The Role of The Quorum Café
on the WPI Campus

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By

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Abstract

The Quorum Café is an elevated dining experience for faculty and staff located in the historic Higgins House on WPIs campus. The goal of the project was to make recommendations to the café stakeholders to improve profitability and increase utilization through the inclusion of students. The project was completed using a three-step methodology that consisted of a student survey to gather data on dining habits and consumer behavior, a scenario analysis to evaluate the feasibility of adding students, and a business and marketing plan. Using the data collected from the survey and the analysis results the team recommended an operational structure to include students and support profitability and a marketing plan to communicate changes and increase student interest.

Acknowledgments

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Executive Summary

The Quorum Café is a dining service at Worcester Polytechnic Institute (WPI) providing a space for faculty and staff collaboration. The café, like most dining services at WPI, is managed by Chartwells, a food company that works with college campuses across the country. In recent years, Quorum has struggled to generate profit, and the café closed due to COVID-19. In the fall of 2022, The Quorum Café was reopened.

The café is currently looking for new ways to utilize the space and generate a profit. To support this effort, the Major Qualify Project team investigated the inclusion of students as part of The Quorum Café experience. Our research was organized under three guiding questions. (1) Does the net tangible and intangible value of including students in Quorum Café positively impact the financials enough to justify the change? (2) How would Quorum Café change if students were added? What would be the impact of this change on operations and advertising? (3) What changes to marketing and outreach would need to be made to connect with students and increase engagement with Quorum Café?

The team first gathered data on students' dining and social media habits through a survey distributed through classes and clubs of WPI. With over two hundred responses, the team was able to analyze the sample data to make estimates for the entire WPI student population. The survey data revealed that most responses came from first-year students, followed by sophomores, graduate students, juniors, and seniors. Students preferred to buy their meals from different dining services at different times. Dunkin Donuts and Starbucks were mostly visited during breakfast, Morgan Hall, the Campus Center Subs, and the Halal Shack were frequented during lunch hours, and for dinner students went to Campus Center Food Court and Morgan Hall. From the group of students that reported they have a dietary restriction, the ones that were vegetarian or vegan found it stressful sometimes to find dining services accommodating their needs.

Students reported they eat breakfast from 7 am to 11 am, lunch from 11 am and 2 pm, dinner from 5 pm to 8 pm, and they might grab a snack from 2 pm to 5 pm. For breakfast and snacks the students are not willing to spend more than five dollars, for lunch, they are not willing to spend more than fifteen dollars, and for dinner they are willing to spend at most twenty dollars. The students use at least nine to eleven meal swipes from Monday to Tuesday and three

to four swipes from Saturday to Sunday. The participants reported they're willing to spend time at a café to do homework and relax. Regarding media, the students primarily receive news updates about WPI from email, social media, posters, and on-campus Bulletin Boards. Still, they tend to check email and Instagram several times a day. They are also more likely to search for a dining place online before visiting and looking up the menu options.

The team addressed the impact of including students on Quorum Café operations through the creation of five businesses scenarios based on expert knowledge gathered from interviews with Chartwells management and student survey data. The first scenario was to run the café under the same hours but allow students as well (all-inclusive), the second created lunch hours for students preserving the faculty only breakfast (student lunch), the third included continuing the current operating hours as well as creating a late-night period (all-inclusive and nights) , the fourth only included students in the night period (student nights), and the final scenario had students included for lunch and the late-night period (student lunch and nights). To predict the success of each scenario, the team first conducted a market assessment that analyzed the potential market size for each meal, revealing the largest interest in lunch and dinner by students. Following the market assessment, the team conducted a break-even analysis to find the minimum number of sales required for each scenario to be profitable. Based on significant assumptions, the breakeven analysis suggested the all-inclusive scenario and the student lunch and nights scenario had the least number of sales needed with 11.43 and 10.9 sales per hour respectively. At this stage of the analysis significant variability and uncertainty existed with the data available to the team, so to address this and improve the accuracy of our models the team conducted two rounds of monte carol simulations. The first used standard three-point estimates for unknown factors including sales per hour, average sale price, food cost, and faculty sales. Each scenario was simulated with five thousand iterations.

The first round of simulations suggested only the student lunch and night scenario would be profitable. Based on the distribution of outcomes the team was able to access the potential risk of each scenario and conclude that despite not being profitable the all-inclusive scenario was most concentrated over zero and therefore incurs the least risk. This analysis helped address assumptions made by the group but could still be improved.

The second round of Monte Carlo simulations further increased the accuracy of the analysis by fitting the distribution of sales prices to the willingness to pay reported in the survey. Under these conditions the all-inclusive and student lunch and nights scenario were profitable with an average simulation output of approximately $7,000 and $1,100 annual profit respectively. Under these conditions the two scenarios also had preferable outcome distributions of outcomes, which suggested they were the least risky scenarios.

To best recommend a scenario to the Quorum Café and its stakeholders the team completed its scenario analysis with a decision matrix that considered economic performance, campus impact, and impact on professors. The scenarios were compared to the existing no change choice to evaluate if the inclusion of students results in a net positive outcome. After completing the decision matrix, the team recommends the student lunch and night scenario structure over the all-inclusive or no changes at all.

Using the structure from the student lunch and nights scenario the team created a more complete business plan that addresses the major features of the new space and assessed the internal and external factors most likely to affect the business. The team recommends the Quorum Café continue to run faculty and staff only breakfast but add two more service periods: an all-inclusive lunch and a student-only late-night shift. The new Quorum Café would serve similar food to current operations but should make accommodations for vegetarian and dairy-free students, the largest two food restrictions reported in the survey. The team also suggests the Quorum enable collaboration by increasing the per table seating size and adding more outlets to the space. The proposed model was further accessed using a business model canvas, S.W.O.T analysis, and PESTLE analysis. These tools revealed the proposed model is relatively protected from external factors but must closely consider changes to WPI. The model benefits from offering an exclusive food and dining atmosphere during exclusive hours when compared to other on campus options. However, the historic nature of the building and its limited size make it difficult to accommodate students and staff if demand is high.

Following the scenario analysis and business model evaluation, a marketing plan was developed based on the data collected from the distributed survey. The first step of the marketing plan was to identify the customer segment by analyzing the students' WPI status. The selected

groups: first-year students, sophomores, junior, seniors, and graduate students were analyzed based on where they live, how often they visit campus, what type of meals they have bought, and the usage of meal swipes in a week. Based on the observations made on similarities and differences of the groups, the juniors and the seniors were grouped together as upperclassmen.

The 4 p's of marketing: product, price, place, and promotion supplied a framework to build the marketing strategy for the suggested recommendations. Product analyzed how often other dining places are visited by students to buy their meals and students' dietary restrictions. Price analyzed the collected responses on willingness to pay for meals. Place analyzed what the café could provide beside meals and promotion identified the best media to use for advertising the café. Furthermore, time marketing determined the timeframe considered for exposure time and strategy use to run the social media accounts.

At the end, the team provided a list of recommendations based on the data collected from the students and scenario analysis. The best media to spread the word about Quorum would be email and social media accounts such as Instagram. An email newsletter would include the café's location, menu, and hours of operation to inform the students about Quorum's services. Social media marketing would advertise content showing the physical location of the café and atmosphere of the place, while Instagram would help building up engagement with students and WPI members. The interior of the café should be redesigned to accommodate a larger number of customers during lunch and dinner. The menu should include vegan or vegetarian options to accommodate the group of students having a stressful time finding alternative options on campus. Furthermore, the menu option should be tested for at least a year to understand which options are more popular with the customers. The months during the summer break would help with planning the layout and purchasing the necessary furniture. Meal swipes should be considered as a payment possibility based on the amount of meal swipes used by first-year students and sophomores.

1.0.0 Introduction

       The Quorum Café was first opened on the Worcester Polytechnic Institute (WPI) campus in 2017. The café is inside Higgins House (see Figure 1), a historic mansion donated by Mrs. Aldus Higgins to WPI in 1971. The Higgins House is a campus building that holds Alumni Offices, Foundation Relationships, Community Relationships and The Quorum Café. When The Quorum Café opened in 2017, the space offered a bistro-like menu with soft seating and an elegant atmosphere exclusively for faculty and staff (Quinn-Szcesuil, 2017). According to original team organizer Mark Richman, The Quorum Café set out to be a space "for faculty and staff to meet others whose campus paths would not otherwise cross" where "they can leave their offices to come and work in a comfortable environment that is social" (Quinn-Szcesuil, 2017). Despite some success towards this goal, The Quorum Café has struggled to keep consistent popularity over the years and has not yet been profitable.
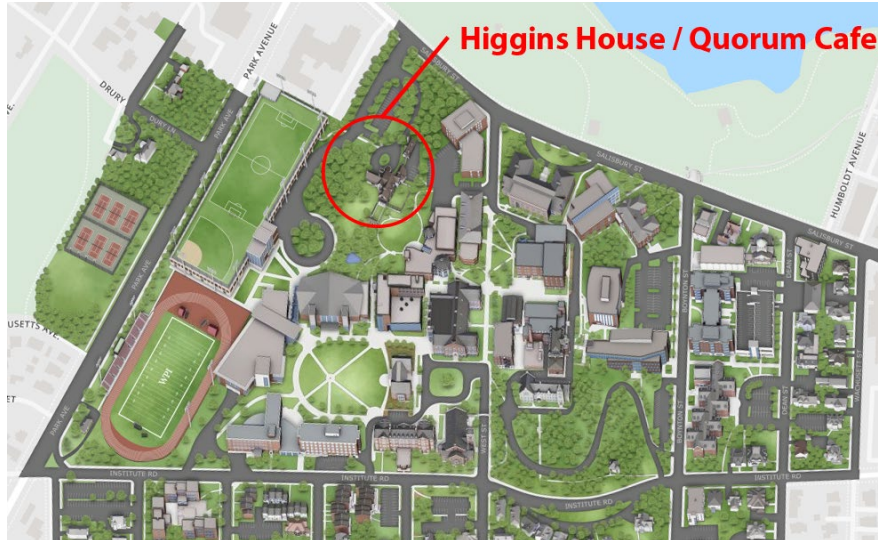
Figure 1: Map of WPI Campus and Quorum Cafe

       When the Quorum Café first opened it was available to faculty and staff only from 7:30 A.M. to 2:00 P.M., Monday to Friday. The Café was advertised as an elevated dining experience on campus with a variety of café style dining options exclusive to the location. In addition to soft seating and higher end crockery, Quorum offered coffee and espresso drinks specifically curated for its customers, as well as sandwiches, pastries, and soup. Unfortunately, despite these attributes the Quorum did not keep sufficient revenue to be profitable.

       According to information provided by Dean of Students Emily Perlow, the proposed business plan for Quorum Café accounted for an average of 105 customers per day spending $8 per visit. At these

estimates there was an expected revenue of $47,830 a year and an expected operating cost of $138,426, resulting in an annual net loss of $90,596 (see Appendix A). The losses were expected but considered acceptable for the intangible benefits Quorum offered. The uniqueness of Quorum and the value it added to the WPI community justified the initial loss, but eventual profitability was expected of Quorum.

Unfortunately, actual sales have been far lower than predicted with only $3,700 in net sales reported in the 2022 fall semester. Eventually, the lack of sufficient popularity coupled with the COVID-19 pandemic forced the café to close in 2020. During the pandemic, the space remained vacant and was rarely used except for isolated events such as alumni reunions.

Eventually, as the pandemic slowed down and normal operations resumed at WPI, The Quorum Café was reopened at the beginning of B-term (October) in 2022. Even though The Quorum Cafe is open again, the challenges around profitability and the role of space remain. At the beginning of 2023, The Quorum Café is open 7:30 A.M. to 11:00 A.M, Monday through Friday for faculty and staff as a test to determine if there is sufficient demand. Due to reduced hours and low demand, the café is still running at a loss.

The role of The Quorum Café has been examined by the Dean of Student's Office and a project group from a WPI graduate marketing course. The data gathered supplied detailed accounts of faculty and staff opinions of the Quorum prior to reopening. However, earlier work did not consider students. In this MQP, we examined how having students as customers could increase financial viability and might change the experience of the café.

This project examines the financial and intangible impacts of allowing students to use Quorum Cafe. The main question this project sought to answer is "What is the role of The Quorum Café at WPI, and can it be profitable?". We answered this question based on survey data and present the impact of including students as customers in the Quorum. Our objectives were to answer the following research questions:

1. Does the net tangible and intangible value of including students in Quorum Café positively impact the financials enough to justify the change?

2. How would Quorum Café change if students were added? What would be the impact of this change on operations and advertising?

3. What changes to marketing and outreach would need to be made to positively affect students and increase engagement with Quorum café?

The project achieved these objectives by leveraging interdisciplinary research. Each project team member has a different specialty in business and data analytics. By combining the disciplines of economics, operations, and marketing, the team supplied a complete analysis of how the Quorum Café could become a viable dining facility on campus with tangible and intangible benefits for the WPI community.

2.0.0 Background

In this section, we explain how dining services on college campuses in the United States have changed over the years, we discuss the specific stakeholders of The Quorum Café and the basics of how the space has run in previous years. We also present the necessary background to understand the data collection and analysis methods.

2.1.0 Dining Services on College Campuses

Dining services on college campuses have evolved over the years. The first dining hall in the United States was introduced by Harvard University in 1624 and since dining halls have become more than just a place to eat food (Williams, 2019). Back in the day, most colleges had one or two cafeterias on campus, while today students can find several options to grab food from or have a place to meet with the community. Furthermore, colleges want to have dining services that offer a variety of food options and meet the preferences or dietary restrictions their populations might have. According to the 2019 College and Universities Consumer Trend Report, students are more likely to buy meals from dining halls if they offer healthy, diverse options, and decent quality food (Williams, 2019).

Colleges and universities tend to generate money from food on campus through the meal plans offered to students; therefore, they want to maximize students' use of dining services. Besides several options in venues and food items, the location where the dining services are found also plays a role in drawing students to buy meals on campus. Depending on the time of the day or the day of the week, students might prefer to go to different places (Klassen et al, 2005). In the morning, students might prefer to grab a quick drink or snack at a location that is not far away from their class, but during lunch time students might be willing to walk a longer distance and go to a location where they can meet with other peers.

To decide which locations to choose on campus for dining services, colleges can map where students spend their time outside of residence halls and academic buildings. In 2017, Clemson University built dining halls by looking into where students spend most of their time and how long would it take them to walk from these locations to the potential places, they could have had the dining hall (Helmer, 2018). Colleges have also attracted students to their dining locations through seating, food experiences, and flexible venues. In their dining halls, Duke University offers different sitting options such as: booth and bar-high tables for students who want to socialize, traditional dining tables for group projects, and sofa and armchairs for students that want to have a comfortable place to sit (Helmer, 2018). On the other

hand, University of Michigan gets students excited about eating on campus by having one-night-only menus at various locations on campus and covered by their meal plans, while Tulane University partnered up with local food trucks and national restaurant chains to serve students on campus as part of their meal plans (Helmer, 2018).

At Worcester Polytechnic Institute (WPI), the dining services are managed by Chartwells. Chartwells is a food service company that works with college campuses across the country. Since every college is different from one another, Chartwells tries to customize every element of the dining experience to reflect the culture around the campuses and design spaces that create an environment to study quietly or gather with friends and family (Chartwells, 2022). WPI's campus offers many different options starting with cafeteria-style dining in Morgan Commons, a food court on the Campus Center, the Goat's Head Kitchen that offers more of a restaurant experience, the Quorum for faculty and staff, and places such as Dunkin Donuts, Starbucks, Melt Lab, Joy Empanadas for mostly grab and go. These venues are spread out throughout the campus, and they offer a variety of options that are gluten-free, vegan, and vegetarian friendly. On the "[Dine on Campus](#)" website, the WPI community can view the hour of operations for each location and their menu options. For most of the locations, the meal plans can be used by the community and Goat Bucks, using the WPI ID to pay for goods and services, is accepted.

2.2.0 The Quorum Café and its Stakeholders

The Quorum Café is in Higgins House on WPI's campus, and it was created for faculty and staff to have a place for collaboration and relationship building. The café was first opened in 2017 and in 2020 it shut down due to the COVID-19 pandemic and Quorum's inability to generate a profit. Although it was an exciting place when it was first opened, the following years had few people visiting the café.

Dean Perlow, a stakeholder and original organizer for The Quorum Café, explained that the café was built with the intention of having a quieter space for faculty and staff members only unlike other places on campus like Campus Center. The café was designed to serve coffee and food items at a higher price point compared to other on campus options such as Dunkin Donuts or Starbucks. The Higgins House was chosen as the location of Quorum because of the unique atmosphere and the coziness it offers. However, for some faculty members this location was inconvenient because they parked on the other side of campus, or their offices were far from Quorum. The café is reserved for faculty and staff, so the marketing for the Quorum was done differently than for student inclusive dining locations on campus.

As part of the WPI Today weekly emails, information about Quorum Café hours of operation and the daily menu was sent to faculty members. This email system was not specific to the café and contained

a variety of information related to WPI but not the café. For added advertising, a Facebook page was opened, because faculty and staff use Facebook more than other social media, where the daily menus were posted on the account. Postcards were used to spread the word and campaigns such as suggesting a sandwich for a week were used to get the potential customers excited. Faculty members were also encouraged to use the place for events; however, it did not generate many customers. Serving alcohol after hours or evening events was considered as a possibility to be added to the café; however, a license is required for serving alcohol which is compounded by the fact a college campus is only allowed to hold two liquored licenses. The Goat's Head previously held a liquor license that could potentially be switched for the Quorum to use.

Chartwells manages all the dining services for WPI including the Quorum. We had the chance to interview Tracy Treadwell, the Chartwells' regional Vice President. Tracy informed us there are two employees that run the café, one person in the front, who is the cashier and takes the orders, and one person in the back who is the chef who prepares the food. If the demand increases, one person might have to be added for maintenance in the back. Quorum has a space called the sunroom with cushions and couches. Considering the limited space, if students are part of the café, adding a few tables outside or the hall close to the café could create more seating space.

2.3.0 WPI Students as a Population

The WPI undergraduate and graduate student body are directly impacted by physical changes on campus and the extent of options available to them. The effects of on-campus dining spaces go beyond sustenance but also have a measurable impact on the physical and mental health of students. While WPI Dining services offers a variety of dining locations and styles there have always been gaps in the types of cuisine and the hours of availability. According to the Journal of American College Health, "Food insecurity is associated with poor mental health among college students, even after controlling for relevant confounders, and may need to be addressed in campus mental health and wellness efforts" (Hagedorn et al., 2018). While the hours without service may be limited, any gaps in food availability offer a potential negative impact on the student body. Inversely, students who are satisfied with campus dining options report lower levels of perceived stress and depressive symptoms. These findings suggest that campus dining services may be an important component of a comprehensive approach to promoting mental health among college students" (Saksvig et al., 2020).

Since the pandemic, mental health crises have affected many communities. and WPI is no exception. Students at WPI experience stress, anxiety, and depression, while the school has made a

commitment to helping navigate and treat these illnesses. Preventive measures around improving the student experience can always be taken (WPI, 2022). Diversifying student spacing and dining options is an opportunity to positively contribute to the WPI Student experience and help reduce stress and anxiety among students.

2.4.0 Scenario Analysis for Decision Making

Scenario analysis is used to understand consumer information data and use it to inform strategic actions. Scenario analysis provides present day decisions by exploring different possible plans that can be used in the future (Forum, 2017). Instead of focusing on one solution, scenario analysis allows examination of many possible outcomes or solutions to a proposed question. Furthermore, the implications drawn from the scenarios trigger discussions rather than serving as perspective outcomes.

Scenarios can be built by choosing a main question that captures the core issue to be explored through the scenarios. Main questions help define the areas of research by clarifying the data gathered and exploring possible future outcomes. In their research, the World Economic Forum was looking into the future of global food systems. The focal question they chose for their scenario analysis was how food systems will nutritiously and sustainably feed 8.5 billion people in 2030 (Forum, 2017). They identified uncertainties related to the question, which were: social change, economic shifts, technology advances, environmental trends, and political developments. Out of the list of uncertainties, they identified the two most important and critical to focus the scenario analysis on, which were demand shift and market connectivity.

3.0.0 Other Quorum Café Studies

Two significant bodies of work relating to the role of The Quorum Café on WPI's Campus have been completed. The first is a survey conducted by the WPI Dean of Students Office that specifically addresses the relationship between faculty and staff and The Quorum Café. The second is a set of in-depth interviews conducted by a graduate marketing class on both faculty and graduate students.

3.1.0 Faculty Survey by the WPI Dean of Students Office

The faculty survey had mostly open-ended questions to get a better understanding of the satisfaction of the café to the participants and any suggestions they might have had to offer. Based on the responses that were supplied 186 out of 200 or 93% of participants had visited the Quorum previously. Another question asked was the net promoter score (Qualtrics, 2023), which is a way to assess if participants would satisfaction with a good or service. The question was as follows, "On a scale from 0-10, how likely are you to recommend the Quorum to a friend or colleague" with 21% of respondents being classified as detractors (gave a score from 0 to 6), 22% as passive (gave a score of 7 or 8) and 58% as promoters (gave a score of 9 or 10). This suggests the majority of respondent, those that answered in the promoters category, are loyal to the cafe and likely to recommend it to others, it also suggests those that answered passive are satisfied but not enthusiastic and may chose competitors over the café, finally those who answered as detractors are not happy with the space and will negatively affect growth (Qualtrics, 2023).

The survey participants were asked about their level of satisfaction with the following features: menu variety, price, atmosphere, customer service, seating, opening hours and value. The results are shown in Figure 2.
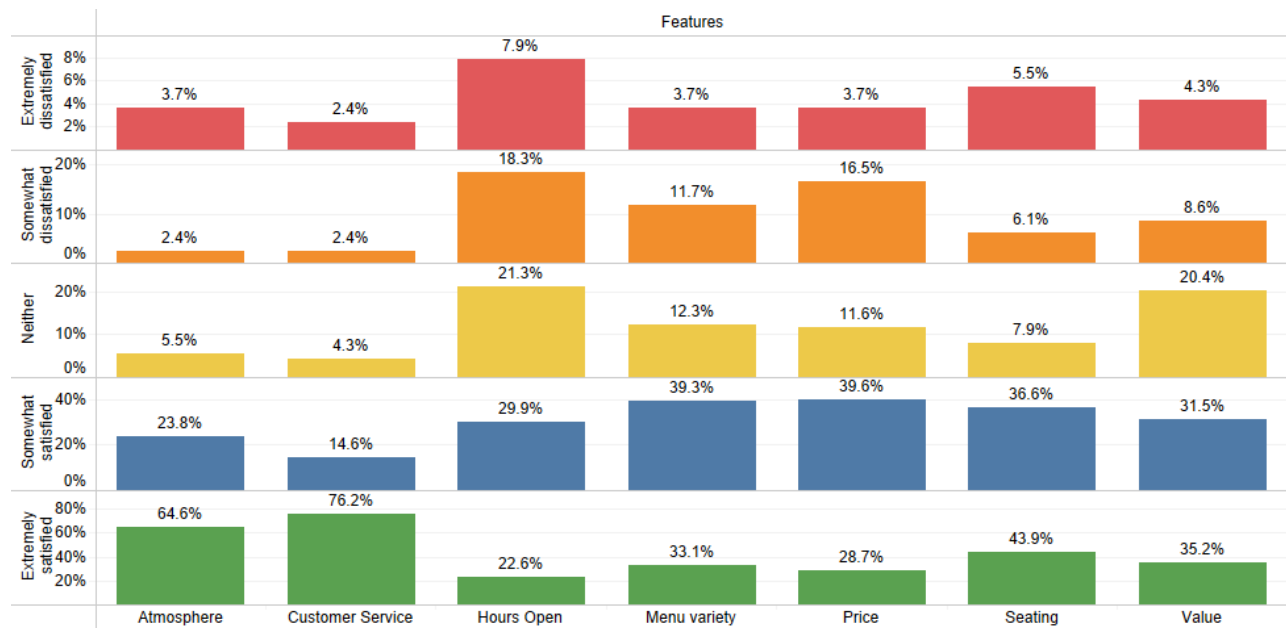
Figure 2: Level of satisfaction for the features of Quorum café.

In general, the participants were extremely satisfied with the atmosphere (64.6%) and customer service (76.2%). For the other features: menu variety, price, seating, opening hours, and value, majority were satisfied. Furthermore, a follow up open-ended questions was asked if the participants wanted to explain their answers further: 38 respondents said they would want café to change the hours the café is open, 17 participants said the serving staff was friendly or they enjoyed their service, and 11 participants said menu items were expensive. Some other participants said the that the menu items were limited, and they would like more food items to be added, the seating space was limited, and the tables were too small, and a few of the responders wanted to see the prices of the menu items on the emails they received.

One of the questions was about how much interest the participants had in the following potential changes: larger tables, farm-to-table menu, outdoor seating, availability of alcohol, soft cushion seating, food delivery, and dinner menu. One potential change that almost 45% of participants were extremely interested in was outdoor seating. There are a few categories where the numbers were close. Figure 3 below shows the responses collected for this question.
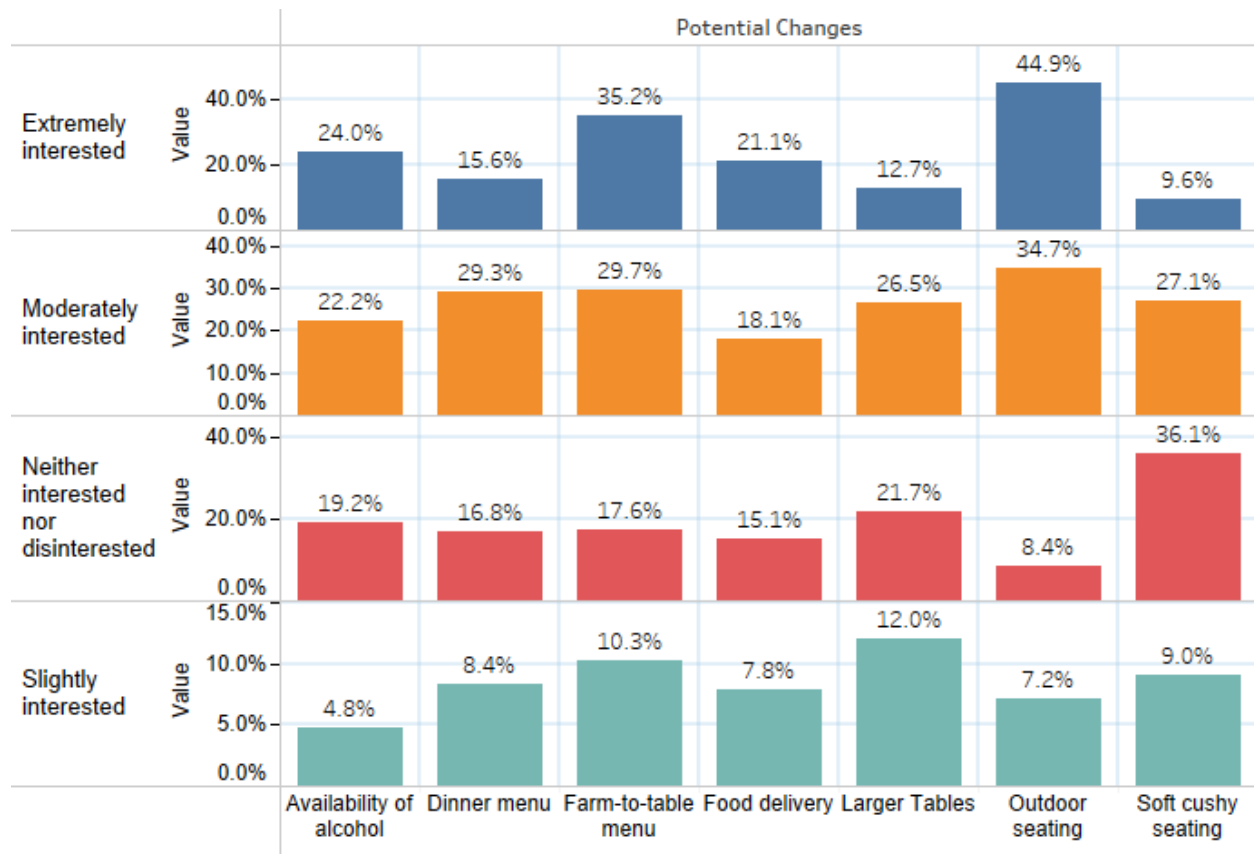
Figure 3: Interests in potential changes Quorum Cafe

When faculty and staff were asked what they liked the best about Quorum, the common answers were friendly staff (54 responses), the food and coffee served (75 responses), and the good atmosphere (51 responses). Some other features that were mentioned were design of the place such as: the fireplace, windows, and seating arrangements (30 responses), being a quiet place to meet (25 responses), a unique place for faculty and staff to meet (15 responses), being found at Higgins House (15 responses), and being inexpensive (5 responses).

