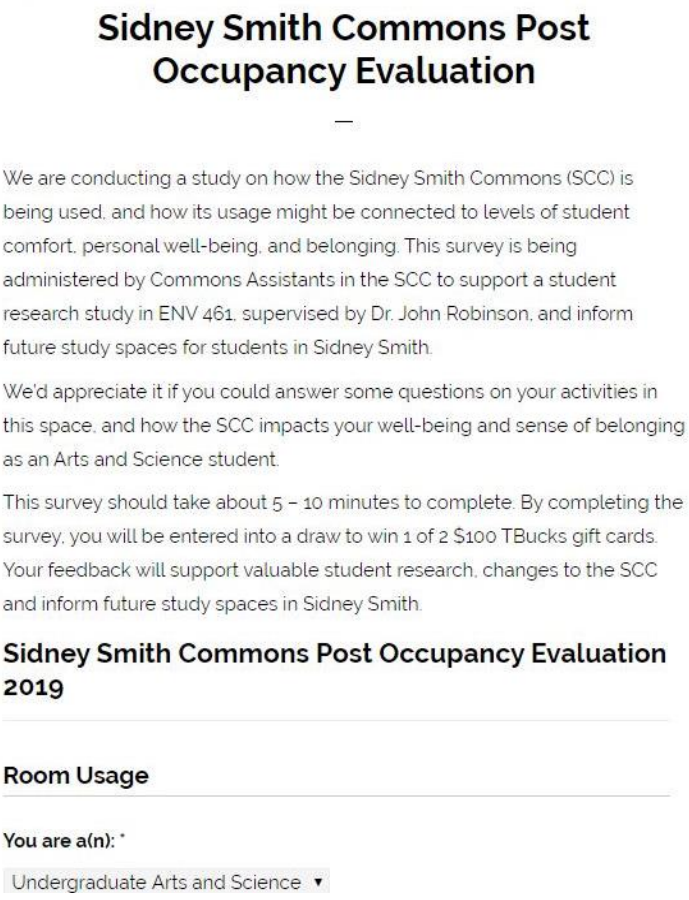
- What recommendations can we make to improve the SSC?
- What recommendations can we make to inform the design considerations of the upcoming Sidney Smith west wing commons renovation?

3. Methodology

The 2019 POE collected data from four sources:

- Electronic User Surveys
- Headcounts
- Semi-structured Observations of Users
- Semi-structured interviews with the Commons Ambassadors (CA)

3.1 User Survey



Sidney Smith Commons Post Occupancy Evaluation

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We are conducting a study on how the Sidney Smith Commons (SCC) is being used, and how its usage might be connected to levels of student comfort, personal well-being, and belonging. This survey is being administered by Commons Assistants in the SCC to support a student research study in ENV 461, supervised by Dr. John Robinson, and inform future study spaces for students in Sidney Smith.

We'd appreciate it if you could answer some questions on your activities in this space, and how the SCC impacts your well-being and sense of belonging as an Arts and Science student.

This survey should take about 5 – 10 minutes to complete. By completing the survey, you will be entered into a draw to win 1 of 2 $100 TBucks gift cards. Your feedback will support valuable student research, changes to the SCC and inform future study spaces in Sidney Smith.

Sidney Smith Commons Post Occupancy Evaluation 2019

Room Usage

You are a(n): *

Undergraduate Arts and Science ▾

Figure 5. Screenshot of online survey. Surveys were administered electronically on mobile tablets and users were prompted with the purpose of the study and the opportunity for a cash prize incentive after survey completion.

User surveys were conducted to gather data on five aspects: user identity, use of space, experience compared to other study spaces on campus, WHO-5 Well-Being Index indicators, and room condition satisfaction. The WHO-5 is a widely used tool to assess psychological well-being. Surveys were administered by the CA's at two different periods in the semester: first, during the third week of October, and second, during the third week of November. Our goal was 250 surveys, much larger than the total number of surveys acquired in the 2018 POE.

Efforts were taken to ensure a successful administration process and to avoid survey fatigue, which was an issue last year. By dividing the surveying into two weeks, rather than a five-week process, CA's were able to stay motivated. CA's were trained with scripts to use when prompting survey participation. Participants were offered a monetary incentive: completing the survey entered the participant in a draw for a cash prize.

3.2 Headcounts

Over five weeks, the CA's collected counts of the number of users in the space. These counts were performed four times a day, once per shift. The clients had expressed interest in mapping the populace of the SSC by day of the week and time of day. CA's missed recording certain days, resulting in gaps in the dataset. However, this exercise produced sufficient data to illustrate the volume of the use of the SSC.

3.3. Semi-structured Observations

Group members performed semi-structured observations. This involved at least one member being in the SSC for at least half an hour, twice a day for two non-successional weeks. Observations were kept semi-structured in order to not limit investigations, however, members were encouraged to consider student activity, CA activity, and user interactions with technologies. Ultimately, observations were conducted in order to understand the overarching trends and patterns in the SSC, and cross-check survey responses for any outlying results.

3.4 Semi-structured Interviews with Commons Ambassadors

While other methods captured key elements of the space like design, indoor comfort, and technology, the interviews were designed to capture the perspectives of the CA's themselves. This is because CA's are unique to the SSC and considered to be a great contributor to its success. Interviews were conducted by various group members and responses were analyzed for any discrepancies. CA's were promised absolute anonymity in their interview responses. 5 of 16 CA's were engaged in 5-10 minute interviews answering the following questions:

- **Role in the space**: What do you feel is your role in this space?
- **Community:** What do you do to develop a sense of community here? What do you feel makes the SSC a unique space on campus?
- **Familiarity with Users:** Do you have familiarity with the users? How do you create that familiarity? Did you make friends here or did your friends use the SSC more since you started working here?
- **Survey:** How was survey administration? What was your process?

4. Main Findings

The following data was collected:

- 305 surveys: 160 from Week 1, 145 from Week 2.
- 16 observation intervals.
- 5 CA interviews (out of 16 CA's).
- 38 Headcount periods.

We have organized our main findings in three categories:

- Room Usage
- Addressing Research Question 1: Does the SSC continue to successfully contribute to user sense of belonging, personal well-being, and academic productivity?
- Addressing Research Question 2: Which elements of the SSC influence productivity, well-being, belonging?

