

What Impacts a Person's Decision When Choosing a Fitness Centre?

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Group 5, Project A

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Executive Summary

Due to the health benefits of aerobic and resistance exercise, many universities provide on-campus fitness centres to promote healthy exercise habits. However, many students at the University of British Columbia (UBC) choose not to use UBC Recreation's fitness centres (BirdCoop and ARC). The existing literature highlights several factors that influence fitness centre choice, including cost, equipment selection, staff attitude and expertise, atmosphere and gym culture, and physical accessibility. However, there is little data pertaining to university students, who may experience different barriers and facilitators than the general population. In order to understand why UBC students choose not to use UBC Recreation's fitness centres, we surveyed UBC students residing on the Vancouver campus. Participants were recruited via convenience sampling using social media, verbally informing students in common areas, and presentations before lectures. The survey began with screening and demographic questions, and then collected quantitative data about factors influencing fitness centre choice, and qualitative data about features that might make participants more likely to attend UBC Recreation's SRC North fitness centre, which is currently under construction.

Of 97 eligible participants, the majority were in their first, second or third years of study (88.6%), and the majority identified as women (73.2%) while a minority identified as men (25.8%) or non-binary (1.0%). A majority of participants currently attend a fitness centre (AFC; 71.1%) as opposed to those who do not attend a fitness centre (DAFC; 28.9%). For AFC participants, the factors that most strongly influenced fitness centre choice were cost, location, and work/school schedule. For DAFC participants, these factors were location, cost, and cleanliness. However, it is not always possible for fitness centres to modify these factors when seeking to increase their customer base. Instead, it may be effective for fitness centres to focus on less influential, but more variable factors such as operating hours, personal enjoyment, gym culture, and sense of belonging. These factors, which were especially important to DAFC participants, could explain where fitness centres can differentiate themselves to increase their customer base. Based on our findings, we have five recommendations to increase attendance at UBC Recreation fitness centres:

- (1) Provide online fitness classes or an app to keep customers engaged on days when they cannot make it to the gym. This can counteract limitations due to time and travel.
- (2) Extend operating hours to attract potential customers with limited availability. In particular, many potential customers might benefit from earlier opening hours to alleviate crowding during the morning rush prior to 8:00 AM lectures.
- (3) Provide community events and challenges to promote personal enjoyment and community engagement. This could be particularly effective for recruiting people who lack experience in a fitness centre, since community challenges are engaging and help to disseminate knowledge.
- (4) Establish a 'Bring a Friend' program to decrease barriers for potential customers in accessing the fitness centres. This program could be particularly effective at helping to promote a sense of belonging for people new to fitness centres.
- (5) Make improvements to the facilities (such as to equipment and environmental features). Although participants repeatedly identified equipment quality and variety as a critical factor (which is already a key consideration of SRC North), they also highlighted several other considerations, such as natural lighting, air conditioning, accessible water fountains, and functional space.

What Impacts a Person's Decision When Choosing a Fitness Centre?

Aerobic and resistance exercise are associated with positive health benefits such as decreased risk of cardiovascular and metabolic disease, as well as increased muscle strength, respiratory function, and mental health (Liu et al., 2019). Hence, promoting exercise engagement in post-secondary students facilitates life-long fitness, disease prevention and health (Weatherson et al., 2021). In Canada, 61.1% of post-secondary students (64.4% of men; 59.6% of women) meet the Canadian Society for Exercise Physiology's recommendations of 150 minutes of moderate to vigorous physical activity alongside two muscle-strengthening activities per week (Weatherson et al., 2021). However, many Canadian post-secondary students experience barriers to exercise including lack of time due to academic and professional commitments, lack of interest, stress, and cost (Bradford et al., 2019; Pellerine, 2022). As many students live on campus, it is vital that universities explore ways to improve exercise habits (Pellerine, 2022).

A commonly adopted approach for universities is to provide students with subsidized memberships for on-campus fitness centres, which reduces cost and travel time to exercise facilities (Ringle, 2008). A fitness centre is a "health, recreational, and social facility geared towards exercise, sports, and other physical activities" (Mion, 2017). UBC offers two fitness centres, known as the Activities and Recreation Centre (ARC) and BirdCoop, at steeply discounted rates for students, with a third fitness centre scheduled to open in 2025 (UBC Recreation, n.d. b). However, many students at UBC choose to use off-campus exercise facilities, on-campus facilities independent from UBC Recreation, or do not use fitness centres at all (Bundon, 2024). Thus, UBC Recreation is seeking to understand factors influencing UBC students' choice of fitness centre, to develop strategies for attracting new users, while retaining existing users of UBC Recreation's exercise facilities (Bundon, 2024).

Literature Review

Barriers and Facilitators to Selecting a Fitness Centre

The existing literature consistently identifies five facility-related variables that influence a person's choice to use a fitness centre: cost, equipment, staff, atmosphere, and accessibility. Cost is the most significant barrier, which often overrules other factors related to fitness centre choice (Brown et al., 2014; Jang & Choi, 2018; Sevilmiş et al., 2023). An individual is less likely to use a fitness centre perceived as being too expensive or out of their affordable price range (Brown et al., 2014). A second consideration is the variety and modernity of exercise equipment, since a lack of desirable equipment can restrict a person's choice of exercises (Brown et al., 2014; Jang & Choi, 2018; Sevilmiş et al., 2023). Similarly, the quality of staff can either facilitate or restrict a person's ability to take advantage of a facility's resources (Sevilmiş et al., 2023). Fourth, the atmosphere of a fitness centre, which often depends on other users (e.g., gender distribution, presence of more experienced fitness enthusiasts), can contribute to an individual's sense of hospitality and belonging in a facility (Cyr et al., 2019; Jang & Choi, 2018). Finally, accessibility is a concern for many people, which includes factors such as the facility's location and transportation options (Brown et al., 2014; Jang & Choi, 2018; Sevilmiş et al., 2023), as well as hours of operation (Brown et al., 2014).

Level of physical ability can also shape the way that a person evaluates a fitness centre. For example, Nikolajsen et al. (2021b) reviewed the factors determining fitness centre choice for people with disabilities (PWD) as opposed to people without disabilities (PWOD) and found that facility-related barriers are often amplified for PWD. This is because fitness centres are typically not designed to accommodate their diverse needs, resulting in barriers related to poor accessibility, non-adjustable equipment, hostile atmospheres, and staff who are not trained to

provide basic accommodations (e.g., wheelchair transfers) (Nikolajsen et al., 2021b). On the other hand, individualistic barriers are more significant to PWD, who are more likely to identify lack of time, lack of interest, and cost as barriers to fitness centres (Nikolajsen et al., 2021b). However, despite their differences, both PWD and PVoD can benefit from initiatives to promote inclusive exercise spaces. It is clear, then, that fitness centres must be designed with physical accessibility in mind (Nikolajsen et al., 2021a).

Barriers and Facilitators for Post-Secondary Students

Post-secondary students may experience different factors that influence fitness centre choice. Du et al. (2019) evaluated participation rates at the Student Recreation Centre of Washington State University and found that students most frequently visited on weekday afternoons, with decreased participation during holidays and increased participation in the spring semester relative to the fall semester. They also found that participants were more likely to be male than female, and first-year students were the most frequent users, with usage rates declining as students aged (Du et al., 2019). These trends may be related to the many individualistic barriers faced by university students, such as perceived enjoyment, social support, distance, price, personal availability, commuting time, convenience, exam schedules, and other academic commitments (Deliens et al., 2015). Students' need for social support is highlighted by the fact that students are more likely to adhere to exercise programs if they are surrounded by people in a similar age category (Steltenpohl et al., 2018). In addition, students of Generation Z are more likely to be influenced by social media marketing strategies when choosing a fitness centre (Almrafee, 2022; Deliens et al., 2015). As such, social connections and social media are key considerations for fitness centres targeted at post-secondary students.

Rapport et al. (2018) evaluated three university campus fitness centres in the United Kingdom and examined how the layout and demographics of the fitness centre affected sense of belonging. Individuals who felt that they did not fit into a particular section (e.g., aerobic machines, weight machines, free weights) reported being more uncomfortable in the fitness centre (Rapport et al., 2018). As a result, the authors emphasized the need for off-peak times used for women-only weights sessions, instructor-led sessions and beginners-only sessions in order to enable groups who may feel uncomfortable in traditional fitness environments (Rapport et al., 2018). UBC Recreation fitness centres have employed similar strategies with women, two-spirit, trans, and non-binary fitness hours and beginner weight lifting classes (UBC Recreation, n.d. c). This is another way that fitness centres can promote inclusion and accessibility for gender-diverse and ethnic-diverse groups, as well as physically-diverse groups (Rivera et al., 2024). This is of particular relevance to UBC Vancouver because 11,244 of 47,612 undergraduate students (24%) are international students (Janmohamed & Gaster, 2023).

Purpose and Rationale

In an observational study of first-year university students in the United States, Kapinos et al. (2014) found that students living on campus, or very close to campus gyms, had more frequent visitations. In addition, the majority of university-run fitness centres are used by undergraduate students (Du et al., 2019), as faculty prefer to separate their work and personal lives by choosing to not exercise in the same space as students (Rapport et al., 2018). Therefore, because undergraduate students living on campus are the primary demographic for university fitness centres, this study's population was narrowed to UBC undergraduate students living on campus.

While previous research has examined individualistic factors that influence young adults' decisions when choosing a fitness center (Almrafee, 2022; Deliens et al., 2015), little research has examined the facility-related factors that influence post-secondary students' choice of fitness centre. In addition, there is little evidence for the specific context of UBC, and why UBC students choose to use UBC-affiliated versus non-UBC-affiliated fitness centres. The new Student Recreation Centre North facility is intended to facilitate health behaviours and promote student health, fitness and overall well-being (UBC Recreation, n.d. a). Thus, it is imperative to understand the factors that may draw students to the facility or push them away. Therefore, the purpose of the present study was to analyze the facility-related factors that determine whether undergraduate students (who live on UBC Vancouver's campus) choose to exercise at UBC's fitness centers (ARC and Birdcoop) or non-UBC run facilities on campus (Gold's Gym and Wesbrook Community Centre). Specifically, this study aimed to explore the following question: what are the considerations of undergraduate students who live on campus when choosing a fitness centre? The conclusions of this study informed a set of recommendations intended to aid in the delivery of the new UBC Recreation North facility, to increase undergraduate student attendance and engagement.

Methods

Target Population and Sample Size

Our target population included degree-seeking undergraduate students at UBC Vancouver residing on campus. Undergraduate students included students in any year of study (1, 2, 3, 4, 5+) completing their undergraduate (i.e., Bachelor's, M.D.) degree at UBC. Anyone who lived on the UBC Endowment Lands was considered on-campus for the purposes of this study, which included privately-owned housing in areas such as Wesbrook Village and University Village

(Appendix B, Figure 1). We excluded any non-degree-seeking students, as well as any students who live on campus in unstable housing. The full inclusion and exclusion criteria are listed in Appendix C, Table 1.

Previous studies examining fitness centre decisions have had sample sizes ranging from 200 to 300 participants (Jang & Choi, 2018; Pope & Harvey, 2015; Thomas et al., 2019). However, these studies sampled large populations, and were generally not time-limited. In contrast, our study population was limited to undergraduate UBC Vancouver students who live on campus, and we recruited for under two weeks (March 19, 2024 to April 1, 2024). As a result, the recruitment goal for this study was 100 participants.

Recruitment

Various methods of recruitment were utilized for this study. For example, participants were recruited via social media, specifically using Instagram. Group members posted one Instagram story (12:00 PM, March 19, 2024) on their personal accounts to promote the study. The social media post included the study purpose, disclaimers, recruitment criteria, link to the survey, potential prizes, and contact information (Appendix A, Figure 1). Despite the wide reach of social media, this method was limited as it spanned only our personal networks (as all group members' Instagram accounts are private), leading to the recruitment of primarily third- and fourth-year (mostly Kinesiology) students.