Another open-ended question was what faculty and staff would change about the Quorum. About 46 responders mentioned that they would like the café to have longer hours of operation. 19 responders suggested expanding the seating by adding more seats inside or expanding it outside. 30 responders wanted to add more food items to the menu and 15 responders wanted the prices to be lower. Some other suggested changes were having the café be open during the winter and summer break when some faculty and staff are still working, add the daily menu to the website instead of being send by email, implement a system that allows ordering online, and being opened to everyone.

A potential change considered was the addition of locally sourced menu items in a question that asked, "If the Quorum were to offer all locally sourced menu-items would it make you more likely or less likely to dine there?" There were 168 responses. Most respondents said it would either not change the likelihood of dining at Quorum or increase it with only 5.4% saying it would make them extremely unlikely to eat there and 3% saying it would make them somewhat unlikely to dine there. The most common response was it would neither increase nor decrease the likelihood of them dining there. Most of the respondents said it would make them more likely to dine there with 32.7% saying it would make them somewhat more likely to and 22% said it would make them extremely likely to dine at Quorum.

Although this survey supplies an insight into how the professors feel about Quorum it fails to answer the question to what extent would be affected by students joining the space. The original idea for the Quorum was for the faculty and staff to have a place where they could meet and connect. The survey does not specifically have a question about how faculty and staff would feel if they had to share the space with students. The only data about this was in the open-ended question about what faculty like best about café 15 wrote that they liked it because it was a place away from students. However, given this question's qualitative nature, it does not supply concrete insight into the faculty and staff's desires.

3.2.0 Faculty and Graduate Student Interviews

Research was conducted on satisfaction with the café from the faculty and staff perspective. Professor Shah's graduate class, MKT 562: Marketing Research, conducted a series of interviews with faculty and staff during B-Term 2022 while the Quorum café had not reopened yet. During an interview faculty and staff were asked about their satisfaction with the hours of operation of the café, the menu items' quality and price, their experience at the café, and how they received news or updates about the place. In addition, the students also asked where on campus the interviewees would go generally to buy their meals.

Some of the findings that came out of the interviews were that the café served as a "Get Away" space for faculty and staff to spend time outside classes or for buying meals, and the interviewees expressed dissatisfaction with working hours, the menu, and communication about Quorum. Overall, faculty expressed there is always food available on campus, however they are not happy with the quality. Furthermore, there is no space for social activities for faculty and staff which increases their stress levels, and although the café supplied a place for relaxing and everyone enjoyed spending time there, the hours of operations were not inclusive for everyone which limited the activities at Quorum.

A few of the interviewees were asked about their opinion on allowing undergraduate and graduate students into the café. Many of them were fine with students visiting the café, however they would want Quorum to expand to avoid any potential crowds in the café. A few interviewees said they try to avoid places on campus such as the Campus Center since they get crowded during lunch time and they would rather eat their meals in their offices or else somewhere that is quiet. At the same time, several of the interviewees were interested in going to the café when Quorum reopened.

Based on the interview responses, the graduate students came up with a list of recommendations. Some of their recommendations included activities at the café such as music evenings, books, board games, and social events to create a more relaxing environment for faculty and staff. Moreover, it was suggested that communication between customers and the café could have been better, and some suggestions were offered: a mailing list and advertising more the specialties or the events taking place at the café to reach a broader audience. Other factors, such as the hours of operation could change to have the café open later in the afternoon and the menu options could be expanded to accommodate vegan and vegetarian customers.

4.0.0 Methodology

The goal of this project was to (1) assess the viability of student inclusion in Quorum Café and (2) supply a recommendation for stockholders of how to implement student dining. To focus the project's efforts, the following research questions were defined by the team:

- Does the nect tangible and intangible value of including students in Quorum Café positively impact the financials enough to justify the change?
- How would Quorum Café change if students were added? What would be the impact of this change on operations and advertising?
- What changes to marketing and outreach would need to be made to positively affect students and increase engagement with Quorum café?

To answer the research questions and achieve the goal of the project the following steps were taken:

1. Research Quorum Café
2. Understand Student Dining Needs through a web survey
3. Analyze the Viability of Potential Scenarios
4. Develop a business and marketing plan for the quorum

4.1.0 Research Quorum Café

The subsequent exploration of student dining needs as it relates to Quorum Café and recommendations for marketing the café rely on a foundational understanding of the history of Quorum Café, the space itself, and its stakeholders. To achieve this objective the team conducted research on the history of Quorum, toured the space, and conducted interviews with stakeholders.

Initial research was conducted using WPI website and social media to better understand the history of the space before it closes. This research was focused on understanding the dining style of Quorum Café and the type of food they offered. The website research deepened knowledge on the mission of space while research into the earlier social media about space revealed weekly menus and promotional offerings. This information was later used for context when making recommendations for changes to the space.

Following the initial research, the team toured Quorum Café. The tour served to understand the physical space's current condition and limitations for change would exist based on the space itself. This was summarized as the front of the house limitations (dining area), the number of seats and amenities able

to be offered, and the back of the house (kitchen) limitations that focused on number of staff and types of cuisine that could be offered.

To deepen the knowledge of Quorum Café and understand the needs of the stakeholders, three expert interviews were conducted. The first with Regional Vice President of Chartwells the company responsible for dining services on campus. This interview was about an hour and was focused on understanding the limitations the project must work within and a more practical understanding of space's operations. The second interview was with the WPI Dean of Students. This interview focused on understanding the major stakeholders within WPI and the history of space on campus. The interview also served to help the project team understand what previous efforts had already been made and more closely understand the financial structure between WPI and Quorum Café. The third interview was conducted with the Director of Dining Services and a Chartwells manager and was used to acquire the necessary operation information including industry norms and expected costs.

4.2.0 Understand Student Dining Needs

After becoming familiar with Quorum Café and its stakeholders, an understanding of student dining needs and habits was needed to make a correct assessment of their impact. These data were gathered through an online survey. Surveys are a method to collect responses through a structured questionnaire with standardized questions (Ha et al, 2015). Other key factors that need to be considered are the survey mode and the survey sample. The survey mode is the contact method, or the medium used in collecting the data. Some of the survey modes that are the most used are: face-to-face, through the telephone, mail, website/online, and e-mail (Ha et al, 2015). The survey mode chosen for this project was an online survey.

An IRB approval was used to ensure the ethics of the study. This approval process examines the survey and methods. The approval process takes around a week and allows the school to ensure that surveys are not done unethically. Based on the IRB protocol, anyone who is less than 18 years old should have signed informed consent from their parents, therefore the age limit on our survey was set to 18 years old. Furthermore, an informed consent was provided at the start of the survey informing the participants about the purpose of the study, the procedure, any risks associated with the survey and contact information of the investigators.

To achieve this objective the team constructed and distributed a survey to a sample of students. Survey sampling is a process used to select a subset of individuals to represent a chosen population.

Research methodologists strongly recommend using probability sampling techniques to decide the sampling sizes (Ha et al, 2015).

The first step in this process was to decide the necessary representative sample size for the student body. The team collected total population and demographic data from the WPI website Public Tableau. The WPI Tableau dashboard had information on size of each class, gender ratio, racial demographics, and international vs domestic student ratio. This Tableau data was used to calculate the minimum viable sample size on a finite population. See Table 1 for information on WPI student demographics. See Table 2 for desired number of respondents per demographic.

Table 1: The current WPI population by minority status and year

Population	Undergraduate	Graduate	Total
Gender			
Male	3303	662	**3965**
Female	1943	1400	**3343**
Total	**5246**	**2062**	**7308**
Ethnicity			
White	3337	896	**4233**
Asian	624	115	**739**
Hispanic/Latino	452	115	**567**
Black/African American	143	74	**217**
American Indian/Alaska Native	2	0	**2**
Native Hawaiian/ Other Pacific Island	2	0	**2**
Two or More Races	190	37	**227**
U.S. Nonresident	366	734	**1100**
Unknown	130	91	**221**
Total	**5246**	**2062**	**7308**
Class			
Mass Academy	50	0	**50**
First Years	1479	0	**1479**
Sophomore	1363	0	**1363**
Junior	1144	0	**1144**
Senior	1210	0	**1210**
Graduate	0	2062	**2062**
Total	**5246**	**2062**	**7308**

Table 2: Desired distribution and ratio per demographic of respondents.

Sample Targets	Undergraduate	Graduate	Total	Ratio
Gender				
Male	165	33	198	**54%**
Female	97	70	167	**46%**
Total	**262**	**103**	**365**	
Ethnicity				
White	167	45	211	**60%**
Asian	31	6	37	**10%**
Hispanic/Latino	23	6	28	**8%**
Black/African American	7	4	11	**3%**
American Indian/Alaska Native	0	0	0	**0%**
Native Hawaiian/ Other Pacific Island	0	0	0	**0%**
Two or More Races	9	2	11	**3%**
U.S. Nonresident	18	37	55	**16%**
Unknown	6	5	11	**3%**
Total	**262**	**103**	**354**	
Class				
Mass Academy	2	0	2	**1%**
First Years	74	0	74	**20%**
Sophomore	68	0	68	**19%**
Junior	57	0	57	**16%**
Senior	60	0	60	**17%**
Graduate	0	103	103	**28%**
Total	**262**	**103**	**365**	

Using the formula for a sample size needed for a finite population, with a population of 7,308, an estimated population proportion of 50%, a 5% margin of error and a 95% confidence level it was calculated the sample size needed was 365 students: 74 first year, 68 sophomores, 57 juniors, 60 seniors and 103 graduate students (see Appendices B and C for calculations and formula). A sample size of 365 was not feasible due to the scope of the MQP and 200 responses were considered a suitable target sample size. Data about other minority identities was gathered in addition to ensure that during the data gathering phase bias towards non minorities was reduced and tracked due to the often presence of this bias often seen in similarly conducted studies.

The sample size calculated was used to decide how to distribute the survey. Based on the necessary sample the team found several methods of survey distribution: (1) Contact professors and distribute through classes, (2) Distribute through club leaders and (3) Distribute through the school

newspaper, Technews. Each of these methods of distribution supported meeting the necessary sample size and reflects the diversity on campus. See Appendix D for specific club and professor distributions.

A Qualtrics survey (see Appendix E) on how to improve students' dining experience and increase the profit of the café was conducted. The introduction block covered the necessary background information about students and filtered respondents that were: (1) not current students, (2) that had already taken the survey, (3) did not consent to the terms of the survey, (4) were under 18 and (5) who did not eat meals on campus. The next block, meal plans, asked what if/what type of meal plan students have. The following block, café, (1) goes into what items students would want out of a café on campus such as what meal they would want it to serve, (2) when do they want it open and (3) what items they would want on the menu. After this section, a block dedicated to user behavior as it relates to social media was created. Similarly, this block focused on socials media platforms used, engagement with on campus news, and time spent using social media. These blocks helped to better describe the needs of WPI students and marketing insight necessary for communicating change. The next block was aimed to assess the value of different dining options for respondents and reflect the tangible and intangible value they can bring back to Quorum Café. The final block was demographics which covers undergraduate or graduate, class year, school of study, gender, race and ethnicity and domestic and international students. The race and ethnicity and gender questions were selected one or more and had a "I prefer not to answer choice". The completed survey targets a 15-to-20-minute completion time and used question types most likely to get respondents to answer accurately.

After the survey design was completed, a test sample was distributed; 33 students responded, and feedback was provided by the respondents. The first test provided feedback on the effectiveness of the survey and ensured any issues with its performance were fixed before the final mass distribution. This test using the methods mentioned previously the survey was distributed to the WPI students and remained active for 20 days then closed. The survey was then summarized and analyzed. The survey summary involved reviewing each question's findings independently and taking note of trends that stood out among the data.

For the final survey, the data collected on the demographics was analyzed based on the students' WPI's status, gender identity, race, and if they were a domestic or international student. Overall, the demographics for class status were skewed towards sophomores and freshmen. The racial, international versus domestic and gender population representation was accurate for the demographics of WPI population. The demographic analysis was done by comparing the desired demographic amount for a particular subgroup to the actual population survey. The percentage difference was calculated.

The number of first years that responded was approximately twice the amount of the target ratio. This was likely due to the classes favored by the team for their size are also generally classes taken by freshman, the larger classes are core classes taken by many students early on in a WPI their academic schedule. The ratio of desired sophomores to actual sophomore respondents was also skewed with 33% more respondents than the target proportion. Juniors, seniors, and graduate students were negatively represented with fewer respondents than needed. Juniors, seniors, and graduate students had approximately 40% less than the desired ratio. Table 3 breaks down the count and ration for each class status.

Table 3: The number of respondents per class status compared to the target

Class Status	Count	Ratio	Target Ratio	Difference
Undergrad: First-year	74	0.418	0.202	1.066
Undergrad: Sophomore	44	0.249	0.187	0.333
Undergrad: Junior	16	0.090	0.157	-0.423
Undergrad: Senior	16	0.090	0.166	-0.454
Graduate school	27	0.153	0.282	-0.459
Total	177			

Gender ratios defined by WPI did not include transgender students. This was different in comparison to our survey which was a check all that apply with several transgender identities included and a gender that. It was not clear if transgender students were excluded from the WPI survey or if the transgender students were grouped with a binary gender. To make accurate data comparison transgender students unfortunately were excluded from this demographic analysis. However overall, the number of students who identified as gender minorities was 8.1%, a large percentage of the population sampled. The binary genders were taken for the survey analysis and transgender students were excluded to correspond with the WPI demographic survey. See table 4 for gender demographics of survey respondents.

Table 4: The number of respondents per gender and percentage of respondents per gender

Gender Identity	Count	Ratio
Woman	75	0.4237
Man	82	0.4632
Transgender	5	0.0282
Non-binary/Gender Non-conforming	11	0.0621
Gender Fluid	1	0.0056
Any gender not mentioned	0	0
Prefer not to answer	3	0.0169
Total	177	

Overall, the distribution of respondents per binary gender was accurate. Women had 4.4% more than the target ratio and men had 3.7% less than the target ratio. See table 5 for more information.

Table 5: The number of respondents per gender binary, percentage of respondents per gender

Binary Gender	Count	Ratio	Target Ratio	Difference
Women	75	0.477	0.457	0.044
Men	82	0.522	0.542	-0.037
Total	157	1	0.006	0

The responses per International or domestic status were biased towards domestic students with the domestic students being 5.4% of an increased rate and 29.3%. See the table below for more information.

Table 6: International vs domestic ratios

Status	Count	Ratio	Target Ratio	Difference
International	18	0.110	0.155	-0.293
Domestic	146	0.890	0.845	0.054
Other	1			
Total minus other	164			

Overall, the distribution of people who identified as white was 15% lower than the target ratio and all minorities except Hispanic were above the target ratio. See table 7 for more information.

Table 7: The number of respondents per racial minority and difference between target ratios

Race/Ethnicity	Count	Ratio	Target Ratio	Difference
American Indian or Alaskan Native	0	0	0	0
Asian/Pacific Islander	38	0.209	0.123	0.691
Black/African American	9	0.049	0.036	0.364
Hispanic	15	0.082	0.095	-0.130
White/Caucasian	110	0.604	0.707	-0.145
Middle Eastern		0	0	0
Multiple ethnicity/Other	10	0.055	0.038	0.449
Prefer not to answer	2	0		0
Total	182	1	0.999	

4.3.0 Define and Analyze Scenarios for Including Students

4.3.1 Create Realistic Scenarios

The creation of the scenarios was based on the findings of the survey data and several likely methods that the café could use to generate a profit. The creation of the surveys focused on willingness to pay, mealtime preferences, and meal type preferences. The scenarios were comparted to reach other and a no change baseline scenario if no changes are made.

4.3.2 Analyze Market Demand

The second step in our analysis was to describe and characterize the market's willingness to pay. By taking the reported willingness to pay for each meal type and multiplying it out to the WPI student population the team was able to generate a potential market size by at each price point for each meal. This analysis was very generalized but was used to better target practical scenarios based on what scenarios would attract the most students.

4.3.3 Break-Even Analysis

The team also conducted a break-even analysis for each of the scenarios. A break-even analysis determines the point when revenue is equal to the cost, both variable and fixed, of running the business (Harvard Business Review, 2014). In our project we considered sales per hour as the units of analysis. To improve the accuracy of our estimate we ran a specific kind of break-even analysis called a multiproduct break-even analysis that accounts for the sales mix (U.S. Small Business Administration, n.d.). This approach allowed us to weigh the likelihood of different sales amounts. The team had to create estimates

for the costs based on the limited information provided in our interviews. We assumed a fixed food cost of 40% of revenue and added miscellaneous cost (paper and facilities) of 7% of revenue. Labor cost was broken into proactive labor cost which was equal to the hourly rate of each position times the operating hours and an additional tax and benefit cost equal to 42% of productive labor cost. The labor cost calculations were based on three positions cashier, cook, and dishwasher. The team also used last year's faculty sales of $7,400 as fixed standard revenue. The team conducted this analysis using the standard features available in Excel.

4.3.4 Monte Carlo Simulation

Significant variability exists in our analysis as a result of limited data and variation among students. To account for variability and improve the accuracy for the next form of analysis the team utilized Monte Carlo simulations. It was understood that the accuracy of our initial estimates would not be high enough to draw meaningful conclusions however the upper and lower limits of many of the variables and the most likely outcome was known allowing us to run Monte Carlo Simulations. The name "Monte Carlo" comes from a famous casino in Monaco, where the technique was first used in the 1940s to analyze the probability of winning at roulette. In a Monte Carlo simulation, the system is modeled as a set of mathematical equations or models, and random samples are generated for the input parameters of the model based on their probability distributions. The simulation then generates multiple scenarios, each with a different combination of input parameters, and calculates the output for each scenario. By analyzing the distribution of outputs across all scenarios, the simulation can provide insights into the range of potential outcomes and the likelihood of different outcomes (Society for Industrial and Applied Mathematics, n.d.). We first ran the simulations using a standard three-point distribution for average sale price and visits per hour.

The data generated by the survey enabled the team to run a second more accurate round of simulations using the known distribution of willingness to pay by meal. Using the "Fit Distribution" feature in the @Risk add-in used to run the Monte Carlo simulations the team was able to create a distinct and more accurate distribution of average sale amount based on the distribution of the sample.

The two rounds of simulation allowed the team to account for variability in average sale amount, average students per hour, revenue generated by faculty, and cost. Modeling the variation in these variables improves accuracy but also provides an evaluation of risk. The distribution of each simulation's outcome gave the team insight into which scenarios carry the most risk.

4.3.5 Decision Matrix

Financial performance was not the only metric considered when determining the best scenario. Our team chose to use a decision matrix to compare the impact of each scenario on economic performance, changes to campus, and professors. A decision matrix is a tool used to evaluate and prioritize different options based on a set of criteria. It is a visual representation that helps individuals or teams make informed decisions by organizing and weighing different factors that influence the decision. The decision matrix allowed the team to use ranked performance and weighted importance to compare attributes of each scenario regardless of unit of analysis (Keller & Kotler, 2016). Much of the ranking of a decision matrix is subjective to the user so detailed scales explaining how to evaluate each scenario were included. The decision matrix provided the team with a means of choosing the best scenario based on some measurable result.

4.4.0 Develop a Business Plan for the Inclusion of Students

After completing an evaluation of risk and economic performance for the set of possible scenarios, the team developed a detailed business model and proposal that can be used describe business more as a whole and be used by stakeholders to make informed decisions about changes to The Quorum Café.

The purpose of the business plan is to provide an overview of the business, in this case the Quorum Café, and it can serve as a blueprint for operating the business (Sanders & Huefner, 2011). The business plan can be written as a paper and prepared in a presentation to share with investors and lenders. There are a few points that must be included in the plan: (1) is there sufficient demand for the product or service, (2) what is the pricing strategy would be used, (3) what is the quality and service of the product or service, (4) how the product or service compares to the competition, and (5) how the product or service will be promoted. To answer these questions in an organized manner the team used the following tools.

4.4.1 Business Model Canvas

A business model canvas is a visual tool used to highlight the key elements of a business. There are nine main elements of a business model canvas. It was created by Alexander Osterwalder and Yves Pigneur in 2010 and first published in their book, Business Model Generation: A Handbook for Visionaries, Game Changers, and Challenger (Osterwalder & Pigneur, 2010). The nine main elements are as follows:

Value Proposition: The products or services that the business offers and the unique value it provides to its customers.

Customer Segments: The specific groups of customers the business targets.

Customer Relationships: The way the interacts with its customers.

Channels: The channels a business uses to reach its customers.

Revenue Streams: How the business generates revenue from its products or services.

Key Resources: The resources required for the business to run, these can be physical infrastructure or people.

Key Activities: The activities the business performs to deliver its products or services.

Key Partners: The partners or suppliers that the business relies on to operate.

Cost Structure: The costs associated with running the business, including operating expenses, overhead, and other costs.

4.4.2 SWOT Analysis

SWOT analysis is another tool that is used when creating a business plan. A SWOT analysis describes a company's strengths, weaknesses, opportunities, and threats. SWOT analysis was first introduced in the 1960s by Albert Humphrey, who was a management consultant at the Stanford Research Institute (now SRI International). Humphrey and his team developed the SWOT framework as part of a research project aimed at identifying factors that contribute to successful corporate planning (MindTools Content Team, n.d.). The four components of SWOT are as follows:

Strengths: Internal Attributes that give the business an advantage over competitors

Weaknesses: Internal attributes that put a business at a disadvantage to its competitors

Opportunities: External factors that could help a business grow.

Threats: External factors that could negatively affect a business.

4.4.3 PESTLE

A PESTLE Analysis is a tool used for evaluating the external factors that may impact a business. PESTLE stands for Political, Economic, Sociocultural, Technological, Legal, and Environmental factors (PESTLE Analysis, 2022). The following are the explanation of each component:

Political: Considers the impact of government policies, laws, regulations, and stability of the government.

Economic: Considers the impact of economic conditions such as inflation, interest rates, economic growth, and unemployment.

Sociocultural: Considers the impact of social and cultural factors such as demographics, lifestyle trends, and consumer attitudes.

Technological: Considers the impact of technology such as innovations, research and development, and the use of automation.

Legal: Considers the impact of laws and regulations on the business, including changes in legislation or potential legal issues.

Environmental: Considers the impact of environmental factors such as climate change, natural disasters, and sustainability practices.

For the purpose of our project, the team focused the analysis around the WPI community.

4.5.0 Develop a Marketing Plan

In addition to the business plan, the marketing plan identifies the target audience, the most effective channels to engage with them, and help achieve the business goals. The focus of the marketing plan is to understand:

- The customer segments
- The positioning strategy
- The marketing mix for Quorum Café

The customer segments were based on the participants WPI's status. After analyzing the differences and similarities between each status, the final customer segments were: first-year students, sophomores, upperclassmen (juniors and seniors), and graduate students. From the data collected, the differences between the groups were on the meal plans they had purchased, the usage of the meal swipes, and the places they chose to purchase their meals from. There were any significant differences on the times they chose to eat their meals, the medias they use, or their preferences for a café-style dining service.

The 4 Ps of marketing provides a framework to build the marketing strategy (Lexa et al, 2006) and they will be used to create a marketing plan for the Quorum Café based on the data collected from each of the customer segments identified. The 4 Ps of marketing are: product, price, place, and promotion.

4.5.1 Product

One of the 4 Ps is a product, which could be a physical good, a service, or even something more abstract (Lexa et al, 2006). At the current state, the Quorum Café serves breakfast and lunch food and beverages to the faculty and staff of WPI. Figure 4 shows an image taken from Quorum's Facebook page of one of the menus at the café and the options they offer.

Figure 4: Example of Quorum Cafe's menu

The survey was utilized to collect data about the students' opinions on the food and beverages products offered at dining services on campus. When it comes to nutritious options, 39.8% of the students strongly agree and 33.1% somewhat agree that they wish the dining services provided more nutritious options. Students also expressed interest in having a café style serve more healthy options and provide more vegan or vegetarian options. We asked the students if they had any dietary restrictions or allergies and how stressful it was for them to find accommodation. The students that identified as vegetarian reported sometimes they have a hard time finding accommodation on campus.

4.5.2 Price

Price is about figuring out the best pricing of the products or services being offered (Lexa et al, 2006). We asked students how much they are willing to pay for breakfast, lunch, dinner, and snacks. Based on the responses collected, the students are not willing to spend more than ten dollars for breakfast,

no more than fifteen dollars for lunch and dinner, and they're willing to spend no more than least five dollars for a snack.

Students will also be using their meal swipes to purchase from the café besides using cash or credit cards. WPI offers different meal plans that have different costs and different number of meal swipes. As was shown at the beginning of this section, almost all the first-year students and some of the sophomores have purchased a resident meal plan. At the same time, all the students, no matter what class status they have, tend to use most of their meal swipes during the week. We asked the students how many meal swipes they have remaining at the end of the week and most of the students, 60 out of 78 that responded to the question, reported they have zero to four meal swipes left. Most of the students that answered this question were first-year students since the majority of them have purchased a meal plan. The mean number of meal swipes left at the end of the week was 3.3 and 80% of students on a mandatory meal plan had at least one swipe remaining. We did not ask the students why they have more than one swipe remaining at the end of the week and to create a plan on what is the best strategy to incorporate meal plans to the café and have students use all their meal swipes for the week more data would need to be collected.

On the survey, a question was asked to the participants to describe which are the most important things they expected out of a café style dining service on campus, like the Quorum Café, and the most common answer was the pricing of the menu items provided or the cost of each meal they are willing to buy at the café. Students expressed that would like the café to have less expensive drinks and food that is worth spending their money on and their meal swipes. Another answer the students provided was the value they get out of a meal swipe. Although it is important to include meal swipes to the café for the students, another important part to consider is how many menu items someone can get out of a meal swipe.