4.1 Room Usage

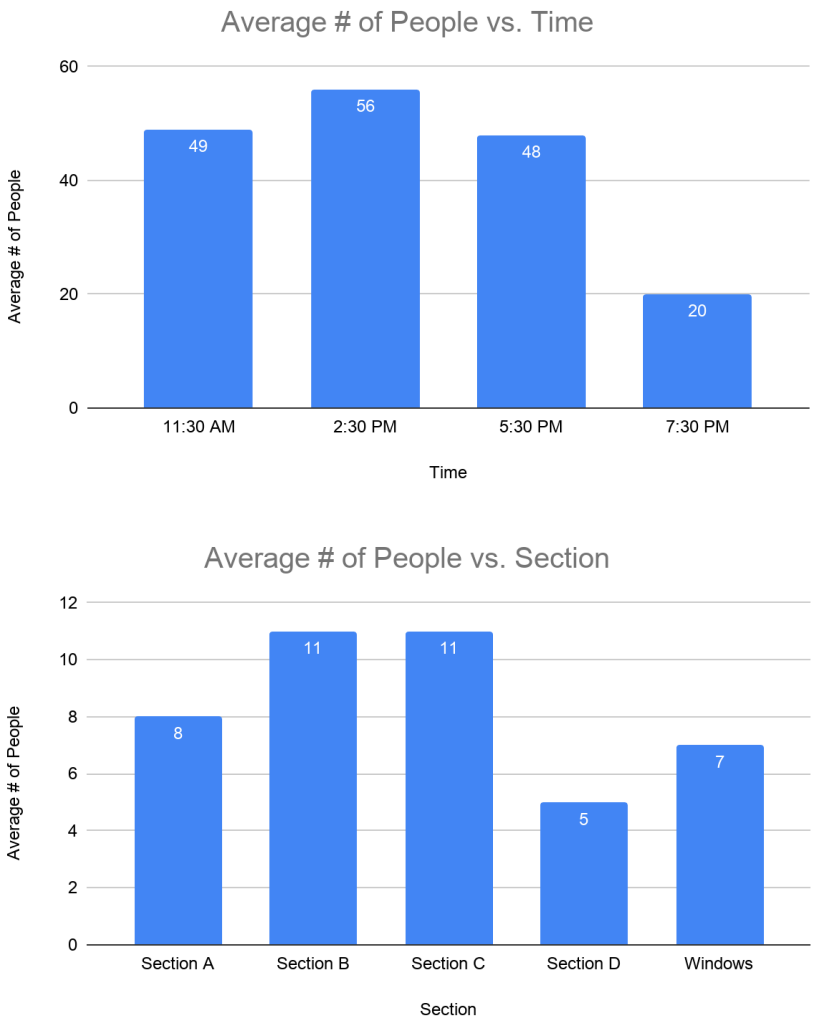
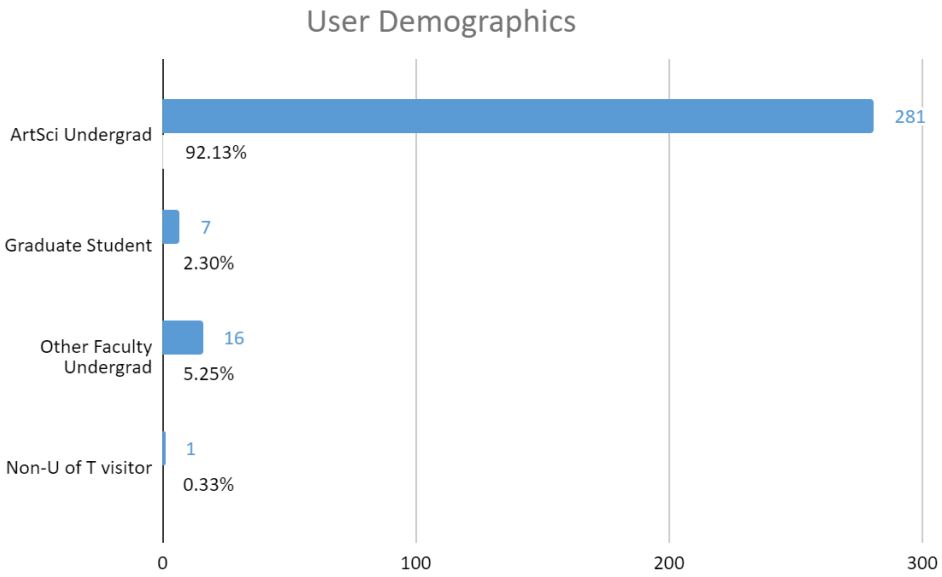


Figure 6. Headcounts were recorded over the research period, and synthesized into a) average number of people per time and b) average number of people per section.

There was an average of 51 people in the SSC in the mornings, afternoons and early evenings. This number drops significantly later in the evening, with an average of 20 people around 7:30 PM. Overall, we can conclude that the SSC is popular space.

Sections B and C, with the tables and chairs structure, are more popular than the other sections. This is consistent with our semi-structured observations where we observed that the seating at the tables were occupied most of the time, whereas the sofas and window ledges in Sections A, D and Windows are comparably less popular.



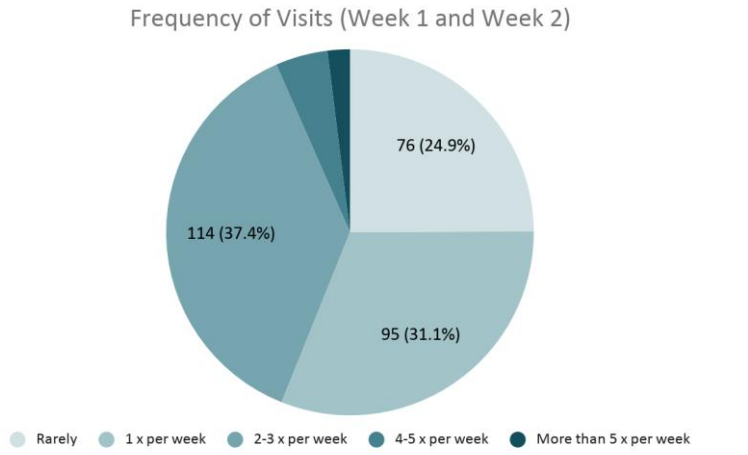


Figure 7. Users were asked about their campus affiliation.
Figure 8. Users were asked how frequently they visited the SSC.

As seen in Figures 7 and 8, 281 (92%) respondents are undergraduate Arts and Science students, and 209 (68.5%) visit 1-3 times per week. Therefore, the overwhelming majority of SSC users are undergraduate students who have incorporated visits to the SSC into their weekly routine. It can be inferred, based on the central role of Sidney Smith Hall as a classroom and campus activity space, that students use the SSC as a convenient drop-in location before, after, or between their classes. This inference is supported both by the survey short answer responses, wherein many participants stated that their favourite thing about the SSC is its location, as well

as our observations, where it was noted that most users tend to not stay in the SSC for longer than two hours, with a high turn around rate at one-hour intervals when classes begin and end.

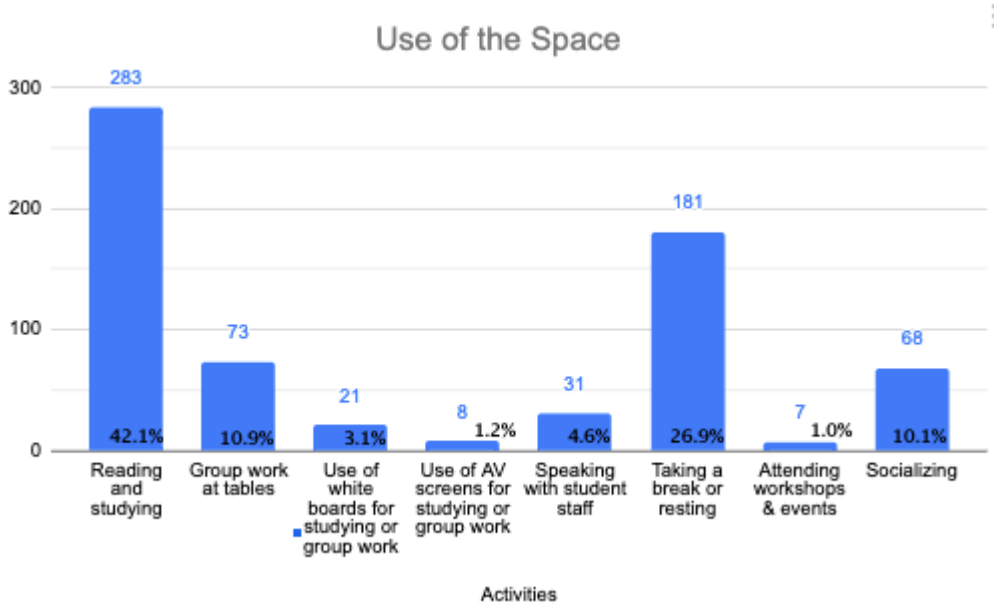


Figure 9. Users were asked to identify primary reasons they use the space. Percentages were taken from a total of 672 responses.

