Implementing Data Collection Software at El Buen Samaritano

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Implementing Data Collection Software at El Buen Samaritano

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Abstract

Food insecurity is a major health concern in the City of Worcester. One nonprofit organization helping to address this problem is the food pantry El Buen Samaritano (EBS). We worked with EBS to implement a digital data collection system after using pen-and-paper for the last 30 years. We conducted interviews, developed a cost-benefit analysis, and organized meetings to determine that PantrySOFT, a software specialized in food pantry operations, is the best digital solution for EBS. Finally, we assisted EBS to acquire, set up, and learn to use the software. This new digital system will allow EBS to collect client data, generate reports, secure grant funding, conduct presentations and expand its services.

Executive Summary

Background

Food insecurity is a pressing issue in the United States. In the last twenty years, there has been little improvement: between 2001 and 2021, the rate of food insecurity changed by a net 0.5%, ending up at 10.2% (Martin, 2022). Food insecurity has a detrimental effect on public health, being linked to birth defects, anemia, asthma, diabetes, hypertension, hyperlipidemia, nutrient deficiencies, aggression, anxiety, sleep issues, depression and suicidality, and cognitive and behavioral issues (Gundersen & Ziliak, 2015). Impoverished households and households containing people of color are particularly impacted.

The status of food security in Worcester, Massachusetts has been shaped by recent history. Into and during the 20th century, Worcester was a bustling manufacturing hub with many factories and mills run by immigrant workers. But in the last few decades of the 20th century, competition from elsewhere in the world drove many of Worcester's factories and mills out of business (Sullivan, 2021). Nowadays, poverty has increased, the populace struggles to maintain employment, and the city has 29 low-income census tracts, 20 of which are food deserts.

Food assistance organizations are vital to those in need because they play a crucial role in encouraging the consumption of healthy foods. Across the U.S., there are hundreds of food banks which distribute food to tens of thousands of food pantries. Feeding America, the parent organization of more than 200 food banks including local Worcester County Food Bank (WCFB), ensures that their food banks have year-round access to healthy food such as produce, meat, and dairy (More than 53 Million People Received Help from Food Banks and Food Pantries in 2021, 2022; Morello, 2022; Sullivan, 2021). Within the City of Worcester, WCFB distributes healthy food to 22 food pantries and over a hundred across the whole county ("Find Food," n.d.).

One such food pantry is El Buen Samaritano (EBS). EBS was founded in 1991 by Maria and Osiris Reyes, and is currently run by their daughter, Mari González (Franco, 2021). EBS has never closed, not even during COVID, and is open to anyone who needs help. EBS provides food, pet food, baby formula, clothing, and helps clients to find other programs as needed, they even provided COVID vaccines during the pandemic (Programs – El Buen Samaritano, 2020).

Given the impact food pantries like EBS have on their local communities, their ability to scale and keep up with demand is increasingly important. One method of doing this is by incorporating IT infrastructure into their organizations. Technology improves not just the scalability, but also the efficiency of nonprofit organizations, especially in the area of data collection. A digital data platform is scalable, sustainable, and accessible. Furthermore, a digital data platform allows users to present their data in well-organized categories, provide documentation and corresponding visuals (important for funding applications), and better understand their needs and progress.

Introducing technology to an organization can have several benefits, but there can also be some barriers that prevent a smooth transition. Barriers may be external, such as lack of necessary equipment or resources or missing training, or internal, such as beliefs against technology, a lack of vision, a past negative experience, or poor computer skills (Bergson-Shilcock, 2020; Kelly, 2015). These barriers can be overcome with careful planning and execution, but an organization must evaluate and define specific needs and goals, and staff at all levels of the organization must be involved.

Having been using a pen-and-paper system for collecting client demographic data for 30 years, EBS is now looking to transition to a digital system. Last year, a system was implemented using the survey platform JotForm to collect responses online, but at the time EBS did not have the necessary equipment to make use of it, so they switched back to pen-and-paper and the JotForm system fell by the wayside (Cook et al., 2022; M. González, personal communication, February 8, 2023). Now that EBS is switching to a client-choice model, they need more robust software to improve the efficiency of their operations and better serve the community.

Goals, Objectives, and Methods

The goal of the project was to identify barriers to implementing a single digital data collection system at EBS that records all data that the organization needs, and work with them to find and implement solutions. Additionally, we worked to leverage the capabilities of the data collection system to collect all necessary client information and generate reports to present the data to grantors. To complete these goals, we identified five intermediate objectives

for completing the project:

1. Identify the needs and goals of the digital system, as well as any specific features that are important to EBS.

2. Explore how other organizations handle data collection and reporting to their sponsors.

3. Evaluate if JotForm can meet the needs and goals of EBS and compare it with other software options.

4. Explore possible options to improve data reporting.

5. Develop and implement solutions that will work best for EBS.

To address the first objective, we held a semi-structured interview and had conversations with Mari González to understand the goals and needs of a digital data collection system at EBS. We also discussed the motivations Mari had for moving EBS' information gathering to a digital system from a pen and paper format. Considering the goals, needs, and motivations Mari expressed to us, we synthesized the functionalities Mari desired in a digital data collection system as well as the target users. In addition to conversing with Mari, we participated in and observed EBS' food distribution process to learn more about the organization's operations. Our experience preparing and serving food packages to clients at EBS informed our view of how a digital data collection system could benefit all of EBS' operations.

Understanding EBS' needs, we investigated potential solutions and reached out to other food pantries about their data collection system. In this sense, we conducted a semi-structured interview with the operations director of a food pantry located in the Montachusett Region of Worcester County. We inquired about the capabilities of their software to collect data and generate reports. Moreover, we conducted a semi-structured interview with David Reed, WCFB Agency Relations Coordinator, to know more about how other food pantries report data to the food bank. These interviews gave us perspective and ideas to implement a tailored solution for EBS.

We evaluated whether JotForm could fulfill the goals and needs of EBS and compared its features to those of other data collection software. To analyze the features of the different digital data collection systems, we created a cost-benefit analysis of all options. Our cost-benefit analysis accounted for data collection software that met the goals and needs of EBS and their staff the most, and involved the least amount of time, money, resources, and

disturbance. To reflect these qualities, we used the features and needs identified in objective 1 to influence our cost-benefit analysis criteria. The analysis included software options that we learned about at other food pantries we visited as part of objective 2 and through our own investigation. We then showed Mari González our cost-benefit analysis to decide on a digital data collection system for EBS.

Even with an excellent data collection system, there is still the challenge of reporting that data to organizations that supply EBS with resources and funding, specifically, WCFB and the City of Worcester (for the funding from the American Rescue Plan Act (ARPA)). We investigated the report requirements and limitations of these organizations through interviews with our project sponsor and with David Reed, and through our own research. These methods allowed us to understand the reporting limitations and try to find a digital solution that can mitigate them.

With all this information, we developed a solution that would remain effective after our project's completion. Throughout the solution design, we regularly had conversations with Mari to get her feedback. We also considered that the solution should be easy to learn and use for volunteers, as they have a variety of technological skills. Based on the cost-benefit analysis we conducted in objective 3, our team and EBS decided to implement a data collection software called PantrySOFT.

Our team and Mari González scheduled an onboarding training session with an employee of PantrySOFT's Customer Success team to set up the software to meet EBS' requirements. PantrySOFT's IT team had already customized a majority of the questions and answer types that EBS needed to collect client data during food distribution. The employee of Customer Success also gave Mari González and team members administrative accounts, which allowed us to implement our own customization of settings and user interfaces within PantrySOFT. Following this onboarding session, our team investigated the data collection process of PantrySOFT in further detail to verify that EBS had all the client creation, registration, and household member questions needed to start collecting information during food distribution.

Findings

In talking with staff and volunteering at EBS, we found that the organization would benefit from a digital system to speed up the signing in of clients to collect food. EBS had been using paper forms to sign in each

client every week and then collecting that data into an Excel spreadsheet. Another request of the EBS staff was to add inventory tracking as they were transitioning to a client choice model of food distribution and were interested in having data on what supplies clients were most interested in. We created a list of features needed by the final solution (Table 1).

Through our interviews with staff from other food pantries and WCFB, along with our own research, we compiled a list of specialized commercial software specifically designed for use in a food pantry like EBS. We compared the features that each of these options offered and narrowed our options down to PantrySOFT and Link2Feed. We then began reaching out to the sales teams of both companies to learn more about these two services. While PantrySOFT was very responsive and gave us a detailed demonstration of everything they had to offer, Link2Feed's sales team was difficult to communicate with and took over a week to schedule a meeting. Due to the time constraints of the project and already having positive testimonies from other food pantries for PantrySOFT, both the research team and EBS agreed that PantrySOFT was the best option to move forward with.

At the same time, we learned about the process EBS needs to go through to report data to WCFB. We already knew the process was tedious, but we wanted to learn why the system was so outdated. We spoke with David Reed, who informed us that WCFB is not necessarily against changing and upgrading the system as once thought. Rather the food bank is concerned that making any large changes could possibly alienate smaller pantries that still use paper forms and have no plans to change to a digital system. As for the issue of the ARPA reporting, we were unable to make any direct changes as the contracts and reporting guidelines had not been finalized at the time of writing. However, we did ensure that the software solution we chose can collect signatures of clients in the hopes that the city would accept a digital signature in place of a paper form.

Once EBS had signed a contract with PantrySOFT, we took over the task of configuration of the software and worked with PantrySOFT's employees to ensure the system was configured to meet EBS' needs. We learned about PantrySOFT's workflow for collecting client data, which involves the use of the new client, new registration, and new household members user interfaces. In addition, there is also a client lookup feature that allows volunteers to search for existing clients returning to the food pantry and record their visits. During the first week using PantrySOFT, the data collection process will move more slowly as all visiting clients will need to be added to the system, registered, and get linked to household members. EBS should become comfortable using the interfaces for registering a new household and logging visits to the pantry before exploring more advanced PantrySOFT features. The organization should also work with PantrySOFT's IT team to build and acquire the necessary dynamic data formats needed for WCFB and federal government reporting during the initial weeks of using PantrySOFT.

While we have not deployed PantrySOFT at the time of writing, it is ready to use; the only remaining step for EBS is to simply begin using the software. Once PantrySOFT is implemented, there are a number of extra features that EBS can begin taking advantage of such as inventory management and assigning barcodes to clients for faster check in.

Recommendations

Going beyond our project, PantrySOFT could enable EBS to make major changes to their operations such as opening for food distribution on more days of the week as they will be capable of tracking individual client visits. This would increase the availability of the food pantry throughout the week while keeping a record of client visits could ensure that no client takes an unfair amount of food. If EBS eventually occupies a larger building allowing more space for clients to select items, the food pantry can also invest in shifting from a client choice system to one that operates more like a grocery store. Using a grocery store model, clients could more freely choose the food that they want without the close supervision of a volunteer. In addition, PantrySOFT could be used to digitally track how much of each item a client takes from the pantry. EBS can ensure that while clients can take any food they desire, they are also not checking out too many of a given item.

Outside of the scope of EBS' use of PantrySOFT, there are also opportunities for future work to improve the efficiency of WCFB's client data portal and reporting to the City of Worcester for ARPA funding. A potential future project team could coordinate an updated data portal solution with WCFB and its many partner food pantries, and the level of comfort with technology of each organization would need to be considered. Not all food pantries working with WCFB use software to collect data, and so a solution for faster data reporting would need to be accessible to all partner organizations. In terms of digitizing the client data used to complete the reporting for ARPA funding, a digital solution for sending the required data in the correct format

would need to be discussed with the City of Worcester.

In the modern digital age, there is no reason for non-profits like food pantries to be excluded from the benefits of technology. Using PantrySOFT, the staff and volunteers of EBS can spend less time organizing data on paper forms and more time helping the community and supplying resources to those in need.

Project Team

Matthew McAlarney - 2024 Computer Science

I am a Computer Science Major in the class of 2024. I am from Lexington Massachusetts. Outside of work and class I am a turntablist (Scratch DJ) and avid listener in the Hip Hop and Rap Rock/Alternative Metal music genres. I am a member of the WPI Student Rock Association, and I also enjoy running outdoors. I have had a very fulfilling experience working with EBS as I have come to value the importance of serving the local community.

