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Determinants of Food Insecurity within University Student Populations: Results
of a College Food Pantry Survey

by

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requirements for the degree of

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Abstract

This research evaluates the role of food insecurity at universities through an examination of hunger in the U.S., a collection of academic and organizational research on hunger at universities across multiple states, and finally through the results of a survey, conducted by the researcher, that assesses the causes of food insecurity at Portland State University. By analyzing the results of this survey, university-specific factors that contribute to student food insecurity are identified, as well as solutions which could prevent those factors from manifesting in the future. Based on this analysis, this research also explores how data entry systems can be adjusted to address and track these factors, and any subsequently implemented solutions, in order to constantly progress our understanding of university hunger and encourage holistic approaches amongst decision-makers.

Key Words: Food insecurity, Student food insecurity, University hunger, University-specific factors

Background

Food Insecurity – National & State

The presence and persistence of food insecurity has become a critical issue in the examination of poverty, environment, and social infrastructure in the United States. Although it is undeniably an issue that affects nearly all low and even some middle-income communities, food insecurity is also characteristic of individual experience, community need, and regional scarcity. According to a study published in 2013 (Coleman, 2013), 14.3% of Americans were considered food insecure at some point during 2013. Food insecurity is defined as a change in dietary habits because of financial deficiencies or a lack of easy access to nutritional food items in a “socially acceptable manner” (Goldrick-Rab, Richardson, Schneider, Hernandez, & Cady, 2018). Levels of food insecurity can range from buying cheap and undesirable items to not eating for one or more days (Dubick, Mathews & Cady, 2016). In 2013, the USDA also estimated that food insecurity was around 14% in the U.S., but recently in 2016 the USDA’s estimate of food insecurity was 12.3%, showing a slight downward trend of hunger since the recession. However, this recent estimate still demonstrates that many individuals and families in the U.S. continue to experience food insecurity, and some specific communities experience hunger at higher levels than others. For instance, the rate of food insecurity for black households in the U.S. is 22%, and Hispanic households is at a close 18%; whereas white households are only estimated a prevalence of 9% (USDA, 2016). These numbers demonstrate that some communities are more affected than others, especially those who have been historically oppressed and who continue to experience marginalization today. However, recent reports are showing that one particular community not traditionally associated with hunger, is now showing high levels of experiencing food insecurity: college students (Goldrick-Rab, et al., 2018; Dubick, et al., 2016). This thesis will discuss some of the specific factors that university students are found

to face and analyze the results of a survey given to food insecure students at Portland State University (PSU).

University Hunger

It has only been recently that university hunger is gaining consideration as an issue that universities are prioritizing and that larger hunger relief organizations are more seriously considering as an expanding new demographic of food insecure individuals. In 2016 “Hunger On Campus”, a report administered by the College and University Food Bank Alliance (CUFBA) and other contributors, reported crucial information about the prevalence of student hunger through the results of a survey completed by 3,500 college students across 12 states, at both community colleges and four-year universities. They found that “48 percent of respondents reported food insecurity in the previous 30 days, including 22 percent with very low levels of food security that qualify them as hungry,” (Dubick, et al., 2016, p. 7). In fact, they found that at each college, anywhere between 20%-40% of students had experienced some form of food insecurity in the last year (Dubick, et al., 2016). This data represents the magnitude of food insecurity on college campuses and indicates that a deeper level of research is needed to interpret why an approximate half of university students may be experiencing food insecurity.

There are many probable reasons for why recognition of university hunger has been slow to develop, but one speculation is that the perception of university students as being overly-privileged and financially-supported inhibits people outside of the issue from seeing need or advocating for increased resources (Haller, 2018). According to “Hunger On Campus”, this stereotype of university students is associated with the term “traditional student”, which includes those who can also be categorized as: recent high school graduates, not financially independent, and full-time students (Dubick, et al., 2016). However, as enrollment rates increase and the job market continues to become further oriented towards

degree-holding individuals, the number of nontraditional students is increasing as well. “The rising cost of a college education and the increasing number of nontraditional students mean that more students are living on a shoestring budget,” (Dubick, et al., 2016, p. 9). This report went on to classify nontraditional students as enrolled students who fall into one or more of the following categories: “attends college part-time, is employed full-time, is financially independent, provides for dependents, is a single parent, or does not have a high school diploma.” These factors often contribute to food insecurity because they make it harder for students to attend college and still meet their living needs.

