

Prospective Bouldering Gym Expansion at UBC Recreation Centre

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Executive Summary

This executive summary provides a concise overview of a study conducted at the University of British Columbia (UBC) regarding the potential expansion of bouldering facilities on campus. Bouldering has gained popularity for its physical and mental health benefits. The study aimed to assess interest and gather insights from the UBC community through a literature review and survey. The literature review highlighted bouldering's inclusivity, physical activity promotion, and mental health benefits, emphasizing its potential to foster a diverse and supportive community. The survey, completed by 565 individuals, revealed a strong demand for expanding bouldering facilities, with current climbers and newcomers expressing interest. Based on survey findings, UBC Recreation was recommended to offer introductory classes, equipment rentals, and inclusive pricing options. Suggestions for facility features such as boulder-focused training areas and colour-coded routes were proposed to enhance the bouldering experience. Overall, the study findings support the case for expanding bouldering facilities at UBC, aligning with the interests and needs of the UBC community. The recommendations aim to ensure that the expansion caters to diverse users, promoting inclusivity, physical activity, and mental well-being on campus.

Introduction

Bouldering, an increasingly popular discipline within rock climbing, has garnered widespread attention for its physical and mental health benefits in recent years. This exhilarating sport, involving climbing small rock formations without ropes or other suspension devices, has seen a surge in participation indoors and outdoors. Indoor bouldering has seen a significant increase in participation as of late, with climbing facilities averaging 100 new members every month (American Alpine Club, 2019, p. 5). As the sport evolves, indoor bouldering facilities have become more accessible, providing safe environments for training, programs, and leisure activities. The difficulty of what climbers call “boulder problems” increases based on the technicality or strength necessary to complete each boulder. It provides a safe and incremental progression scheme that helps participants advance their bouldering skills and physical fitness. Furthermore, according to the American Alpine Club (AAP), the sport of bouldering has created a platform for gender inclusivity, as almost half of all participants at bouldering facilities are female (2019). Alongside this gain in popularity, bouldering has earned its place as an Olympic sport, making its first appearance in the 2020 Tokyo Olympic Games. This trend towards indoor bouldering has significant implications, particularly for communities such as the University of British Columbia (UBC), where the demand for recreational activities is high among its diverse population.

UBC currently hosts a modest bouldering facility in a small “BirdCoop” gym subsection. However, with the forthcoming development of the Student Recreation Centre North, there is an opportunity to expand the existing facility to cater to the growing interest in bouldering among the UBC population. Our literature review explored the benefits of bouldering as an activity and its relevance to the UBC community by examining key themes such as inclusivity, physical

health promotion, and mental well-being. We are focusing on the population of individuals that live, work, study, and play on the traditional, ancestral, and unceded territory of the Musqueam people that UBC is built upon to inform decisions regarding the potential expansion of our bouldering facility.

The rationale for this project extends beyond UBC's immediate need for recreational infrastructure. Bouldering has emerged as more than just a sport; it is a community-building activity that positively impacts physical fitness, mental health, and social inclusivity. Our review of past literature associated with the sport identified three key themes: *Inclusivity of Females in Bouldering*, *Promoting Physical Activity and Improving Health-Related Fitness Through Rock Climbing*, and *The Mental Health Benefits of Bouldering and Rock Climbing*. By conducting our survey and gathering data on the sentiment towards bouldering among the UBC population, we aim to ensure that any future expansion of facilities aligns with the needs and interests of the diverse community it serves. This left us with two main research questions: Is the UBC community interested in a bouldering facility expansion? And what recommendations can we give UBC Recreation regarding facility organization, program delivery, and community interest?

Literature Review

Inclusivity of Females in Bouldering

Recent research highlights a promising shift towards greater inclusivity in the sport of bouldering, particularly concerning gender representation. Historically, the climbing community has been predominantly male-dominated, attributed to gender-normative expectations and barriers such as fear of embarrassment or rejection, which have deterred female engagement in outdoor recreation-related sports (Evans & Gagnon, 2019; Hewitt & McEvelly, 2022). This lack of diversity limits participation and impedes the potential growth of bouldering as a sport (Wigfield, 2023). However, recent trends indicate a transition towards more inclusivity, with an increasing number of females participating in climbing sports and the establishment of more accessible climbing facilities catering to individuals of various ages and abilities (Ellmer et al., 2020, as cited in Hewitt & McEvelly, 2022).

This shift towards inclusivity is facilitated by the relatively low-risk environment of indoor climbing, which encourages a broader range of participants to engage in the sport (Wigfield, 2023). Studies suggest that once females become involved in climbing, they often re-evaluate their preconceptions of the sport, particularly after experiencing the social aspects and personal achievements it offers (Hewitt & McEvelly, 2022). Furthermore, research indicates that the gender divide becomes less evident within climbing communities, as climbing fosters a sense of belonging and facilitates a more gender-inclusive environment, thereby mitigating the constraints typically experienced by females (Evans & Gagnon, 2019). In fact, within competition climbing, both males and females report similar perceptions of constraints regarding participation (Evans & Gagnon, 2019).

The motivations driving female participation in climbing encompass various factors such as socializing, community engagement, physicality, and enhanced self-efficacy (Hewitt & McEvilly, 2022). Consequently, increasing female participation in bouldering is essential for the continued growth and development of the sport. It is also significant for fostering greater inclusion of marginalized populations within the climbing community. By recognizing and addressing the barriers to female participation in bouldering, initiatives to expand bouldering facilities can create a more diverse and inclusive environment that benefits the broader population.

Promoting Physical Activity and Improving Health-Related Fitness Through Bouldering

Traditional forms of physical activity, such as resistance training and aerobic exercises, while effective in maintaining health-related fitness, may not appeal to everyone due to their repetitive nature. On the other hand, Bouldering offers a dynamic and engaging alternative that incorporates both aerobic and anaerobic fitness components, making it a compelling option for individuals seeking a non-traditional approach to physical activity (Siegel & Fryer, 2015). Research suggests that bouldering can effectively enhance muscular strength, endurance, and flexibility while also eliciting improvements in cardiometabolic health (Siegel & Fryer, 2015).

As participation rates in rock climbing continue to rise and the sport becomes more accessible through the proliferation of bouldering facilities, it presents an opportunity for individuals to engage in physical activity in a novel and enjoyable way (Siegel & Fryer, 2015). Access to proper rock climbing training not only facilitates participation in bouldering but also equips individuals with the skills necessary for safe outdoor climbing activities. Outdoor pursuits have been linked to overall health and well-being improvements, underscoring the broader benefits of engaging in activities like bouldering (Siegel & Fryer, 2015).

The growing popularity of rock climbing and its diverse benefits make it relevant as an effective means of improving overall health-related fitness. By exploring bouldering's potential as a nontraditional yet impactful form of exercise, initiatives aimed at expanding bouldering facilities can promote physical activity and foster improved health outcomes within the community.