Survey participants were asked to select up to five primary uses of the space. Therefore, the total number of responses equals 672, with a total of 305 participants. This indicates that users are, on average, engaging in 2.2 activities while in the SSC. We suspect this is due to the SSC's casual yet studious atmosphere and various seating options, making it a versatile, multipurpose space.

The two main uses of the SSC are studying and resting, with 69% of responses being in these categories. This is consistent with our previously stated inference that students use the SSC as somewhere to go between classes to accomplish schoolwork or take a break. Furthermore, 21% report using the SSC for group work and socializing. This is consistent with our observations; we have noted that conversation is common in the SSC, especially between 12:00-4:00 PM. This data demonstrates that there tends to be an equal amount of friendly and studious conversation.

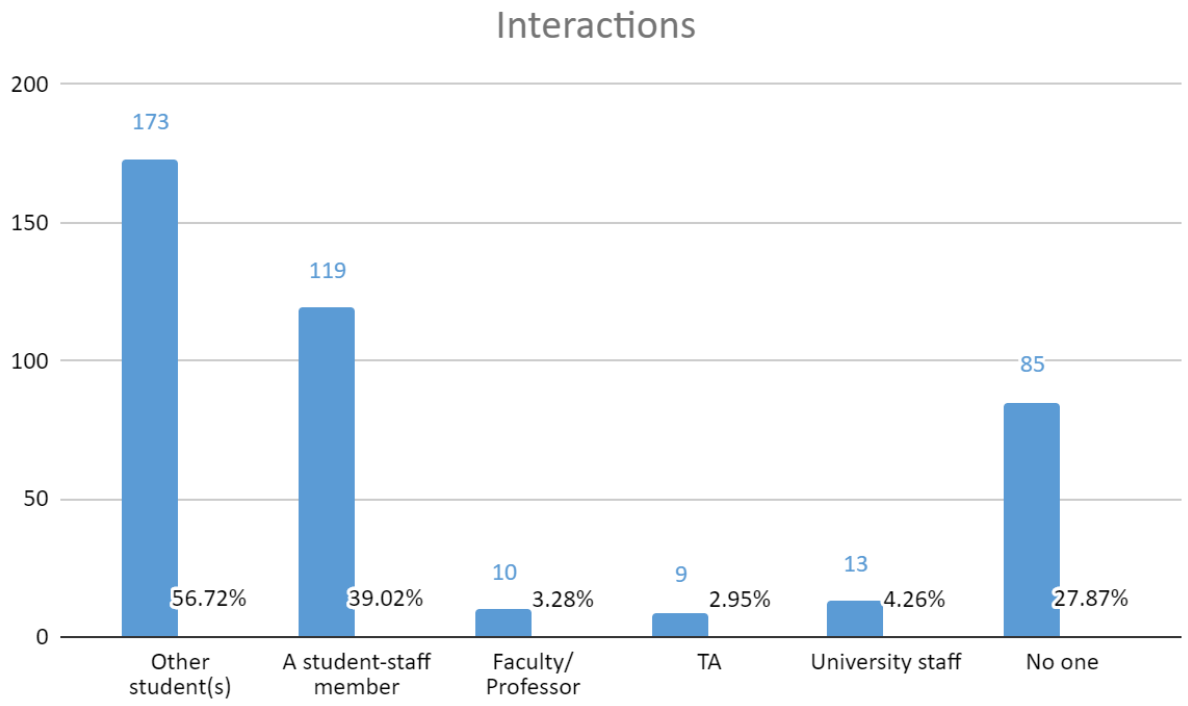


Figure 10. Number of users who reported a type of interaction in the SSC.

Approximately 70% of users have interacted with at least one person in the SSC, with 39% reporting having interacted with the CA's. The SSC has been designed with the intention of promoting conversation and community-building, and it is one of the primary roles of the CA's to interact with users and enable collaboration. These results illustrate that this desired interaction is occurring.