“Hunger On Campus” also took into account many factors that are presumed to eliminate food insecurity, such as secure employment, a campus meal plan, and financial aid. These are often not eliminators of food insecurity for college students, despite popular assumptions, and the following will illustrate why:

Employment. Students often struggle to find jobs, even part-time jobs, that accommodate having a class schedule which can change drastically from term-to-term. However, attaining a job does not guarantee food security either. Inconsistent schedules and strict class hours make it hard for students to work jobs that pay higher than minimum wage. This need for job flexibility keeps students chronically underemployed and at minimum wage during their time in college.

Meal Plans. A common assumption about meal plans is that having a meal plan means always having access to food. Meal plans have become a fixed part of university structures and university life, and may seem theoretically to be the perfect solution to food insecurity on campus. However, not only is a meal plan not ideal for students who commute to campus or who live paycheck to paycheck and therefore can’t afford big bills at once, but having a meal plan cannot always guarantee food security (Dubick, et al., 2016). This can be attributed to several factors that are integral to the way these programs are set up. One, dining

halls with specific hours are not conducive to student schedules, making it difficult for students to get food when they need it. Two, not accommodating a large variety of dietary restrictions can mean that students on the meal plan are still needing to purchase food elsewhere. Lastly three, not being able to afford a larger meal plan can also mean that students still need to purchase food elsewhere when they run out of meals or vouchers at the end of each week or term (Dubick, et al., 2016). For these reasons, having a meal plan does not mean that a student is completely food secure.

Financial Aid. The Free Application for Federal Student Aid (FAFSA) and other types of financial support programs, such as scholarships, have become common-place in the U.S. as a way for students to reduce the cost of studying and therefore ideally not be burdened financially as they pursue their educational goals. The idea of need-based financial aid was popularized in the 1960's as a way to promote equity and reduce rampant poverty through means of accessible education (Hansen, 1883). Today, it is estimated that 86% of college students at 4 year universities are receiving some form of financial aid (U.S. Department of Education, 2016). Despite the intention that all of this financial aid would lead to students having un-burdened access to education, 75% of food-insecure students are receiving financial aid ("Hunger On Campus", 2016), which means that financial aid is too often falling short for the students who need it most.

University Hunger: Oregon Universities

In Oregon, the percentage of food insecure students may be even higher than universities in other states. As one study in 2014 found at a rural Oregon university, 59% of students surveyed reported experiences of food-insecurity in 2013 (Patton, 2014). Both this study and "Hunger On Campus" listed housing status, difficulties finding jobs that accommodate class schedules, and difficulties with financial aid to be the top reasons that University students experience food-insecurity. Both studies also found that food insecure

students are less likely to have GPA's over 3.0, and are more likely to miss class, drop out, or not purchase necessary textbooks (Patton, 2014; Dubick, et al., 2016). Not being able to perform well because of food insecurity may only lead to more financial burden as students may need to re-take required classes or may end up dropping out with a lot of debt and no degree to help them secure a high-paying job.

In comparison to those findings at a rural Oregon university, food insecurity has also recently been researched at an urban Oregon university: Portland State University (PSU). In 2014, PSU alumnus Jessica Cole, the founder and previous co-chair of the Committee for Improving Student Food Security (CISFS), released a campus-wide PSU survey in order to determine the university's level of food insecurity and the demographics most affected by hunger. In her results, Cole found that 59% of those surveyed had experienced some level of food insecurity in the past year by reporting that they had been "unable to consistently access (either by purchase or through charitable giving) sufficient quantities or quality of food and could not eat balanced meals" (Cole, 2014). Of this percentage, 18% stated that they had repeatedly not had enough food to eat, which categorizes them as having very low food security to the point of being qualified as "hungry". This data indicates extreme levels of food insecurity, which may be perpetuated by the university's structure and student access to resources.