Another recruitment strategy was verbally informing UBC students about the study around the MacInnes Field, Nest, Life Building, and in student residences for both upper years and first years (Orchard Commons, Walter Gage, Totem Park, Saltwater) and other high-traffic areas for undergraduate students. We gave a brief summary of the study purpose and offered a QR code if students expressed interest in participating. Furthermore, undergraduate instructors

from various faculties, previously associated with the researchers (Janka Corewyn, Douglas McCollor, Jean-Sébastien Blouin, and others), were contacted via email to display the study in the beginning of class to recruit undergraduate students from Kinesiology classes and other electives. A sample email is shown in Appendix A, Email 1. The poster that was displayed in classes is shown in Appendix A, Figure 1. However, this method is limited, as primarily Kinesiology professors were contacted. To combat this source of bias, email recruitment was utilized to contact clubs (having personal connections to the organizers) such as the UBC Alpine Ski Club, UBC Taiwanese Social Club, and UBC Volleyball Club (sample email shown in Appendix A, Email 2).

Data Collection

Data was collected through a Qualtrics survey distributed to the study sample (Appendix C, Link 1). This survey tool was chosen as it has been approved for use by UBC and complies with the BC Freedom of Information and Protection of Privacy Act (The University of British Columbia, 2024b). Furthermore, a survey was selected to collect data from a large sample size with cost and time efficiency. The ‘landing page’ was a consent form and informed individuals that if they chose to continue with the survey, they were agreeing to be participants. The survey asked several demographic questions to screen out participants who did not meet the inclusion criteria and to provide us with information on sample demographics. Demographic data was used for two purposes. First, it allowed us to ensure that our sample demographics reflect the population demographics. Second, it also allowed us to identify any potential demographic variables influencing our participants’ physical activity behaviours. For example, undergraduate students’ experiences with physical activity and perceptions of fitness centres can be influenced by physical (dis)ability (Nikolajsen et al., 2021), gender (Cyr et al., 2019; Jang & Choi, 2018),

and year level (Du et al., 2019). It is also possible that students' experiences and perceptions are shaped by their faculty, or their status as domestic or international students, although there is a lack of existing data in these areas (Du et al., 2019). As a result, we asked students to identify their level of physical ability, gender, year level, domestic or international status, and faculty.

The previous literature has largely focused on people who already attend fitness centres, rather than people who do not attend fitness centres (Jang & Choi, 2018). It was thus important to collect data from both demographics in order to identify any differences in the factors that may influence fitness centre choice among these two groups. In addition, the survey was branched based on whether or not participants attended a fitness centre in order to personalize questions about fitness centre attendance and perceptions.

Once demographic data was collected, we collected quantitative and qualitative data about participants' experiences with and perceptions of fitness centres. Using a 5-point Likert scale (extremely unlikely (1) to extremely likely (5)), we collected quantitative data about categorical variables that influence the likelihood of attending a particular fitness centre, as identified in the existing literature (Almrafee, 2022; Brown et al., 2014; Cyr et al., 2019; Deliens et al., 2015; Jang & Choi, 2018; Kapinos et al., 2014; Nikolajsen et al., 2021; Sevilmiş et al., 2023; Steltenpohl et al., 2018). Participants were also able to identify any additional variables in an open-ended format. Finally, because attitudes can be an important determinant of exercise behaviours (Bradford et al., 2019), we asked about people's exercise beliefs using a 5-point Likert scale (strongly disagree (1) to strongly agree (5)).

We then asked participants to identify any changes or improvements that they would like to see in the new Student Recreation Centre North in an open-ended format. Open-ended interview questions are often used to generate information-rich data to inform research about

fitness centre choices (e.g., Nikolajsen et al., 2021). Furthermore, we asked individuals who are currently registered at a fitness centre to identify the hours that they usually attend in order to generate data on peak hours, since busyness can impact individuals' choice of fitness centre (Du et al., 2019).

Data Analysis

Given that the survey collected both quantitative and qualitative data, we used a combination of descriptive statistical analysis and descriptive qualitative analysis. The quantitative Likert scale responses were analyzed using descriptive statistical analysis, with responses being summarized using graphs or tables (Bundon, 2024a). We used this data to analyze how our sample responds to previously identified variables that influence fitness centre attendance. We also examined statistical variation between the demographic groups identified in our sample. Subsequently, the qualitative open-ended responses were analyzed using qualitative content analysis, where we coded the data using both a deductive approach (coding for previously identified variables) and an inductive approach (coding for novel variables), and then organized the codes into themes (Löfgren, 2013). Once we had analyzed both the quantitative and qualitative data, we synthesized the results to inform a set of recommendations to UBC Recreation in order to increase attendance at UBC-owned and operated fitness centres. When formulating our recommendations, we considered both the overarching themes identified by the qualitative content analysis and any statistical variation between demographic groups identified by the descriptive statistical analysis.

Results

Demographic Results

A summary of survey demographics can be found in Appendix D, Table 1. We had a total of 131 survey responses, 97 of which were eligible. Survey respondents were considered ineligible if they did not live on campus (22.1%), were not a UBC Vancouver student (2.3%) or were not an undergraduate student (5.3%). The majority of respondents currently live in UBC residence (46.6%) while 30.5% of respondents live in other on-campus housing (e.g. Westbrook Village or University Village). The succeeding questions were only answered by respondents who met the study requirements.

Responses came from a variety of faculties, with the most frequent being Science (33%), Kinesiology (30.9%) and Arts (13.4%). There was a notable lack of responses from Education, Medicine and Law students (Appendix D, Table 1). 97.9% of respondents are full-time students (Appendix D, Table 1). The majority of respondents were in third year (38.1%) or first year (36.1%), with a notable lack of fifth+ and fourth years with 2.1% and 9.3% of respondents respectively (Appendix D, Table 1). The majority of survey respondents identified as a woman (73.2%), 25.8% identified as a man and 1.0% identified as non-binary/third gender/queer (Appendix D, Table 1). 90.7% of survey respondents were domestic students while only 9.3% of respondents were international students (Appendix D, Table 1). 66.7% of survey respondents did not have a disability or medical condition, 15.2% had a mental health condition, 10.5% had a neurological condition, 5.7% had a chronic health condition, 1.0% were deaf or hard of hearing and 1.0% were blind or visually impaired (Appendix D, Table 1). 28.9% of survey respondents reported that they currently do not attend a fitness centre (DAFC) and 71.1% of respondents reported currently attend a fitness centre (AFC) (Appendix D, Table 1).

Does Not Attend a Fitness Centre (DAFC) Results

A majority of DAFC respondents stated that, if they were to start attending a fitness centre, they would choose UBC-affiliated fitness centres (UBC Recreation Gym (38.9%), a UBC Residence Gym (27.8%), or the Doug Mitchell Thunderbird Sports Center (8.3%)). DAFC respondents who would not choose UBC-affiliated fitness centres would most likely attend Gold's Gym (8.3%) or another off-campus gym (8.3%), while some would attend the Wesbrook Community Center (5.6%) or stated 'other' (2.7%).

Attitudes and perceptions about fitness centres were measured on a 5-point Likert scale from 'strongly disagree' (1) to 'strongly agree' (5). When respondents were asked how much they agreed with the statement '*Attending a fitness center is important to me and I believe it contributes to a healthy lifestyle*', the mean score was 3.54. 9.1% said they strongly agreed, 54.5% said that they somewhat agreed, 18.2% did not agree nor disagree, 18.2% somewhat disagreed (Appendix D, Figure 2). When respondents were asked how much they agreed with the statement '*I would feel included and comfortable in a fitness center environment*', the mean score was 2.92. 13.6% said that they strongly agreed, 13.6% said that they somewhat agreed, 36.4% said they did not agree nor disagree, 36.4% said that they somewhat disagreed, and 4.17% said that they strongly disagreed (Appendix D, Figure 3).

The factors that influence fitness centre choice were measured on a 5-point Likert scale from 'extremely unlikely' (1) to 'extremely likely' (5). The average score was calculated for each factor. In order of importance, the factors that were reported to influence DAFC participants' decision when choosing a fitness centre are: location (4.56), cost (4.48), personal enjoyment/motivation (4.48), school/work schedule (4.44), cleanliness (4.40), sense of belonging (4.16), atmosphere/gym culture (4.08), hours of operation (3.96), equipment amount and variety

(3.92), friends or family attending the same gym (3.80), level of exercise knowledge (3.72), free trial (3.60), staff (3.16), availability of personal trainers (2.88), and physical accessibility (2.80).

A detailed summary of factors that influence DAFC survey respondents' decision when choosing a fitness centre can be found in Appendix D, Figure 4.

68.2% of DAFC respondents were aware of the new Student Recreation North Fitness Center being built, while 31.8% were not (Appendix D, Figure 5). A summary of what DAFC survey respondents would like to see in a new fitness centre can be found in Appendix D, Figure 6. Notable improvements respondents would like to see include: larger physical space (20.0%), more equipment (20.0%) and improved sectioned-off space (15.0%) (Appendix D, Figure 6).

Attends a Fitness Centre (AFC) Results

The majority of AFC respondents currently attend the UBC Recreation Gyms (53.2%) with other respondents attending UBC Residence Gym (13.9%), Gold's Gym (11.39%), off-campus gyms (6.3%), Wesbrook Community Center Gym (6.3%) and other on-campus facilities (Appendix D, Figure 7). The majority of AFC respondents attend a fitness centre 3 to 4 times per week (36.3%), or 1 to 2 times per week (30.3%) (Appendix D, Figure 8). The most common mechanism by which individuals found out about their fitness centre was through friends or family (53.0%), or Google search (28.8%) and the least common method was through social media (9.1%) (Appendix D, Figure 9). There was a wide distribution of when survey respondents normally attend a fitness centre. Overall, results indicate that most individuals prefer going in the morning (Appendix D, Figure 10). The least common times were distributed between afternoons and evenings, with Saturday evenings being the least common at 20.93% and Monday afternoons being the second least common at 22.64% (Appendix D, Figure 10).

When respondents were asked how much they agreed with the statement '*Attending a fitness center is important to me and I believe it contributes to a healthy lifestyle*', the mean score was 4.41. 62.3% said that they strongly agreed, 29.5% said they somewhat agreed, 1.6% said they did not agree or disagree, 1.6% said they somewhat disagreed, and 4.9% said they strongly disagreed (Appendix D, Figure 2). When respondents were asked how much they agreed with the statement '*I feel included and comfortable in my fitness centre's environment*', the mean score was 3.97. 23% strongly agreed, 57.4% said that they somewhat agreed, 14.8% did not agree or disagree and 4.9% somewhat disagreed (Appendix D, Figure 3). A detailed summary of factors that influence AFC survey respondents' decision when choosing a fitness centre can be found in Appendix D, Figure 11.

In order of importance, the factors that were reported to influence AFC participants' decision when choosing a fitness centre are: location (4.8), cost (4.73), school/work schedule (4.69), personal enjoyment/motivation (4.36), equipment amount and variety (4.32), cleanliness (4.18), hours of operation (4.15), atmosphere/gym culture (4.03), sense of belonging (3.81), level of exercise knowledge (3.73), friends or family attending the same gym (3.62), physical accessibility (3.18), membership perks or rewards (3.02), staff (2.82), free trial (2.72), and availability of personal trainers (1.91). A detailed summary of factors that influence AFC survey respondents' decision when choosing a fitness centre can be found in Appendix D, Figure 11.

When AFC survey respondents were asked what features of their current fitness center are most important to them, the top four features were location (23.9%), quality and variety of equipment (17.05%), cost (15.9%) and availability of machines (11.36%) (Appendix D, Figure 12).

84.6% of AFC respondents were aware of the new Student Recreation North Fitness Center being built (Appendix D, Figure 5). A summary of what AFC survey respondents would like to see in a new fitness centre can be found in Appendix D, Figure 13. Notable improvements respondents would like to see include: more equipment (25.7%), larger physical space (24.3%) and a greater variety of equipment (18.9%) (Appendix D, Figure 13).