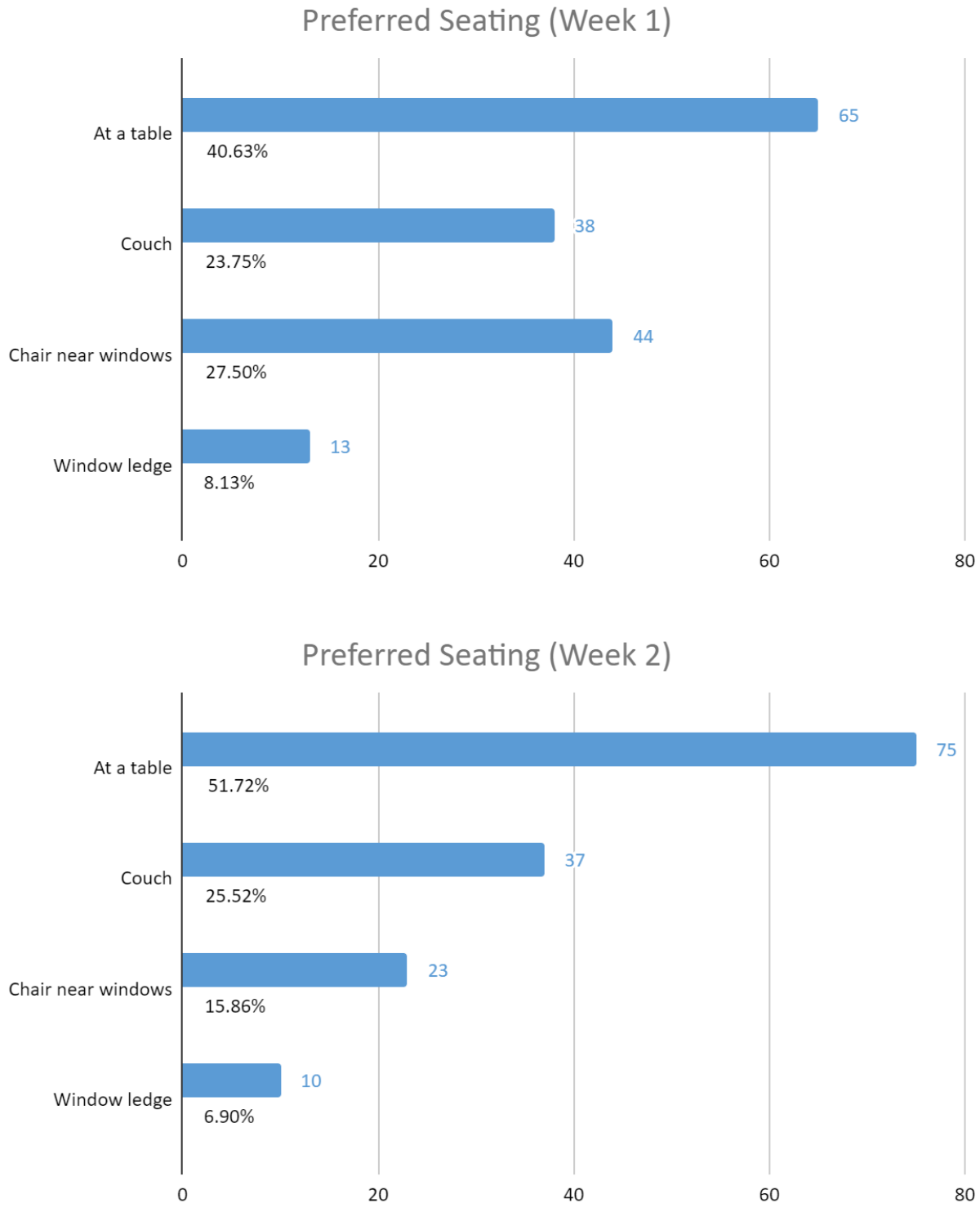
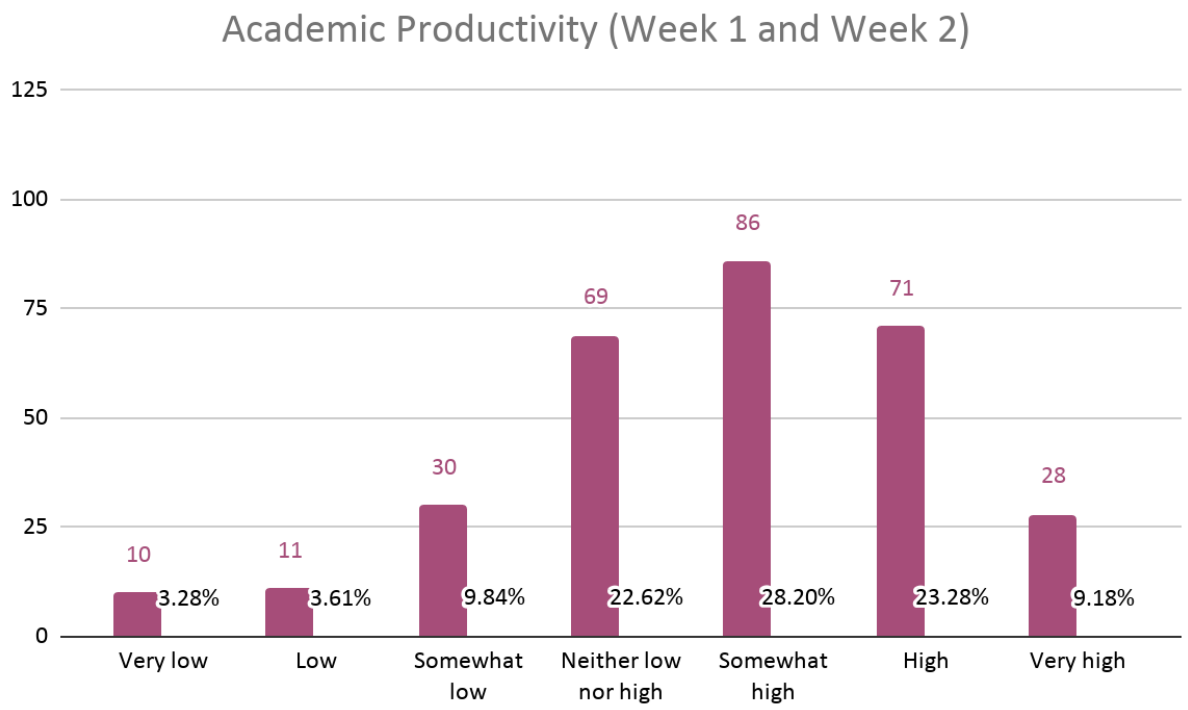


Figure 11. Number of Preferred Seating Responses in Week 1 and Week 2.

There was a noticeable change in preferred seating over the surveying weeks. Preference for the chairs near the windows declined and table preference increased. We speculate that this is because of changes in weather and semester demands. During week 1 in October, the weather was warmer and trees were changing colour, thereby providing window seat users with a beautiful view and comfortable temperatures.. However, winter had begun by week 2 of surveys in November, thereby rendering the view less rewarding and colder. Furthermore, as the semester comes to an end, there is an increased need for spaces where students can be productive. Since tables are better at supporting more intensive studying due to their increased desk space and familiar structure, the increase in their preference is expected.

Tables are the most preferred and window ledge is the least preferred type of seating. This is consistent with headcount data. Preference for the sofas remains relatively the same throughout the semester.

4.2 Research Question 1: Do users continue to give high ratings for Academic Productivity, Personal Well-being, and Sense of Belonging?