Based on Hunger On Campus's findings about the instability of employment and meal plans, it is important to note that PSU is on a quarter system which means that students might be finding it even more difficult to find high-paying jobs than students at semester schools. In addition, many of their on-campus job opportunities are usually only minimum wage at a time when the cost of living is persistently rising in the Portland metro area. Lastly, it should also be considered that most PSU students commute to campus, making it difficult or

impractical to purchase a meal plan. All of these factors may have contributed to the university's high level of food insecure students.

The findings in Cole's campus-wide study were used to create awareness within PSU about the issue of campus food insecurity and the possible reality of almost 20% of PSU students facing hunger on a regular basis. This awareness led to the expansion of both CISFS as a campus resource and the PSU Food Pantry as both a resource and a service to all PSU students.

Food Pantry Intervention & Data

To address hunger, multiple social platforms have arisen around the world, in both the public sector and the private sector of communities. These include such programs as food pantries, soup kitchens, meal programs, and food stamps (or SNAP, Supplemental Nutrition Assistance Program, as it is currently referred to). Food pantries are perhaps one of the most well-known and oldest programs in the United States. They exist in the private sector as non-profits and are usually affiliated with a larger organization known as a food bank. Their ability to draw a wide range of people experiencing different levels of food insecurity has made them an interesting source of collecting information about hunger.

Previous studies of food pantries across the U.S. have yielded insight into the barriers that prevent food security. In a study in Pennsylvania, researchers found that the biggest barrier to accessing food pantries among low-income households was their access to a personal vehicle (Daponte, 1998). In another, the use of food pantries and of SNAP were assessed through the surveying of multiple pantries in Kansas City, which found that individuals who *believe* their food insecurity is temporary are much less likely to apply for SNAP, even though they may qualify for it and are utilizing food pantry services on a regular basis (Mosley, 2004). These surveys were successful in identifying some of the barriers preventing families and individuals from accessing food pantries as well as their patterns of

accessing other food security programs. However, these surveys only represent the snapshot in time in which they were taken. Hunger relief organizations have begun to look toward data collections systems that offer on-going tracking of participants across food pantries in order to better assess long-term changes of barriers to food security.

One such organization that has found a data collection solution is the Oregon Food Bank (OFB). OFB was founded in 1988 and has since become a distributor to over 200 partner agencies across the Portland metro area and other parts of Oregon. Through their own research, they currently estimate that 1 in 5 Oregonians are food insecure (“Hunger in Oregon”, Oregon Food Bank) — which is 8% higher than national average most recently published by the USDA. This difference indicates that Oregon may struggle with hunger more than other states, despite the Oregon Food Bank’s efforts. To understand why there are more food insecure Oregonians than the national average, OFB has introduced a new data system called Link2Feed which they are currently encouraging among their partner agencies. This data system is designed to track the prevalence of factors contributing to food insecurity within food pantries, which can help organizations like the Oregon Food Bank understand factors that occur in specific communities as well as factors occurring in multiple communities across the Portland metro area.

Link2Feed

Link2Feed is a food pantry software system that was created in Canada, and is now currently implemented in 2,300 organizations across the U.S. and Canada (“Link2Feed Food Pantry Software”, 2018). Their software operates by querying food pantry clients through an encouraged four page entry form which asks multiple questions around health determinants, such as race/ethnicity, sex, age, income, education level, housing situation, health status, employment status, number of dependents, etc. They have also engineered a way to track pantry client participation across food pantries, as well as a way to effectively collect and

analyze the information of thousands of pantry users at once. Their motivation is that “we can’t end hunger if we don’t understand it” (“Link2Feed Food Pantry Software”, 2018), and the appeal of better understanding the roots of hunger has created a draw for hunger relief organizations, like the Oregon Food Bank. Unlike sporadic surveys, this system can track pantry client usage in real time rather than snapshots of time, and will live-feed compiled data results back to the food pantry and to the food bank partnered with them. Since the launch of Link2Feed at OFB, several of their partnered food pantries have converted to this data collection system. One pantry in the beginning stages of transitioning to Link2Feed is the PSU Food Pantry.

