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Political Ideology, Beliefs And Values As A Framework For Analysis Of School Nutrition Preferences

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POLITICAL IDEOLOGY, BELIEFS, AND VALUES AS A FRAMEWORK FOR ANALYSIS OF SCHOOL NUTRITION PREFERENCES

by

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EXPLANATION OF ACRONYMS

AST	Active School Transportation
BMI	Body Mass Index
CDC	Centers for Disease Control and Prevention
DGA	Dietary Guidelines for Americans
FBO	Faith Based Organizations
HHFKA	Healthy Hunger-Free Kids Act
LP	Libertarian Paternalism
MRE	Military Readiness Entrée
MT	Mechanical Turks
NGO	Non-Governmental Organization
NHANES	National Health and Examination Survey
NSLP	National School Lunch Program
RCT	Randomized Control Trial
USDA	United States Department of Agriculture

EXPLANATION OF POLITICAL IDEOLOGY ACRONYMS

(C)	Conservative self-identified political ideology
(L)	Liberal self-identified political ideology
(N)	Neutral self-identified political ideology
California C	Focus group participant from a group self-identified as conservative
California L	Focus group participant from a group self-identified as liberal
Connecticut L	Focus group participant from a group self-identified as liberal
Florida C	Focus group participant from a group self-identified as conservative
Florida L	Focus group participant from a group self-identified as liberal
Iowa L	Focus group participant from a group self-identified as liberal
North Dakota C	Focus group participant from a group self-identified as conservative
North Dakota L	Focus group participant from a group self-identified as liberal

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To my family
Each one of you is truly a gift.
Thanks for letting me be a part of your lives!

ABSTRACT

Multiple studies have documented the growing controversies in school nutrition public policy. Less is known about the political ideologies, beliefs and diverse perspectives coming from conflicting values and their influence on policy acceptance. Key issues examined are: Does the average US citizen filter their impressions of policies through their core beliefs, values and politics? And, in general, what policies, interventions, and regulations do conservatives and liberals favor?

Utilizing a sequential mixed methods design, Phase I included a survey given to 201 people with both a multi-item closed ended section and an open-ended section. Statistical analysis was performed on the quantitative survey data, with pattern matching and documentation of outliers providing analysis of qualitative data. Findings in Phase I were used to develop questions for Phase II where 8 focus groups--California, North Dakota, Iowa, Connecticut and Florida--shared perspectives on nutrition public policies.

Regression analysis showed political ideology statistically significantly predicts perceptions toward ease of implementation, ($p < .001$) and efficacy, ($p < .001$). Beliefs and values about personal responsibility versus government responsibility is at the heart of the debate. This research shows core beliefs, values and political ideology affects preference for more or less government regulations and acceptance of local versus public policies. This is some of the first research to suggest the theory of *Politics of Values* for how people view public policies through a lens of core beliefs, values and political

ideology. Evidence presented suggests this is one way people make sense of public policies, affecting perceptions and acceptance of nutrition and other policies.

Implications from this study include, regardless of political ideology, the general public sees local as better. Public policy makers are not perceived as agreeing with the consensus toward local proposals for improving school lunch nutrition. Findings suggest a general consensus for strong evidence-based research on which to build nutrition policy.

CHAPTER I

INTRODUCTION

This study explores perceptions of proposed nutrition public policy and develops a better understanding of factors that influence acceptance of policies. Core beliefs, conflicts and political ideologies form public opinion on a wide range of issues (Feldman, 1988). Growing evidence that diverse perspectives of nutrition public policy often come from inherent beliefs, values, and biases drives this research (Pelletier, McCullum, Kraak, & Asher, 2003; Barry, Brescoll, Brownell, & Schlesinger, 2009; Schwartz, 1996). In order to build consensus for public policy, recommendations based on only the strongest evidence-based research available finds acceptance by people with diverse perspectives. Therefore, this research can inform public policy makers at many stages of the policy process. For example, in areas of very little consensus and a great amount of controversy, stronger evidence-based research can provide clarity.

The need for stronger evidence-based research is especially important as the public's perception of nutrition policies is changing (Funk & Rainie, 2015). Even as scientific evidence points toward specific nutrition interventions designed to increase health outcomes, increasingly divisive, sometimes ugly discourse takes place (Confessore, 2014). The tension created by angry, emotional 'taking of sides' has created an environment of distrust concerning nutrition policies. An example of this taking of sides is the nutrition interventions for the National School Lunch Program (NSLP)

included in the newest farm bill, H.R.2642 - Agricultural Act of 2014 (USDA, 2014). An enormous amount of criticism caused a deadline extension for the bill, giving schools more time to meet the requirements of the new law. Specifically, school kitchens struggle with serving food that meets the mandates but is also accepted by students (Thiagarajh, Getty, Johnson, Case, & Herr, 2015). Research into beliefs, biases, and values can help us understand the influence, the reception, and support of policies. The next section gives evidence of the need for looking at perceptions to inform the nutrition policy process.

Need for the Study

Guidelines, regulations, laws, and mandates designed to improve the diets of individuals make up nutrition public policy. There have been many shifts in policy over the last century, but perceptions of the general public toward nutrition public policy seem to be increasingly polarized (Funk & Rainie, 2015). This polarization creates distrust, conflict, and frustration toward nutrition policy. There is evidence to suggest values, beliefs, biases, and diverse perspectives have led to this polarization. A gap in the literature exists leaving many questions about the general public's perceptions of proposed nutrition policies.

Many consider a USDA booklet from 1917, a forerunner to the Dietary Guidelines for Americans (DGA's), some of the first nutrition public policies (Germov & Williams, 2004). The DGA's were first designed by a scientific committee in the 1930s as a way to codify the growing knowledge of nutritionists about macronutrients. The guidelines were designed to inform Americans and to give guidance on what a healthy diet looks like (Millen, 2016). Historically, the guidelines have been the basis for NSLP

and many other nutrition policies, including efforts to improve the readiness of military recruits in WWII. Since those first recommendations, many other nutrition public policies have been implemented. Considerable attention has been focused on developing the nutrition guidelines and implementing nutrition policy that the government sees as important for increasing health outcomes. Perceptions of the general population toward those nutrition policies may affect the ease of implementation of nutrition policies, acceptance of the policies, and efficacy of the recommendations toward population health. These are areas that have not been fully studied.

Slavin (2015) discusses the complexity of the nutrition research informing policy over the years and argues for stronger evidence-based research to back up nutrition policy before it is implemented. She gives the example of a low sodium policy implemented in schools. Slavin explains that the benefits for lowering sodium levels are inconclusive and may even be detrimental. Children with low blood pressure or those who exercise and sweat excessively likely need a regular sodium diet. Schools which have implemented these types of policies are put in a position where the sodium guidelines need to be removed. Slavin (2012) points out how confusing this is to students, parents, and other stakeholders. It causes those same stakeholders to question other nutrition policies that are based on excellent research. An example is milk. A beverage with calories and saturated fat but full of essential vitamins and minerals compared to a soft drink which is a beverage with calories but no essential vitamins and minerals.

It is reasonable to assume that if the general public sees policies with wavering guidelines, they may be more susceptible to nutrition claims from other less reputable

sources. For example, some researchers suggest that guidelines restricting dietary cholesterol are based on faulty theoretical models (Teicholz, 2014). Public service messages first stating one fact and then repealing that stance have opened the door for individuals to see value in a wide range of supplements and food products marketed as low cholesterol.

The need to understand attitudes toward proposed nutrition policies is fourfold. First, the study of perceptions of public policy is needed to inform policy makers in future work so their policies address real nutrition concerns. Second, polarization of public opinion is not well understood in the arena of nutrition policy. Third, underlying themes of discontent in America toward the government can be better understood by looking at perceptions of the general public toward policies meant to help them. Fourth, deeper insights into what leads to consensus in nutrition public policy are needed.

The US is considered an anomaly in our reliance upon values as a lens for understanding critical issues rather than economics. The economist (2004 October, 4) reports that church attendance predicts political ideology far better than income. A map of the 2016 US Presidential election showing how people voted coincides closely with a map showing where people with strong biblical values live (Bloomberg Politics, 2016). Even opponents who disdainfully call these people of faith religious zealots and bigots in the Washington Post (Rubin, 2016) concede that they are the ones who heavily influenced the 2016 US Presidential election. Core beliefs and values give consistency and stability to people's political ideology as described by Feldman (1988). These stable convictions are not likely to change just because someone has a different preference.

People with inherent beliefs will push back with incredible resistance when the pressure to conform goes against politics of their values.

Politics of Value is a theory I use to describe how people make sense of critical issues. In looking at two similar nutrition policy proposals, specific words or ideas are honed in on. These specific words or ideas are based on core beliefs. While policy makers may see a specific nutrition policy of increasing fruits and vegetables as the prioritized message, Americans see those as secondary to beliefs informing values and ethics about individual responsibility vesus government responsibility. The words that stand out are *federal regulated* and *local choice*. All of the other words of a proposed policy are secondary and even a non-issue. *Politics of Value* is the idea that the proposals are evaluated on a person's inherent beliefs. Core beliefs that lead people to see just the titles of the policy proposals include: Is there a preference for more or less government in my life? Do policy makers share my values for my family? And if they do fit with my values, will the regulaitons set a course ultimately leading to inefficiency, over-regulation and mismanagement? Do top-down policies (*federal regulated*) or policies made by my neighbors and local people like me (*local choice*) make it easier for my family and business to thrive and grow stronger?

Progression of Interest in Current Study

This dissertation addresses the perceptions of nutrition polices and how those perceptions affect acceptance and implementation. I have worked in the area of food and nutrition for almost 50 years, all the while watching amazing advances in nutritional sciences and trying to avoid falling for the nutrition fads. The field of nutrition public

policy is a paradox. The person on the street increasingly maintains an all-knowing attitude about nutrition, but in some respects the best practices of nutrition for our population are more elusive than ever. A critical issue Slavin sees is when nutrition public policy follows popular opinion instead of leading with evidence-based solutions (Slavin, 2012).

Qualitative research reports often include the researcher's background in order to disclose the researcher's bias to readers. Especially in a study designed to show evidence of bias in perceptions of nutrition interventions, what shaped and influenced the researcher is important. In this study, I purposely tried to stay true to the data, but I would like to share my own inherent beliefs so they are known to the reader. A look at my background gives the reader insights into the research and a lens through which to examine the evidence. The following background tells the progression of interest in the current study.

Undergraduate research in the early 80's found me at Iowa State trying to find a way to provide more protein for malnourished individuals in the Middle East who subsisted on pita and flatbread. I worked at sprouting ancient grains to increase protein content long before I knew of anyone else doing this, and I continue this line of research today (Nyenhuis & Drelich, 2015). As a graduate student in an MS program in nutrition, I researched the nutrient changes in the brain caused by caffeine, alcohol, and cocaine. The observable caffeine effects were really frightening, which has always made me especially concerned about school kids freely drinking caffeinated beverages. As a PhD graduate

student, I studied perceptions of the general public toward nutrition interventions and proposed nutrition public policies.

Researching peer reviewed nutrition publications for a college-level textbook I co-authored (Cataldo, Nyenhuis, & Whitney, 1989) set a foundation for my nutrition recommendations to always be grounded in evidence-based science. Later, as a nutrition consultant at hospitals and medical facilities across the country, I found nutrition policy recommendations were not very satisfying to either practitioners or the population they were designed to help. Practitioners often would argue for the nutrition guidelines they were taught and many patients would argue for the latest fads seen on infomercials and in the popular media. Current peer reviewed research literature has steered my nutrition recommendations which did not always support the guidelines or the popular fads.

As a 4th generation farmer, I have a distinct perspective on food and agriculture policy and expected biases. According to Lusk and Ellison (2013), those with farm ties are more likely to blame government-farm policy than those who do not have ties to farming and agriculture. Here is a brief recount of my strong ties to farming.

I gave many presentations on agriculture and nutrition controversies as a grade schooler demonstrating to a group of 4-H peers. Later in high school, it was a presentation at the state fair on nutrition. As a professional nutrition consultant I returned several times to the state fair promoting similar topics. As a small family farm, we received the benefit of many farm subsidies and other government programs, as does the farm I retain partial ownership in with my siblings. Family and farming neighbors were vocal in their negative opinion of these government programs.

An example comes from a vivid memory of checking the crops with my Dad and getting a government lesson on why a particular field was not planted. He explained it as a government program of getting paid for leaving the land fallow. This memory supports Lusk and Ellinson's (2013) findings in their survey that people closely associated with farming do not generally support the government-farm policies at the same level as others.

Chayanov, a Russian economist, lost his life for saying the family farm could be a competitive entity (Smith, 1984). His stance and my experiences are similar in that as a small farm, our family could survive lean years. Droughts or poor markets meant a change in methods, such as increasing to more productive crops or changing livestock we readied for market. Small family farms like ours survive when nimble and able to change in volatile markets. Core beliefs of faith in God, the land as a gift, and the food we produce as blessings influence our perceptions of every policy proposed. Faith the size of a mustard seed is all I ask.

My parents divorced when I was 3. My mom worked full-time and attended night school while single-handedly raising 6 kids under the age of 10. There was no child support, so we stood in line for commodities. Our house burned and neighbors paid the $50 rent on another house for us. They brought us clothes and furniture. My mom died a few months later when I was 8.

Commodities, government payments for not growing crops, and other welfare programs were common in this hilly farm region. Lusk and Ellison (2013) found that recipients of government food programs were more likely to blame government-food

policy for problems than those who had never participated in the programs. A quote from Lusk and Ellison (2013) is an interesting summary of this paradox of government recipients not supporting the very programs that are designed to help them. Their summation is, "These individuals are perhaps in the best position to personally witness the potential harm that some government policies create (while at the same time reaping the benefits from other government policies that provide them subsidies)" (Lusk & Ellison, 2013, p. 19). Policies that are intended to do good sometimes have unintended consequences. People far removed from the policymakers—such as the recipients—sometimes see what is happening at the implementation level.

Throughout my middle school years, my older sisters and I washed dishes in the school cafeteria in exchange for free school lunches. Detasseling corn, pulling weeds in the bean fields, or feeding my horse were other jobs I did. During critical times or when the weather was threatening the crops, my brothers were often forced to stay home from school during planting and harvesting. I do not feel like I worked particularly hard growing up on the farm, but it did make attending school feel like an awesome privilege.

Our family farm included both genetically engineered (GE) and non-GE crops, organic and non-organic crops, as well as heirloom varieties of produce. Our chickens were always free-range, and the lamb, pork, and beef were sometimes grass-fed, sometimes free-range and often corn-fed finished, all of which are polarizing issues in food and nutrition. I grew up on great tasting food and always knew exactly where it came from. Just like our neighbors, we worked hard to produce a safe food supply, but also one that could feed the world if needed. At one time all of the animals on our farm

were on pasture, but over the years transitioned to a feedlot when we built a silo. Later we went back to grass fed as the benefits became apparent. We also tried organic crops to meet consumer demand for these products as they became popular, but found it hard to get these products to the specialty markets. I know firsthand how hard it is to grow organic crops. When I see that a product is labeled organic, but it tastes the same as a non-organic product, I question the organic labeling system. I know the taste of organic produce and it is typically much better in flavor because it takes longer to grow. The length of growth time directly relates to how much flavor is produced. The product is more perishable and sometimes deeper in color, more irregular, and possibly blemished. This does not always hold true, but research has shown that many products labeled organic are not actually grown much differently from some local farm to table products. The produce from the local farm often is not labeled certified organic—even if it is organically grown—for several reasons: the cost of certification, the integrity of the local farmer, label manipulation, and the use of heirloom crops which make organic farming even harder.

I did not think much about my political ideology in the past, but my faith is strong and my beliefs are deep-seated. Even just writing this section has made me more aware of how involved I have been in nutrition public policy since gradeschool. Key stances on nutrition include strong beliefs in infant breastfeeding and good childhood nutrition. My daughter does not regularly give fruit to her children until they are at an age where they are well established on vegetables, about 2 to 3 years old. On a theoretical level, there is some evidence this will decrease their desire for sweet foods throughout

their lifespan. Even though research is still pending on that subject, kids eat vegetables much easier when fruit is not an option. Secondly, the importance of eating fruits and vegetables over only eating organic or non-GMO products, even when they are not available or economical, should not be overlooked. In addition, a healthy diet and a tight food budget can go hand in hand. A major barrier to healthy eating is the lack of cooking skills for preparing economical foods like beans, rice, grains, garden produce, and inexpensive forms of protein. Processed food and fast food become the inexpensive substitute for nutritious, home-cooked meals. School lunches can be incredibly healthy within the current budgets, but it takes skill, creativity, training, hard work, and a passion for excellence. However, the NSLP will continue to have a tough time competing with fast food tastes. Third, research bears out that the relationship with people at the table is a stronger indicator of good health than what is being served (Fiese, & Schwartz, 2008; Gillman et al., 2000; Harrison, Norris, Obeid, Weinstangel, & Sampson, 2015).

This dissertation attempts to go against the status quo of nutrition public policy orthodoxy and show another side that is often ignored. It is a view that does not make big headlines because it relies simply on the strength of evidence-based research. No catchy sound bites. It is a view that sometimes does not receive research funding because of the topic, the position, or a variety of other reasons. For more information on research funding, see Nestle, 2013.

Values and beliefs are stable convictions that strongly influence attitudes in other areas of our lives. This dissertation addresses how they influence nutrition public policy even when they are based more on family values or faith-based values than nutrition.

This is a view that honors diverse perspectives. A view that believes consensus is possible if we focus on research as a priority. A view that does not feel that anything should drive nutrition public policy except strong, evidence-based research. A view that diverse perspectives only find consensus when the evidence is solid. Some researchers have argued that nutrition is not a medical issue.

Viewing nutrition as a medical issue, creates a situation where we try to regulate micro-nutrients, macro nutrients and foods to control those medical problems. Over the last 30 years, this has not been successful. Consider the evidence; First, dietary guidelines suggest decreasing some foods (red meats and high fat foods) creating other concerns (low iron and high simple carbohydrate diets). Secondly, controversy is heightened because of the infringement on food practices under the guise of is a medical issue. An example is suggesting high taxes or bans on soft drinks but not on other empty nutrient, high-calorie drinks such as alcohol. Third, food is personal and, depending upon specific political ideology, highlights whether policies intervening in our personal lives is warranted. Especially if it is based on food preferences of another group such as environmentalists, vegans or animal rights activists instead of strong evidence-based science.

Campos, Saguy, Ernsberger, Oliver, and Gaesser (2006) give evidence of a great number of researchers, doctors, psychologists, epidemiologists, and eating disorder specialists who see nutrition and weight issues as a cultural, political issue and not a medical issue. Despite the mounting evidence of health issues being politicized, very

little research explores how political ideology and other values, beliefs, and diverse perspectives influence the general public's view of proposed nutrition interventions.

Given this perspective on the many influences on policy perceptions, I designed the survey in Phase I to explore inherent beliefs, core values, biases, and diverse perspectives toward proposed nutrition policies. This study is interested in nutrition policies in general even though the survey queried respondents on proposed NSLP nutrition interventions. This was a great starting place because the NSLP is in the popular media and the proposed policies are common issues across the country. The survey included questions to elicit both qualitative and quantitative data. Although the questions mostly centered around NSLP policy, the open-ended questions were designed to elicit responses to show stable beliefs and values in other nutrition policy areas. For instance, the general public's perceptions of low sodium public policy in schools may stem from the participant's deep-seated beliefs about low sodium issues in restaurants, for athletes, or in military meals ready to eat (MRE's).

Phase II of the study utilized focus groups across the United States to explore a deeper understanding of the findings from the survey. The proposed nutrition interventions for the school lunch program were mentioned in the introduction for each focus group, but the groups were given the latitude to talk about other food, nutrition, and agricultural policies. This was intentional because it was my goal to understand emotions, beliefs, and values in policy areas that the participants were passionate about. Military individuals spoke about the US nutrition policies that affect service members (MRE's). Farmers in focus groups were passionate about food policy that most closely affects

agricultural production such as organics and GMO's. Students were passionate about the freedom to leave school and go to the fast food restaurants of their choice. Parents were passionate about their kids' overall well-being at school. People converse and share strong opinions on nutrition issues closest to their experience.

This study makes a unique contribution to the field of nutrition in that it highlights perceptions of the general public toward proposed nutrition policies. Exploring this subject in depth shows that proposed nutrition policies are often evaluated through a lens of biases, beliefs, values and diverse perspectives. One area that has not been looked at in detail is how the knowledge of those biases, beliefs, values and diverse perspectives can help build consensus. The common ground can inform policy makers. This study also moves beyond many of the commonly researched conservative versus liberal issues.

Conceptual Framework

The conceptual framework of this study is based on the idea that research clearly shows that diet is a modifiable factor in improving health outcomes (Park et al., 2003; Stein & Colditz 2004). However, nutrition public policy designed to improve the food and eating environments in schools have often been met with strong, emotional responses such as: *Is congress finally about to bring Michelle Obama's AWFUL school lunch rules to an end?* (Owens, 2016) and *How school lunch became the latest political battleground* (Confessore, 2014). These and other authors suggest several reasons for the political rhetoric, but one of the most common is the involvement of the First Lady of the US. She speaks publicly on healthy eating and increased physical activity and rarely ever mentions legislation that funds her *Let's Move* campaign. This is likely an effort to

reduce the appearance of politics. Regardless, researchers have suggested that even just involvement of the first lady with a program increases a partisan response (Lusk, 2014).

Many would correctly argue that school lunch was already political but her attached name brings recognition and possibly more of an awareness of school lunch politics. Many critics of the NSLP changes are polarized political attacks and seem partisan. Other comments show the no-win situation of changes to NSLP. For example, a major criticism was the low calorie content of meals inappropriate for various ages, sizes and metabolism of K-12 students. Michelle Obama was a target of student's YouTube video pretending to faint during volleyball practice from lack of food. The video was covered by CBS, ABC, Time Magazine, The New York Times and many other media outlets—see YouTube video *We Are Hungry* (McFadden, 2012). The issues with the new changes to the NSLP illustrate other areas that were not well thought out. Unintended consequences such as NSLP cafeteria workers adding animal crackers to trays just to meet the mandates for iron became political fodder (Siegel, 26 December, 2012). These stinging criticisms are not just a bump in the road for NSLP nutrition public policy but are a remarkable case study in the failure of cooperation between increasingly polarized stakeholders.

A similar polarization in nutrition is documented by a recent Pew research study in collaboration with the American Association for Advancement of Science surveying the beliefs of scientists as compared to the beliefs of the general public on controversial topics (Funk & Rainie, 2015). The 15 topics chosen for inclusion in the study ranged from off-shore drilling to fracking, from vaccines to climate change. Only two of the 15

topics were related to food: genetically modified organisms (GMO's) and pesticide use in food. In showing the greatest polarization, those two food subjects were two of the top three issues with the greatest spread between what scientists--members of the American Association for the Advancement of Science, the largest general scientific society in the world--believe and what the general public believe. The other item in the top three was a wide gap indicting polarization on global warming issues.

This is an interesting illustration of what the science of nutrition and, more specifically, nutrition public policy based on nutritional science has to overcome in order to build a consensus for successful nutrition policy. There may have been a time when good ideas on healthy eating was the only consideration when setting nutrition public policy but deep-seated values and beliefs in the general public about nutrition may be changing that as evidenced by conflict and diverse perspectives seen in nutrition issues. Kahan et al. (2012) found that even with higher levels of scientific knowledge, consensus was elusive. The author found that increased knowledge actually polarized opinions even more with evidence of political ideology as a factor. One example is the desire for hormone-free and antibiotic-free beef. The general public may intuitively believe that consensus is increased with more knowledge. However, more knowledge brings to light more issues such as animals treated with disease prevention levels of antibiotics and growth promotants are still labeled antibiotic-free and no-hormone. "The FDA establishes minimum withdrawal periods between the last use of the antibiotic and slaughter" allowing the meat to be sold in the grocery stores with antibiotic-free type of labels (Sneeringer, MacDonald, Key, McBride, & Mathews, 2015, p. 10). This

knowledge brings controversy and increases polarization. Whether safety of antibiotic use is the issue or a zero-tolerance level, increased controversy stemming from increased knowledge is seen?

Understanding the characteristics, models, and frameworks of nutrition public policies and how they have changed over time is an important issue. On the other hand, lacking in the literature are studies that look at the general public's perceptions of proposed nutrition interventions and policies.

Purpose of Study

Building consensus for critical nutrition interventions requires understanding of possible biases of the general public. The purpose of this study was to examine and explore the general public's perceptions of proposed nutrition public policies and to develop a better understanding of factors that influence perceptions of nutrition interventions. It also explored core beliefs, biases, conflicts and diverse perspectives affecting attitudes toward nutrition policies.

A multi-item survey and focus groups explore the general public's perceptions of proposed nutrition interventions. They aim to develop a better understanding of factors that influence perceptions of nutrition interventions. These tools also explore beliefs, values, conflicts, political ideologies and diverse perspectives. Each of these play a role in perceptions of proposed health interventions that are designed to improve public health outcomes. Strong evidence-based nutrition research should inform nutrition policy towards consensus for policies that are intended to improve nutrition outcomes.

Research Questions

This study will be guided by the following research questions:

Question 1: Does the general public filter their impressions on ease of implementation, acceptance and efficacy of school lunch nutrition policies through their political ideologies, beliefs and values?

Question 2: Does the general public want more or less government intervention in nutrition public policy and can political ideology predict this?

Question 3: What evidence of values, beliefs and biases influencing science of nutrition and perceptions of proposed nutrition policies?