4.5.3 Place

Place, also known as position, is the physical place that would be used to display and sell the goods and services (Lexa et al, 2006). The participants were asked which places they purchase their meals from for breakfast, most of the students regardless of WPI status, would go to Dunkin Donuts or Starbucks for breakfast. Another place that was popular amongst first-year students and sophomores for breakfast was Morgan Hall. For lunch, the common places were the Campus Center Subs, Joy Empanadas, and Sono. For dinner, the dining services most of the students chose to go to the Goat's Head Kitchen and South Village. When asked to rate the different places on campus, the Halal Shack received the highest ranking based on their service and food quality.

Students were asked what they were willing to do at the café beside purchasing meals most of them chose to spend time at the café for either doing homework or just relaxing. At the same time, some students expressed they would like the café to have a few outlets to plug in their devices and have enough table to seat.

4.5.4 Promotion

Promotion is used to develop the strategy for the marketing plan (Lexa et al, 2006). We asked the students which types of media they receive news and updates from WPI. The top media used by the students were: email, Instagram, posters, and campus bulletin boards. Students also reported that they are likely to use the Internet to search for a dining place before visiting and look up the menu online.

Another important concept to consider for the marketing plan is real-time marketing. Real-time marketing is defined as branded content used to personalize the goods, services, or brand communications in real time to capture the visibility of the brand based on consumer interests (Santos et al, 2022). Real-time marketing is used as a social media strategy to generate organic content such pictures, videos, or hashtags to create engagement with customers. The Quorum café has established a presence on campus; however, the students are not familiar with the space, or the services offered. Real-time marketing will help with figuring out the best time to expose and advertise the café to the student population.

5.0.0 Results

The following section presents the findings of each component of the project. The section begins with an explanation of the survey sampling, then continues to the survey result. The results of the survey were used to create the scenarios in the following section. The results of the scenario analysis were implemented into the final section, a business and marketing plan.

5.1.0 Survey Results

The survey was designed to collect data on students' habits and needs regarding dining services, as well as to answer our research questions. Students were asked questions about their willingness to pay, where on campus they choose to purchase their meals from, type of meal plans they might have, their dietary restrictions, interest in café style dining service, and their media habits. The survey was distributed using convenience sampling to approximately 1122 students in 14 classes and 14 clubs via email or Canvas messaging. The survey was conducted for 20 days and received 270 responses, a 24% response rate, before being closed. The group had a target sample of 365 to be a true representative sample of the entire WPI population. Our final sample was 79% (95 short) of the target but was still large enough to conduct analysis on.

The survey represents students that are 18 or older and used the dining services on campus, students who answered no to either of these questions were not permitted to submit a response. To increase the willingness of respondents to complete the survey, certain questions were able to be skipped if the respondent was not interested or unable to answer. Because of this not every question has a total of 270 responses.

After evaluating the distribution of responses, the survey data was brought into Tableau. Tableau allowed for more granular data analysis and faster understanding through customizable visualizations. Tableau was also used for its ability to filter data easily. Using the filter functions the team was able to quickly evaluate trends across different segments of survey sample. The survey was organized into six blocks: dining habits, meal plans, café, media preferences, intangibles, and demographics. The demographics were covered in the methodology section and the rest of the results are shown in this section categorized based on the survey blocks.

Block 1: Dining Habits

The first block of the survey was dining habits and the questions asked related to satisfaction of the students with the current WPI dining services, the students' dining habits such as when and where they choose to dine on campus, and how much they're willing to spend per meal.
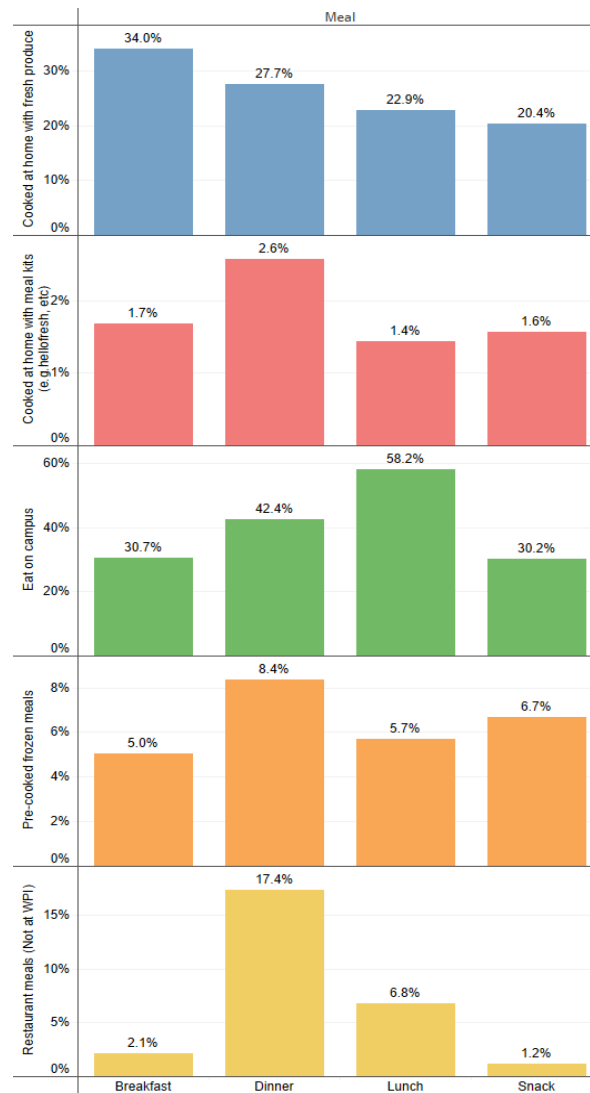
Figure 5: How the students source their food for breakfast, lunch, dinner, and snack

One of the questions asked on this block was how the students source their food and the responses are shown in Figure 5. For breakfast, most of the participants, 34%, choose to cook their meal at home with fresh produce. Lunch and dinner have the highest percentage of participants choosing to eat

on campus with 58.2% of the students' purchasing meals for lunch on campus and 42.4% choosing to dine on campus for dinner. Moreover, 30.2% of the students grab a snack when they're on campus.

Figure 6 shows the responses of the participants on how many meals they eat during the weekdays (Monday-Friday) and weekends (Saturday-Sunday). From Monday to Friday, the students have on average 3 meals and on the weekends most of the students have about 2 meals.
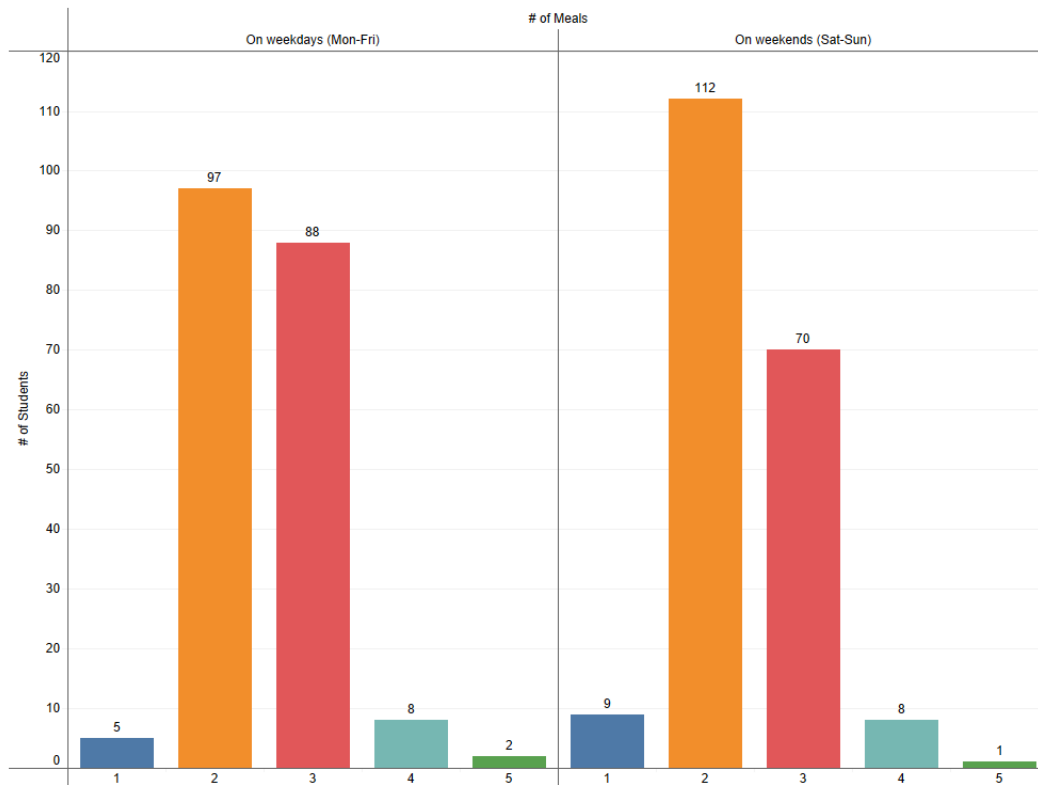
Figure 6: Number of meals students eat during weekdays and weekends

The participants were asked to report the times they choose to eat breakfast, lunch, dinner, and snack during weekdays (see Figure 7) and during the weekend (see Figure 8). For breakfast, most of the students responded they eat from 7am to 11am. During the weekend 94 students chose the same time frame, however 79 students reported they eat breakfast later from 11am to 2pm, which when most of the students choose to have lunch during weekdays, which explain why some students eat about 2 meals during the weekend. There were not significant differences between the times the majority of the students chose to eat dinner (5pm to 8pm) and snack (2pm-5pm) during weekdays and weekends.
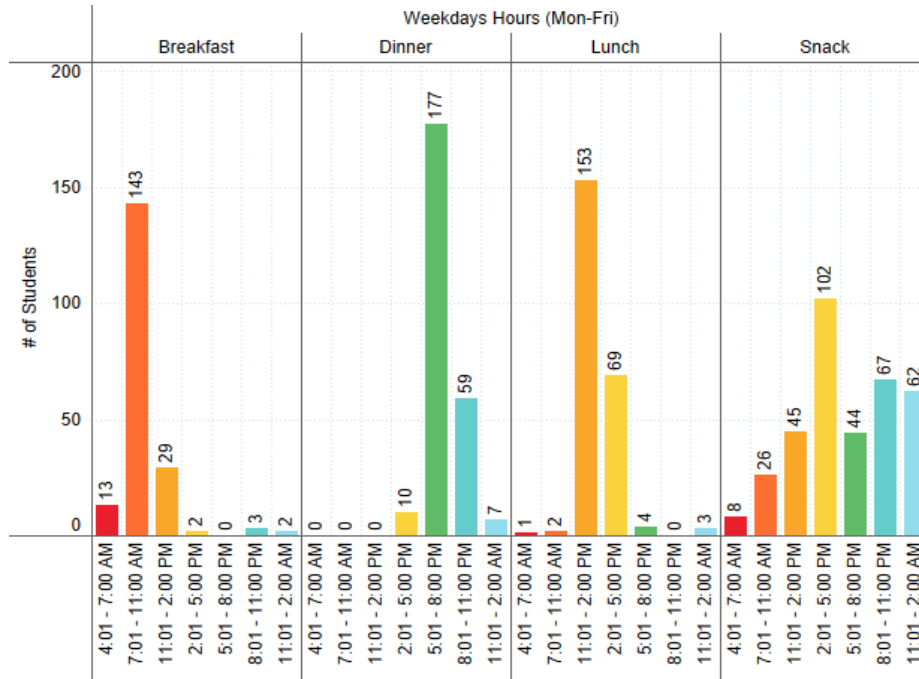
Figure 7: The times students choose to eat from Monday to Friday
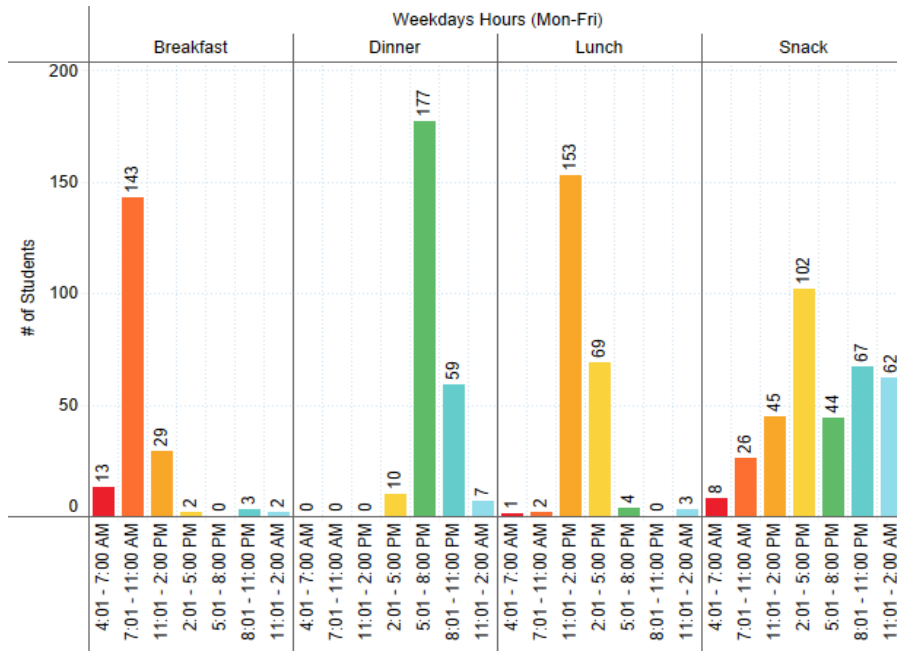
Figure 8: The times students choose to eat from Saturday to Sunday

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Another question asked was where the students preferred to buy their meals on campus and the results are shown in Figure 9. Dunkin and Starbucks are two popular options for breakfast amongst all customer segments. For lunch, Joy Empanadas, Campus Center Subs, and Sono are the most visited places. South Village and Goat's Head Kitchen are preferred for dinner. The Quorum Café, Starbucks, and Dunkin are preferred for grabbing a snack. Based on the dining services on campus chosen by the customer segments, Morgan Hall was picked by 43 first-year students for breakfast and also frequent for lunch by 58 first-year students and 19 sophomores. Moreover 19 sophomores reported they go to the Halal Shack for lunch. For dinner, 20 upperclassmen (juniors and seniors) and 11 graduate students chose to dine outside campus.
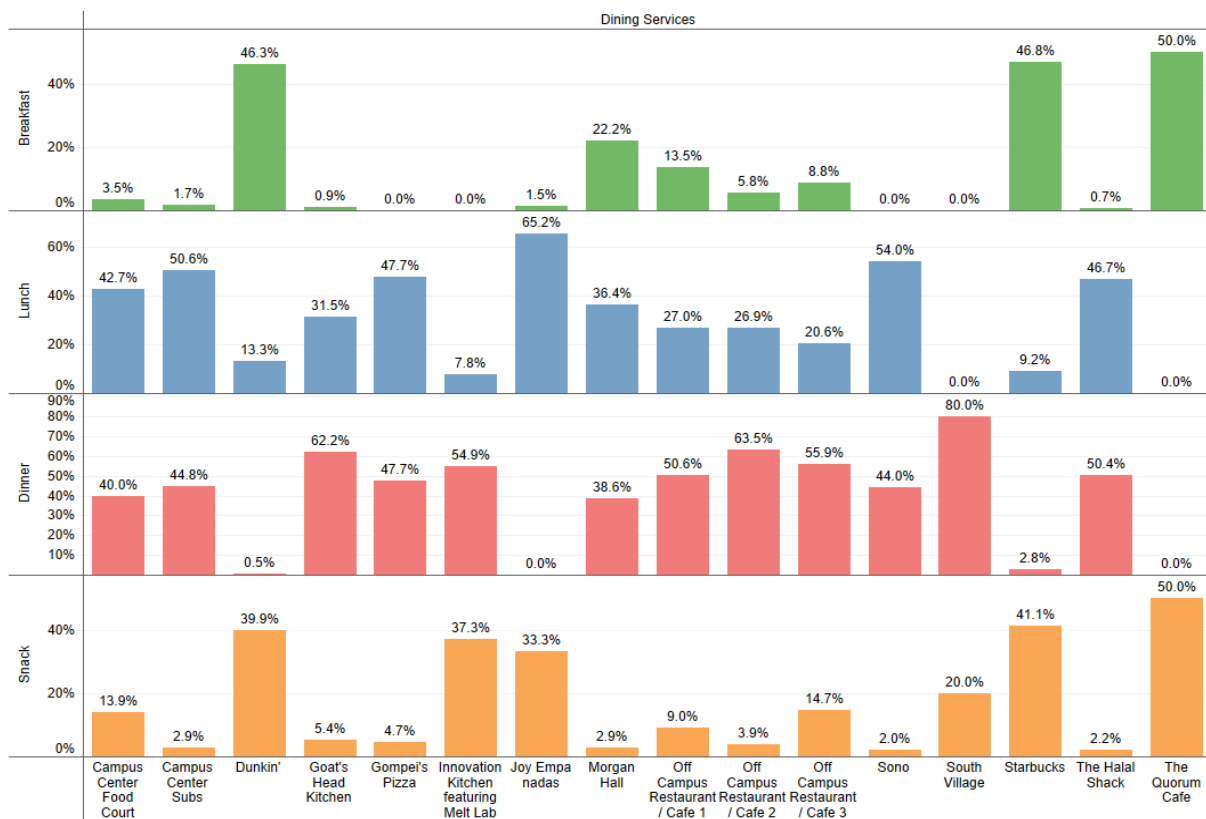
Figure 9: Data on dining services on campus visited by the students

Furthermore, the students were asked to rate the dining services on campus based on a star system (see Figure 10). The dining service that received the highest star rating was the Halal Shack with an average score of 4 starts and the lowest rating was received by South Village with an average score of 2 stars. For this question, we provided a text box for the students to provide an explanation for their rating if

they preferred to do so, and for the Halal Shack two students said they loved the food and the service being offered at this place. No student provided an explanation on why they gave a low rating for South Village, but most of the open-ended responses received from the other options were about the meal being overpriced and not worth a meal swipe.

Figure 10: Ratings of the dining services on campus

Another question about dining services on campus was having the participants rating attributes of these services. The attributes were: accessibility, ambiance, availability of variety of cuisine, availability of healthy food options, availability of special food options, cleanliness, hours of operations, quality of food, quality of service, value per money, speed of service, and variety of dining options (see Figure 11). Most of the students, 31.2%, were somewhat dissatisfied with the availability of healthy options. Although 31.2% of the students reported they were somewhat satisfied with the hours of operations,

another 27.4% reported they were somewhat dissatisfied with the current hours. For the other options, the majority seemed to be neither satisfied nor dissatisfied nor somewhat satisfied.
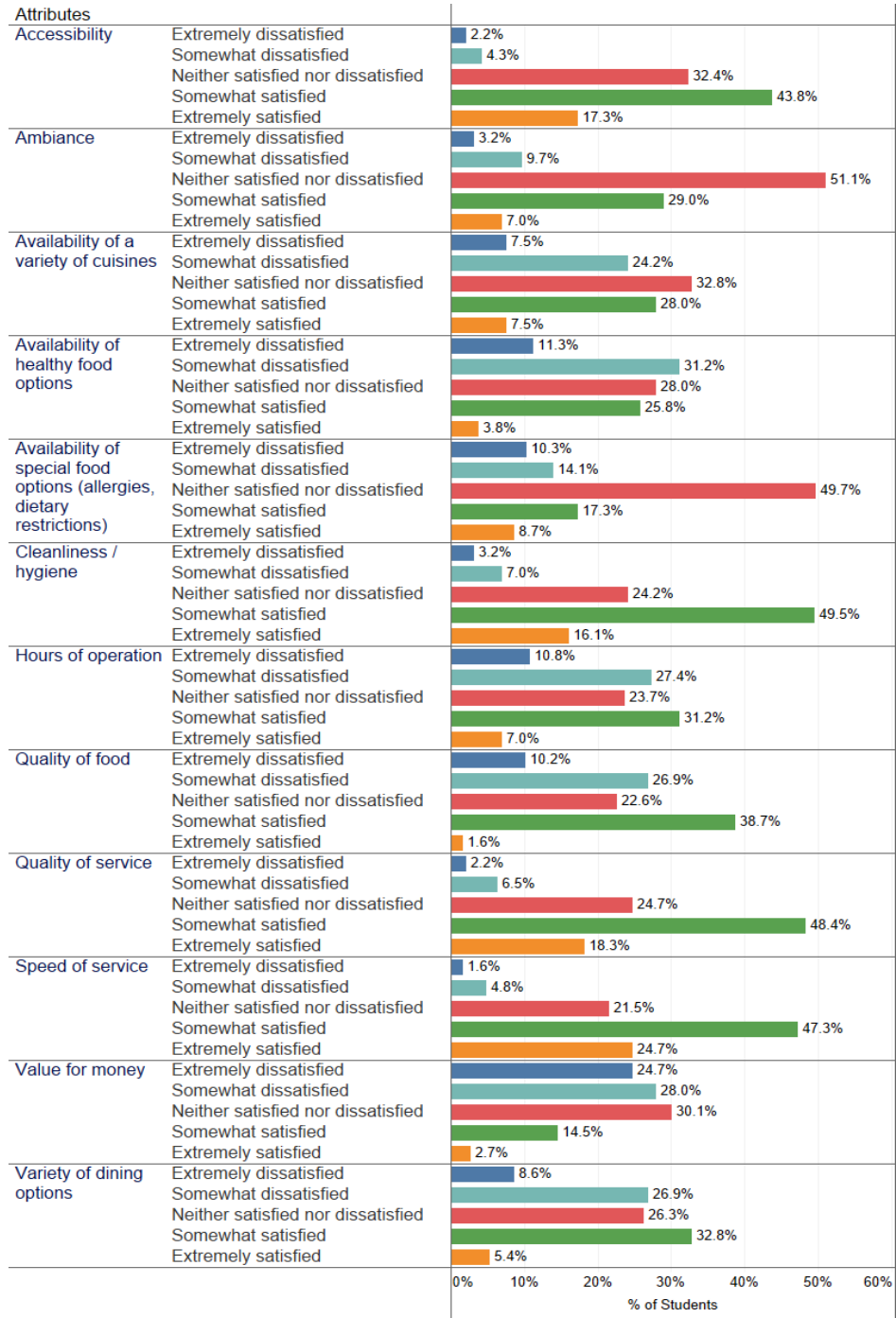
Figure 11: Data shows the ratings of the attributes of the dining services on campus

The students were asked to report how much they would pay for breakfast, lunch, dinner, and snacks, and the answers are shown in Figure 12. For breakfast, 41.6% are not willing to spend more than ten dollars, 50% are not willing to spend more than fifteen dollars for lunch, 38.4 % are also not willing to spend more than fifteen dollars for dinner, and 84.6% were not willing to spend more than five dollars for a snack.
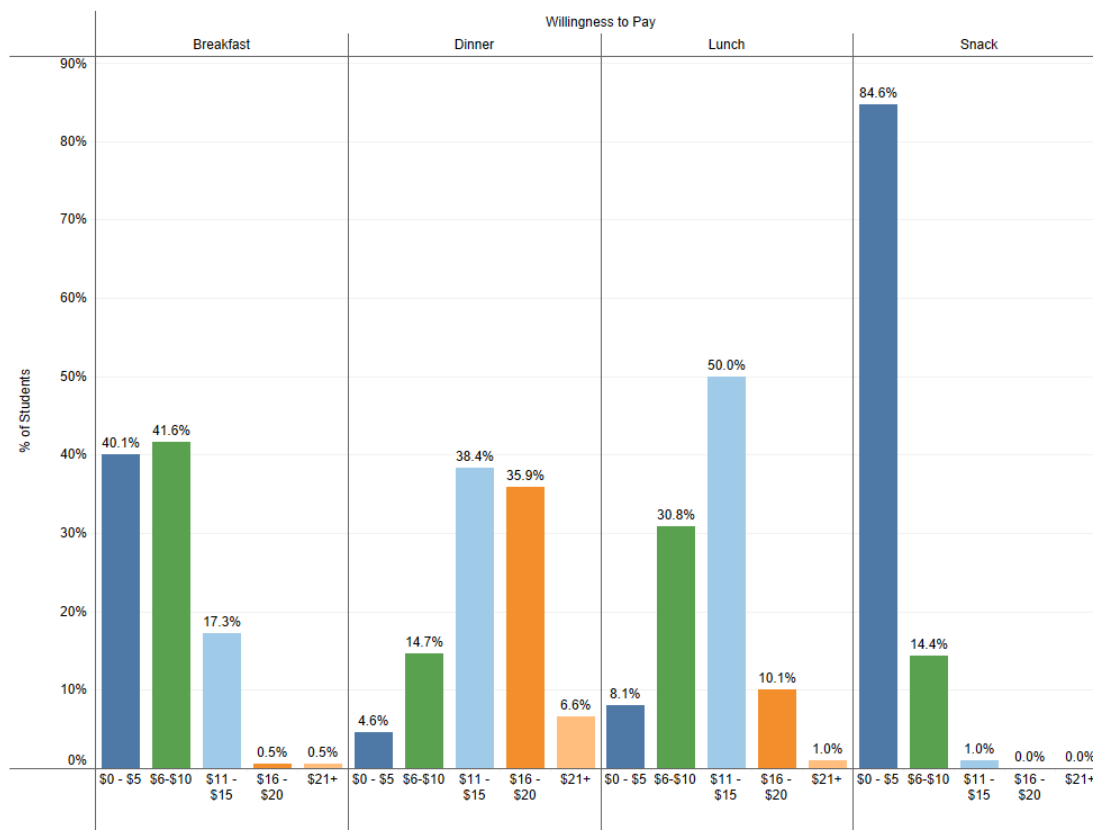
Figure 12: Students willingness to pay for breakfast, lunch, dinner, and snack

Overall, most of the students who took the survey responded that they choose to eat on campus during lunch and dinner time. For these times, the popular dining services to go were Joy Empanadas and the Campus Center Subs for lunch, and South Village and Goat's Head Kitchen for dinner. However, when the students rated the dining services on campus, the Halal Shack received a higher rating although it was the third or fourth most visited for lunch and sinner. The majority of the students reported they eat lunch from 11am to 2pm, and dinner from 5pm to 8pm. Students expressed somewhat dissatisfaction for availability of healthy option offered and hours of operations on dining services.

Block 2: Meal Plans

The second block on the survey was about meal plans. There are two types of meal plan offered at WPI: resident meal plan and non-mandatory meal plan. The resident plan must be bought by students that live in Morgan, Daniels, Founders, Institute, Sanford Riley Hall, Stoddard Complex, Messenger, Wachusetts House, Southvillage Apartment, and Townbridge House (Dine on Campus at WPI, 2023). The resident plan includes: the VIP meal plan, the 19-meal plan, the 14-meal plan, and the 200 meal-plan. The non-mandatory meal plan includes: the Gompei 190 meal plan, the 40-meal plan, the 50-meal plan, and the 75-meal plan. The data collected on meal plans and meal swipes used was categorized based on the students' WPI status.