PSU Food Pantry

The PSU Food Pantry opens Monday through Friday in order to provide a free resource to currently enrolled students. According to the administrative advisor for the pantry, at their current level of operation they are visited by PSU students over 16,000 times a year, and in 2016-2017 they distributed more than 175,000 lbs. of food. The PSU Food Pantry currently only requires verification of student enrollment (via the showing of a student ID) to access pantry services, and does not ask any questions related to health determinants or client identity. This lack of information about their clients is why the pantry decided to transition from their current data collection system to Link2Feed. However, based on some of the sources of information about university hunger referenced in this thesis, the PSU Food Pantry is interested in first learning more about the specific factors that are contributing to student food insecurity (such as employment issues, meal plans, financial aid, or other factors) according to the students themselves. For this reason, the following survey was conducted at the PSU Food Pantry, with the intention that the results would be used to compile a list of factors that contribute to student food insecurity that could be tracked using the Link2Feed data collection system. The survey also sought to gather student input about

solutions that PSU could implement in order to address the contributive factors that they had identified.

Methods

Survey Location

The survey was conducted at Portland State University in the PSU Food Pantry during March of 2018 after being approved by the PSU Institutional Review Board. The questions in the survey are specifically directed to PSU students who currently experience some level of food-insecurity, and for that reason only students who were in the process of attending the PSU Food Pantry were approached. While the food pantry does not currently have a system in place for assessing level of need, the pantry operates under the general assumption that only students who are experiencing food insecurity utilize their service.

Sample Selection

The survey was distributed to 200 students who visited the pantry before and during its open hours from 11:00am to 2:30pm; of the 200 surveys distributed, 142 were returned (71% response rate). By virtue of attending the food pantry, all students who completed the survey are defined as “food insecure”.

Data collection

Students were informed about the survey through an announcement made by myself, staff, or a pantry intern while they waited in line for the pantry to open. The announcement informed students about the survey and its potential importance to the pantry’s future decisions, but also informed students that the survey was voluntary and that their participation, or lack of, would not affect their access to the pantry services. Students were then handed the survey and told to return it to a volunteer if they felt comfortable or to place it in the secure lockbox provided for anonymity purposes.

Variable categorization

In the survey (See Appendix D for full survey) students were asked the following quantitative questions and instructed to check off the appropriate number of days in a month. One, how often do you not have sufficient food? Two, how often do you come to the pantry? These questions were designed to determine the level of food insecurity that a student is currently experiencing and correlate this to how often they utilize the PSU Food Pantry.

Following this, the survey asked qualitative questions in which students were instructed to write their own answers, rather than being given a set of pre-determined answers. One, what are the top three factors contributing to your food insecurity? And two, if PSU could do one thing to eliminate your need to use the food pantry, what would it be?

It was decided that students would write their own answers to these questions in order to field the most student experiences possible and to provide students with a voice that can often be lost in more traditional survey systems of pre-determined checkboxes. Having complete write-in answers differs from having a checkbox for “Other: _____”, in that it gives students a chance to describe the nuances of their situation which might have

Table 1. Sections deduced from survey results for Qualitative: Question 1: “What are the top three factors contributing to your food insecurity?”

- Lack of money
- No time
- Cost of tuition, fees, textbooks
- Cost of living / rent
- Bills / debts / medical expenses
- Food desert
- Insufficient wages
- Unemployment
- Underemployment
- Health concerns / illness / disability
- Ineligibility for SNAP
- Children / dependents
- Insufficient Financial Aid

been overlooked if they had been given clear-cut options. For example, if a student struggles to purchase food because they are living on-campus, and the survey had contained a box labeled “Housing/Cost of living”, it is likely that they would have checked that option. In which case, the data would not have revealed that one or many university students struggle to pay for food because of the price of university housing specifically.