Fabrizio Filizzola - 2024 Computer Science

I am a Computer Science major graduating in 2024. I am an international student from Paraguay. Outside of class, I am passionate about sports, especially soccer and basketball. I also love running and playing video games. Working with EBS has been a great experience, where I could apply the lessons I learned in WPI to give back to the community.

Leo Morris - 2023 Robotics Engineering

I am a Robotics Engineering Major from Lunenburg Massachusetts graduating in 2023. Ontop of classes and work I am an avid mountain biker, play saxophone in the WPI Marching and Pep Band and recently started downhill skiing. As my final project at WPI, I have really enjoyed working with EBS and the feeling of giving back to the community.

Vivian Reno - 2024 Computer Science

I am a Computer Science Major in the class of 2024, and a transgender woman. I'm from Grafton, Massachusetts, but originally from Maryland. I'm outdoorsy and artsy, but also a nerdy gamer who is obsessed with video game soundtracks. I was in Sound Logic last year, and I'm in Alden Voices this year, though I'm largely taking IQP term off. I identify as a jack of all trades, in that I can learn to have above-average skill in anything I set my mind to.
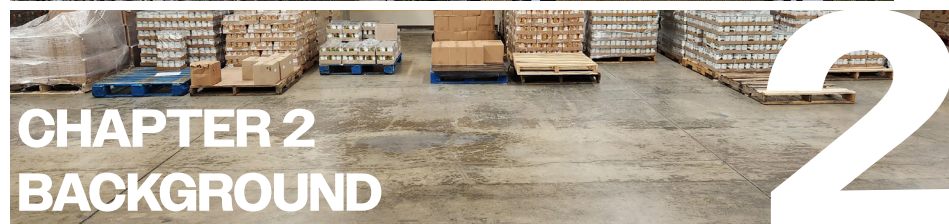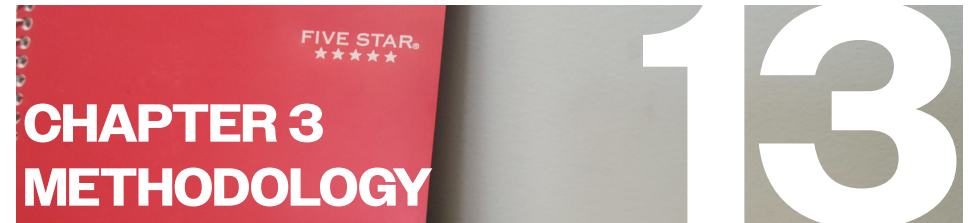
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CHAPTER 1 INTRODUCTION

Food insecurity is a serious health issue in the United States. The United States Department of Agriculture (USDA) defines food insecurity as restricted access to sufficient food for a healthy lifestyle due to a shortage of money and additional resources (Martin, 2022). From 2001 to 2021, the rate of food-insecure US households never went below 10 percent, with rates above 14 percent for several years (Martin, 2022). Those who are food insecure can suffer from serious health consequences such as malnutrition, diabetes, hypertension, hyperlipidemia, negative sleep results, and mental health issues including depression (Gundersen & Ziliak, 2015). US households with incomes below the poverty line are the most affected and vulnerable to these health consequences of food insecurity.

A proven solution to mitigate food insecurity in the US is the work done by food pantries. A food pantry is a local distribution center that provides food directly to those in need within the community. Food pantries get their food from regional food banks, and from community and business donations. Within the City of Worcester, Worcester County Food Bank (WCFB) stocks 22 food pantries, according to the interactive map on their Web site ("Find Food," n.d.). In total, there are 33 free food resource locations in Worcester (Bureau, 2022). El Buen Samaritano (EBS) is one such food pantry in Worcester that has been tirelessly fighting food insecurity for the last three decades. EBS was founded in 1991 by Maria and Osiris Reyes, immigrants from Puerto Rico and the Dominican Republic, respectively, and is currently run by their daughter, Maricelis "Mari" González (M. González, personal communication, February 8, 2023). They serve about 500 families monthly and welcome everyone who is in need (Franco, 2021).

For the last 30 years, EBS has been using a pen-and-paper system to collect demographic data on their clients to report data to WCFB; now, they intend to transition to a digital data collection system. A pen-and-paper system is tedious to organize, and it is difficult to present the data to apply for grant funding. EBS needs documentation and visualizations to demonstrate the work they have been doing. In a previous WPI project, a team of students created a JotForm system to replace paper forms. However, the system was not adopted after the project finished and the operations at EBS continue to be recorded using a pen-and-paper system.

The overall goal of the project was to identify barriers to implementing a digital data collection system at EBS and work with the organization to find and implement solutions. Additionally, we worked to leverage the capabilities of the current data collection system to collect more data and generate reports to present the data. To complete these goals, we identified five intermediate steps to completing the project:

1. Identify the needs and goals of the digital system, as well as any specific features that are important to EBS.

2. Explore how other organizations handle data collection and reporting to their sponsors.

3. Evaluate if JotForm can meet the needs and goals of EBS, and compare with other software options.

4. Explore possible options to improve data reporting.

5. Develop and implement solutions that will work best for EBS.

The background chapter comes next with relevant information about topics such as food insecurity, food pantries, and technology at NPOs. Next, the methodology chapter has the objectives and research methods explaining how the project was carried out in detail. This is followed by the findings of our research, which conveys the knowledge we gathered and organized for integrating a digital system into EBS' base operations. Our recommendations describe how EBS can continue to take advantage of a digital system as the organization grows. Finally, our conclusions express our reflections on the project.

CHAPTER 2
BACKGROUND

2.1 FOOD INSECURITY IS A MAJOR ISSUE IN THE UNITED STATES

Food insecurity is an unfortunate reality for many households throughout the US, and it is intertwined with the economy and public health. According to the United States Department of Agriculture (USDA), food insecurity is defined as restricted access to sufficient food for a healthy lifestyle due to a shortage of money and additional resources (Martin, 2022). The USDA utilizes the Economic Research Service (ERS), a federal statistical organization that collects and synthesizes data about food insecurity rates in US households. The ERS administers a national survey annually to collect this information, and the research service also accounts for different levels of food insecurity throughout US households. The USDA reports the national food insecurity rate such that it encompasses both low food security and very low food security rates of US households.

Food insecurity has been a serious health issue in the United States throughout much of the 21st century. As shown in Figure 1, the net change in the rate of food-insecure US households between 2001 and 2021 was small, a decrease of only 0.5 percent, and there were several years in this period where this rate exceeded 14 percent. The rate of food-insecure US households grew from 10.7 percent in 2001 to 12 percent in 2004 (Martin, 2022). In addition, the Great Recession of 2008 is connected to a significant increase in food insecurity (Coleman-Jensen, 2021). As a result, the rate of food-insecure US households in 2008 reached 14.6 percent (Martin, 2022). This percentage stayed higher than 14 percent during the following three years, and it peaked

at 14.9 percent in 2011. Although the rate of food-insecure US households has decreased since 2011, 10.2 percent of US households were still food insecure by 2021. The minimal net change in the national rate of food-insecure US households indicates that much work needs to be done to support local food assistance organizations that help alleviate food insecurity. Furthermore, the Great Recession demonstrated how easily substantial shifts in the global and national economy can affect an individual's ability to afford healthy foods. It is critical that food assistance organizations can respond to these changes by meeting the needs of food-insecure households.

Figure 1: *Rate of Food-Insecure US Households, 2001-2021. Data from Food Security and Nutrition Assistance by USDA (USDA ERS - Food Security and Nutrition Assistance)*

Food insecurity throughout the US disproportionately affects households with incomes below the poverty line, households with people of color, and households located in certain living environments. As shown in Figure 2, 32.1 percent of US households with incomes below the poverty line were food insecure in 2021 (Martin, 2022). This means that food insecurity rates were greatest for households with incomes below the poverty line that year. In addition, food insecurity rates were higher than the national average for Black and Hispanic households; the food insecurity rate for Black households

is close to double the national average. Big cities and rural environments experienced food insecurity more frequently than suburban communities in 2021 as well. The common ethnic and economic backgrounds of individuals who face food insecurity are foundational knowledge for understanding why certain communities need help accessing nutritious food, and the health consequences of food insecurity warrant attention to these communities as well.

Note: Food-insecure households include those with low food security and very low food security.
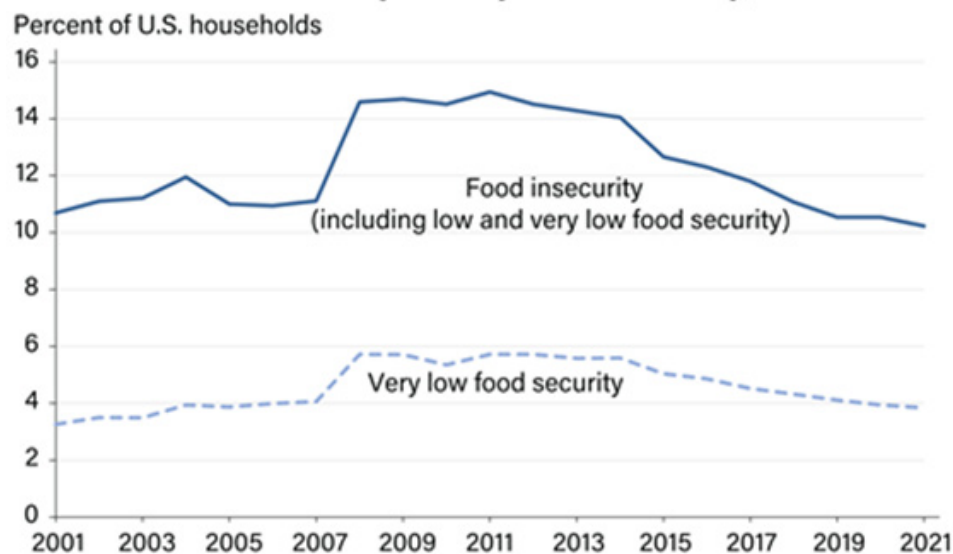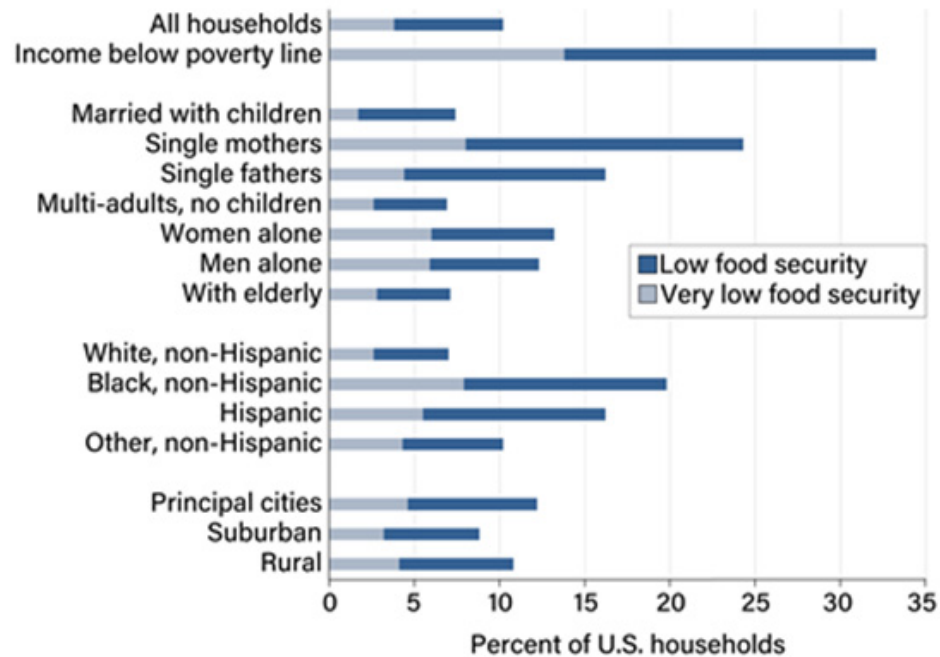
Figure 2: *Prevalence of Food Insecurity by US Household Characteristics, 2021. Data from Food Security and Nutrition Assistance by USDA (USDA ERS - Food Security and Nutrition Assistance).*

2.1.1 Food Insecurity is Linked to Negative Health Risks

Food insecurity negatively impacts the physical and mental health of children and adults in the US due to low intake of healthy foods, and it is connected to greater chances of food-insecure children developing poorer health results than children living in food-secure households. Gundersen and Ziliak (2015) found that food insecurity in children is linked to higher odds of birth defects, anemia, insufficient nutrient consumption, cognitive and behavioral issues, aggression, anxiety, hospitalization, asthma, depression, suicidal thoughts, and poor oral health. Their study found that food insecurity in adults is also associated with a certain set of health consequences. The authors concluded that food insecurity affecting nonsenior adults is connected to insufficient nutrient consumption, diabetes, hypertension, hyperlipidemia, negative sleep results, mental health issues, and depression. The authors also discovered that within the category of nonsenior adults, mothers who are food-insecure are two times more likely to report mental health issues and three times more likely to have oral health issues than mothers living in food-secure households. The study also investigated food insecurity in senior adults, which is linked to insufficient nutrient consumption, adequate or poor health, and depression. Furthermore, the authors found that food-insecure senior adults were over two times more likely to report adequate or poor health than food-secure senior adults. The connection of food insecurity to unfavorable aspects of physical and mental health across all ages implies that diet quality plays a vital role in ensuring the well-being of an individual. Moreover, different levels of food insecurity are also connected to the extent of mental health conditions in an individual.