First year students tend to live on campus and use meal plans when buying from dining services. From the responses we received on the survey, 71 out of 74 first-year students responded live on campus, and the rest come three to six times a week. When asked if they dine on campus, 67 first-year students responded that they eat on campus every time and 7 of them said they sometimes use the dining services offered at WPI. Figure 13 shows the types of meal plans first-year students have purchased and how many meals swipes they use in a week. Out of 74 first-year students, 73 have purchased a meal plan, and the average usage of meal swipes during the week is around 11 and during the weekends is about 4 swipes.

First Year Students
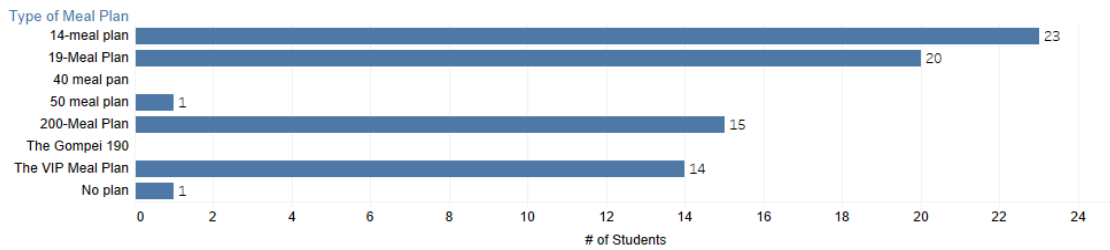
Meal Swipes Used in a Week

Figure 13: First-year students on types of meal plan and usage of meal swipes in a week

From the sophomore class, 21 out 44 students live on campus, 17 live off campus within walking distance and 3 outside of walking distance, and 3 live in a sorority/fraternity house. When asked if they dine on campus, 12 reported that they dine at WPI every time they're on campus and 32 said that they sometimes dine on the dining services at WPI. For the meal plans, 10 have a resident plan, 14 have a non-mandatory plan, and 20 don't have a meal plan. Figure 14 shows the distribution between meal plans and meal swipes for sophomores. During the week the sophomores use an average of 7 meal swipes, and during the weekend they do not use more than 4 meal swipes.

50

Figure 14: Sophomores *on types of meal plans they have and usage of meal swipes*

The students that are juniors, 4 of them live on campus, 10 live off campus within walking distance, and 2 live on a sorority/fraternity house. Of the students that do not live on campus, 5 of them reported that they come to campus daily and 5 said they are on campus five or six times a week. When asked how often they dine on campus, 2 of the students reported that they always dine on campus and 14 said they sometimes buy food from the dining services. In terms of meal plans, 1 of the students has a resident plan, 7 have a non-mandatory plan, and 8 do not have a meal plan. Figure 15 shows the distribution between meal plan and meal swipes for the juniors. Since there is not as many juniors that have a meal plan as there are first-year students and sophomores, there is an equal distribution of meal swipes that the participants that were juniors use during the weekdays, and on the weekends, they do not tent to use more than 4 meal swipes.
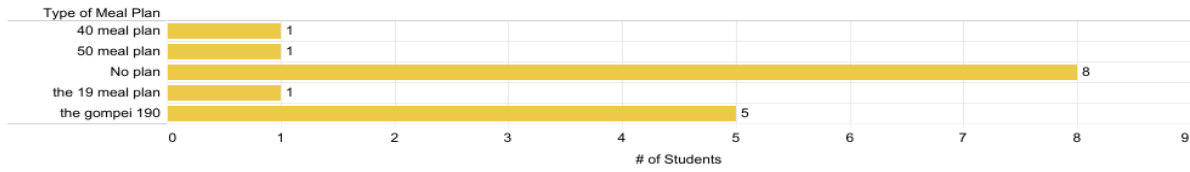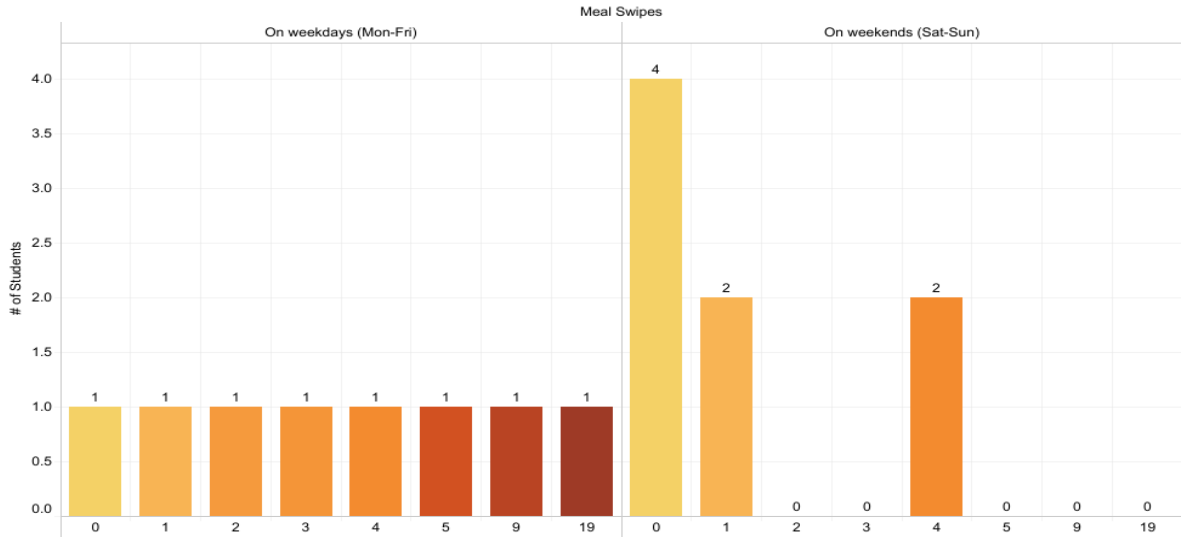
Figure 15: Juniors on types of meal plans they have and usage of meal swipes

The students that are seniors, 3 out 16 live on campus, 12 live on campus within walking distance, and 1 student lives off campus outside of walking distance. Of the students that do not live on campus, 1 visits campus once or twice a week, 2 come to campus three or four times a week, 7 are on campus five times a week and 3 always come to campus. When asked how often they eat on campus, 2 said they always dine on campus, and 14 reported they sometimes use the dining services. For meal plans, only 4 students have a non-mandatory meal plan and 12 do not have one. Figure 16 shows the distribution between meal plan and meal swipes for the seniors. Similar to the juniors, there is a somewhat equal distribution of meal swipes used by the seniors during weekdays, and only two of the seniors reported they do not use more than 3 meal swipes during the weekend.
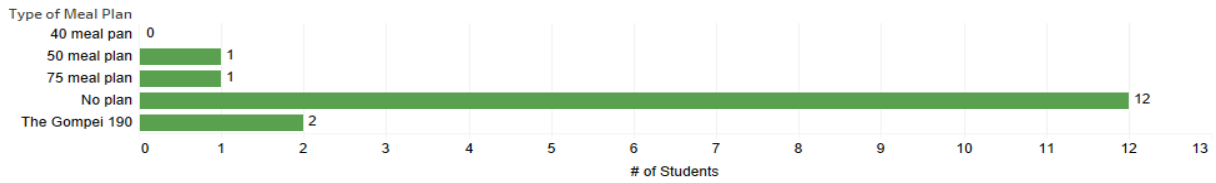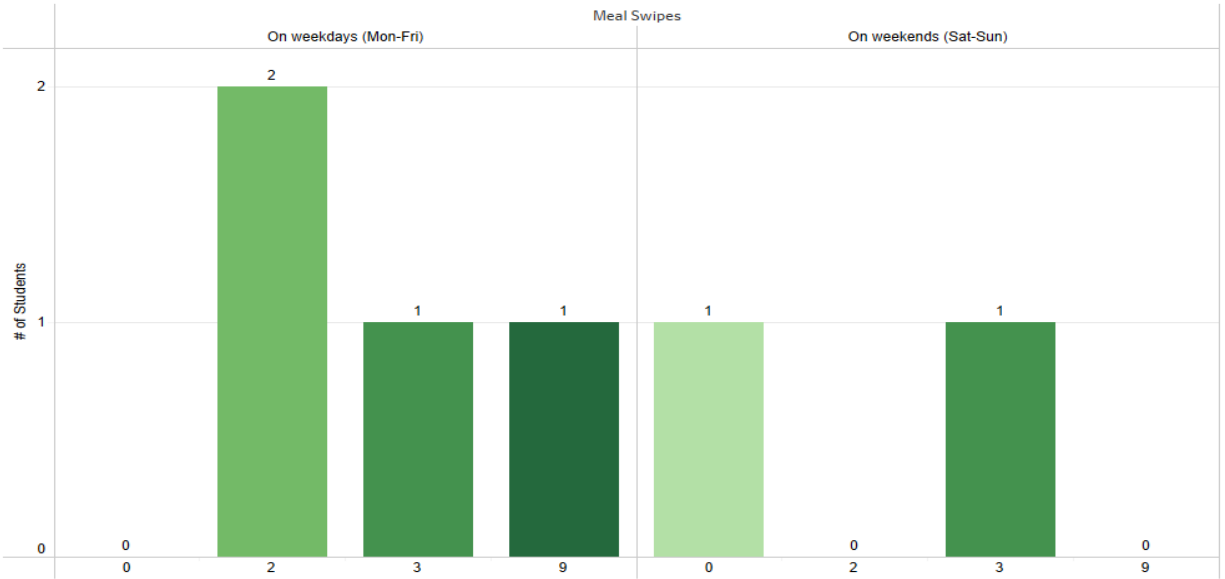
Figure 16: Seniors on types of meal plans they have and usage of meal swipes

For the graduate students, including master's and PhD students, 3 out of 23 live on campus, 10 live off campus within walking distance and 10 live off campus outside of a walking distance. Of the students that do not live on campus, 7 visit campus once or twice a week, 5 come to campus three or four times a week, 5 are on campus five or six times a week, and only 3 always come to campus. When asked if they dine on campus, all 23 students reported that they sometimes buy food from the dining services. When it comes to meal plans, only 5 have a non-mandatory meal plan and the other 18 have not purchased a meal plan. Figure 17 shows the distribution between meal plan and meal swipes for the graduate students. Since there is a lower number of graduate students having purchased a meal plan, from the responses we collected, they tend to not use more than 6 meal swipes during weekdays and not more than 5 meal swipes during the weekends.
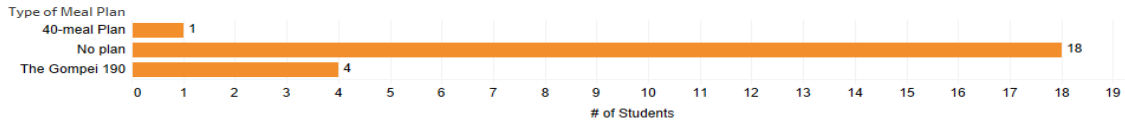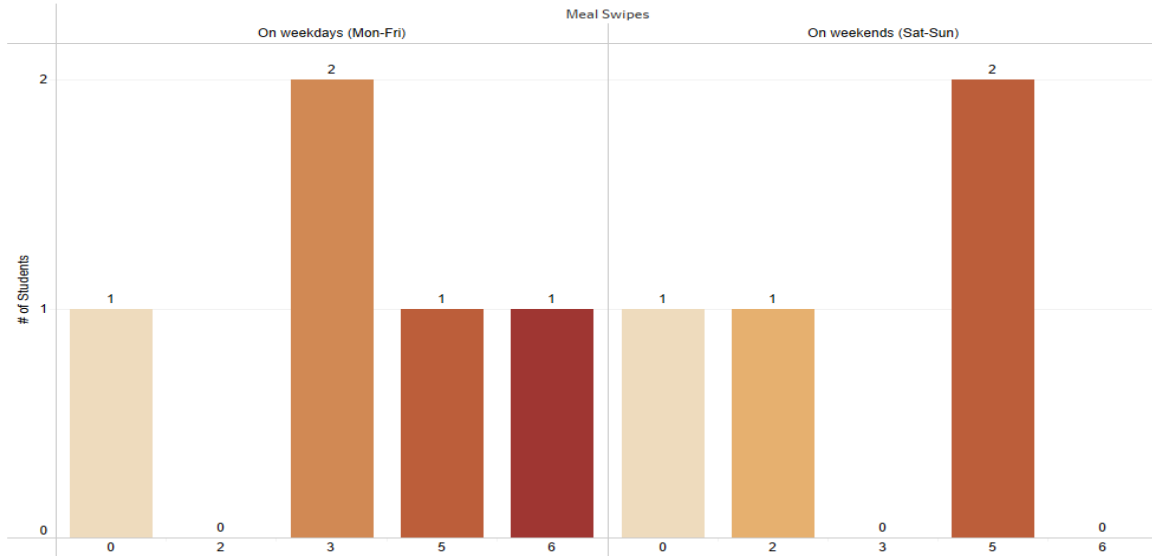
Figure 17: Graduate students on types of meal plans they have and usage of meal swipes

Another question asked in this block was how many meal swipes students have at the end of the week and table 8 below shows the result. On average, the students don't have more than 4 swipes left, however there were a few that have five or more meal swipes left.

Table 8: Meal swipes remaining at the end of the week

# of Meal Swipes	# of Students
0	15
1	10
2	12
3	11
4	12
5	5
6	2
7	5
9	1
11	2
12	1
16	2

From the data collected, first-year students and sophomores are more likely to purchase a meal plan and use most of their meal swipes when dining on campus. It would benefit the Quorum Café to include meal swipes as a payment option, and even though there wasn't a large number of upperclassmen (juniors and seniors) and graduate students that have meal plans, they might choose to use meal swipes when visiting the place.

Block 3: Café

The third block on the survey explored the interest of the students in the Quorum Café. Considering the café currently offers services to faculty and staff, the questions were asked in a hypothetical way and not to mention Quorum by name to avoid giving any idea that the café is accessible to the students. One of the questions asked whether the students would consider visiting a café style dining services on campus serving sandwiches, paninis, soups, salads, and beverages and the answers are shown in Figure 18. Out of all the responses recorded, 61.1% of the students responded positively and 31.9% of the students considered visiting the café but it would depend on other factors. The most common answers were based on the price of the menu options, the value they would get out of a meal swipes, menu variety and the quality of food.
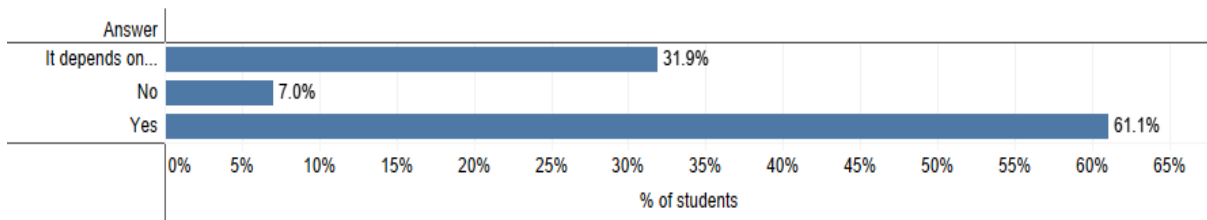
Figure 18: Students' on whether they would visit a café style dining service on campus

Students were asked what else they would do at the café besides purchasing meals from the place, and 30% reported they would go to the café for relaxing and 28.1% would choose to do their homework (see Figure 19). At the same time, 40.9% would visit the café during lunch hours, 21.9% would there for dinner, 20.6% would go to purchase a snack, and 15.2% would go at the place during breakfast hours.
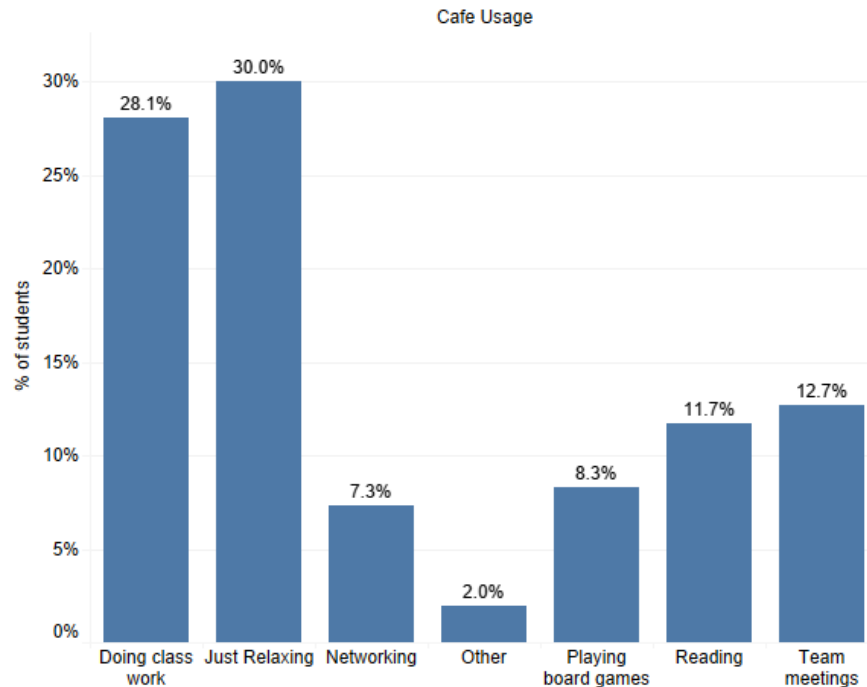
Figure 19: Data collected on how the café would be used by students

The students were asked to describe the most important things they would expect from a café style dining service (through an open-ended question). We received about 200 responses for this question and the most common answers were pricing of the menu options, allowing meal swipes and the value they would get out of a meal swipe, being open at later hours of the day, offering healthy options such as vegetarian or vegan options, good quality food, and having a place with large tables and having charging stations.

Block 4: Media Habits

The fourth block on the survey was about students' media habits. The students were asked which types of media they preferred to receive news or updates about WPI, and the top three answers were email, Instagram, and posters (see Figure 20).
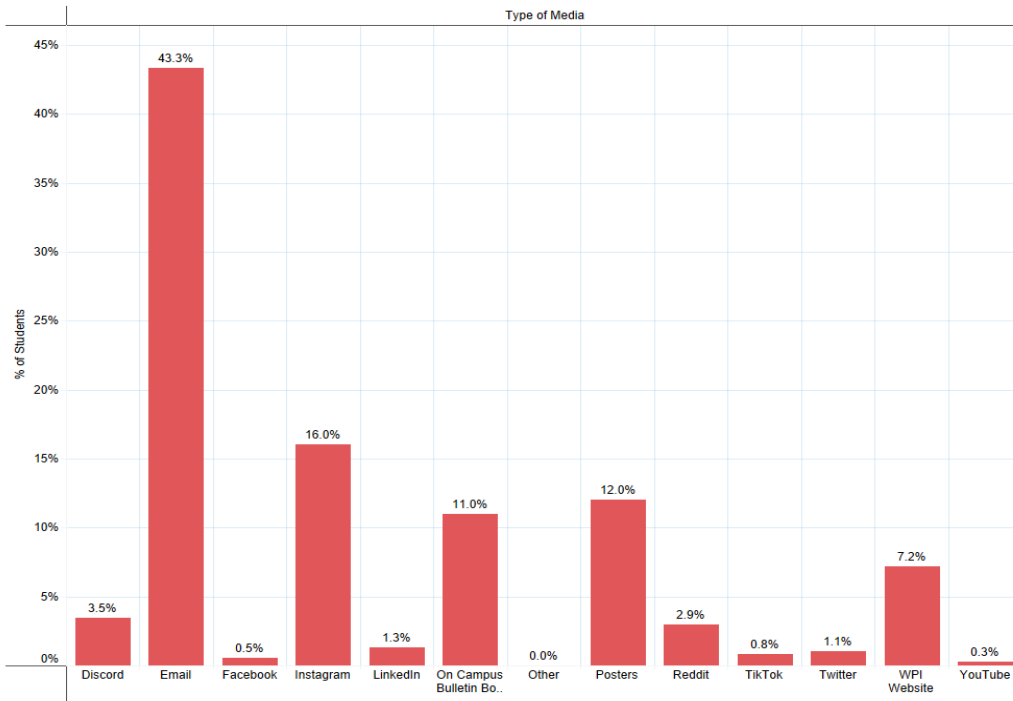
Figure 20: Data collected on the types of medias students prefer about WPI

Figure 21 shows the data collected on the frequency of the media usage. Students reported they mostly check their emails (86.7%) and visit Instagram (47%) several times a day. Facebook was the media students never visited (66.7%) followed by Twitter (57.8%) and TikTok (54.2%).
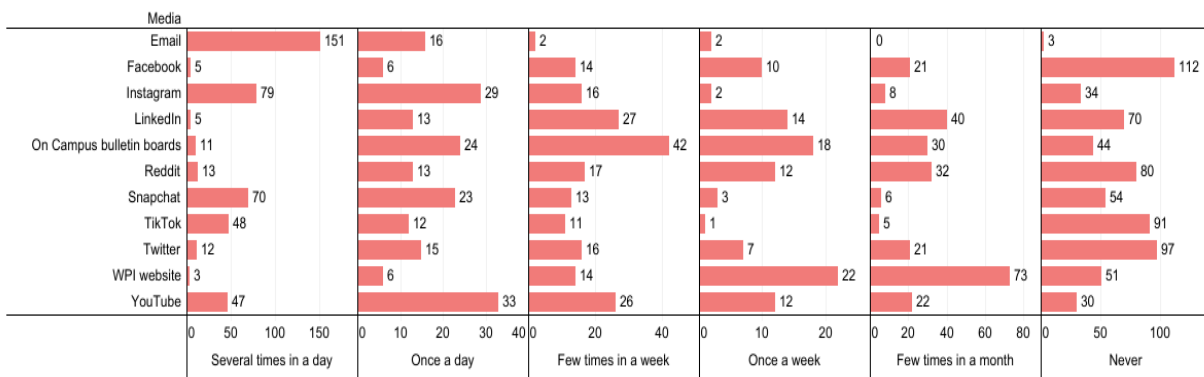
Figure 21: Data collected on the frequency of media usage by the students

Furthermore, we asked the students for a series of statements shown in Figure 22 and record how likely they were to do the following. Students were extremely likely to use the Internet to check out the menu options (54.9%) and search for a dining place on the Internet before visiting it (44.8%).

How likely are you to do the following?

Statement	Extremely unlikely	Somewhat Unlikely	Neither likely or unlikely	Somewhat likely	Extremely likely
Search a dining place on the internet before visiting it	9	12	16	58	77
Search an on campus dining place on the internet before visiting it	34	34	33	41	28
Share WPI related news/updates with your friends and colleagues	25	29	43	51	23
Use the internet to check out the menu options	9	11	15	42	94
Use the internet to check out the menu options of an on campus dining place	32	26	28	42	42

Figure 22: Data collected on how likely the students are to do on the listed items

Overall, the students use mostly email and Instagram to receive news related to WPI, and they're more likely to search on the Internet for a dining service before they visit the place.

Block 5: Intangibles

The fifth block of the survey related to dietary restrictions students had and how hard it was for them to find accommodations on campus. Figure 21 shows the responses collected on the dietary restrictions the survey students had. As shown, 54% of the students selected that they do not have any food restrictions or allergies. We asked this group of people how often it is finding dining options that accommodate their needs stressful, 61.8% reported that it has never been stressful for them.
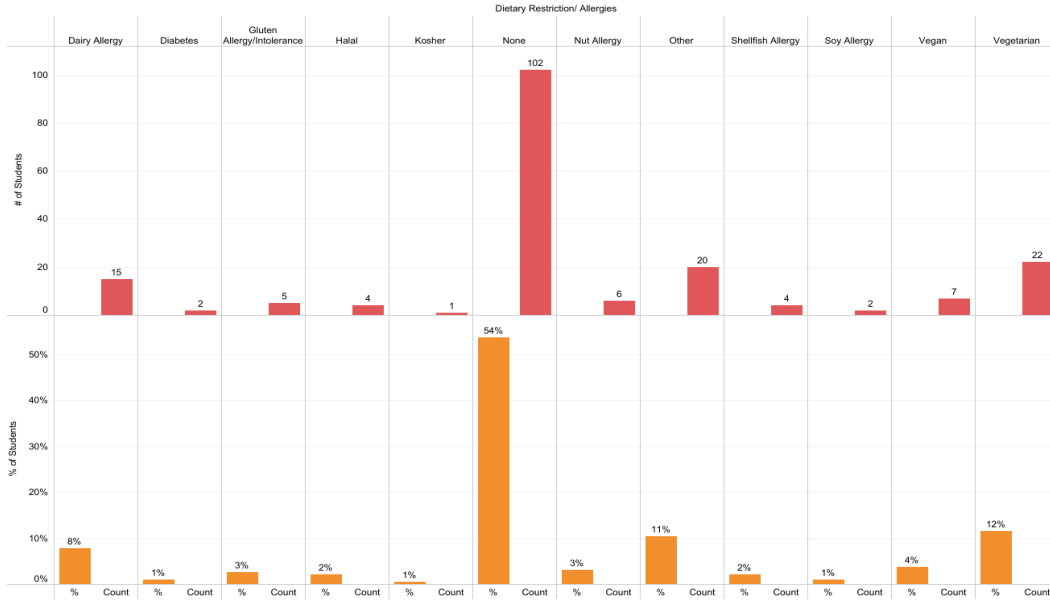
Figure 23: Data on dietary restrictions selected by the participants

We also asked the same question to the participants that have a dietary restriction or allergy, and the responses are shown on Figure 23. From the responses received, 40.9% of the participants that are vegetarian reported that sometimes they have a stressful time finding accommodation for their needs on campus, and 22.7% of them reported that finding accommodation is stressful for them most of the time. Participants that had a gluten allergy, 60% of them had a dairy allergy, 26.7% of them also reported that most of the time it is stressful to find dining services on campus that accommodate these needs.

How often is finding dining options that accommodate your needs stressful?
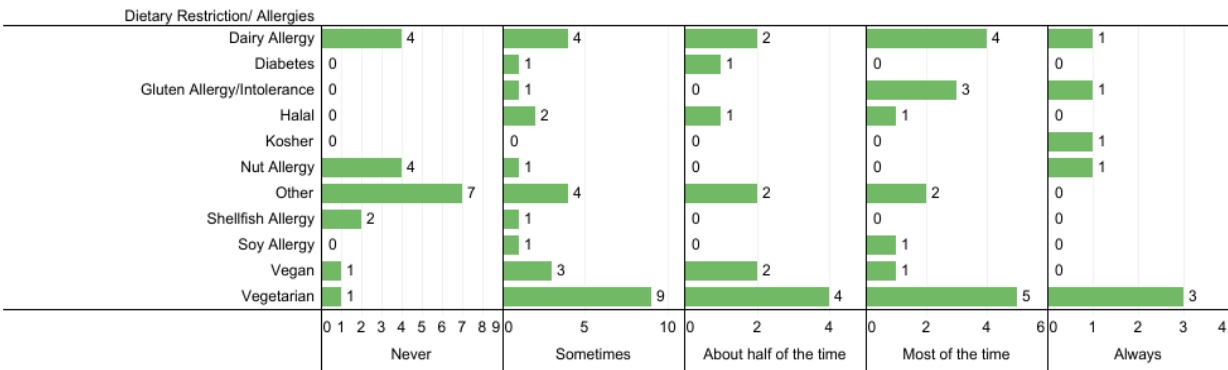
Figure 24: Data collected on stress when finding on campus food within dietary restrictions

Figure 25 shows the responses to different statements we asked the students about. We asked students what they thought of different timing of dining services on campus, and 43.8% of the students reported that they strongly agree with using a dining location that is open from 10pm and 12am, and 32.9% of the students said they would use a dining location that is open between 12am and 2am.