Mental Health Benefits of Bouldering

Engaging in physical activity has shown to be effective at treating depression when done in conjunction with cognitive behavioural therapy (CBT) or with pharmacological interventions (Luttenberger et al., 2021). Recent research suggests that activities like bouldering and climbing offer benefits for individuals grappling with various psychological challenges such as attention deficit hyperactivity disorder, anxiety disorders, and eating disorders (Lee and Song, 2015; Vesper et al., 2009; Wallner, 2010, as cited in Schwarz et al., 2019). Kleinstäuber et al. (2017) observed that a single session of rock climbing or bouldering is linked to immediate improvements in positive affect among the 40 individuals diagnosed with major depressive disorder. Positive emotions and coping abilities increased, while negative emotions and feelings of depression decreased immediately after the activity (Kleinstäuber et al., 2017).

A study conducted by Luttenberger et al. (2021) compared the effectiveness of bouldering psychotherapy — a form of therapy that combines the physical activity aspect of bouldering with psychotherapeutic practices — to traditional cognitive-behavioural therapy in the treatment of depression. The study found that combining physical activity, critical problem-solving, and consistent social interaction associated with bouldering effectively assisted people who required medical interventions to combat depressive symptoms (Luttenberger et al., 2021). As a result, consistent participation in bouldering activities or psychotherapy led to

improvements in an individual's depression severity levels, improving from moderate to mild (Luttenberger et al., 2021).

Additionally, Schwarz et al. (2019) investigated the use of bouldering psychotherapy to complement traditional treatments for depression. Their findings showed compelling evidence of both short and long-term positive effects on participants' depression levels. Throughout the bouldering intervention, participants experienced a notable decrease of 7.21 points in their depression scores, indicative of a moderate effect size. Notably, participants transitioned from moderate to mild depression scores during the intervention, and these improvements were maintained throughout the follow-up period at 12 months.

Depression is a prevalent mental health issue affecting various populations, including university students and residents of British Columbia. Given the potential of bouldering to alleviate symptoms and improve overall health, it emerges as a viable option for individuals struggling with mental health illnesses or experiencing negative emotions, including those within the UBC community. Additionally, the group aspect associated with bouldering fosters an environment conducive to peer support, experience sharing, increased participation, socialization, and therapeutic outcomes (Luttenberger et al., 2021). Thus, integrating bouldering activities into campus recreational offerings can contribute to addressing mental health challenges and enhancing the well-being of UBC students, staff, and community members.

Methods

Description of relevant population/scope

This study aimed to gauge interest in a potential bouldering space at the University of British Columbia's Vancouver campus (UBC) Student Recreation North Building. The target population for this study was all individuals who use UBC's campus (students, faculty/staff, UBC residents, and alumni). The rationale was to gather information from a broad range of individuals at UBC, allowing for a large and diverse representation of the population's interests. The only exclusion criteria for this study were individuals with no association with UBC (definition of association = any student, faculty/staff, alumni, UBC resident, or individual who uses UBC's facilities). Individuals with no association with UBC were filtered out through the survey process. This provided the best representation of the population most likely to use and benefit from UBC's facilities. The purpose of collecting data was to provide recommendations to UBC Recreation that could inform their decision about whether or not to include a bouldering facility in the new Student Recreation North building and, if so, what they should consider for the format and delivery.

Research Design and Plan

Our overall research intention was to collect information for our partner, UBC Recreation, to help predict future recreational engagement in the potential new bouldering space at UBC. This was complemented by a cross-sectional observational quantitative design via a Qualtrics survey. A cross-sectional design allowed us to gain insight into the current interest in bouldering within our community at UBC due to its nature of collecting data from a specific group at one point in time through a single observation (Kesmodel, 2018). This provided us with findings regarding who and how many people are interested in using the new space and

additionally what program delivery or facility resources were of interest. Ultimately guiding our partner to make well-informed decisions. Our outreach focused on collecting data on those associated with UBC, such as all students, staff/faculty, alumni and UBC community residents. This demographic allowed the data to be applicable and relevant to indicating interest in bouldering at UBC from everyone in the area.

Using an online survey allowed us to reach a widespread audience efficiently while providing valid and meaningful results (Jones et al., 2013). The nature of an online study aligned with our goal of gathering data from a large sample size. We concurred that various sampling methods should be used to reach a large audience. Our Qualtrics survey was accessible via QR code, enabling anyone with a smartphone camera to participate. This QR code was dispersed in a multitude of ways, primarily through social media, which has proven to be a successful and streamlined method for enlisting participants for studies (Leighton et al., 2021). This strategy involved connecting with multiple organizations' platforms (mainly through Instagram), including the Kinesiology Undergrad Society (UBC KUS), UBC Alma Mater Society (UBC AMS), UBC School of Kinesiology (UBC Kin), UBC Climbing Club, and UBC Student Life and have them share our survey QR code or link with users. This gave a diverse outreach to students and staff at UBC since research suggests almost 60% of all active Instagram users are young adults between the ages of 18-29 (Masrom et al., 2023).

Additionally, we posted the survey link on our own Instagram stories and reached out to friends and acquaintances we knew had an affiliation with UBC leading to snowball sampling. To broaden the reach of individuals outside of Instagram, we made posts in various UBC community Facebook groups such as the 'UBC Class of 2024 (Official Group)', 'UBC Class of 2027/28 (Official Group)', and 'UBC Families' groups. Facebook is a widely used social media

platform, with almost 80% of people who use the internet also using Facebook (Kowal et al., 2020), and this level of engagement provides access to data results from a more extensive range of different demographics.

Besides social media, posters with the QR code were placed across the entirety of the UBC campus in high-traffic areas such as, but not limited to, the Nest, UBC Recreation facilities, apartment buildings, and surrounding businesses for enhanced survey engagement. Physical poster distribution assisted in recruiting non-students and people who do not use social media as frequently or at all. Our final sampling method was approaching people on campus and asking them if they'd be interested in participating in our survey. A consent form (Appendix B) was displayed at the start of each study, and voluntary agreement was required from every participant before completing the survey questions. All survey participation was incentivized with a UBC Athletics prize pack, and everyone was ensured their participation was anonymous.

To obtain relevant data our initial goal was to engage a cohort exceeding 150 participants to complete our survey, thus providing us with a comprehensive portrayal of the UBC community. Regarding the procedures for this study, each group member completed the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans training to help establish ethical research guidelines. The survey was distributed through the tool Qualtrics over roughly a 3-week time frame (March 14th, 2024, to April 2, 2024) to collect data from the research population.

Data Collection/Analysis

The survey (Appendix A) consists of 19 questions, including 2 multi-selection answer questions and 17 multiple-choice answer questions. 18 of the 19 questions are close-ended, and 1 is open-ended. We developed questions to collect data on the demographics, barriers, behaviour,

frequency, experience, and preference regarding bouldering. Depending on the participants' experience with bouldering, they were directed to a set of questions that differed in intent. Participants with previous bouldering experience answered preference, frequency, and opinion questions, ensuring a comprehensive understanding of the specific preferences and requirements of the climbing community within UBC. In contrast, for participants lacking prior exposure to bouldering, their set included behavioural, experience, and barrier-related questions. This ensured an understanding of the potential interest non-climbers might have in the new expansion and facilitated identifying and mitigating any participation barriers that may arise. Additionally, participants were given the opportunity to provide any further barriers that were not listed as an option. All participants answered demographic questions, including age, affiliation to UBC, and whether they were domestic or international students.