The results of a Canadian survey known as the Canadian Perspective Survey Series 2 provide further insight into the connection between food insecurity and mental health explored in Gundersen and Ziliak's (2015) findings. Polsky and Gilmour (2020) conducted a study analyzing the results of the Canadian Perspective Survey Series 2. The study demonstrated that food insecurity is associated with poorer mental health, and it was administered to Canadians ages 15 or older in May 2020 when the COVID-19 pandemic caused household financial consequences. The survey includes several questions about the perceived mental health of respondents. The study gathered that Canadian survey respondents who experienced food insecurity had a higher chance of evaluating their mental health as fair or poor and anxiety symptoms as moderate or severe than those living in food-secure

households. The study also concluded that among Canadians who reported living in households dealing with food insecurity within 30 days of taking the survey, about one in five Canadians expressed fair or poor mental health and moderate or severe anxiety symptoms. Furthermore, the study showed that higher levels of food insecurity were connected to higher chances of one evaluating their mental health as fair or poor and anxiety symptoms as moderate or severe. The authors found that Canadians who lived in moderately food-insecure households had almost a three times greater chance of expressing mental health and anxiety conditions. In addition, Canadians living in severely food-insecure households had almost a four times greater chance of expressing fair or poor mental health and almost a seven times greater chance of reporting moderate or severe anxiety symptoms. The link between elevated food insecurity and greater chances of perceived mental health issues suggests that a consistent lack of nutritious foods limits an individual's ability to develop a healthy lifestyle.

Massachusetts and Worcester are not exempt from food insecurity. Understanding the scope of food insecurity within the city is essential to developing effective solutions to community hunger and nutrition deficiencies.

2.1.2 Food Insecurity Impacts Low-Income Residents in Worcester, Massachusetts

Food insecurity affects the livelihood of Worcester households as local inaccessibility to quality food has been connected to economic, geographic and health consequences for immigrants, adults, and groups of color during the city's recent history. In the last few decades of the 20th century, working-class and immigrant families in Worcester struggled with food insecurity because of a loss in manufacturing jobs and prevalent poverty levels (Sullivan, 2021). Deindustrialization occurred in Worcester due to the city's collective inability to sustain the costs of established manufacturing companies competing with other ones across the globe. As a result, quite a few Worcester manufacturing companies closed; abandoned factories and mills appeared in Worcester throughout the 1990s. Many immigrant groups stayed in Worcester despite not having employment opportunities in the manufacturing industries that originally brought them to the city.

In 2013, three WPI engineering students conducted a study known as the Worcester Community Food Assessment, which concluded that obesity and diet-related diseases are more common in Worcester adults than the average in Massachusetts (Sullivan, 2021). The frequency of obesity and diet-related diseases may be connected to the strong presence of food deserts in Worcester. Worcester food deserts unequally impact low-income groups, immigrants, and groups of color (Sullivan, 2021). The USDA identifies 29 Census tracts in Worcester that are low-income, of which 20 are considered food deserts. The average demographic makeup of the 20 low-income food desert tracts is 54.5% white, which means that a sizeable demographic is also comprised of those from non-white ethnic groups. Not only have immigrant groups struggled to find stable employment following deindustrialization in Worcester during the past several decades, but the lack of access to affordable, nutritious food in several parts of the city also exacerbates local food insecurity. Moreover, the low nutritional value of foods – such as candy and chips – provided by convenience stores, drug stores and pharmacies across Worcester County suggests poor diet quality among low-income households.

In addition to the USDA's data concerning the distribution of food deserts in Worcester, the Worcester Regional Research Bureau provides a visual map (Figure 3) of Worcester County with the locations of convenience stores, drugstores, and pharmacies. The nutritional value provided by convenience stores, drug stores, and pharmacies is categorized according to the Food Access Index (Bureau, 2022). In 2016, the Department of Urban & Environmental Policy Planning of Tufts University and the Metropolitan Area Planning Council (MAPC) developed the Food Access Index to evaluate the ability to obtain food in Massachusetts. The Worcester Regional Research Bureau uses the Food Access Index to assess the accessibility of food sellers across Worcester County based on their size and ability to give healthy food to consumers. Convenience stores, drug stores, and pharmacies are assigned lower weights in the Food Access Index, which means that they offer lower access to healthy foods. The map divides Worcester County into different Census tracts where darker shades of blue indicate greater poverty rates and lighter shades of blue indicate lower poverty rates.

As shown in Figure 3, many convenience stores, drug stores, and pharmacies are concentrated around the center of Worcester County in Census tracts that have poverty rates that at least exceed 5%; several of these food sellers exceed poverty rates of 15% and 30% as well. In contrast, there are fewer convenience stores, drug stores, and pharmacies in the outside areas of Worcester County with Census tracts that have poverty rates between 5% and 15%, as well as with Census tracts that have poverty rates less than
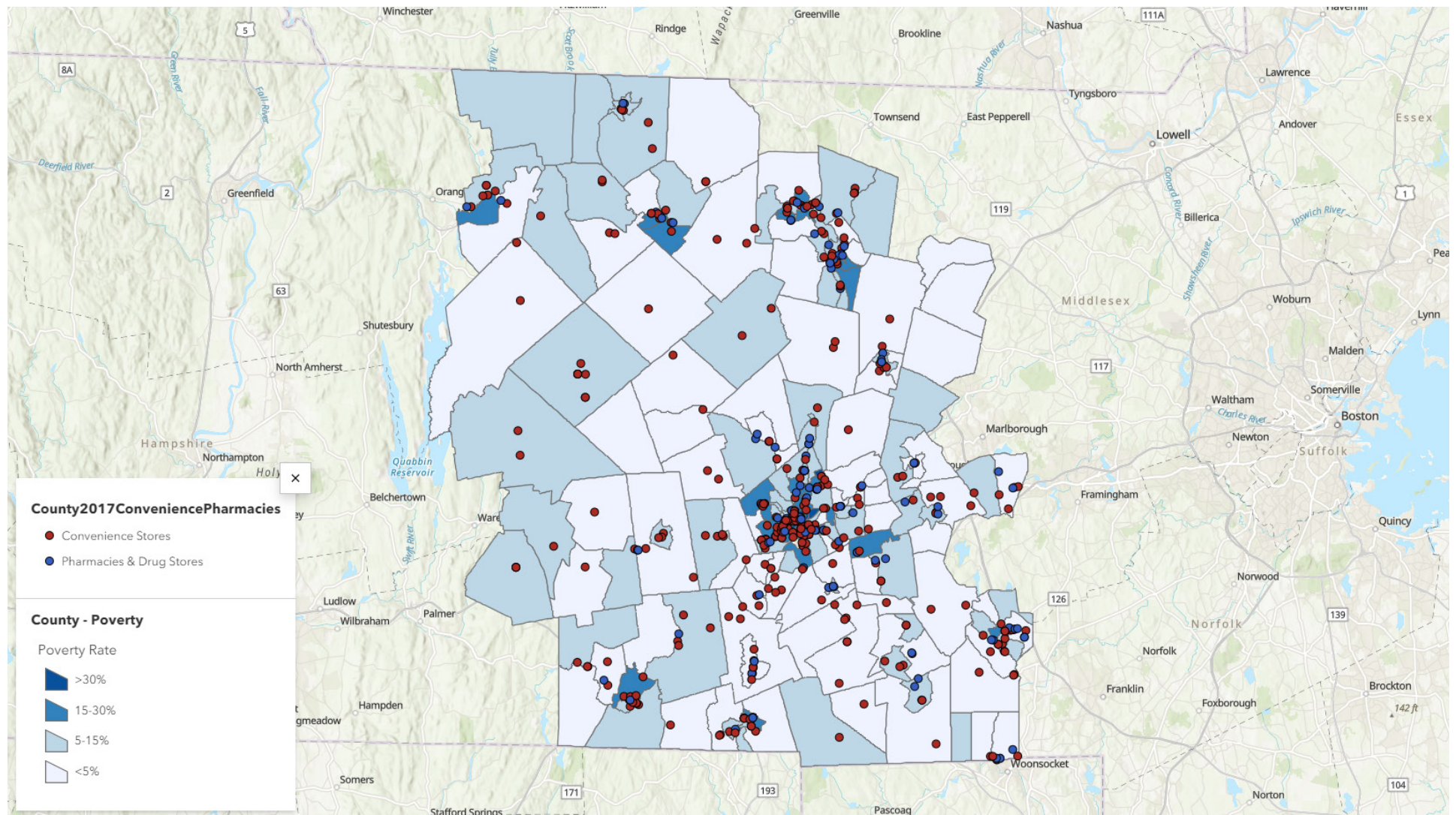
Figure 3: *Convenient Stores, Drugstores, and Pharmacies in Worcester County. Data from Is Worcester County Food Insecure? It Depends on Where by Worcester Regional Research Bureau (Worcester Regional Research Bureau – Is Worcester County Food Insecure? It Depends on Where)*

5%. In 2016, pharmacies and drug stores made up 142 of 317 total food retailers in Worcester County, which means that 44.8% of total food retailers sold food not deemed as healthy (Bureau, 2022). In summary, almost half of all food retailers in Worcester in 2016 did not sell healthy food according to the Food Access Index and many of these retailers are located near the center of Worcester County in areas with higher poverty rates. Individuals experiencing higher levels of poverty living around the center of Worcester County have access to more convenience stores, drug stores, and pharmacies than individuals experiencing lower levels of poverty living in the outer Census tracts. Therefore, those living in Census tracts with higher poverty levels around the center of Worcester County also have access to more unhealthy food than those living in outer Census tracts with lower poverty levels.

In relation to the access to a larger number of unhealthy foods in Census tracts with higher poverty levels in Worcester County, the USDA conducted the National Household Food Acquisition and Purchase Survey (FoodAPS) between 2012 and 2013; the USDA investigated the food spending choices of US households to gain knowledge about what influences the demand for convenience foods (Rahkovsky & Jo, 2018). The USDA found that lower incomes steered households to buy less expensive convenience foods such as fast-food or pre-prepared foods. Worcester County individuals earning lower incomes and experiencing poverty not only deal with food insecurity, but they may also be more likely to buy unhealthy convenience foods. As a result, these individuals may also lack the nutritional diet needed to achieve a healthy lifestyle. Food assistance organizations are vital to those in need because they play a crucial role in encouraging the consumption of healthy foods.

2.2 Food Banks and Pantries are Proven Solutions to Mitigate Food Insecurity

"Food banks, ...serving as brick-and-mortar food relief options for food insecure individuals [are] one of the most common and time-tested methods of countering food insecurity," as stated by Clark University graduate David Sullivan (2021, p. 32). Hundreds of food banks across the United States distribute food to tens of thousands of food pantries, which in turn serve local communities (Marriott et al., 2022).

The importance of these organizations cannot be understated, especially during the COVID-19 pandemic. Between 2019 and 2020, food pantry usage across US households rose from 4.4% to 6.7%, surpassing the previous record of 5.5% in 2014 (Coleman-Jensen & Rabbitt, 2021).