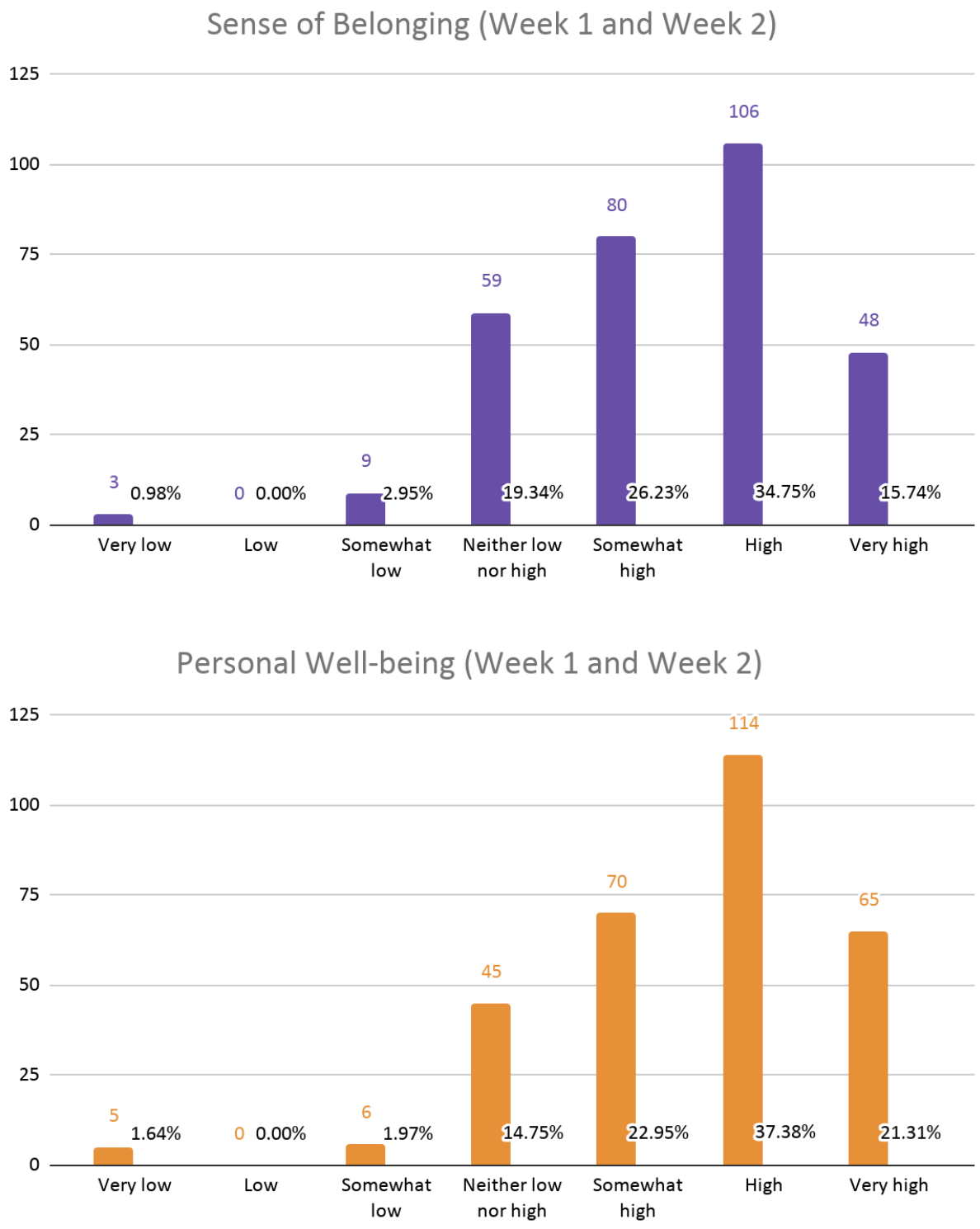


Figure 12. Total number of responses to a) Academic Productivity, b) Sense of Belonging, and c) Personal Well-Being from Week 1 and Week 2

Generally, the three experience measures are overwhelmingly positive, with over 60% of respondents reporting in the Somewhat High, High, or Very High range in each of the three categories. We can conclude that the SSC is creating more positive experiences in comparison to other study spaces on campus.

Among the three, personal well-being (Figure 12c) is the best rated, with the least amount of low responses and greatest amount of high responses; 59% report in the High and Very High range. Notably, academic productivity (Figure 12a) has the lowest ratings, with 16.7% reporting in the Very Low, Low or Somewhat Low range, as well as only 9.8% reporting experiencing Very High productivity. This is a concerning result, since our clients have expressed that, although all experience measures are important, the primary objective of the SSC is ultimately academic productivity.

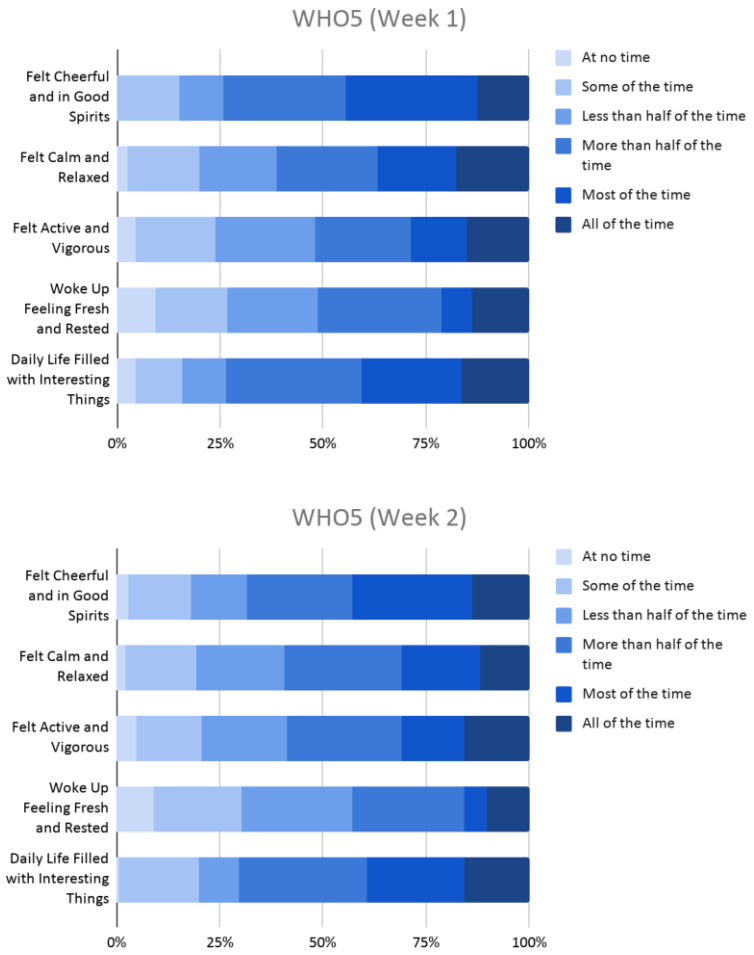


Figure 13. Users were asked to respond to five different statements on well-being.

Related to the personal well-being measure is the WHO-5 Well-being Index results (Figure 13). Interestingly, these results display a relatively normal distribution with a slight left

skew. This means that most responses are in the middle range (Less than half the time, More than half the time, Most of the time). Furthermore, there were no significant changes in response between weeks 1 and 2.

4.3 Research Question 2: Which elements of the SSC influence productivity, well-being, and Belonging?

In order to investigate the lower ratings of academic productivity in comparison to the well-being and belonging measures, we measured productivity against Seating and Interactions. We hypothesized that productivity may vary depending on if the user was studying at a table, sofa, or window. Productivity may also vary if the student was in the SSC to socialize or to do group work, compared to if they entered with the intention to work quietly and independently. Additionally, we hypothesized that the room conditions results could have an influence on productivity, since it can be more difficult to be productive in a room with worse conditions.

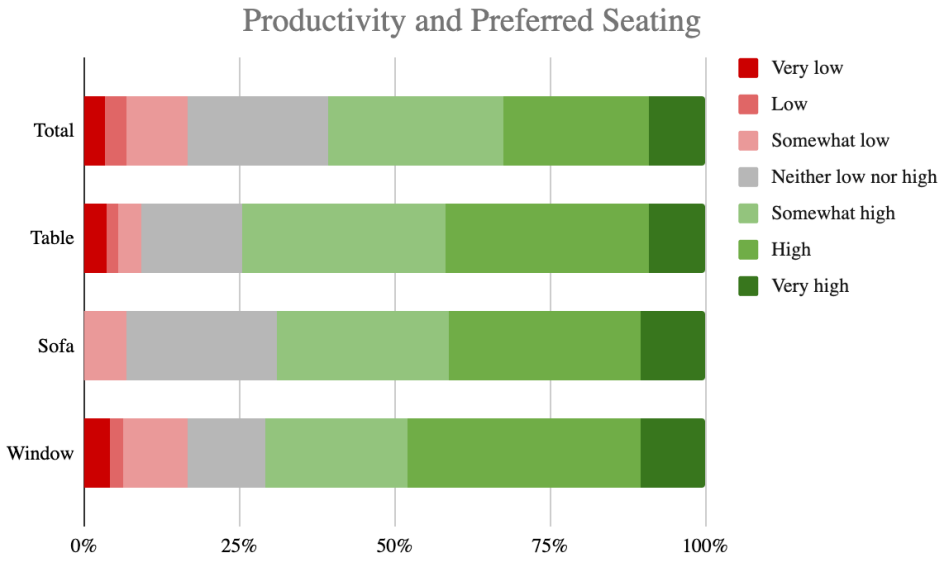


Figure 14. Productivity of Users According to Preferred Seating

Figure 14 reveals that there is no significant variation in productivity responses depending on seating preference. Noticeably, sofa preference returned no low and very low productivity responses, however their very high and high responses are similar to the table and window responses.