DAFC vs. AFC Results

The factors that influence fitness centre choice differ subtly between the DAFC and AFC groups. To generate a single statistic representing the difference between groups, we subtracted each AFC score from the corresponding DAFC score (DAFC-AFC). A positive statistic indicates a factor that more strongly influences the DAFC group, while a negative statistic represents a factor that more strongly influences the AFC group. In ranked order from most positive to most negative, the differences between groups are: availability of personal trainers (0.97), free trial (0.88), membership perks or rewards (0.58), sense of belonging (0.35), staff (0.34), cleanliness (0.22), friends or family attending the same gym (0.18), personal enjoyment/motivation (0.12), atmosphere (0.05), level of exercise knowledge (-0.01), hours of operation (-0.19), location (-0.24), cost (-0.25), school/work schedule (-0.25), physical accessibility (-0.38), and equipment amount and variety (-0.40).

Discussion

The goal of our study was to explore the factors influencing the choice of fitness centre for UBC students, with a particular focus on the differences between individuals who do not attend a fitness centre (DAFC) and individuals who attend a fitness centre (AFC). In recognition of the importance of physical ability on people's experiences at fitness centres, we also analyzed the differences between able-bodied and non-able-bodied individuals. We also included an

open-ended question to ask specifically about SRC North in order to help develop strategies and plans to increase student fitness centre attendance. Our results provide insight into the factors and perceptions influencing the choice of a fitness centre for these two groups.

DAFC vs. AFC Comparison

Based on the results, there are several distinct differences in the factors influencing fitness centre attendance between DAFC and AFC individuals. First, the factor with the largest difference was ‘the availability of personal trainers,’ indicating that DAFC individuals may be more inclined to use personal trainers. However, the Likert score for ‘availability of personal trainers’ was only 2.88, indicating that DAFC individuals are still only neutral about personal trainers. Second, other factors that held greater importance to DAFC individuals were ‘free trial’ and ‘membership perks and rewards’. Not only did these two factors score higher on the Likert scale, but this result also aligns with the literature indicating the effectiveness of promotional incentives on consumer purchase decisions (Subramanian, 2017). Finally, ‘sense of belonging’ held greater importance for DAFC individuals. This is significant because ‘sense of belonging’ also has a Likert score of 4.16 for the DAFC group, indicating that this is a very important factor for this demographic. This may be related to the desire for ‘sectioned-off space’ in the new SRC North fitness centre, since some DAFC individuals felt that fitness centres are too visually open, making them feel intimidated. Overall, these findings suggest that providing free trials and membership perks, and promoting a welcoming gym culture may be particularly effective methods for targeting the demographic of people who do not already attend a fitness centre.

On the contrary, cost and factors related to time are the biggest factors that influence the choice of fitness centre for AFC. Examples of factors related to time are operating hours, location, and school/work schedule. This result is consistent with the observation that

convenience is a key factor moderating fitness centre choice and attendance (Rhodes et al., 2020). In addition, ‘equipment amount and variety’ was more influential to AFC participants than DAFC participants. This aligns with the results of our open-ended question about SRC North, where the most commonly cited factors included both equipment amount and equipment variety. This is, of course, among the factors that is most commonly identified in the existing literature, since an individual’s exercise choices are restricted by the equipment that is available to them (Brown et al., 2014; Jang & Choi, 2018; Sevilmiş et al., 2023). However, it is notable that AFC participants felt much more strongly about equipment than DAFC participants. This finding highlights the different factors that impact individuals’ choice of fitness centre between the two groups. While DAFC individuals are more likely to consider personal enjoyment and community belonging when choosing a fitness centre, AFC individuals prioritize practical considerations like cost, operating hours, and equipment selection as influential factors in their decision-making.

Able-Bodied vs. Non-Able-Bodied Individuals Comparison

Our survey demographics included 70 individuals who did not have a current disability (ND) and 35 individuals who did have a disability or ongoing medical condition (D) (Appendix D, Table 1). Our study aimed to examine key differences in factors influencing fitness centre choice in able-bodied and non-able-bodied individuals, which is highlighted in Appendix D, Table 4. Findings indicate there were some similarities between groups, with certain factors such as cost (D=4.73; ND=4.44), location (ND=4.56; D=4.68), school/work schedule (ND=4.44; D=4.67), cleanliness (ND=4.28; D=4.52), personal enjoyment (ND=4.56; D=4.48) and sense of belonging (ND=4.11; D=4.48) ranking as important considerations (Appendix D, Table 4). While this may indicate that both groups experienced similar barriers to attending a fitness centre, the

exact mechanism is often different. For instance, ‘sense of belonging’ amongst the D group can be related to feelings of not fitting in with a largely able bodied crowd, whereas the ND group had greater concerns about both lacking knowledge of gym etiquette or lacking confidence (Nikolajsen et al., 2021a). Additionally, location is a key barrier for D groups due to there not being an accessible way to get to the gym, either through transportation, or building accessibility (e.g., elevators). In contrast, location for able-bodied individuals refers to the proximity of the fitness centre to their home or work (Nikolajsen et al., 2021a). Additionally, personal enjoyment for D groups is often tied to the availability of assistive devices and the inclusivity of the gym environment, whereas for ND groups personal enjoyment is often linked to their intrinsic interest in exercises (Nikolajsen et al., 2021a).

Factors such as free trials (ND=3.56; D=3.00), personal trainers (ND=2.94; D=2.38), staff (D=3.09; ND=3.09) and membership perks (ND=3.50; D=3.10) were ranked as less important considerations across both groups (Appendix D, Table 4). Our findings oppose current research that indicates that staff is an important consideration amongst disabled individuals (Nikolajsen et al., 2021a). Studies indicate that staff are particularly helpful when an individual lacks exercise knowledge, or are trained to provide adaptations to exercises based on an individual's needs (Nikolajsen et al., 2021a). It's possible our results indicate staff is less important because the majority of non-able bodied individuals already attend a fitness centre and may already have some exercise knowledge, or know how to adapt exercises based on their condition.

There were some key differences across the ND and D group. For instance, the D group perceived hours of operation, physical accessibility, level of exercise knowledge and sense of belonging as more important considerations compared to non-able-bodied individuals (Appendix

D, Table 4). Physical accessibility such as wheelchair-friendly spaces (e.g., automatic doors) and available equipment for people with different abilities is consistently found to be more important to individuals with physical disabilities compared to those without (Nikolajsen et al., 2021a). Additionally, similar to our results, lack of exercise knowledge and anxiety about not fitting in (in particular to certain body ideals) has been found to be higher amongst disabled individuals (Nikolajsen et al., 2021a).

Based on our results and current literature, it is important to consider both able and non-able bodied individuals separately to help promote an inclusive environment. Our results can help tailor UBC Recreation's current and upcoming fitness centres to be a more accessible environment.

Study Applications

The importance of our study is the examination of factors that influence the choice of the fitness centre for UBC undergrad students residing on campus, specifically DAFC and AFC, and able and non-able bodied individuals. For DAFC and AFC individuals, we found that DAFC individuals tend to prioritize their enjoyment and community connection, while AFC individuals prioritize cost, convenience, and equipment selection. In addition, there are key findings when comparing able-bodied and non-able-bodied individuals when choosing a fitness centre.

Non-able-bodied individuals see operating hours, level of exercise knowledge, and physical accessibility as more important considerations compared to able-bodied individuals. These results can help UBC Recreation consider this when developing tailored strategies and creating a more inclusive environment to attract and retain different demographic groups. Furthermore, some desired changes for SRC North are suggested by the targeted population. For desired equipment, respondents recommended adding dumbbells, squat racks, sleds, plyometric boxes,

etc. (Appendix D, Table 2). Improved air ventilation and more sectioned-off areas for different stations are examples of desired environmental changes for SRC North (Appendix, Table 3).

Importantly, the study contributes to existing literature by providing valuable evidence on factors influencing undergrad students' choice of fitness centre and highlights the significance of promoting accessibility, equity, and inclusivity to meet the diverse needs of all individuals with the goal of increasing fitness centre attendance.

Limitations and Future Research

It is essential to acknowledge the limitations of our study, including the limited representation of study samples, self-report biases, and time constraints. First, the survey sample only focused on individuals who live on campus, which may affect the generalizability of the findings. The majority of respondents identified as women and domestic students, meaning there was limited representation from men, non-binary and international students. Moreover, there was a notable lack of individuals from the Faculties of Education, Medicine, and Law. These limited representations of study samples could potentially overlook the perspectives of this student population and might not capture the perspectives of other student populations who may have different perspectives. Second, the survey design is an online self-report survey, which may cause response bias and inaccuracy due to social desirability bias and memory recall.

Respondents may choose to give more socially acceptable answers rather than answering based on their true experience. Since it is a self-report survey, respondents also heavily relied on recalling memories and past experiences, which can be affected by factors like time and emotion. Finally, the limited time for recruiting survey respondents meant that only 97 eligible respondents were surveyed, affecting the generalizability of the findings to those populations that we did not study. Additionally, we used recruitment methods that may not have reached far

beyond the researchers' own social circles, such as using private social media accounts to promote the study.

Moving forward, future studies should aim to study a more diverse and representative sample by extending recruitment time and designing a more accessible survey design. Also, we recommend that future studies implement randomized responses and use short recall periods to reduce self-report and response biases due to social desirability and memory recall. In addition, future studies could explore the novel factors identified in this study in more depth. For example, the importance of creating a sense of belonging for people who do not already attend a fitness centre is relatively poorly understood, despite its apparent importance given our results. It may be important to explore this area to understand how best to improve the sense of belonging in a fitness centre. As another example, our results show that most people who attend fitness centres attend the same centre as their friends and family, and that people are typically introduced to new fitness centres by friends and family. As such, it may be prudent to explore the social networks that underlie fitness centre choice, since this may be a mediator for other factors of fitness centre choice.

Recommendations

The findings of our study support the following five key recommendations: implementing online fitness classes, extended operating hours, community events and challenges, the 'Bring a Friend' program, and facility improvements. These recommendations include both immediately actionable ideas (e.g. extended operation hours, community challenges, and the 'Bring a Friend' program) and long-term recommendations (e.g. online fitness classes and facility improvements).

Recommendation 1: Online Fitness Classes

The results demonstrate that the most important factors for both those currently attending and not attending a fitness centre are cost and location (Appendix D, Figures 4 and 11). To promote community engagement and decrease cost and location barriers, free or low-cost access to online resources, such as workout videos, nutrition resources, or fitness tracking, can be provided with a gym membership. These resources can all be included in an app, which allows individuals to engage in fitness activities from home at a minimal cost. This allows participants to be active on their own schedule, which is important as the large majority of respondents were full-time students (Appendix D, Table 1). Workout classes can be pre-recorded and available anytime or live on the app to promote participation.

Recommendation 2: Extending Operating Hours

Scheduling is a major determinant in fitness centre participation for both those currently attending and not attending a fitness centre (Appendix D, Figures 4 and 11). In addition, hours of operation are an important factor individuals consider when choosing a fitness centre (Appendix D, Figures 4 and 11). Therefore, a second recommendation is extending operating hours to accommodate individuals with varying schedules due to school and work. For example, this could include opening the BirdCoop and ARC earlier (6:30 AM) and closing later (10:00 PM) on weekends and ensuring these facilities remain open during winter break. In addition, individuals have indicated they would like to work out before their 8:00 AM classes and thus, it is recommended that weekdays open at 5:00 AM (Appendix D, Figures 4 and 11). On the weekends the ARC and BirdCoop open at 10:00 AM (UBC Recreation, 2024), compared to Gold's Gym which opens at 8:00 AM (Gold's Gym, 2024), and Wesbrook Community Centre gym at 8:30 AM (University Neighborhood Association, 2022). Furthermore, we see that fitness

centres are busiest in the morning (Appendix D, Figure 10) and that overcrowding in the gym is a factor individuals consider when choosing a gym (Appendix D, Figures 6 and 13). Therefore, increasing the fitness centre's hours of operation could help alleviate this issue.