Furthermore, the percentages of low-income and food-insecure households using food pantries in 2020 were particularly high as shown in Figure 4.
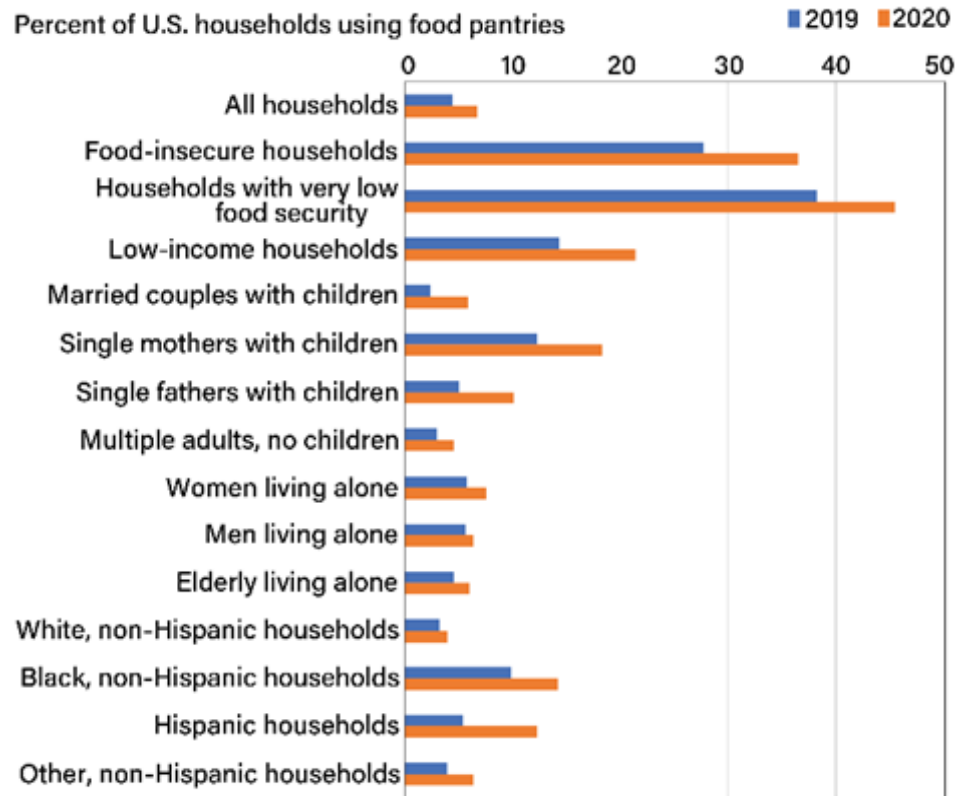
Notes: Food insecurity includes low and very low food security. **Low-income households** include households with an income-to-poverty ratio under 1.85. **Race/ethnicity categories** are based on the race/ethnicity of the household reference person. For **men living alone**, the difference from 2019 to 2020 was not statistically significant for that category. The change from 2019 to 2020 was statistically significant for all other categories with 90-percent confidence.

Figure 4: *Comparison of Food Pantry Usage From 2019 to 2020. Copied from Food Pantry Use Increased in 2020 for Most Types of U.S. Households by Alisha Coleman-Jensen and Matthew P. Rabbitt (2021) USDA Economic Research Service.*

2.2.1 Food Pantries Serve Nutritious and Healthy Food

While it is commonly believed that food pantries serve primarily nonperishables and canned and dried foods, that is not necessarily the case. Feeding America ensures food pantries within its network can access healthy foods, such as produce, meat, and dairy, year-round (Morello, 2022). Seventy-one percent of food provided through Feeding America's network promotes good health, according to their website (Our Work Providing Healthy Foods, n.d.). However, access to healthy food does not ensure healthy eating; not all food pantries have nutrition policies, and the content of those policies varies. A pair of studies found that in Maine, 40% of client-choice pantries provided clients with dietary recommendations while 60% of prepackaged-bag pantries had guidelines on the content of a bag; in North Carolina, six out of seven food pantries surveyed had no nutrition policy (Joly et al., 2020; Thompson et al., 2019). Food pantries can do more to promote healthy eating; research has shown positive effects from nutrition and cooking education, intentional display organization, and diabetes support (An et al., 2019). In Worcester, organizations such as food pantries provide opportunities to obtain healthy food locally.

Figure 5: *Stacks of food from the MEFAP program at the Worcester County Food Bank's warehouse. The ammount of food a pantry can take is determined by the number of households they serve.*

2.2.2 Organizations in Worcester Distribute Healthy Food to Clients

The food bank covering Worcester, Worcester County Food bank (WCFB), is a Shrewsbury subsidiary of Feeding America (Sullivan, 2021). According to David Reed, one of WCFB's staff, the food bank receives food from the Massachusetts Emergency Food Assistance Program (MEFAP), a state-run program that purchases food for the various food banks in the state, as well as The Emergency Food Assistance Program (TEFAP), a USDA program that supplies food to all the food banks in the country (D. Reed, personal communication, March 28, 2023). These programs provide not only non-perishable and canned goods but also plenty of fresh produce, meats, and dairy products. Many local businesses and grocery stores also directly donate extra food to WCFB which supplements and diversifies the food they have to offer.

Local partner organizations such as food pantries pick up food from WCFB's warehouse, seen in Figure 5, based on the number of families and individuals they helped. These organizations schedule an appointment to WCFB and select the items according to the needs of the community they serve. Partner organizations acquire food at different times, and some visit WCFB more frequently than others. Organizations provide their own vehicles, and the partners' own staff loads, drives, and unloads those vehicles. The organizations then distribute this food to clients at their respective pantries (Campbell, 2022).

WCFB stocks 22 food pantries within the City of Worcester, according to the interactive map on their Web site ("Find Food," n.d.). In total, there are 33 free food resource locations in Worcester (Bureau, 2022) – other organizations in Worcester that run food pantries include Salvation Army, AIDS Project Worcester, the Boys and Girls Club, and four of the local colleges (specifically Clark University, Quinsigamond Community College, Worcester State University, and UMass Medical School) (Sullivan, 2021).

Worcester has several organizations beyond food pantries that help to address food insecurity (Sullivan, 2021). The Regional Environmental Council (REC) sponsors 67 community gardens through its UGROW program, interns and educates teens in urban agriculture through its YouthGROW program, and hosts both standing and mobile farmers markets. The Boys and Girls Club, in addition to hosting a food pantry, runs the Kids Café program in which

children prepare meals for their families, and has partnered with 2Gether We Eat to teach adolescents to set up and run hydroponic farms. The Worcester Regional Food Hub supports local businesses by providing a shared commercial kitchen, and by aggregating locally grown crops and selling them wholesale. The Food Hub provides food for REC's farmers markets, Boys and Girls Club's food pantry, Worcester Public Schools, colleges, hospitals, and restaurants. Finally, Woo Fridge hosts community refrigerators that operate with a "take what you need - leave what you can" policy and can be accessed at any time.

2.2.3 The American Rescue Plan Act Will Provide Federal Money to Organizations

To assist with COVID 19 pandemic relief, the City of Worcester was awarded $146 million in federal and state funding through the American Rescue Plan Act (ARPA) of 2021 (ARPA, 2023). This funding is intended to be put toward neighborhoods and communities impacted by the COVID-19 pandemic. As part of the plan, a total of $10 million was set aside for community organizations such as food pantries and community centers (Batista, 2023). Organizations were allowed to submit requests for ARPA funding up to $250,000 for assistance with their community programs, or up to $1,000,000

for capital improvement projects. Organizations that are selected for funding must sign a grant agreement with the City of Worcester documenting how these funds will be used. Furthermore, this agreement specifies rules for grant draws, data reporting and all federal and state regulations, citations and provisions for compliance. (Community Projects and Programs RFP, n.d.).

2.2.4 El Buen Samaritano Has a Sizable Impact on the Local Community

One Worcester organization that was awarded ARPA funding is El Buen Samaritano (EBS) (Batista, 2023). EBS is a non-profit food pantry and community center located on Piedmont Street (About – El Buen Samaritano, 2020; Shih, 2021). It is not a subsidiary of any other organization (M. González, personal communication, February 8, 2023), although it does receive grants, funding, and food from other organizations. EBS was founded in 1991 by Maria and Osiris Reyes, immigrants from Puerto Rico and the Dominican Republic, respectively (Franco, 2021), and is currently run by their daughter, Mari González, who was responsible for the creation of the current logo (Figure 6), Web site, and social media accounts (M. González, personal communication, February 8, 2023). EBS primarily serves Spanish-speaking families but welcomes anyone who needs help. They have never

Figure 6: *El Buen Samaritano's building sign*

closed, not even during the pandemic, when the number of families served monthly, previously around 500, peaked at 972 (Franco, 2021). Besides food, EBS distributes pet food, baby formula, and clothing (Programs – El Buen Samaritano, 2020). They also provide COVID-19 vaccines, help people find other community resources, and plan to offer youth foster care in the future.

Given the impact food pantries like EBS have on their local communities, their ability to scale and keep up with demand is increasingly important. One method of doing this is by incorporating IT infrastructure into their organizations.

2.3 Technology Increases the Efficiency of Nonprofit Organizations

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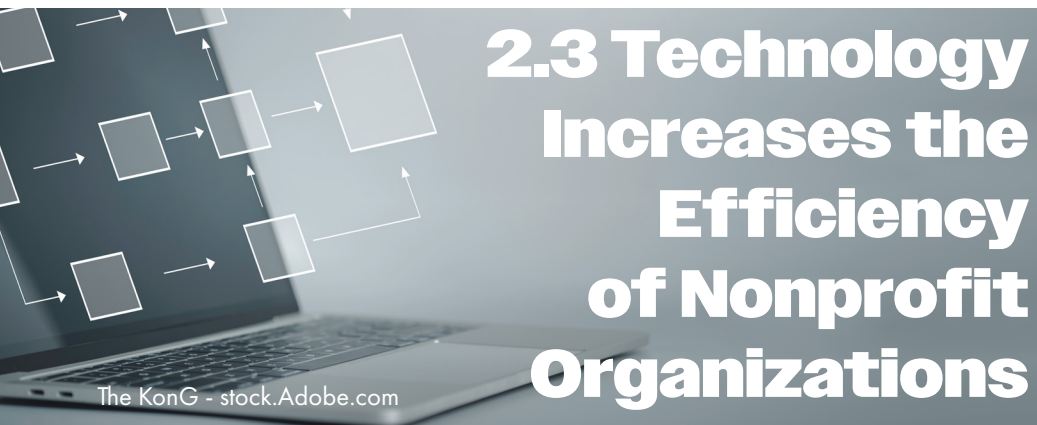
Incorporating technology in an organization can have many benefits to its operating system and service delivery; technology has the power to make the organization's operations more efficient, scalable, and accessible. As Hackler & Saxton (2007) explain, technology has the potential to reconfigure the structure and relationships of an organization to improve its structure and resource management. These improvements translate into a better customer experience by making the service faster and more organized. Technology takes care of repetitive tasks with efficiency, which allows the organization to focus its efforts on improving the services and carrying out innovative solutions. Besides freeing up time to improve the service, technology offers scalable data collection and documentation for historical data. Digital tools transform repetitive and time-consuming activities into a well-structured and efficient system at the service of the organization.

Adopting a digital data collection system leads to an increase in productivity (Hackler & Saxton, 2007). Unlike a pen-and-paper system, a digital data collection system allows multiple users to read and write at the same time. Digital data collections allow for real-time responses, which can be crucial for some activities such as in the medical field (Christie et al., 2013). Moreover, digital systems create a more scalable and sustainable framework for data collection. Well-designed software has the capability to handle large amounts of information and streamline work. In addition, keeping track of information is easier because digital information is accessible and difficult to lose. As a result, digital systems promote efficiency in an organization by keeping data accessible, scalable, and secure.

Furthermore, IT in data collection offers a convenient way to communicate and visualize historical data. A digital system can collect large amounts of information from an organization and present them in well-organized categories. From this feature, organizations can have a better understanding of their progress and needs. Having first-hand data visualizations can improve decision-making by presenting information that would otherwise have been difficult to process (Unwin, 2020). Besides, IT allows an organization to have documentation and visuals ready to communicate their work. Having well-organized documents is important for creating funding applications and organizing paperwork. Also, visuals help to convey understanding of the organization's progress and trends (Unwin, 2020). Overall, IT offers convenient documentation and visuals of historical data that can help for efficient planning and analysis of the organization.