Question 4: Even with inherent beliefs, values and polarized political ideologies, is there common ground on nutrition policy?

Importance of Study

This study is important in that it provides empirical evidence that perceptions of proposed nutrition interventions for school lunch programs can be biased by political ideology. Deeper understanding of the role of government in setting nutrition policy have been identified as an area for further research (Lusk, 2012). Information on the general population's perceptions toward proposed nutrition programs is useful as policy makers grapple with these issues. The findings from this study may help other stakeholders in their support, implementation and evaluation of proposed nutrition policy at their level of influence. Stakeholders such as school administrators, school board members, student leaders, parent groups, community leaders and local policy makers, encouraged by the

findings that the general public are open to proposals from local sources for nutrition interventions, will bring improvements in school nutrition programs.

This study is also important for its exploration into the themes of conflict in nutrition public policy and how conflict can be beneficial in building consensus. Building consensus leads to stronger programs when they include the realization of similar goals across a wide range of the general public. This study, through qualitative data analysis, identified improved nutrition and health outcomes as a priority even though people had diverse perspectives and beliefs toward nutrition interventions.

This study also makes an important contribution by increasing our understanding of the polarization of opinions on nutrition policies. This study gives support for more evidence-based research on which to build a base for strong nutrition policy. To date, there have been no studies on perceptions of the general public toward nutrition intervention proposals. This study used both qualitative and quantitative methods that show the general public has deep-seated beliefs, values, biases and diverse perspectives toward nutrition interventions.

Delimitations

The research design included data collection from an online survey and from focus groups. Delimitations of the study, based on data collection and recruitment of study participants, were purposeful choices made that set boundaries for this the study. One choice made was that analysis of data collection of the survey and focus groups would be prioritized on perceptions of nutrition policies and not necessarily on food preferences. Invariably there are comments on preferences of what is considered healthy

or nutritious in the survey and focus groups. These types of comments were intentionally marginalized in an effort to explore participant's perceptions of nutrition policies.

Delimitations also included what is covered in the survey or focus group discussion. In part, this was determined by the experiences of the people and those varied experiences were encouraged. The participants were recruited in a less structured method than some focus groups and the focus groups discussions were fairly unstructured. Participants for the focus groups were recruited using a snowball effect. One individual was asked if they were willing to participate in a focus group. If they agreed, they became a recruiting agent. Questions for the focus group were not structured except for an outline of the initial question and possible follow-up questions depending upon the dynamics of the group and the responses, interests and conversation seen in the first question.

The unstructured aspect of the focus groups meant no subjects were off-limits in the focus groups. This likely created a study with fewer delimitations than studies not looking at emotions, beliefs and biases towards all different kinds of nutrition policies. Perceptions of the nutrition policy rather than specifics of the policy were a focus during data analysis. I did try to keep participants on the subject of nutrition policy.

Limitations

Due to the nature of the convenience sample, the ability of the survey to generalize to other groups is limited. The sample population was similar to the overall population in several ways such as income, political party preferences and political ideology. The participants were younger and probably more tech oriented than the

general population, see Table 1. The online format of the survey can influence these demographics (Mason & Suri, 2012).

The focus groups utilized a small number of participants which makes it impossible to generalize to other populations but they did counter-balance the survey in that the participants were an older-than-average population. Older participants typically use technology less for health care information than any other group.

It is possible that the participants who were in either the survey or focus groups are more interested in health or nutrition than others in the general population. The participants volunteered to be a part of the focus groups and in the online survey, a self-selected health survey. These factors influence the results in the survey in that others with less interest in health have different biases, values and perspectives.

Definitions

- *Beliefs*: Placement of trust or faith; Viewpoints (Pelletier et al., 2003); Strong pre-determined attitudes (Lusk & Ellison, 2013, p. 14). "How a person chooses among potential alternatives is not only a matter of 'what he wants' but also of 'what he believes,' and for some kinds of choices an actor's beliefs … may play a most crucial role." (Buchanan, 1991, pp. 52–53)
- *Beliefs beyond the nutrition evidence*: Adhering to nutrition ideals despite evidence refuting them. Distortion of scientific research results by researchers when reporting, or when results are distorted when reported by second hand sources (Brown, Brown, & Allison, 2013).

- *Conflict*: A clash that can be caused by opposing beliefs or values. Fisher, Ury, and Patton, (2011) suggest that the goal in such a clash is not to pretend it does not exist or deny a problem, but to embrace it and use it as a way to work together.
- *Consensus*: Areas of agreement. Sometimes thought to be discovered through conflict such as in this excerpt: "Democracies surface rather than suppress conflict, which is why democracies often seem so quarrelsome and turbulent when compared with more authoritarian societies. The goal cannot and should not be to eliminate conflict. Conflict is inevitable – and useful – part of life. It often leads to change and generates insight. Few injustices are addressed without serious conflict…And it lies at the heart of the democratic process, however, the best decisions result not from a superficial consensus but from exploring different points of view and searching for creative solutions" (Fisher et al., 2011, p. xiii).
- *Core beliefs*: Concepts that we hold to be true. Built on faith, often a religious faith. It is assumed that information alters beliefs (Hayes, Shogren, Shin, & Kliebenstein, 1995) about nutrition but deep-seated beliefs are based on a faith in which facts or alternative information does not alter beliefs. Hynes and Wilson (2016) found that individuals have complex personal constraints for food that did not change with an online intervention to try to encourage an increase in environmentally friendly foods.
- *Diverse Perspectives*: The many points of view that are held about any one nutrition issue; the divergent beliefs of individuals in relation to nutrition and

public policy that are seen across a population (Roberto et al., 2015). Support for nutrition public policies has been shown to be dependent upon how the issue is framed. (Moran et al., 2016). Framing public policies can create a specific lens so that more people agree with a specific policy (Brock, 2016). Framing public policies can also produce diverse perspectives: "represented by the growing number of sectors and disciplines that play a role in public policy development and in nutrition program planning and delivery" (Schwartz, 1996, p. 1137). According to the Harvard Negotiation Project people are "creatures of strong emotions who often have radically different perceptions...Emotions typically become entangled with the objective merits of the problem" (Fisher et al., 2011 p. 12). In this study, outliers are an example of diverse perspectives.

- *Evidence-based research*: Critical thinking, research and evaluation of the strongest types of research possible to answer a problem. "The incorporation of systematically reviewed scientific evidence in making food and nutrition practice decisions by integrating best available evidence with professional expertise and client values to improve outcomes." (Academy Scope of Dietetics Practice Framework, 2004, para. 20).
- *Healthism*: "A sociocultural phenomenon characterized by increased awareness of health, interest in food supplements and mistrust of all things scientific" (Greenhalgh & Wessely, 2004).
- *Nudge*: "An aspect of choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their

economic incentives" (Thaler & Sunstein, 2009); "Potentially powerful instrument to influence social behaviour by seeking to prompt or 'nudge' individuals to make decisions that the choice architect deems desirable" (Yeung, 2012, p. 122). Thaler and Sustein (2009) use the words nudge, mindspace and libertarian paternalism to describe similar types of policies that encourage a behavior desired by others for a given population.

- *Nutrition proposals, also referred to as interventions, reforms or programs*: These words are all used in this study to describe what the participants see in the two nutrition ideas outlined in the survey for improving school lunches. Nutritionists, dietitians and other healthcare workers refer to these as "interventions". School administrators or school boards who are trying to implement improvements for the school lunch program use the term "proposals". Public policy makers often refer to ideas for improvements as "reforms". Program is a term used in the public health sector and gives the connotation that it is ongoing and structured. The actual language in the survey is 'school lunch proposal to promote healthier eating'. The terms are used interchangeably in this dissertation to promote an inclusiveness of the wide range of disciplines involved in nutrition improvements.
- *Obesogenic environment*: Corsica and Hood (2011) define this as genetic obesity factors in combination with a social and behavioral focus on food and an inactive lifestyle. Based on statistics it could be said that across the world we have an

obesogenic environment since WHO (2016) reports that obesity has increased in almost every country in the world over the last few years (Pollan, 2009).

- *Paternalism*: "Interference with a person's liberty of action justified by reason referring exclusively to the welfare . . . of the person being coerced" (Dworkin ,1988, p. 121). A sort of soft paternalism where people are not coerced is called libertarian paternalism by Thaler and Sunstien (2009. Other researchers argue it is impossible for paternalism to be libertarian because the values of each person may not be the same leading to the possibility of coercion for some who believe differently or hold different perspectives (Vallgårda, 2012).
- *Political Bias*: When preferences for a specific ideology based on an individual's politics influences decision making.
    - *Politics of Values*: My name for the theory to explain decision making when beliefs and values really are given a first priority in their lives. People view nutrition public policies through a lens of core beliefs, values and political ideology. It is much easier to make decisions based on strong, unwavering values. Much like decisions built on stable convictions, there is a sense of peace and contentment when we live by inherent beliefs. *Politics of Values* is a way to make sense of a wide range of issues surrounding us, including nutrition public policy.
- *Values*: Meaning given to food and food issues, often non-nutritive. Can be very personal in nature and influenced by culture, traditions or background. It is also defined as "less concrete, less quantifiable aspects of comestibles in human cultures that may be nonetheless relevant to understanding interrelated workings

of food, politics, and society" (Gold, 2015). Lusk (2012) reports that traditionally, economists make no distinction between values and preferences which they consider stable. Lusk (2012) questions the assumption that choices of preferences are stable. For this study and this dissertation's framework, beliefs are described as deep-seated beliefs to indicate the assumption of stable convictions that are held as truth and values stem from these deep-seated beliefs. The framework of this dissertation is that values and preferences are also two distinct constructs, values being stable and complete while preferences describe a structural instability in food choices (Lusk, 2012).

Values and their meaning:

> Naturalness (extent to which food is produced without modern technologies)
> Taste (extent to which consumption of the food is appealing to the senses)
> Price (the price that is paid for the food)
> Safety (extent to which consumption of food will not cause illness)
> Convenience (ease with which food is cooked and/or consumed)
> Nutrition (amount and type of fat, protein, vitamins, etc.)
> Tradition (preserving traditional consumption patterns)
> Origin (where the agricultural commodities were grown)
> Fairness (the extent to which all parties involved in the production of the food equally benefit)
> Appearance (extent to which food looks appealing)
> Environmental Impact (effect of food production on the environment)
>
> (Lusk & Briggeman, 2009, p. 190)

Summary

Nutrition public policy is stated as a priority by many to address numerous health problems like obesity and chronic diseases. Additionally, there are billions of dollars directed toward health. It is perhaps most striking there is little research on perceptions of the general public toward proposed nutrition policies. The purpose of this study was to

examine and explore the general public's perceptions of proposed nutrition public policies and to develop a better understanding of factors that influence perceptions of nutrition interventions. It also explored core beliefs, biases, conflicts and diverse perspectives affecting attitudes toward nutrition policies.

There are few things we Americans, with our sense of individualism, can agree upon so when we find consensus on something as important as government investment in scientific research, it provides a clear call to examine how we might work toward that common ground.

CHAPTER II

LITERATURE REVIEW

The purpose of this study is to explore the general public's perceptions of proposed nutrition public policies and to develop a better understanding of factors that influence perceptions of nutrition interventions. It will also explore deep-seated beliefs, conflicts, political ideologies and diverse perspectives coming from conflicting values having, on their face, very little to do with nutrition.

Nutrition public policy has wide ranging implications for the US population. However, the best mechanisms through which nutrition and healthy weight maintenance can be encouraged and perpetuated are not well understood. It has been suggested that the NSLP is in a position to make the most impact on students' and ultimately the general population's response.

This literature review begins with an overview of the nutrition public policy process, factors complicating efforts designed to improve diets, an agricultural history of the early school lunch program, and a discussion of a feedback loop that is thought to contribute to the perpetuation of poor nutrition decision making. Evidence from current literature is presented for the hypothesis that the general population has values, biases, deep-seated beliefs and diverse perspectives on nutrition public policy, having very little to do with nutrition, but influence perceptions of nutrition nonetheless. The conclusion

addresses specific gaps in our current knowledge of perceptions of proposed nutrition public policy and the implications for those perceptions for informing policy.

Competing Frameworks

One factor that complicates public policy efforts is that nutrition policy and scaled-up programs designed to improve nutrition outcomes are easily weakened. They are weakened and become ineffective by the neglect or lack of appreciation and comprehensive understanding of competing values and special interests (Moore, Murphy, & Moore., 2011). Traditional thinking would consider policy decision making as constrained by bounded rationality, first defined by Simon in 1957. Policy is informed by just enough knowledge to 'satisfy'. An example of this is the understanding that cholesterol build up in the arteries causes blockages or cardiac infarctions. That information leads people to believe that cholesterol in food is bad and directs some of their nutrition decisions. Hunink et al. (2014) explain that decision making in health (like nutrition) is often made under conditions of uncertainty. So while a specific amount of information on cholesterol might be enough to satisfy and help direct nutrition decisions, it falls short. It is now believed, and has been for decades by many researchers, cholesterol in food does not increase cardiac events. The American Heart Association is very against any changes in food cholesterol recommendations even in light of new research substantiating decades of evidence. Other researchers see this very message as one that has turned the US general public toward diets high in sugar that may be causing increased obesity (Teicholz, 2014).

Since we are not always able to clearly understand complex problems, the theory is that we focus in on one specific part of the policy. Fischer (2003) describes this as hobbling the policy process and states that a driving force of the process is the "value issues and social meaning" (p. vii). Pelletier et al. (2012) discuss the importance of values and beliefs in the formulation of nutrition public policy. Barnhill, King, Kass and Faden (2014) stress that nutrition public policy that limits access to food—by, for instance, banning or taxing sugary treats or foods high in saturated fat or cholesterol--is one of the most controversial areas of nutrition public policy. The reason for the emotional conflict and controversy is that food has cultural and personal value and meaning to individuals. Food is a way in which a person can express their thoughts, feelings and attitude to the world (Jones, 2007). Researchers have theorized why there is such a strong emotional outburst when a food ban is implemented. This response shows something very deep and personal is challenged. One possible answer from decision making sciences is that people react more to a loss than a gain. Another possibility is the association of food with values, stable convictions, or deep seated beliefs we hold about the world we live in.

Stable convictions and deep-seated beliefs do complicate the policy process (Barnhill et al., 2014). They may be an underlying factor creating polarization toward nutrition policy. It is important for this discussion to briefly touch upon some of the competing narratives of public policy delivery in the literature to illustrate the polarization of values built upon theoretical frameworks.

Government, Non-Government and Faith Based Organizations

Ayo (2012) argues that health promotion policy in a climate of neoliberalism creates an unhealthy, health industry and that neoliberal rationality is pervasive in today's culture of health. The tenets of neoliberalism, free market enterprise or the privatization of industry (i.e., fitness and nutrition), are the same factors that Ayo sees as preventing social and structural changes needed for government to intervene at the level the author sees as necessary to solve the problem. In place of social determinates that could make an impact, Ayo (2012) says a structure of self-regulating exercise and individualized healthy eating is promoted.

Ayo (2012) provides a convincing critique of the framework that the marketplace is distracting from sound nutrition public policy. Many consumers as well as policy makers and nutrition professionals mistake a structure of self-regulating exercise and healthy eating as a model. Ayo is correct in many respects that a thin person may not be any healthier than an obese person. The neoliberalism of thinness as a cultural norm of health does create blind spots. Ayo's framework, however, neglects the evidence of rapid changes in the field of nutrition. Some of the biggest critics that low-fat diets do not work were healthy eating gurus with little nutrition expertise. Those self-regulating exercise and nutrition promoters may one day be proven correct in areas where government intervention, policy, system and environment changes which Ayo is advocating for are focused on decreasing total fat in the DGA's and NSLP.

A competing narrative and framework is by Hefferan, Adkins, and Occhipinti (2009) who value a step back of the government as beneficial so as to allow space for

private interests to have a place to work in the margins. The authors put forth the importance of delivery systems through non-governmental organizations (NGO) and faith-based organizations (FBO) some of which take up the work where government leaves off.

There are examples of FBO that work well within the government and then continue the work after the completion of the government contract. The term "bridging the gap" is an excellent metaphor for Judy Mayotte's (1992) work and the work she has inspired (p.3). Mayotte lived alone in refugee camps for 2 years, researching food politics along with other refugee issues. Her work as a part of the government and later continuing to work toward similar goals but in a FBO gives credence to the possibility of making a space for private interests to work both in the U.S. and around the globe. The Mayotte framework is inclusive of the idea that building relationships and solidarity is absolutely necessary to improve population health outcomes.

NGO's and FBO's take on many forms such as Mayotte's framework but other organizations may have the goal of working against government's policies, actively resisting their priorities. Another category of FBO's choose a position that tries to limit and reduce what they see as the harmful effects of neoliberalism. Some may see NGO's and FBO's only as complicating public policy efforts, but others see that they bring value (Wuthnow, 2009) and have an important role in building relationships and bridges with those in need of nutrition support in the U.S. and across the globe.

Ecology Policy Incorporating Empirical Evidence and Values

Inherent beliefs and values may seem at odds with the field of nutrition which is traditionally seen as a science, technology, engineering and mathematics (STEM) field that fits neatly into an empirical category. Public discourse in the field of nutrition, diet and obesity has in many ways followed a similar route that Fischer (2003) describes as the empiricist approach to public policy. Researchers argue that this empirical approach hobbles the process (Fischer 2003). It is a linear approach that cannot encompass outliers and does not inform policy of so many complex issues. A linear approach goes from A to B to C, overlooking important side issues that influence the process. In contrast to a linear policy process approach, the framework of ecology is used in other disciplines to describe a way of dealing with policy process of complex issues (families: Bubolz & Sontag, 2009; school food: Moore, Murphy & Moore, 2011; Robert & Weaver-Hightower, 2011 and boy's education: Weaver-Hightower, 2008). Policy ecology allows for interrelated, conflicting and often messy issues which is possibly closer to the intent of Lasswell, known widely as the founder of the study of policy analysis (Diem, Young, Welton, Mansfield, & Lee, 2014). In 1951, Lasswell envisioned the field of policy analysis made up of those who have knowledge to guide policy formulation (Fischer, 2003). One salient benefit of uncovering possible blind spots that limit nutrition policy efforts is a better understanding of the complexities of diet and its implications for nutrition policy analysis and practice in order to inform policy makers.

Researchers have found that taking a socio-ecological perspective can help incorporate lower level factors such as children's food likes and dislikes (Moore et al.,

2011). Moore and colleagues convincingly make the argument that policy is ineffective if both lower level and higher level factors are not considered in the policy process. A socio-ecological framework allows for the consideration of multi-level factors, processes and evaluation at the policy, community, organizational and the personal level. Moore et al. (2011) gives the example of the school lunch policy process involving the cooks on a daily basis so they are able to make changes to take advantage of seasonally available produce, local sources or cultural favorites.

Competing Perspectives on Nutrition

Pelletier et al. (2012) determined that for nutrition policy processes "a universal feature is the disagreement mostly on perspectives and interests rather than differences on the technical evidence that might or might not support interventions" (p 29). Current nutrition policy process is fractured among competing themes and special interests creating a situation of conflict over delivery of public policy, disagreements over goals, squabbles about lines of responsibility and dissension in roles of differing views.

Atkins, Siegel, and Slutsky (2005) propose that "many of the debates that appear to be intractable disputes over the evidence arise from conflicts in the other spheres that influence decisions, such as the values, preferences, and circumstances of individuals and the communities they represent" (p.102). There is also reason to believe that nutrition public policy is complicated by political ideology. Political ideology is a construct of its own but may also influence perceptions of what public policy should address and whose perspective might be included as discussed in the next section.

The Political Policy Process

The rhetoric surrounding the debate of what we should eat seems to be more negative and antagonistic than would be expected in straightforward discussions of, say, fat and sugar content of foods. A larger philosophical disagreement seems to lie just below the surface of these policy discussions. Some authors suggest that perceptions of nutrition public policy interventions fall in line with respondent's political ideology and party affiliation rather than simply their beliefs about nutrition (Lusk, 2012).

Researchers (Guthman, 2011; Robert & Weaver-Hightower, 2011) effectively argue that food is political. The policy process of genetically engineered (GE) foods is especially interesting. The National Academies of Science report that GE foods do not need a label for safety reasons (retrieved on May 19, 2016). However, an increasingly polarized general public does not agree with the science on this issue (Funk & Rainie, 2015). As one food industry analyst points out, "It's an emotional issue, it's not a science issue," hinting to a conceptual framework where other factors (Weise, 2016, para. 7) are prioritized over evidence-based nutrition research.

Lusk (2012) suggests that political ideology might be a factor in respondent's views on food policy. A survey of political ideology of food questions was taken by 701 participants. Lusk reports there were no existing survey measures for determining people's political ideologies toward food and farm issues. The survey he developed followed a common framework used in discovery of attitudes about political change and how food and farm policies are currently maintained. A succession of questions was put forth with a range of answers about what the government should do in specific situations.

The questions about government action included the following issues: food safety, food technology, food imports of foreign foods, animal welfare, affordable food, fats, farm subsidies, organic and local, fast food and healthy food.

The food ideology questions were followed by questions designed to determine political ideology. Survey participants were given the choices of Democratic, Republican, Tea Party, Independent or other for the question on which party they most closely identified with. In addition, a series of questions was used to determine political ideology in addition to the questions to determine political party affiliation.

Lusk (2012) concludes that the general public is more open to government intervention in some areas such as food safety. At 41.8%, participants reported that they favor government action in making sure the food supply is safe. The item with the lowest level of support for additional government intervention was healthy eating with only 30% favoring increased government regulations.

Lusk suggests a growing concern in the general public for the future directions of nutrition public policy. A major consideration in nutrition policy is should public policy address individual behavior or public structures and institution? Does the population need the government to nudge toward better health with public policy to change what has been called an obesogenic environment? Corsica and Hood (2011) define an obesogenic environment as a genetic, social and behavioral issue with food accentuated by a sedentary lifestyle. It is when people live a lifestyle where foods associated with increased risk of obesity are readily available and accentuated with sedentary lifestyles.

Arguments that changing the environment does not get to the crux of the matter have been made. Extensive work to change the environment includes: More bike trails, walking paths, parks, near elimination and labeling of trans fats, DGA's with specific target goals, promotion of farm to table over fast food, and increased accessibility of produce in many areas of the US. The argument that policy, system and environmental (PSE) changes are not working echoes Dr. Steven Parker, a pediatrician at the Failure to Thrive Clinic of Boston City Hospital, who stated almost 25 years ago that these types of changes do not correct the misunderstandings about what is nutritional (Barringer, 1992). During the ensuing 25 years, instead of clarity on nutritional issues, confusion has seemed to increase.

Nutrition education, interventions and individualized treatment can bring clarity, but those who desire structural changes defend their position in a variety of ways. Guthman (2011) emphatically believes that treatment or educating people will not be enough to overcome economic interests. The food environment is caused by politics and necessitates a structural address according to Guthman's framework.

Brownell et al. (2010) also see an obesogenic environment requiring prevention and increased structural public policy in the light of what he calls the failure of treatment. The researchers argue individualized treatment is cumbersome and lacks the ability to make changes on the level needed. Treatment of obesity has such a high failure rate and is so incredibly time intensive that the authors question efforts in this direction as viable. Since individualized treatment cannot reach all the people who need it, many public policy reformers call for a change in policy, systems and environment (PSE) including:

Higher taxes; bans on specific food; price supports for foods seen as healthy; expanded trails and outdoor spaces to encourage physical activity; and, a general change in infrastructure that would make the healthier choice the easy choice (University of Florida Extension, 2016). This a framework that ignores what Paarlberg and Paarlberg (2013) see as the empowerment of individuals through nutrition education and the potential to find individualized interventions that can translate to a larger population.

Changing the environment may help in some situations but the research is mixed. Just as treatment works for some individuals and not others, changing the environment looks like it might have similar barriers. In one study looking at long term outcomes, researchers reconfigured corner stores, increasing access to healthy foods for low-income residents (Ortega et al., 2016). Surveys were given out to almost 1000 residents before, during and after the comprehensive changes. The over-haul of the stores included increasing fresh produce and other healthy choices. Two years later, survey residents responded that they were aware of the increased choices but also reported that the access to healthier foods did not significantly improve their eating habits. Some residents reported worse nutritional practices after the intervention.

Data from the corner store intervention study forced the researchers to conclude that changing the environment may not make a difference in some low income areas. This is just one example of empirical evidence of long term changes in health outcomes that yields little evidence of ways that policy and scaled-up programs can improve nutrition outcomes. The authors state that it is disappointing that an intuitive idea combined with massive amounts of resources--time and money--and substantial change

in the structure of the system such as this turned out to not work. In one of the low income areas, eating habits were worse post-intervention than before the extensive environmental and structural changes. Other researchers have found positive gains with changes such as point of purchase nudges (Wansink, 2010). Researchers give evidence of the framework such as, if it easier to eat well, people can mindlessly eat but it will be more nutritious.

Ortega and colleagues' (2016) point out research limitations on why the corner store interventions did not work. One possibility is treatment as a missing factor. In opposition to that idea, Brownell et al. (2010) argues that treatment or individual interventions can never reach an entire population due to cost and time constraints. This is a viewpoint that ignores another complicating factor in the quest for strong nutrition policy: Nutrition is confusing to the general population. j

Adding to the confusion is that what works for one person in one situation might not fit the next person, making definitive policy for a population on what is the perfect diet extremely hard (Henes et al., 2013; Kreuter, Strecher, & Glassman, 1999). Paarlberg and Paarlberg (2013) see private counseling as the best intervention in contrast to public policy that puts eating certain foods in the same category as cigarette smoking or alcohol consumption. Alcohol is empty calories but abstinence is rarely mentioned as a suggestion for nutrition public policy campaigns. It can be a confusing message. Why, the general public might wonder, is alcohol given a pass in public policy anti-obesity campaigns compared to juice, soft drinks and other caloric drinks? Does that send a message that alcohol is healthy and other caloric drinks are not?