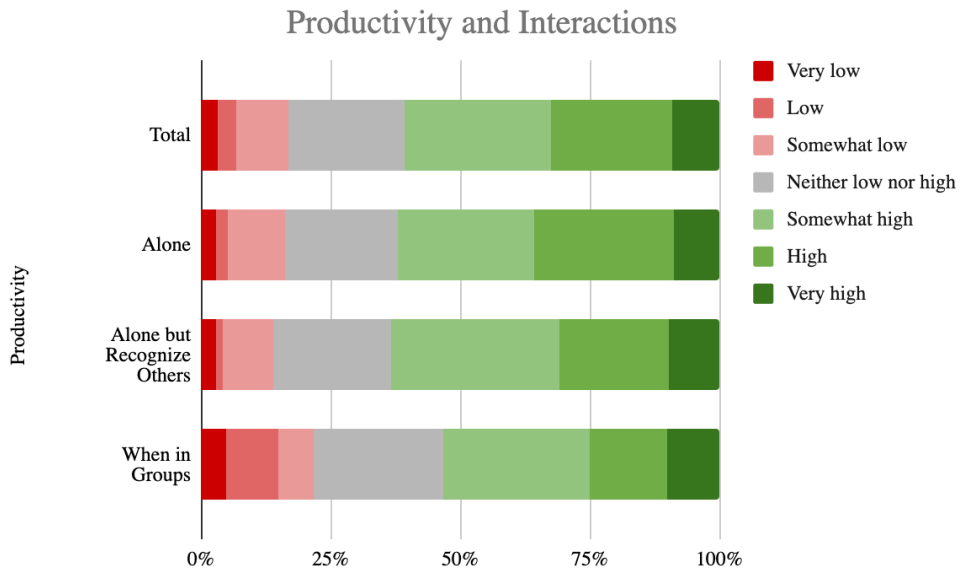


Figure 15. Productivity of Users According to their Interactions

Figure 15 reveals that lower productivity is correlated with users who are working in groups. This is a critical finding because, as was discovered in Figure 9 concerning use of the space, not all users who use the SSC to work in groups are doing so with the intention of being academically productive. In fact, approximately half of the users in groups are there to engage in friendly socializing. Furthermore, users who report being alone have the most ratings of high (High and Very High) productivity. Thus, users enter the SSC with various intentions, and these are correlated with their productivity.

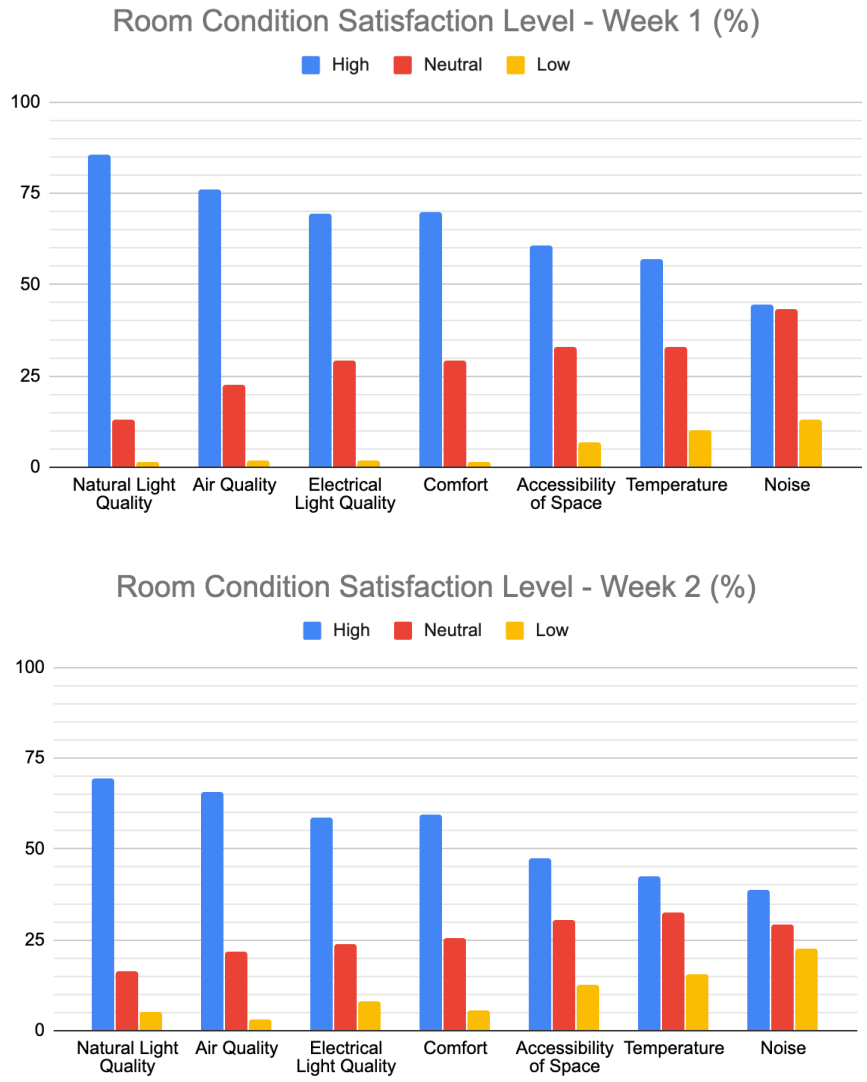


Figure 16. Room Condition Satisfaction Responses in Week 1 and Week 2.

In order to illustrate the data more clearly, responses were coded so that "High" represents the "Very High - 7" and "High - 6" ratings, "Neutral" represents the "Somewhat High - 5" and "Neither High nor Low - 4" ratings, and "Low" represents the "Somewhat Low - 3", "Low - 2" and "Very Low - 1" ratings.

Room condition ratings changed from Week 1 to Week 2 of surveying. Every category experienced a decrease in high ratings and an increase in low ratings. This is likely due to the change of seasons from fall to winter, and the progression of the student life cycle. Overwhelmingly, the natural light quality is the highest rated room condition. This is supported by the survey short answer responses, where many users cited the large windows as their favourite thing about the SSC. Likewise, the lowest rated room conditions are temperature and noise. Many short answer responses were concerning these topics, with comments stating the

SSC is too cold and too loud. Interestingly, high ratings for noise remain largely consistent, whereas the neutral noise levels decreased and low levels increased. This implies that the noise levels of the SSC appeal to a specific demographic who do not change throughout the semester. We infer that high ratings come from those who use the SSC for relaxation and socialization, whereas the increase in low ratings come from users who are using the SSC to be productive and no longer appreciate the noise while trying to meet end-of-semester demands.

5. Conclusion

Addressing our first primary research question, the SSC does continue to successfully contribute to user sense of belonging, personal well-being, and academic productivity, as was found in the 2018 POE. Belonging and well-being are overwhelmingly positive, whereas productivity is less positive in comparison to the former two, but it is still predominantly rated higher or at the same level as other study spaces on campus. Addressing our second primary research question, there are many factors which could contribute to the high belonging, well-being, and productivity ratings, which we will discuss individually.