2.3.1 There are Barriers to Implementing Technology

Introducing technology to an organization can have many benefits, but there can also be some barriers that prevent a smooth transition. Sometimes these are external barriers that are outside the control of an individual employee such as a lack of equipment or resources, limited time in their schedule to learn, or missing necessary training (Kelly, 2015). Other barriers are internal, and can include personal beliefs against technology, a lack of vision on how to best utilize it, or a past negative experience. These barriers can also be interconnected; for example, poorly planned implementation may lead to insufficient resources, negatively impacting the experience of employees.

There is also the possibility that employees may not have the computer skills to use a digital system. Shown in Figure 7, a report in 2020 found that about a third of adults aged 16-64 were considered to have limited or no

digital skills (Bergson-Shilcock, 2020). Individuals in the "Limited" category are those who can perform only simple tasks on a computer. Those in the "None" category either have never used a computer or could not complete basic tasks. Having limited computer skills can also affect the personal beliefs mentioned previously, as there is a greater perceived difficulty in learning and thus less willingness to adopt a technology platform (Kelly, 2015). Interestingly however, among those individuals who lack computer skills, many were perfectly comfortable using other devices such as mobile phones (Bergson-Shilcock, 2020). This would imply that it may be an issue of experience or familiarity rather than not understanding or refusing to learn how to use technology.

Fortunately, many of these barriers can be solved through careful planning and execution of technology integration. It is important that the planning phase includes all levels of staff, not just executives or administrators, so that groups who might see a drastic change in their workflow have a voice in how that change takes place (Kelly, 2015). Additionally, the specific needs and goals should be evaluated and explicitly defined in a plan, instead of blindly adding technology with no specific measurement for success.

2.3.2 EBS Could Benefit from a Digital System

El Buen Samaritano (EBS) is looking to fully transition to a digital system. The organization has been utilizing paper forms for the last 30 years to collect information on residence, age of family members, primary income,

Computer Skills of US Adults in 2020

None: *Has never used a computer or could not complete 4 of 6 basic tasks including text highlighting*

Limited: *Can use a general system but struggles with specific tasks like sorting email*

Proficient: *Can complete most tasks but may struggle with a new interface or tasks requiring multiple windows*

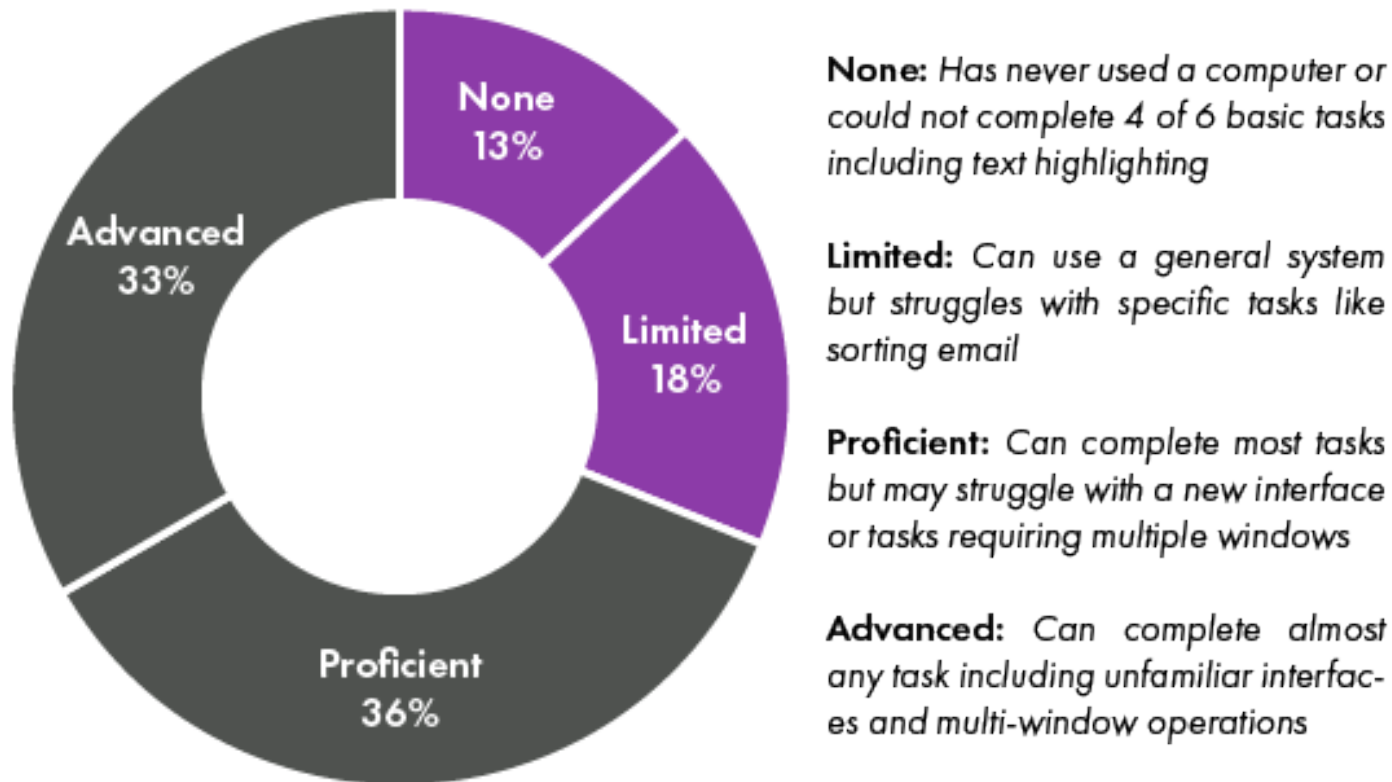**Advanced:** *Can complete almost any task including unfamiliar interfaces and multi-window operations*

Figure 7: *Computer Skills of U.S. Adults ages 16 - 64 in 2020. Data adapted from Nearly 1 in 3 workers lack foundational digital skills, new report finds by Amanda Bergson-Shilcock (2020) National Skills Coalition.*

and what assistance programs are used by each of their clients (Cook et al., 2022). Currently, a volunteer from EBS needs to fill out two forms for each client that collects food. The first form, shown in Appendix A, is used to collect data for the Worcester Country Food Bank (WCFB) and all the data must be aggregated each month to report back to WCFB. The second form, shown in Appendix B, is needed for federal grants. Filling out these forms is slow and much of the data they collect is repeated such as family size and zip code.

Additionally, EBS is beginning to change their operations to a model that allows their clients to choose what they want instead of receiving pre-packaged boxes (M. González, personal communication, March 29th, 2023). The new shelving units they purchased through a grant to make this change in distribution can be seen in Figure 8. This new operating procedure means that tracking inventory will become necessary for the organization. Having a system to manage the tracking digitally will save significant amounts of time and paper; the data will be stored in a digital database that can be accessed at any time.

In Spring 2022, another project team implemented a digital system using JotForm (See Appendix B), an online tool to collect survey responses, and an Excel template to format the data in a way that can be easily entered into Worcester County Food Bank's online portal (Cook et al., 2022). Unfortunately, the project did not last beyond the project's duration as EBS lacked the equipment to make full use of it (M. González, personal communication, February 8, 2023). Once the team left EBS, the organization eventually returned to using pen and paper forms.

Going digital, the organization can keep track of key data and produce visualizations to present to grantors and display to the community. It will also open the door to gathering more data as federal grant requests require different data than the reports to Worcester County Food Bank (M. González, personal communication, February 8, 2023). Finally, having an efficient digital system will allow the volunteers and staff to spend more time helping the community, instead of copying numbers from slips of paper.

Figure 8: *Food stacked on shelves at EBS to be hand picked by clients*

CHAPTER 3
METHODOLOGY

The goal of the project was to identify barriers to implementing a single digital data collection system at EBS that records all data that the organization needs, and work with them to find and implement solutions. Additionally, we worked to leverage the capabilities of the data collection system to collect all necessary client information and generate reports to present the data to grantors. To complete these goals, we identified five intermediate objectives for completing the project:

1 Identify the needs and goals of the digital system, as well as any specific features that are important to EBS.

2 Explore how other organizations handle data collection and reporting to their sponsors.

3 Evaluate if JotForm can meet the needs and goals of EBS, and compare with other software options.

4 Explore possible options to improve data reporting.

5 Develop and implement solutions that will work best for EBS.

3.1 Identifying the Goals of the Digital System

The first step for implementing a digital system is to understand the goals and needs of this technology. A digital data collection system is helpful only if it can achieve the organization's goal. So that we could tailor our solution around the objectives and needs of the technology, we identified the vision for the digital system. In addition, we created a baseline to evaluate if the current system or a solution we developed meets the demands of EBS. This objective served as a framework for us to develop a digital data collection system that is sustainable at EBS.

To accomplish this objective, we conducted a semi-structured interview and had additional conversations with Mari González (EBS Program Director) to understand the needs and goals of a digital system. We understood the motivations for EBS to transition to a digital data collection system. We also gathered information about what functionalities Mari expected for the digital system and their priorities. Identifying the users of the digital system was another important aspect of the interviews. Overall, we obtained a picture of the purpose of the system, its important functions, how the system is carried

Figure 9: Team members helping bring food into EBS. We spent about 6 hours a week volunteering at EBS to learn their operations and build relations with the other volunteers.

out, and where there are barriers in its use. Sample interview questions are included in Appendix D.

To take full advantage of a digital system, we learned about EBS' operations. We started with participant observation by getting involved with the food distribution process at EBS (Figure 9). Initially, we did not implement any changes to the regular operations and allowed the volunteers to use the paper forms and distribute food as normal. This enabled us to see the usual processes at EBS and learn how the volunteers interact with clients. By "Hanging out" with EBS' staff, as Victor De Munk (1998) describes it, we learned all the details and nuances of the work at EBS that we could never gain from interviews alone. Through this observation, we gained an understanding of the processes the volunteers are comfortable with and designed solutions that cater to them.

One factor that was not addressed in our research is acquiring equipment. This past summer, EBS was able to secure a technology grant for several tablets and computers which are intended to be used in digitizing their system. This means that we did not need to be concerned about sourcing devices and instead focused on the needs of the software.

3.2 Exploring Solutions of Other Organizations

Understanding how other food pantries and NPOs within Worcester County Food Bank network collect and report their data helped us to find a solution for EBS. To understand the workflow of the different software used by other organizations and the different processes used to create reports, we conducted semi structured interviews of workers and directors at other food pantries and NPOs within Worcester County Food Bank network to obtain this information. Sample questions for these interviews can be found in Appendix E.

Semi structured interviews allowed us to learn about local circumstances through conversation with local individuals (Beebe, 2014). Since we were interested in the local digital infrastructure of different food pantries and NPOs, this type of interview served our purpose the best. Overall, semi structured interviews with knowledgeable interviewees proved to be the most effective choice for gathering the desired information about the breadth and quality of software features and particularly data reporting capabilities.

3.3 Evaluating JotForm and Other Options

Irina Ivanova - stock.Adobe.com

To evaluate the options available to EBS, we conducted a cost-benefit analysis to compare JotForm to other solutions that we identified. According to Harvard Business School Online writer Tim Stobierski (2019), cost-benefit analysis is a comparison between the forecasted costs and opportunities of a project choice. Weighing the costs and benefits of a project choice allows a business or organization to make an informed decision. If the costs of a choice exceed the benefits, then the organization may need to pursue a different project decision. In contrast, if the benefits of a choice exceed the costs, then there is reason to carry out the project choice. Our analysis considered which systems fulfilled EBS' user requirements, project goals and needs to the greatest extent.

Initially, we reviewed the capabilities and drawbacks of JotForm, which was the final software deliverable presented by the previous research team. Afterward, we compared JotForm, the options found in objective 2 and software found through our own research. We evaluated the software based on the presence or absence of the necessary features identified in objective 1. We presented our cost-benefit analysis to Mari González to make a final decision on the software to be implemented in EBS.

3.4 Exploring Options to Improve Data Reporting

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3.5 Implementing Solutions

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Even with an excellent data collection system, there is still the challenge of reporting that data to organizations that supply EBS with resources and funding, specifically, Worcester County Food Bank (WCFB) and the City of Worcester (for the funding from the American Rescue Plan Act (ARPA)). In our research we found these groups have restrictions on how food pantries and other non-profits can report data on the number of people served. In particular, the City of Worcester requires signed paper forms for EBS to receive ARPA funding.