Whose perspective should be used to set policy? Marion Nestle in her book on *Food Politics* (2002) reports confusing nutrition advice is a concern everywhere she goes. Good nutrition, as in all basic sciences, is based on probabilities not absolutes, making points of view interpretation dependent. Nestle points out that while the basis of a good diet – increased plant foods and decreased processed foods – has not changed in over 50 years, consumers are questioning more than ever what foods to eat. She puts the blame on big companies' purposeful manipulation of nutrition messages to undermine an "eat less" campaign. But she does concede what she considers is "the most effective nutrition icon" of our time (p. 66), the United States Department of Agriculture (USDA) Food Pyramid, has failed. She was on the committee to develop the Food Pyramid and laments that it has not changed what really matters: Energy consumption patterns in the American population is as high as ever.

The USDA Food Pyramid was designed to be a standard for nutrition education. This was to be done through the evaluation of dietary intake patterns and to show a hierarchical level of food choices in that high fat foods should be decreased (Nestle, 2002). Nestle deems the food pyramid as highly influential by any measure. On the other hand, she also reports that consumption of premium ice cream and American cheese has increased showing that the efficacy of encouraging the more healthful diet–as the intended expectation by policy makers–was not fulfilled.

Nestle (2002) blames the failures of nutrition public policy on several factors, not the least of which is how the pyramid was construed by big business and lobbyists. Nutrition education using the pyramid often pointed out that all foods can fit which

Nestle says contradicts the explicit message of the food pyramid of food-group hierarchies. Nestle (2002) points out that the DGA's use the words *more* when talking about foods and the word *less* when talking about nutrients which sends a really confusing message.

Lang and Heasman (2015) in their book *Food wars: The global battle for our mouths, minds, and markets* point out that "it is sad when policy is ineffective, but this should be an incentive to clarify the arguments, analyze the reasons for failure and help spread public understanding of the need for change" (p xiv). It seems intuitive that first we must get the facts right. Nutrition misstatements are common but should not be ignored just because they are so common. An example is the following peer reviewed journal article's review of fat build up in the diet.

Otero, Pechlaner and Ğrcan, (2015) describe what they call a neoliberal diet. This writer's source of expert nutrition knowledge on fat build-up in the body is not correct. The citation is from Howard (2012) in the journal "The Economist". This is definitely subject matter outside of the author's scope of expertise. Not a good source of expert nutrition information, incorrect facts, but the nutrition information is passed on without fact-checking. The incorrect statement by Howard (2012, p.7) is repeated in a scholarly handbook even though it contradicts empirical evidence of how fat builds up in the body (Cataldo, Nyenhuis, & Whitney, 1989). The authors idea of a neoliberal diet fails to even get the basic facts correct. But many authors do not have evidence-based facts as a goal. Their goal is to supply great sounding nutrition jargon to support an argument.

This is just one example of how nutrition inaccuracies become grounded in scholarly articles, popular literature and the media. This type of nutrition mis-education is another area that complicates nutrition policy. Strategies of evidence-based nutrition education for professionals and writers of nutrition, as well as consumers, continues to be one of the best avenues for spreading public understanding of nutrition.

Nutrition Education and Interventions

Nutrition education sits squarely in the middle of a debate: How serious is the nutrition and obesity issue? How can public policy best influence health issues? And, how much government involvement is optimum? Arguments of food as a social justice issue (Freeman, 2007) and Lupton's (2014) arguments that health education and promotions are built on shaming is an interesting study of frameworks. Lupton points out that by linking risk to emotion, public policy creates a situation where the very ones that need the most help are being degraded. It is not just about the nutrition facts but it has become ingrained in our culture that fat is 'bad' and thin is 'good' according to Lupton. Empirical evidence of long term changes in health outcomes might normally be considered areas of consensus but the following sections shows areas of tension and illustrates why policy and scaled up programs built on social determinates of health, weight loss or increased exercise are not without critics.

One might surmise thin is fit and thin at any cost is still better than the alternative. However, research is mixed toward this cultural preference that thin is healthy. Afzal, Tybjærg-Hansen, Jensen, and Nordestgaard (2016) published empirical evidence of long term changes in health outcomes after following 97,000 people for three decades. The

results give little evidence of ways that policy and scaled-up programs can improve nutrition outcomes because the data points us in a different direction. Afzal and colleagues say that the data is clear: A body mass index (BMI) in the obesity range has the lowest all-cause mortality rate (Afzal et al., 2016). Participants in this study were followed until death or emigration, whichever occurred first to determine what body mass index showed the best outcomes. The researchers of the tri-cohort study said the data driven results are straightforward. The data unmistakably points to having more weight than what was previously believed as being associated with increased mortality.

Research is also mixed when determining how much progress has been made in public health outcomes. When interpreting the National Health and Examination Survey (NHANES), Dietz (2016) points to researchers who conclude that obesity rates have increased in the 2 to 5-year old population (Skinner, Perrin, & Skelton, 2016). Ogden, Carroll, Fryar, and Flegal (2015) conclude that the rates have not increased (using the same population, similar time frame and using the same NHANES data). Ogden and colleagues (2015) give additional evidence that the rates did not increase again the next year, reiterating that their conclusion was not an aberration. Neither report is incorrect. It is just a matter of what years are chosen as the starting point according to Dietz (2016, p. 991). A discussion of the two researcher's findings is in an article titled, *Are we making progress in the prevention and control of childhood obesity? It all depends on how you look at it.* The social determinants of health as a basis for nutrition policy are susceptible to the same type of mis-information. It all depends on who is looking at it and how they perceive it.

Benefits of Weight Loss as Policy

Additional empirical evidence that might have been well accepted in the past is sometimes called into question and makes the policy process a complex and confusing undertaking. Participants from the reality television show, *The Biggest Loser* were followed for 6 years after their initial weight loss. Researchers found that 14 of the 15 participants from the 6th episode gained all of their weight back and some actually gained more than they lost (Fothergill et al., 2016)).

Much of our current nutrition education has been built on the premise that even losing just a few pounds decreases risk of diabetes and other weight related disorders (Dietz, 2016). However, for the general population, just like the participants on *The Biggest Loser* reality show, weight rebound is all too common. The question becomes: What does good health look like? Were the biggest losers healthier at their original weight? If they lost lean muscle, essential bone minerals and important nutrients along with the pounds but gained it back primarily as fat, do we consider the increased physical activity and healthier eating a model for public policy formulation?

The researchers measured the participants metabolic rate and found as expected that along with the weight loss, there was a decrease in metabolism (Lissner et al., 1991). Researchers expected metabolism to rebound and reach similar levels of where it was before the weight loss, but instead, after 6 years, metabolism was significantly reduced to the point that participants could not eat the same as they had previous to the weight loss and still maintain the weight loss. If nutrition education is all about weight loss–which it often is even though disguised as healthy eating–is this a disservice to the general public?

At the very least it does make a healthy eating public policy combined with a campaign to reduce weight very challenging and a target for criticism.

The goal of global nutrition education to improve health outcomes is a laudable goal, but researchers have found that science literacy does not always translate into the general public understanding and accepting the intended message (Kahan et al., 2012). Furthermore, research on nutrition education alone is mixed and shows it is difficult to make substantial changes stick (Brownell et al., 2010; Gould, Russell, & Barker, 2006) but other studies show that health and home economics courses can make a significant difference (Gryboski, Yinger, Dios, Worley, Fikree, 2015).

One particular promising area of research is that parental nutrition education makes a significant difference in long term outcomes of obese children, even more than interventions for the child (Epstein, 1996; Golan & Crow, 2004; Quattrin, Roemmich, & Paluch, 2015; Rhee, 2008). Family meals where children are not verbally encouraged or otherwise prodded about food has been seen be one of the best environments for fighting against obesity and disordered eating (Corsica & Hood, 2011; Neumark-Sztainer, Wall, Larson, Eisenberg, & Loth, 2011). Evidence seems to indicate relationships formed during meals is more important than the foods served in determining health outcomes. This is an interesting area of study on family dynamics. If the choice is between having a family dinner based on take-out foods or not having a family dinner at all due to sports, evening activities or social events, maybe there is a place for take-out foods at the family dinner table. The ideal would be for families to have skills to plan, shop and prepare

meals in the few minutes they have available. In reality, sitting together at the dinner table is a huge accomplishment and a move in the right direction for many families.

Tools to assess the home environment show potential for use in nutrition education, also (Hales et al., 2013). Arguments against these types of interventions use the defense that they will not reach enough people to change prevalence rates (Brownell et al., 2010). In contrast, other researchers (Liu, 2016) have found that adherence to 5 key health behaviors known to prevent chronic diseases is very low in the US (6.4%), and when statistics of success are this small, it is much easier to see progress with an approach that has an individual treatment or intervention focus.

Liu (2016) also suggests that attention to strategies that increases children and adolescent adherence to the 5 key health behaviors might translate to life-long benefits. Parenting skills could potentially have an impact on the 5 key indicators of health behaviors: Adequate sleep, low alcohol intake or abstinence, healthy body weight, not smoking and adequate physical activity. It is easy to understand the 5 key indicators of healthy behaviors, but after that, it feels a little like mass confusion as to how to actually improve health outcomes. The purpose of this study is to examine and explore the general public's perceptions of proposed nutrition interventions and to develop a better understanding of factors that influence perceptions of nutrition policy.

Liu's (2016) study highlights the simplicity of health interventions and, ironically, the immense difficulty of implementing, following and adhering to simple steps. These 5 key indicators are backed by strong evidence-based science, but many proposed public policies are not. Furthermore, evidence suggests that inadequate research behind nutrition

public policies has led to confusion and lack of a consensus for future directions. The hidden cost of nutrition regulations, not backed by strong evidence-based research, are emotional responses which may in turn lead to increased polarization and lack of trust in future nutrition policies.

Benefits of Physical Activity as a Policy

Mainstream nutrition health policies often focus on diet in combination with an increase in physical activity campaigns. Fitness interventions with diet or as a separate campaign has shown the most promising potential for increasing health outcomes (Bascetta, 2006; Daniels & Greer, 2008) but other research studies show that exercise does not necessarily equate to weight loss. It is not uncommon for an increase in exercise to correlate positively to an increase in weight gain. Consider the following argument.

Chaufan, Yeh, Ross and Fox, (2015) effectively argue that children cannot exercise themselves out of poverty, referring to the theoretical framework that poverty is the underlying factor and health outcomes will not be improved until the poverty is addressed. Chaufan et al. (2015) found that when school children use active school transportation (AST), such as walking or riding a bike to school, which increases energy expenditure, there were increases in weight (although some measurements of cardiovascular health were improved). Drawing on this study and others, the authors criticize the three main policy areas in nutrition: Direct behavioral interventions like walking and dieting, indirect behavioral changes like taxing unhealthy foods or changing the food environment and non-behavioral approaches like penalizing companies that are producing unhealthy foods as being ineffective and counterproductive to the goals of

reducing obesity. Their conclusion is that each of these policy processes ignore the real problem which is poverty and if all the resources were to go toward poverty alleviation, public health obesity would be a non-issue.

It is a valid argument that nutrition policy makers are having difficulty developing a clear, concise message that brings about the desired change. Alleviating poverty as a public health initiative is a worthy goal that would also help many economically strapped individuals have the needed resources for healthy food and increased physical activity.

Nonetheless, there are important limitations to this framework. Other influences on the effectiveness of public policy campaigns to get individuals to increase physical activity must be considered. One barrier is the receptivity to government intervention in individual's personal lives. In some studies, individuals report that they do not feel it is the government's responsibility to tell them to exercise (Hervik & Thurston, 2015). The authors of this study state that they intentionally conducted their study outside of a neoliberal population. They were expecting to see a difference from studies in neoliberal environments which the authors argue is where most of these types of studies are conducted. They specifically wanted to evaluate what other populations see as the government's role versus the individual's role in setting policy for physical activity. The authors concluded that even in a population not considered neoliberal (Danish), participants were wary of government intervening in their personal lives. To put this into context for the current study, this is evidence that diverse perspectives of nutrition public policy often come from deep-seated beliefs, values and biases. Understanding this could guide advocates and policymakers.

Perceptions of Nutrition Messages

Intentional versus unintentional effects of policies (Peters, Klein, Kaufman, Meilleur, & Dixon, 2013; Fletcher, Jamal, Fitzgerald-Yau, & Bonell, 2014; Weaver Hightower, 2008) are one more factor that complicates nutrition and health policies. Broom (2008) gives historical examples where empirical evidence was repressed because of cultural beliefs (i.e., the discovery of a change in diet as a preventive and curative address for pellagra). There are claims of health promoting foods today that either die or thrive by the general public's obsession regardless of the empirical science behind the claim.

Broom (2008) lists four unintentional consequences of public policies: First, blame toward the individual who does not fit the ideal of a policy. Second, an invisible structure in that policy makers set up individuals as the center with modifiable factors to include in the process as a type of self-fulfilling prophecy. Third, intensified medical testing that perpetuates the increased interest in public policies. And fourth, how applicable the facts are to a population. Health disparities give us examples of situations of facts not being applicable to a population. For instance, a wonderful public policy might be for every student to be served fewer calories, less sodium and less fat for school lunch. The facts show that this is considered best practice. But to the teenager who is homeless, living in a car and eating from a dumpster, the solutions are not beneficial to this individual or possibly other populations and outliers. Many people in every population need individualized attention. And providers of food assistance need the flexibility to meet those needs.

For instance, the gold standard in nutrition research are double blind experimental studies. But, even if a gold standard is found, it has limited clinical application and is even less applicable to a whole population according to Broom (2008). An example of this might be the admirable nutrition public policy campaign to decrease fat intake (which was intentional). Some of the consequences–which were unintentional–are that individuals increased carbohydrates in their diet when trying to adhere to low-fat processed food diets. The end result--a diet high in sugars and natural sweeteners—is an unintentional nutritional consequence.

Another example of unintended consequences of a nutrition policy is a study in which fifth grade students participate in the breakfast at school program. It was found that the students were more likely to move into the obese level than their peers who did not eat the breakfast that was offered at school (Sudharsanan, Romano, & Cunningham, 2015). But not all breakfast eaters gain weight – even when the children eat two breakfasts – as seen in a study where parents did not feel the breakfast foods offered were culturally appropriate. The children (n=273, 84.6% Hispanic) had two breakfasts, one at home early in the morning and another one at the school (Bruening, Afuso, & Mason, 2016). This parenting and nurturing practice of having two breakfasts was inversely related to obesity. The situation was created because there was a policy in place that some parents did not feel fit with their deep-seated beliefs.

If there ever was a gold standard, it would be: Do not eat two breakfasts. And, eating breakfast daily–just on –is tied to healthy outcomes. Contrary to popular wisdom and research, (at least in the two studies mentioned) specific populations show results that

diametrically oppose what public policy experts might think is intuitive or an empirical gold standard. Understanding diverse populations and how nutrition policy affects individuals is important and might be more easily accounted for using individualized nutrition education.

In some situations, it is the spokesperson or the company the spokesperson represents that might send an unintentional message. McDonald's corporation quietly disbanded a nutrition program at schools after complaints about the conflicting message this sent to students (Ferdman, 2016). The nutrition message the McDonald's spokesperson shared was in line with the DGA's. The message was to increase fruits and vegetables and lower intake of other foods. At no point was the message encouraging fast food, but people were very vocal in saying none of that mattered. Critics made it clear, any nutrition information from anyone associated with McDonald's was not acceptable even it was factual (Seigel, 2015). It gave the appearance McDonalds and fast foods are an acceptable part of a healthy diet. While McDonalds is a highly visible conflict of interest, it is incredibly difficult to find any nutrition messages that are not backed by companies, government or non-profits with another agenda.

McDonald's, Chick-fil-A and other fast food restaurants have been hit hard with negative campaigns in comparison to what some feel are healthier restaurants. Schoffman et al. (2016) examined both types of restaurants. They found that restaurant entrees at places such as Chipotle and Panera are higher in calories than entrees at fast food restaurants. A public policy message to avoid fast food restaurants could have the unintended effect of encouraging increased calorie consumption if people choose

healthier sounding restaurants that might actually be the opposite. Subway is another example of a restaurant that bills itself as healthy. Subway sandwiches can reach 1000 calories with a nutritional value very similar to many other fast food chains.

Even though the potential for dietary factors to stop or change the course of disease processes such as obesity, cancer and comorbidities is well established (Ettinger et al., 2015), there are gaps in the literature. These gaps include understanding how perceptions are created and influenced by values above and beyond nutrition facts. Food can receive value when perceived through various prisms such as a cultural lens (what foods are acceptable for breakfast), a medicinal lens (what foods bring vitality), a political lens (what foods are ethically produced), a socio-political lens (what foods garner peer identification), a religious lens (what foods are wholesome), or an economic lens (what foods are affordable or increase sustainability).

A conundrum develops when a public policy is enacted that goes against deep-seated values. The emotional outburst when nutrition interventions, including calorie limitations, were enacted for the NSLP possibly illustrates a deep-seated value impasse. It was reported that over 1 million students stopped eating school lunches when nutrition reforms took place in the NSLP (Harrington, 2014).

Values vary from individual to individual but might include one of the following. Students who have very little control over their school day except at lunch, might be fiercely protective of what little independence they have. So the student might purposely choose to elevate the social status of the very foods those in authority are trying to ban. After Flamin' Hot Cheetos were banned in California, New Mexico and Illinois, students

posted YouTube videos with Flaming Hot Cheetos as the star, creating an even bigger sensation for the snack company (Layman, 2014).

Political bias toward the authority legislating the policy might be another underlying factor. Possibly a deep seated value of 'this is just another silly rule that gives me a reason to vent and express myself'. Other students might see nutrition interventions as a chance to make a profit black- marketing junk food (Fletcher et al., 2014). Students who are in a controlling atmosphere where adults control what they do or do not eat are known to be at an increased risk for obesity, anorexia, bulimia and other eating disorders (Arredondo et al., 2006; Carper, Orlet Fisher, & Birch, 2000; Faith, Scanlon, Birch, Francis, & Sherry, 2004; Faith, & Kerns, 2005; Jang & Whittemore, 2015). It is likely a combination of competing values that makes it so hard to establish nutrition interventions and policy with wide acceptance. Jang and Whittemore (2015) suggest a family management framework where family perceptions and health behaviors are respectfully considered. The researchers point out that understanding family dynamics with obesity is an important part of the experience needed to understand the best way to move forward in policy formulation. The family management framework is a possibility for work within proposed nutrition intervention for NSLP.

Research Methodology as a Confounding Factor

A topic worth exploring is how methodological factors in human research increases complications for informing the nutrition policy process. For example, empirical body fat estimates and measurements should be straightforward in nutrition literature, but Flack, Siders, Johnson, and Roemmich (2016) found that as fat free mass

increases, accuracy of prediction equations underestimates resting metabolic rate. The authors stress that other methods to determine resting metabolic rate are labor intensive, not always cost efficient and require specialized equipment.

Nestle (2013) discusses the placebo effect as an incredibly strong factor in nutrition and human health. It is real and it makes every clinical trial of a dietary intervention suspect to its influence. Consider the placebo effect when a trial product works for a specific people and the influence it exerts on others to have increased faith in the product? Anecdotal evidence can sometimes trump rigorous research creating yet another avenue for confusion in the nutrition policy process.

The placebo effect only needs to overcome a minuscule change over a course of a day. Consider a weight gain of 50 excess pounds over a lifetime. This can theoretically be equal to an extra 10-calorie bite per day. Trying to elucidate the reason for these 10 calories is extremely susceptible to methodological issues such as how clinical trials are set up, recruiting strategy, physiological impact of knowing a clinical trial is being conducted as well as past failures and successes at dieting compounded by individual differences of participants.

Nutrition claims are made for numerous products that are not tested in double-blind studies and are readily accepted by many in the general public. On the opposite extreme are nutrition claims that are tested by the most rigorous standards possible and are not accepted by the general population. A possible reason for the non-acceptance of well-documented nutrition research may have nothing to do with methodological issues but is better understood in light of a study that surveyed 1540 participants and reported

that individuals were most likely to accept research that fits with their world view (Kahan et al., 2012). Accepting evidence that fits with worldview is an especially troubling trend in nutrition because some studies with the least rigor might have results that lead people to believe a product has amazing nutrition properties.

Nutrition research even with the highest level of rigor might include data on how the participant feels after the intervention or their perceived improvement or to rate their overall level of wellbeing, making it imperative to control for a variety of psychological effects. Other factors are ethical considerations not allowing research where participants are denied care or put in harm's way. Studies such as the Tuskegee experiment where syphilis-infected men were not treated for their illness because they were in the control group highlights a worst case scenario (Jones, 2009), but offering an herbal supplement may have unintended side effects that also brings up ethical concerns that require adjustments to the research design.

Reporting results has important implications for nutrition research. Correlation of two factors does not necessarily mean causation as pointed out in a study where students' BMI and other measurements of obesity were compared in one group that participated in active school transport (AST) and a control group that did not participate in AST (Chaufan et al., 2015). Even though the two factors correlated the authors did not accept it as causation. They believe that a more likely reason is that lower income students are the ones who are forced in schools where AST is most prominent and that socio-economic factors create an environment where socio-political issues associated with poverty are overpowering (Chaufan et al., 2015).

Examples of other research design issues include: How to isolate 1 or 2 meals a day to determine their impact? How to control for foods eaten outside of the school environment such as snacks or the evening meal? How to control for food carried into the school in backpacks or pocket?

Food records and diaries have their own set of problems including forgetting to record items or shame causing the participants to purposely adjust their food record to reflect what they feel is acceptable. Study of environments to measure the obesogenic influence on individual eating patterns has proven to be particularly difficult because individuals react very different to a similar environment. There may also be unintentional cues in an environment set up in a lab situation (Corsica & Hood, 2011).

Journaling is known to be one factor that is positively correlated to weight maintenance, but some studies that require participants to bar code or look up food items may inadvertently steer participants toward eating more processed foods so it is easier to journal or look up foods (Epstein et al., 2016). This is one type of positive nudge that has unintended consequences and can become a negative nudge. Under reporting self-measurements (Leon, Jensen, Hartman, & Jensen, 2016) or false self-reporting behaviors (Liu, 2016) are also common problems in nutrition research. Replication of a research study is important in establishing its reliability, but studies are rarely replicated for a variety of reasons, including economics, logistics, and the incentives for scientists to do original studies rather than replicate those of others. Teicholz (2014) argues that even when replication of a study is completed and the results are in disagreement, sometimes it is explained away. Furthermore, Teicholz, (2014) points out, research decades ago

demonstrated that low-fat diets were not working. She says this was explained away or the data manipulated to lead the public to believe decreasing fat was the answer.

Follow-up with participants in the field of nutrition is an arduous task as studies that are a few weeks or months may have very different results than studies encompassing the formative years. Any of the mentioned studies may show a significant difference from decade long studies (Brownell et al, 2010). Another issue is how nutrition research results are presented. Brownell et al. (2010) answer their own question of how do we cope with decades of research that have yielded little evidence: Researchers make dismal results look like they have potential. He adds that nutrition and diet research is a humbling process. It is evident that methodological issues have their own confounding influence on determinates of what is a healthy diet and consequently on nutrition policy formulation. A catchy headline for a study may garner attention but the true weight of the findings is sometimes misunderstood. This leads us to ask, does the average US citizen filter their impressions of nutrition policies through their beliefs, values and biases? Knowing these answers could guide advocates and policymakers.

This section analyzes frameworks and efforts that yield little evidence of ways that policy and scaled-up programs can improve nutrition outcomes but as Pelletier et al. (2012) point out, the disagreements and conflicts can add strength to policy formulation. The nutrition policy process is inherently complex and in need of a framework that encompasses a wide range of multi-disciplinary research and diverse opinions, Figure 1. Evidence-based research is shown as the starting point in Figure 1. Empirical research is a good place to start consideration of what might be addressed by policy. Once a policy

area is highlighted, decisions to move forward and choices for delivery type need evaluation. Values, beliefs and similar factors of the general population and the specific population effected can be studied using research literature reviews, focus groups or surveys. Improved nutrition related behavior is the goal but Figure 1 shows that there are many ways to approach the goal. Atkins et al. (2005) convincingly argues:

> A formal evidence-based approach can help separate questions of evidence from the other important considerations. This process often reveals surprising consensus on the scientific evidence, which is masked by fundamental differences of opinion about what outcomes are most important and what actions are appropriate in the face of imperfect evidence (p. 102).

Key questions to continue asking are: "Can it work? Will it work? Is it worth it?" (p. 104). Evidence based research is needed to answer these questions. Diet as a modifiable factor in addressing disease and health outcomes brings hope – with cautious optimism – that evidence for causation, nutrition education and interventions can lead to long term changes that will improve health outcomes.