5.1 Noise

More than any other feature of the SSC, noise appears to produce mixed results. In the survey short answers, 18.6% stated that their favourite thing about the SSC is the noise level, and 24.6% stated that their top suggestion for programs they would like to see in the SSC to improve their well-being is more social events. 70% of users report having interacted with at least one person at the SSC, although we have considered the possibility of non-verbal interactions. Alternatively, 12.9% of responses from the short answer question “how would you improve the SSC?” were requesting a quiet zone, and noise levels are consistently the lowest rated room condition, with only 27% of users reporting high satisfaction.

We conclude that the variety of ratings in noise level is due to differences in the intentions of the user in entering the SSC. Use of space (Figure 9) illustrates that there are two main uses of the SSC, both of which have a similar number of respondents: 42% use the SSC for studying and 37% use the SSC for resting or socializing. These are two objectives which result in two different noise levels, thereby causing conflict. However, although this decreases productivity, it likely increases belonging and well-being. We make this conclusion based on the short answer responses, which overwhelmingly praise the casual atmosphere of the SSC, largely caused by its noise levels.

5.2 Seating

Data from the headcounts, preferred seating, and short answers illustrate that the tables in Sections B and C are the highest rated and most occupied. Through our observations, we conclude that this is because they have the most back support, access to outlets, and facilitate both group and individual work. Requests for more tables increased in week 2 cite their need for productivity.

Sofas are less popular than the tables but are still often occupied and rated highly. Noticeably, sofas did not return any Very Low or Low responses in productivity, and their preference ratings remained the same throughout the semester. We infer that sofa-users view the SSC as primarily a place of relaxation. We have observed that people who sit on the sofas are more often seen on their phones, in reclined positions, and have textbooks and notebooks out less often. While productivity is largely a subjective and unobservable measure, this inference is also supported by the short answer data. and there were comments claiming that it is difficult to be productive on the sofas without access to a mini table, which can be scarce during the SSC's busier periods and provide limited surface area.

Windows are the least preferred seating area. It also has the most low (Very Low, Low, Somewhat Low) responses in productivity. This section has been described as cold and uncomfortable. We have observed that the windows are often a last resort for users coming in with nowhere else to sit.

5.3 Atmosphere

The atmosphere of the SSC is the most commonly cited favourite thing about the SSC in the survey short answer responses. Words used to describe the atmosphere include the following: relaxed, calming, bright, comfortable, friendly, and soothing. Although it is difficult to determine because most comments did not specify, but we can infer that the main factors contributing to the overall atmosphere are the furniture, windows, and noise level. We deduce that the atmosphere contributes to user sense of belonging and personal well-being.

Furthermore, it is possible that the atmosphere is responsible for the lowered levels of productivity. Its casual nature is suitable for relaxation, and although studying is welcome, the atmosphere does not demand intensive studying like in a library. Additionally, as is evident in the room usage main findings, most users use the SSC as a quick stop between classes, thereby creating a time constraint that limits in-depth studying.

5.4 Role of CA's

39% of survey participants reported having interacted with a CA. However, only 4.6% consider speaking with CA's as one of their primary activities in the SSC, and in our observations, we noticed no more than 10% of students speaking with the CA's. We infer that this discrepancy is because these interactions are non-verbal.

This inference is supported by the CA interviews, where they all stated that one aspect of their role is to simply be present, smile, and nod at users; the greeting establishes human interaction and welcomes dialogue. It was also said that CA's set the atmosphere for the SSC; when seeing CA's talking quietly and working in different sections, users learn that they are welcome to do the same. CA's explain that their role involves building connection and trust between student-staff and users that is unique to the SSC.

We have considered the possibility that CA interaction ratings are higher than observed because CA's were administering the surveys to people they already know. In an effort to investigate, we interviewed CA's about their surveying methods. All CA's interviewed stated that although they often recognize familiar faces, they have not made friends with many users of the space. Therefore, we determine that CA's would not have been able to acquire enough surveys by surveying friends alone.

5.5 WHO-5 Well-being Index

The results of the WHO-5 are highly related to the results of personal well-being, which was the highest rated among the experience measures. WHO-5 results indicate that most users experience a moderate level of well-being in their daily life, with a lack of very high or very low ratings. These results answered the secondary research question of how users feel in the SSC over the course of a semester; although both WHO-5 and well-being experience responses did not decrease as the semester progressed, WHO-5 responses are significantly lower than well-being experience responses. This confirms our clients' hypothesis, and we conclude that users experience a higher level of well-being in the SSC than they do in their daily life.

5.6 Technology

SSC offers a variety of new technology to enhance user experience, including outlets, TV screens, AV screens, whiteboards, wall partitions, movable furniture, and a water fountain. However, we have observed that few users interact with these features, with the exceptions of the outlets, movable furniture, and water fountain. Notably, less than 9.5% use the SSC for its whiteboards or AV screens. Low usage is also supported by the reported difficulty of the process of connecting to AV screens, where device or app compatibility and connection issues were frequent, and requests for tutorials on all the available resources and functions in the SSC.

5.7 Workshops and events

Only 1% of responses indicated that they use the SSC primarily for its workshops and events. This is significant because when asked for suggestions for how the SSC can improve personal well-being in the survey short answer, 63% of responses requested an increase in workshops and events. This raises important questions: do users not know about the workshops and events taking place, or are they aware but uninterested in the ones currently being held? If the former is true, it would be an issue of improving advertising and signage. If the latter is true, it would pose a larger issue for the SSC, as it would require a reconfiguration of its event planning. Our investigation does not provide us with the tools to evaluate these questions. However, it is also possible that CA's did not wish to interrupt the workshop by asking its participants to complete the survey and thus we received an unrepresentative few of these responses. In the interviews, CA's did express their hesitance in approaching users who looked highly engaged in their activity. Additionally, it is possible that users are not entering the SSC with the intention of participating in workshops, but end up involved. Regardless, this is an important question to consider when planning of both the SSC and the west wing's upcoming reconstruction. Further investigation into this topic is needed.

6. Limitations

A major limitation of this investigation was time restraints. Total data collection took place over six weeks from October to November. Therefore, we are unable to assess how the SSC and its users behave throughout the year. There may be seasonal changes or interesting activity during the beginning of the semester that we cannot analyze. We also encountered gaps in the headcount data, which demonstrates that data collection for longer periods can increase survey fatigue on the CA's.

Monetary incentives were advertised to SSC users in an effort to reduce survey fatigue and nonresponse bias, defined as the bias that results when survey results differ significantly from nonrespondents (Standish & Umbach, 2019). This was an issue in the 2018 POE, where they experienced challenges in getting users to take the survey. People who are more likely to take school surveys tend to be those already involved in their community, with high academic performance, and have positive feelings about school (Standish & Umbach, 2019). This is an issue for our study because it would suggest that our positive results are due to the fact that only the people who feel positively are responding. Although the monetary incentive encourages those who would not normally take the survey, and we received more than a statistically significant number of surveys, there is still a possibility that this issue was relevant to our investigation.

A final limitation was found in our investigation of productivity and preferred seating. We hypothesized that productivity may be related to where users were seated. The survey only

asked users for their preferred seating, whereas it may have been more accurate to investigate a clearer relationship between productivity and the actual seating arrangement of users at the time of survey administration. As a result, our investigation of productivity and preferred seating is left to inference.

7. Recommendations

In our recommendation section, we will combine the feedback from SSC users and our own observations to make corresponding suggestions.