Our project goal, to be fully paperless, necessitated resolution of these issues. For WCFB, the issue is a requirement that organizations submitting information must use an outdated form with individual fields for every individual value (12 numbers for each zip code). This process can be tedious, especially as the number of zip codes served increases. Ideally, an organization would be able to upload a CSV file or copy and paste a table directly from a program like Microsoft Excel, but this is not the case. To find a possible solution, we interviewed staff members from WCFB to understand why the system is the way it is and whether anything can be done to initiate change.

The more difficult issue is the ARPA funding. Since the City of Worcester requires EBS to record every visit to the food pantry on a signed paper form, the options for digital data recording were limited. The main reason for requiring paper forms was so the city could keep a signature as a record, meaning it could be possible to meet the terms of the ARPA contract with digital signatures. While we did not interview city officials or staff members directly as that is outside of our responsibilities, we did discuss the ARPA funding situation with Mari González during our meetings with her and possible solutions to mitigate the limitation.

As we developed our solutions for EBS, we regularly communicated with staff to get their opinions on our ideas. This was in the form of conversations to share our progress and ideas with key members such as Mari González.

We also needed to take care that the solutions we implemented were not too difficult to learn for the average user. As stated previously, about a third of adults are lacking in general computer skills, and EBS is no exception with many volunteers being older and not as familiar with computers or tablets (Bergson-Shilcock, 2020). We needed to ensure that our questions and planning account for volunteers with all levels of technical experience, not just those who are more experienced. That said, as Daniel Kelly (2015) made clear, employees who openly accept and make good use of the system are one of the best resources to encourage others to use it.

Our solutions will only be effective if they are sustainable and EBS can reliably continue using the digital system. Our team was onsite for about eight weeks and our solutions had to be functional and effective after we finished the project. To achieve this, we completed training with Mari González in using the data collection software.

Based on our analysis of JotForm and other systems, our team and EBS decided to use a data collection software called PantrySOFT to fulfill the organization's goals and needs. The findings that led us to select PantrySOFT as the best data collection software for EBS follow the methodology chapter.

Mari González purchased a PantrySOFT product plan, which accounted for three years of use. The purchase included additional features and services that could benefit EBS' operations in the future such as advanced inventory capabilities, a client portal for self-registration, extra setup assistance, and support sessions with PantrySOFT team members. Furthermore, we sent copies of EBS' client intake forms and data reporting formats to a member

of PantrySOFT's Customer Success team so that their IT staff could adjust PantrySOFT towards EBS' goals and needs.

Our team and PantrySOFT's IT staff tailored the software to meet EBS' digital system requirements. We first scheduled an onboarding session with a member of PantrySOFT's Customer Success team to evaluate the customization PantrySOFT's IT staff worked into the software for EBS. During the onboarding session, we addressed the specific intake questions the organization needed, as well as how to perform data collection in the software. Our team and Mari González created PantrySOFT accounts with administrative privileges, which allowed us to control software settings and customize the questions and answer types displayed on user interfaces. The member of Customer Success showed us that prior to the onboarding meeting, PantrySOFT's IT team had already incorporated most of the client intake questions EBS needed (questions used to collect data reported to both WCFB and the federal government) into new client, new registration, and new household members user interfaces.

Our team further investigated the creation of a new client, registering the client, and adding household members. In the new registration user interface, our team and Mari González found that PantrySOFT's IT staff had not implemented question six in EBS' Self Certification form as shown in appendix B, which is needed to report annual income range and household size information to the federal government. To address this omission, we contacted Customer Success asking if PantrySOFT's team could add this question to the user interface such that there is conditional logic linking a household size to possible annual income ranges, which is also a feature that Mari González expressed to us. Since each member of our team had administrative access to the software, we also explored a solution to incorporating question six in the meantime. Our team originally implemented question six by adding eight different dropdown selection elements. Each element corresponded to a distinct household size displayed in the Self Certification form, and the dropdown selection was for an annual income range.

When Customer Success responded to our request, we observed that PantrySOFT's team had implemented question six in a way that visually demonstrates how household size corresponds to certain annual income ranges. As shown in Appendix F, the new registration user interface accounted for question six with a chart linking household size to possible annual income ranges. Referencing the chart, a single dropdown selection element was added below it to enable a volunteer to select an income range based on household size. After settling on the improved implementation of question six, our team determined that PantrySOFT was customized for EBS to begin digitally collecting data during food distribution.

Although PantrySOFT's IT team has not implemented digital formats for data reporting to WCFB and the federal government at the time of writing, we also requested their help in programming these dynamic reports for EBS.

3.6 Ethical Considerations

This project was supervised by the WPI Intuitional Review Board (IRB). As part of the project, we conducted interviews only after we received voluntary informed consent from the respondents. Before we conducted the interviews, we explained the goals of our study and the purpose of each interview. We also informed the respondent that participation is voluntary, and they were welcome to leave the study or skip questions at any time for any reason. Responses were also made anonymous unless the respondent gave explicit permission for their name to be included in this report.

CHAPTER 4 FINDINGS

4.1 EBS' Operations Moved to a Client-Choice System

Through participant observation, we learned how EBS' operations allowed food distribution to be successful. As we volunteered for the organization, we found that the structure of EBS' inventory is foundational to the organization's ability to serve clients. Food is carefully organized and stored according to type; meats are stored in several different freezer units, beverages are stored in refrigerators, and canned goods, fruits, vegetables, and snacks are grouped on tables and shelves. Additionally, EBS stocks a collection of dog food, cat food, and baby products, which all address the needs of local families beyond just proper nutrition. Volunteers understand where to find items when they are needed or when clients request them.

When we first arrived on site, EBS had a prepacked boxes model to distribute food to their clients. EBS was having volunteers pack and bring boxes of mixed food (Figure 10) outside where they would be placed on a check-in table. A line of clients would move toward the check-in table to obtain these boxes. As the process of packing and transporting food boxes was happening, volunteers stationed at the check-in table would fill out a few different paper forms with information about each current client receiving food. By the end of the distribution, EBS usually gave out most of their food.

During our third week volunteering at EBS, the organization implemented a client-choice system, as had been planned for some time, replacing the previous system of carrying food boxes to clients checking in outside of the facility. The client-choice system functioned such that clients could enter EBS' pantry and choose the type of foods they wanted to take back home with them; all available food was grouped by type and presented on open shelves and tables accessible to clients inside of the pantry. Clients would still form a line and check in with a volunteer outside of the building where information is collected for reporting. A few volunteers worked in the pantry to help facilitate food selection, and clients could only take a certain amount of each item from the pantry to ensure that the organization would not run out of food on a given distribution day; this item limitation allowed EBS to retain more food to display on their shelves the next week. After a client placed all the food they needed into a box from EBS' available inventory and exited the building, another client was let into the pantry to begin choosing items. Volunteers ensured that only three clients could be in the pantry at a given time so as not to overcrowd the food selection process.

Our participant observations of EBS' food distribution process(es) helped us identify features needed for data collection software to improve the efficiency of their operations.

Figure 10: *Prepackaged Food Boxes. Prefilled boxes of food would be distributed to each client at EBS before client choice was implemented. Every box contained canned goods, fresh produce, bread, meat, and any other items that the pantry had available that week.*
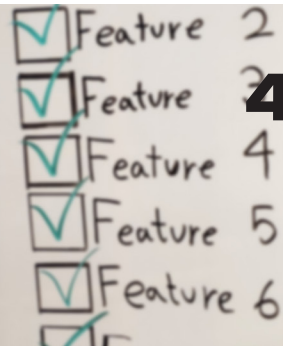
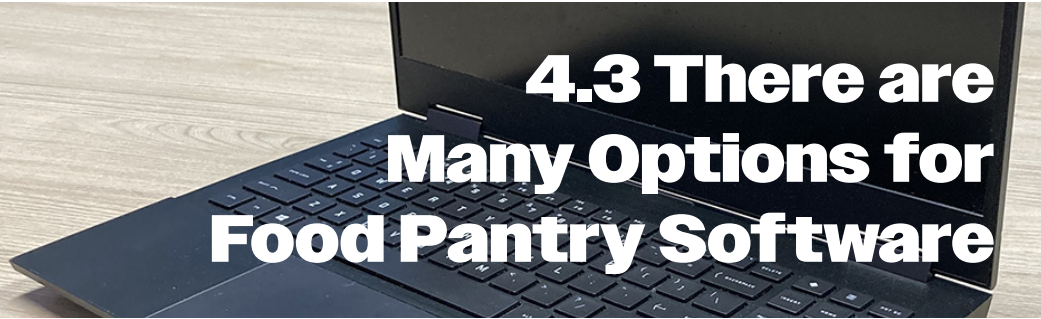# 4.2 There are Several Features EBS Needs for Their Software

We spoke with Mari and EBS staff to understand what they wanted from a software solution; we also found several features that were not previously considered during our own research. Once we had all the requirements of EBS, we began to compile a list of software features we deemed to be necessary for EBS. The most important of these features was the ability to save and recall client information for repeat visits, eliminating the need for clients to fill out the same forms every week and speeding up the check-in process. When clients do check in there also needed to be a way to collect their signature as some of the reports EBS files require a signed form for each client. Mari also wanted there to be visualizations of the data EBS was recording, as this would be easier to present during grant and funding requests. EBS was also interested in beginning to track their inventory to understand what foods were most popular with their clients and keep better track of their resources as they move to a client choice model.

From a technical standpoint, the software needed to be usable on an iPad, as EBS had acquired several of them for this very purpose. A desktop computer would not be a viable option since clients are checked in at a table outdoors. Once the data had been collected, there needed to be options for customizing the reports generated by the software. EBS submits data to multiple groups and organizations, each requiring different information. Having the ability to choose the format and what data is reported would greatly simplify the process of creating those reports.

When looking into software options, we found a handful of less important but still valuable features such as barcode integration and IT support. These along with the features described above are summarized in Table 1. This list of ten features was used to compare the various software solutions we found in our research and narrow down the options.

Table 1: *List of software feature requiremnts for EBS*

Feature	Reason
Client Lookup	Re-using client information will speed up the intake process instead of manually filling out the same form for every client each week.
Client Digital Signature	Some of EBS' reporting obligations require signatures, even when collected digitaly.
Data Visualization	Visual graphs and charts can backup funding requests and clearly display information.
Inventory Tracking	EBS wants to collect information on what foods their clients eat the most often. They also want greater detail on their inventory as the organization moves to a client-choice model.
Tablet App	EBS already has iPads from a prior grant to use a digital solution, so the software chosen must support them.
Report Customization	EBS collects a large amount of data but only needs to report certain information to each of their supporting organizations. Having the ability to pick what data is exported to a table will make the process much simpler.
Language Options	EBS serves a diverse community and there are often language barriers between staff and clients. Having the options to change what language the form is in would help to mitigate this issue.
Barcode Integration	Barcode scanners can be used to check in clients or track inventory faster than manually entering information.
IT Support	Having continued IT support from the software company means EBS will have a resource to solve any potential issues with the software.
HIPAA Verification	While most software did claim some form of data security, HIPAA was the only certification we saw among their Web sites. As a handful of clients may be at-risk (undocumented, homeless, etc.), we felt having a verification that the data would be properly handled was important. However, there is no medical data being recorded, so HIPAA in particular is not a necessity.

4.3 There are Many Options for Food Pantry Software

Originally, we wanted to reach out to several food pantries in the area to understand how they collected client data. Out of several organizations we contacted asking about their methods of collecting client information, only one food pantry, located in the Montachusett Region of Worcester County, was willing to speak with us. This food pantry was using PantrySOFT, a software developed by Cedar Mountain Software specifically designed to manage client data and inventory for a food pantry. We traveled to the pantry to meet with a member of their staff and view the capabilities of PantrySOFT. Because this pantry is in Worcester County, they were also partnered with WCFB and so part of our trip was to investigate if this organization handled data reporting differently than EBS.

Our initial impressions of the software were very positive. The food pantry had been using PantrySOFT for about 9 months and had had an excellent experience so far. The staff member gave us a demonstration of the process for adding a new client and checking in a visitor to the food pantry. As we observed the process, it was clear that PantrySOFT covered most of the features EBS wanted for their solution. The only exception was the creation of data visualizations such as charts and graphs, but there are plenty of options for external software, such as Excel or Google Sheets, which can be used to create plots from PantrySOFT's data. As for reporting data to WCFB, PantrySOFT could be configured to export a table in the correct format with all the fields populated, but there was no way to directly move the entire data set into WCFB's portal; each cell needed to be individually copied.