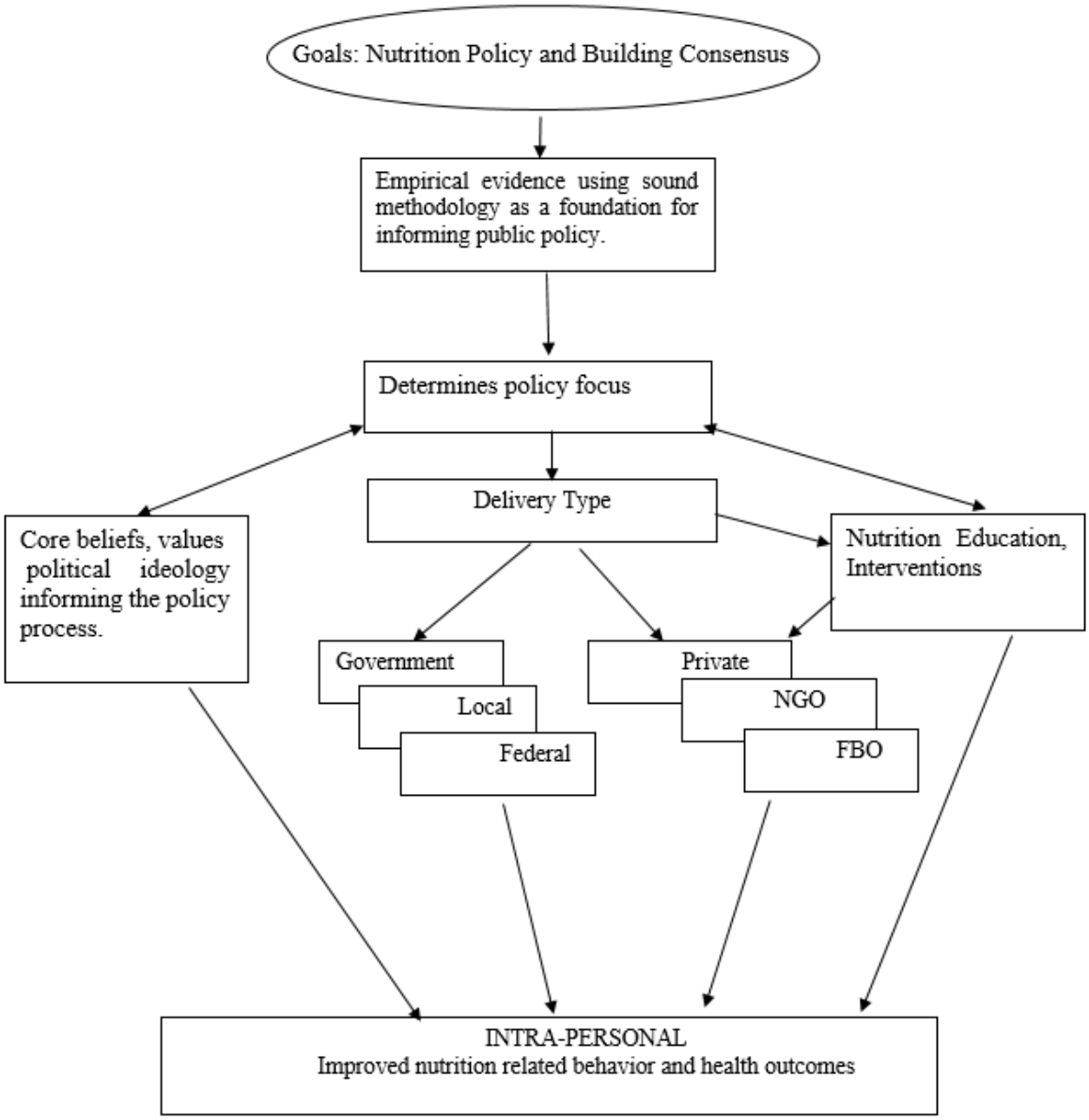

Figure 1. Suggested input for forming nutrition policy. Evidence based research using sound methodology is the basis for building consensus. All other factors fall in behind strong research for informing the nutrition policy process.

An Agricultural History of School Lunch

In an attempt to examine and explore the general public's perceptions of proposed nutrition school lunch policies and to develop a better understanding of factors that

influence perceptions of nutrition interventions, it is important to understand the background. This section will also explore deep-seated beliefs, conflicts, political ideologies, and diverse perspectives coming from conflicting values having very little to do with nutrition, but influence nutrition perceptions nonetheless.

The following history of the school lunch program is not the norm for what is written in history books. It is just one perspective that is not often considered. But, this study builds on the growing evidence that diverse perspectives of nutrition public policy often come from deep-seated beliefs, values, and biases. This section highlights issues encompassing diverse perspectives and complex histories that influence the perspective of the current school lunch program.

There is no question that obesity is an issue for our school children, but the causes, implications and efficacy of policy are far from settled. The history of the school lunch program involves stakeholders that mostly agree changes are needed (Welker, Lot, & Story, 2016). It seems public policy makers, students, administrators, parents, and the school community agree on little ese. One coordinator for the NSLP reported that since implementing the most recent federal nutrition guidelines, participation rates have fallen by 9%. This is an estimated loss of $700,000 in revenues for the school lunch program since Smart Snacks in Schools program was started. Senator Pat Roberts (Republican-Kansas) chairman of the Senate Committee on Agriculture, Nutrition, and Forestry weighed in on the controversy of how to improve school lunch programs, stating that the programs are not helping anyone if they don't work (Medpage, retrieved 2015, May 11).

Surplus Agricultural Products

The school lunch programs in the US were focused on nutrition and using surplus agricultural foods to supplement low resource children's lunches long before legislation for a NSLP was passed in 1946. Oral histories tell of children lined up with lunch pails as they entered one room school houses across the country. Homemade bread, biscuits, or cornbread were common depending upon what region of the country it was. They were wrapped in waxed paper for upper income families, wrapped in waxed paper that breakfast cereals come in for mid-income families, and wrapped in scraps of cloth or not at all for low-resource families. Carrots from the garden and apples from the tree in the back yard were very common fare in those lunch boxes.

A century ago, lunches brought to school were all very similar. In the same context, everyone enjoyed the grains, beans, corn, apples, peaches, carrots, and other produce farmers would bring to the school to supplement lunches. The type of food products offered depended upon what the land produced that year. This produce was not always from the surplus of their fields. Sometimes it was sharing of the small amount of food they had because they knew neighboring families had even less. Offering school children food was one way of giving a handout without offending anyone's pride. More often than not, the food would be given to anyone who would like it—not just the low resource families (personal communication, Cecile Coffin, May, 2004).

In many agrarian cultures, which describes the US in the early 1900's and before, this type of sharing food is customary (Gewald, 2007). Izumi, Wright and Hamm (2010) describe some of the reasons US farmers might make efforts to share their surplus with

schools. They say one reason farmer's make the effort for their produce to be available to school children is to "contribute to social action through direct action" (p. 374).

During the great depression of the 1930's, a more structured program of using surplus commodities for school lunches was implemented by the government (Levine, 2010). Later, as transportation improved, local crops and produce could be shipped farther. Fertilizers and better agricultural methods made it possible to grow more food than was consumed locally. With surplus agricultural products came the need for outlets. Surplus commodities that were once wasted because there were no outlets became part of a more organized system. The advances in transportation made it possible to more easily use these surplus commodities.

Anthropometrics and Education

Concurrently with agricultural surpluses and better transportation, changes were happening in places of education. School children were routinely weighed, and their height recorded (Levine, 2010). Information that had never been considered, such as data on under-weight children, began to appear in reports and on charts. Nutrition was starting to become a scientific discipline with quantifiable data to support the studies. Out of this data, a picture of under-nutrition of school children began to appear.

The trajectory of surplus agricultural commodities and school children in need of a good mid-day meal coincided with the newly developed interest in better nutrition for students. These factors garnered the support needed to pass legislation for a NSLP. One debate from the very beginning was whether the NSLP would be available to all students or just the ones who really needed a free lunch. In the end, support was stronger for

legislation by including every child in the NSLP (Levine, 2010). In the 60's and 70s, the School Breakfast Program was implemented with free and reduced breakfasts to those who qualify (Spradlin, Gard, Huang, Kopp, & Malik, 2012).

Prescriptive Nutritional Targets

The first prescriptive nutritional targets for lowering fat, saturated fat, sodium, and sugar in school meals were set in 1994 by the United States Department of Agriculture (USDA) through the School Meals Initiative for Healthy Children (SMI). Nutrition targets for increasing whole grains, fresh fruit and vegetables, and decreasing targeted nutrients were never met according to assessments made by the USDA in 2007 (Spradlin et al., 2012).

Other prescriptive nutrition policies included First Lady Michelle Obama's campaign called *Let's Move: America's Move to Raise a Healthier Generation of Kids* (Office of the First Lady, 2010). The goal to return obesity to no more than 5% has not been met even though the campaign included a range of initiatives to increase physical activity and availability of healthy foods (WHO, 2016).

Levine (2010) argues the quality and nutrient value of the food served in school lunchrooms decreased with an increase in commodities. She blames the powerful interests of the USDA for diluting the food quality. This framework for understanding increased obesity rates is popular even today, but is controversial.

In contrast, other research shows that farm commodities increased the quality and nutrient value of school lunches for several decades (McDermott & Stephens, 2010). Teicholz, (2014) argues that commodities such as cheese, meat, milk and other fats are an

important part of a healthy diet. Some of the other common agricultural commodities in the decades surrounding the 50s–peanut butter, wheat, dry beans, cornmeal and milk– were given to schools to supplement food for the school lunch program. Lunch room kitchens turned these commodities into nutritious homemade chicken and noodles, bean soup and cornbread, fresh yeast rolls, and preserved produce. Peanut butter sandwiches were always available for those who wanted more to eat. These are nutritious foods from many dietitians' perspective.

Story, Kaphingst, and French (2006) see the NSLP as a logical place to improve health outcomes. The USDA purchases over $8 billion dollars of commodities for the NSLP, understandably blaming commodities for everything that is wrong with the NSLP. Just the word 'commodity' elicits emotional responses based on political ideology, beliefs, and values. Today, commodities have minimal benefit to the agricultural sector and minimal benefit to schools. According to Peterson (2011), it would be better to just give schools the money instead of the complicated commodity in kind exchange. The next section points to gaps in the literature regarding some of the other complex problems surrounding commodities and the NSLP shortcomings.

Quality of School Food and Nutrient Levels

Many surplus agricultural products are considered good forms of macronutrients. The saturated and trans fat content is low or non-existent in beans, grains, and produce (Cataldo, Nyenhuis, & Whitney, 1989). There is little research data on the quality of the meals or the nutrient level of the foods served using commodities in the early years of the program (Fox, Hamilton, & Lin, 2004). Because foods were made from homemade

recipes during this era, the quality was very much dependent upon the skills of the school lunch cooks.

It is not surprising that the food quality of school meals was not scientifically evaluated at the turn of the century in a quantifiable way. Even today, there are few definitive tests or research methods for determining food quality of school meals. Quality is a subjective opinion that is intricately intertwined with personal values, biases, and beliefs about food (Bloomberg, 2016). We can easily determine consumption by measuring plate waste, or determine nutrient value by measuring proportion of nutrients to calories. Determining food quality may include those parameters, but subjectivity increases. Food quality is arguably determined by an individual's beliefs and values. A generalization that food quality was higher before surplus commodities is questionable at best.

Consider a counter argument for the decrease in food quality. The first nutrition regulations for specific nutrients in school lunches were mandated by the government in 1994. Processed foods increased their market share in school lunches over the years (Popkin, Adair, & Ng, 2012), but requiring schools to meet mandates with an emphasis on specific nutrients ushered in an era of processed foods that was stronger and more entrenched in school programs than ever. As obesity rates increased (WHO, 2016), the pressure was on for schools to meet mandatory nutrient guidelines that big food companies were only too happy to cater to. A homemade vegetable soup might be healthier and taste better. However, it did not come with a nutrient label or a menu

spreadsheet with nutrient breakdown of each ingredient to comply with regulations like the big food company's products did.

Levine (2010) also makes the argument that free school lunches caused school lunch budgets to be strained. She argues this in turn created a situation where food quality started to suffer and more processed foods were added to school lunch menus. It is interesting to consider, although these events coincided, it may not be cause and effect of the nature Levine suggests. Instead, kitchens using commodities and making food from scratch are usually higher quality and less expensive than food made with processed foods (Fox et al., 2004; Popkin et al. 2012). A common trend is for lower food quality as processed food use is increased. This is dependent upon the skills of the people devising menus, budgeting needed items, ordering ingredients, and cooking meals. Shelf life, ease of preparation, and safety issues also contribute to decreases in food quality.

Regulation on school lunches have large impacts, both intended and unintended, on what foods are served in school lunches. Fewer regulations in a school kitchen mean it is easier to serve fewer processed foods and to serve foods that are made from scratch, locally sourced, and procured in season. Poppendieck (2010) reviews the NSLP and how it got to where it is today. She describes the highly processed foods subsidized by the federal government beside the extensive ala carte items, vending machines snacks, and fast food offerings subsidized by students with a dollar to spend. The three-tiered system in many school lunchrooms is established by the free and reduced lunches--who eats them, who qualifies but refuses, and who doesn't have to. These types of situations are

yet another unintended consequence of nutrition interventions intended to increase health outcomes.

Processed foods are often more expensive and of a lower quality, but using processed foods places the burden of meeting regulations on big businesses, corporations, and private entities. Corporations readily give free menus and nutrient spreadsheets to school lunch programs because the material is designed to include their processed products. As more and more regulations are mandated, fewer school lunch kitchens are able to make homemade-type foods. Primary exceptions are large or wealthy school districts that can afford to employ a dietitian specifically to make sure all foods and meals are in compliance. Schools without such a person depend upon businesses to provide that service free (i.e., nutrition labels on packaged foods which are nearly always more highly processed). Even then, many dietitians have more training in dietetics than in cooking skills needed to increase the food quality.

Big Businesses Thrive on Federal Mandates for National School Lunch Program

The move of schools to privatization of food vendors and food brokers--who include the nutrient calculations and have the portion sizes standardized--is a natural progression when regulations are enacted. Even today, as regulations increase for specific nutrients, it makes it harder for school kitchens to prepare homemade type foods. Small, niche-type food companies have difficulty keeping up with regulations and thereby not able to place their foods in schools even when their products are healthier. Chicken nuggets, corndogs, and frozen pizza, with easy to serve portion sizes, already have the nutrients calculated to fit into the mandated nutrition guidelines. Big companies

can more easily manipulate nutrients in processed foods to fit the guidelines through reformulation, fortification, and other types of food engineering. Whole foods cannot be easily manipulated. Even if cutting an apple in half will help meet the guidelines, the shelf life is decreased substantially as the apple starts turning brown as soon as it is cut.

Evidence of well received, homemade style entrees, for NSLP is seen in the literature. These types of entrees can be higher in nutritional value and less expensive than processed foods as presented in a study by Burgess-Champoux, Marquart, Vickers, and Reicks (2006). Pulses such as dried beans and legumes were added to entrees that could be made on site with significantly reduced reliance on processed foods. Focus groups and plate waste measurements showed a high rate of acceptance by grade school students. An interesting outcome, considering research has shown that younger students typically have the highest amount of plate waste (Niaki, Moore, Chen, & Cullen, 2016).

School lunch programs find it hard to make the adjustment away from processed foods because staffing needs are simpler when serving foods that do not require significant preparation skills. Another barrier is that these homemade-style of foods do not come with a label assuring compliance with school lunch regulations. Research regarding the effect of regulations on the quality of school lunches is needed. A look into how nutrition regulations impact the use of partially prepared and prepared foods versus school meals made from raw ingredients would be an interesting future inquiry.

Schwartz, Henderson, Read, Danna, and Ickovics, (2015) found that plate waste did not increase with the new regulations, and fruit intake increased. Other researchers (Cohen, Richardson, Parker, Catalano, & Rimm, 2014) demonstrate substantial plate

waste coinciding with the most recent nutrition regulations, but stress it is no reason to repeal the regulations. There has been progress toward better nutrition in school lunches. Schwartz et al. (2015) and Cohen et al. (2014) argue that food quality is a factor, requiring additional research. See additional discussion in the introduction on how food quality can easily plummet as school lunch staff on the front lines try to deal with overwhelming changes.

Research on the efficacy of regulations can be misleading. If an increase in fruit is the only positive outcome of the new nutrition regulations, is it really a benefit if a stated goal is to decrease student consumption of sugar (Spradlin et al., 2012)? Fruit, being higher in sugar than many other foods, is metabolized very similar to foods with high fructose corn syrup (Rippe & Angelopoulos, 2013). Furthermore, fruit does not make the list of the top foods dietitians recommend for weight loss (Turner, 2016). This is an example of just how tough it is to make a significant impact through NSLP interventions designed to improve nutritional outcomes.

Prescriptive nutrition policies have serious unintended consequences for schools and for students. Many schools without resources to calculate nutrient contents of meals are forced to rely on processed, labeled foods. Secondly, when the prescriptive nutrition policy is not backed by strong evidence-based research, it will be confusing to the general public if repealed (Nestle, 2013). Essington and Hertelendy (2016) argue that another unintended consequence is it might then become counterproductive as an anti-obesity intervention. Prescriptive nutrition goals for fat are widely used, but some research shows evidence of unintended consequences when high calorie carbohydrates are substituted in

a low fat diet. This is an example of how prescriptive nutrition might be counterproductive to weight loss.

As more regulations are set for specific nutrients, it is the big food companies who can afford to formulate foods to fit the exact nutrient specifications. It is very inefficient, cumbersome, and labor intensive for a school to prepare a food and determine how it can fit into the guidelines. Every time there are stricter regulations, big business becomes that much more entrenched in our school lunches to meet those regulations. It is interesting to note that plate waste shows what food students are accustomed to and prefer. These consumers have become conditioned to a narrow idea of what a nutritious food is by regulations and food labels. An interesting inquiry is, 'how many unprocessed foods carry a nutrition label'. Are whole grain processed foods, even though advertised as healthy, actually loaded with fat and sugar to make them more palatable to students?

The current fight over federal government regulations instead of local control over school lunches favors big businesses with formulated, nutrition labeled foods. Consider the problem encountered by food companies if each school district decides what nutrient regulations to adopt. A rural school where the migrant labor population is high or a high school that puts a priority on making sure their athletes get enough sodium might have different nutrient regulations than suburban schools that want to decrease sodium in school meals. Local control of school lunch nutrition favors local, homemade, and scratch cooking of high quality. A system that is not standardized throughout the wreaks havoc for food companies who want to market pre-packaged, single serve, high volume,

high markup items with one nutrition label to meet the same regulations in a rural California school as in the neighboring up-scale California school.

Stallings (2015) makes the point that it is possible that schools will opt out of the federal school lunch program if the regulations become too expensive or burdensome. A position that has not been researched in depth is that some schools may opt out for any number of reasons. One particularly salient reason might be to provide healthier meals, at a lower price and of a better quality if they can make their own nutrition policies that better fit their population.

Argument for Precise Terminology for Nutrition Policy

Those in favor of legislating changes that would bring about healthier diets frequently use the terms 'less processed' or 'un-processed' foods to describe the foods they would like to see in healthier school lunches. The terms are ambiguous at best. They rarely include the explanation that many healthy foods served in their natural form, such as oatmeal or chia seeds, are processed. Some foods requiring less processing, such as honey or fruit, are high in sugar even though considered unprocessed. This underscores the need for precise language for nutrition public policy as individuals from many different disciplines weigh in on nutrition. For example, some processed foods (oatmeal) are healthier than some unprocessed foods (raw sugarcane). Essington and Hertelendy (2016) give two examples of NSLP legislation that possibly will not bring about promised outcomes because they are not backed by conclusive evidence-based research. "We now know, for example, that a healthy diet includes a reasonable consumption of monounsaturated and polyunsaturated fats and now there is new evidence that lowering

sodium consumption does not result in improved health outcomes" (p. 457). These comments toward selected nutrient address regulations that have recently been enacted in NSLP. It is difficult to work so hard for progress, only to find out that it might not lead to better health outcomes.

Parker (2015) sees wide sweeping changes in how commodities are ordered, purchased, and utilized as a solution. It can alleviate many of the processed foods now flooding the NSLP menus. However, staff retention, training and other barriers that school lunch kitchens have with increased regulations still need to be addressed. More research is needed to determine if the regulations meant to improve the diets of students and reduce obesity have been effective, and if more regulations at the federal level will intensify the use of formulated, processed foods.

Progress in addressing school lunch nutrition will require the coordinated efforts of multiple sectors and settings. A look at the history of the issues with nutrition and food quality in school lunches bears out that regulations have and will continue to encourage big business in school business. As regulations become heightened, only foods with a nutrition label or with easily determined nutrient analysis of will be served in many schools. The exceptions will be schools that can afford to do otherwise, increasing health disparities. It is an argument that has been largely ignored even though schools have been targeted as one of the best places to fight health disparities and obesity.

Constructs of Proposed Nutrition Policy

Constructs of the survey in the current study are reviewed in this section. The first part of this section will give an argument of prescriptive and restrictive nutrition policy

and how it increases tension and conflict. Next are arguments for empowering decision making for the general public instead of circumventing their decision making. And finally, how "decentering health as the be-all, end-all of human subjectivity" (LeBesco, 2011) is a more honest and effective way to work toward nutrition health goals.

Prescriptive Nutrition

Research shows that 75% of people surveyed would rather be the paternalist than the paternalee. Lusk (2014) found that when it comes to nutrition, people not only want to be telling everyone else what to do, but the research shows that they feel like they know better--a sort of egotistical superiority.

Many public health and consumer activists spend a great deal of time justifying paternalistic methods for getting people to eat a specific way (Buchannan, 2008). Buchannan suggests that by working so hard to justify their methods, they risk alienating the general public and losing the general population's trust in public health messages. There is also the risk of increased conflict. The cause of conflict often has very little to do with nutrients, calories, or even nutrition. Fulponi (2009) points out a delicate area of nutrition policy is who should make our food decisions. Kleinert and Horton (2015) find policy actions have very little support from the people they are designed to help and the general public. The general public may be asking, do the people making my food decisions have similar values about food as I do? Emotional conflict and controversy can surround proposed changes in foods connected to personal value and meaning to individuals. Herring (2015) stresses that people have valued ways of thinking about food and it filters perceptions of food technology, consumption, and therefore politics.

Porter and Pelletier (2012) used a unique questionnaire format to determine values of participants. The results showed that high school students in the research study were more likely than the adults to feel that individual freedoms are more important than reducing childhood obesity. The students were much more likely not to want regulations, mandates, or taxes on foods that are seen as unhealthy. Specifically, they did not agree that foods should be banned from community centers and schools just because they are unhealthy. The types of changes they were most in favor of were increasing access to activity areas that are free, and increasing the availability of fruits and vegetables.

Porter and Pelletier (2012) report all non-teen groups felt that individual freedoms and low taxes were lower on the priority list than childhood obesity. This study illustrates that many adults support the idea of telling others what to eat and trying to make the healthy choices easier (by not allowing specific foods in schools). Students, on the other hand, don't want to be told what to eat. Likely, this age group–high-school students–have spent a great deal of time being paternalees–being told what to do–and consider themselves past the age of being told how to eat. Even adults are more likely to give others healthier instructions than they themselves follow.

More importantly than just that paternalistic actions in schools are not appreciated by students, research has shown that paternalistic policies for students can cause additional tension and conflict. Just and Hanks (2015) suggest setting policy in areas where there are strong emotions, such as against foods that individuals enjoy, can possibly create even stronger preferences for that food. An example of this in the lunch room is flaming hot Cheetos. They were banned in school and became black market

contraband. The American Academy of Pediatrics newest guidelines say that how to talk to a teen about weight can be summed up in just one word: Don't (Golden, Schneider, & Wood, 2016). It is hard. It seems counterintuitive. It feels like denial. It is frustrating, but research has shown that it is important. Nutrition is an incredibly hard subject to broach, let alone force onto students.

Diverse Perspectives

Many journalists, researchers, and public policy critics focus on the idea that nutritional science is not settled on what is the best science to back regulations. The position of this dissertation aligns with the hypothesis that evidence-based research can inform nutrition policy, but it is diverse perspectives on nutrition and food practices that are making it so difficult to find consensus on nutrition policy. Friedberg (2016) questions the ability to look to the science for answers when it is "far from clear what (or whose) knowledge the science should include" (p. 70).

In examining just one recent NSLP intervention, it is evident how stakeholders become conflicted due to diverse perspectives. This section looks at how differing ideology leads to a focus on scientific research for recent NSLP interventions regarding fats--just one of the macro-nutrients. A meta-analysis on research on fats in 1989 rebuffed many of the recommendations suggesting a decrease in fat, but the research was ignored in favor of what the popular media, dietary guidelines, and American Heart Association were proposing as a healthy diet (Taubes, 2008). A look at the diverse perspectives on fat shows just a sampling of the competing research.

One specific step taken in the Healthy Hunger-Free Kids Act (HHFKA) was reducing saturated fats and elimination of non-naturally occurring trans fats (Cornish, Askelson, & Golembiewski, 2016). From the viewpoint of a nutritional clinician, the interventions on fat in the NSLP are long overdue. Evidence-based research indicated saturated fats and trans fats should be reduced (Cataldo, Nyenhuis, & Whitney, 1989) for several decades before any action was taken. Foods containing non-naturally occurring trans-fats were only eliminated from the NSLP with the implementation of HHFKA in the 2012-2013 academic year. About the time this evidence-based macro-nutrient change was put into effect, a meta-analysis of 32 randomized controlled trials concluded that strong recommendations of either low-fat or high-fat diets cannot be made (Schwingshackl & Hoffman, 2013) – although the NSLP made these exact recommendations. This means, research on the nutrients was found lacking evidence just about the time of announcing implementation. A really disheartening scenario for nutrition advocates and public policy makers.