The data gathered through this survey primarily consisted of quantitative data, and we employed descriptive statistical analysis and the use of frequency distributions. The survey questions provided greater insights into the attitudes of our target audience toward the potential expansion of the UBC bouldering facility. By analyzing that data, we understood the sentiment of our target population toward expanding the bouldering facility at UBC. This information was analyzed and designed to be forwarded to UBC Recreation so they can make evidence-informed decisions regarding facility expansion.

Results

Descriptive Statistics

The survey recorded a total of 565 responses. The majority of the respondents were undergraduate students, comprising 75% (n=423) of the total. Graduate students constituted 13% (n=77), followed by alumni at 4% (n=22), community members at 4% (n=21), faculty and staff at 3% (n=17), and finally post-doctoral at 1% (n=5). Regarding faculty affiliation, there was a diverse representation: Sciences at 22%, Kinesiology at 21%, Applied Science at 18%, and Arts at 15% (refer to Appendix C, Figure 1 for further breakdown). Regarding age distribution, 35% fell within the 16-20 range, 48% fell within the 21-25 range, and the remaining 17% were 26 and older. Notably, 89% of respondents reported utilizing the UBC Recreation Center (Appendix C, Figure 3).

The findings regarding bouldering participation revealed that 86.5% (Appendix C, Figure 4) of participants had engaged in bouldering previously. Those who responded “yes” to prior participation were directed to a series of questions regarding their climbing frequency and interest in utilizing the BirdCoop as their primary facility. For bouldering frequency, 174 reported that they bouldered multiple times a week, 81 reported going once a week, 92 reported going once a month, and 136 reported that they have only bouldered a handful times (Appendix C, Figure 5). Furthermore, 358 respondents expressed their intention to make the BirdCoop their primary bouldering gym should it undergo expansion (Appendix C, Figure 6).

Conversely, the 13.5% (Appendix C, Figure 4) who responded “No” to having previously participated in bouldering were directed to a different set of questions. These inquiries focused on their interest level, perceived barriers, anticipated frequency of gym usage, and their receptiveness to trying bouldering at the BirdCoop if introductory classes were available. Among

the 75 survey participants lacking prior bouldering experience, 81% indicated varying levels of interest in trying bouldering for the first time at UBC (Appendix C, Figure 7). Additionally, 80% of non-climbers indicated a higher inclination to try bouldering if introductory classes were available. Notably, the most commonly cited barriers included a lack of knowledge (n=52), absence of bouldering equipment (n=52), intimidation as a new climber (n=41), and cost concerns (n=40) (refer to Appendix C, Figure 9 for further details). Interestingly, two respondents who selected "other" mentioned injury or the risk of injury as a significant barrier. Regarding their potential gym usage frequency, at least 77% of them expressed willingness to visit the gym, with 39% indicating a couple of times a month and 27% indicating at least once a week (Appendix C, Figure 10).

The remaining questions for all participants encompassed various aspects: the likelihood of recommending bouldering to friends, preferred type of gym membership, anticipated time of gym usage during the week, and desired features for potential expansion. Among all respondents, 85% expressed a likelihood of suggesting bouldering to friends as a group activity. Regarding membership preferences, the most frequently selected options included one-semester membership (n=255), yearly membership (n=217), a 10-day punch pass (n=129), day pass/drop-in (n=120), and monthly membership (n=85) (Appendix C, Figure 12). The preferred times for gym visits varied, with the majority indicating any time of the week (n=236), followed by weekdays between 5pm and 10pm (n=152) (Appendix C, Figure 13). Lastly, in terms of desired components for the new gym, popular responses included a larger area (n=469), availability of open gym sessions (n=295), dedicated space for bouldering training tools (n=250), and provision of lessons (n=223) (Appendix C, Figure 14).

Qualitative Analysis

Qualitative data was collected in the form of an open-ended question (Appendix A) asking participants if they had any additional comments or suggestions that may not have been covered in our survey questions. Due to the large number of survey respondents (n=565) in addition to the tight time frame, we were unable to include and analyze each individual's qualitative data response. Incorporating all participant responses while considering the relevant project scope was challenging. Consequently, we focused on extracting common themes from participant comments to shape our recommendations for UBC Recreation.

Some common themes identified were having better equipment (holds, crash pads, shoe rentals), training boards (kilter boards, moon boards), ranging levels of route difficulty (i.e., grading scale), colour-coded climbing routes, use of ropes for climbing, designated training area, appropriate student pricing, delivery of introductory classes, bouldering gym membership options, variety of pass options, and holding climbing competitions/events. While these were some of the most frequently seen comments, most participants commented on the need to expand the bouldering gym overall, thus giving UBC a proper bouldering facility. Although we could not fully incorporate every participant's response since it would be too difficult given this project's scope, taking this qualitative data into consideration in unison with our quantitative survey responses allows us to tailor our recommendations to UBC Recreation best.

Discussion

Our discussion section presents a comprehensive analysis of our survey findings regarding the potential expansion of the bouldering wall in the BirdCoop at the UBC. Our survey garnered an impressive response from 565 individuals within the UBC community, providing significant and relevant data for our partner's consideration. This large sample size enhances the quality of our data by ensuring a more representative sample and increasing the stability of results against random variation or outliers. It addresses the initial inquiry posed by our partner regarding the feasibility and support of an expanded bouldering space at UBC.

The data revealed a strong demand for bouldering facilities among current climbers and potential newcomers. A notable 358 respondents were willing to utilize BirdCoop as their primary bouldering location, underscoring the urgent need for expanded facilities. Moreover, over 80% of participants indicated a likelihood of recommending bouldering to friends, indicating the potential for increased popularity and sustained use of the proposed space. This finding suggests that individuals are willing to bring in their friends to try the sport, further highlighting the inclusive nature of bouldering. The sport provides a shared recreational activity accessible to individuals of diverse backgrounds, abilities, and fitness levels. This aligns with the existing literature highlighted in our review, emphasizing the role of bouldering in promoting inclusivity and fostering community engagement. Furthermore, the survey identified a significant interest among non-boulderers, with 82% expressing a willingness to engage in bouldering if facilities were available at UBC. This suggests a substantial potential for growth within the UBC community and shows the importance and relevance of expanding bouldering amenities on campus.

Regarding operational considerations, our data indicated respondents' preference for long-term memberships, signalling a commitment to sustained facility usage. This insight, coupled with recognizing the need for flexible entry options such as punch cards and day passes for beginners to try the sport, provides valuable guidance for designing and managing the proposed bouldering space.

It is essential to acknowledge the limitations of our study. While efforts were made to obtain a diverse study population, given the assignment criteria and scope, we were only able to gather data from individuals directly associated with UBC. Expanding on the diversity of our sample, the majority of survey participants had previous experience with bouldering which leads to biased data. This was to be expected as most people who would seek out the time to complete our survey are probably doing it because it benefits them, meanwhile, those with no interest in bouldering had no backing motivation to complete the survey. Additionally, the short time frame imposed constraints on the project, limiting our ability to explore the perspectives of a broader audience. Despite the short time frame and project scope, we believe our data collected on the UBC demographic is beneficial and will provide insightful recommendations for UBC Recreation.