To what extent you agree with the following statements?

Statements	Strongly agree	Somewhat agree	Neither agree or di..	Somewhat disagree	Strongly diagree
Dining services is missing a type of food from where I am from	22	27	59	22	31
I skip meals because of dinning hours	17	47	39	16	42
I wish dining services provided more nutritious options	65	54	29	12	3
I would use a dining location on campus open between 10pm and 12am	71	46	20	15	10
I would use a dining location on campus open between 12am and 2am	53	26	31	18	33
I would use a dining location on campus that is open between 5am and 7am	16	15	22	30	78
My mental health is affected by the lack of nutritious options on campus	23	43	45	28	23
My physical health is affected by the lack of nutritious on campus	25	44	49	30	14

Figure 25: Data collected on how likely the students are to agree with the statements

The purpose of the implementation and distribution of the survey was to further understand students' dining needs and habits and use the data to provide recommendations to the Quorum Café. For most of the blocks, the collected responses did not change based on the students' WPI status. Students who had purchased a meal plan had a different one based on their status and if they lived on campus. Some of the dining services, such as Morgan Hall, were visited more by first-year students and sophomores compared to the other students. From the responses collected about the demand of the café, most of the students from the identified segments were interested on visiting the place: 71.6% of the first-year students, 47.8% of the sophomores, 46.9% of the upperclassmen (juniors and seniors), and 57.2% of the graduate students.

5.2.0 Scenarios for Including Students

5.2.1 Scenario Creation and Definition

To provide accurate recommendations on the impact of students on The Quorum Café, the team created five scenarios based on the trends reported in the student survey and the current operations of the café. The trends included where students source their meals, how much they were willing to pay, and what meals they preferred to eat on campus. When asked how they generally source each of their meals 16% of students reported they eat breakfast on campus, 36% reported eating lunch on campus, 29% reported eating dinner on campus and 19% reported eating snacks on campus. This information was used to target specific meal types and ensure the possible scenarios cover student interest in eating lunch,

dinner, and stacks on campus. Similarly, when asked about the meals students would be interested in eating at a café on campus, 15% were interested in breakfast, 41% were interested in lunch, 22% were interested in dinner, 20% interested in snacks, and 1% answered other. The meal offerings for the scenarios also considered this data. The specific hours of operation considered in scenarios were determined by the existing operating hours and the typical mealtimes reported in the survey; see Figure 7 and Figure 8 for details. Students were also asked to rate dine in and grab and go styles of eating on campus, dine in had an average rating of 3.38 out of 5 and grab and go had an average rating of 3.76 out of 5. The reasonably high scores of both options prompted the team to include dine in and grab and go options for each of the scenarios. Lastly, students were also asked to indicate to what extent they agree or disagree with various statements related to on campus dining. The survey responses shown in Table 9, show students strong interest in dining from 10:00PM to 12:00AM with 71% of students answering strongly agree or somewhat agree; 33% of student strongly agreed that they would uses a dining location open from 12:00AM to 2:00AM. There was strong disagreement at 48% for using a dining location from 5:00AM to 7:00AM.

Table 9: Responses to on campus dining statements

Question	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I would use a dining location on campus that is open between 5am and 7am	9.94%	9.32%	13.66%	18.63%	48.45%
I would use a dining location on campus open between 12am and 2am	32.92%	16.15%	19.25%	11.18%	20.50%
I would use a dining location on campus open between 10pm and 12am	43.83%	28.40%	12.35%	9.26%	6.17%
I skip meals because of dinning hours	10.56%	29.19%	24.22%	9.94%	26.09%
Dining services is missing a type of food from where I am from	13.66%	16.77%	36.65%	13.66%	19.25%
My mental health is affected by the lack of nutritious options on campus	14.20%	26.54%	27.78%	17.28%	14.20%
It would benefit my mental health to have a quieter area to eat	16.15%	21.74%	40.37%	11.18%	10.56%
My physical health is affected by the lack of nutritious on campus	15.43%	27.16%	30.25%	18.52%	8.64%
I wish dining services provided more nutritious options	39.88%	33.13%	17.79%	7.36%	1.84%

This information collected from the survey was used to inform the creation of scenarios. The scenarios are shown in Table 10, and were characterized based on number of employees required, hours of operation, customers, accepted forms of payment, service type, seating styles, and meals served.

Table Table 10: Scenarios for the inclusion of students

Scenario Name	Employees	Hours of Operation	Customers	Payment Method	Service Type	Seating	Meal Type
No Change	2	Mon-Fri 7:30a-11:00a	Faculty/Staff	Cash/Card	Dine-In	Current (comfort seating)	Breakfast
All Inclusive	2	Mon-Fri 7:30a-11:00a	Faculty/Staff/Students	Cash/Card/Meal Plan	Dine-In/ToGo	Current (comfort seating)	Breakfast
Student Lunch	3	Faculty: Mon-Fri 7:30a-11:00a, Student: Mon-Fri 11:00a - 3:00p	Faculty/Staff/Students	Cash/Card/Meal Plan	Dine-In/ToGo	Current (comfort seating)	Lunch
All Inclusive +Nights	3	Faculty: Mon-Fri 7:30a-11:00a, Student: Mon-Fri 7:30a-11:00a, 9:00p -12:00a	Faculty/Staff/Students	Cash/Card/Meal Plan	Dine-In/ToGo	Current (comfort seating) + Larger Collaborative Seating	Breakfast/Dinner
Student Nights	3	Faculty: Mon-Fri 7:30a-11:00a, Student: Mon-Fri 9:00p -12:00a	Faculty/Staff/Students	Cash/Card/Meal Plan	Dine-In/ToGo	Current (comfort seating) + Larger Collaborative Seating	Dinner
Student Lunch + Nights	3	Faculty: Mon-Fri 7:30a-11:00a, Student: Mon-Fri 11:00a - 3:00p, 9:00p -12:00a	Faculty/Staff/Students	Cash/Card/Meal Plan	Dine-In/ToGo	Current (comfort seating) + Larger Collaborative Seating	Lunch/Dinner

The first scenario was to run the café under the same hours but allow students as well (all-inclusive), the second created lunch hours for students preserving the faculty only breakfast (student lunch), the third included continuing the current operating hours as well as creating a late-night period (all-inclusive and nights) , the fourth only included students in the night period (student nights), and the final scenario had students included for lunch and the late-night period (student lunch and nights). The subsequent analysis accounts for the meal offerings of each scenario to predict revenue, the meal type column of the scenario table was used to distinguish each scenario. The service type column and seating were later used in the final business recommendation and looked at as essential changes to make the scenario viable.

5.2.2 Market Size Evaluation

The potential market size for each meal at specific price points was calculated to give a better understanding of how to accurately predict sales prices and to recommend final target prices to the stakeholders. Using the willingness to pay data gathered in the survey the market size predictions shown

in Figure 26 were made based on the number of students who showed interest at each price point and the total WPI population.
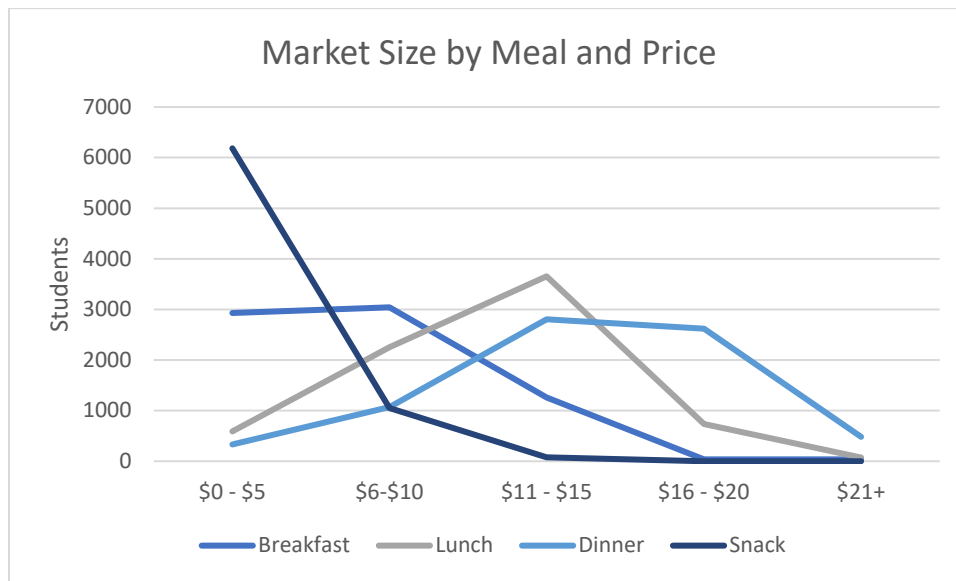
Figure 26: Market size at each price point for each meal

As figure 26 shows, the largest market potential exists for snacks under $5. In our survey 85% of students would be willing to pay $5 for a snack, extrapolated to the WPI population this would be 6,185 students. The largest potential market at breakfast exists in the $6-$10 price range, closely followed by the $0-$5 price range; the potential market size is 3,042 students and 2,931students respectively. Interest in Breakfast at high prices dropped significantly suggesting high price sensitivity. Willingness to pay for lunch grows through the $11-$15 price range before shrinking at high prices and 50% of respondents or 3,654 students showed interest at the $11-$15 price point. Dinner had a more distributed willingness to pay than the other meals. Dinner's largest market existed at $11-15 and $16-20 price ranges with 38% and 36% of respondents showing interest respectively. This translates to a potential market at $11-15 of 1,070 students and 2,805 students at $16-20. Very little interest existed at greater than $20, for any meal however dinner had the highest percent interested at this price point at 7% or 480 students. This information was later used to generate target prices and fit distributions of variability.

5.2.3 Break-Even Analysis

For each scenario the team ran a break-even analysis to determine the minimum number of transactions per hour needed to equal the cost of operations. A sales mix based on the willingness to pay for each meal type reported in the survey was used to improve the overall accuracy of the estimate. Every

scenario assumes the same $7,400 dollars a year generated from faculty sales (based on previous year's sales) and assumes the fixed cost are equal to the total labor costs. Figure 27 shows the calculation of the breakeven point for the "All Inclusive" scenario with consideration for willingness to pay.

All Inclusive

Assumptions

	Fixed Costs (Standard)		$ 34,066.62
	Fixed Cost (Accounting for Faculty)		$ 26,666.62
	Weighted Average Contribution Margin		$ 4.76

	Food	Other	Total
Variable Cost % Sale	40%	7%	47%

Product	Sale Price	Variable Cost	Sales Forcast
Breakfast	5.00 $	2.35	40%
Breakfast	10.00 $	4.70	42%
Breakfast	15.00 $	7.05	17%
Breakfast	20.00 $	9.40	1%
Breakfast	25.00 $	11.75	1%

Product	Weighted Average Price	Weighted Cost	BEP Units	BEP (Dollars)
Breakfast	$ 2.01 $	0.94	2,245.67 $	20,176.83
Breakfast	$ 4.16 $	1.96	2,330.95 $	20,943.04
Breakfast	$ 2.59 $	1.22	966.49 $	8,683.70
Breakfast	$ 0.10 $	0.05	28.43 $	255.40
Breakfast	$ 0.13 $	0.06	28.43 $	255.40

Sales/Hr	Sales	Total Fixed Cost	Total Variable Cost	Total Cost	Sales Value	P/L
1	490 $	26,666.62 $	2,069.19 $	28,735.81 $	4,402.54 $	(24,333.27)
2	980 $	26,666.62 $	4,138.39 $	30,805.01 $	8,805.08 $	(21,999.93)
3	1470 $	26,666.62 $	6,207.58 $	32,874.20 $	13,207.61 $	(19,666.58)
4	1960 $	26,666.62 $	8,276.77 $	34,943.39 $	17,610.15 $	(17,333.24)
5	2450 $	26,666.62 $	10,345.96 $	37,012.58 $	22,012.69 $	(14,999.89)
6	2940 $	26,666.62 $	12,415.16 $	39,081.78 $	26,415.23 $	(12,666.55)
7	3430 $	26,666.62 $	14,484.35 $	41,150.97 $	30,817.77 $	(10,333.20)
8	3920 $	26,666.62 $	16,553.54 $	43,220.16 $	35,220.30 $	(7,999.86)
9	4410 $	26,666.62 $	18,622.74 $	45,289.36 $	39,622.84 $	(5,666.51)
10	4900 $	26,666.62 $	20,691.93 $	47,358.55 $	44,025.38 $	(3,333.17)
11	5390 $	26,666.62 $	22,761.12 $	49,427.74 $	48,427.92 $	(999.82)
12	5880 $	26,666.62 $	24,830.31 $	51,496.93 $	52,830.46 $	1,333.52
13	6370 $	26,666.62 $	26,899.51 $	53,566.13 $	57,232.99 $	3,666.87
14	6860 $	26,666.62 $	28,968.70 $	55,635.32 $	61,635.53 $	6,000.21
15	7350 $	26,666.62 $	31,037.89 $	57,704.51 $	66,038.07 $	8,333.56
16	7840 $	26,666.62 $	33,107.09 $	59,773.71 $	70,440.61 $	10,666.90
17	8330 $	26,666.62 $	35,176.28 $	61,842.90 $	74,843.15 $	13,000.25
18	8820 $	26,666.62 $	37,245.47 $	63,912.09 $	79,245.69 $	15,333.59
19	9310 $	26,666.62 $	39,314.66 $	65,981.28 $	83,648.22 $	17,666.94
20	9800 $	26,666.62 $	41,383.86 $	68,050.48 $	88,050.76 $	20,000.28
21	10290 $	26,666.62 $	43,453.05 $	70,119.67 $	92,453.30 $	22,333.63
22	10780 $	26,666.62 $	45,522.24 $	72,188.86 $	96,855.84 $	24,666.97
23	11270 $	26,666.62 $	47,591.44 $	74,258.06 $	101,258.38 $	27,000.32
24	11760 $	26,666.62 $	49,660.63 $	76,327.25 $	105,660.91 $	29,333.66
25	12250 $	26,666.62 $	51,729.82 $	78,396.44 $	110,063.45 $	31,667.01

Output

Revenue Set From Faculty	$ 7,400.00
Hrs Avaialble to Students	490
Break Even Sales	5600
Break Even Sales Per Hour	11.43
Total Break even In Dollars	$ 50,314.38
Total Break even In Dollars/hr	$ 102.68

Figure 27: Break-even analysis for the all-inclusive scenario

This analysis provides an estimated number of sales per hour and the total revenue that must be generated to break even. The top table (yellow) stores the assumptions of the analysis. This analysis assumes the fixed cost are equal to the total labor, then also assumes a standard faculty revenue of $7,400

a year. There was also an assumed cost of food and other costs at 40% and 7% respectively. This information was gathered from interviews. The following table (red) is the sales mix, this table is the sales price and cost based on the survey data and interview data. The sales mix is included in the final column of this table as sales forecast and was derived from the number of students willing to pay at each price point. The next table (blue) is the weighted average price and cost based on the sales distribution. The sum of the price minus the sum of cost creates the weighted contribution margin seen in the assumption table. The weighted contribution margin is the average amount that a group of products or services contribute to paying down the fixed costs of a business. The model table (green)calculates out the fixed cost, variable cost, sales, and profit, given the number of sales per hour. The sales per hour increase in increments of one sale per hour in a range of one through twenty-five. The final table (orange) is the output showing the hours of operation and the break-even point as total annual sales revenue in volume and dollars for the entire year and each hour. In this scenario the café would have to make $11.43 sales an hour and generate $102.68 per hour in revenue to break even. This information can also be represented graphically. See Figure 26, the point where the P/L line (Profit and Loss) crosses the x-axis is the break-even point.
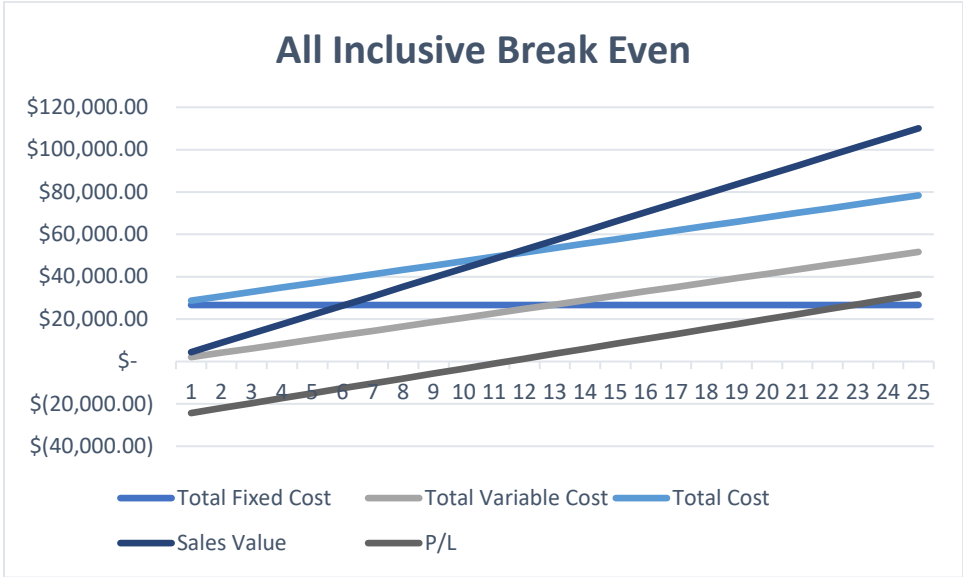
Figure 26: Graph of Break-even for All inclusive

This system was followed for every scenario to give a comparable estimated sales required. Each scenario accounts for changes in labor cost and sales amounts bases on the operating hours and the meals being offered. Table 11 compares the breakeven point for each of the scenarios.

Table 11: Summary table for the breakeven point of each scenario

	All Inclusive	Student Lunch	All Inclusive + Student Nights	Student Nights	Student Lunch + Nights
Hours Available to Students	490	560	1050	420	980
Break Even Sales	5600	11720	12308	9554	10682
Break Even Sales Per Hour	11.43	20.93	11.72	22.75	10.90
Total Break Even in Dollars	$ 50,314	$155,374	$155,374	$ 90,593	$179,028
Total Break Even, Dollars/Hour	$102.68	$277.45	$147.98	$453.83	$182.69

To be profitable the All-Inclusive scenarios requires 5,600 sales year or 11.43 sales per hour selling breakfast to students. The Student Lunch scenario must make 11,720 sales a year or 20.93 transactions per hour. The high breakeven point is heavily influenced by the lack of sufficient revenue during the faculty only mornings. The costs increase without proportional increase in revenue. The All Inclusive + Student Nights scenario must make 12,208 sales a year or 11.72 sales an hour. The student nights scenario must make 9,554 sales a year or 22.75 sales an hour and the Student Lunch with Students Night Scenario must make 10,682 sales a year or 10.9 sales an hour to break-even. Scenarios with high breakeven points (> 20) significantly increase costs from new operating hours and staff positions without revenue and sales prices being balanced. This information gives a basic understanding of the number of sales that would have to be generated at a specific price point to be profitable.

Unfortunately, this breakeven analysis is limited in its ability to predict actual events. This model accounts for sales mix but is selected from the limited number of willingness to pay values provided through the survey. In this way the model is discrete and does not account for the continuous possibilities of sales prices that would exist. This model does not account for any hour-to-hour variation in business or fluctuations in faculty sales.

5.2.4 Monte Carlos Simulation

Following the Break-Even Analysis, the team needed to better test each scenario against real world variation. To do this the team used two levels of Monte Carlo simulations, the first with three-point

estimates for sales prices and the second with distributions fitted to survey data. After structuring the data available, the simulations accounted for variability in customers per hour, average ticket price, expected sales from faculty, cost of goods related to food, and additional cost (paper, packaging, cleaning supplies). Each simulation was run over 5,000 iterations.

The first stimulation used three-point estimates and PERT distributions to simulate the distributions. PERT distributions are a form of continuous normal distributed distribution with a lower limit, median, and upper limit (Risk AMP, 2020). Table 12 shows the breakdown of the limits set for the simulations.

Table 12: Pert distribution upper, most likely, lower

PERT Distribution				
Category	**Variable**	**Lower**	**Most Likely**	**Upper**
Students Per Hour by Meal	Breakfast	$ 1.00	$ 8.00	$ 15.00
	Lunch	$ 1.00	$15.00	$ 20.00
	Dinner	$ 1.00	$ 20.00	$ 25.00
	Snack	$ 1.00	$ 5.00	$ 10.00
Average Sale by Meal	Breakfast	0	10	20
	Lunch	0	10	20
	Dinner	0	10	20
	Snack	0	5	10
Revenue	Revenue	$6,660	$7,400	$8,140
Food Cost (% Revenue)	Percent	30%	40%	45%
Additional Cost (5 of Revenue)	Percent	5%	7%	1%

To set each variable's limits the team used data from the survey and information collected in interviews. Sales per hour were determined based on the capacity of the café and overall interest. The average sales price was estimated using the price willing to pay for each meal with the most likely price being set to the price category with the highest precent interest and the limits set using the limits from the survey. Information related to cost and faculty sales was set based on information gathered in interviews that suggest minimal changes in cost and faculty sales. Figure 28 shows the scenarios in their static form with inputs in blue and outputs in red.

	All Inclusive	Student Lunch	All Inclusive + Student Nights	Student Nights	Student Lunch + Nights
Operating Schedule					
Weeks	28	28	28	28	28
Days	5	5	5	5	5
Hours	3.5	7.5	7.5	6.5	10.5
Total Hours	490	1050	1050	910	1470
Hours Available to Students					
Breakfast	490		490		
Lunch		560			560
Dinner			420	420	420
Snack	490	1,050	910	420	980
Students Per Hour					
Breakfast	10		10		
Lunch		10			10
Dinner			10	10	10
Snack	5	5	5	5	5
Average Sale					
Breakfast	$ 8.00		$ 8.00		
Lunch		$ 13.50			$ 13.50
Dinner			$ 17.67	$ 17.67	$ 17.67
Snack	$ 5.17	$ 5.17	$ 5.17	$ 5.17	$ 5.17
Revenue					
Students	$ 51,858.33	$ 129,850.00	$ 136,900.46	$ 85,042.13	$ 175,108.79
Faculty	$ 7,400.00	$ 7,400.00	$ 7,400.00	$ 7,400.00	$ 7,400.00
Labor Cost					
Cashier/Supervisor	$ 12,600.00	$ 23,800.00	$ 23,800.00	$ 23,800.00	$ 23,800.00
Culinary	$ 11,340.00	$ 21,420.00	$ 21,420.00	$ 21,420.00	$ 21,420.00
Dishwasher		$ 17,850.00	$ 17,850.00	$ 17,850.00	$ 17,850.00
Tax and Benefit					
Cost of T & B	$ 10,126.62	$ 26,678.61	$ 26,678.61	$ 26,678.61	$ 26,678.61
Food/Operating Cost					
Food Cost	$ 23,703.33	$ 54,900.00	$ 57,720.18	$ 36,976.85	$ 73,003.52
Percent Revenue	40%	40%	40%	40%	40%
Additional Cost	$ 4,148.08	$ 9,607.50	$ 10,101.03	$ 6,470.95	$ 12,775.62
Percent Revenue	7%	7%	7%	7%	7%
Revenue Totals					
Total	$ 59,258.33	$ 137,250.00	$ 144,300.46	$ 92,442.13	$ 182,508.79
Cost Totals					
Total Food Cost	$ 27,851.42	$ 64,507.50	$ 67,821.22	$ 43,447.80	$ 85,779.13
Total Labor	$ 34,066.62	$ 89,748.61	$ 89,748.61	$ 89,748.61	$ 89,748.61
Profit					
Total Profit	$ (2,659.70)	$ (17,006.11)	$ (13,269.37)	$ (40,754.28)	$ 6,981.05

Figure 28: Normal distribution Monte Carlo simulations

Using inputs and outputs shown in Figure 28 the team simulated the results for each scenario. Figure 29 shows the outputs of each simulation. The mode value represents the most likely outcome of each scenario while the mean represents the average profit expected. The minimum and maximum possibilities represent the worst and best-case outcomes of each scenario.
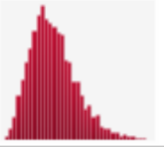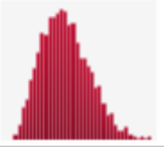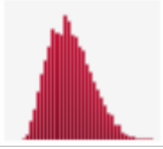
Detailed Statistics					
Output	Total Profit / All Inclusive	Total Profit / Student Lunch	Total Profit / All Inclusive + Student Nights	Total Profit / Student Nights	Total Profit / Student Lunch + Nights
Function	RiskOutput()	RiskOutput()	RiskOutput()	RiskOutput()	RiskOutput()
Graphs					
Cell	'Scenario Analysis (NormDist)'!C54	'Scenario Analysis (NormDist)'!G54	'Scenario Analysis (NormDist)'!K54	'Scenario Analysis (NormDist)'!O54	'Scenario Analysis (NormDist)'!S54
Statistic					
Minimum	-$ 27,321.04	-$ 82,835.50	-$ 71,099.43	-$ 83,249.75	-$ 65,138.28
Maximum	$ 46,481.32	$ 95,740.77	$ 86,079.48	$ 35,209.97	$ 118,159.21
Mean	-$ 2,279.19	-$ 16,144.07	-$ 12,256.49	-$ 40,186.63	$ 8,074.68
Mode	-$ 10,276.87	-$ 4,770.26	-$ 26,444.73	-$ 45,822.15	$ 7,912.03
Std. Deviation	$ 11,546.37	$ 30,324.80	$ 22,552.26	$ 18,456.10	$ 27,145.42
Variance	133,318,702	919,593,291	508,604,448	340,627,762	736,873,653
Skewness	0.6528	0.4030	0.3996	0.3883	0.3021
Kurtosis	3.3285	2.8213	3.0115	2.6814	3.0084
Errors	0	0	0	0	0
Percentiles					

Figure 29: Detailed statistics for Monte Carlo simulation (PERT Distribution)

Based on the simulations All-Inclusive, Student Lunch, All-Inclusive + Student Nights, and Students Nights are not expected to be profitable. The worst performing scenario, Student Nights, is expected to have a loss of $40,186 with the inclusion of students. The Student Lunch + Nights scenario is expected to be profitable with the most likely profit being $7,912 from the inclusion of students.
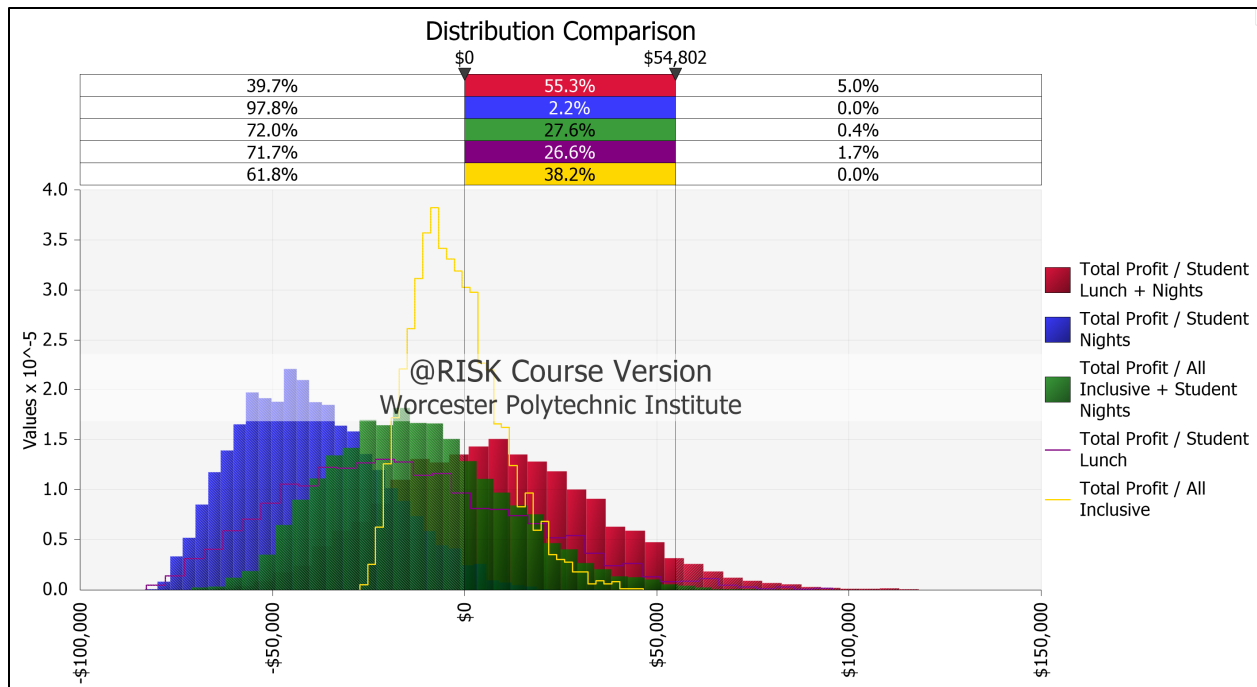
Figure 30: Distribution statistics for Monte Carlo Simulation (PERT Distribution)

Figure 30 is the overlayed distribution of total profit outcomes for all five scenarios. By overlaying the simulation outcomes on one axis the risk and likelihood of profitability can be compared. The distribution of each simulation outcome can be interrupted as the risk of each scenario. In figure 30, a wide distribution suggests that the potential outcomes vary greatly; this can be especially risky if the potential outcomes are both positive and negative. The top bars show what percent of the outcomes of each scenario are profitable; 55.3% of the student lunch and nights scenarios were profitable while only 2% students nights scenarios are profitable. Choosing a scenario with a high percent profitable outcome was the criteria the team used to decide the top scenario. The tightly distributed simulations, like all inclusive (yellow), are considered less risky and more likely that the real-world outcome matches the simulation. In the all-inclusive scenario, while it is expected to lose money, the negative potential is far more controlled than any other scenario. The student lunch plus student nights scenario shown in red is profitable but has greater risk because the lower limit is more negative. There is more uncertainty in this distribution making it a riskier scenario to choose.