The information gleaned from this meta-analysis, plus a look at how individual nutrition experts from diverse perspectives view fats, is indicative of how science has made nutrition a very confusing field for consensus toward nutrition public policy. Take for example the Certified Diabetic Educator's (CDE's) nutrition advice. It is based on a set of facts that see carbohydrates as the major culprit in a war between fats and carbohydrates with recommendations to reduce net carbohydrates (Nyenhuis, 2014). Certified diabetic educators use a traditional interpretation of evidence-based science as

outlined by the American Diabetic Educators Association where a decrease in overall fat is recommended.

Other dietitians have a set of facts that show that high levels of fats are possibly beneficial for overall health outcomes (Satija et al. 2016). The Academy of Nutrition and Dietetics stated in a position paper on the subject that "fatty acids can no longer be viewed in general categories such as saturated or unsaturated because individual fatty acids within these categories have different influences on health status and disease risk" (Vannice & Rasmussen, 2014).

Nutritionists in psychiatric practices working with students with eating disorders have a set of facts that show that some diets are so low in fat that they have to work hard to teach and get patients to accept fats as an important part of a healthy diet (Freeland-Graves & Nitzke, 2013). Nutrition ethicists might be looking at a set of facts that find all saturated fats from any source where animals are not harmed as more acceptable. This diverse perspective may be an underlying reason fat from coconut has gained almost a celebrity status compared to a decade ago when it was considered an unhealthy fat.

Nutritionists working with undernourished populations see so many more severe nutrition issues than what kinds of fats are eaten and likely see type and level of fat as a non-issue compared to finding enough food to fill a child's belly. Agrarian nutritionists' perspectives include supporting farm-to-table foods as a priority, with less concern for the types of fats (Teicholz, 2014).

Ruiz-Núñez, Dijck-Brouwer, and Muskiet, (2016), with the perspective of a biochemist- nutritionist, indicates that saturated fats might be beneficial for increasing

"good" cholesterol. These researchers go so far as to say that the dietary guidelines might need to be "reconsidered" in relation to saturated fatty acids. The authors say they are opposed to what they call a reductionist approach to diet planning, where the effects of individual nutrients such as saturated fatty acids are singled out. Each of these experts in nutrition, gleaning their facts from empirical research, have differing views on just this one macro-nutrient called saturated fatty acids.

The research shows diverse perspective, not to mention the change in public perspectives and positions on the very same topic. For example, eggs have gone from being a "good" food in moderation to a "bad" food and then back to "eggs have lots of good nutrition to offer". Even after more than three decades of research on saturated fat in eggs and their effects on health in the general population, an authoritative review still suggests more study before giving recommendations. Ballesteros et al. (2015) gave evidence of their benefits over oatmeal on fatty acid patterns. There is a need for strong, empirical evidence for nutrition research to inform policy makers. In the case of eggs, so many differing recommendations have been made because the science informing recommendations was skewed by diverse perspectives. It causes perceptions in the general public that scientific results–even those based on RCT–are to be considered on an equal footing to all other nutrition claims even those based on less rigorous research.

In the past, mainstream nutritional science informing dietary guidelines was more straightforward. Today, there are a wide range of groups who are informing policy, and they each have beliefs that their view of nutrition is superior. Huovila and Sampsa (2016) calls this phenomena dietetic individualism. It is when nutrition beliefs rely on

some nutritional science but not as the ultimate authority. Dietetic individualism is when one group advocates for all organic foods to be served in the school lunch program regardless that organic milk has been shown to have a larger carbon footprint than conventionally produced milk (Cederberg & Mattsson, 2000). Dietetic individualism is when one group advocates only plant-based foods be served in the school lunch program and provide personal experience as the evidence, regardless of what the nutritional evidence-based guidance says (Huovila & Sampsa, 2016). Dietetic individualism is when a group advocates for plant based proteins like almonds even though their water needs during the growing season mean that they are not as environmentally friendly as other proteins that are shunned (Kendall, Marvinney, Brodt, & Zhu, 2015).

Decision Making Feedback Loop

People make decisions using simple rules for many different things in their lives (Gigerenzer & Selten, 2002), from decisions of what to eat, to what types of policies on nutrition they think should be implemented. These simple rules are called heuristics and they help us form a decision even when there are too many choices for all the options to be considered. Heuristics might be driven by deep-seated beliefs and values such as following a specific kind of nutrition regimen to identify with one group versus another. Or, heuristics can be as simple as the decision to eat pre-packaged cups of mandarin oranges instead of a fresh orange--which might also be driven by core beliefs, but on the surface it seems very simple.

The Bayesian theory of decision making takes into account that each person has prior knowledge and information in addition to new knowledge when faced with a

decision to make (McFadden & Lusk, 2014). Deep-seated beliefs are not easily changed by new knowledge or new information. But there are other situations that present themselves where decision making processes are informed by cognitive biases, political ideology (McFadden & Lusk, 2014), complexity biases (Nyenhuis & Cokely, 2011), or other heuristics that are influencing decision making. This argument has been used as a reason for having someone with superior decision making abilities to make decisions for the rest of us. However, this same argument can be used to encourage those who feel they have superior decision making ability to allow others to develop their decision-making abilities through utilizing the decision feedback loop.

Yeung (2012) is critical of paternalistic nudges for several important reasons. Her work examines why public health initiatives based on paternalism might fail. It creates a void of situations where individuals can practice making healthy decisions.

There is the potential for students to learn how to make decisions when they are faced with a myriad of good and bad choices. This is particularly pertinent to nutrition nudges or interventions. One example is that choice architecture is used to design a system where students do not have to make a choice on what is the healthiest choice between choices (possibly because other less healthy foods are removed or put into an out of the way position). The theory is that students do not build strong decision making skills. Future nutrition decisions where both the healthy and less healthy item are side by side may be more difficult to make without adequate feedback loop practice.

Evers (1997) found that pre-school children with parents who control their food choices and intake were less able to self-regulate their caloric intake than children who

were accustomed to eating without someone telling them what to eat and how much. The authors describe an internal locus of control for eating as an important regulatory mechanism for self-regulating food intake.

This is an incredibly difficult concept for parents. How can their child regulate their own intake without the parent controlling it? Possibly the parent has not been all that successful at regulating their own intake. It becomes a self-perpetuating cycle with very little opportunity for the development of a decision making feedback loop. Teaching students how to make good decisions will always be valuable.

The smarter lunchroom movement was started by researchers from Cornell University (Just, Hanks, & Wansink, 2013). It is based on libertarian paternalism, and the literature, as well as the reviews of the smarter lunchroom, are positive for changing behaviors describing it as a new field of behavioral economics that the authors call win-win research (Van Ittersum & Wansink, 2016). One part of the program is to encourage students to nudge other students into healthier eating. Food service managers are taught how to use peer nudge to encourage better food choices (Song, Grutzmacher, & Munger, 2016). However, other researchers see some red flags. Students likely will pick fatter individuals to nudge and all of a sudden the movement is encouraging bullying of fat people. Even if thin students have poor eating habits, the peer pressure is not likely to include the same micro-aggressions as toward fat kids. It is not hard to imagine the types of nutrition bullying that kids could come up with.

Top nutrition experts and communicators are hard pressed to send the right nutrition messages. Are kids going to send the correct scientific nutrition research or junk

science in these smart lunchrooms? Should you eat your carrots, though they are full of sugar? Peanut butter is full of fat, but lean ham isn't? What about the nitrates in ham? Choose an apple but eat the peeling where all the nutrients are—wait, that is where the pesticide residue might be! And don't get started on cancer-causing foods. There is evidence for a long list of cancer-causing foods on our planet. But all of these examples pale in comparison to what kids decide makes that kid in the corner fat and what other kids will have to say about that. Parents might not mind if their child is the paternalist, but if their child is the paternalee—because another child is encouraged to be a paternalist by adults in authority—this issue looks very different. Where is the line between paternalism of kids towards kids and bullying?

De-Centering Food and Nutrition Issues

According to the World Health Organization, the United States ranks 7th in countries with the highest rates of obesity (WHO, 2016). From this information, it is evident that many individuals are not making choices that balance their intake with activity levels. The relationship between food, bodies, and nutrition is complex. Nutrition public policies, anti-obesity nudges, legislation, and a multitude of fitness marketing strategies over the last few decades have not seemed to be the caveat (Essington & Hertelendy, 2016). This section attempts to explain a radically different approach to nutrition environments that has been successful on small scales. It has been tried under many different programs and in different ways, but, in this study, the term de-centering food and nutrition issues to gain better health outcomes will be used. First will be ideas that do not have strong track records and then a few that show promise.

Nutrition experts do not have a definitive answer as to why some individuals are competent at making choices leading to good health. On the other hand, most researchers agree that eating habits begin in childhood (Spradlin et al., 2012).

Consider one example. It is well established that water as a replacement for sugary drinks can help increase weight loss efforts (Duffey & Poti, 2016). What is less studied is whether restrictions on sweetened beverages have the same result. Taber, Chriqui, Powell, and Chaloupka, (2012) compared states with policies restricting sugary drinks in schools to states that did not have policies regarding sugary drinks. They reported that there was not a significant difference in consumption. Programs that decrease sugary drinks in school changes student purchasing in school and access at school to soft drinks and juice but did not change the overall intake of sugary drinks. Restrictive policies have not been shown to change habits for school populations.

A leading expert in child feeding practices, with 6 kids of her own, suggests not forcing our food decisions even on our own children because it creates disordered eating (Satter, 2012). Could the disordered eating seen in our population be a similar revolt caused by forcing our nutrition choices on a lunchroom, school, or an entire population?

It may seem to be in our own child's or a school population's best interest to encourage, cajole, bribe, tease, or manipulate the food environment, but research shows that it may be only short-term gains at best (Satter, 2012). Anyone who has been through power struggles with children over food can attest that the ultimate victor is usually not the paternalist. Ultimately, the child decides what food will be eaten. Satter (2012) puts

it into simple terms: If no emotional meaning is attached to food, it is impossible for a power struggle to ensue. This is called de-centering nutrition and food.

De-centering nutrition and food in families and thereby eliminating the power struggle between parent/adult and child over food has been well documented (Satter, 2012). More research is needed to see if de-centering nutrition and food issues in schools, communities, and populations will prevent conflict, tension, and power struggles that have very little to do with the food or the nutrient value of the food.

Satter (2012) sees many parents who have a hard time believing that children can control their eating. The position of this dissertation is that many public health and consumer activists have a hard time believing that children can control their eating. The fact is, children who are allowed to make their own decisions become better decision makers (Satter, 2012). Children who are not allowed to decide what to eat lose the ability to self-regulate their intake (Evers, 1997). The question then becomes: Can we sneak in a little paternalism and hope that our students' self-regulating and decision making will not be harmed? Students across the globe tell us that they notice that US students have more paternalism in their lives (Ripley, 2013). Statistics show that students across the globe seem better at regulating food intake than American students (WHO, 2016). There are probably many factors for this phenomena but the importance of self-regulation might one day be better understood for its role in obesity.

The United States is becoming increasingly paternalistic in our attitudes toward how our students eat. But this is not an anomaly in our schools. Amanda Ripley's (2013) book on comparative, international education, *The Smartest Kids in the World and How*

They Got That Way, found that students around the world say that American students have more fun but less freedom than students in their native country. It is really difficult to research the effects of allowing our children more freedom to make their own food decisions because the effects are likely to be generational. Generational poverty has huge implications for dietary health. Generational obesity may also be a similar issue. Generational poverty has implications for dietary health, and, in the same way, might generational acceptance of tightly controlling our children have implications? It is something that has noticeable consequences to students across the globe. More research is needed to determine the consequences of intervening, as a parent or as a nation, in whether our kids eat their broccoli or not.

Many nutrition experts believe students need the freedom to choose foods to learn self-regulation of food. For further discussion of how controlling eating habits is counterproductive see Satter (2012); Evers (1997); Faith et al. (2004). Previous discussions in this dissertation of the feedback loop of decision making also supports this idea.

Several researchers have suggested allowing students, communities, and populations effected, such as those with high obesity levels, to be the decision makers (Pelletier et al., 2003). It may not be the same decisions that food activists and public health associates are currently advocating. If it were, there would not be a need to frame opinions in a certain way (Kleinert & Horton, 2015; Roberto et al., 2015), to change beliefs so there would be more support for obesity related policy, system, and environmental changes (PSI) (Moran et al., 2016), to create a specific agenda in order to

change ideas of who is to blame for obesity (Barry et al., 2009), or try to get students in the lunch line to take one item over another (Thaler & Sunstein, 2009). For a child who is working before and after school, or who had no breakfast because there was no food in the house, are we really sure that money spent on a carrot is better than spending that last dollar on a food item with more calories?

Increasingly, polarized views on nutrition are seen, not in what is healthful, but in how ethical is it for powerful voices to make the decisions of what is available to the population. Thaler and Sunstein (2009) in their book *Nudge: Improving Decisions About Health, Wealth, and Happiness* suggest using libertarian paternalism (LP) to improve school lunches. Just about everyone agrees that school lunches are not where they should be nutritionally but the tension toward LP comes in several areas such as whose views on nutrition will be adopted in setting regulations? As previously discussed, a common approach is to set nutrient regulations (specific maximum levels) on sodium, fat, and sugar, which favors serving processed foods.

Lusk (2014) makes the argument that it is a decision that belongs with each person even if behavioral economists and public health officials feel as a paternalist that they can make a better decision for individuals than individuals can make for themselves. This paternalism not only decides what is best for me, it replaces the powerful paternalist's preferences as the "single preference for the many thousands of preferences of citizens affected by the policy" (p. 369).

This paternalism has an effect on our students in ways that are barely noticeable because they are so ingrained into our DNA. But students from the US studying in other

countries notice that there is something different in the top performing countries. Interviews with foreign exchange students brought out some interesting insights about other countries where paternalism might not be as prevalent. Ripley (2013) describes how US students would talk about their host country, “the distinctions were subtle: the freedom, the freshly cooked food in the cafeteria, the civility. It was hard to describe the cumulative effects of these differences, but it felt, on days like today, as if she’d been paroled for good behavior.” (p. 102).

Barnhill and colleagues (2014) give the viewpoint of nutrition public policy as “imposing on everyone a hierarchy of values that privileges health over other goods and pleasures that come from unhealthy eating" (p. 210). They continue with the argument that this is clearly in the realm of values which they say are up to the person. Noe (2013) sees food as deeply personal and, as such, it holds value for people.

Interesting research shows that healthcare in this country has made a shift from paternalism to a system that prioritizes individual values. Older people often value paternalistic healthcare providers, but a younger generation typically does not (Couët et al., 2015). Could nutrition be headed backwards with a shift to paternalism? One-size-does-not-fit-all (Celis-Morales et al., 2016), and mandating values will always be controversial. This is not meant to be a rejection of all types of environmental changes and paternalistic nudges to limit food consumption. It is designed to consider the importance of evidence-based research to inform policy. The next section considers the choice-limiting and other nutrition policy processes. The decision of whose values

nutrition public policies are based on is not easily determined, even from evidence-based research (Lusk, Marette, & Norwood, 2014).

Whose Values of Nutrition do we Use?

Questions surrounding this issue include: 1) Whose view of nutrition do we use? 2) What values should be considered the most important? 3) Does one size fit all? 4) Why, as healthcare is moving toward a patient-centered type of care where patients are considered experts on their own health issues and body, is nutrition suggesting that the general public needs paternalistic help to decide what is best? 5) Is it ethical for powerful voices to make food decisions for those with less power? 6) What if we really enjoy food and one of the small pleasures in our lives is the freedom to choose?

Public policies intended to improve health outcomes with evidence-based interventions have moved away from that evidence-based research. The newest Dietary Guidelines for Americans (DGA's) contains a policy shift suggestion that interventions include considerations of carbon footprint.

Friedburg (2016) criticizes the DGA's policy shift and recommendation toward less animal products as a win-win proposal, when in fact there are deep-seated beliefs on both sides of the issue that have very little to do with health. Some schools in the US have even gone toward vegan meals, but this nutrition policy shift is likely one of the most controversial due to the fact that it does not give guidance in what constitutes a healthy diet. Consider other countries such as Sweden that have considered legislation that threatens parents with imprisonment if they are found guilty of raising a child on a vegan diet (Pullella, 2016). Government recommendations that move away from nutrition

and into personal areas of food practice are controversial. If a food is better for the environment but maybe not as healthy, which construct should be given priority for nutrition public policy?

Conflict and tension toward nutrition interventions are centered around what Lusk (2014) describes as determining if government should have a "heavy hand" in what we eat or a "light hand" (p.370). Story and colleagues (2008) determined that environment is an even stronger contributor to the increase in obesity and chronic disease than the knowledge, skills, and motivation of individuals. They maintain that the most effective way to create policy-wide improvements in eating is structural policy interventions. This speaks directly to a major conflict in the literature: should public policy address individual behavior or public structures and institutions? The next section examines the barriers to implementing either individual or population-wide interventions.

Ease of Implementation of Nutrition Interventions

Another construct in the current survey is the medical community thinks in terms of risks and benefits of treatments when making decisions, but considering the high rate of failure to curb obesity, it is clear tools are needed to aid health educators in guiding consumers to make better decisions. Studies have shown that we think we can handle more information than is really possible (Dawson and Arkes, 1987; Miller, 1956) and our ability to deal with complex problems is limited (Newell and Simon, 1972; Redelmeier, Rozin, & Kahneman, 1993). The message from past research is that consumers need actionable health knowledge. The current health communications give a huge amount of information to consumers but possibly what is needed are tools for health providers to be

able to help consumers focus on which health information is going to work for each individual.

One health education technique is to tailor nutrition interventions to unique individual characteristics, behaviors, perceptions of behavior, and motivations to change (Kreuter et al., 1999). Krupa Das et al. (2009) found that improved outcomes were seen with interventions that were individualized over generic interventions. The authors concluded that increased adherence is linked to individualized plans. They state that plans that increase adherence are important in health interventions. In a meta-analytic review, Hagger and Orbell (2003) listed the need to identify appropriate targets for interventions that lead to improved adherence as a priority for psychological research in health. Integrating nutrition education into the curriculum of all classes instead of having an isolated class or section is a possible target.

One identifiable target for Hagger and Orbell's (2003) interventions is the NSLP, which continues to be one of the most popular federal programs. Some of the first policy changes to the NSLP in 15 years was the Healthy Hunger-Free Kids Act. The bill was met with such controversy that a bipartisan bill is being introduced to ease regulatory portions of the nutrition policy interventions (Pratt-Heavner, 2016). For decisions to be more durable, creative yet comprehensive tools to help policy-makers and the local community to work together are important. Controversy surrounding nutrition interventions aimed at improving the NSLP is not new, but the NSLP faces a growing complexity of issues including rapid advances in nutrition that cause confusion as well as amazing health opportunities. This nutrition environment, coupled with stakeholder's

diverse policy goals and possibly their political ideology, is an issue. Herring (2015) makes the case that food itself has been intensely political from the very beginning, and evidence that school food has been political from the very beginning as well. Weaver Hightower (2011) suggests school food is deeply political, making it an important policy area to study. See also Robert and Weaver Hightower (2011).

Conflicts, Biases, Core Beliefs and Nutrition Policy

The quantitative section of the survey in this study helps determine if acceptance of nutrition public policy, specifically in school lunch programs, might be biased by beliefs or biases having very little to do with nutrition, but that influence perceptions of nutrition nonetheless. The qualitative section of this study puts forth an effort to find common ground for otherwise divisive nutrition policy fraught with confrontations and conflicts. Processes that help diverse groups find common nutrition goals including their values, vision, and voice in decision making will be discussed.

A core value of Americans is health and wellness (Schiffman & Kanuk, 2010) and the general public says that health-related attributes are important to them (IFICF, 2012). Those are values that we share. On the other hand, tension and conflict about nutrition is evident at the community and household level as noted by Campbell (2004). She points to diverse perspectives, values, power, and stakeholder frames as increasing conflict.

Nutrition policy makers face the challenge of improving the NSLP while remaining responsive to diverse stakeholders. Nutrition poses particular problems because issues are often technically complex and full of diverse opinions of what constitutes best practices. Although seldom discussed in the literature, another significant

challenge for nutrition policy makers are stakeholder's values and beliefs. Evidence-based nutrition goals can be theoretically grounded, scientifically proven, technically sound, and predictive of future behavior, but if they conflict with values and beliefs it is likely that the scientific facts will not overcome and might even increase ideological divides and competing interests (Collingridge & Reeve, 1986; Nelkin & Pollak, 1979). This illustrates the problematic relationship between science and judgements in the area of nutrition. When a particular ideology is held, scientific nutrition facts can be used to support it and when an opposing ideology is held, scientific nutrition facts can be used to support that opinion with similar tenacity and accountability to a set of facts. It is often not premeditated to use just a specific set of facts, possibly just is a different interest or perspective such as fiscal realities

Even just within the nutrition community, differing perspectives can complicate reactions to policy. Inter-cultural nutritionists might see the set of facts relating to the culture as very important. Clinical nutritionists might see the therapeutic set of facts as most important. A public policy nutritionist will use a set of facts seen through a political lens. Food science oriented nutritionists might focus on the molecular level of food nutrition. Ecology minded nutritionists might see the environmental set of facts in nutrition issues as paramount. It can then be argued that it is not because we do not have enough scientific evidence to support nutrition public policy for specific action. Instead, as Sarewitz (2004) points out, "such diversity in nature that can support a huge array of methodologies, disciplines and a complex scientific inquiry that can legitimately support …a range of competing, value-based political positions" (p. 386). Science is constantly

giving us new ways of looking at nutrition issues. Many other influences, such as political ideology, form an even more complex web. It is encouraging when effective action steps can be set up based on strong research. Population-wide action steps for these healthier individual diets is a priority (Artinian et al., 2010; Spring et al, 2013). Specific barriers to public policy designed to increase population health have been criticized but many of the policies are simply not based on sound nutrition research (Slavin, 2015). Pelletier, Menon, Ngo, Frongillo, and Frongillo (2011) concluded in a study looking at the nutrition policy process that a universal feature is the disagreement mostly on perspectives and interests. The authors concluded that differences on the technical evidence that might or might not support interventions has conflicts but is not as contentious.

With this in mind, this study will take a deeper look at those inherent beliefs and core values. Disagreement over NSLP nutrition interventions are not new. Perhaps what has dramatically changed is how polarized stakeholders are. It might be assumed higher levels of knowledge would reduce barriers but research has shown otherwise. Kahan and colleagues (2012) surveyed 1540 participants to determine their science knowledge. They found that higher levels of science knowledge showed an increased polarization of views. They concluded that individuals use scientific facts that fit with their worldview. look at major changes suggested for NSLP and diverse perspectives helps understand many of the barriers and develop processes for consensus.

Politics of Values

The study of perceptions of nutrition interventions is important for understanding the influences of values, beliefs and biases toward nutrition policies, what I call the theory of *Politics of Values*. There is very little research examining perceptions and biases of the general public toward proposed nutrition policy but it is evident inherent beliefs form a lens for making sense of issues put in front of us. Diverse perspectives and political ideology based on values create a polarizeation which should not be underestimated. Their are issues which can be a source of emotional attachment because they come from inherent beliefs and values having very little to do with nutrition, but influence perceptions of nutrition policies nonetheless.

> Policies that in fact validate some emotional attachments can stir a stronger preference for the good or behavior. Reviewing both survey and experimental data from the literature, we demonstrate how such emotional responses can create hidden costs to policy implementation that could not be detected using standard welfare economic techniques. Building upon Rabin's work on fairness in games, we propose a partial equilibrium model of emotional response to policy whereby preferences are endogenous to policy choices. In accordance with evidence both from our own analysis and the field, we propose that confrontational policies (such as a sin tax) increase the marginal utility for a good, and that validating policies (such as a subsidy) also increases the marginal utility for a good. A social planner that ignores potential emotional responses to policy changes may

unwittingly induce significant dead weight loss. (Just & Hanks, 2015, p. 1385)

Confrontatinal policies ingnoring inherent beliefs and core values also risks potentially strong resistence to policy changes. By their very definition, these values are based on stable convictons not likely to change. *Politics of Values* can be seen as an incredibly rich context for decision making. They stir a strong preference for good. Secondly, being based on strong convictions, the decisions based on values are likely to not be fickle. Third, decision making based on faith, inherent beleifs and strong values should be encouraged to strengthen familes which in turn will strengthen the very fabric of our country. Fourth, *Politics of Values* brings consensus and a depth of commitment every cause can benefit form.

Experiences: Personal and Cultural Factors

Gard and Wright (2005) look at nutrition public policy from a perspective of how it reflects on the individual. The authors state that "How we approach issues of weight, weight control, and body image shows us what kind of people we are." (p. xxvi). Food practices might take on a similar identifying characteristic. Food practices or nutrition intake can be used as a way of identifying with one group or another. Consider the emotional conflict and backlash if there are mandates treading on a student's identity. This identity might come from cultural, personal or other shared traditions.

Exploring *Politics of Values* is important because a clear understanding of the perceptions of proposed nutrition interventions is needed to inform policy makers.

Understanding the influence of those perceptions on outcomes is needed (Schwartz Riis, Elbel, & Airely, 2010). To understand this issue, it is necessary to look at what we currently know about outcomes and/or perceptions of efficacy, acceptance, and ease of implementation of nutrition interventions.