Table 2. Sections deduced from survey results for Qualitative: Question 2: “If PSU could do one thing to eliminate your need to use the food pantry, what would it be?”

- Lower tuition / fees / textbooks (state and out-of-state)
- Make more food / meal-plan options available and affordable (PSU Eats)
- Expand pantry hours / expand pantry services
- More Financial Aid (state, out-of-state, and international)
- Pay grad students more
- Hire me / hire more students
- Subsidize Insurance
- Lower cost of student housing

For these reasons, the survey uses an open format in which answers were later synthesized into categories based off of the root meaning of each answer and then grouped by equivalence or similarity. Please refer to Table 1 and Table 2 for a list of the sections.

In order to execute the intention of isolating PSU specific, or university-specific, causes of food insecurity, some of these

sections were further divided into subcategories in order to provide more detail about the different factors that result in the same cause of hunger. These subcategories are detailed in Table 3a and Table 3b.

<i>Table 3a. Sub-categories identified under Section “Food Desert” from Question 1 (see Table 1a)</i>	
Category	Sub-Category
Food Desert	Lack of easy access to an affordable grocery store
	Lack of access to healthy food items
	Lack of access to affordable meal plans/grocery stores on PSU campus or downtown area
	Lack of access to culturally relevant foods

<i>Table 3b. Sub-categories identified under Section “Lack of time” from Question 1 (see Table 1a)</i>	
Category	Sub-Category
Lack of time	Lack of time to work or work more
	Lack of time to visit PSU Food Pantry
	Lack of time to grocery shop or prepare food

	Lack of time - unspecified

It should be noted that answers pertaining around not having enough time to grocery shop were input into the category “Lack of time” under sub-category “Lack of time to grocery shop or prepare food”. However, student responses that indicated that their food insecurity stems from not having enough time *to travel* to any grocery store or an affordable grocery store were categorized under “Food Desert” because this indicated that the student qualified for living in a food desert as defined by the USDA to be any residential area in which there is not access to any grocery store or an affordable grocery store within 1 mile (American Nutrition Association, 2015). Therefore the students’ answers that taking time *to travel* to a grocery store or an affordable grocery store constitutes them as experiencing an aspect of living in a food desert; whereas, students who answered that they didn’t have enough time to grocery shop, but did not give further indication about their proximity to affordable grocery stores, were determined to not constitute experiencing an aspect of food desert living.

In Qualitative Question 1 (see Table 1a) the term “Underemployment” is used and is defined in this study as a student who has the capacity to work more hours or full-time but is not currently because of barriers in the hiring process that may include things like: lack of job opportunities, lack of qualifications for jobs, disability, discrimination, and other reasons. This category has been separated from students who reported a “Lack of time to work more”, because it was interpreted that the student does *not* have the capacity to work more hours or full-time and therefore does not constitute this researcher’s definition of underemployment. These answers are therefore compiled under “Lack of time” in Qualitative Question 1 (See Table 1a and Table 2b).

Results

The results cannot present a sociodemographic description of respondents because they did not collect any respondent descriptions, such as race/ethnicity, sex, or age. This is due to the intention of the survey being to improve upon the questions that the Link2Feed entry form asks, in which it already contains questions pertaining to client description. Therefore, we did not request demographic information.

From the quantitative portion of this survey, 44% of pantry users reported experiencing high levels of food insecurity and average of 1-5 days per month, and 25% reported experiencing it on an average of 6-11 days per month. Similar results were found for the number of times that students attend the PSU pantry within a month, the highest percentage being 47% for 1-5 days and descending in percentage as the number of days increased. Only 4% of students reported attending pantry 24 or more days a month. (See Appendix A, Figure 1).

When asked to list the top three factors contributing to their food insecurity, the most frequently reported reason was “Lack of money” at 22%. The second highest was 17% of students who attributed their food insecurity to factors pertaining to experiencing a food desert, and the third highest section was “Lack of time” at 15%. The remaining sections only received results of 10% or less, although it can be assumed that many who fell into the general category of “Lack of money” probably also would have fallen into sections like “Cost of tuition, fees, or textbooks”, “Cost of living/rent”, “Bills/debts/medical expenses”, but weren’t able to be placed in those sections due to a lack of specificity in their answers. (See Appendix A, Figure 2).