Future research could explore the feasibility and interest in bouldering facilities among neighbouring communities (Dunbar, Kitsilano, West Point Grey, Kerrisdale etc.), considering the potential demand and benefits for residents beyond the UBC campus. Despite these limitations, our findings strongly support the case for expanding the bouldering space in the BirdCoop, aligning with the expressed interests of the UBC community and contributing to promoting inclusivity, health, and well-being on campus.

Recommendations

Based upon the research data collected throughout this study, many recommendations can be made to UBC Recreation regarding the UBC community sentiment of expanding the bouldering facility and what this should feature. Firstly, the data collected demonstrated a strong demand for expanding the current bouldering gym. Of the individuals who already participate in bouldering on a frequent or infrequent basis, 358 people said that the BirdCoop would be their primary bouldering facility after an expansion had been completed in addition to the 41 respondents who already use BirdCoop primarily. (Appendix C, Figure 6). Of those participants who had not previously engaged in the sport of bouldering, 81% answered that they would be interested in trying bouldering for the first time at the BirdCoop if expanded (Appendix C, Figure 7). Furthermore, 80% of these individuals suggested that they would be further inclined to try bouldering for the first time if introductory classes were available for participants (Appendix C, Figure 8).

Most individuals reported their primary barriers to participation in bouldering as a lack of understanding, intimidation of being a new climber, and lack of available classes (Appendix C, Figure 9). With an already strong sentiment from most individuals to expand the BirdCoop bouldering facility, we recommend the option of introductory classes for first-time boulderers. This will likely increase the number of individuals willing to try bouldering as a new activity at UBC by addressing knowledge gaps and providing proper training for safe bouldering. Further prominent barriers to bouldering that were highlighted within our data were a lack of access to bouldering equipment (rock climbing shoes and chalk) and financial barriers to participation (Appendix C, Figure 9). Rock climbing equipment is an essential component of participation in

bouldering, and the current bouldering facility within BirdCoop does not offer rock climbing shoe rentals or chalk. We recommend that UBC recreation implements equipment rentals in the expanded bouldering facility to remove what many participants in the survey consider to be a major barrier to participation in bouldering.

When considering the costs of bouldering, many participants considered this a barrier to their participation in the activity. The Hive is currently the most popular bouldering facility in Vancouver, offering students a 4-month semester membership for \$499 with unlimited access to all their facilities. Individuals looking to participate in bouldering on a more infrequent basis will be charged \$30 for a day pass or \$255 for a 10-punch pass. This does not include shoe rentals or chalk. We recommend that UBC Recreation utilize this information and offer inclusive pricing options for the expanded bouldering facility, considering a fair price for rentals and entry. Regarding passes available for students, most individuals suggested they would most likely utilize single-day passes, 10-day punch passes, semester-long and yearly memberships. We recommend providing all 4 pass options to ensure flexibility of use for all UBC community members.

Our final recommendation to UBC Recreation considers the implementation of various components of the bouldering facility if the facility comes to fruition. Based on the collected quantitative and qualitative data our recommendations for what the expanded facility should include are as follows. Firstly, many individuals would be happy to see a boulder-focused training area implemented (Appendix C, Figure 14). Specific training tools that have been mentioned include an area with training boards (Moon Board, Kilter Board, Campus Board, Hang Board, etc.). These training tools can be implemented in a space separate from the primary

climbing walls that will be the focus of the gym expansion. Moreover, multiple participants from the study have commented on the need for colour-coded bouldering routes. Currently, the routes in the BirdCoop are marked by different coloured tape due to the lack of funding for new climbing holds. This makes understanding the bouldering routes difficult for new climbers. We recommend that alongside the facility expansion, an investment is made in new climbing holds that are colour-coded, allowing for easier-to-understand bouldering routes for new climbers.

Overall, there is a positive sentiment toward expanding the UBC BirdCoop bouldering gym. We hope the collected data provides sufficient evidence to proceed with this expansion and that our recommendations for this gym are considered.

Conclusion

In conclusion, this study provides an overview of the potential popularity and practical implications of the expansion of a new bouldering facility on the UBC campus. The research explores the popularity and inclusive nature of bouldering as a sport, allowing for a better understanding of its possible significance within the UBC community. Utilizing an insightful literature review, the study emphasized bouldering's ability to promote inclusivity, foster physical activity, and improve mental health and well-being. The presented survey, completed by 565 participants representing a diverse range of the UBC community (undergraduates, graduates, alumni, community members, faculty and staff, and post-doctoral) revealed a strong demand for expanding bouldering facilities on campus. Both new and current climbers expressed significant interest, opening the door to increasing inclusivity and community-building within the UBC bouldering community. Survey participants also displayed a willingness to recommend bouldering to their friends, showcasing their interest in bouldering as a social activity and its potential to help develop a more supportive environment.

In addition, the cross-sectional observational quantitative design of the survey facilitated a comprehensive understanding of data collected regarding the interest in bouldering throughout the UBC community. Furthermore, after analyzing the data from the survey, it was concluded that there is significant interest in bouldering among UBC students and community members, emphasizing the relevance and general demand for expanding or developing current facilities. The study also analyzed and acknowledged several strengths of the research such as the large diverse sample size of 565 participants which helped increase the quality of data and stability of the results by increasing the odds of avoiding variations or outliers. Research limitations were also addressed, such as the study's exclusive focus on the UBC community which may have

limited the generalizability of the data and results to other populations. Based on the data collected several recommendations were also proposed to UBC Recreation to address identified barriers and enhance the bouldering experience on campus. This study highlights the evident popularity and relevance of expanding a new bouldering facility on the UBC campus, emphasizing the need for inclusive strategies to foster community engagement and well-being.

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Appendix A

Survey:

https://ubc.ca/1.qualtrics.com/jfe/form/SV_bOsOSvvrTEItLTM

Survey Questions:

1. Which of the following statements best describes your reason for spending time on UBC campus?
 - 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 an alumni.
 - Other
2. What Faculty are you associated with?
 - Applied Science
 - Science
 - Art
 - Land and Food Systems
 - Sauder School of business
 - Education/Kinesiology
 - Forestry
 - Dentistry
 - Medicine
 - Other:
3. Do you live on campus?
 - Yes
 - No
4. What is your age?
 - 16-20
 - 21-25
 - 26-30
 - 31-35
 - 36-40
 - 41+
5. Do you currently use UBC's Recreation Center?
 - Never
 - Sometimes
 - Frequently
6. How familiar are you with the sport of bouldering?
 - Very unfamiliar
 - Slightly familiar
 - Moderately familiar