The second round of simulations benefited from variability distributions for sales price fitted to the data collected in the survey. Using the goodness of fit functionality that is built into @Risk, the program suggests a distribution seed based on the data. Our simulations used AIC (Akaike Information Criterion) test a statistical measure to compare the goodness of fit of different statistical models to a given

dataset. The AIC test provides a way to balance model complexity (the number of parameters used in the model) with goodness of fit. The new simulations offer outputs that are truer to the data collected in the project but may not necessarily be the most accurate because of the limited sample size. The comparison of both rounds of simulation and each of their limitations enhanced the team's decision-making processes. Each meal type generated its own distribution based on the model of best fit. All other inputs remained the same. Table 13 shows the distribution seed for each meal type. The text indicates the distribution type, then the following values contained in the outer parenthesis are the lower, most likely, and upper value for the distribution. A triangle distribution, used for breakfast and snack, is a three-pointed distribution bounded with an upper and lower limit, and a point at the most likely value. The Pert distribution, used for lunch, is bounded and normally distributed. The Kumaraswamy distribution, used for dinner, accounts for greater variation compared to a normal distribution (@Risk, n.d.).

Table 13: Distribution of each meal type

Meal	Distribution of Price Willing to Pay
Breakfast	=RiskTriang(5,5,25.292,RiskName("Breakfast"))
Lunch	=RiskPert(2.9258,12.533,26.271,RiskName("Breakfast"))
Dinner	=RiskKumaraswamy(3.769,7.2988,-0.99202,31.584,RiskName("Dinner"))
Snack	=RiskTriang(-0.29249,5,15.188,RiskName("Snack"))
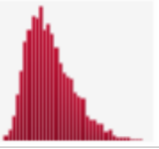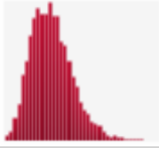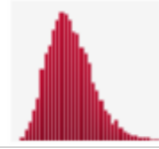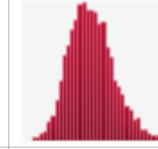
Detailed Statistics					
Output	Total Profit / All Inclusive	Total Profit / Student Lunch	Total Profit / All Inclusive + Student Nights	Total Profit / Student Nights	Total Profit / Student Lunch + Nights
Function	RiskOutput()	RiskOutput()	RiskOutput()	RiskOutput()	RiskOutput()
Graphs					
Cell	'Scenario Analysis (FitDist)'!C54	'Scenario Analysis (FitDist)'!G54	'Scenario Analysis (FitDist)'!K54	'Scenario Analysis (FitDist)'!O54	'Scenario Analysis (FitDist)'!S54
Statistic					
Minimum	-$ 25,565.06	-$ 77,909.17	-$ 67,477.65	-$ 81,628.39	-$ 68,283.89
Maximum	$ 73,438.75	$ 65,423.66	$ 117,005.42	$ 22,704.55	$ 94,241.92
Mean	$ 7,034.57	-$ 30,797.84	-$ 2,663.42	-$ 45,324.29	$ 1,100.58
Mode	$ 1,164.38	-$ 40,996.42	-$ 5,802.38	-$ 46,976.07	-$ 1,617.43
Std. Deviation	$ 15,875.92	$ 20,571.53	$ 28,018.78	$ 15,094.85	$ 25,243.71
Variance	252,044,830	423,187,800	785,051,826	227,854,466	637,244,942
Skewness	0.7084	0.5573	0.5369	0.3698	0.3728
Kurtosis	3.2041	3.2830	3.2087	2.8669	2.9602
Errors	0	0	0	0	0

Figure 31: Detailed statistics for Monte Carlo simulation (Fitted Distribution)

Figure 31 shows the outcome of each scenario using the fitted distributions. The Student Lunch, All-Inclusive + Student Nights, and Student Nights are not expected to be profitable while All-Inclusive and Student Lunch + Student Nights are expected to have an average profit of $7,034.47 and $1,100.58 respectively. Under these conditions the most likely outcome for the All-Inclusive scenario is $1,164 profit and $1,100.58 profit for the Student Lunch + Nights scenario.
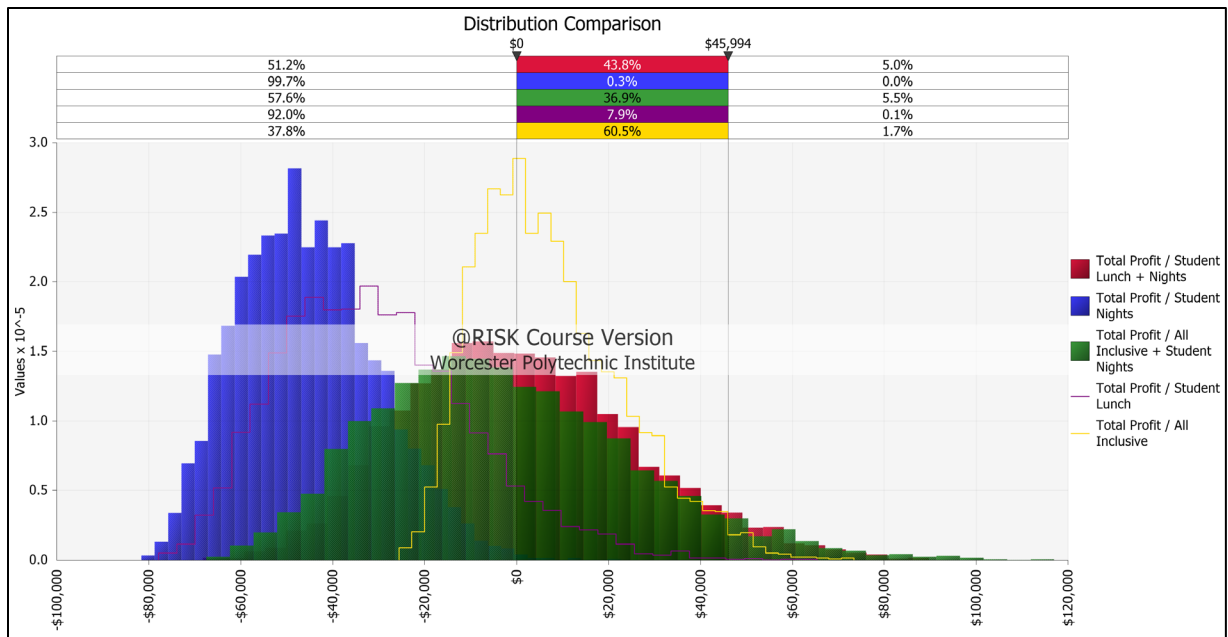
Figure 32: Distribution statistics for Monte Carlo Simulation (Fitted Distribution)

Figure 32 shows the distributions of outcomes for the fitted simulations. The All-Inclusive Scenario has the narrowest distribution, and the least number of negative profit outcomes, suggesting it is the least risky scenario. Both Student Nights and All-Inclusive + Student Nights have a significant proportion of their outcomes creating negative profit and a far worse negative limit than the other scenarios. The All- Inclusive + Student Nights and Student Lunch + Student Nights have similar risk profiles with about half the outcomes positive and half negative.

The results of the market potential, break even, and Monte Carlo simulations lead the team to promote two scenarios to the decision matrix for further evaluation. The All Inclusive and Student Lunch + Student Nights scenarios were chosen based on their likelihood to turn a profit, limited risk when compared to the other scenarios, and fit with overall market size.

The simulations provided additional accuracy and risk assessment over the static break-even analysis. However significant assumptions were used to create models that directly impact the model's accuracy to real world events. A more detailed cost breakdown is required to understand the impact of operating hours, cuisine types, and dining styles on cost. A better understanding of average dining time and take-out capacity is required to understand if the estimated number of visits per hour is realistic for the space. The labor costs are based on the current set up plus the addition of one dishwasher for the scenarios that expand into lunch and dinner. A more detailed analysis of labor requirements for each scenario should be completed.

5.2.5 Decision Matrix

Following the simulations, the team used a decision matrix to compare the performance of the two selected scenarios against a no-change scenario. The decision matrix is divided into three categories economic performance, campus impact, and impact on faculty. The scores of each category were determined by the team and then a final score was determined by summing the weighted values in each category and then for each scenario. Based on the research questions defined by the team the weights of each category were set at 50%, 25%, and 25% respectively. This breakdown prioritizes economic performance, a key decision factor for the space, but also considers the impact to students independent of performance, and the impact a change to the space will have on the existing faculty customers.

Table 14: Decision Matrix

Category	**Criteria**	**Definition**	**Weight**	**No Change**	**All Inclusive**	**Student Lunch + Nights**	**Score**		**Score Criteria**
Economic									
1	Cost	How expenisive is the cost of running the scenario per year?	50%	0	5	10	0		No cost to develop scenario
							5		Some cost to develop scenario
							10		Significant cost to develop scenario
2	Profit	Is the scenarios likely to be profitable?		0	5	5	0		Scenrio is will lose money
							5		Scenario may be profitable
							10		Scenario is likely to be profitable
3	Market Size	How well does the scenario fit with the potential market size?		0	5	10	0		No student market
							5		Fits with some student market
							10		Scenario fits with greatest number of students
4	Risk	What is the potential the scenario will lose money?		-10	-5	-10	0		No risk of loosing money
							-5		The scenario has some risk of loosing money
							-10		The scenario has high risk of loosing money
Economic Total:				-5	5	7.5			
Campus Impact									
1	Time	Does the scenario increase the hours food is availble on campus to	25%	0	0	10	0		Does not increase
							5		Increases some
							10		Signigicant increase in when food is available
2	Options	Does the scenario impact the locations available for students to eat on		0	5	10	0		Doesn't create a new dining loction for students
							5		Creates a new dining location for students one meal
							10		Creates a new dining location for students for multiple meal
3	Safety	Does the scenario increase safety risks on campus?		0	-5	-10	0		No new safety concerns
							-5		Creates some new safety concerns
							-10		Creates many new safety concerns
4	Exclusivity	Does the scenario create a new experience for students specifically		0	5	10	0		No new experience
							5		New experience but not exlusive to students
							10		New exclusive student experience
5	Availability	Does the scenario impact the availablity of Higgins house for other events		5	-5	-10	0		Does not impact the use of the space
							-5		Impacts the use of the space
							-10		Significantly impacts the use of the space
Campus Impact Total:				1.25	0	2.5			
Professor Impact									
1	Impact on Professor	Will the scenario reduce the features liked by professors?	25%	0	-5	0	0		Will not change professor experience
							-5		Will have some impact on professor experience
							-10		Will have significant impact on professor experience
Professor Impact Total:				0	-1.25	0			

Table 15: Decision Matrix Results

Summary				
Category	Weight	No Change	All Inclusive	Student Lunch + Nights
Economic	50%	-5	5	7.5
Campus Impact	25%	1.25	0	2.5
Professor Impact	25%	0	-1.25	0
Total	100%	-3.75	3.75	10

Table 15 shows the summary output of the decision matrix. Ranked last is the "No Change" scenario that represents the performance of The Quorum Café based on its current operations. This scenario scores -3.75 primarily because of its significant negative economic performance and neutral impact on the student body. The All-Inclusive scenario ranks second with a score of 3.75. Because this scenario overlaps completely with current faculty hours it is awarded a negative score in that category. This scenario has good model performance but does not increase the availability of food on campus because it overlaps with many other dining locations. The student lunch + nights was given the highest score of 10. While more risk is taken by creating a late-night space, the positive interest in a late-night location and no impact on faculty experience during the morning makes the student lunch + nights the top performer. Based on the decision matrix the team decided to proceed to develop a business model that used the student lunch + late night framework.

5.4.0 Business Model

Based on the scenario analysis and survey results the team recommends The Quorum Café adopt the following business model outline:

Hours of Operation: The team recommends The Quorum Café operate Monday – Friday 7:30AM – 3:00PM close then open again from 9:00PM – 12:00AM. The first shift would serve breakfast exclusively to faculty. These hours preserve the privacy and convenience faculty value about the current space during the hours they already most use. Then the space would open to students and faculty for the second shift. The space would then close as it is expected existing dining options on campus will be preferred for their proximity to academic buildings and student housing. The space would then open again for a third shift from 9:00PM - 12:00AM, these hours capitalized on the limited options on campus and the high demand from students (see Figure 33).

								Operating Weeks	28

Day	First Shift		Second Shift		Third Shift		Daily Hour Total
	Open	Close	Open	Close	Open	Close	
Sunday							00:00
Monday	7:30 AM	11:00 AM	11:00:00 AM	3:00:00 PM	9:00:00 PM	11:59:59 PM	10:29
Tuesday	7:30 AM	11:00 AM	11:00:00 AM	3:00:00 PM	9:00:00 PM	11:59:59 PM	10:29
Wednesday	7:30 AM	11:00 AM	11:00:00 AM	3:00:00 PM	9:00:00 PM	11:59:59 PM	10:29
Thursday	7:30 AM	11:00 AM	11:00:00 AM	3:00:00 PM	9:00:00 PM	11:59:59 PM	10:29
Friday	7:30 AM	11:00 AM	11:00:00 AM	3:00:00 PM	9:00:00 PM	11:59:59 PM	10:29
Saturday							00:00

Days per Week		5
Weekly Operating Hours		52:29
Yearly Operating Hours		1469:57

Figure 33: Proposed hours of operation

Meal Swipes/Goatbucks: Based on the student survey to be a practical option to students regardless of time or cuisine type the location must accept meal swipes. The team recommends the Quorum accept meal swipes and Goatbucks during the hours available to students.

Service Style: To accommodate the limited space, the Quorum should adopt a combination of counter service and grab and go stations. Ready to eat meals and bottled drink options can be prepared and stored in refrigeration units or warming units accessible to students. Fresh food and drinks can be ordered at the counter. The combination of the two allows for personal interaction and fresh food when desired but also allows for fast and easy meal selection through grab and go.

Interior: The interior of The Quorum Café offers a unique atmosphere when compared to other campus options. The new business model is in support of preserving these features while enabling the collaboration and livelier atmosphere the café set out for. Additional electrical outlets should be added to allow customers to use personal devices more freely. The student body expresses interest in collaboration and a working space, for this reason the team recommends that larger tables able to accommodate 4-5 people be added.

Cuisine: Local and fresh food options should be continued at The Quorum Cafe. These options are in alignment with faculty and student preference. The Quorum Café should expect to adopt meal options to accommodate vegetarian and nondairy students as these were the largest dietary restrictions reported by students and with the most stress experienced from a current lack of options. Student lunch hours should keep the breakfast options but adopt the meals to be larger and more diverse. The team also

recommends the dinner hours keep the local and fresh them but offer more complete meals that can be served quickly. Hot meals easily consumed are preferred in later hours.

5.3.1 Business Model Canvas

After choosing the best scenario, the business model canvas was created. Figure 34 shows the business model canvas for Quorum café.
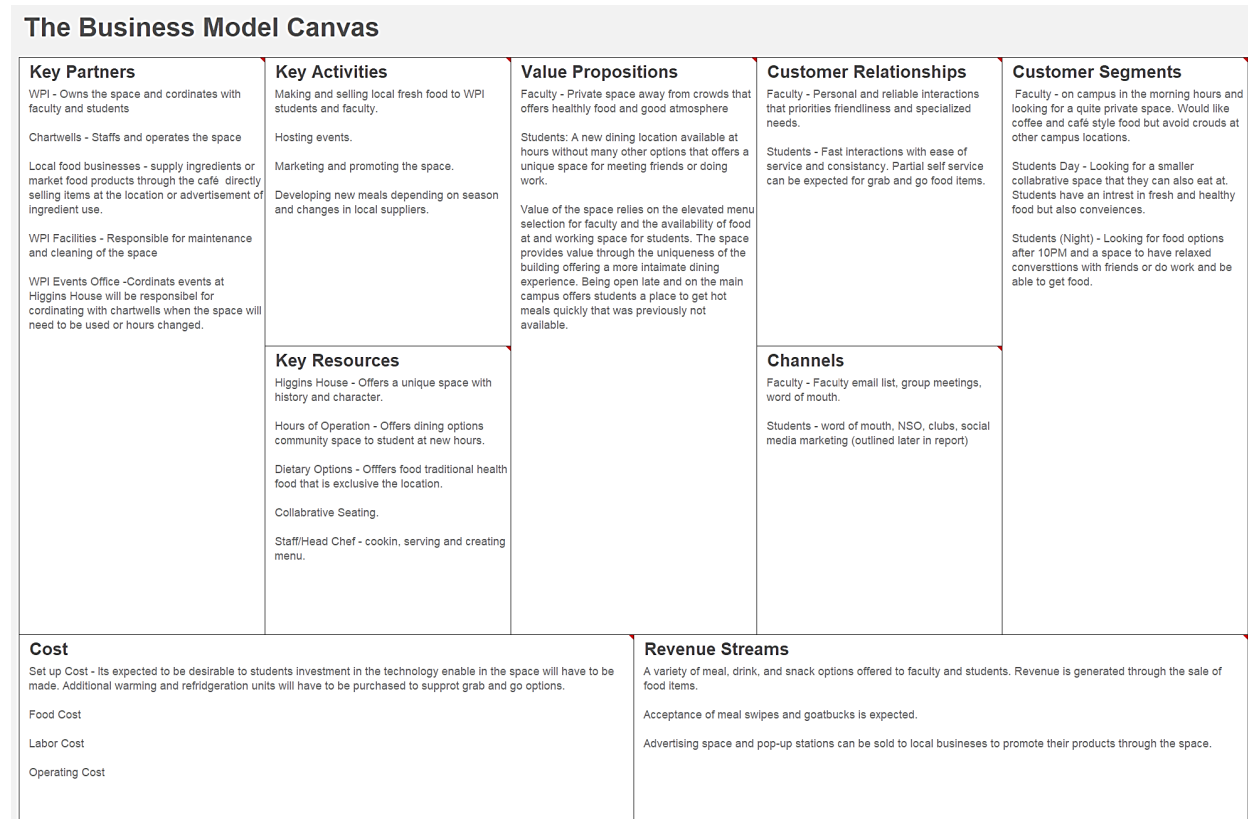
The Business Model Canvas

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
WPI - Owns the space and cordinates with faculty and students Chartwells - Staffs and operates the space Local food businesses - supply ingredients or market food products through the café directly selling items at the location or advertisement of ingredient use. WPI Facilities - Responsible for maintenance and cleaning of the space WPI Events Office -Cordinats events at Higgins House will be responsibel for cordinating with chartwells when the space will need to be used or hours changed.	Making and selling local fresh food to WPI students and faculty. Hosting events. Marketing and promoting the space. Developing new meals depending on season and changes in local suppliers.	Faculty - Private space away from crowds that offers healthly food and good atmosphere Students: A new dining location available at hours without many other options that offers a unique space for meeting friends or doing work. Value of the space relies on the elevated menu selection for faculty and the availability of food at and working space for students. The space provides value through the uniqueness of the building offering a more intaimate dining experience. Being open late and on the main campus offers students a place to get hot meals quickly that was previously not available.	Faculty - Personal and reliable interactions that priorities friendliness and specialized needs. Students - Fast interactions with ease of service and consistancy. Partial self service can be expected for grab and go food items.	Faculty - on campus in the morning hours and looking for a quite private space. Would like coffee and café style food but avoid crouds at other campus locations. Students Day - Looking for a smaller collabrative space that they can also eat at. Students have an intrest in fresh and healthy food but also convelences. Students (Night) - Looking for food options after 10PM and a space to have relaxed converstions with friends or do work and be able to get food.

	Key Resources		Channels	
	Higgins House - Offers a unique space with history and character. Hours of Operation - Offers dining options community space to student at new hours. Dietary Options - Offfers food traditional health food that is exclusive the location. Collabrative Seating. Staff/Head Chef - cookin, serving and creating menu.		Faculty - Faculty email list, group meetings, word of mouth. Students - word of mouth, NSO, clubs, social media marketing (outlined later in report)	

Cost	Revenue Streams
Set up Cost - Its expected to be desirable to students investment in the technology enable in the space will have to be made. Additional warming and refridgeration units will have to be purchased to supprot grab and go options. Food Cost Labor Cost Operating Cost	A variety of meal, drink, and snack options offered to faculty and students. Revenue is generated through the sale of food items. Acceptance of meal swipes and goatbucks is expected. Advertising space and pop-up stations can be sold to local businesses to promote their products through the space.

Figure 34: Business model canvas for proposed business model

5.3.2 SWOT

After considering the business canvas model, the team considered the strengths, weaknesses, opportunities, and threats of the new model (see Figure 35).
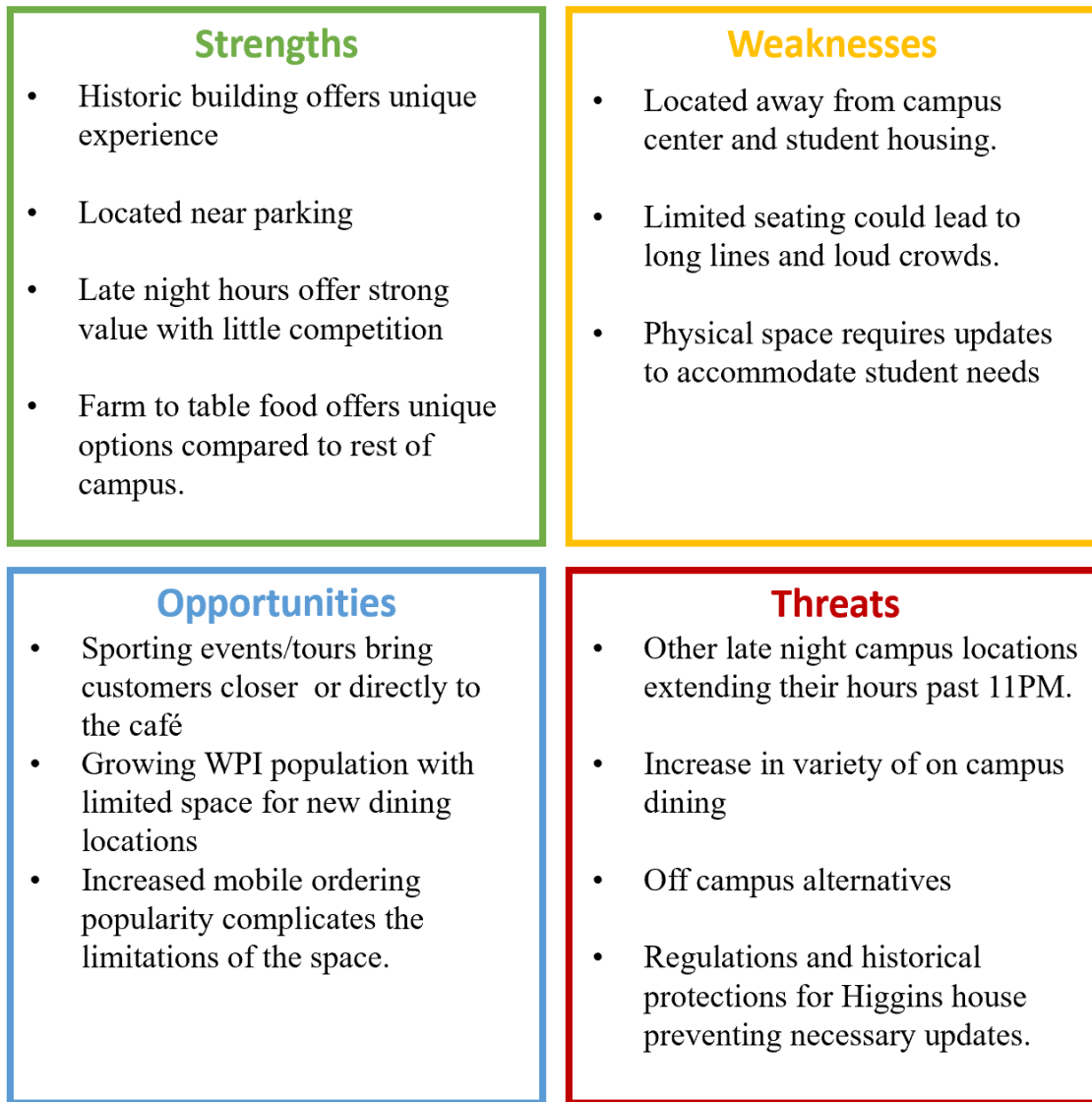
Strengths	Weaknesses
• Historic building offers unique experience • Located near parking • Late night hours offer strong value with little competition • Farm to table food offers unique options compared to rest of campus.	• Located away from campus center and student housing. • Limited seating could lead to long lines and loud crowds. • Physical space requires updates to accommodate student needs
Opportunities	**Threats**
• Sporting events/tours bring customers closer or directly to the café • Growing WPI population with limited space for new dining locations • Increased mobile ordering popularity complicates the limitations of the space.	• Other late night campus locations extending their hours past 11PM. • Increase in variety of on campus dining • Off campus alternatives • Regulations and historical protections for Higgins house preventing necessary updates.