Although having a lack of time and money were listed the most in total, when asked to arrange answers in order of most contributive to food insecurity to least contributive, the top answers that students listed were “Lack of money” and “Unemployment/Underemployment”. Although it only ranked second highest at 11%, being underemployed or unemployed was the

only answer that more students reported first on their list than any other specific factor (See Appendix A, figure 3).

Of the 17% categorized under food desert, 70% reported experiences around not having easy access to an affordable grocery store, answers that specifically pertained to not having access to affordable food around PSU campus or the downtown area were separated and constituted 10%. The remaining 20% of students reported specifically not having sufficient access to healthier food items, or culturally relevant food items (See Appendix A, Table 1).

Within the students that reported “Lack of time”, 15 students said their inability to have more time to work while being a student is one of three top factors contributing to their food insecurity. In total, 11 students wrote that their Lack of time most impedes their ability to grocery shop or visit the pantry. The remaining students were nonspecific about their Lack of time, only that it inhibits them from being fully food secure (See Appendix A, Table 2).

In the survey’s second qualitative question, “If PSU could do one thing to eliminate your need to use the food pantry, what would it be?” One third of students said lower tuition, 26% asked for a more affordable meal-plan option, and 24% asked for an expansion of pantry services. Other significant outcomes include 12% of students requesting more financial aid and 11% wanting higher pay for graduate students. (See Appendix B, Figure 4).

Discussion

Within those students who reported experiencing low levels of food security for more than 24 days per month, only 60% said that they use the pantry 24 or more days a month. Those remaining students reported only attending pantry less than 11 days per month, and of these students, two-thirds also reported “No time” as one of their top three factors contributing to their food insecurity. These findings suggest that students’ burden of food insecurity could be lessened if PSU began offering more time-flexible programs like an

expansion of food pantry hours or a SNAP-type system that gives access to the PSU dining hall or other campus dining options.

In the U.S., tuition has increased three times that of what it was ten years ago, at both private and public universities (Boyington, 2017). Despite this, only 10% of students directly listed tuition, fees, or textbooks as a factor that contributes to their food insecurity (See Appendix A, Figure 1). However, it can be inferred that a large portion of students who reported only “Lack of money” may also fall into this category. Nevertheless, it is important to recognize that instead of specifying tuition, fees, or textbooks, more students reported difficulties in experiences relating to food deserts or lack of time as factors that most interfered with their food security.

“Food deserts are areas that lack access to affordable fruits, vegetables, whole grains, low-fat milk, and other foods that make up a full and healthy diet,” (CDC, 2017). Being located in downtown Portland, PSU is subject to the rising prices of urban living as well as the higher pricing of a downtown area that is surrounded by luxury apartments, tourist attractions, and corporate high-rises. Not only do the surrounding grocery outlets and restaurants reflect this, but on-campus outlets and convenience stores are even pricier than nearby, off-campus options. Although only 10% of “Food Desert” students *specifically* pointed out PSU or the downtown area’s lack of affordable options, this factor of not having access to affordable food near PSU is implied in the other 86% that reported having a general lack of access to affordable grocery stores or healthy food items. Most students are likely to be on-campus one or more times a week, which indicates that if PSU had more affordable food options on campus or nearby, not as many students would be reporting food desert problems. They would have approximal access to healthy food items at least one or more times a week, even if they didn’t necessarily have that access where they live. Because students reported such high levels of general food desert experiences, those answers can be

indirectly linked to PSU campus or its downtown location, even if the students didn't necessarily specify those areas. Given this, it can be argued that the PSU campus itself has become a food desert and that both on-campus and off-campus students suffer the effects of this on a regular basis.

"Lack of time" is the third highest reported factor contributing to a student's food insecurity, according to the results of this survey. Although it may seem easy to dismiss this answer because of current cultural expectations in the U.S. which dictate that being busy is a sign of success and drive in a person, the break-down of this section will reveal a different story of student struggle and scarcity.