Recommendation 3: Community Events and Challenges

Survey results indicate that personal enjoyment and feelings of belonging are important facilitators for both individuals currently attending and not attending a fitness centre (Appendix D, Figures 4 and 11). This can be fostered through community events and challenges such as: step challenges, weight loss challenges, nutrition seminars, and seasonal challenges to 'get into shape before summer.' Additionally, UBC community engagement can be enriched by offering discounted group fitness classes to participants who bring non-perishable food items as a donation to the AMS Food Bank. Research indicates that when fitness centres strive to increase community engagement in members, there is a higher rate of physical activity adherence, particularly in women (Carter & Alexander, 2020). This is important as a majority of respondents of our survey were women (Appendix D, Table 1). Therefore, implementing challenges could improve both belongingness and increased attendance for members.

Recommendation 4: Bring a Friend Program

Another recommendation to improve a sense of belonging is allowing existing gym members to bring a friend for free once. Survey results demonstrate that most individuals attend the same gym as friends or family members, and this is an important factor when considering a fitness centre (Appendix D, Figures 4 and 11). Furthermore, the majority of individuals find out about fitness centres through friends or family (Appendix D, Figure 9). Research supports this recommendation, as individuals are more likely to adhere to physical activity programs when they have social support (Collado-Mateo et al., 2021). In addition, a 'Bring a Friend Program'

allows new gym attendees who are nervous or unsure about how to use equipment to be shown how to use machines (Appendix D, Figure 6). This also allows new gym attendees to view the gym environment and analyse whether it aligns with their desires in lieu of a free trial.

Recommendation 5: Facility Improvements

The most commonly requested feature for the new Student Recreation North building is having a greater quality and variety of equipment (Appendix D, Figures 12 and 13). Respondents frequently outlined their desire for more dumbbells, machines (ex. leg training), squat racks, bench presses, kettlebells, cable machines, barbells, punching bags, pilates machines, plyometric boxes, and skipping ropes (Appendix D, Table 2). A variety of equipment is important to maintain the engagement of the student body and allow individuals the opportunity to experience new and diverse exercises. Cleanliness is also an important factor for those currently attending and not attending a fitness centre (Appendix D, Figures 4 and 11). It was recommended that air ventilation be improved, and air conditioning be placed in cardiovascular training areas as the temperature of the BirdCoop and ARC is frequently too hot (Appendix D, Table 3). Similarly, the gym environment including natural lighting, sectioned off spaces, and accessible water fountains were also indicated by respondents (Appendix D, Table 3). Additionally, it was requested that out-of-order machines should be fixed with time efficiency to maximize equipment use and gym space (Appendix D, Table 3).

Conclusion

The research objective of this study was to analyze the factors that determine whether undergraduate students (who live on UBC Vancouver's campus) choose to exercise at UBC's fitness centers (ARC and Birdcoop) or non-UBC run facilities on campus (Gold's Gym and Wesbrook Community Centre). Specifically, this study aimed to explore the following question:

what are the considerations of undergraduate students who live on campus when choosing a fitness centre? This was important to derive recommendations for the delivery of the new UBC Recreation North facility, to increase undergraduate student attendance and engagement.

To make our recommendations more specific, we analyzed data separately for individuals who currently attend a fitness centre (AFC) and those who do not (DAFC). We found that DAFC individuals tend to be more considerate of personal enjoyment and their sense of belonging, while AFC individuals prioritize cost, convenience, and equipment selection. In addition, we analyzed data separately for able-bodied and non-able-bodied individuals. Non-able-bodied individuals see operating hours, level of exercise knowledge, and physical accessibility as more important considerations compared to able-bodied individuals. These findings are important for understanding how best to appeal to currently unserved and underserved demographic groups living on university campuses, thus increasing attendance at on-campus fitness centres. More generally, our findings also highlight that the factors that influence fitness centre choice for university students may differ from the general population, warranting further study into the complexities of these factors.

References

- Almrafee, M. (2022). Impact of TikTok social media marketing on Generation Z's choice of fitness centers in Jordan. *Journal of Social Media Marketing, 1*(2), 19-37.
<https://doi.org/10.33422/jsmm.v1i2.1035>
- Bradford, B., van Ingen, B., Daniels, J., Wagner, J., & Hanic, M. (2019). Student Wellness: An Investigation on a Small Canadian Post-secondary Campus. *International Journal of Learning in Higher Education, 26*(2), 35–55.
<https://doi.org/10.18848/2327-7955/CGP/v26i02/35-55>
- Bundon, A. (2024). *Project List and Link to Sign up for a Group*. [Canvas]. University of British Columbia.
https://canvas.ubc.ca/courses/131563/pages/project-list-and-link-to-sign-up-for-a-group?module_item_id=6431450
- Carter, A., & Alexander, A. C. (2020). A qualitative exploration of womens' experiences who belong to a "fitness community". *American Journal of Health Education, 51*(1), 22-30.
<https://doi.org/10.1080/19325037.2019.1687365>
- Collado-Mateo, D., Lavín-Pérez, A. M., Peñacoba, C., Del Coso, J., Leyton-Román, M., Luque-Casado, A., Gasque, P., Fernández-Del-Olmo, M. Á., & Amado-Alonso, D. (2021). Key factors associated with adherence to physical exercise in patients with chronic diseases and older adults: An umbrella review. *International Journal of Environmental Research and Public Health, 18*(4), 2023.
<https://doi.org/10.3390/ijerph18042023>
- Coutts, L., (2012). *Who are our students? implications for teaching and learning*. UBC Centre for Teaching, Learning and Technology.

<https://ctl.ubc.ca/2012/08/15/who-are-our-students-implications-for-teaching-and-learning/#:~:text=The%20average%20age%20of%20a,with%20questions%20related%20to%20ethnicity.>

Cyr, A., Munroe-Chandler, K., & Gammage, K. (2019). Might plight: The social anxiety felt by men in the weightlifting environment. *ACSM's Health & Fitness Journal*, 23(2), 14-18. <https://doi.org/10.1249/FIT.0000000000000466>

Deliens, T., Deforche, B., De Bourdeaudhuij, I., & Clarys, P. (2015). Determinants of physical activity and sedentary behaviour in university students: A qualitative study using focus group discussions. *BMC Public Health*, 15(1), 201. <https://doi.org/10.1186/s12889-015-1553-4>

Du, Y., Gebremedhin, A. H., & Taylor, M. E. (2019). Analysis of University Fitness Center data uncovers interesting patterns, enables prediction. *IEEE Transactions on Knowledge and Data Engineering*, 31(8), 1478–1490. <https://doi.org/10.1109/tkde.2018.2863705>

Gold's Gym. (2024). *Gold's Gym UBC* . <https://www.goldsgym.com/umvancouverbc/>

Google Maps. (n.d.). [UBC Endowment Lands]. Retrieved February 28, 2024, from <https://www.google.com/maps/place/University+Endowment+Lands,+BC/@49.2573033,-123.2572715,12.8z/data=!4m6!3m5!1s0x548672b7de525387:0x65687430fcc3211c!8m2!3d49.2731278!4d-123.2487641!16zL20vMDhmMHI2?entry=ttu>

Jang, W. Y., & Choi, K. (2018). Factors influencing choice when enrolling at a fitness center. *Social Behavior and Personality: An International Journal*, 46(6), 1043–1056. <https://doi.org/10.2224/sbp.7104>

Janmohamed, I., & Gaster, T., (2023) *We broke down UBC's 2022/23 enrolment stats, admission rates and more*. The Ubyyssey.

<https://www.ubyssey.ca/news/ubcs-202223-enrolment-report/>

Kapinos, K. A., Yakusheva, O., & Eisenberg, D. (2014). Obesogenic environmental influences on young adults: Evidence from college dormitory assignments. *Economics & Human Biology*, 12, 98–109. <https://doi.org/10.1016/j.ehb.2013.05.003>

Liu, Y., Lee, D., Li, Y., Zhu, W., Zhang, R., Sui, X, Lavie, C. J., & Blair, S. N. (2019).

Associations of resistance exercise with cardiovascular disease morbidity and mortality. *Medicine and Science in Sports and Exercise*, 51(3), 499-508.

<https://doi.org/10.1249/MSS.0000000000001822>

Löfgren, K. [kentlofgren]. (2013, May 19). *Qualitative analysis of interview data: A step-by-step guide* [Video file].

https://www.youtube.com/watch?v=DRL4PF2u9XA&t=1s&ab_channel=KentLofgren

Mion, E. (2017). *Fitness centers*. WBDG.

<https://www.wbdg.org/building-types/community-services/fitness-centers>

Nikolajsen, H., Richardson, E. V., Sandal, L. F., Juul-Kristensen, B., Troelsen, J. (2021a).

Fitness for all: How do non-disabled people respond to inclusive fitness centres? *BMC Sports Science, Medicine and Rehabilitation*, 13, 81.

<https://doi.org/10.1186/s13102-021-00303-2>

Nikolajsen, H., Sandal, L. F., Juhl, C. B., Troelsen, J., & Juul-Kristensen, B. (2021b). Barriers to, and facilitators of, exercising in fitness centres among adults with and without physical disabilities: A scoping review. *International Journal of Environmental Research and Public Health*, 18(14), 7341. <https://doi.org/10.3390/ijerph18147341>

- Pellerine, L. P., Bray, N. W., Fowles, J. R., Furlano, J. A., Morava, A., Nagpal, T. S., & O'Brien, M. W. (2022). The influence of motivators and barriers to exercise on attaining physical activity and sedentary time guidelines among Canadian undergraduate students. *International Journal of Environmental Research and Public Health*, *19*(19), 12225. <https://doi.org/10.3390/ijerph191912225>
- Pope, L., & Harvey, J. (2015). The impact of incentives on intrinsic and extrinsic motives for fitness-center attendance in college first-year students. *American Journal of Health Promotion*, *29*(3), 192–199. <https://doi.org/10.4278/ajhp.140408-quan-135>
- Rapport, F., Hutchings, H., Doel, M., Wells, B., Clement, C., Mellalieu, S., Shubin, S., Brown, D., Seah, R., Wright, S., & Sparkes, A. (2018). How are University Gyms used by staff and students? A mixed-method study exploring gym use, motivation, and communication in three UK gyms. *Societies*, *8*(1), 15. <https://doi.org/10.3390/soc8010015>
- Rhodes, R. E., Zhang, E., & Zhang, C. (2020). Direct and indirect relationships between the built environment and individual-level perceptions of physical activity: A systematic review. *Annals of Behavioral Medicine*, *54*(7), 498-509. <https://doi.org/10.1093/abm/kaz068>
- Ringle, H. (2008). Gyms offer specials to entice members in tight economy: YMCA, others offer discounts to help those struggling. *Tribune Business News*. <https://www.proquest.com/docview/456474893?pq-origsite=summon&sourcetype=Wire%20Feeds>
- Rivera, E., Smith, C., & Hesketh, K. D. (2024). Priority populations' experiences of the accessibility and inclusion of recreation centres: A qualitative study. *BMC Public Health*, *24*, 205. <https://doi.org/10.1186/s12889-023-17595-3>

- Schonlau, M., Gweon, H., & Wenemark, M. (2021). Automatic classification of open-ended questions: Check-all-that apply questions. *Social Science Computer Review*, 39(4), 562-572. <https://doi.org/10.1177/0894439319869210>
- Steltenpohl, C. N., Shuster, M., Peist, E., Pham, A., & Mikels, J. A. (2018). *Me time, or we time? age differences in motivation for exercise*. OUP Academic. <https://doi.org/10.1093/geront/gny038>
- Subramanian, K. R. (2017). Role of Incentives in Shaping Consumer Mindset. *International Journal of Trend in Research and Development*, 4(1), 28-32. <https://www.ijtrd.com/papers/IJTRD6556.pdf>
- Thomas, A. M., Beaudry, K. M., Gammage, K. L., Klentrou, P., & Josse, A. R. (2019). Physical activity, sport participation, and perceived barriers to engagement in first-year Canadian university students. *Journal of Physical Activity and Health*, 16(6), 437–446. <https://doi.org/10.1123/jpah.2018-0198>
- UBC Recreation. (n.d. a). *ACTIVATE UBC: Student Recreation Centre North*. UBC Recreation. <https://recreation.ubc.ca/home/activate-ubc/>
- UBC Recreation. (n.d. b). *Fitness centres & locations*. UBC Recreation. <https://recreation.ubc.ca/fitness-classes/fitness-centres/>
- UBC Recreation. (n.d. c). *Women (trans women welcome) & two-spirit, trans, non-binary (2STNB) fitness hours*. <https://recreation.ubc.ca/fitness-classes/fitness-centres/women-fitness-hours/>
- UBC Recreation. (2024). *Hours of Operation*. <https://recreation.ubc.ca/fitness-classes/contact/>
- University Neighbourhood Association. (2022, May 5). *Fitness Centre Hours*. University Neighbourhood Association. <https://www.myuna.ca/fitness-centres/>

University of British Columbia. (2024a). *Residences Overview*. UBC Student Residence .