- Very familiar
7. Have you ever participated in bouldering before?
- No
 - Yes
8. If YES, how often do you participate in bouldering?
- I have tried once.
 - 1 time per month
 - 1 time per week
 - Multiple times per week
9. Would the BirdCoop be your primary bouldering facility if it were to be expanded?
- I only climb at the bird coop anyway
 - Yes, I would always climb at the BirdCoop if it was expanded.
 - No, I would climb at the BirdCoop but it would NOT be my primary bouldering facility
 - No, I would not climb at the BirdCoop
10. If NO, how interested would you be in trying rock-climbing for the first time at UBC?
- Not interested.
 - Slightly interested.
 - Moderately interested.
 - Very interested.
11. Would you be more inclined to try bouldering if introductory classes were offered by the facility?
- No
 - Yes
12. How likely would you be to suggest bouldering as an activity to do with a group of friends?
- Unlikely
 - Neutral
 - Likely
 - Very likely
13. Which of the below would you identify as a personal barrier for participating in bouldering? (Can select multiple answers)
- Lack of knowledge of the sport.
 - Costs.
 - Bouldering equipment (rock shoes).
 - Lack of events or classes.
 - Intimidating to be a new climber.
 - Skill/fitness level
 - Other:
14. How frequently would you see yourself using the bouldering gym?
- At least once a week
 - Twice a week
 - Three times a week
 - More than four times a week
 - Never

Questions for all participants:

15. How likely would you be to suggest bouldering as an activity to do with a group of friends?
- Unlikely
 - Neutral
 - Likely
 - Very Likely
16. What type of pass would you likely purchase?
- 1 Day pass / Drop-in
 - 10 Day punch pass
 - Monthly Membership
 - Yearly Membership
 - 1 Semester Membership
17. When would you be most likely to go to the bouldering gym at UBC?
- Weekdays 6:30am - 12pm
 - Weekdays 12pm - 5pm
 - Weekdays 5pm - 10pm
 - Weekend 6:30am - 12pm
 - Weekend 12pm - 8pm
 - Any time in the week
18. What components of a facility expansion would you like to see in the BirdCoop Bouldering gym? (select all that apply)
- A larger area for bouldering
 - More events and competitions held in the BirdCoop
 - Greater area for bouldering-specific training tools
 - Open gym
 - Competitions
 - Performance Training
 - Lessons (intro, etc.)
 - Kids after school program
 - Others:
19. Do you have any additional recommendations for the potential bouldering space OR additional suggestions on what the BirdCoop could be used for?

Appendix B

CLASS PROJECT: Health Promotion and Physical Activity (KIN 464)
Participant Consent Form Potential bouldering space in Student Recreation North Building
[Group 9]

Project ID: H17-03560-A017

Principal Investigator: Dr. Andrea Bundon (Assistant Professor, School of Kinesiology, Faculty of Education)

The purpose of the class project: To gather knowledge and expertise from community members to provide recommendations to UBC Recreation that could inform their decision about whether or not to include a bouldering facility in the new building and, if so, what they should consider for the format and delivery.

Study Procedures: With your permission, we are asking you to participate in a survey. You may only complete each survey once. With the information gathered, students will critically examine how different individuals understand or engage in health promoting activities or health promotion initiatives.

Project outcomes: The information gathered will be part of a written report for the class project. The written report will be shared with campus partners involved with the project. Summaries of findings will also be posted on the following websites. UBC SEEDS Program Library: <https://sustain.ubc.ca/courses-degrees/alternative-credit-options/seeds-sustainability-program/seeds-sustainability-library> No personal information/information that could identify participants will be included in these reports or shared with campus partners.

Potential benefits of class project: There are no explicit benefits to you by taking part in this class project. However, the survey will provide you with the opportunity to voice your opinion on your experiences with health promoting activities or initiatives in a broad sense and will provide the students with an opportunity to learn from your experiences. Confidentiality:

Maintaining the confidentiality of the participants involved in the research is paramount, and no names of participants will be linked to the data collected. At the completion of the course, all data (i.e. notes) and signed consent forms will be stored on a secure electronic drive by Dr. Bundon. All data and consent forms will be destroyed 1 year after completion of the course.

Risks: The risks associated with participating in this research are minimal. There are no known physical, economic, or social risks associated with participation in this study. You should know that your participation is completely voluntary and you are free to withdraw from the study and there will not be negative impacts related to your withdrawal. If you withdraw from the study, all of the information you have shared up until that point will be destroyed.

Contact for information about the study: If you have any questions about this class project, you can contact Andrea Bundon by email at andrea.bundon@ubc.ca

Research ethics complaints: If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at 604-822-8598 or e-mail RSIL@ors.ubc.ca . or call toll free 1-877-822-8598.

Consent: Your participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time.

By proceeding with this survey, I am confirming I have read the above information and agree to participate in this research project.