One third of the students reported that despite having a part-time or full-time job, their lack of time to work more hours because of their class schedule and academic load is a large contributor to their food insecurity. In fact, "Lack of time" came in third as the answer that most students wrote down first in their scaling of most contributive factor to least contributive. These results indicate that many food insecure students struggle to work enough hours to be financially stable while also meeting academic expectations. For this reason, food insecure students are at very high risk of dropping classes, or dropping out of school completely, in order to work the extra hours they may need to survive financially. This risk is even higher among students with children or dependents.

"Lack of time" also accounted for students who don't have much time capacity to shop on a regular basis or attend the PSU food pantry. In addition, students also reported not having enough time to prepare meals, and not having enough financially to purchase ready-made meals, which are typically more expensive items.

As stated in methods, the survey separated answers that expressed a temporal inability to work more hours and answers that expressed an ability and need to be employed or more employed in order to reach food security. The latter of these answers were categorized under

“Unemployment/Underemployment”, and although it wasn’t one of the most repeated answer in the survey, it was the second most highly prioritized answer by students, meaning that it was more often written as the biggest contributor to a student’s food insecurity than any other factor except for “Lack of money”. These results indicate that PSU students struggle to find employment opportunities, especially ones that work with their school schedules.

Related to student employment, 18 % of student answers in Qualitative Question 2 (If PSU could do one thing to eliminate your need to use the food pantry, what would it be?) implicated a request for more on-campus jobs, and for those jobs, especially graduate jobs, to be of higher pay.

Figure 4. Top three solutions based on Qualitative Question 2 survey results.

Although only 10% of students surveyed specifically addressed the cost of tuition, fees, or textbooks as one of their contributive factors in Qualitative Question 1, the data collected from Qualitative Question 2 in Table 3 clearly shows that it is an important aspect

of their financial burden, and therefore their burden of food insecurity. Lowering tuition, fees, and the cost of textbooks is what students feel a university has the most control over, and which also has the biggest impact on their ability to access healthy food on a regular and sustainable basis.

At 26%, students also requested that PSU show more initiative in creating affordable meal plans that are tailored to student needs like diet restrictions and varied schedule availability. 12% of students also asked for an increase in financial aid, and if these answers were combined to create a solution that addresses both requests, it could look like an increase in aid that specifically goes to funding a student's access to campus meal plans or other university dining options (See Figure 4).

Lastly, students also requested an expansion of pantry hours, despite the question being phrased, "What can PSU do to *eliminate* your need to use the pantry?" As one anonymous student defended, "I think that having such a thing as this food pantry is a better and more appropriate response to students' needs than trying to eliminate the need for it. Sometimes people just can't help their situation while going to school and a resource like this is the best help the school could offer." Although this thesis argues the importance of finding the roots of hunger in order to eliminate people's need to utilize "band-aid" programs like a food pantry, this student opens up a counter perspective that sometimes "band-aid" programs can be exactly what is needed while people are on the road to achieving food security—in this case via attaining a higher education. However, if student hunger can be prevented at all by programs or systemic changes that can be implemented by the university, then those advances should be executed to the best of a university's ability.

Recommendations for Changes to Data Entry Systems

Based on these results, it was concluded what the best questions might be to include in the Link2Feed entry form (or in any other entry form that a University food pantry might

use) in order to better evaluate the causes that influence university hunger, and track changes as solutions are implemented in the future. The proposed questions are:

1. Do you have a PSU Dining plan? If so, which one?
2. Are you employed by PSU?
3. Do you receive financial aid?
4. How much do you pay out-of-pocket for tuition, fees, or textbooks?

These questions address the main factors that students reported in their survey answers that aren't already coincidentally being addressed by the more general health determinant questions in the Link2Feed entry form (See Appendix E).