Figure 35: SWOT analysis of proposed business model

5.3.3 PESTLE

Political: The Quorum Café should be aware of changes to WPIs administration. The success of the café depends on continued support from deans and key faculty. Changes to either of these could impact on the business.

Economic**:** The Quorum Café will be directly affected by changes in the economy as they will impact on the willingness to pay faculty and students out of pocket. Fortunately, the student customer base can utilize meal plans to purchase items which are independent of economic changes. The Quorum

Café should be aware of changes to the financial stability of WPI over the general economy as the café will still rely on the financial support of the school until it can make a profit.

Social: According to a survey by Nielsen Holdings, a data and marketing firm, sales of plant-based meat substitutes in the United States increased by 45% in 2020 an argument for increase in health consciousness and demand for vegetarian options. The Quorum Café should be prepared to adapt its menu to accommodate these changes. New norms for ordering food and crowded spaces since the covid-19 pandemic have lent itself to the style of Quorum Café.

Technology: The Quorum Café should monitor the changes in technology that are related to the restaurant industry. Improvements in efficiency could be made through self-service stations, table reservation software, and integrated feedback systems that allow customers to leave recommendations easily.

Legal: Changes to the minimum wage law will directly affect the bottom line of the café and should be closely monitored. Additionally, health regulation changes will impact the businesses and could require additional expenses to remain up to code.

Environment: Increases in unpredictable weather events will affect the ability to utilize outdoor space at Higgins house for the café. Poor weather conditions will affect the likelihood students will be willing to walk to café which is further away from academic buildings and student housing than other dining options. If winter weather becomes milder outside seating may be available later in the fall and earlier in the spring. If the Quorum Café intends to keep farm to table food, the effects of the environment on farms and farmers will also impact on the café. The environment could decrease reliability of suppliers and increase food cost. Farm to table and local source food continues to have increased positive perceptions from consumers.

5.4.0 Marketing Plan

For the marketing plan, the customers, in this case the undergraduate and graduate students, were separated into segments based on their class status. After looking at the similarities and differences between each identified segment based on where they live, how often they're on campus, if they have purchased a meal plan, and how many meal swipes they tend to use in a week, it was determined to group the juniors and seniors into one segment called the upperclassmen from the similarities between the two groups, and keep the other segments the same: first-year students, sophomores, graduate students.

Another customer segment for the café was faculty and staff members. Based on the previous interviews conducted by the graduate class, faculty expressed the need for better food quality on campus and having a place for social activities. Furthermore, the survey conducted on faculty and staff collected a number of responses regarding expanding the menu by including more options, changing the numbers of operations, and establishing better communication between the café and their customers. The stakeholders of Quorum Café tried to promote the place to be used to host events, however there was no interest.

The data collected from the survey was used to evaluate the 4 P's of marketing: product, price, place, promotion. Some of the data was broken down based on the customer segments to identify if any segment were willing to visit the café more often or had a higher willingness to pay. However, from the responses received, the hours they choose to eat their meals, their willingness to pay, and their interest in the café were not very different from each other. From the responses received, students choose to go to different places on campus depending on the time of the day. Furthermore, students expressed their interest in having more nutritious options provided from the dining places. There was a high interest in using the café to do homework or relax outside of class time. Although the students provided a what they were willing to pay for each meal of the day, some of the students, such as the first-year students and the sophomores, use their meal plans to purchase food on campus, and wanted to know more about the value they will get out of using a meal swipe at the café. When it comes to promotion, students preferred to use one or two types of media more than the others. The different media used could help with the exposure of the café to the students and the recommendations provide a timeframe for strategies related to email marketing and social media accounts.

6.0.0 Conclusions and Recommendations

The purpose of this project was to provide recommendations to Quorum Café stakeholders about opportunities to become profitable by analyzing what impact including WPI's student population might have on the café, by conducting research on dining services on college campuses, conducting interviews with Quorum's stakeholders, and analyze past data collected on the customers. We used the following methods: research Quorum Café, understand student dining needs, analyze the viability of potential scenarios, develop a business and marketing plan. The methods were chosen based on the research questions related to net tangible and intangible value of including students to the café, impacts on operation and marketing from the change on demand and increasing the engagement of Quorum with WPI members. An online survey was used to collect data on the student body and the data was used to analyze different scenario analysis as well as creating recommendations for the café.

From the responses collected from the survey, the data was skewed towards the first-year students and the customer segments were identified based the students' WPI status: first-year students, sophomores, upperclassmen, and graduate students. Juniors and seniors were grouped together as upperclassmen based on their similarities of most of them living outside of campus and not purchasing less meal plans comparted to first-year students and sophomores. Besides the different meal plans they have purchased, and how often the students are on campus, there were no other significant differences about their dining habits, media habits, and café usage. When asked if they would be interested in visiting a café style dining service similar to Quorum, all four customer segments showed interest, therefore we recommend that Quorum offer services to undergraduate and graduate students besides faculty and staff.

Different scenarios were considered to find the best time to have the café offer their services to the students. Based on the data collected, students expressed an interest in having dining services open later at night as well as providing more healthy options. The best scenario that accommodated students' needs and predicted Quorum would be profitable was serving to faculty and during breakfast hours, then serving to students as well during lunch and dinner. Based on this scenario, the café will have to expand its hours of operations, adjust their menu, and cover additional costs such as hiring more stuff and adding new furniture.

After picking the best possible scenario, the recommendations below were provided as part of the marketing strategy and communication.

6.1.0 Email Marketing

Email marketing can be used to make the students aware of the services of the café, its location and hours of operation, menu options, and discounts. The Quorum Café already sends emails to faculty and creating an email list for the students won't be difficult to implement. The emails could be sent as a weekly newsletter to help with the exposure of the café. Usually, the best time for businesses to send out emails is Mondays since customers are more likely to check their inboxes at the beginning of the week. The emails should be sent out once a week for at least one year mentioning any changes to the menu or hours of operations. WPI students receive a large number of emails and might end up ignoring promotional emails. The header of the email should have Quorum's café logo and the date of the week is being sent, for example March 20th – March 26th. Then newsletter can be separated by blocks, where the first block should showcase the hours of operations, the second block should provide the menu options, the third block should advertise any events or workshop taking place that week if any, and the fourth block should show the social media handles.

The goal of implementing email marketing is to generate word of mouth and have the students talk to each other about the services being offered by Quorum. The limitation of this recommendation is that the Student Government Association (SGA) might not allow advertisement to the students in the form of newsletter emails. On SGA's website, they typically approve some newsletters, however they will still have to approve the email before it is sent out to the student body.

6.2.0 Social Media Marketing

Another type of media that helps with generating word of mouth and to keep the conversation going are the social media applications. The students are more active on social media and 47% of the participants reported they check Instagram several times a day. The café already has an existing Facebook page, and this allows them to open an Instagram page directly from there. This allows the users to post the same content to Facebook and Instagram at the same time.

There is not a guideline of how many times a business should post on social media. There are accounts that post every day and there are also some that post a few times a week. Since the Quorum café is looking into targeting a specific demographic, WPI members, posting three to five times a week would help with establishing a presence online. The social media calendar could be organized by choosing three days to post photos and videos on the feed and for the other days of the week post at least one story. The numbers of days could be changed after analyzing which times the café receives the most engagement. To

build up a presence online, Quorum should consider having other accounts share the café's content on their pages. Many other services around campus have an existing Instagram page and they could help the café reach the accounts of WPI's students and members.

Another strategy to consider when it comes to bringing awareness to the services being offered and the place is using a PR story. Some examples of PR stories are sharing the behind the scenes on how the menu options are picked up, having the café's staff talk about their favorite beverage or food item, asking the customers what's their favorite feature of the café, or sharing facts about how to maintain a healthy diet. Storytelling helps with providing more content for the social media pages beside posting pictures of the place and products.

On the other hand, Instagram could help collect more data on the customers. The stories on Instagram include features such as polls, multiple choice answers, and fill in the blank answers. These features can measure which type of menu options are most liked, collecting answers on menu ideas or activities that could take place at the café, or asking what the best time is to visit Quorum. The café should implement these features at least once a week in their stories to help with keeping up engagement and interaction.

Although opening an Instagram page costs nothing, the café will need someone to run the page. They could hire someone as a Social Media Manager, which increases the labor costs, or they could have one or two students run the social media pages as part of federal work or an internship. Since Quorum would be using the social medias to better advertise to WPI members, there no need to spend long hours on social media strategy to gain followers, therefore getting content out and replying to comments or questions asked should not take more than one hour per day.

6.3.0 Event Marketing

From the interview conducted with dean Perlow, faculty and staff were encouraged to use the space to host events, however there wasn't a specific marketing campaign used for these events. If the space of the café increases, faculty and other organizations on campus would benefit from hosting events or workshops at Quorum. Event marketing helps with planning and organizing events and bring awareness to the brand at the same time. The customers should be aware of how to book the whole café for parts of it. The consumers can request to reserve the place by directly reaching out to Quorum, for example by email, or they could use 25Live Pro, a website used at WPI to reserve different locations on campus. Moreover, the café should promote and market the events through their social media and

measure the success of hosting the event by asking the participants to participate on a short survey to learn what their opinions were about the place and the food provided.

6.4.0 Menu Variety and Options

With the addition of students, the menu offered will have to be expanded to accommodate the preferences of the customers. Right now, the menu options for lunch are sandwiches, paninis, soups, and salads. We are recommending having the café open at night and serving students, therefore creating a menu for this to accommodate these hours is essential. Based on the responses collected, 119 students expressed they agree they wished dining services on campus provided more nutritious options. We would recommend adding vegan or vegetarian options to the menu since these groups reported on the survey sometimes, they had a stressful time finding dining services on campus that accommodated their needs.

The café will have to test out different menu options and evaluate which items might be more popular with the customers. One way this could be executed is by using one academic year to test out the options being offered by changing the menu for lunch and dinner every academic term. The social media accounts can be used to ask customers about suggestions to the menu each academic term and the café could be considering testing out the suggestions for the upcoming term. At the end of the year, there could be a survey sent out through the email newsletter collecting responses about the customers opinions on the menu throughout the year, and the choices receiving the most responses could end up on the menu permanently.

6.5.0 Redesigning the Quorum Café

The Quorum Café offers a place to collaborate and meet with other people and considering the current state of the place; there are not enough seats and tables, and moreover there are not enough outlets to allow the customers to plug in their devices. The café is closed during winter and summer break and this time could be used to redesign the space. Since the summer break runs from May to August, this would be the ideal time to plan the layout of the café, the budget that will be needed to cover the costs and purchasing the chairs and tables. During A-term and B-term, the café can measure the traffic of customers and make any changes needed during winter break when Quorum would be closed. These costs would be different from the operations costs since they would have to be covered once. Another factor that should be considered is the expansion of the current physical place. Faculty and staff expressed they would want the café to provide more chairs and tables, and if students are included during lunch the place could get

crowded. Some options to consider are to use the hall at the entrance of Higgins House and outside of the location of the café, and also adding a few chairs and tables outdoors.

6.6.0 Allow Meal Swipes

If the café decided to incorporate students adding the option for meal swipes would increase the use of the space by undergraduates. All first years are on a meal plan and the mean number of swipes left at the end of each week is 3.3. 80% of students on a meal plan have at least 1 swipe unused at the end of the week. With so many swipes left at the end of the week and the Campus Center directly next to Quorum the utilization of the space for people on a meal plan without making quorum take swipes is unlikely. Additionally, the mental health benefit of having a late-night option will be reduced if students cannot use Quorum because it does not take meal swipes.

Of all the respondents surveyed 93 of the respondents were on a residential meal plan and 68% were on a type of meal plan. This means that it is unlikely that around 50% of the people who responded to the survey would be willing to go to Quorum given that most of them have unused meal swipes for other locations.

6.6.0 Conclusions

The proposed recommendations provide a framework for exposing the café to students and proposing the best times to start planning the changes needed for including students during lunch hours and operating later at night. Different strategies will need to be tested for the social media accounts to generate engagement between Quorum and the WPI community. Furthermore, the menu options should be varying and accommodate different groups of customers. The menu might have to change a few times a year to work out the best options for different times of the day. Lastly, meal swipes should definitely be considered as a payment option if students are going to be part of the services the café offers.

7.0.0 Project Process, Experiences, Challenges, and Learning

The following chapter is a reflection on the project process and means in which the objectives of the project were accomplished. It is the goal of this chapter to address the efficiency and effectiveness the team had in completing the the project objectives.

Project Process: This project started after a previous project was dissolved, as such the team had reduced time to complete the project but felt that the new project outline was handed off from the professors effectively. The team could have been more organized and deliberate in their project management during the project. At certain points in the project there were many questions about next steps, expectations, and methods that could have been eased with improved project management. In the final term, the team did outline weekly goals for completing the project that enabled us to keep a better schedule. Different project management tools were suggested however they were delayed in favor of completing project related tasks.

The team accomplished the goals of the project by first narrowing the scope to a more focused and actionable objective that related specifically to the inclusion of students in Quorum Café. We then decided to collect our own data as the needs of the project demanded we understand the students of WPI as it relates to dining. The survey took longer and required many reviews before finally being completed. In the future, the team would have benefited from creating the survey earlier on and with clearer objectives. After the survey was completed, it was an effective tool for the team to analyze marketing and operations data for the student body. This data on its own was not enough to draw meaningful conclusions so the team interviewed and collected data from stakeholders like Chartwells and the Dean's Office. Despite agreeing on types of data we would be able to access, the team ended up with very limited data from Chartwells and the Dean's office. We could have begun queries into this matter earlier and set up more frequent meetings with stakeholders that might have led to more relevant data being gathered. Despite these limitations, the team was able to estimate much of the information needed but at a cost of relevance and accuracy to the project. This project was a good exercise in understanding the limitations of survey data and the analysis methods we chose.

Experiences: Over the course of the project each team member was given the opportunity to apply their expertise. The project was roughly segmented into a marketing plan, business plan, and economic analysis that allowed each team member to grow and apply the skills of their major. In many cases the work of the project required collaboration and a combination of skill sets, however the majority of tasks were completed individually when possible. The level of collaboration and integration of

different skills could have been improved. The team did discuss strengths and weaknesses early on in the project but was not able to seamlessly combine them. The final recommendations could have benefited from more collaboration throughout the project.

Challenges: The project was scheduled to be completed in only two terms after the previous project was canceled. This created a challenging timeline for completing all the necessary tasks of the project. While we feel successful in doing so, further work can be done to provide a more complete answer to the research questions. The additional work should focus on the collection of onsite operations data, accurate food cost data, and an assessment of costs related to recommended changes.

Learning: The project cultivated learning for the team at all stages. While past skills were applied the team also had to learn new ones to accomplish the goals. The scenario analysis had to handle significant uncertainty to accommodate this, the team investigated and learned new forms of analysis designed to account for variation. When Monte Carlo simulations were decided, it was an opportunity to learn more about the @Risk add-in for Excel. A significant amount of time was spent becoming familiar with the tool and the methods. In addition, the team was able to practice new skills in Qualtrics and Tableau.

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Appendices

Appendix A: Costs and Annual Profit for Quorum Café in 2019

FY 2019 Statistics

Hours of operation	730 am to 2 pm Monday-Friday
Total Annual Sales	$47,830
Average Daily Sales	$290
Breakeven avg daily sales	$838 [105 people per day with $8 check average]
Total Food Costs	$30,155
Total Labor +T&B	(Staff 1) $52,433 + (Staff 2) $37,795 =$90,228
Other Costs	$18,043
Annual Profit & Loss	-$90,596

Appendix B: Sample Size Calculations

Sample Targets	Undergraduate	Graduate	Total
Gender			
Male	165	33	198
Female	97	70	167
Total	262	103	365
Ethnicity			
White	167	45	211
Asian	31	6	37
Hispanic/Latino	23	6	28
Black/African American	7	4	11
American Indian/Alaska Native	0	0	0
Native Hawaiian/ Other Pacific Island	0	0	0
Two or More Races	9	2	11
U.S. Nonresident	18	37	55
Unknown	6	5	11
Total	262	103	365
Class			
Mass Academy	2	0	2
Freshman	74	0	74
Sophomore	68	0	68
Junior	57	0	57
Senior	60	0	60
Graduate	0	103	103
Total	262	103	365

Appendix C: Sample Size Formula

   The sample size of a finite population formula was taken from Eval Academy. The following identifies each variable (Eval Academy, n.d.).

- n is the sample size
- N is the population size
- z is the z-score associated with the desired level of confidence (e.g., 1.96 for a 95% confidence level)
- p is the estimated proportion of the population with the characteristic of interest (often set at 0.5 if there is no prior estimate available)
- e is the desired margin of error (i.e., the maximum difference between the sample estimate and the true population parameter)

$$n' = \frac{n}{1 + \dfrac{z^2 * \hat{p}\left(1 - \hat{p}\right)}{\varepsilon^2 * N}}$$

Appendix D: List of professors and clubs contacted to share the survey

	Professors Contacted	Clubs Contacted
1	Adam Sales	Green Team
2	Carly Thorp	Alliance
3	Gillian Smith	Science fiction Society
4	Matthew Ahrens	Crow
5	Izabela Stroe	Grad Students Union
6	James Dittami	Vegetarian Club
7	Ronald Grimm	Running Club
8	Uma Kumar	Cheese Club
9	Gbetonmasse Somasse	Cooking Club
10	Hermine Vedogbedon	Food Recovery
11	Jim Doyle	Theta Nu Xi
12	Angela Incollingo Rodriguez	tea club
13	Daniel Treku	Chess Club
14	Elizabeth Lingo	TechNews
15	Walter Towner	
16	Robert Sarnie	
17	Michael Buckholt	
18	Bohrer Rose	
19	Rusell Powell	
20	Herman Servatius	
21	Michael Johnson	
22	Chun-Kit Ngan	
23	Torumoy Ghosha	
24	Adrienne Hall-Philips	
25	Kwamie Dunbar	
26	Steve Taylor	

Appendix E: Survey Questions

You are being asked to participate in a research study. Before you agree, however, you must be fully informed about the purpose of the study, the procedures to be followed, and any benefits, risks or discomfort that you may experience as a result of your participation. This form presents information about the study so that you may make a fully informed decision regarding your participation. The purpose of this study is to understand the student dining needs and this survey will be used to collect this data. The survey is anonymous and you don't have to give any personal information.

All the data collected through Qualtrics will be stored in a OneDrive shared amongst the investigators and the project advisors. Records of your participation in this study will be held confidential so far as permitted by law. However, the study investigators, the sponsor or it's designee and, under certain circumstances, the Worcester Polytechnic Institute Institutional Review Board (WPI IRB) will be able to inspect and have access to confidential data that identify you by name. Any publication or presentation of the data will not identify you. Your participation in this research is voluntary. Your refusal to participate will not result in any penalty to you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits.

For more information about this research or about the rights of research participants, please contact: Principal Investigator (Prof. Purvi Shah, pshah@wpi.edu), Director of Human Subjects Research and Academic Programs (Ruth McKeogh, Email: irb@wpi.edu), and the Director of Research Integrity and Compliance (Gabriel Johnson, Email: gjohnson@wpi.edu).

By clicking agree below, you acknowledge that you have been informed and consent to be a participant in the study described above.

- ○ I agree
- ○ I disagree

How old are you?

Have you previously participated in and completed this survey?

- ○ Yes
- ○ No

On average how often do you come to WPI campus each week?

- ○ Rarely to Never
- ○ Sometimes (1-2 days a week)
- ○ Often (3-4 days a week)
- ○ Most of the time (5-6 days a week)
- ○ Always (Daily)
- ○ I live on campus

Do you eat or dine on WPI campus when you visit ${q://QID66/ChoiceGroup/SelectedChoices} ?

- ○ Yes, every time I visit the WPI campus.
- ○ Sometimes I eat on the WPI campus and sometimes I don't.
- ○ No, I never eat on the WPI campus.

How do you generally source each of your meals? Select all that apply.

How do you generally source each of your meals? Select all that apply.

	Cooked at home with fresh produce.	Cooked at home with meal kits (e.g. blue apron, hellofresh, etc...)	Restaurant meals (Not at WPI)	Pre-cooked frozen meals	Eat on campus	Other
Breakfast	☐ Breakfast Cooked at home with fresh produce.	☐ Breakfast Cooked at home with meal kits (e.g. blue apron, hellofresh, etc...)	☐ Breakfast Restaurant meals (Not at WPI)	☐ Breakfast Pre-cooked frozen meals	☐ Breakfast Eat on campus	☐ Breakfast Other
Lunch	☐ Lunch Cooked at home with fresh produce.	☐ Lunch Cooked at home with meal kits (e.g. blue apron, hellofresh, etc...)	☐ Lunch Restaurant meals (Not at WPI)	☐ Lunch Pre-cooked frozen meals	☐ Lunch Eat on campus	☐ Lunch Other
Dinner	☐ Dinner Cooked at home with fresh produce.	☐ Dinner Cooked at home with meal kits (e.g. blue apron, hellofresh, etc...)	☐ Dinner Restaurant meals (Not at WPI)	☐ Dinner Pre-cooked frozen meals	☐ Dinner Eat on campus	☐ Dinner Other
Snack	☐ Snack Cooked at home with fresh produce.	☐ Snack Cooked at home with meal kits (e.g. blue apron, hellofresh, etc...)	☐ Snack Restaurant meals (Not at WPI)	☐ Snack Pre-cooked frozen meals	☐ Snack Eat on campus	☐ Snack Other

How many meals do you eat in a day?

0 1 2 3 4 5

On weekdays (Mon-Fri)	_____
On weekends (Sat-Sun)	_____

On weekdays (Monday - Friday) when do you typically eat? Select all that apply.

On weekdays (Monday - Friday) when do you typically eat? Select all that apply.

	4:01 - 7:00 AM	7:01 - 11:00 AM	11:01 - 2:00 PM	2:01 - 5:00 PM	5:01 - 8:00 PM	8:01 - 11:00 AM	11:01 - 2:00 AM
Breakfast	☐ Breakfast 4:01 - 7:00 AM	☐ Breakfast 7:01 - 11:00 AM	☐ Breakfast 11:01 - 2:00 PM	☐ Breakfast 2:01 - 5:00 PM	☐ Breakfast 5:01 - 8:00 PM	☐ Breakfast 8:01 - 11:00 AM	☐ Breakfast 11:01 - 2:00 AM
Lunch	☐ Lunch 4:01 - 7:00 AM	☐ Lunch 7:01 - 11:00 AM	☐ Lunch 11:01 - 2:00 PM	☐ Lunch 2:01 - 5:00 PM	☐ Lunch 5:01 - 8:00 PM	☐ Lunch 8:01 - 11:00 AM	☐ Lunch 11:01 - 2:00 AM
Dinner	☐ Dinner 4:01 - 7:00 AM	☐ Dinner 7:01 - 11:00 AM	☐ Dinner 11:01 - 2:00 PM	☐ Dinner 2:01 - 5:00 PM	☐ Dinner 5:01 - 8:00 PM	☐ Dinner 8:01 - 11:00 AM	☐ Dinner 11:01 - 2:00 AM
Snack	☐ Snack 4:01 - 7:00 AM	☐ Snack 7:01 - 11:00 AM	☐ Snack 11:01 - 2:00 PM	☐ Snack 2:01 - 5:00 PM	☐ Snack 5:01 - 8:00 PM	☐ Snack 8:01 - 11:00 AM	☐ Snack 11:01 - 2:00 AM

On weekends (Saturday and Sunday) when do you typically eat? Select all that apply.

On weekends (Saturday and Sunday) when do you typically eat? Select all that apply.

	4:01 - 7:00 AM	7:01 - 11:00 AM	11:01 - 2:00 PM	2:01 - 5:00 PM	5:01 - 8:00 PM	8:01 - 11:00 AM	11:01 - 2:00 AM
Breakfast	☐ Breakfast 4:01 - 7:00 AM	☐ Breakfast 7:01 - 11:00 AM	☐ Breakfast 11:01 - 2:00 PM	☐ Breakfast 2:01 - 5:00 PM	☐ Breakfast 5:01 - 8:00 PM	☐ Breakfast 8:01 - 11:00 AM	☐ Breakfast 11:01 - 2:00 AM
Lunch	☐ Lunch 4:01 - 7:00 AM	☐ Lunch 7:01 - 11:00 AM	☐ Lunch 11:01 - 2:00 PM	☐ Lunch 2:01 - 5:00 PM	☐ Lunch 5:01 - 8:00 PM	☐ Lunch 8:01 - 11:00 AM	☐ Lunch 11:01 - 2:00 AM
Dinner	☐ Dinner 4:01 - 7:00 AM	☐ Dinner 7:01 - 11:00 AM	☐ Dinner 11:01 - 2:00 PM	☐ Dinner 2:01 - 5:00 PM	☐ Dinner 5:01 - 8:00 PM	☐ Dinner 8:01 - 11:00 AM	☐ Dinner 11:01 - 2:00 AM
Snack	☐ Snack 4:01 - 7:00 AM	☐ Snack 7:01 - 11:00 AM	☐ Snack 11:01 - 2:00 PM	☐ Snack 2:01 - 5:00 PM	☐ Snack 5:01 - 8:00 PM	☐ Snack 8:01 - 11:00 AM	☐ Snack 11:01 - 2:00 AM

For each meal how much are you willing to pay (in U.S. dollars)?

For each meal how much are you willing to pay (in U.S. dollars)?

	$0 - $5	$6-$10	$11 - $15	$16 - $20	$21+
Breakfast	○ Breakfast $0 - $5	○ Breakfast $6-$10	○ Breakfast $11 - $15	○ Breakfast $16 - $20	○ Breakfast $21+
Lunch	○ Lunch $0 - $5	○ Lunch $6-$10	○ Lunch $11 - $15	○ Lunch $16 - $20	○ Lunch $21+
	$0 - $5	$6-$10	$11 - $15	$16 - $20	$21+
Dinner	○ Dinner $0 - $5	○ Dinner $6-$10	○ Dinner $11 - $15	○ Dinner $16 - $20	○ Dinner $21+
Snack	○ Snack $0 - $5	○ Snack $6-$10	○ Snack $11 - $15	○ Snack $16 - $20	○ Snack $21+

Please mark where you generally buy your meals from when on WPI's campus. (Select all that apply.)
If you are not aware of the dining option or have never dined there, please mark not applicable.

Please mark where you generally buy your meals from when on WPI's campus. (Select all that apply.)
If you are not aware of the dining option or have never dined there, please mark not applicable.