<https://vancouver.housing.ubc.ca/residences-rooms/residences/>

University of British Columbia. (2024b). *Survey Tool*. UBC Information Technology.

<https://it.ubc.ca/services/teaching-learning-tools/survey-tool>

Weatherston, K. A., Joopally, H., Wunderlich, K., Kwan, M. Y. W., Tomasone, J. R., & Faulkner,

G. (2021). Original quantitative research - post-secondary students' adherence to the canadian 24-hour movement guidelines for adults: Results from the first deployment of the canadian campus wellbeing survey (CCWS). *Health Promotion and Chronic Disease Prevention in Canada*, 41(6), 173-181. <https://doi.org/10.24095/hpcdp.41.6.01>

Appendix A

Figure 1

Recruitment Materials for Social Media Posts and Presentations



The poster features a light beige background with green accents at the top and bottom. At the top right is the UBC logo and the text 'THE UNIVERSITY OF BRITISH COLUMBIA'. The main title is 'Are You a UBC Undergraduate Student Living on Campus?' in purple. Below it is a paragraph explaining the research project (KIN 464) and its focus on fitness centres. A list of criteria for participation is provided, followed by a QR code and a text box stating that the survey link can be accessed via the QR code or a direct link. A red-bordered box lists prizes for respondents: Lululemon Yoga Mats and UBC Athletics Prize Packs. Contact information for Dr. Andrea Bundon is provided, along with a small illustration of a dumbbell. The project ID is listed at the bottom.

 THE UNIVERSITY OF BRITISH COLUMBIA

Are You a UBC Undergraduate Student Living on Campus?

As part of a course-based research project (KIN 464), we are conducting a study on what impacts a person's decision when choosing a **fitness centre**.

If you are:

- An Undergraduate UBC Vancouver student

AND

- Live on campus

We would love for you to complete a short survey!

The survey link can be accessed via QR code or from this link



Survey **respondents** will have the opportunity to enter a draw to **win** one of the following **prizes**:
Lululemon Yoga Mat (2), UBC Athletics Prize Pack (4)

For more information about this project, contact:
amundt@student.ubc.ca



Please note that this post is public and anyone who likes, comments or shares the link will, by doing so, be associated with this study. The Principal Investigator on this project is Dr. Andrea Bundon (andrea.bundon@ubc.ca)

Project ID: H17-03560-A017, Group # 5

Email 1*Sample Email to Instructors*

Dear [instructors name],

As part of a course based research project [KIN 464], we are conducting a study on what impacts a person's decision when choosing a fitness centre. We are group 5 and the Principle Investigator is Dr. Andrea Bundon (andrea.bunden@ubc.ca).

If you have the time, could you please present or allow us to present our study poster (attached to this email) before the beginning of your class [insert class]. If the students respond to the survey, they will have the opportunity to enter a draw to win one of the following prizes: Lululemon Yoga Mat (2) or UBC Athletics Prize Pack (4).

Sincerely,

[insert name] (Group 5)

Email 2*Sample Email to Clubs*

Dear [Club Name],

As part of a course based research project [KIN 464], we are conducting a study on what impacts a person's decision when choosing a fitness centre. We are group 5 and the Principle Investigator is Dr. Andrea Bundon (andrea.bunden@ubc.ca).

If you have the time, please fill out the survey attached below. Individuals who fill out the survey have the opportunity to enter a draw to win one of the following prizes: Lululemon Yoga Mat (2) or UBC Athletics Prize Pack (4).

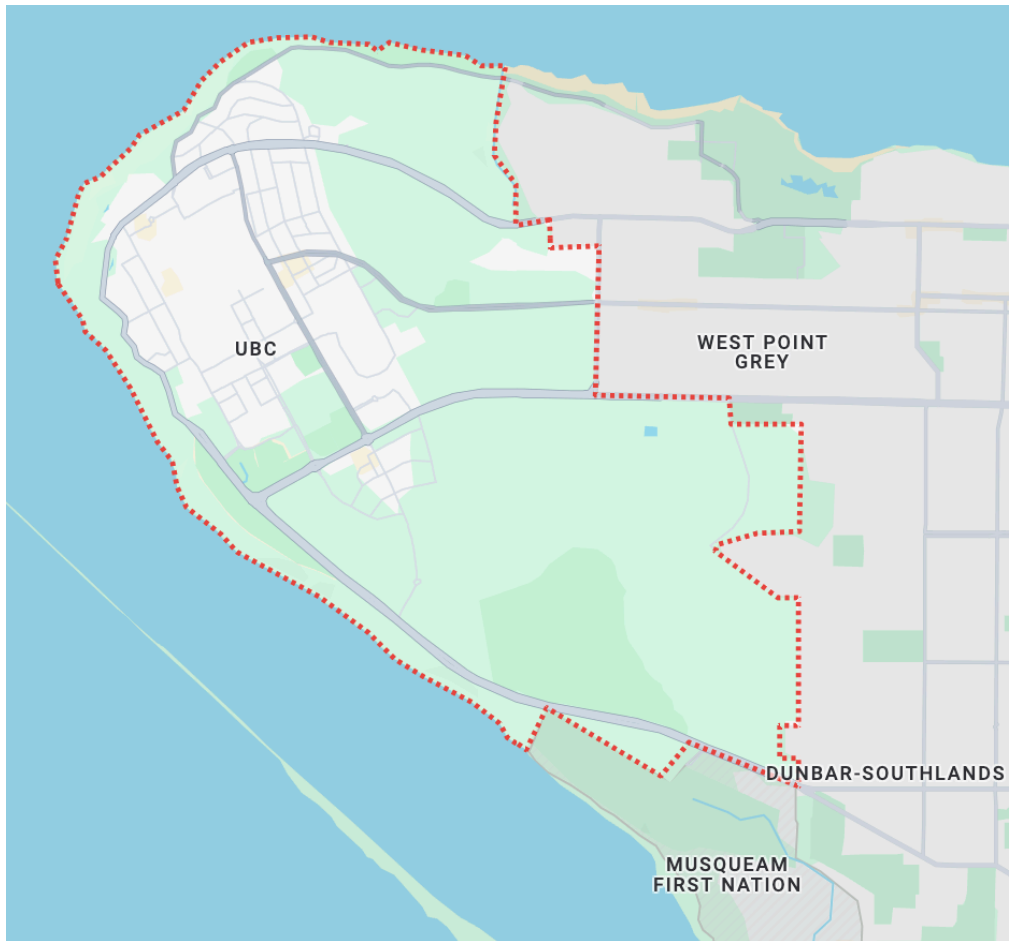
Sincerely,

[insert name] (Group 5)

Appendix B

Figure 1

Map of UBC Endowment Lands Boundary



From Google Maps. (n.d.). [UBC Endowment Lands]. Retrieved February 28, 2024, from

<https://www.google.com/maps/place/University+Endowment+Lands,+BC/@49.2573033,-123.2572715,12.8z/data=!4m6!3m5!1s0x548672b7de525387:0x65687430fcc3211c!8m2!3d49.2731278!4d-123.2487641!16zL20vMDhmMHI2?entry=ttu>

Appendix C

Table 1

Inclusion and Exclusion Criteria

	Inclusion criteria	Exclusion criteria
Student status	<ul style="list-style-type: none"> ● Degree-seeking student ● Full-time or part-time 	<ul style="list-style-type: none"> ● Non-degree student ● University staff or faculty ● Alumnus/a
University	<ul style="list-style-type: none"> ● UBC Vancouver 	<ul style="list-style-type: none"> ● UBC Okanagan ● Any other university
Level of study	<ul style="list-style-type: none"> ● Undergraduate 	<ul style="list-style-type: none"> ● Graduate student (Masters and Ph.D.) ● Postdoctoral fellow
Location of residence	<ul style="list-style-type: none"> ● University Endowment Lands (e.g., UBC residence, Westbrook Village) 	<ul style="list-style-type: none"> ● Off-campus ● Unstable housing (e.g couch-surfing, living in a vehicle, facing eviction)

Link 1: Survey

[Group 5: Fitness Centre Considerations Survey](#)

Link 2: URL for Survey

https://ubc.yu1.qualtrics.com/jfe/preview/previewId/f2f36f41-9911-4a79-9499-356639f25be5/S_V_b3gE8fJNWsaKObQ?Q_CHL=preview&Q_SurveyVersionID=current

Appendix D

Table 1

Demographic Data

Demographic Data	Count	Percentage
UBC Student		
Yes	128	97.7%
No	3	2.3%
Campus Attendance		
UBC Vancouver	131	100.0%
UBC Okanagan	0	0.0%
Relationship with UBC		
Undergrad student	124	94.7%
Staff member	2	1.5%
Post doc	1	0.8%
Graduate student	3	2.3%
Other	1	0.8%
Faculty member	0	0.0%
Alumnus/a	0	0.0%
Current Residence		
UBC Residence	61	46.6%
Other on-campus housing (e.g. Westbrook Village, University Village)	40	30.5%
Off campus	29	22.1%
Non stable housing	1	0.8%
Faculty distribution		

Science	32	33.0%
Kinesiology	30	30.9%
Applied Science	10	10.3%
Forestry	1	1.0%
Arts	13	13.4%
Commerce	4	4.1%
Land and Food Systems	6	6.2%
Pharmaceutical Sciences	1	1.0%
Education	0	0.0%
Medicine	0	0.0%
Law	0	0.0%
Economics	0	0.0%
Current Student Status		
Full time	95	97.9%
Part time	2	2.1%
Study Year Distribution		
First	37	36.1%
Second	15	15.5%
Third	34	38.1%
Fourth	9	9.3%
Fifth	2	2.1%
Gender		
Woman	71	73.2%
Man	25	25.8%
Non-binary/third gender/queer	1	1.0%

Domestic versus International Distribution		
Domestic student	88	90.7%
International student	9	9.3%
Disability or Ongoing Medical Condition		
Mental Health Condition	16	15.2%
Chronic Health Condition	6	5.7%
Blind/Visually Impaired	1	1.0%
Deaf/Hard of Hearing	1	1.0%
Neurological Condition	11	10.5%
No disability or ongoing medical condition	70	66.7%
Currently attends a fitness centre?		
Yes	69	71.1%
No	28	28.9%

Figure 1

Distribution of survey respondents who do not currently attend a fitness centre's response to the following question: If you started attending a fitness centre today, which would you most likely choose?