7.1 Quiet zone

In consideration of the mixed opinions on noise levels, we suggest piloting a quiet zone in the SSC. This would entail sectioning off one of the sections with the existing wall partitions and labelling the area as a quiet zone. We recommend initially testing with Section D because it is already the quietest. The pilot may occur only at a specific time of day, or certain days of the week, and the schedule can be posted on the SSC's social media. This may have the added effect of teaching SSC users about the wall partitions. Clients should observe for any activity changes. If the pilot is successful, clients can consider making a quiet zone as a fixed feature of the west wing, whether this be a permanent construction or a replication of the wall partitions. Furthermore, with the completion of the west wing, we suggest that clients can make one side more quiet and study-oriented, whereas the other side can be more social event and group work-oriented, while maintaining a casual and productive atmosphere on both sides.

We believe that the demographic which is requesting quiet for increased productivity should take priority over those who are requesting more social events to increase well-being, since well-being ratings are already very high and only 1% of respondents report that they use the SSC primarily for its workshops and events.

7.2 Seating

47.5% of short answer responses to the question "How would you improve the SSC" were related to seating. It is clear that there is room for improvement. For the SSC, we recommend pillows and more private pods in the Window section. Pillows would make the window bench more desirable, comfortable, and warm. Private pods are highly requested and since there is a lack of chairs near the windows, we recommend this location. We also recommend more mini tables, which can be scarce during SSC's busier periods but are necessary for productive work at the sofas.

Seating in Sections A, D, and the window ledge offer minimal back support, and mini tables are low and do not have a height adjustment feature. Thus, most SSC users have extremely hunched posture. Back pain is the most common physical health issue among post-secondary

students after headaches (El Ansari and Stock, 2011). For the SSC, we recommend higher or adjustable mini tables. For the west wing renovation, we recommend greater attention to ergonomics; seating with higher arm and back support can alleviate neck and back strain without compromising the SSC's sofa's comfortability.

7.3 Workshops and Social Events

As mentioned in our conclusion, few users report using the SSC for its workshops but many (63%) requested an increase in events. Requests include the following: meditation sessions, communal puzzle solving, painting/movie/video game night, colouring books and program-specific socializing. We recommend experimenting with various events. This way, if clients notice an increase in attendance, clients can determine if the few workshop-use responses were due to a lack of knowledge or lack of interest in the ones currently being held. Most social events should take place earlier in the semester; closer to exams there is a greater desire for quiet spaces to be productive and events can be noisy. Additionally, we recommend occasionally offering free food at workshops and events to satisfy the desire for eating in the SSC in a controlled manner that does not jeopardize its cleanliness.

7.4 Technology workshops and accessibility

We have concluded that users are not currently engaging with the various technologies available to them. This is likely due to an information barrier and lack of ease. For the SSC, we recommend holding workshops to inform users that these technologies are available and teaching them how they work. This recommendation is enhanced by the many short answer responses requesting more workshops. For the west wing reconstruction, we recommend implementing technologies that are more intuitive and require less effort to learn. For example, the AV screens are a great tool but require the user to download an app and get assistance from a CA; most people are not willing to go through this process, especially if the reward is unclear. Further research should be done in determining which technologies best support user experience while being easy to learn and use.

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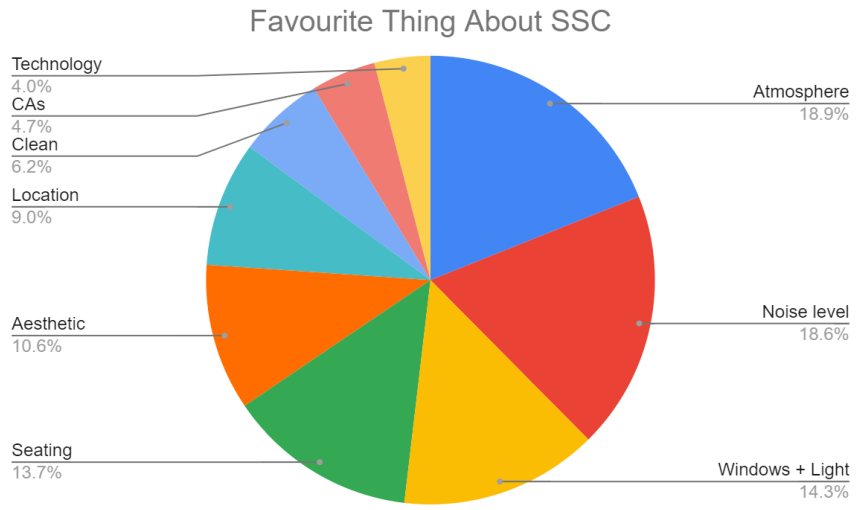
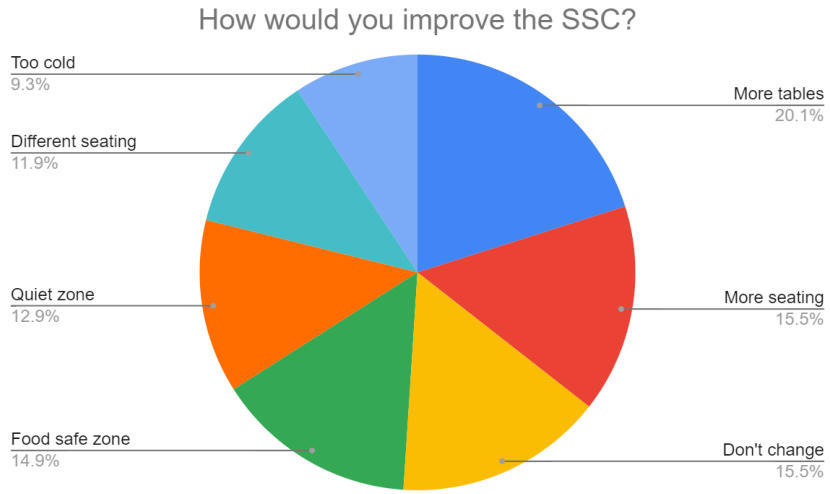
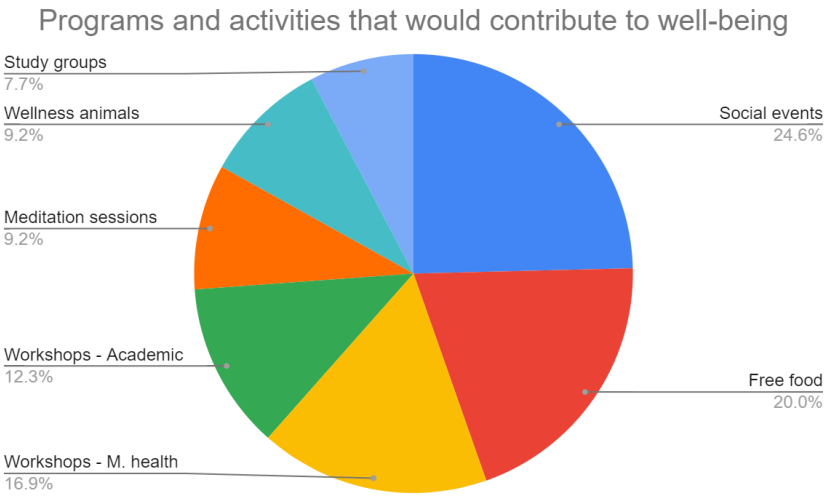
Appendix

Survey short answer responses:







Survey: https://sidneysmithcommons.artsci.utoronto.ca/post-occupancy-evaluation-poe/