Appendix C

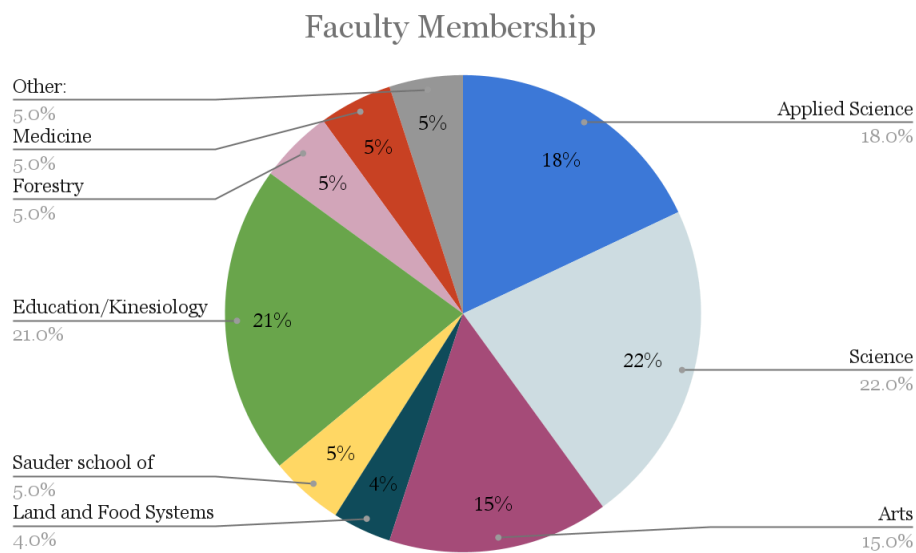


Figure 1. Faculty membership of participants

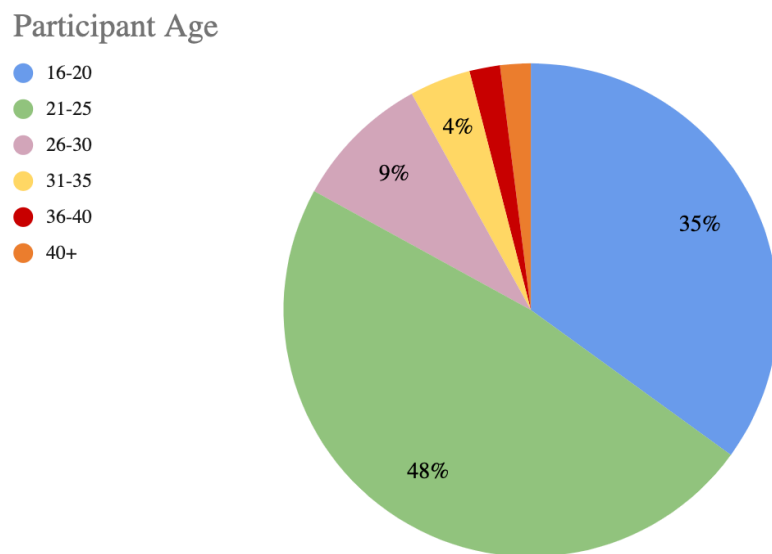


Figure 2. Participant Age

Q. Do you currently use the UBC's Recreation Center?

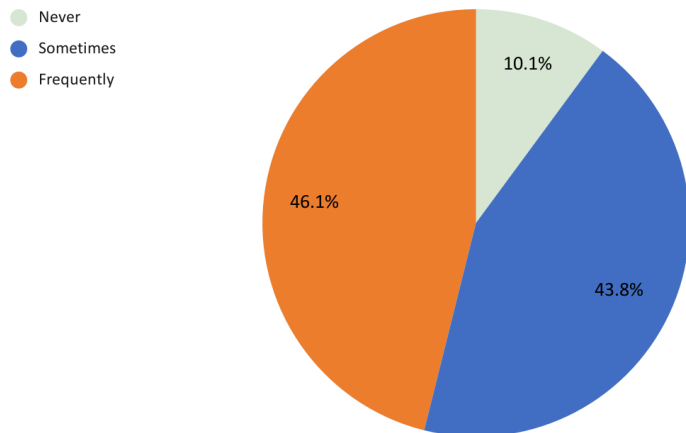


Figure 3. Participant's use of UBC's Recreation Center

Q. Have you ever participated in bouldering before?

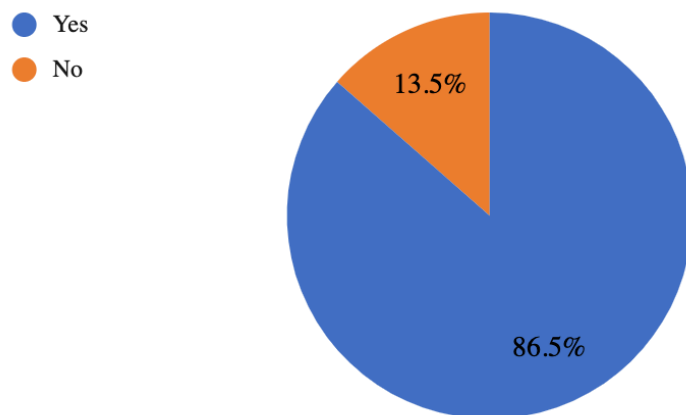


Figure 4. Participant's experience with bouldering

Questions for participants who answered “Yes” to participating in bouldering.

Q. How often do you participate in bouldering?

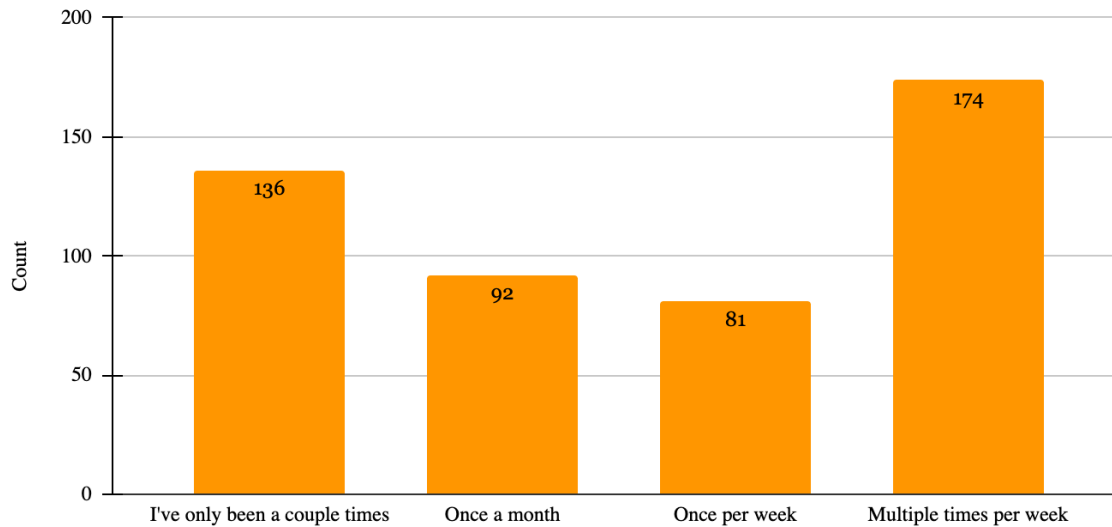


Figure 5. Participants frequency of bouldering

Q. Would the BirdCoop be your primary bouldering facility if it were to be expanded?

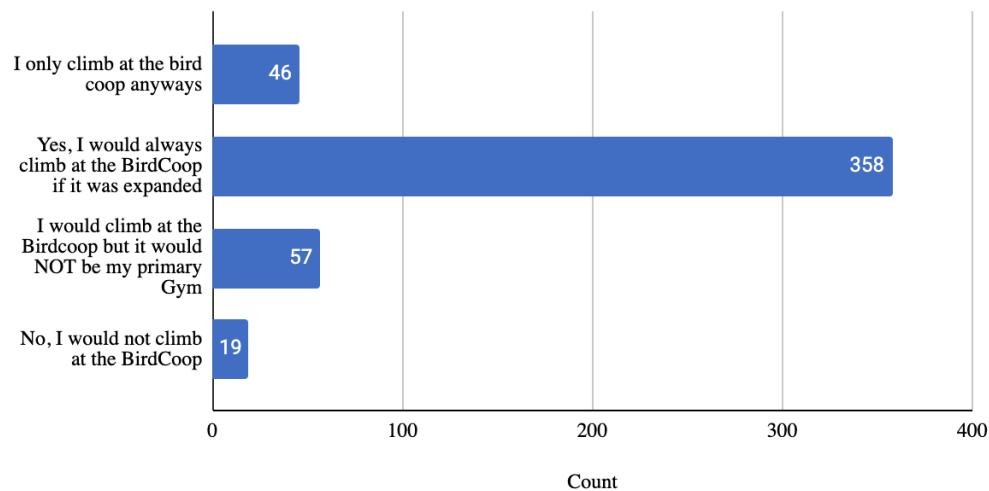


Figure 6. Participants response to making the BirdCoop their primary gym if expanded

Questions for participants who answered “No” to participating in bouldering.