This trip also revealed to us that software specifically designed for food pantries is commercially available and we began researching other options on our own. Some of the options we found though our own research included Boswell, Food Pantry Helper, Plan Street's Food Pantry Software, Pantry Saver, SmartChoice, and Food Bank Manager. These all had similar features to each other and any one of them could have helped EBS to some degree. There were a handful of other options such as the open source LibreFoodPantry, but we removed these from the discussion as they were greatly lacking in features and documentation.

Lastly, we spoke with David Reed of Worcester County Food Bank. David informed us he had heard positive comments about PantrySOFT from other pantries who use it and referred us to two other applications recommended by Feeding America: Link2Feed and Oasis Insight. We created a list of nine food pantry software solutions in addition to the existing JotForm solution for a total of ten possible options for EBS. The next step in the process was to compare the features of each program to evaluate which option would benefit EBS the most.

4.4 PantrySOFT and Link2Feed Satisfy the Needs of EBS

We went through the documentation for each software option we identified and created a list comparing which features from Table 1 each software had. This comparison, seen in Table 2, simplifies the inclusion of each feature to a simple yes or no. Since some companies were vague or ambiguous with certain features, anything not explicitly stated to be present was considered absent, under the reasoning that companies are likely to exclude any features which their software lacks from their advertising.

Looking at the comparison table, two options stood out from the rest: PantrySOFT and Link2Feed. Both solutions covered nearly all the requirements for EBS, with PantrySOFT missing data visualizations and Link2Feed not having HIPAA verification. However, the absence of these features did not mean disqualification of the software. To create visualizations, data from PantrySOFT could simply be imported into a program such as Excel to create charts and graphs. As for HIPAA, it was not an absolute requirement, but

Table 2: *Food Pantry Software Comparison*

Software	Client Lookup	Digital Signature	Data Visualization	Inventory Tracking	Tablet App	Report Customization	Language Options	Barcode Integration	IT Support	HIPAA Verification
JotForm	✗	✓	✓	✗	✓	✓	✓	✗	✗	✗
PantrySOFT	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓
Boswell	✓	✓	✗	✗	✓	✓	✓	✗	✗	✗
Food Pantry Helper	✓	✗	✗	✓	✓	✓	✗	✓	✓	✗
Plan Street	✓	✓	✓	✓	✗	✓	✗	✗	✓	✓
Link2Feed	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
Oasis Insight	✓	✓	✗	✗	✓	✗	✗	✓	✗	✗
Pantry Saver	✓	✓	✗	✓	✗	✗	✗	✓	✗	✗
SmartChoice	✗	✗	✗	✓	✓	✗	✓	✗	✗	✗
Food Bank Manager	✓	✓	✗	✓	✓	✓	✓	✓	✓	✗

rather peace of mind that the data will not be misused, seeing as EBS does not collect medical data.

To further compare these two options, we attended a live demo of PantrySOFT with their sales team. In this demo, we were able to get a detailed look at how PantrySOFT functions and reaffirm that all EBS's needs were met by the software. After the demo we then learned from PantrySOFT staff that data visualizations were in development and were expected to become available within the year. This meant that PantrySOFT would meet all the feature requirements of EBS once this feature was added.

We attempted to have a similar meeting with staff from Link2Feed as well, but we had difficulty contacting their sales team. As we had a time constraint on our project and were already impressed with PantrySOFT, both our team and EBS decided it would be best to choose PantrySOFT as the software solution and forgo any further investigation into Link2Feed.

4.5 WCFB and ARPA Reporting Obligations Present Challenges to Transition to a Digital System

Transitioning to a digital system has another layer of complexity because EBS must report data to other organizations, such as WCFB and the City of Worcester (for funding from ARPA). Each organization has its own requirements and report formats that are potential limitations for EBS to transition to a digital data collection system.

WCFB requires their partner agencies to fill out a digital portal with the demographic information of their clients every month. Even though this is a digital portal, EBS needs to manually insert individuals' rows of data because there is no option to upload a CSV file or insert a table. This missing functionality results in many hours of extra work for EBS, which the organization could

use in other areas. In the interview with David Reed, WCFB Agency Relations Coordinator, we learned more about this reporting system and potential updates to this portal. He said that the system works well but acknowledged it is outdated. He also explained that WCFB is cautious when updating major parts of its system, as they have 115 partner agencies with a variety of needs and skills. There are partner agencies with only basic computer skills that could find an updated system difficult to use. However, David Reed added that they are open to change if it is for the benefit of everyone. This deliberation requires careful planning and consideration, which can take a long time.

The greater limitation comes from the ARPA funding forms. The City of Worcester requires EBS to fill out signed paper forms for every client visit. EBS must keep these forms and make copies to be collected by city officials. There are major disadvantages to this system: significant time and resources for printing the forms, the difficulties of handling paper forms, and the large space required to store the papers. As discussed in section 2.3, a digital system can mitigate these disadvantages and make the process more efficient and secure. Signatures should not be a barrier for software since this system can collect digital signatures from the client, but conversations to determine whether the City of Worcester will accept digital signatures are still ongoing.

4.6 PantrySOFT Will Enable EBS to Expand its Operations

The best option for EBS to scale up their operations and keep up with the data demands of their support organizations is to fully embrace the digital system. We chose PantrySOFT because it is capable of completely replacing the paper forms with a single webpage and EBS can automatically create the reporting data they need while having confidence it is accurate. The service also opens the door to new data for EBS such as inventory tracking that would not be feasible without software like PantrySOFT.

We learned how PantrySOFT's new client, new registration, and new household members interfaces are essential to the software workflow that

volunteers use to collect client data on mobile devices during food distribution. When checking in a new client, a volunteer first brings up the new client screen as shown in Appendix F to create a client in the system; this is where an organization collects basic information about the individual such as name, gender, age, race/ethnicity, street address, city, and state. In addition, an account number is set for a new client. Next, a volunteer navigates to the new registration screen where EBS collects more specific information about the individual to register them for the pantry. As shown in Appendix F, the new registration interface collects data such as spoken languages, primary source of income, program participation, annual income based on household size, and a digital signature that are needed for WCFB and federal government reporting. Lastly, a volunteer must add each household member of the registered client. As displayed in Appendix F, the new household members user interface collects information such as name, gender, age, race/ethnicity, and relationship to the registered client.

When meeting with the member of Customer Success during our PantrySOFT onboarding training session, we learned that once clients and household members are added to the software, EBS staff can search for any client and household member by data types such as name, account number, or street address. The client search functionality allows for quickly finding existing clients in the system and recording their visits to EBS' food pantry, a necessary feature that PantrySOFT provides for the process of checking in returning clients.

Another benefit of PantrySOFT is its flexibility and the fact that most features, such as inventory tracking, can be left unused until the organization needs them. During the first week of using PantrySOFT, the process of collecting client data will take longer as every client will need to be added to the system, registered, and have new household members. Even during subsequent weeks using PantrySOFT, volunteers will not only need to record existing client visits, but also will still need to add new clients, register them, and add household members. Therefore, EBS should take as much time as they need to become familiar with the client check-in process and data reporting before overhauling more of their operations. This is also an opportune time to make any adjustments to the client registration questions and set up any required data formats such as WCFB and Self Certification reports. Once the volunteers are comfortable with the system, EBS can begin making use of other features such as barcode readers and inventory data.

PantrySOFT has all the tools and features necessary for EBS to meet its reporting obligations. We confirmed that the registration questions cover all the information to generate the reports EBS needs. If EBS needs new dynamic reports in the future, the IT team can add registration questions as needed and build new formats. PantrySOFT also offers aggregate reports that let the user visualize the full activity of the food pantry within specific date ranges. This report shows information such as number of households served, unique entries, age distribution, and demographics. This information could be useful for EBS to demonstrate the progress of the organization, and even generate graphs.

CHAPTER 5 RECOMMENDATIONS
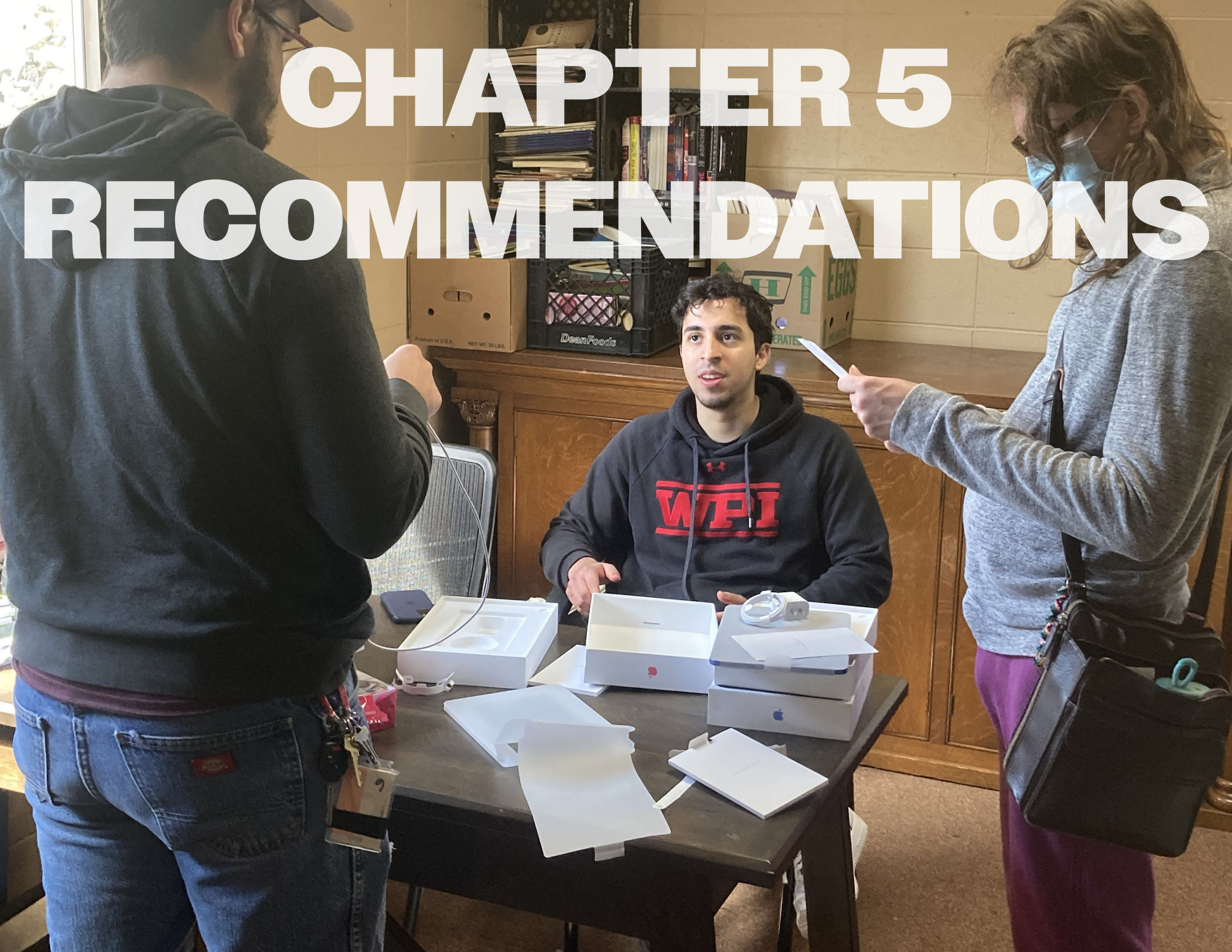
While EBS has not begun using PantrySOFT at the time of writing, all the preparations and configuration of the software are complete. All that is left for EBS to do is swap out the paper forms for the software. In the short term, we recommend that EBS first consolidate the process of checking in clients and generating reports. Once this phase is completed and as they gain experience using PantrySOFT, EBS could further take advantage of the software by using inventory tracking, barcode scanning for quickly checking in clients, and a portal to make client appointments. In addition to the direct advantages conferred by these features, there are a handful of improvements that PantrySOFT enables EBS to make to their operations outside of data collection.