An example of one piece of legislation showing how perceptions have not necessarily matched what public policy makers have intended is the Patient Protection and Affordable Care Act of 2010. This act mandates national calorie labeling for restaurants with more than 20 locations and for vending machine items distributed by vendors with 20 or more units (Roseman, Riddell, & Haynes, 2011).

In an effort to understand how the calorie counts were perceived and how they effected decision making, Elbel, Kersh, Brescoll, and Dixon (2009) stood outside of Burger King, Wendy's, McDonalds, Kentucky Fried Chicken and other fast food chains to talk to customers as they were leaving the restaurants. A total of 1,156 customers were surveyed and the researchers collected the receipts from their fast food purchase. The study took place in New York before and after calorie labels were printed on the menu boards and compared them to fast food purchases in a neighboring state where the law was not in effect and no calorie labels were on the menus. The researchers report that almost a third of the adults said the calorie counts influenced them. But, there was not a significant change in the number of calories ordered.

In a similar experiment with teens and adults with children, only 9% of adolescents and 16% of adults said calorie counts mattered when considering what food to order (Elbel, Gyamfi, & Kersh, 2010). Adolescents ordered about 725 calories per

visit and adults ordered about 600 calories per visit regardless of the presence of calorie counts or not. The area where the survey took place was in a low-income area and up to 90% of the customers surveyed were of a racial or ethnic minority group.

Researchers said that they choose the low-income neighborhood because this population is at a higher risk for poor intake and has more health-issues related to high calorie diets. This population is also more likely to choose food based on availability and cost according the researchers. Urban areas such as those where the study took place have a higher concentration of fast food restaurants and fewer healthy alternatives. Economic costs of finding healthier foods includes cost of gas or public transportation fares and inconvenience of travel. Time to get to stores or restaurants with healthier options is another factor in food choices for a low-income population in an urban area.

The food choices available in urban areas dictate the flavors and tastes families are accustomed to. They influence future food choices such as those children might make at school. The authors report that taste is the number one priority for adolescent food choices with habit, access, price and location also listed as factors. The environmental changes intuitively seem like they should work. They did not. Just one example of how hard improving nutrition outcomes is.

An important piece of legislation focusing on the impact of nutrition interventions is the Child Nutrition Reauthorization 2016. This legislation sets up all the federal nutrition programs for kids including school lunches and breakfasts (Roseman, Riddell, & Haynes, 2011). It seems straightforward to reinforce kid's programs with healthier

food options, but goals need to be established with care and the perceptions that affect the program's outcomes well understood.

Provencher, Polivy, and Herman (2008) found that, when participants were told that oatmeal-raisin cookies were healthy, they ate more than when given the same cookie without a nutrition message. Participants were told that the study was to examine marketing of snacks. The control group was given oatmeal-raisin cookies with a description of the formulation for a new, gourmet cookie with fresh butter, whole eggs, real vanilla and brown sugar. The experimental group were told that the cookie was a formulation of high fiber, whole grains, free from trans-fat and low in saturated fat.

The researchers added a nutritional comment to the experimental groups description of the cookies. The effect of the message was that participants had surely heard how good whole grains, high-fiber are for them and how the elimination of unwanted fats is important for good health and because soluble fiber decreases unwanted cholesterol build-up, it is also healthy. The participants were instructed to taste the cookie and then rate them on taste and palatability. They were told to eat as many cookies as they needed to accurately assess the cookies. After the taste test, participants were welcome to eat as many as they wanted. Participants ate 35% more – about 56 calories – when given the experimental condition in which the cookie was described as "healthy".

In the experimental condition where researchers made weight a prominent issue, restrained eaters showed a significant change in the perceived healthiness of the cookie. The authors concluded that participants might feel it is very normal to have more of a

nutritious food. The cookie participants thought was healthier changed perceptions, leading to overeating.

Foods promoted with a nutritional halo are also at risk of increasing caloric consumption (Chandon & Winsink, 2007). The researchers found that customers at restaurants who made healthy claims such as Subway, are more likely to underestimate calorie content and choose high caloric side-items than in restaurants that do not make health claims. This "halo effect" stems from a nutrition message that creates an environment where consumer's perception is influenced and can cause an increased intake of calories.

Single or multiple health behavior interventions for improved health outcomes also makes a difference in results. In a meta-analysis and review of this subject, Sweet and Fortier (2010) found it depended upon the goal. This is where the intent of the nutrition message and the congruency to the outcome becomes paramount. If school children participate in an intervention that labels each food as healthy or not healthy, do they understand the consequences of over-consumption of even healthy foods? If the message for multiple interventions is perceived as burdensome, will it decrease the effectiveness of all of the interventions?

Sweet and Fortier (2010) reported from his synthesis of the literature that there was not a significant change in weight with diet interventions alone and weak support for increased physical activity alone. The strongest finding: Greater weight loss with a combination of change in diet and exercise behavior. The caveat here is that increased change in habits by choosing just one area to focus on increases adherence. He stated

that it is important to gear interventions based on desired outcomes. It is a complicated issue that needs to be addressed before policy is set. Is the desired outcome increased weight loss which might be temporary or change in health behaviors which might be more permanent? Sweet and Fortier (2010) found that focusing on a single behavior change is more likely to bring about change then attempting to adjust multiple behaviors at the same time. Dietary behavior changes reviewed in the meta-analysis included changes in fruit and vegetable intake, fat intake and an increase in fiber intake. Intervention studies demonstrated positive results for increasing fruit and vegetable intake.

Even though research has shown that increasing fruit and vegetable consumption is a nutrition intervention that has been positive, the outcomes have mixed effectiveness. Campaigns to increase fruit and vegetable consumption sometimes result in an increase in fruits and fruit juices of high caloric value (Davis, Cullen, Watson, Lonarik, & Radcliffe, 2009). Increasing fruits and vegetables does make for an intake with a better pattern of nutrients, which is important in a healthy diet. On the other hand, an increase in fruits and fruit juices increases sugar intake and can lead to weight gain. Here again, it is important to distinguish between 'Is the goal a healthier diet?' or 'Is the goal a lower caloric intake?'.

Well-designed nutritional interventions for school lunch programs designed for healthier outcomes need to start with a good understanding of the perceptions by stakeholders of the health intervention. It is also important to understand the perception of a combination of interventions or how complex just one intervention is.

Whether talking about public policy for a population or just an individual who decides to try to get healthier, people may choose a complex method. Wansink (2010) found that participants who made simple changes lost more weight than a control group, who had counseling sessions and more complex behavior changes.

In an online study, participants (n=414) did see a large difference in the difficulty and complexity of specific interventions. At the same time participants showed a "complexity bias" in their belief that the complex programs would give better weight loss results (Nyenhuis & Cokely, 2011). The authors suggest that even though previous research has shown that less complex health interventions increase adherence and therefore efficacy, there may be a "complexity bias" in that people choose the very programs that might lead to failure. If individuals choose regimens that they perceive as more complex it may be because they cannot conceive of a simple solution to such a complex problem. This leads to the idea that possibly these or other types of biases are at work in public perceptions of nutrition policy interventions that are being proposed or legislated.

Biases lead to diverse perspective and also to incompatible ideas which might be responsible for polarized positions. The goals of the empirical section of this dissertation are to determine if perceptions of nutrition interventions are based on biases having very little to do with nutrition, but influence perceptions of nutrition nonetheless. The qualitative data might lead to understanding a little more about the values, beliefs, conflicts and diverse perspective of the general public and to explore survey participant's comments for ideas where common ground might exist.

CHAPTER III

METHOD

One important area of analysis in nutrition research is determining if people might hold core beliefs or biases that influence perceptions of policies designed to improve people's diet. The research questions were best answered by using a mixed methods research design. Qualitative data gained from focus groups served to clarify and expand upon the quantitative data garnered in a survey. Triangulation of the data converged the results and increased collaboration of the phase I and II data. Triangulation helps integrate the various aspects of the different types of data as well as the different phases of research (Creswell & Plano Clark, 2011).

In this chapter, Phase I describes one strand of the study: an online survey. Phase II describes another strand: eight focus groups. An explanatory sequential mixed research design integrated the quantitative and qualitative data (Creswell & Plano Clark, 2011). Each phase is detailed below with a discussion of the research questions, data collection, analysis, and validity-reliability.

Questions

This study addressed four research questions. All four questions used data from both Phase I: the online survey (n=201), and Phase II: 8 focus groups. In Phase I, a combination of qualitative and quantitative data came from the online survey. The

findings in the Phase I survey informed the process of developing questions for focus groups. A major feature of focus groups is a natural setting so discussions included additional topics. The type of data analysis used to answer each research question is discussed in this section.

Question 1: Does the General Public Filter their Impressions on Ease of Implementation, Acceptance and Efficacy of School Lunch Nutrition Policies through their Political Ideologies, Beliefs and Values?

a) Quantitative Survey: Analysis included descriptive statistics, correlations, and multiple hierarchal regression.

b) Qualitative Survey: Open ended question analysis included pattern matching and documentation of outliers.

c) Focus groups: Pattern matching and documentation of outliers helped gain a deeper understanding of participant's perceptions.

Question 2: Does the General Public want More or Less Government Intervention in Nutrition Public Policy and can Political Ideology Predict this?

a) Quantitative Survey: Analysis included descriptive statistics, correlations, and multiple hierarchal regression.

b) Qualitative Survey: Analysis included open ended questions, pattern matching, and documentation of outliers.

c) Focus groups: Pattern matching and documentation of outliers gave deeper understanding of participant's perceptions.

Question 3: What Evidence of Values, Beliefs and Biases Influencing Science of Nutrition and Perceptions of Proposed Nutrition Policies?

a) Quantitative Survey: Analysis included descriptive statistics and correlations.

b) Qualitative Survey: Open ended question analysis included pattern matching and documentation of outliers.

c) Focus groups: Pattern matching and documentation of outliers helped gain a deeper understanding of participant's perceptions.

Question 4: Even with Inherent Beliefs, Values and Polarized Political Ideologies, is there Common Ground on Nutrition Policy?

a) Quantitative Survey: Analysis included descriptive statistics and correlations.

b) Qualitative Survey: Open ended question analysis included pattern matching, and documentation of outliers.

c) Focus groups: Pattern matching and documentation of outliers helped gain deeper understanding of participant's perceptions.

Phase I: Survey

The online survey explores beliefs, values and biases influencing decisions toward proposed nutrition policies. People were asked to make judgements of nutrition proposals designed to improve NSLP nutrition outcomes. The survey was taken by 201 participants nation-wide from self-registered Mechanical Turks (MT). Likert-type questions about demographics, political ideology, and perceptions of the proposed school lunch nutrition proposals required judgement-type decisions.

Closed-ended questions on the survey provided data for quantitative statistical analysis. Open ended questions were included at the end of the survey providing qualitative data that explains and gives more detail of the quantitative data. Multi-item survey questions and open ended questions also explored core beliefs, conflicts, political ideologies, and diverse perspectives. Many of these beliefs come from conflicting values having very little to do with nutrition, but that influence perceptions of nutrition, nonetheless. It was hypothesized that the local choice proposal and the federal regulated proposal would be perceived as cognitively different (e.g., perceptions of efficacy, ease of implementation or acceptance).

Design

A design to combine both qualitative and quantitative data obtained from the survey increased the integrity and credibility of the findings. The first section of the survey included questions about individual differences in political ideology, political party self-identification, and demographics.

A second section of the survey asked people to read the proposed nutrition interventions and then judge efficacy, ease of implementation and perceived acceptance of each one. People were asked questions such as how easy each proposal would be to implement or how likely each proposal would be accepted. Themes of beliefs, values, and perception of school lunch interventions were examined by using a 40-item survey assessed on a 5-point Likert scale. For each of the scales, participants were asked to judge ease of implementation, efficacy, or stakeholder acceptance of the hypothetical school lunch proposals. This added insight into core beliefs that people might hold toward

public policies. Political biases, values and diverse perspectives based on these beliefs are believed to influence how people see proposals labeled either federal regulated or local.

The number of proposed nutrition rules were purposefully minimal (4) and non-intrusive in nature – such as increase fruits and vegetables – but scientifically important for increased health outcomes (Centers for Disease Control and Prevention, 2010; Davis et al., 2009; Lin, 2005; Thomson & Ravia, 2011). The nutrition rules were designed to mimic nutrition messages that have been found to have the widest acceptance with the US population. Each set of proposed nutrition interventions had a different title but all other aspects of the interventions were designed to be as similar as possible. One set was given the title *local choice* and the other the title *federal regulated* but both described a set of interventions that were intended to elicit similar outcomes. The design of the two sets of interventions brought to mind a political ideology frame of reference just by a change in the title. See Appendix C for a complete list of the questions.

A third section of the survey included pre-existing survey measures adapted from Lusk (2012). Bulmer, Gibbs, and Heather (2006) suggest this as a way of increasing survey data quality. Lusk's questions, tested on 800 participants and designed by the researcher, provided political ideology comparisons. Lusk's (2012) study consisted of only closed-ended questions. The current survey included four questions: food technology, banning unhealthy foods, labeling imported foods, and creating an agency to increase healthy foods.

In the fourth section of the survey, four open ended questions allowed participants to add their ideas and thoughts. The four questions asked people for written comments on barriers to improving school lunch. Additional space gave participants a chance to offer suggestions of what might help improve school lunches. At the very end of the survey participants could add further comments. All but one person wrote additional information in response to the first question. Approximately 70% of the survey participants wrote additional information for all four questions.

Collection

The online survey queried 201 participants recruited via Amazon's MT. Inclusion criteria set up in MT ensured participants were from the United States. Concern about the use of MT for participants for social science research has been addressed in other studies (Mason & Suri, 2012). Studies have shown that MT respondents represent other online participants in most general applications (Paolacci & Chandler, 2014). Hauser and Schwarz (2016) found attention checks of MT groups showed a higher score as compared to other research pools.

Mechanical Turks labor force register with Amazon to do tasks advertised online. The task and payment of 50 cents for the completion of a survey on food and nutrition issues was visible in the advertised list. Participants who completed the survey, collected the agreed payment—completing the survey. An in-person survey participant would have been paid substantially more creating an inequality that should be remedied the next time a similar study is conducted.

The survey oversampled for lower incomes. It is probable that people signed on to do this task because of a financial deficit, explaining why there were more low income participants. However, not all participants self-reported incomes that indicated a financial need. Almost 1 in 10 participants record their income as above $100,000 per year. In this study, the sample population also diverged from the US Census in terms of age and ethnicity, likely a function of using the MT workforce, see Table 1 for more details on demographics and other characteristics of the sample population.

Table 1. Background Variables of Sample Population of Current Online Survey as Compared to US Census and the Sample Population in Lusk Online Survey (2012) Study.

	Sample %	US Census (%)	Lusk (2014) %
Income			
Less than $ 20,000	23	13.8	14.5
$20,000 to $39,000	25	19.9	26.7
$40,000 to $59,000	24	17	19.3
$60,000 to $79,000	12	14.7	14.7
$80,000 to $99,000	7	10.3	10.3
Over $100,000	9	25	14.5
Ethnicity			
White, non-Hispanic	82	68.2	83.3
Black or African American, non-Hispanic	7	11.5	6.7
Hispanic	5	13.9	3.9
Other	6	6.5	6.1
Political Affiliation			
Republican	22		22.1
Democrat	42		33.7
Independent	30		34
Tea Party	1		5.1
Other	5		4.2
Self-defined Political Ideology			
Conservative	30		*M*=-.08 (-2 extremely conservative +2 extremely liberal
Liberal	50		

Note: All numbers are percentages and for US census and Lusk sample were taken from a published study by Lusk (2012).

Males comprised 54% of the sample population and females 46%; "other" was not an option presented. Race, primarily white, made up 82 % of the people who signed on the take the survey. Self-reported political ideology, a key demographic, provided an independent variable for the quantitative analysis and a context for the qualitative analysis. Participants described themselves as 21% strong liberal, 29% slightly liberal, 20% neutral, 22% slightly conservative and 8% strong conservative. In terms of specific US political party affiliation, the survey oversampled democrats with fewer independent and republicans than the US population (Pew Research Center, 2015). The current study shows an oversampling for liberals and slightly younger people, possibly a result of using an online sample since younger people use online technology more often.

Measures. This study focuses on the general population's attitudes of proposed nutrition interventions for the school lunch program. It is based on an integrated mixed methods design that includes elements from both qualitative and quantitative work. Chosen themes linked values, political biases, and core beliefs to perceptions toward nutrition policies.

The instrument used in the quantitative portion of this study, a survey of questions, intended to elicit responses showing if participants viewed nutrition policies through a political lens. Questions taken from a study conducted by Lusk (2012) reported on food and political ideology. Lusk reports other surveys on food and political ideology did not exist so his questions, designed specifically for his study, added to the literature on attitudes toward government intervention in food areas.

Background variables. Background variables such as age, gender, ethnicity, and income levels gave participant demographics. The demographic variables lend a picture of the typical participant. They also provide a way to statistically check for confounding variables.

Control variables. Questions on political ideology and political party affiliation provided a basis for statistical analysis. Participants self-labeled one of five categories: strong liberal, slightly liberal, neutral, slightly conservative, or strong conservative.

Survey questions on perceptions of proposed nutrition policy. Many of the questions used in this survey related to each other and likely measure some of the same dimensions. The questions would correlate with one another just because they might share some of the same underlying explanatory factors. This could have been dealt with in the survey design by changing the questions, but a decision to use exploratory factor analysis to reveal questions with similarities allowed grouping several questions together as one construct. Researchers have suggested this as a more objective approach because it allows the data to drive the variable groupings and not initial biases or preconceptions (Lusk, 2012).

Factor analysis makes it apparent which questions are related. This method explains the maximal amount of the total variation in the survey questions. It also helps determine the number and type of dimensions underlying attitudes about proposed nutrition interventions.

Since there are no clear rules determining how many factors should be retained, a judgement was made based on the variance explained by each factor: Did the results

make sense and is each variable loading on just one factor. The factors produced by exploratory factor analysis were perceptions of efficacy, ease of implementation, ease of following, and acceptance.

Factors affecting school lunch nutrition intervention success. Factors based on themes of exploring political ideology bias, core efficacy beliefs, ease of implementation, and diverse perspectives formed the basis of a survey tool to study attitudes. The Factors Affecting School Lunch Intervention Success (FASLIS) scales used 40 items assessed on a 5-point Likert scale. For questions of determination of likelihood of action, F1= Very Unlikely and 5=Very Likely. For questions of determination of ease, 1=Very difficult and 5= Very Easy. For each scale, participants judged ease of implementation, efficacy, and acceptance of the school lunch proposals. The scales were: Implementation--3 items for federal regulated proposal and the same 3 items for local choice proposal, e.g. How likely do you think that each proposal would have lasting nutrition and health benefits for students? Efficacy--3 items for federal regulated and the same 3 items for local choice proposal, e.g. How likely is each proposal to improve children's school lunch nutrition choices? Acceptance--3 items for federal regulated and the same 3 items for local choice, e.g. How likely is each proposal to be accepted by the general public? Government Intervention--3 items, e.g. How much government intervention would you prefer in your personal life? See Table 2 for full scales and item descriptive statistics. Data analysis used IBM SSPS Statics for Windows, Version 22 (IBM Corp., Armonk, NY) software.

Perceptions of efficacy. This factor of perception of efficacy toward the two very similar nutrition interventions – title as the only major difference – shows whether

participants feel one intervention would work better than the other. The survey participants are being asked to judge a difference in the ability to produce the intended result. Values driven by beliefs of what is important and biases of towards types of interventions able to produce the desired result influences decisions for this set of questions.

Perceptions of ease of implementation. Perceptions toward ease of implementation of two very similar nutrition interventions shows whether participants see a difference in two very similar interventions even to the extent they choose one intervention over the other. It is possible to extend this question in several different directions as Lusk (2012) points out in his survey on political ideology of food. The thought behind these questions is implementation influenced by values and beliefs is an underlying theme to explore. The survey participants are being asked to judge if one of the programs might be easier to get up and running.

Perceptions of acceptance. This factor of perceptions of acceptance toward two very similar nutrition interventions – the only major difference is the title – shows whether participants perceive that others would accept the nutrition interventions. These are questions giving insights into beliefs, values and diverse perspectives of the participants. They are being asked to gauge whether they think others would perceive that one specific nutrition intervention is more palatable than the other.

Desired level of government intervention. This factor examined participants' preference for more or less government involvement in different areas of their lives. Figure 2 is a screen shot of these questions in survey. One question asked whether

participants would like more government involvement in fiscal issues. A second question asked about level of government involvement in social issues. A third question asked about level of government involvement in personal issues. A fourth question, a separate construct, was as a summary query: level of importance for the government intervention. These questions were designed to elicit a summary judgement about participants' preferences for regulatory oversight. Government Intervention: Three items, e.g. How much government intervention would you prefer in your personal life? See Table 2 for full scales and item descriptive statistics.

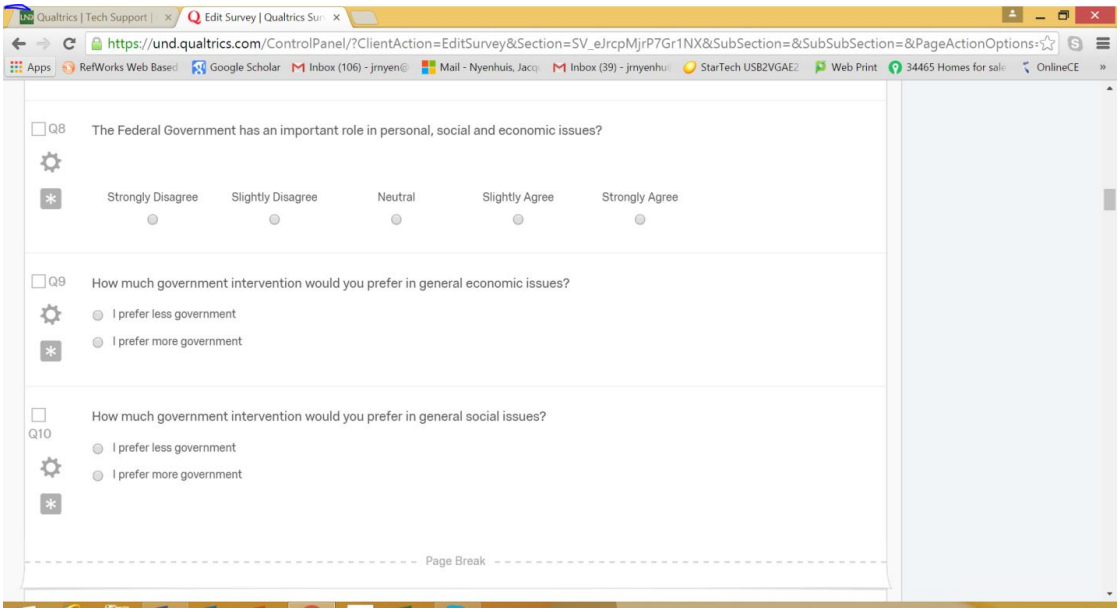

Figure 2. Screen shot of questions on preference of level of government intervention. Question 9 and 10 are a variation of question 8 as a check on the stability of preference for government intervention.

Exploring political ideology of food. Questions for this survey on political ideology of food were established scales previously used and published by Lusk (2012). The author states that the purpose of the development of his survey instrument is to

explore and measure preference for more government involvement or less government involvement in food and farm policy.

Lusk (2012) devised the survey with the intention to determine ideology as it relates to food and agriculture. Each question focused on a particular food or agricultural issue. His question format uses the exact same question each time and participants were given 5 different options that included a range of possible government actions that might theoretically be possible. The questions asked: Which of the following best describes your view on what the US government should do? (p. 532). The first answer out of the five was always the choice that described the greatest amount of government involvement. The middle question always included the word maintain which Lusk used as a descriptor for the status quo.

Lusk (2012) specifically designed each scale to determine if the participants desire more or less government involvement. Four of the 10 questions on the political food ideology survey where chosen to be included in the current study based on their applicability to the political ideology of food in the current study. The first question dealt with food technology and what level of government intervention best described their viewpoint. The second, third, and fourth questions were on healthy food, imports, and labeled fats respectively. Each of these questions are discussed in detail in the following sections.

Food technology. Devcich, Pedersen, and Petrie (2007) found an increase in worry over the healthfulness of new technology and how it affects individual's decisions about foods. The question on food technology from the Lusk (2012) survey was chosen

because a pew research study indicated genetic modifications to food stuffs is one of the most polarizing subjects comparing the beliefs of the general public to what scientist believe. This question also includes other controversial technology such as cloning, irradiation, and nanotechnology. Researchers (Nyenhuis & Drelich, 2015) have discovered a way to use nanotechnology as means for nutrient supplementation for salad greens, sprouts, and micro-greens. In contrast, researchers at a tier 1 research university said they do not allow students on grant funded research to work on GE food research. The reason: high consumer non-acceptance of GE products, lack of funding for additional research, and perceptions of the general public toward GE technology (personal communication, NDSU Food Science Faculty, February 2012).

Question #32: Food technology. (Which of the following best describes your view on what the US government should do?)

Ban controversial new food technologies such as genetic modification, cloning, irradiation, or nanotechnology.

Require food companies to label foods that use genetic modification, cloning, irradiation, or nanotechnology.

Maintain current level of regulations on genetic modification, cloning, irradiation, or nanotechnology.

Decrease regulations and make it easier for food companies to use new food technologies, genetic modification, cloning, irradiation, or nanotechnology.

Make no restriction on new food technologies, genetic modification, cloning, irradiation. or nanotechnology.