Q. How interested would you be in trying bouldering for the first time at UBC?

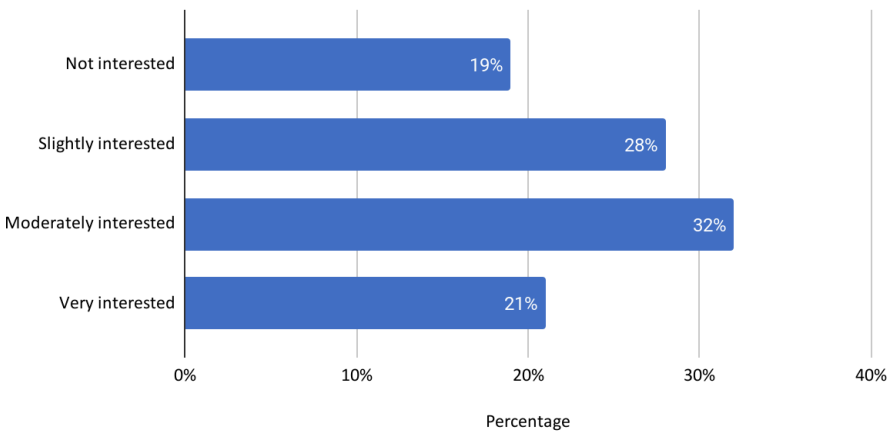


Figure 7. Interest of non-climbers trying bouldering at UBC for the first time

Q. Would you be more inclined to try bouldering if introductory classes were offered?

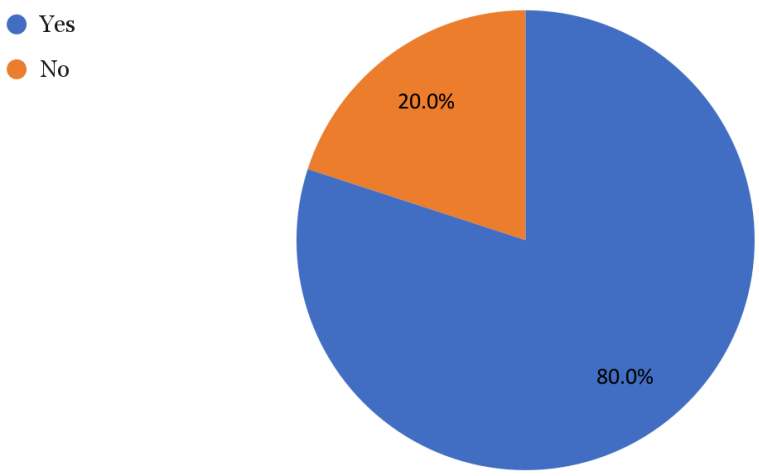


Figure 8. Non-climbers response to try bouldering if introductory classes were offered

Q. Which of the below do you perceive as a personal barrier? (select all that apply)

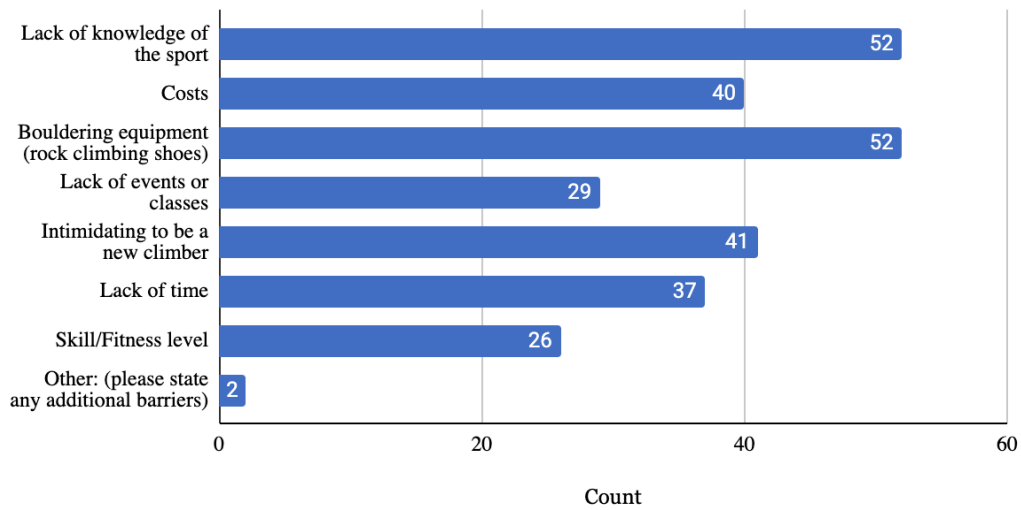


Figure 9. Personal barriers by non-climbers. Others included: injury and injury risk.