One of the bottlenecks in EBS' food distribution is that the pantry is only open to clients on Fridays. In our team's experience working at the pantry, these days can become quite chaotic with hundreds of families coming in a short time span to collect the food and resources they need to stay healthy. This can be very tiring for the staff and results in clients waiting outside in the often-harsh New England weather. While it would help ease the strain on the volunteers and clients to have multiple days of food distribution, EBS stocks food with the assumption that clients will only visit once a week per household. With the introduction of PantrySOFT however, rules for how many times a client can visit within a given time frame can be configured and a volunteer will be warned if a client attempts to break those rules and take more than their fair share. This means that EBS could open multiple days a week for food distribution without the risk of a client taking in an extra allotment of food. The software can also help prevent families from sending in multiple members to collect extra food as the name of each household member is associated with the same client information and address and so the account will also be flagged. While we do not want to turn away people in need, it is also important for EBS to distribute food equally and fairly to every family who comes to them.

Once EBS implements inventory tracking, it would also be possible to modify the client-choice model to something closer to a grocery store. Much like the restrictions on visitation, PantrySOFT can also limit quantities of items given to a client. Instead of volunteers following clients, the process could in theory be replaced with a system similar to a typical store where clients pick the food they want and bring it to a volunteer to be scanned. PantrySOFT can then be used to add the items a client is taking to their visit information and

flag an alert if they attempt to take more than is allowed. These limits can also be adjusted by family size so that larger households are permitted to collect more food. One thing to keep in mind is that clients must be informed of these limits. While the one visit per week rule could easily be posted with a sign, many clients are not as accepting when they are told they cannot take certain items. This responsibility to explain the rules can be mitigated with signage but would primarily fall to the staff member scanning the items and may result in resentment being directed towards them. The larger issue with moving to a grocery store model though is the current size of EBS' building; much of it is used for storage space for food and supplies and there is no room to have a checkout space with the current layout. Shifting to a grocery store model is not expected to be made immediately, and it is possible that EBS could move to a new location that is more suited to this method of operation before they are ready to make such a change.

Outside of EBS, there is also work that can be done to ensure EBS and other pantries in the Worcester area are getting the most out of their software. It is worthwhile making the process of submitting digitally collected data easier for organizations using software like PantrySOFT. We recommend that a future research project work with WCFB to find ways to modernize their client portal. In our interview with WCFB staff, we understood that the organization is not opposed to modernizing the platform but is concerned about alienating food pantries that still rely on paper forms. There is an opportunity for a new project team to work with several pantries in the Worcester area and find what features they would like to see added to WCFB's client portal. Even a change as simple as enabling table data to be pasted in instead of inputting each cell manually would drastically speed up the process for pantries using digital reporting software, and WCFB would be able to encourage the use of software like PantrySOFT as it will provide more accurate data. Similar project opportunities may exist for making changes to the data reporting rules for funding such as the ARPA reports that EBS needs in the future.
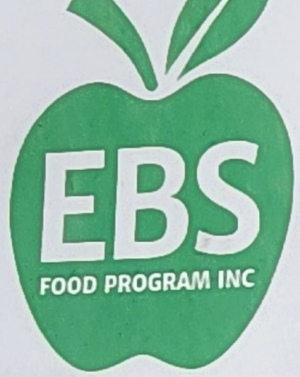
CHAPTER 6 CONCLUSIONS

This project was a meaningful experience for us and gave us the opportunity to give back to the community, both through the goals of the project and the time we spent volunteering at EBS. We gained first-hand experience of how food banks and pantries operate along with a better understanding of the broader issue of food insecurity as we served hundreds of families just within the few weeks of our project. Moreover, volunteering at EBS made us realize that our project would have an immediate real-world impact and directly benefit the Worcester community by helping EBS improve and expand its services. Incorporating technology not only improves the efficiency of an organization's operations, but also enables the growth of the services that are essential to the livelihood of thousands of families.

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Appendix A: EBS WCFB Paper Form

Ask the Client if this is the first at time at EBS or a food pantry

Ask how many children, adults, elderly, put the number on the box.

El Buen Samaritano Food Program Inc.

Principle Household Income Source (check only 1)

Federal Programs you can check all if the client receives all

Zip Code	New Client	Fam Size	0-4	5-17	18-64	65-up	Employment	Unemployed	SS	Tran Cash	Other	None	SNAP EBT	WIC	School Brkfst	School Lunch	Summer Free Schl Lunch program

Appendix B: EBS Self Certification Form

COMMUNITY DEVELOPMENT BLOCK GRANT FUNDED PROGRAMS
SELF-CERTIFICATION FORM

Updated 3/2022

1. Where is your principal residence? _____

Address _____ Town _____

2. How many persons are in your household? _____

3. Are you a single-parent head of household with dependent minor children living with you?   Yes   No

4. If yes to # 3, please circle your gender.   Male   Female

5. Is anyone in your household disabled or handicapped?   Yes   No   If yes, how many? _____

6. Which of the following categories most nearly approximates the annual household income in the home where you currently reside? (Please check the appropriate line based on your household's size).

1 person	5 persons
$0 - $20,650 ___	$0 - $31,850 ___
$20,651 – 34,400 ___	$31,851 – 53,050 ___
$34,401 - 54,950 ___	$53,051 – 84,800 ___
over $54,950 ___	over $84,800 ___
2 persons	**6 persons**
$0 - $23,600 ___	$0 - $35,160 ___
$23,601 – 39,300 ___	$35,161 – 57,000 ___
$39,301 – 62,800 ___	$57,001 – 91,100 ___
over $62,800 ___	over $91,100 ___
3 persons	**7 persons**
$0 - $26,550 ___	$0 - $39,640 ___
$26,551 – 44,200 ___	$39,641 – 60,900 ___
$44,201 – 70,650 ___	$60,901 – 97,350 ___
over $70,650 ___	over $97,350 ___
4 persons	**8 persons**
$0 - $29,450 ___	$0 - $44,120 ___
$29,451 – 49,100 ___	$44,121 – 64,850 ___
$49,101 – 78,500 ___	$64,851 – 103,650 ___
over $78,500 ___	over $103,650 ___

7. Please provide the number of persons living in your household who are part of the following demographic group(s):

Race

White	___
Black/African-American	___
Asian	___
American Indian/Alaskan Native	___
Native Hawaiian/Pacific Islander	___
American Indian/Alaskan Native and White	___
Asian and White	___
Black/African-American and White	___
American Indian/Alaskan Native and Black/African American	___
Other Race(s)	___

Hispanic/Latino (total number of persons of any race(s)) ___
Elderly (total number of persons aged 60 or over) ___

I (WE) CERTIFY THAT THE ABOVE INFORMATION REGARDING MY (OUR) INCOME IS TRUE AND ACCURATE TO THE BEST OF MY (OUR) KNOWLEDGE.

Applicant Name (please print): _____

Signature _____   Date _____

Thank you for taking the time to complete this survey. This information will be held confidentially and used only for CDBG compliance records.

Appendix C: Previous JotForm System

Appendix D: EBS Staff and Volunteer Interview Sample Questions

EBS Staff Questions
1. What are your goals for implementing a digital data collection system at EBS?
    a. How do you envision that a digital data collection system will benefit EBS?
    b. What goals are priorities for the digital data collection system and why?
2. Who will need to use the digital data collection system?
    a. How do you plan for individuals to use the digital data collection system?
3. What functionalities would you like a digital data collection system to have?

EBS Volunteer Questions
1. How long have you volunteered with EBS?
2. What do you like about using the paper form with clients?
    a. What do you dislike about the paper form?
3. Are you familiar with the JotForm system the research group from WPI introduced last year?
    a. Have you ever used it?

Questions for volunteers who have used the digital system:
4. What do you like about the digital form?
    a. What do you dislike about the digital form?
5. Do you prefer the paper or digital form?
    a. Why?
6. Are there any changes that you believe would make the digital form:
    a. Easier to use?
    b. Faster to fill out?
    c. Have a better user experience?

Informed Consent

We are a student research group from Worcester Polytechnic Institute (WPI) working with your organization, the El Buen Samaritano (EBS) food pantry, to transition the client data collection to a digital system. Your participation in our research is entirely optional and any responses will be kept anonymous, though they may be included in a publicly published report. You are welcome to skip any question or end the interview/video call entirely at any time for any reason.

# Appendix E: Other Food Pantry Staff Sample Questions

1.   How does your organization collect data from clients?

2.   Are there any specific advantages to your system?

      a.   And disadvantages?

3.   Have you had any issues transitioning to a digital form? (If applicable)

      a.   How did you overcome them?

4.   Have you ever had to present your data to other organizations?

      a.   What tools/software did you use?

      b.   Would you be willing to share any examples of your diagrams with us?

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Only if communicating by email: By replying to this email, we assume you agree to these terms unless otherwise stated in your reply.

Appendix F: PantrySOFT User Interface

CLIENT   NEW CLIENT   Search For Client...   ☑ Active Only

Search Or Create New Client
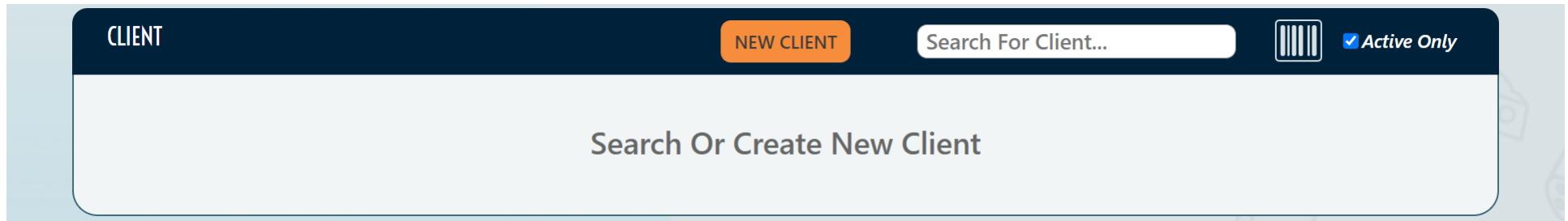
PantrySOFT client look-up screen, from this page a staff member can search for an existing client or create a new client account by pressing the "New Client" button.

CREATE NEW CLIENT

Client Info

Account Number

Status *
Active

Client Since *
4/24/2023

Primary Household Members Basic Info

First Name *

Middle Name

Last Name *

Age *

Gender

Email Address

Phone Number

Primary Household Members Demographic Questions

Demographics

Race/Ethnicity (Select Best Option):

Address Info

☐ No Fixed Address

Street Address *

Apt / Suite / Unit

Postal Code

City

County

State

SAVE AND EXIT   CANCEL

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New clients are requested to provide the above information for themselves and their household. Additional household members are only asked to provide the questions in the Household Member Info and Demographic Sections.

Registration Questions

Language(S) Spoken:

> Albanian
> English
> Spanish
> Portuguese

If "Other" Above, Please Specify Language:

What Is Your Primary Source Of Income?

Do You Participate In Any Of The Following Programs (Check All That Apply)

> Food Stamps/EBT (SNAP)
> WIC
> School Breakfast
> School Lunch

How Many Household Members Are Disabled/Handicapped?

Income Questions

Family/Household % of Median Family Income for Worcester, MA HUD Metro Area

Household Size	0-30%	31-50%	51-80%	Over 80%
1	$0 - $20,650	$20,651 - $34,400	$34,401 - $54,950	over $54,950
2	$0 - $23,600	$23,601 - $39,300	$39,301 - $62,800	over $62,800
3	$0 - $26,550	$26,551 - $44,200	$44,201 - $70,650	over $70,650
4	$0 - $29,450	$29,451 - $49,100	$49,101 - $78,500	over $78,500
5	$0 - $31,850	$31,851 - $53,050	$53,051 -$84,800	over $84,800
6	$0 - $35,160	$35,161 - $57,000	$57,001 - $91,100	over $91,100
7	$0 - $39,640	$39,641 - $60,900	$60,901 - $97,350	over $97,350
8	$0 - $44,120	$44,121 - $64,850	$64,851 - $103,650	over $103,650

Based On The Table Above Please Select The Applicable Option From The List Below:

Household Income

Clients are also asked to provide the above information that pertains to their household as a whole. This information is required to be resubmitted yearly.

Once a client is registered, their information can be searched via the name of any household member, address, or account number. From this screen staff members can edit information such as adding additional household members, log visits, schedule appointments, and leave notes and reminders about the client such as allergies.