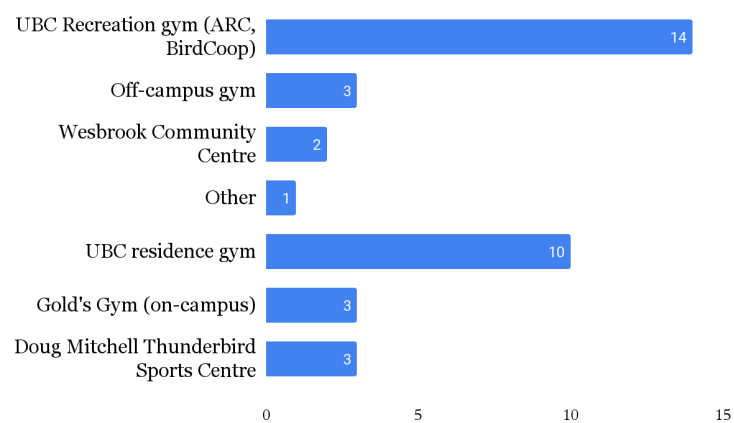
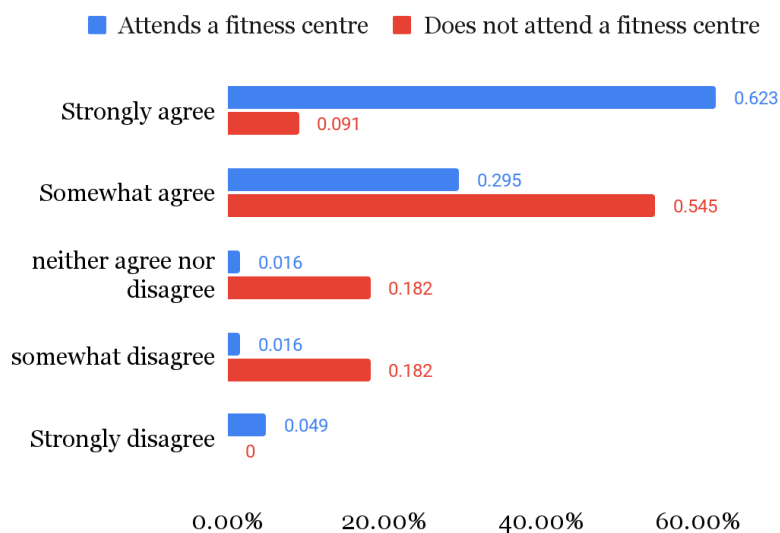


Figure 2

Distribution of survey respondents agreement to the following statement: Attending a fitness center is important to me and I believe it contributes to a healthy lifestyle.

**Figure 3**

Distribution of survey respondents agreement to the following statement: I would feel included and comfortable in a fitness centre environment.

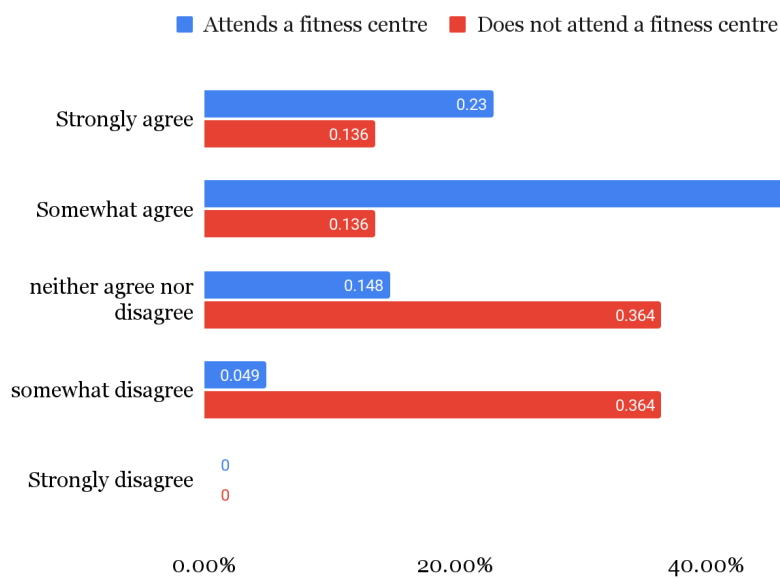


Figure 4

Distribution of factors that impact survey respondents who do not currently attend a fitness center when choosing a fitness centre.

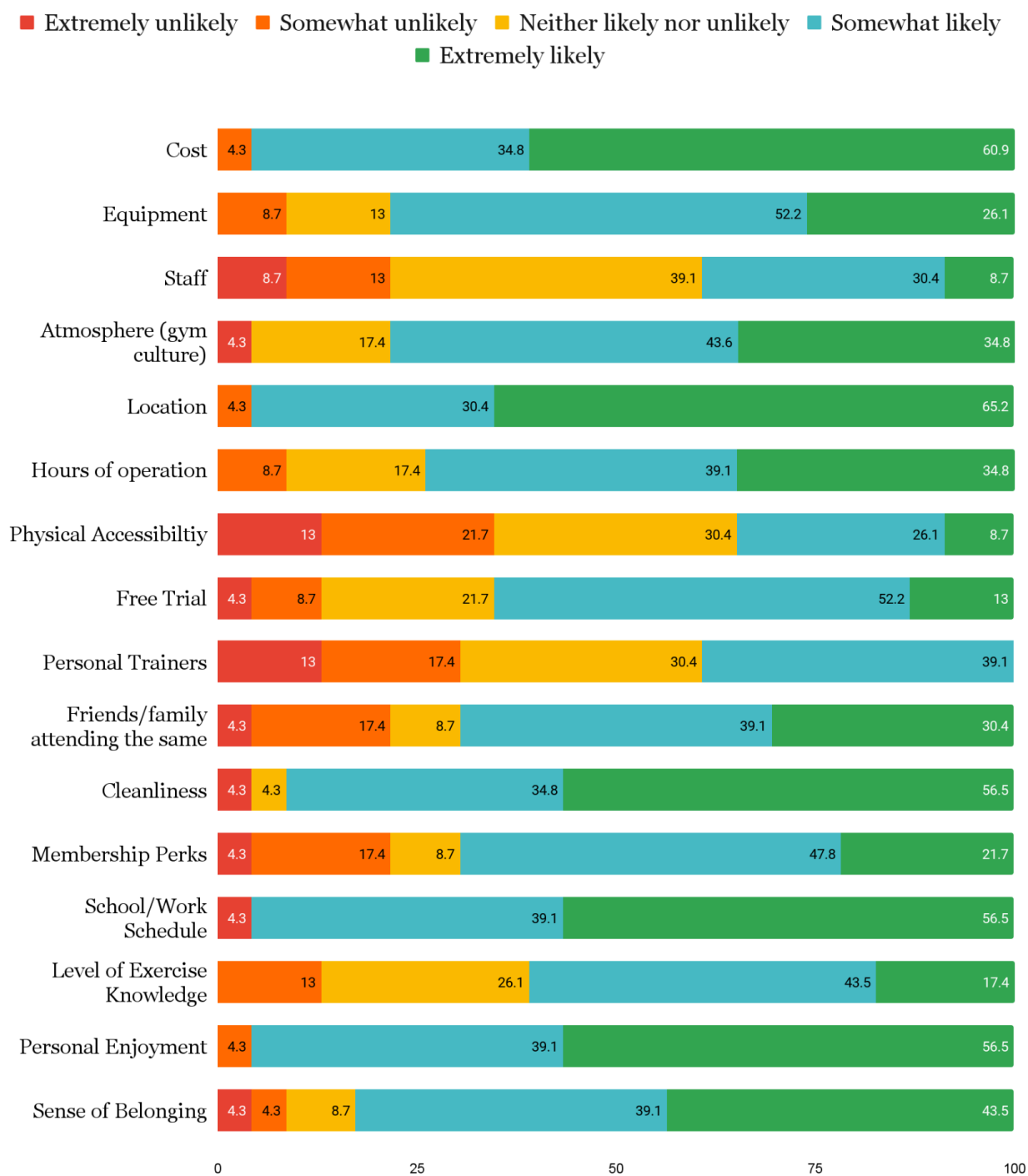
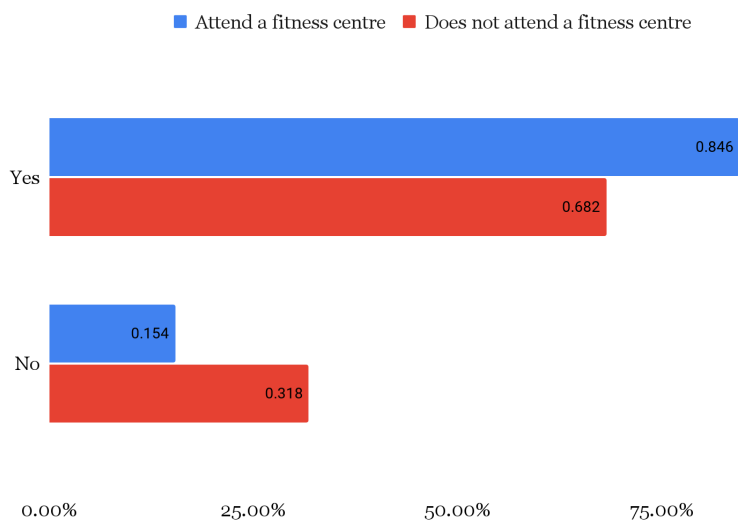


Figure 5

Distribution of survey respondents' awareness of the new Student Recreation North fitness centre being built.

**Figure 6**

Distribution of what survey respondents who do not attend a fitness centre would like to see at the new Student Recreation North Fitness Center.

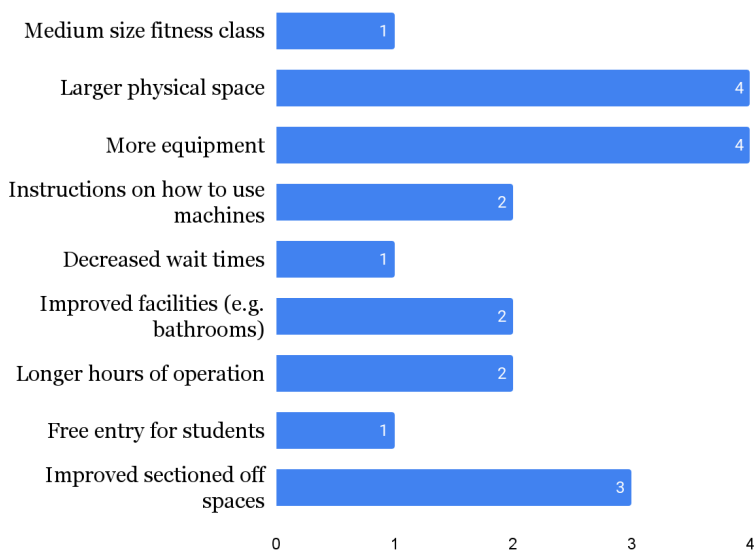
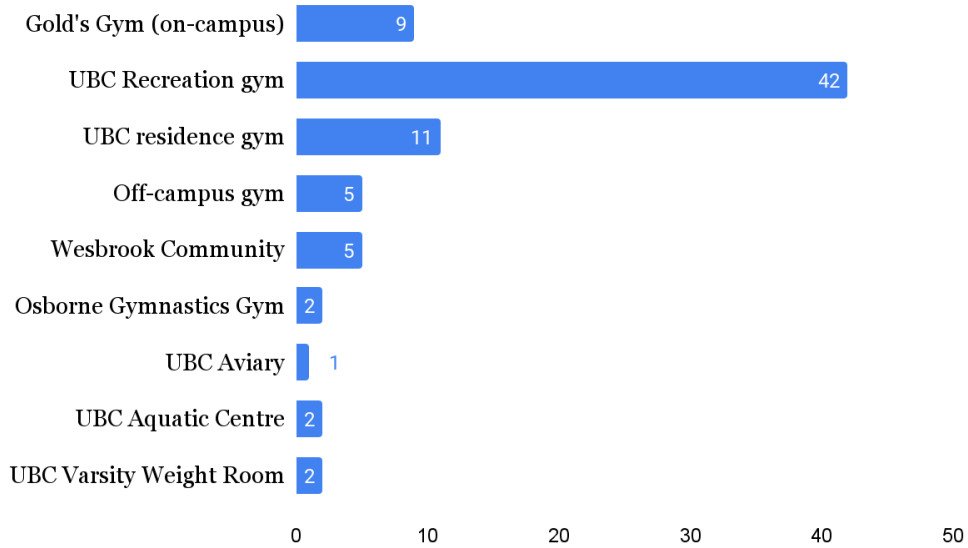


Figure 7

Distribution of where survey responders who attend a fitness centre exercise.

**Figure 8**

Distribution of frequency of fitness center attendance among survey respondents who currently attend a fitness centre.