Conclusion

These results have provided insight into why university students, and specifically PSU students, are experiencing hunger and what are the ways that PSU could alleviate, if not eliminate, these students' food insecurity. Students identified experiencing a food desert and not having enough time as being huge factors that consistently contribute to their food insecurity. They also requested that PSU implement solutions like lowering the cost of tuition, fees, and textbooks, providing more affordable and accessible meal-plan options, expanding pantry hours and services, providing more financial aid, hiring more students for well-paying positions, and others. By implementing programs that include and combine these services, student food insecurity on-campus could be greatly reduced, especially among populations that already use available hunger relief services like college food pantries.

Through this research, not only has a greater understanding been formed about University food insecurity and what universities can do to prevent hunger from occurring, but a tool has been improved which could extend this understanding even further through a consistent and accurate account of useful data points that are tailored to the experiences of distinct communities.

Appendix A

Figure 1. Percentages of student answers for Quantitative Question 1: “How many days per month do you feel that you have not had enough food to eat in a 24 hour period due to a lack of financial resources?” in blue, and percentages of student answers for the Quantitative Question 2: “3) How many days per month do you visit the food pantry?” in orange.

Figure 2. Percentages of cumulative answers for Qualitative Question 1: “What are the top three factors contributing to your food insecurity?”

Food Desert Sub-category	% of students from “Food Desert” category
Lack of easy access to affordable grocery store	70%
Lack of access to healthy food items	16%
Lack of access to affordable meal plans/grocery stores on PSU campus or downtown area	10%
Lack of access to culturally relevant foods	4%

Table 1. Sub-categories derived from answers related to being in a food desert from Qualitative Question 1: “What are the top three factors contributing to your food insecurity?”

“Lack of time” Sub-category	% of students surveyed
Lack of time to work or work more	33%
Lack of time to visit PSU Food Pantry	9%
Lack of time to grocery shop or prepare food	11%
Lack of time - unspecified	47%

Table 2. Sub-categories derived from answers related to having a lack of time from Qualitative Question 1: “What are the top three factors contributing to your food insecurity?”

Figure 3. Percentages of top first answers for Qualitative Question 1: “What are the top three factors contributing to your food insecurity?”

Appendix B

Figure 4. Percentages of cumulative answers to Qualitative Question 2: "If PSU could do one thing to eliminate your need to use the food pantry, what would it be?"

Appendix C

Figure 5. Percentages of cumulative answers to General Question 1 (not included in research data): "What are the best hours for you to come to the food pantry? Check all that apply."

Appendix D

PSU Food Pantry

This survey is **voluntary**, and is **not required** in order to access the PSU food pantry. By participating in this **anonymous** survey, you will be helping the food pantry better serve you and the PSU student body. None of the individual information contained here will leave the food pantry team. If you have questions or concerns, you can reach out to the pantry manager at pantry@pdx.edu.

What are the best hours for you to come to the food pantry? Check all that apply:

☐ 11:00am-1:00pm	☐ 11:30am-1:30pm	☐ 3:00pm-5:00pm	☐ 3:30pm-5:30pm
☐ 12:00pm-2:00pm	☐ 12:30pm-2:30pm	☐ 4:00pm-6:00pm	☐ 4:30pm-6:30pm
☐ 1:00pm-3:00pm	☐ 1:30pm-3:30pm	☐ 5:00pm-7:00pm	☐ 5:30pm-7:30pm
☐ 2:00pm-4:00pm	☐ 2:30pm-4:30pm	☐ 6:00pm-8:00pm	☐ 6:30pm-8:30pm

2) How many days per month do you feel that you have not had enough food to eat in a 24 hour period due to a lack of financial resources?

- ☐ 1-5
 ☐ 6-11
 ☐ 12-17
 ☐ 18-23
 ☐ 24+

3) How many days per month do you visit the food pantry?

- ☐ 1-5
 ☐ 6-11
 ☐ 12-17
 ☐ 18-23
 ☐ 24+

1. What are the top three factors contributing to your food insecurity? Please arrange in order of importance

a. _____

_____

b. _____

_____

c. _____

_____

2. If PSU could do one thing to eliminate your need to use the food pantry, what would it be?

_____

_____

_____

_____

Thank you for your participation!

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