Healthy food. A question determining desire for more or less government action in the arena of creating a new nutrition agency was chosen to be included in the current survey. Lusk (2012) reports the "creation of new government agencies" in the UK and attributes this to a large amount of research on nutrition public policy advocating paternalism and media coverage of paternalism (p. 356).

The question labeled healthy food in the Lusk (2012) survey is changed to create a new nutrition agency as descriptor for the analyses of this study. These words are not seen by the survey participant. The Lusk study included titles for each question but the current study did not. If the title has a framing effect, this is likely to influence perceptions of what the question is about.

Question #33: Create a new nutrition agency. (Which of the following best describes your view on what the US government should do?)

Create an agency to plan food production and distribution to improve nutritional intake

Use extensive taxes and subsidies to promote healthier foods

Maintain current regulations designed to promote healthier foods which include mandatory nutritional labels on foods and establishing suggested dietary intake

Decrease efforts to promote healthier foods

Eliminate all food health regulations; allow citizens to make their own food choices

Food imports. Lusk's (2012) question on food imports was included in this study survey. This question is likely to be interpreted as a question on food labeling laws as

much as for imports of foreign foods. Food labeling laws in public policy are one area of conflict that has possibly intensified in the last few years. Nutrition public policy set by the USDA has come under criticism for not requiring foods to be labeled for place of origin.

Question #34: Food Imports (Which of the following best describes your view on what the US government should do?)

Ban imports of foreign foods

Require country of origin labeling for all foods produced outside the US

Maintain current policies toward foreign foods

Reduce regulations on food imports

Repeal all laws which would impede food imports

Question #35 was labeled as a query about fats. Some of the choices for this question seem to describe a kind of healthism. Greenhalgh and Wessely (2004) describe healthism as "beliefs, behavior and expectations of the articulate, health-aware and information-rich middle-class" (p. 197). It is the characterization of some foods as unnatural and therefore unhealthy. Greenhalgh and Wessley (2004) further explain this type of person as "information-seeking, self-reflection, high expectations, distrust of doctors and scientists, healthy and often 'alternative' lifestyle choices, and a tendency to explain illness in terms of folk models of invisible germ-like agents and malevolent science." (p. 198)

The questions for the current study did not carry any type of label as to what the issues were. The question can be interpreted: Should more or less government action be

taken to restrict any unhealthy food ingredients in food production? Or, it could be interpreted as: Should more or less government action be taken to restrict saturated fats and trans fats?

Question #35: Fats - Which of the following best describes your view on what the US government should do?

Ban the use of tranfats, saturated fats, and other unhealthy food ingredients in food production

Increase regulations to restrict the use of transfats, saturated fats, and other unhealthy food ingredients in food production

Maintain current policies on transfats and saturated fats, (e.g., mandatory labeling in the supermarket)

Reduce regulations on transfats and saturated fats

Make no law regarding transfats, saturated fats, and other unhealthy food ingredients, leaving people to take responsibility for their own diet

Lusk (2012) describes participants who answered the above questions with the middle answer—maintain-- as the status quo (p. 535). This could also be interpreted as those who answered in the middle might include participants who are not engaged in the subject, do not have a strong opinion of food regulations, or possibly have a mixed opinion of the different items in the question. For example, if a participant feels transfats should be banned but saturated fats are a part of a healthy diet, they might use the middle answer. The middle answer best reflects strong government action for trans fats – which currently requires labeling which was not the case when the Lusk study was conducted.

The Lusk study was conducted prior to any legislation on transfats. Currently, there are no restrictions on saturated fats. Each question in the Lusk (2012) study has similar issues. Future studies might use well-defined constructs and different sentence construction for similar questions.

Local Choice Finds More Support. The open ended questions were intended to elicit information that further explains and gives a fuller understanding to the conflict and consensus that might be held by the general public. The open ended questions were: In your opinion, what are some ideas to improve the school lunch program? What might be some things that make it hard to improve school lunch programs? What are some of your thoughts about student accessibility to high fat, high sugar, or high calorie foods? Is there any other information about nutrition, school lunch programs or other issues you would like to share on this survey? See Appendix C for complete survey.

The written comments are more than just hypothetical ideas. They are qualitative data of actual reflections of the participants on a wide range of issues relating to nutrition and public policy. They are valuable additions to the quantitative data as insights into the decision-making process that each participant made as they answered the scaled items on the survey.

Analysis

To test the quality of the survey scales, an exploratory factor analysis was first conducted that included all 40 items and used a varimax rotation to determine if the scales assessed distinct constructs. Results from the analysis indicated that each scale had all items loading strongly on 1 item. The final factor loading indicated five distinct

factors with strong item loadings (.50 to .90) that aligned with the hypothesized scales (α =.91) and the scale distributions all approached normality (i.e., skewness and kurtosis less than or equal to ±1.00). The scale items were then summed into their respective FASLIS variables.

The survey tool included a portion of an established scale (Lusk 2012). Four questions were used in the current survey. There was a positive correlation between self-identified political ideology for the question on using extensive taxes and subsidies versus allowing citizens to make their own food choices. More conservative participants were more likely to hold the views that included less government regulations and liberals were more likely to hold the view that included more government regulations pertaining to regulations on creating a government agency to improve nutritional intake.

Legitimation

This survey combined qualitative and quantitative strands of research in what is considered a triangulation of findings. Other researchers have documented that when the strands of research are combined, the findings can be corroborated (Creswell & Plano Clark, 2011).

The bringing together of qualitative and quantitative research also has the advantage of what Creswell and Plano Clark (2011) call completeness. A better picture of the research gives the researcher increased visibility into the area of inquiry. The qualitative research affords a chance to actually come face to face with a lived experience of another person and to understand multiple perspectives. When supportive of

qualitative findings, as in this study, the triangulation offers credibility and transferability.

This study survey included several questions taken from a survey on the political ideology of food by Lusk (2012). Lusk's (2012) study consisted of only closed-ended questions. The data results of the two studies coincided on the questions that were identical: Generally, people are open to government oversight on specific food issues and not others. In the current study survey, participants volunteered a deeper, more complex view in additional open ended questions which according to Creswell and Plano Clark, (2011) validates the outcomes.

The questions of the current survey did not attempt to cover the full breadth of perceptions that an individual might have concerning proposed nutrition interventions for school lunch programs. Since these questions have not been queried before, it is likely that other researchers would come up with different questions to cover similar issues (Lusk, 2012). The questions – and the word selections – pertaining to implementation and acceptance explored core beliefs, values, biases, conflicts, and diverse perspectives. The goal of increased confirmability of data surrounds the evaluation of participants' judgements. For this reason, participants were asked to make judgements on multiple constructs of implementation, acceptance, and efficacy.

A list of procedures recommended for rigorous research by Creswell and Plano Clark (2011) and followed in this study included: visually inspected data, established a codebook, conducted descriptive analysis, checked for trends and distributions, chose appropriate statistical test or transcribed and grouped interrelated themes, analyzed the

data to answer the research questions and assessed how the research answered the research questions.

Phase II: Focus Groups

This section describes methods used to answer the research questions for this dissertation. The first phase, a mixed methods research online survey provided qualitative data and quantitative data. A second phase, using focus groups, provided qualitative data exploring the tensions seen in the first phase of research toward proposed nutrition interventions. From this analysis, it is theorized that common ground can be uncovered and used for developing future nutrition policy. The purpose of this study is to develop a better understanding of the perceptions of nutrition interventions and highlight biases based on political ideology, values and beliefs that form those perceptions in order to build consensus for informing nutrition policy, see Figure 1.

The focus group structure utilized survey data to inform the research process and to build a stronger focus group outline. Especially in research exploring bias in nutrition public policy, some ideas need quantifying. Insights into the thoughts and feelings behind those numbers can be just as important. Integration was more than just the sum of the parts. Focus groups provided a richer understanding of the issues.

Design

Survey findings informed questions posed to focus groups. In this exploratory design, the qualitative explains the quantitative data. The strands of the research were performed sequentially as described in Figure 3 (Creswell & Plano Clark, 2011). This flexibility was beneficial in answering the different types of research questions.

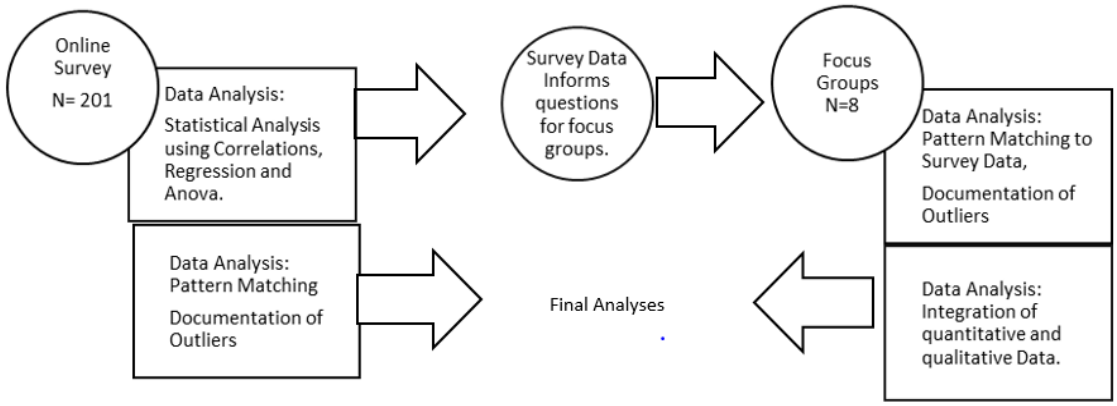

Figure 3. Sequential design for collecting and analyzing data. Phase I included an online survey with both quantitative and qualitative data collection. Findings from the survey were used to formulate questions for Phase II focus groups.

Eight focus groups were conducted in California, Connecticut, Iowa, North Dakota, and Florida from July 2016 through September 2016. I moderated the focus groups and transcribed data. The results of the survey gave three major questions for structuring the focus group discussion. The additional questions were not limited to school lunch issues. Participants were allowed to talk in depth about nutrition policies that were the most meaningful to them. See Figure 3 for details on design and steps for use of a focus group for this study. See paragraph 2 in the protocol section of this dissertation for the exact questions.

Participants

Snowball sampling, used as a way to recruit participants, was initiated by the selection of one acquaintance. That one person was then asked to recruit people who had a similar political ideology. Those people were then asked to also recruit people. See Figure 4 for a description of when snowball sampling took place in relation to the research design.

Some focus groups are queried for demographics and chosen on that basis. Stewart and Shamdansi (2015) point out that this can be a confounding variable when all of the focus group participants have a similar background, personality or attitude.

Research Question
Example: Are participant's perceptions of nutrition public policy biased by beliefs, values and biases?
Sampling Frame
Focus groups were conducted in several states and were made up of Liberals or Conservatives.
Identification of Moderator
Principle researcher was the moderator for all focus groups.
Generation of Interview Guide
Guided by Phase I survey findings.
Recruiting the Sample
Snowball sampling.
Conducting the Group
Focus groups allowed discussion of nutrition policies in a way that encouraged everyone to participate and feel comfortable.
Analysis and Interpretation of Data
Analysis included a summary transcription of the conclusions and an analysis of the findings.
Summary of Findings
Qualitative and Quantitative data summarized in dissertation.
Decision Making and Action
Findings will be used for informing policy makers and the general public on nutrition policy issues.

Figure 4. Research design. This figure depicts steps used for focus groups in the current study. Adapted from Stewart, D. W., & Shamdasani, P. N. (2015). *Focus groups: Theory and practice* (Vol. 20). Thousand Oaks, CA: Sage Publications, p. 50.

Background demographics were not formally collected on the focus group participants for the current study as some participants might see them as too personal.

Participants were invited to share their background that related to nutrition or nutrition policy as an icebreaker for the focus group. This also served to give people an idea of the interests of the others in the focus group.

Focus group participants were queried as unobtrusively as possible on political ideology by asking the entire group if they considered themselves liberal or conservative. Considered a potentially personal question for some participants, I accepted a choice to not answer. If a potential participant identified themselves as liberal, conservative, or with any other type of identifying label of political affiliation or ideology, I nodded to encourage others in the focus group to share.

Cohesiveness for the focus groups was achieved by asking people I know to recruit participants with similar political ideology. It is desirable for the group to be attracted to each other, agree, contribute and feel comfortable in order to form a cohesive group (Stewart & Shamdansi, 2015). This cohesiveness influences a number of factors and dynamics in a group. The participants do not need to agree completely with each other but individuals who do not agree at all might be troublesome (Stewart & Shamdansi, 2015). There was some disagreement about amount of government action to be taken on nutrition issues even though the focus groups were designed to be similar in ideology. This is expected since there is wide variation in political ideology within each of the political parties in the US as seen in the survey Phase I findings.

During the focus groups, participants might self-identify as liberal, progressive, or democrat, but I did not define the terms. All of these descriptors might mean something very different to each person but no one questioned what any of the terms were or asked

for clarification. For example, participants who self-described as conservative might be grouped with people who self-identified as republican even though they might in reality be registered as a democrat but consider themselves as fiscally conservative. Many times this information was informally shared in the focus group, but participants could also choose to not share any demographic information.

Collection

Combining two different collection methods brings a diversity of views. Creswell and Plano Clark (2011) state "combining researchers' and participants' perspectives through quantitative and qualitative research" reveals meaning. Focus groups have been seen as useful in other research to follow the analysis of quantitative surveys to facilitate "interpretation of quantitative results and add depth to the responses obtained in the more structured survey" (Stewart & Shamdasani, 2015, p. 44).

A time and place convenient for all members of each focus group was set up within one week of recruiting the focus group participants. The goal was to find a private or semi-private space in a coffee shop where the participants would feel comfortable sharing ideas on nutrition and political ideology. The focus group conversation was audio-recorded and the recording was mined for discourse that explained findings in Phase I of the research survey. For example, Phase I findings included acceptance of the local choice nutrition intervention for all groups except for public policy makers. I searched the focus group recordings for any comments showing a rationale for consensus of acceptance by groups other than policy makers. This provided more information and

interesting insights into the qualitative data. A transcript was made of the areas that gave interpretation of quantitative results**.**

Themes from the focus groups emerged and led to ideas of how to build a consensus toward nutrition interventions. A protocol used in other research utilizing focus groups was given to me by Dr. Robert Stupnisky (Personal Communication, July 20, 2012). I used the same protocol and changed the text slightly to fit my research project. Here that protocol is listed in paragraph form.

Focus group protocol. The groups included from 4 to 6 people and lasted about 30 minutes. A cell phone recording app was used to audio record each focus group.

The people for the focus group were greeted as they arrived. Each person was given a consent form which was summarized. Participants were given a chance to read it and sign the forms. I gave the following information to the group:

> Please read the consent form. In brief, your comments will be confidential, so please answer openly and honestly. We also encourage you the participants, to not divulge any of what the other participant says in today's session. We are audio recording this session so that we can clarify and elaborate on our notes. The procedure of the study will be described and each person is encouraged to introduce themselves.

Focus Group Questions. The focus group protocol was developed in May, 2016. As the 2016 Presidential Election drew closer people in the focus groups were less likely to feel comfortable sharing political affiliations. The structured questions taken from Phase I are listed here, each group was treated with individual care and only 3 questions

were on the structured agenda. Question number 4 and other questions were used to keep people on the subject and to elicit as much information about how political ideology, core beliefs, and values influence perceptions of public policy. Questions:

1. Do you prefer more or less government intervention in your personal life?
2. How do you feel about the statement: The Federal Government has an important role in personal, social, and economic issues?
3. A previous survey, including proposed nutrition interventions, was described to the focus groups. Each group was asked their ideas on why survey participants thought the local proposal would be more acceptable, easier to implement, and more effective over the federal regulated one?
4. Further questions on policy areas that were important to the specific group were asked such as on farm food policy if people did not talk much about school lunch policy.

After 30 minutes to an hour of discussion, or if no new information is emerging, the session was concluded. The participants were thanked.

Changes in protocol. Phase II of the mixed methods study is based on data derived from focus groups. The success of focus groups depends upon the participants feeling "comfortable, respected and free to give their opinions without being judged." (Krueger & Casey, 2015, p. 4). I found it sometimes created tension if people were immediately asked if they were liberal or conservative. Initially this was the plan so that focus groups could feel open to discuss their political views. In one of the first groups, it seemed that the participants were hesitant to give party affiliation or political ideology

information, it was gathered later during the focus group if the participant felt comfortable sharing this information. This is one example of a change in protocol for the remaining focus groups to ensure that the participants felt comfortable and respected.

Not all data was used from the focus groups. The study purposely did not focus on food preferences of the participants that were unrelated to nutrition public policy. Additional reports on food practices and their correlation to background variables could be made. The priority of the analysis focused on discourse answering the research questions.

Analysis

Participants self-identified as liberal more often than as conservative in Phase I of the study. Phase II in the focus groups people self-identified frequently as strong conservative but this was rarely seen in the survey responses. It may be connected to the study context in building up to the 2016 Presidential Elections. It could also be that the online survey oversampled for liberal participants. Statistics were not maintained on specific party affiliation for focus group participants because sometimes the same individual might use different terms to describe themselves. For example, one participant self-identified as a progressive at the beginning of the recruiting process for the focus group. Once this individual became a part of the conversation in the focus group, they self-identified as slightly conservative. It was very common for focus group participants to describe themselves in one way but answer focus group questions in a way that indicated a different political ideology than what might be generally expected to fit with how they self-identified. Many people joined a group of a specific political ideology but

found during the discourse they were not as conservative or as liberal as other people in the group. The focus groups were likely very representative of the political ideology found in other conservative or liberal circles. It is possible that both the online survey and the focus groups were skewed in terms of political ideology but in opposite directions. The online survey statistics show that the participants were more liberal, see Table 1. Focus group participants were likely to be slightly more conservative based on the US census data, see Table 1. The focus groups, conducted within 2 months of the 2016 presidential election, likely skewed the sample. Participants who are reluctant to voice their political opinion are more likely to avoid being a part of this type of focus group. People who like confrontation and enjoy politics might be more likely to participant in a focus group. Specific questions near the beginning of the discussion created a discussion that aided in integration of the two methods. The survey participants and the focus groups were discussing similar issues but in different contexts which gives depth to the findings.

Mixed Methods Integration

Mixed method integration (Wooley, 2009) allows for a wide spectrum of flexibility for the qualitative and quantitative data to interface. Data collection and analysis of the Phase I and Phase II was both sequential and explanatory. Data of the Phase I, closed--and open ended survey questions, was collected concurrently. The data was analyzed separately. The quantitative data was analyzed using descriptive statistical software and the qualitative data analyzed by grouping participants' ideas, pattern matching, and documenting outliers. Amaratunga, Baldry, Sarshar, & Newton (2002) describe pattern matching as one of the best strategies to use in qualitative research

analysis. The idea is to look for similar outcomes for anticipated reasons to produce a theory. Pattern matching also entails looking for different results but also for anticipated reasons to produce or support a theory. In the current research, I looked for similar outcomes—interpretation of a policy – for predicted reasons--core beliefs as a lens people use to understand policies also known as *Politics of Values*. I also looked for different outcomes—negative perceptions of policy acceptance—for predicted reasons—core beliefs as a lens people use to make sense of policies, a part of the theory of *Politics of Values*. Amaratunga et al. (2002) points out that pattern matching is strengthened as a research method when quantitative analytical methods are used also such as in the current study. The participants were asked questions that used a parallel design in that similar concepts were used for all the questions on the survey.

Qualitative research is creative and has several inquiry possibilities (Denzin & Lincoln, 2011). The researchers stress that "qualitative research is defined by a series of tensions, contradictions, and hesitations" (p. 15). The authors argue that these tensions are political and the interpretations are constructed. It is interesting to note that even though qualitative data is constructed and might be labeled as biased by the general public, published research based on empirical data from quantitative studies can also have a political bias (MacCoun & Paletz, 2009).

Creswell and Plano Clark (2011) give a detailed overview of mixed methods: "As a method, it focuses on collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies" (p. 5). Mixed methods was used to

evaluate, contrast, and compare quantitative data from surveys with qualitative data from open ended survey questions and focus groups in this study.

Focus groups are one of the strongest research methods for encouraging self-disclosure, but the larger the group, the more difficult it is for people openly share their opinions. The authors (Krueger & Casey, 2015) discuss the work of Jourard (1964) on self-disclosure and quote the author as saying, "subjects tended to disclose more about themselves to people who resemble them in various ways than to people who differ from them" (p. 15). The drawback of having a wide range of ideologies is some people who think differently, might not feel free to share. A recruitment tool called snowball sampling was used. This is a strategy where one person is willing to recruit several others with a similar political ideology to discuss policy. Snowball sampling is effective in giving the participants a safe place for self-disclosure (Biernacki & Waldorf, 1981; Stewart & Shamdasani, 2015).

Focus groups allow flexibility. Even though the discussion is focused in some ways, the conversation is allowed to flow. The best groups allow participants to follow up on the ideas of another person, building a fuller, more visual depiction of the subject. A poorly understood concept can develop into a well-crafted vision through the use of focus groups in research. Stewart and Shamdasni (2015) point out that the word "focus" in the title simply refers to the idea that a small number of issues are under consideration for the group. They go on to describe this process as one also open to new ideas being generated. Ideas that might not have even been considered by the researcher. Here too, there seems

to be a tension between keeping the focus group on task but fluid enough to not stifle the creativity, which is a strength of this research method.

As mentioned previously, qualitative data collection from focus groups was performed after the survey data analysis. The data analysis from the survey tool helped focus and direct questions that were asked in the focus groups. For example, focus groups were asked for feedback on the outcomes of the survey. They were asked their thoughts on the data analysis of the survey which determined that people seemed to generally perceive that the local nutrition proposals would be more effective than the federal nutrition proposals. The proposals were designed to be almost identical in health outcomes.

Interface of the qualitative and the quantitative data took place at the beginning and at the very end of data analysis, also. This flexibility is a strength since the researcher can manipulate the interface quantity and timing to answer a research question fully. This allows for an increased complexity of data analyses (Creswell & Plano Clark, 2011).

Krueger and Casey (2015) say to expect queries about rigor. In this research, methodology triangulation--a combination of survey, open-ended questions and focus group interviews-- were used to cross verify the same information. The qualitative data used to answer the research questions became the basis for the focus group questions. This strengthened the research and gave additional confirmation of the findings. The questions on the survey were peer reviewed and pretested on other professors and students thereby verifying the quantitative data to maintain a decorum of rigor. An

external audit of the survey was completed by Dr. Marcus Weaver Hightower, my advisor who also helped design the focus groups and data analysis of the qualitative data.

Onwuegbuzie and Leech (2007) make the case for qualitative and quantitative research: both truthful and valid. They argue the rigorous side of qualitative research. The internal and external validity or legitimation of qualitative research can be increased at each of three phases: data collection, data analysis, and data interpretation. These three phases are interdependent in qualitative research. During data collection, I put effort into developing strong, opposing focus groups. During data analysis, I read through the data, made notes and used as many quotes as possible for analysis. During data interpretation, I tried to stay with the themes developed from the quantitative findings.

Sample integration legitimation is how successfully the two strands of data provide metainferences (Onwuegbuzie & Johnson, 2006). For example, the current mixed research uses different population samples for the qualitative data collection and the quantitative data collection. The question becomes, was the data integrated in a way that provides valid results? Does the data relate to reality and what types of safeguards are used in the research process to assure that the stated results are applicable to the general public?

Legitimation is a descriptor of issues surrounding either external or internal validity (Onwuegbuzie & Leech, 2007). Mixed research rigor is difficult to explain using terms traditionally used in quantitative research. As a way of dealing with this issue, researchers are encouraged to use different words to better describe the process that is taking place. Legitimation is one of those words which describes the concept of reliability

and validity for mixed research. Even the word mixed research is suggested as a more appropriate description of what takes place when both qualitative and quantitative data is collected in one study. Evidence of legitimation in this research project is discussed here.

Onwuegbuzie and Johnson (2006) describe an exciting outcome of mixed research--which is evidence of legitimation--is when the research integration of qualitative and quantitative research produces a theory. The theory produced by this mixed research is *Politics of Values*, a theory that people view nutrition and other public policies through a lens of core beliefs, values and political ideology. I believe this theory will prove to be useful and if it is, progress will have been made (p. 48).

A second example for evidence of legitimation is reliability determined by whether the survey tool measures what it is intended to measure. The survey is intended to determine if other factors influence how the general public evaluates nutrition interventions designed to improve school lunches. Does the survey measure what it is intended to measure is a very hard factor to determine precisely, but there are indicators: Do study findings compare favorably to other work in the field? A comparison to the Lusk (2012) study shows that results are similar.

Other evidence of legitimation is, do specific questions in the research survey confirm other survey questions as a cross check? Or, is it a construct known about the population as a whole? For instance, participants self-labeled their own political ideology. These answers coincided with a question to self-identify their own party affiliation. The answers to these two questions closely aligned. Another question provided interpretive validity for responses when it asked survey participants if they

prefer more or less government in personal issues. Republicans (94%) answered that they prefer less government, 66% of democrats prefer more government involvement, 83% of Independents prefer less government and 70% of other prefer less government. These results are in agreement with other studies on political ideology and government intervention (Lusk, 2012).

Mehra (2004) gives several ways of monitoring our own subjectivity giving additional legitimation to research. The tendency to take a comment out of context to make my point was constantly something that needed to be monitored. Ways of monitoring my own subjectivity are illustrated by the following example. In Phase I of the current study, quantitative data was collected and the qualitative data was used primarily to give deeper insights into the quantitative data. Therefore, if the statistics from the quantitative data showed a significance, qualitative data pertinent to understanding this significance was prioritized in the data reporting. This is one part of the research design that increased legitimation.