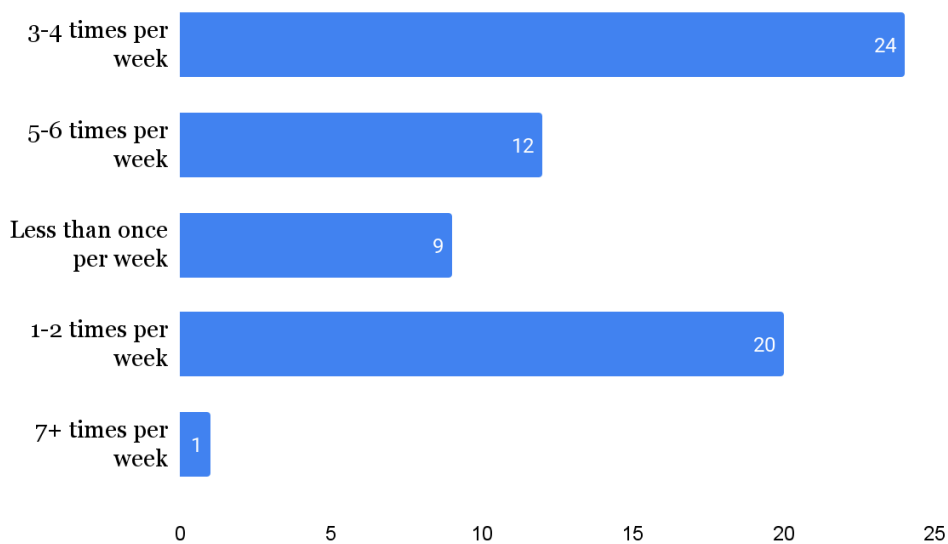


Figure 9

Distribution of how survey respondents found out about the fitness center that they attend.

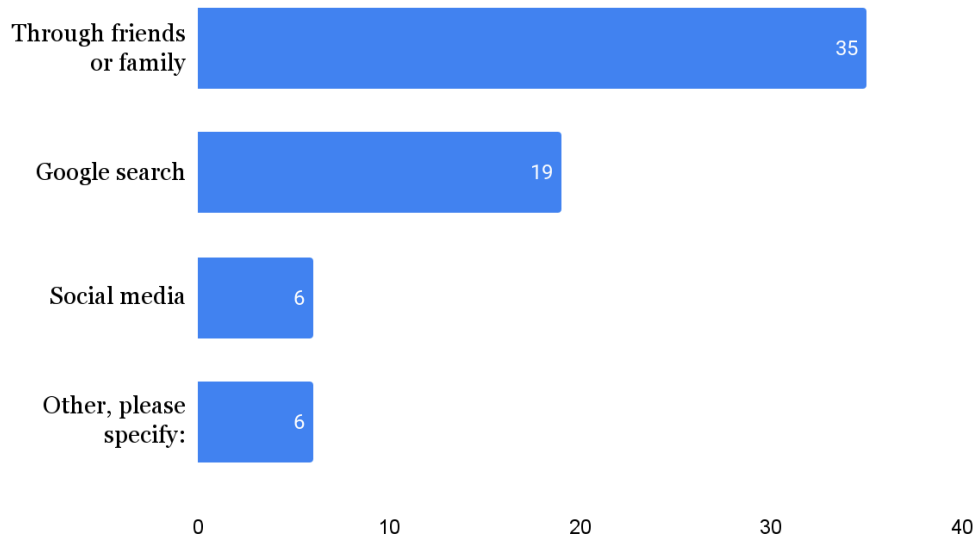


Figure 10

Distribution of when survey respondents currently attend a fitness centre.

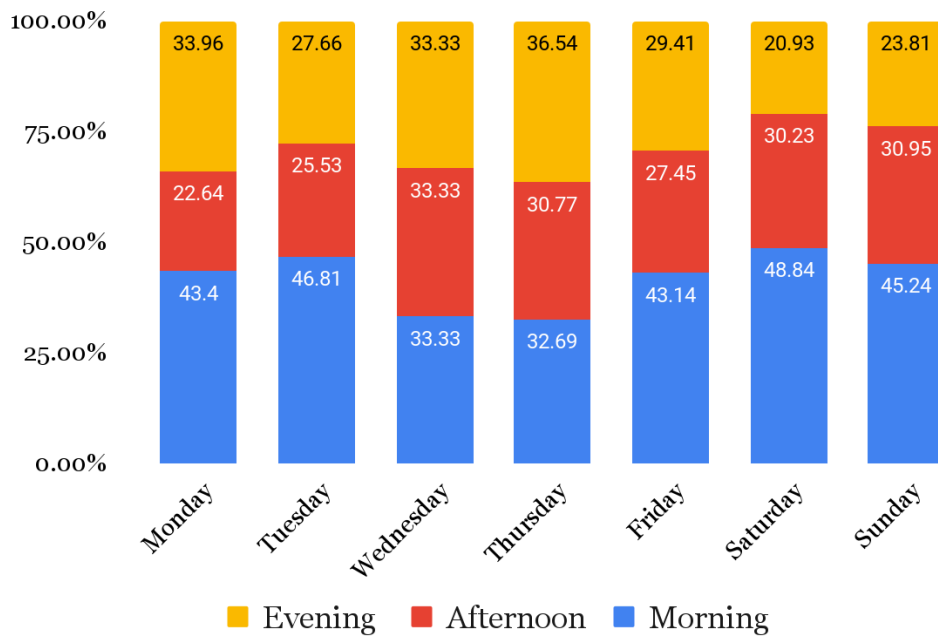


Figure 11

Distribution of factors that impact survey respondents who do currently attend a fitness center when choosing a fitness centre.

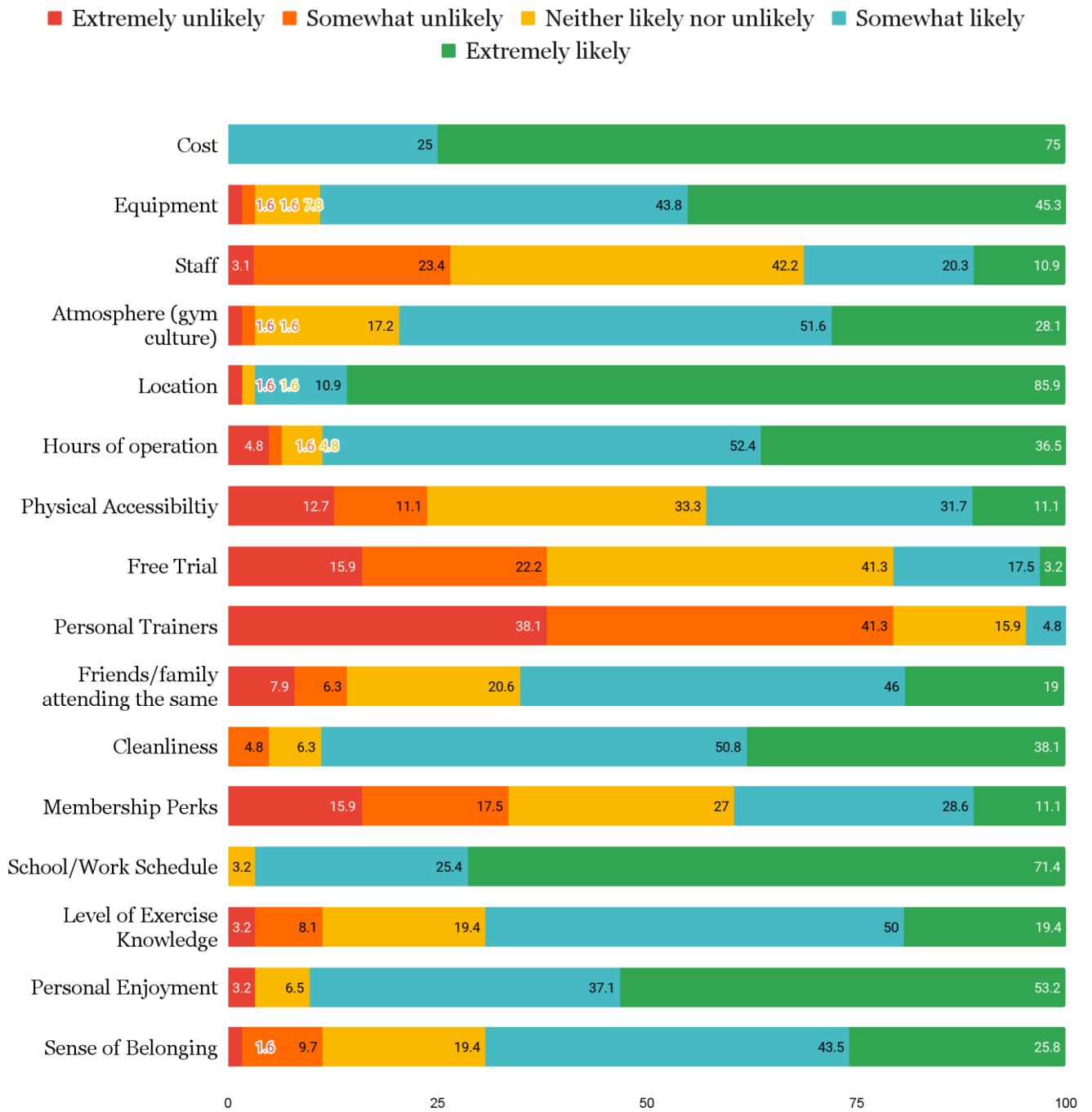


Figure 12

Distribution of survey respondents who currently attend a fitness center response to the following statement: What features of your current fitness centre are most important to you?

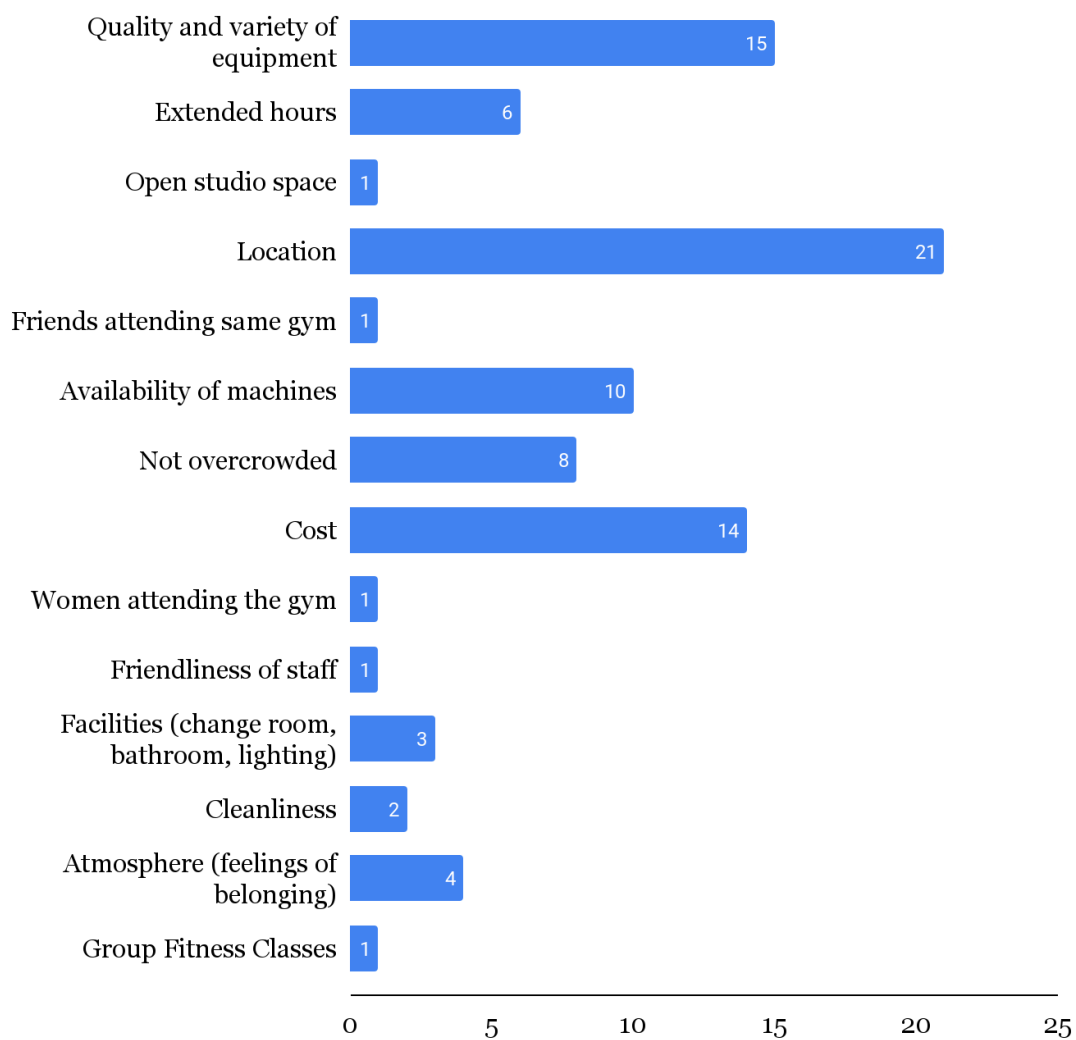


Figure 13

Distribution of what survey respondents who do attend a fitness centre would like to see at the new Student Recreation North Fitness Center.