Q. How frequently would you see yourself using the bouldering gym? (non-climbers)

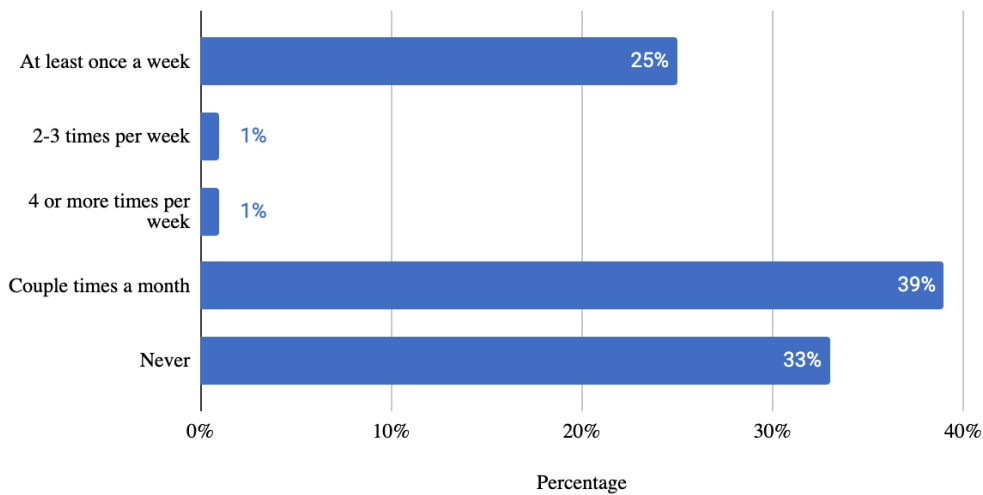


Figure 10. How Frequently non-climbers would use the bouldering gym

Q. How likely would you be to suggest bouldering as an activity to do with a group of friends?

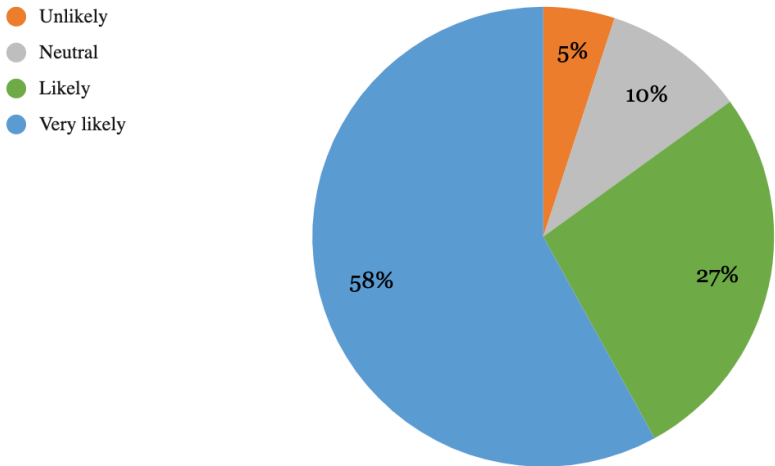


Figure 11. How likely participants would suggest bouldering to friends

Q. What type of pass would you likely purchase?

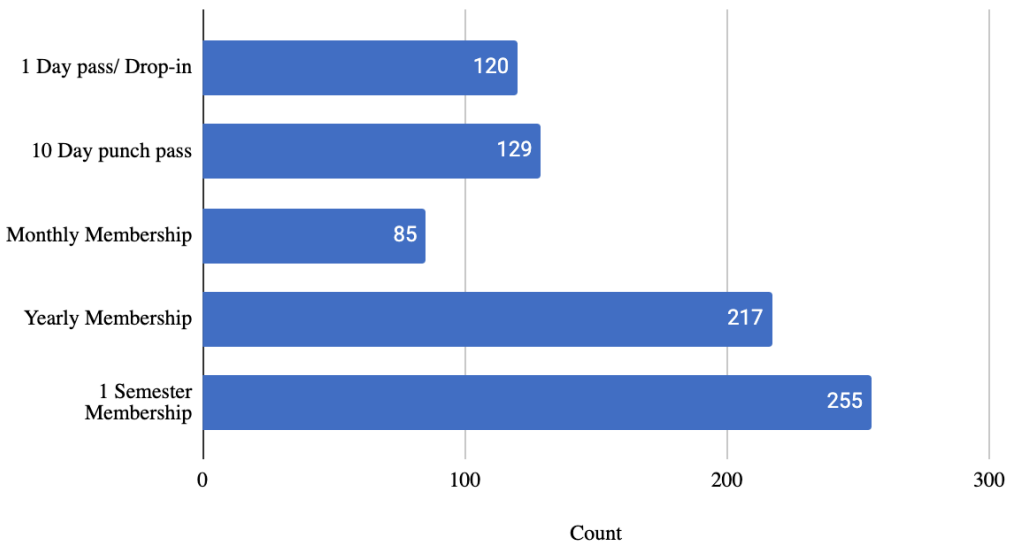


Figure 12. Type of pass

Q. When would you most likely use the bouldering gym at UBC?

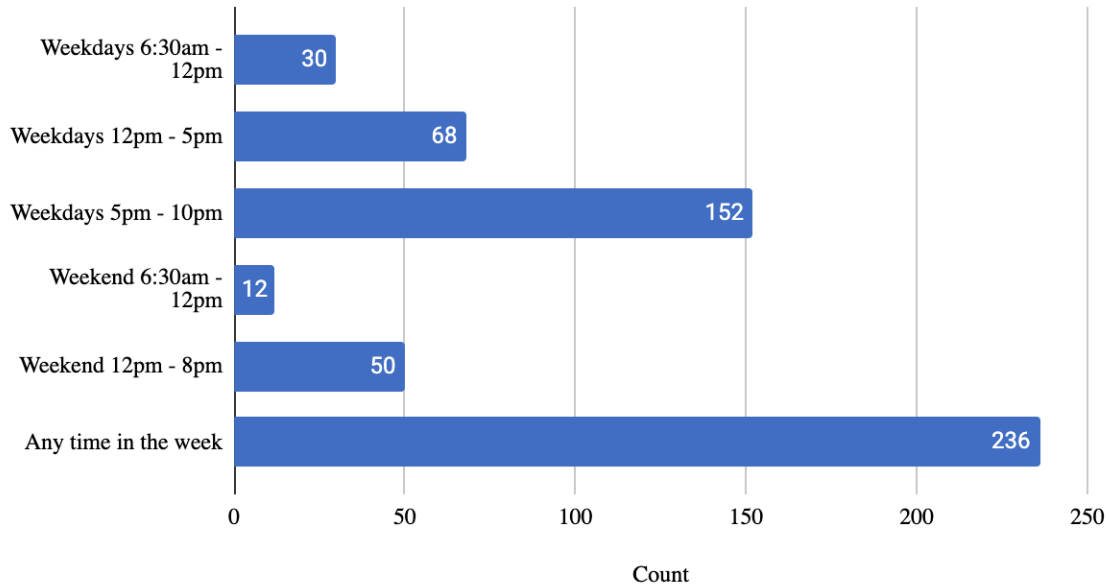


Figure 13. When participants would likely use the bouldering gym

Components for New Gym

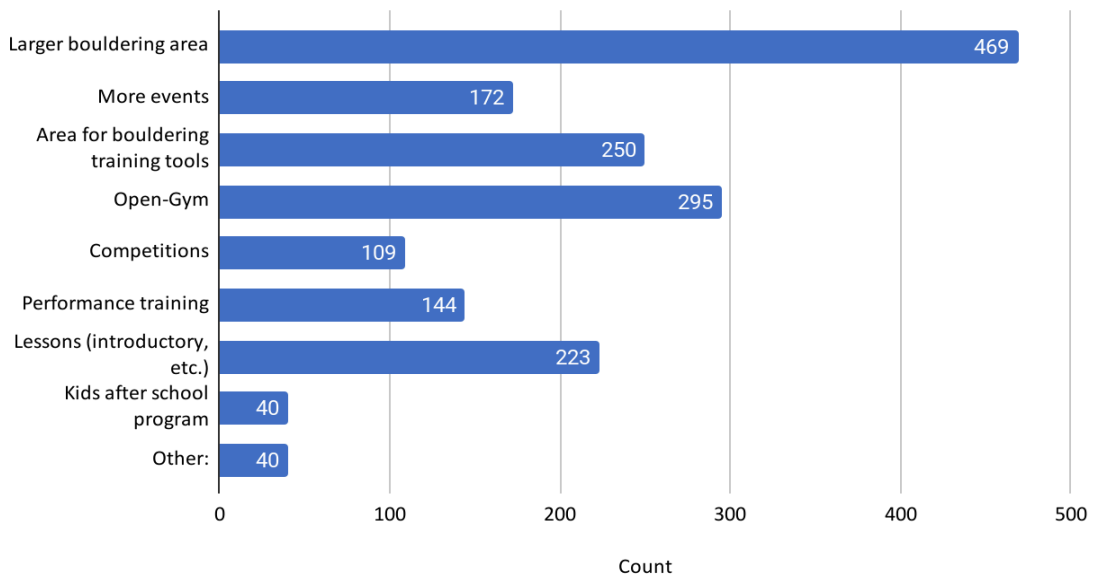


Figure 14. Components for expansion of the new gym

Appendix D

Poster link:

[https://www.canva.com/design/DAF-DJ8cRbA/_taxWh-rliHCe7cOkppy0g/edit?utm_content=D
AF-DJ8cRbA&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton](https://www.canva.com/design/DAF-DJ8cRbA/_taxWh-rliHCe7cOkppy0g/edit?utm_content=D
AF-DJ8cRbA&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton)



We want to hear what YOU think about a

PROSPECTIVE BOULDERING GYM AT UBC BIRDCOOP

Open to **EVERYONE** who visits UBC

LINK TO SURVEY:
[Qualtrics Survey](#)

OR

SCAN QR CODE:



Respondents will have the opportunity to enter a draw to WIN one of:

- Lululemon yoga mat (2)
- UBC Athletics Prize Pack (4)

As part of a course-based research project (KIN 464)

- Project ID: H17-03560-A017 - Group 9
- Please note that this post is public and anyone who likes, comments or shares the link will, by doing so, be associated with the study.
- The Principal Investigator on this project is Dr. Andrea Bundon (andrea.bundon@ubc.ca)