Breakfast	Lunch	Dinner	Snack	Not applicable

	Breakfast	Lunch	Dinner	Snack	Not applicable
Goat's Head Kitchen	☐ Goat's Head Kitchen Breakfast	☐ Goat's Head Kitchen Lunch	☐ Goat's Head Kitchen Dinner	☐ Goat's Head Kitchen Snack	☐ Goat's Head Kitchen Not applicable
Joy Empanadas	☐ Joy Empanadas Breakfast	☐ Joy Empanadas Lunch	☐ Joy Empanadas Dinner	☐ Joy Empanadas Snack	☐ Joy Empanadas Not applicable
The Halal Shack	☐ The Halal Shack Breakfast	☐ The Halal Shack Lunch	☐ The Halal Shack Dinner	☐ The Halal Shack Snack	☐ The Halal Shack Not applicable
South Village	☐ South Village Breakfast	☐ South Village Lunch	☐ South Village Dinner	☐ South Village Snack	☐ South Village Not applicable
Campus Center Subs	☐ Campus Center Subs Breakfast	☐ Campus Center Subs Lunch	☐ Campus Center Subs Dinner	☐ Campus Center Subs Snack	☐ Campus Center Subs Not applicable
Gompei's Pizza	☐ Gompei's Pizza Breakfast	☐ Gompei's Pizza Lunch	☐ Gompei's Pizza Dinner	☐ Gompei's Pizza Snack	☐ Gompei's Pizza Not applicable
	Breakfast	**Lunch**	**Dinner**	**Snack**	**Not applicable**
Sono	☐ Sono Breakfast	☐ Sono Lunch	☐ Sono Dinner	☐ Sono Snack	☐ Sono Not applicable
Innovation Kitchen featuring Melt Lab	☐ Innovation Kitchen featuring Melt Lab Breakfast	☐ Innovation Kitchen featuring Melt Lab Lunch	☐ Innovation Kitchen featuring Melt Lab Dinner	☐ Innovation Kitchen featuring Melt Lab Snack	☐ Innovation Kitchen featuring Melt Lab Not applicable
Starbucks	☐ Starbucks Breakfast	☐ Starbucks Lunch	☐ Starbucks Dinner	☐ Starbucks Snack	☐ Starbucks Not applicable
Campus Center Food Court	☐ Campus Center Food Court Breakfast	☐ Campus Center Food Court Lunch	☐ Campus Center Food Court Dinner	☐ Campus Center Food Court Snack	☐ Campus Center Food Court Not applicable
Dunkin'	☐ Dunkin' Breakfast	☐ Dunkin' Lunch	☐ Dunkin' Dinner	☐ Dunkin' Snack	☐ Dunkin' Not applicable
The Quorum Cafe	☐ The Quorum Cafe Breakfast	☐ The Quorum Cafe Lunch	☐ The Quorum Cafe Dinner	☐ The Quorum Cafe Snack	☐ The Quorum Cafe Not applicable
	Breakfast	**Lunch**	**Dinner**	**Snack**	**Not applicable**
Morgan Hall	☐ Morgan Hall Breakfast	☐ Morgan Hall Lunch	☐ Morgan Hall Dinner	☐ Morgan Hall Snack	☐ Morgan Hall Not applicable
Off Campus Restaurant / Cafe 1 (Please mention the name in the textbox.)	☐ Off Campus Restaurant / Cafe 1 (Please mention the name in the textbox.) Breakfast	☐ Off Campus Restaurant / Cafe 1 (Please mention the name in the textbox.) Lunch	☐ Off Campus Restaurant / Cafe 1 (Please mention the name in the textbox.) Dinner	☐ Off Campus Restaurant / Cafe 1 (Please mention the name in the textbox.) Snack	☐ Off Campus Restaurant / Cafe 1 (Please mention the name in the textbox.) Not applicable
Off Campus Restaurant / Cafe 2 (Please mention the name in the textbox.)	☐ Off Campus Restaurant / Cafe 2 (Please mention the name in the textbox.) Breakfast	☐ Off Campus Restaurant / Cafe 2 (Please mention the name in the textbox.) Lunch	☐ Off Campus Restaurant / Cafe 2 (Please mention the name in the textbox.) Dinner	☐ Off Campus Restaurant / Cafe 2 (Please mention the name in the textbox.) Snack	☐ Off Campus Restaurant / Cafe 2 (Please mention the name in the textbox.) Not applicable
Off Campus Restaurant / Cafe 3 (Please mention the name in the textbox.)	☐ Off Campus Restaurant / Cafe 3 (Please mention the name in the textbox.) Breakfast	☐ Off Campus Restaurant / Cafe 3 (Please mention the name in the textbox.) Lunch	☐ Off Campus Restaurant / Cafe 3 (Please mention the name in the textbox.) Dinner	☐ Off Campus Restaurant / Cafe 3 (Please mention the name in the textbox.) Snack	☐ Off Campus Restaurant / Cafe 3 (Please mention the name in the textbox.) Not applicable

Please rank the following attributes used to describe a WPI Dining location in terms of importance. (1 = Most Important, 13 = Least Important)

- 1 Quality of Food
- 2 Open late at night (after 10 pm)
- 3 Variety of dining Locations
- 4 Variety of food options in the menu
- 5 Speed of service
- 6 Convenience
- 7 Quality of service
- 8 Cost of food
- 9 Atmosphere/Ambiance of dinning area
- 10 Cleanliness / Hygiene
- 11 Availability of healthy food
- 12 Availability of multiple cuisines
- 13 Anything else? (Please mention and rank. Otherwise, type NA and rank it at 13.)

Rate the dining styles on campus

Sit Down	
Grab and Go	
Other (If not applicable put last)	

How satisfied are you with the following attributes of the WPI dining experience on campus?

How satisfied are you with the following attributes of the WPI dining experience on campus?

	Extremely dissatisfied	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Extremely satisfied
Quality of food	○ Quality of food Extremely dissatisfied	○ Quality of food Somewhat dissatisfied	○ Quality of food Neither satisfied nor dissatisfied	○ Quality of food Somewhat satisfied	○ Quality of food Extremely satisfied
Quality of service	○ Quality of service Extremely dissatisfied	○ Quality of service Somewhat dissatisfied	○ Quality of service Neither satisfied nor dissatisfied	○ Quality of service Somewhat satisfied	○ Quality of service Extremely satisfied
Speed of service	○ Speed of service Extremely dissatisfied	○ Speed of service Somewhat dissatisfied	○ Speed of service Neither satisfied nor dissatisfied	○ Speed of service Somewhat satisfied	○ Speed of service Extremely satisfied
Hours of operation	○ Hours of operation Extremely dissatisfied	○ Hours of operation Somewhat dissatisfied	○ Hours of operation Neither satisfied nor dissatisfied	○ Hours of operation Somewhat satisfied	○ Hours of operation Extremely satisfied
	Extremely dissatisfied	**Somewhat dissatisfied**	**Neither satisfied nor dissatisfied**	**Somewhat satisfied**	**Extremely satisfied**
Variety of dining options	○ Variety of dining options Extremely dissatisfied	○ Variety of dining options Somewhat dissatisfied	○ Variety of dining options Neither satisfied nor dissatisfied	○ Variety of dining options Somewhat satisfied	○ Variety of dining options Extremely satisfied
Availability of healthy food options	○ Availability of healthy food options Extremely dissatisfied	○ Availability of healthy food options Somewhat dissatisfied	○ Availability of healthy food options Neither satisfied nor dissatisfied	○ Availability of healthy food options Somewhat satisfied	○ Availability of healthy food options Extremely satisfied
Availability of a variety of cuisines	○ Availability of a variety of cuisines Extremely dissatisfied	○ Availability of a variety of cuisines Somewhat dissatisfied	○ Availability of a variety of cuisines Neither satisfied nor dissatisfied	○ Availability of a variety of cuisines Somewhat satisfied	○ Availability of a variety of cuisines Extremely satisfied
Availability of special food options (accommodating allergies, dietary restrictions)	○ Availability of special food options (accommodating allergies, dietary restrictions) Extremely dissatisfied	○ Availability of special food options (accommodating allergies, dietary restrictions) Somewhat dissatisfied	○ Availability of special food options (accommodating allergies, dietary restrictions) Neither satisfied nor dissatisfied	○ Availability of special food options (accommodating allergies, dietary restrictions) Somewhat satisfied	○ Availability of special food options (accommodating allergies, dietary restrictions) Extremely satisfied
	Extremely dissatisfied	**Somewhat dissatisfied**	**Neither satisfied nor dissatisfied**	**Somewhat satisfied**	**Extremely satisfied**
Cleanliness / hygiene	○ Cleanliness / hygiene Extremely dissatisfied	○ Cleanliness / hygiene Somewhat dissatisfied	○ Cleanliness / hygiene Neither satisfied nor dissatisfied	○ Cleanliness / hygiene Somewhat satisfied	○ Cleanliness / hygiene Extremely satisfied
Accessibility	○ Accessibility Extremely dissatisfied	○ Accessibility Somewhat dissatisfied	○ Accessibility Neither satisfied nor dissatisfied	○ Accessibility Somewhat satisfied	○ Accessibility Extremely satisfied
Value for money	○ Value for money Extremely dissatisfied	○ Value for money Somewhat dissatisfied	○ Value for money Neither satisfied nor dissatisfied	○ Value for money Somewhat satisfied	○ Value for money Extremely satisfied
Ambiance	○ Ambiance Extremely dissatisfied	○ Ambiance Somewhat dissatisfied	○ Ambiance Neither satisfied nor dissatisfied	○ Ambiance Somewhat satisfied	○ Ambiance Extremely satisfied

Rate the following on campus dining options at WPI.
If you are not aware of a particular dining option listed below or have never visited it, please type NA in the textbox provided and do not rate it.

Joy Empanadas
[   ]

The Quorum Cafe
[   ]

Sono
[   ]

Campus Center Subs
[   ]

Innovation Kitchen featuring Melt Lab
[   ]

Morgan Hall
[   ]

Dunkin'
[   ]

Starbucks
[   ]

South Village
[   ]

Goat's Head Kitchen
[   ]

The Halal Shack
[   ]

Campus Center Food Court
[   ]

Gompei's Pizza

Please select the type of meal plan you use at WPI.

- ○ Resident Meal Plan
- ○ Non Mandatory Meal Plan
- ○ No Meal Plan

How many meal swipes do you typically use in a week?

0 1 2 3 4 5 6 7 8 9 11 12 13 14 15 16 17 18 19 20 21

On weekdays (Mon-Fri)

On weekends (Sat-Sun)

What meal plan do you have?

- ○ The VIP Meal Plan
- ○ The 14-Meal Plan
- ○ The 19-Meal Plan
- ○ The 200-Meal Plan

What meal plan do you have?

- ○ The Gompei 190
- ○ 40 Meal Plan
- ○ 50 Meal Plan
- ○ 75 Meal Plan

How many meal swipes do you typically have remaining at the end of the week?

Not Applicable

0 1 2 3 4 5 6 7 8 9 11 12 13 14 15 16 17 18 19 20 21

Meal Swipes ☐

If there was a new café style dining option on WPI campus serving sandwiches, paninis, soups, salads, and beverages, would you like to buy your meal(s) from there?

- ○ Yes
- ○ No
- ○ It depends on... (Please state what does your decision depends on in the textbox.)

If there was a new café style dining option on WPI campus serving sandwiches, paninis, soups, salads, and beverages, which of your meals would you buy from there? (Select all that apply.)

- ☐ Breakfast
- ☐ Lunch
- ☐ Dinner
- ☐ Snack
- ☐ Other (Please mention.)

If there was a new café style dining option on WPI campus serving sandwiches, paninis, soups, salads, and beverages, what else would you like to do there apart from dining? (Select all that apply.)

- ☐ Team meetings
- ☐ Networking
- ☐ Playing board games
- ☐ Reading
- ☐ Just Relaxing
- ☐ Doing class work
- ☐ Other (Please mention.) _____

Please describe the most important things that you expect from such a café?
For example, related to hours of operation, menu, pricing, ambience, etc...
It is important to know students' perspectives on this. Please voice out your thoughts and opinions.

MEDIA HABITS

What is/are your preferred way(s) to receive news/updates about WPI? (Select all that apply.)

- ☐ Email
- ☐ Instagram
- ☐ Twitter
- ☐ Facebook
- ☐ YouTube
- ☐ LinkedIn
- ☐ TikTok
- ☐ Reddit
- ☐ Discord
- ☐ On Campus Bulletin Boards
- ☐ WPI Website
- ☐ Posters
- ☐ Other (Please specify.) _____

How often do you visit the following media?

How often do you visit the following media?

	Several times in a day	Once a day	Few times in a week	Once a week	Few times in a month	Never
Email	○ Email Several times in a day	○ Email Once a day	○ Email Few times in a week	○ Email Once a week	○ Email Few times in a month	○ Email Never
Instagram	○ Instagram Several times in a day	○ Instagram Once a day	○ Instagram Few times in a week	○ Instagram Once a week	○ Instagram Few times in a month	○ Instagram Never
Twitter	○ Twitter Several times in a day	○ Twitter Once a day	○ Twitter Few times in a week	○ Twitter Once a week	○ Twitter Few times in a month	○ Twitter Never
Facebook	○ Facebook Several times in a day	○ Facebook Once a day	○ Facebook Few times in a week	○ Facebook Once a week	○ Facebook Few times in a month	○ Facebook Never
	Several times in a day	Once a day	Few times in a week	Once a week	Few times in a month	Never
YouTube	○ YouTube Several times in a day	○ YouTube Once a day	○ YouTube Few times in a week	○ YouTube Once a week	○ YouTube Few times in a month	○ YouTube Never
LinkedIn	○ LinkedIn Several times in a day	○ LinkedIn Once a day	○ LinkedIn Few times in a week	○ LinkedIn Once a week	○ LinkedIn Few times in a month	○ LinkedIn Never
Snapchat	○ Snapchat Several times in a day	○ Snapchat Once a day	○ Snapchat Few times in a week	○ Snapchat Once a week	○ Snapchat Few times in a month	○ Snapchat Never
TikTok	○ TikTok Several times in a day	○ TikTok Once a day	○ TikTok Few times in a week	○ TikTok Once a week	○ TikTok Few times in a month	○ TikTok Never
	Several times in a day	Once a day	Few times in a week	Once a week	Few times in a month	Never
Reddit	○ Reddit Several times in a day	○ Reddit Once a day	○ Reddit Few times in a week	○ Reddit Once a week	○ Reddit Few times in a month	○ Reddit Never
On Campus bulletin boards	○ On Campus bulletin boards Several times in a day	○ On Campus bulletin boards Once a day	○ On Campus bulletin boards Few times in a week	○ On Campus bulletin boards Once a week	○ On Campus bulletin boards Few times in a month	○ On Campus bulletin boards Never

WPI website	Several times in a day	Once a day	Few times in a week	Once a week	Few times in a month	Never
WPI website	○ WPI website Several times in a day	○ WPI website Once a day	○ WPI website Few times in a week	○ WPI website Once a week	○ WPI website Few times in a month	○ WPI website Never

How likely are you to do the following?

How likely are you to do the following?

	Extremely unlikely	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Extremely likely
Search a dining place on the internet before visiting it	○ Search a dining place on the internet before visiting it Extremely unlikely	○ Search a dining place on the internet before visiting it Somewhat unlikely	○ Search a dining place on the internet before visiting it Neither likely nor unlikely	○ Search a dining place on the internet before visiting it Somewhat likely	○ Search a dining place on the internet before visiting it Extremely likely
Use the internet to check out the menu options	○ Use the internet to check out the menu options Extremely unlikely	○ Use the internet to check out the menu options Somewhat unlikely	○ Use the internet to check out the menu options Neither likely nor unlikely	○ Use the internet to check out the menu options Somewhat likely	○ Use the internet to check out the menu options Extremely likely
Share WPI related news/updates with your friends and colleagues	○ Share WPI related news/updates with your friends and colleagues Extremely unlikely	○ Share WPI related news/updates with your friends and colleagues Somewhat unlikely	○ Share WPI related news/updates with your friends and colleagues Neither likely nor unlikely	○ Share WPI related news/updates with your friends and colleagues Somewhat likely	○ Share WPI related news/updates with your friends and colleagues Extremely likely
	Extremely unlikely	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Extremely likely
Search an on campus dining place on the internet before visiting it	○ Search an on campus dining place on the internet before visiting it Extremely unlikely	○ Search an on campus dining place on the internet before visiting it Somewhat unlikely	○ Search an on campus dining place on the internet before visiting it Neither likely nor unlikely	○ Search an on campus dining place on the internet before visiting it Somewhat likely	○ Search an on campus dining place on the internet before visiting it Extremely likely
Use the internet to check out the menu options of an on campus dining place	○ Use the internet to check out the menu options of an on campus dining place Extremely unlikely	○ Use the internet to check out the menu options of an on campus dining place Somewhat unlikely	○ Use the internet to check out the menu options of an on campus dining place Neither likely nor unlikely	○ Use the internet to check out the menu options of an on campus dining place Somewhat likely	○ Use the internet to check out the menu options of an on campus dining place Extremely likely

For messages/news/updates about WPI dining please indicate what you are most likely to engage with.

For messages/news/updates about WPI dining please indicate what you are most likely to engage with.

	Dislike a great deal	Dislike somewhat	Neither like nor dislike	Like somewhat	Like a great deal
Messages showing a WPI dining location without people.	○ Messages showing a WPI dining location without people. Dislike a great deal	○ Messages showing a WPI dining location without people. Dislike somewhat	○ Messages showing a WPI dining location without people. Neither like nor dislike	○ Messages showing a WPI dining location without people. Like somewhat	○ Messages showing a WPI dining location without people. Like a great deal
Messages showing a WPI dining location with people.	○ Messages showing a WPI dining location with people. Dislike a great deal	○ Messages showing a WPI dining location with people. Dislike somewhat	○ Messages showing a WPI dining location with people. Neither like nor dislike	○ Messages showing a WPI dining location with people. Like somewhat	○ Messages showing a WPI dining location with people. Like a great deal
Messages showing food without people.	○ Messages showing food without people. Dislike a great deal	○ Messages showing food without people. Dislike somewhat	○ Messages showing food without people. Neither like nor dislike	○ Messages showing food without people. Like somewhat	○ Messages showing food without people. Like a great deal
Messages showing food with people.	○ Messages showing food with people. Dislike a great deal	○ Messages showing food with people. Dislike somewhat	○ Messages showing food with people. Neither like nor dislike	○ Messages showing food with people. Like somewhat	○ Messages showing food with people. Like a great deal
	Dislike a great deal	Dislike somewhat	Neither like nor dislike	Like somewhat	Like a great deal
Messages showing a promotion (e.g., discounts).	○ Messages showing a promotion (e.g., discounts). Dislike a great deal	○ Messages showing a promotion (e.g., discounts). Dislike somewhat	○ Messages showing a promotion (e.g., discounts). Neither like nor dislike	○ Messages showing a promotion (e.g., discounts). Like somewhat	○ Messages showing a promotion (e.g., discounts). Like a great deal
Messages showing WPI students.	○ Messages showing WPI students. Dislike a great deal	○ Messages showing WPI students. Dislike somewhat	○ Messages showing WPI students. Neither like nor dislike	○ Messages showing WPI students. Like somewhat	○ Messages showing WPI students. Like a great deal
Messages showing dining staff.	○ Messages showing dining staff. Dislike a great deal	○ Messages showing dining staff. Dislike somewhat	○ Messages showing dining staff. Neither like nor dislike	○ Messages showing dining staff. Like somewhat	○ Messages showing dining staff. Like a great deal

INTANGIBLES

Selected all dietary restrictions that apply to you.

- ☐ Vegetarian
- ☐ Vegan
- ☐ Kosher
- ☐ Halal
- ☐ Dairy Allergy
- ☐ Nut Allergy

- ☐ Shellfish Allergy
- ☐ Soy Allergy
- ☐ Gluten Allergy/Intolerance
- ☐ Diabetes
- ☐ Other Option A (Please Specify) [_____]
- ☐ Other Option B (Please Specify) [_____]
- ☐ Other Option C (Please Specify) [_____]
- ☐ None

For each of the restrictions you selected, indicate how satisfied you are with WPI accommodations.

For each of the restrictions you selected, indicate how satisfied you are with WPI accommodations.

	Extremely dissatisfied	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Extremely satisfied
» Vegetarian	○	○	○	○	○
» Vegan	○	○	○	○	○
» Kosher	○	○	○	○	○
» Halal	○	○	○	○	○
» Dairy Allergy	○	○	○	○	○
» Nut Allergy	○	○	○	○	○
» Shellfish Allergy	○	○	○	○	○
» Soy Allergy	○	○	○	○	○
» Gluten Allergy/Intolerance	○	○	○	○	○
» Diabetes	○	○	○	○	○
» Other Option A (Please Specify) ${q://QID78/ChoiceTextEntry}	○	○	○	○	○
» Other Option B (Please Specify) ${q://QID78/ChoiceTextEntry}	○	○	○	○	○
» Other Option C (Please Specify) ${q://QID78/ChoiceTextEntry}	○	○	○	○	○
» None	○	○	○	○	○

For each of the restrictions you selected, how often is finding dining options that accomodate your needs stressful.

For each of the restrictions you selected, how often is finding dining options that accomodate your needs stressful.

	Never	Sometimes	About half the time	Most of the time	Always
» Vegetarian	○	○	○	○	○
» Vegan	○	○	○	○	○
» Kosher	○	○	○	○	○
» Halal	○	○	○	○	○
» Dairy Allergy	○	○	○	○	○
» Nut Allergy	○	○	○	○	○
» Shellfish Allergy	○	○	○	○	○
» Soy Allergy	○	○	○	○	○
» Gluten Allergy/Intolerance	○	○	○	○	○
» Diabetes	○	○	○	○	○
» Other Option A (Please Specify) [_____]	○	○	○	○	○

		Never	Sometimes	About half the time	Most of the time	Always
» Other Option B (Please Specify) [_____]		○	○	○	○	○
» Other Option C (Please Specify) [_____]		○	○	○	○	○
» None		○	○	○	○	○

How often is finding dining options that accomodate your needs stressful.

- ○ Never
- ○ Sometimes
- ○ About half the time
- ○ Most of the time
- ○ Always

To what extent you agree with the following statements?

To what extent you agree with the following statements?

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I wish dining services provided more nutritious options	○ I wish dining services provided more nutritious options Strongly agree	○ I wish dining services provided more nutritious options Somewhat agree	○ I wish dining services provided more nutritious options Neither agree nor disagree	○ I wish dining services provided more nutritious options Somewhat disagree	○ I wish dining services provided more nutritious options Strongly disagree
My physical health is affected by the lack of nutritious on campus	○ My physical health is affected by the lack of nutritious on campus Strongly agree	○ My physical health is affected by the lack of nutritious on campus Somewhat agree	○ My physical health is affected by the lack of nutritious on campus Neither agree nor disagree	○ My physical health is affected by the lack of nutritious on campus Somewhat disagree	○ My physical health is affected by the lack of nutritious on campus Strongly disagree
My mental health is affected by the lack of nutritious options on campus	○ My mental health is affected by the lack of nutritious options on campus Strongly agree	○ My mental health is affected by the lack of nutritious options on campus Somewhat agree	○ My mental health is affected by the lack of nutritious options on campus Neither agree nor disagree	○ My mental health is affected by the lack of nutritious options on campus Somewhat disagree	○ My mental health is affected by the lack of nutritious options on campus Strongly disagree
It would benefit my mental health to have a quieter area to eat	○ It would benefit my mental health to have a quieter area to eat Strongly agree	○ It would benefit my mental health to have a quieter area to eat Somewhat agree	○ It would benefit my mental health to have a quieter area to eat Neither agree nor disagree	○ It would benefit my mental health to have a quieter area to eat Somewhat disagree	○ It would benefit my mental health to have a quieter area to eat Strongly disagree
Dining services is missing a type of food from where I am from	○ Dining services is missing a type of food from where I am from Strongly agree	○ Dining services is missing a type of food from where I am from Somewhat agree	○ Dining services is missing a type of food from where I am from Neither agree nor disagree	○ Dining services is missing a type of food from where I am from Somewhat disagree	○ Dining services is missing a type of food from where I am from Strongly disagree
	Strongly agree	**Somewhat agree**	**Neither agree nor disagree**	**Somewhat disagree**	**Strongly disagree**
It would benefit my mental health to have a quieter area to eat	○ It would benefit my mental health to have a quieter area to eat Strongly agree	○ It would benefit my mental health to have a quieter area to eat Somewhat agree	○ It would benefit my mental health to have a quieter area to eat Neither agree nor disagree	○ It would benefit my mental health to have a quieter area to eat Somewhat disagree	○ It would benefit my mental health to have a quieter area to eat Strongly disagree
I would use a dining location on campus that is open between 5am and 7am	○ I would use a dining location on campus that is open between 5am and 7am Strongly agree	○ I would use a dining location on campus that is open between 5am and 7am Somewhat agree	○ I would use a dining location on campus that is open between 5am and 7am Neither agree nor disagree	○ I would use a dining location on campus that is open between 5am and 7am Somewhat disagree	○ I would use a dining location on campus that is open between 5am and 7am Strongly disagree
I would use a dining location on campus open between 10pm and 12am	○ I would use a dining location on campus open between 10pm and 12am Strongly agree	○ I would use a dining location on campus open between 10pm and 12am Somewhat agree	○ I would use a dining location on campus open between 10pm and 12am Neither agree nor disagree	○ I would use a dining location on campus open between 10pm and 12am Somewhat disagree	○ I would use a dining location on campus open between 10pm and 12am Strongly disagree
I would use a dining location on campus open between 12am and 2am	○ I would use a dining location on campus open between 12am and 2am Strongly agree	○ I would use a dining location on campus open between 12am and 2am Somewhat agree	○ I would use a dining location on campus open between 12am and 2am Neither agree nor disagree	○ I would use a dining location on campus open between 12am and 2am Somewhat disagree	○ I would use a dining location on campus open between 12am and 2am Strongly disagree
I skip meals because of dinning hours	○ I skip meals because of dinning hours Strongly agree	○ I skip meals because of dinning hours Somewhat agree	○ I skip meals because of dinning hours Neither agree nor disagree	○ I skip meals because of dinning hours Somewhat disagree	○ I skip meals because of dinning hours Strongly disagree

DEMOGRAPHICS

What is your current student status at WPI? (Select all that apply)

- ☐ Undergraduate - First Year
- ☐ Undergraduate - Sophomore
- ☐ Undergraduate - Junior
- ☐ Undergraduate - Senior
- ☐ Graduate Student- Master Program

- ☐ Graduate Student- PhD Program
- ☐ Other [_____]

Which WPI School are you part of?

- ☐ Business School
- ☐ School of Art and Sciences
- ☐ School of Engineering
- ☐ The Global School
- ☐ Other [_____]

Where do you live?

- ○ On Campus
- ○ Fraternity / Sorority Housing
- ○ Off Campus - Within walking distance.
- ○ Off Campus - Outside of walking distance.

What is your gender identity? (Select all that apply)

- ☐ Woman
- ☐ Man
- ☐ Transgender
- ☐ Non-binary/Gender Non-conforming
- ☐ Gender Fluid
- ☐ Prefer not to respond
- ☐ Any gender not mentioned above [_____]

Are you an international or domestic student?

- ○ Domestic
- ○ International
- ○ Other [_____]

Which race or ethnicity best describes you? Select all that apply.

- ☐ American Indian or Alaskan Native
- ☐ Asian/Pacific Islander
- ☐ Black or African American
- ☐ Hispanic
- ☐ Middle Eastern
- ☐ White/Caucasian
- ☐ Multiple ethnicity/Other [_____]
- ☐ Prefer not to answer

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