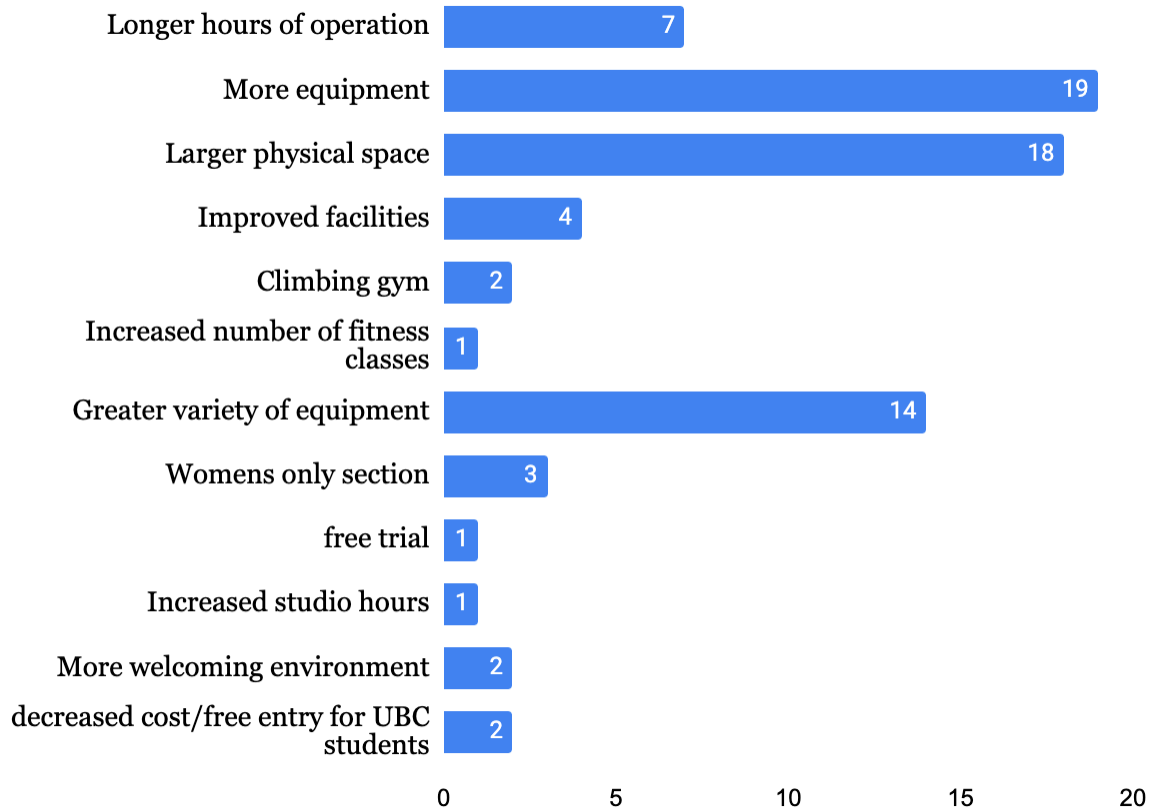


Table 2*Desired equipment*

More of existing equipment	New equipment desired
Dumbbells	Sleds
Squat racks	Turf
Bench presses	Plyometric boxes
Incline bench	Laser therapy
Punching bags	Assault bike
Barbells	Sandpit
Olympic lifting spaces	Hack squat machine
Skipping ropes	Track along the perimeter
Tower cable machine	Pilates machine
Leg presses	
Stairmaster	

Table 3*Desires facility changes*

Infrared lighting
Large change rooms
Accessible water fountains
Natural lighting
Improved showers
Air conditioning in cardio areas / improved air ventilation
Larger sinks
More sectioned off areas for different stations

Table 4*Average Score for factors influencing fitness centre choice**

	No disability	Has a disability
Cost	4.44	4.73
Equipment	3.89	4.32
Staff	3.09	3.09
Atmosphere (gym culture)	4.00	4.09
Location	4.56	4.68
Hours of operation	3.83	4.19
Physical Accessibility	2.94	3.29
Free Trial	3.56	3.00
Personal Trainers	2.94	2.38
Friends/family attending the same gym	3.78	3.86
Cleanliness	4.28	4.52
Membership Perks	3.50	3.10
School/Work Schedule	4.44	4.67
Level of Exercise Knowledge	3.67	4.05
Personal Enjoyment	4.56	4.48
Sense of Belonging	4.11	4.48

*Likert Scale with the following parameters: extremely unlikely=1; somewhat unlikely=2; neither likely nor unlikely=3; somewhat likely=4; extremely likely=5.

Appendix E

Survey Questions

Screening Questions

Are you a UBC student?

- Yes
- No

Which campus do you attend?

- UBC Vancouver
- UBC Okanagan

To start, which of the following statements best describes your primary relationship with UBC?

- I am an undergraduate student
- I am a graduate student
- I am a Post Doc
- I am a faculty member
- I am a staff member
- I am a alumnus/a
- Other

Where do you currently live?

- UBC residence
- Other on-campus housing (e.g., Wesbrook Village, University Village)
- Off-campus
- I do not have stable housing (e.g. couch-surfing, living in a vehicle, facing eviction)

Participants that don't meet study requirements

Thank you for taking the time to complete the survey.
Unfortunately, you did not meet the study requirements.

Demographic Questions

What is your current student status

- Full-time
- Part-time
- Other

What faculty/school are you a part of?

- Applied Science
- Science
- Arts
- Commerce
- Education
- Land and Food Systems
- Kinesiology
- Medicine
- Law
- Pharmaceutical Science
- Forestry
- Economics
- None
- Others

What year are you currently in?

- First
- Second
- Third
- Fourth
- Fifth+

What gender do you identify as?

- Woman
- Man
- Non-binary / third gender/ queer
- Two-spirit
- Other
- Prefer not to say

Are you a domestic or international student?

- Domestic student
- International student

Do you have any of the following disabilities or ongoing medical conditions that have affected your everyday functioning?

- Physical disability
- Blind/Visually impaired
- Deaf/Hard of Hearing
- Mental Health Condition
- Neurological (learning disability, ASD, Traumatic Brain Injury, ADHD, etc.)
- Chronic Health Condition (Crohn's, HIV, etc.)
- Other, please specify:
- I don't have a disability or ongoing medical condition
- I would prefer not to say

Do you currently attend a fitness centre? A fitness centre is a "health, recreational, and social facility geared towards exercise, sports, and other physical activities" (Mion, 2017).

- Yes
- No

Does not attend a fitness centre

In a typical week, how much time do you spend engaging in moderate-vigorous physical activity?

- 0-30 minutes
- 30 minutes-1 hour
- 1-2.5 hours
- 2.5-5 hours
- 5+ hours

If you started attending a fitness centre today, which would you be most likely to choose? Check all that apply.

- UBC Recreation gym (ARC, BirdCoop)
- Gold's Gym (on-campus)
- Wesbrook Community Centre
- UBC residence gym
- Off-campus gym
- Other, please specify:

	Extremely unlikely	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Extremely likely
Cost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Equipment (amount and variety)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Atmosphere (gym culture)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hours of operation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physical accessibility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Free trial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of personal trainers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friends or family attending the same gym	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cleanliness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Membership perks or rewards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
School/work schedule	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Level of exercise knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal enjoyment/motivation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sense of belonging	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other, please specify:					
<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

On a scale from 1 to 5, how much do you agree with this statement: Attending a fitness centre is important to me and I believe it contributes to a healthy lifestyle.

Strongly disagree Somewhat disagree Neither agree nor disagree Somewhat agree Strongly agree

On a scale from 1 to 5, how much do you agree with this statement: I would feel included and comfortable in a fitness centre environment.

Strongly disagree Somewhat disagree Neither agree nor disagree Somewhat agree Strongly agree

Are you aware of the new Student Recreation Centre North fitness centre that is anticipated to be completed in late 2024?

- Yes
 No

What would you improve or like to see in the new Student Recreation Centre North fitness centre? Please explain why.

The Student Recreation Centre North is being built next to the UBC Life Building and the current Student Recreation Centre. Among other facilities, it will include a four-level fitness centre as well as a running/walking track. The fitness centre will include spaces dedicated to cardio, free weights, racks and platforms, machines, and functional space.

Besides what is listed above, what would you improve or like to see in the new Student Recreation Centre North fitness centre? Please explain why.

Currently attends a fitness centre

Which fitness centre do you attend? Check all that apply.

- UBC Recreation gym (ARC, BirdCoop)
- Gold's Gym (on-campus)
- Wesbrook Community Centre gym
- UBC residence gym
- Off-campus gym
- Other, please specify:

On average, how many times per week do you currently attend a fitness centre?

- Less than once per week
- 1-2 times per week
- 3-4 times per week
- 5-6 times per week
- 7+ times per week

In a week, when do you normally attend a fitness centre? Select all that apply.

	Morning	Afternoon	Evening
Monday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tuesday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wednesday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thursday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Saturday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sunday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

How did you find out about the fitness centre that you attend?

- Through friends or family
- Social media
- Google search
- Other, please specify:

In a typical week, how much time do you spend engaging in moderate-vigorous physical activity (e.g., 1 hour 30 minutes)?

- 0-30 minutes
- 30 minutes-1 hour
- 1-2.5 hours
- 2.5-5 hours
- 5+ hours

Do your friends or family attend the same fitness centre as you?

- Yes
- No

What factors are you likely to consider when you choose a fitness centre? Select all that apply.

	Extremely likely	Somewhat likely	Neither likely nor unlikely	Somewhat unlikely	Extremely unlikely
Cost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Equipment (amount and variety)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Atmosphere (gym culture)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hours of operation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physical accessibility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Free trial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of personal trainers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friends or family attending the same gym	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cleanliness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Membership perks or rewards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
School/work schedule	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Level of exercise knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal enjoyment/motivation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sense of belonging	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other, please specify: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What features of your current fitness centre are most important to you?

On a scale from 1 to 5, how much do you agree with this statement: Attending a fitness centre is important to me and I believe it contributes to a healthy lifestyle.

Strongly disagree Somewhat disagree Neither agree nor disagree Somewhat agree Strongly agree

On a scale from 1 to 5, how much do you agree with this statement: I feel included and comfortable in my fitness centre's environment.

Strongly disagree Somewhat disagree Neither agree nor disagree Somewhat agree Strongly agree

Are you aware of the new Student Recreation Centre North fitness centre that is anticipated to be completed in late 2024?

- Yes
 No

What would you improve or like to see in the new Student Recreation Centre North? Please explain why.

The Student Recreation Centre North is being built next to the UBC Life Building and the current Student Recreation Centre. Among other facilities, it will include a four-level fitness centre as well as a running/walking track. The fitness centre will include spaces dedicated to cardio, free weights, racks and platforms, machines, and functional space.

Besides what is listed above, what would you improve or like to see in the new Student Recreation Centre North fitness centre? Please explain why.

Survey Completion

Thank you for completing the survey. The following page will redirect you to a new survey where you can enter the draw for prizes (2 lululemon yoga mats and 4 UBC Athletics Prize Packs).

You will need our group number to enter the draw - GROUP 5.