Reliability of a research tool is whether it is free from random error, in other words, if the research was repeated, would the results be the same. A common check for reliability is test-retest and internal consistency. There were questions on the survey that asked similar questions in different ways to check for consistency in participant's answers. One of these is the question on political ideology, a question on political party affiliation, and questions on level of government action preferred. A very similar percentage of participants were self-labeled as democrat (50%) and slightly liberal or very liberal (42%) as shown on table 2. Qualitative reliability such as inter-rater

reliability would have been beneficial but was not used in this study. If the study is replicated, it is suggested that that inter-rater reliability be used.

A future researcher could replicate the open ended questions of the survey which could show whether the qualitative data analysis is dependable. It would be harder to replicate the focus groups and to get the same answers because every group of people are likely to be different. Confirmability of the data can really only be addressed by ensuring that the researcher's biases have not colored the data analysis. Mehra, B. (2002) reports that inexperienced researchers often do not realize it, but "researcher bias and subjectivity are commonly understood as inevitable and important by most qualitative researchers" (p 1). The author sees students as the ones most likely to feel uncomfortable doing research that might include the author's voice and perspectives. Interesting research in future studies: Explore the differences between data analysis by researchers of differing political ideologies of the exact same data.

To increase confirmability of the data, a team of researchers could transcribe the material and independently analyze the data to see if they come up with the same conclusions. In this study, some biases of the researcher were made known so that readers could determine how it might impact the data analysis. Mehra (2004) states that each researcher has their own way of looking at the world and this subjectivity is a good thing in research. This seems like a fitting way to look at the current study which hinges upon the premise that nutrition is seen in very subjective ways and a framework of each person having a very different way of seeing the world as Mehra describes. Mehra says the beginning of bias is the research project we choose to do. This is true in this study. The

subject was influenced by the awareness of bias in a portion of the literature written on the subjects in this dissertation. I did not realize this particular bias until I started writing on the subject which was a self-discovery of the researcher's bias Mehra talks about to her classes. She stresses that this is an important part of the qualitative research process and reporting. It is interesting to consider what is meant by her words "A biased researcher is an honest researcher" (p 10). People have biases and only those who admit it, are being honest.

At all stages of the data collection, data analysis, and data interpretation a standard of trustworthiness was established. Stewart and Shamdasani (2015) point out that when multiple focus groups are held, complete utilization of all of the comments in the final product is not possible. In order to preserve the meaning, retain reliability in the sample, and representation of the focus groups, a plan was put in place. In this study, the criteria that Shenton (2004) finds important were considered: Credibility was increased by trying to present to the reader a true representation of what took place in the focus groups and the open ended questions. Transferability of the study may be limited but an attempt was made to allow the reader to see what the focus groups were like so they could decide similarity to another situation.

Research Context

Focus groups are always linked to the context of the study (Stewart & Shamdasani, 2015). The focus groups were conducted in the last few months leading up to the 2016 presidential election, which was incredibly contentious time in US political history. Paige, a liberal from Connecticut, saw the political climate as a likely factor in

why survey participants chose the local choice proposal for nutrition interventions rather than one with a title indicating federal regulation.

Her comment was, "I think that the awareness of that perspective is out there, especially around the time of elections……you hear a lot more about not wanting big government." (Connecticut Liberal). Although holding views similar to other liberals--more government intervention--she clearly articulated a reason behind the survey findings with a conservative bent. She acknowledged the elections changed how many people view big government. This could be seen as a strength in the study as people were possibly more engaged in politics at the time of the study or it could be seen as a weakness because people in other seasons of the political cycle might not have such negative discourse. The following section discusses other limitations of the current study.

Limitations

The survey in this study was designed to determine if participants perceived a difference in the proposed nutrition policies based simply on a political framing of the titles. While the quantitative survey data did show a positive correlation with qualitative data supporting those conclusions, there was an interesting outlier. One focus group participant commented, "The campaigns to buy local, eat local and that local is fresher may have influenced people to think that the local is better." It is possible that the general public who do not have strong political engagement might have this view. Qualitative data from the open ended surveys support this idea in that those who were self-reported as having a neutral political ideology were less likely to make any mention of

government in their response. Their responses were much more focused on the food, the nutrition and other issues surrounding nutrition public policy.

In pattern matching of the qualitative data, liberals were less likely to talk about government in their responses unless it was to explain why people seemed to like the local choice proposal better. This could have skewed the quantitative data if liberals were looking at the local choice nutrition policy proposal as better in regard to other deep-seated beliefs or values. It should be considered that even though liberals might see the local choice as better because it fits with ideologies of buy local, eat local, and local is fresh, that is still a political ideology lens (Dreher, 2006).

Another limitation of the methods chosen to look at perceptions of proposed nutrition policies is that it is a sampling of a population. The sample might not represent the whole population. Mechanical Turks as a sample population has been found to be slightly younger and more liberal than the US population as a whole (Paolacci & Chandler, 2014). This might be a factor in generalizability or transferability of conclusions and findings.

No questions in either portion of the survey asked if the participants had children or if those children took their lunch or ate the school lunch. In the open ended questions, some respondents volunteered that their grandkids or kids were in school. It was interesting to note that their comments were no more likely to have passionate words in their answers than those who volunteer that they did not have kids in school. The additional data gained from the mixed methods does encourage reflection: Is information on the family make-up important in future studies?

This research study, although aligned with evidence from meta-analysis and prospective cohort studies, needs to be peer reviewed and then reviewed again by experts in the field of nutrition before any consideration of proposing nutrition public policy. Slavin (2015) reiterates how important it is that "food and nutrition policies reflect, and do not get ahead of, the strongest available scientific evidence. It is unlikely we will ever have RCTs data available to answer most nutrition questions, but we should rely on our strongest designs" (p. 1). Reliability and validity can be compromised in many ways, but the strongest designs in mixed research are most likely to have reproducible results indicating increased legitimation.

This mixed methods survey, in itself, is not enough to drive specific public policies. It needs other studies to align with the conclusions and findings. Research studies with stronger designs that contradict or corroborate the findings are important in future considerations.

There are no perfect research designs. Humans as participants in research studies make choices that might not be accounted for, and humans change their attitudes and beliefs over time. Some of the participants may not adhere to the regimen, or might have traditions, social conventions, or activities that create unknowing confounds. The findings from any research study can be misinterpreted. For example, the proposed nutrition policy to increase fruits and vegetable intake is based on excellent research with wide agreement (Thomson & Ravia, 2011). However, even this simple nutrition intervention is interpretation dependent. Is the goal an increase in vitamins, minerals,

antioxidants, and substances that are found in fruits and vegetables or is it equally beneficial to get these nutrients in a liquid or a supplement form?

This study has revealed that perceptions of nutrition can be seen through a lens that might have very little to do with nutrition but has a strong influence on implementation or acceptance. There is evidence associating people looking through different lenses with the many diverse perspectives of nutrition.

Lovejoy (2002) talks about bias in research studies and sees bias from even the choice of subjects that a researcher chooses to study. The author's perspective is that bias in research "starts when researchers identify a potential problem, but the recognition that something is a problem demands a pre-existing framework of values and interests within that problems can be recognized." (p. 386). Sarewitz (2004) suggests that a well-known problem in empirical research designed to inform decision making is "value disputes" and that the lines between research, policy, and politics are in a constant state of flux (p. 386). The opinion that science cannot overcome this is likely true. But a mixed method study can inform, explore and help to bring understanding.

Surveys and focus groups were used in this study to elicit judgements about proposed nutrition interventions. The participants were not endowed with a tangible. In contrast, future research which includes benefits to the participants to determine if they would still make similar judgements. An example was a mixed methods study (Burgess-Champoux, Chan, Rosen, Marquart, & Reicks, 2008) which included school lunch meal preparation for students. The meals were based on proposed nutrition interventions (increase in fiber and plant based foods). Offering students a high fiber lunch is an

illustration of the students being endowed with a tangible instead of just thinking about how they might respond to a high fiber school lunch. Future directions for the current research could include an intervention or endowment giving a look at how the same nutrition beliefs and biases look in an actual lunch room, school board member meeting, parent group or school kitchens

In the current mixed methods survey, the political ideology bias may not be something I can solve but the open ended questions do give valuable feedback for common ground between otherwise polarized sides.

CHAPTER IV

RESULTS

This paper explores the general public's perceptions of proposed nutrition public policies to develop a better understanding of factors that influence perceptions of nutrition policies. It aims to establish evidence for the theory of *Politics of Values*. Core values, ethics and politics coming from and informed by beliefs having very little to do with nutrition are an incredibly imporant influence of nutrition policies nonetheless. This section first repeats demographics of the participants and then looks at the research questions in light of the data collected.

Participants in Phase I, the online survey, were a little more than half male--54%, 46% females. Race was primarily white--82 %. Self-reported political ideology was a key demographic, one that provided an independent variable for the quantitative analysis and a context for the qualitative analysis. When participants were asked how they would describe themselves, there was an oversampling of self-defined liberals. In terms of specific US political party affiliation, participant's party identification was slightly more democratic than the general population in 2015 (Pew Research Center, 2015). The current study oversampling for liberals and younger people is possibly a result of using an online sample. The result of more democrats and more liberals in the online survey could skew my results in that direction for the Phase I statistical analysis. This issue and the overall quality of the research study will be improved by triangulation with

qualitative data from focus groups. In the focus groups, the concern will be the experiences of the people as a way to understand more about core beliefs, faith and values as informing ethics and politics. With a research focus toward understanding a theory of *Politics of Values,* there is less concern about an oversampling because the emphasis is on individual reflections and how each person views public policy.

Research Questions

The following sections outline the research questions and the findings.

Question 1: Does the General Public Filter their Impressions on Ease of Implementation, Acceptance and Efficacy of School Lunch Nutrition Policies through their Political Ideologies, Beliefs and Values?

Perceived ease of implementation. Respondents perceived the local proposed interventions would have increased ease of implementation. Three items for federal regulated and 3 items for local choice measured ease of implementation on a 5-point scale: 1= Very likely, 5=Very unlikely--in relation to ability to follow each school lunch nutrition intervention proposal. When asked how likely is each nutrition proposal to improve children's school lunch nutrition choices, people judged the local to be better. When asked how likely each nutrition proposal would to lead to better nutrition choices, people judged the local as better, see Table 2.

Perceived efficacy. Respondents perceived the local proposed interventions would have increased efficacy. Three items for federal regulated and 3 items for local choice measured efficacy on a 5-point scale:1= Very likely, 5=Very unlikely. When asked how effective they thought each proposed school lunch nutrition intervention would be, people judged the local as more effective? When asked how likely would the

proposal have lasting nutrition and health benefits for students, people judged the local to be better. An additional question asked how likely would the proposal help students make good choices, people judged the local to best, see Table 2.

Perceived acceptance. Respondents were more likely to perceive the local proposed interventions would be accepted by all stakeholders except for policy makers. Five items for federal regulated and 5 items for local choice measured acceptance on a 5-point scale: 1= Very likely, 5=Very unlikely). When asked how likely each proposal would gain acceptance by the general public, people judged the local choice. When asked how likely is each proposal to gain acceptance by students, people judged the local choice. When asked how likely is each nutrition proposal to gain acceptance by school administrators, people choose local. When asked how likely is each nutrition proposal to gain acceptance by parents and community leaders, people choose local. The outlier in this set of questions was how likely are public policy makers to support each proposal. People judged that public policy makers would choose the federal regulated nutrition proposals, see Table 2.

Skewness and kurtosis are given for the variables on Table I. These parameters give an initial look at the data. If the data has a positive, negative or 0 skew, this indicates the symmetry. The closer the number is to 0, the more symmetrically distibuted the data is. Kurtosis helps understand the general distribution of the data. For instance, tails in the data indicates outliers which are possibly important in my study as diverse perspectives. The distributions all approached normality, i.e., skewness and kurtosis less than or equal to $\pm$1.00.

Table 2. Descriptives of Survey Items. (Std. D = standard deviation, Std. E of Skew = Standard Error of Skew, Std. Er Kurtosis = Standard Error of Kurtosis).

	Mean	Std. D.	Skew	Std. E of Skew	Kurtosis	Std. Er Kurtosis
How easy would it be to follow each proposal?						
Federal Regulated	3.18	1.18	-.10	.17	-1.12	.33
Local Choice	3.27	1.11	-.20	.17	-1.08	.33
How likely is each proposal to improve children's school lunch nutrition choices?						
Federal Regulated	3.38	1.13	-.44	.17	-.78	.33
Local Choice	3.62	1.01	-.49	.17	-.48	.33
How likely is each proposal to gain acceptance by the general public?						
Federal Regulated	3.13	1.10	-.19	.17	-.88	.33
Local Choice	3.44	.10	-.37	.17	.68	.33
How effective do you think each proposal would be?						
Federal Regulated	3.39	1.29	.59	.17	.80	.33

Table 2 cont.

	Mean	Std. D.	Skew	Std. E of Skew	Kurtosis	Std. Er Kurtosis
Local Choice	3.66	1.13	-.84	.17	-.07	.33
How likely do you think each proposal would have lasting nutrition and health benefits to students?						
Federal Regulated	3.37	1.23	-.44	.17	-.84	.33
Local Choice	3.54	1.13	-.58	.17	-.52	.33
If a student is rushed and has very little time at lunch, which proposal is most likely to lead to good nutrition choices?						
Federal Regulated	3.40	1.15	-.60	.17	-.57	.33
Local Choice	3.61	1.04	-.73	.17	-.03	.33
How likely are school administrators to request to take part in each proposal?						
Federal Regulated	3.33	1.09	-.46	.17	-.48	.33

Table 2 cont.

	Mean	Std. D.	Skew	Std. E of Skew	Kurtosis	Std. Er Kurtosis
Local Choice	3.59	1.01	-.73	.17	.27	.33
How likely are parents and community leaders to encourage schools to adopt each proposal?						
Federal Regulated	3.19	1.14	-.29	.17	-.84	.33
Local Choice	3.61	.99	-.54	.17	-.36	.33
How Likely is each proposal to help students make better choices at lunch time.						
Federal Regulated	3.40	1.15	-.60	.17	-.57	.33
Local Choice	3.61	1.05	-.73	.17	-.03	.33
How likely is each proposal to gain acceptance from students?	2.71	1.13	.12	.17	-.83	.33
Federal Regulated						
Local Choice	2.96	1.13	-.184	.17	-.94	.33

Table 2 cont.

	Mean	Std. D.	Skew	Std. E of Skew	Kurtosis	Std. Er Kurtosis
How likely are parents and community leaders to encourage schools to adopt each proposal?						
Federal	3.19	1.14	-.29	.17	-.84	.33
Regulated						
Local Choice	3.61	.99	-.54	.17	-.36	.33
How likely are public policy makers to support each proposal?						
Federal	3.60	1.00	-.70	.17	-.00	.33
Regulated						
Local Choice	3.56	.98	-.57	.17	-.10	.33

Note. Skewness and kurtosis are given for the variables. Symmetry of the data can be determined if there is a positive, negative or 0 skew. The closer the number is to 0, the more symmetrical the data is. Kurtosis can help understand the general distribution of the data. It can be determined if there are outliers (tails) in the data. The distributions all approached normality (i.e., skewness and kurtosis less than or equal to $\pm$1.00).

Political ideology of food. Dimensions of food ideology included four questions taken from the Preference for Government Action survey (Lusk, 2012). Demographics of this group as compared to the sample for the current study and the US census showed some interesting commonalities, see Table 1. Both survey populations are oversampled for lower income and younger participants. Even though ethnicity was skewed in the current study, it was very similar to the sample used in the Lusk (2012) study. Political

affiliations were also similar, see Table 1. The sample population may be younger because younger people are more likely to participant in an online survey for pay and high income people may be less likely to.

Correlations. There were several significant correlations among the scales, see Table 3. Pearson's r was computed to assess the relationship between the political view of participants and implementation, efficacy and acceptance of federal regulated nutrition interventions.

Table 3. Factors Affecting School Lunch Nutrition Proposal Success Correlations.

Variables	1	2	3	4	5	6	7
1. Political Affiliation							
2. Federal Regulated Implemented	-.197**						
3. Local Choice Implemented	-.130						
4. Government Involvement	-.222**	.610***	.499***				
5. Local Choice Efficacy	.187**	.798***	.145***	.856***	1.0***		
6. Federal Regulated Acceptance	-.145**	.587***		.428***	.533***	.533***	
7. Local Choice Acceptance			.502***	.313***			

**p<.01. ***p<.001, (2-tailed).

There was a moderate negative correlation for implementation and a small to moderate negative correlation between efficacy, acceptance, lasting benefits and helping to make better choices and the nutrition proposal labeled federal regulated and political views. As views became more conservative, there was a decrease in the perception of ease of implementation, acceptance, efficacy and lasting benefits of nutrition

interventions labeled *Federal Regulated,* see Table 3. The effect size for this analysis was found to exceed Cohen's convention for a moderate effect (r = .30) for implementation and a small effect (r = .20) for the other variables (Cohen, 1969).

There was a small to medium negative correlation between efficacy, acceptance, lasting benefits, likely to improve nutrition and better choices and the nutrition proposal labeled local choice and political views, see Table 3. Liberals were more likely to judge the federal regulated nutrition interventions as more efficient with lasting benefits that allows students to make better choices, and they perceived the federal regulated interventions as more likely to improve the nutriton of school lunches overall.

Conservative views correlated with desire for less government involvement and liberal views correlated with preference for more government involvement in personal issues, general economic issues and social issues, see Table 4. A question checking for accuracy of the above data asked for the same information in a different way. The question was worded "The Federal Government has an important role in personal, social and economic issues." Responses available were: *Strongly Disagree, Slightly Disagree, Neutral, Slightly Agree, Strongly Agree*. Political views correlated with importance of role of the Federal Government in liberals more strongly agreed with an important role of the government in personal, social and economic issues although conservatives also slightly agreed with this issue, see Table 4.

Table 4. Correlations of Preference for Government Involvement.

Political Ideology	Preference for Government in in Personal Issues.	Importance of Government in Personal, Economic and Social Issues	Preference for Government in in economic issues	Preference for Government in in Social Issues
1				
161				
-.416**	1			
.000				
161	201			
-.435**	.445**	1		
.000	.000			
161	201	201		
-.502**	.513**	.473**	1	
.000	.000	.000		
161	201	201	201	
-.451**	.554**	.386**	.416**	1
.000	.000	.000	.000	
161	201	201	201	201

**. Correlation is significant at the 0.01 level (2-tailed).
Note: Variables are individual questions and then also a question is asked including all three.

Implementation of the local choice nutrition proposal correlated with both conservative and liberal political views, suggesting an increase in perception of ease of implementing a school nutrition lunch intervention titled local choice. Two other bivariate correlations were federal regulated or local choice efficacy and government involvement with implementation regardless of title, suggesting that participants perceive

a similar level of efficacy in both of the proposals--which is how the two proposals were designed—regardless of political ideology.

Table 5. Correlations for Political Affiliations and Acceptance. Local is Statistically Significantly Judged as the Better Choice.

		Correlations		
Political Affiliation 2	Pearson Correlation			
	Sig. (2-tailed)			
	N	127		
Sum of all groups for Acceptance of Federal Regulated Proposal	Pearson Correlation	.168		
	Sig. (2-tailed)	.059		
	N	127	201	
Sum of all groups acceptance of Local Choice Proposal	Pearson Correlation	.118	.242**	
	Sig. (2-tailed)	.185	.001	
	N	127	201	201

** $p < .01$, two-tailed.

On the other hand, when it came to acceptance of the two proposals, participants perceived a big difference in how the two proposals were thought to be accepted by stakeholders and this is reflected in the statistically significant correlations, see Table 5.

Pearson correlations were computed to assess the relationship between perceived acceptance and political views. Participants perceived that students, administrators, parents and community more likely would accept the local choice proposal, see Table 5.

The only group that the survey participants perceived would not accept the local choice proposal was the public policy makers, see Table 6.

Table 6. Correlations between Public Policy Makers and Political Affiliations.

Political Affiliation Republican or Democrat			
How likely are public policy makers to support *Federal Regulated* proposal?	Pearson Correlation	.063	
	Significant (2-tailed)	.479	
How likely are public policy makers to support *Local Choice* proposal?	Pearson Correlation	.028	.249**
	Significant (2-tailed)	.755	.005

** $p < .01$, two-tailed.

Political ideology was statistically significantly correlated with three questions from the political ideology of food, see Table 7. Liberals were more likely to view taxing unhealthy foods as a positive. Conservatives were in favor of allowing citizens to make their own decisions about unhealthy foods. Similar correlations were found for labeling imports and banning unhealthy foods, with liberals in favor of both and conservatives opposed.

Food technology did not significant correlate with political ideology. This finding is in agreement with other researcher's findings on this subject: Regardless of political ideology, the general public does not support many food technologies listed in the

question such as cloning, irradiation, nanotechnology, and use of GMOs (Funk & Rainie, 2015).

Table 7. Correlations of Political Ideology and Questions Taken from Lusk (2012) Study.

Restrict food technology.	Pearson Correlation	1				
	Significant, (2-tailed)					
	N	201				
Taxes and subsidies vs. Allow citizens to make their own food choices.	Pearson Correlation	.266**	1			
	Significant (2-tailed)	.000				
	N	201	201			
Require country of origin on label.	Pearson Correlation	.529**	.279**	1		
	Significant (2-tailed)	.000	.008			
	N	201	201	201		
Ban unhealthy ingredients vs. leave people responsibility for their own diet.	Pearson Correlation	.384**	.590**	.394**	1	
	Significant (2-tailed)	.000	.000	.000		
	N	201	201	201	201	
Political Ideology	Pearson Correlation	.118	.366*	.201**	.361**	1
	Significant (2-tailed)	.096	.000	.004	.000	
	N	201	201	201	201	201

** p <.01, two-tailed.

To examine the effect of variables on school lunch nutrition interventions, they were compared on the FASLIS scales using t-test, see Table 2. Respondents were more likely to think the *local choice* proposal was easier to implement, had increased efficacy

and would be more likely to be accepted by stakeholders (with the exception of public policy makers).

Regressions. This analysis examined how well the FASLIS scales predicted indicators of perceptions of the school lunch proposals using a three step multiple regression with 95% bootstrap confidence intervals. A multiple regression was run to predict political ideology from perception of ease of implementation, efficacy and acceptance. Perception of ease of implementation statistically significantly predicted political ideology, as did efficacy. This shows that the regression model is a good fit of the data.

This study gives evidence of a statistically significant number of self-identified conservatives are more likely to have a negative perception that a nutrition proposal with the title of *federal regulated* can be easily implemented, see Table 8.

Preference level of government intervention was a significant predictor of political ideology. The regression model is a good fit of the data and shows that a good percentage of the data can be explained by political views.

Preference level of government intervention was significant predictor of political view. In this study, there is statistically significant evidence that self-identified conservatives preferred less government involvement, see Table 8.

Table 8. Regression Analysis Demonstrates Statistical Significance for Ease of Implementation of the Local Choice Proposal.

	Unstandardized Coefficients		Standardized Coefficient		
	B	*Std. Error*	*Beta*	*t*	*p*
Constant	2.103	.187		11.226	.000
Total Sum of questions for ease of implementation of nutrition proposal labeled *Local Choice*	-.047	.012	-.283	-3.877	.000
Total sum of questions for efficacy of nutrition proposal labeled *Local Choice*	-.026	.013	.143	1.952	.053

ANOVA. The nutrition proposals were designed to be as similar as possible, but one did contain specific numbers in describing the proposal as compared to the other one which did not. The study needed to have some differnce between the two proposals in order to fit with the research. Numbers were one way to do this, but people can sometimes have a hard time understanding numbers which could be a confounding variable. A two-way analysis of variance was conducted to explore if any differences occurred between the presence of numbers (high and low) and political affiliation (1=Republican 2=Democrat). There was no numeracy main effect see Table 9. The fact that there was not a numeracy effect means, the numbers or the ability to understand information with numbers was likely not a confounding variable in this data set.

There was a statistically significant political affliliation interaction with improved health and nutrition chioices, implementation and acceptance, see Table 9. Political affiliation strongly influence how people judged the two nutrition proposals.

Table 9. F of Main Effects and Interactions.

			Numeracy (N)		Political Affiliation (PA)		N x PA	
DV Measures	*MSE*	df^{α}	*MS*	*F*	*MS*	*F*	*MS*	*F*
How likely would is either proposal to improve school lunches?	288.22	206	.54	.39	2.56	3.66**	.32	.23
How hard would it be to implement nutrition proposal?	1355.44	205	6.97	1.50	63.25	9.57**	2.62	.39
How likely would either proposal be accepted by all categories?	1626.34	205	2.21	.28	18.54	2.34*	14.32	1.80

*$p < .05$. **$p < .01$, two-tailed.

Local Choice has Advantages. Strong opinions on preference of government intervention were evidenced in the responses to the open ended survey questions. In the following discourse, it can be seen that most people, regardless of political ideology respond in a positive way to *Local Choice* and control by local entities. It comes through that in their experience, local expresses tangibles in line with their values and beliefs. A closely held belief of the following person is who should be regulating school nutrition. "The federal government shouldn't be regulating that. It should be local governments or the schools." (Neutral). This depicts a change from top down policy process to a bottom

up design. Further evidence of this was a conservative's viewpoint who said, "I am a fan of going back to local control." (Conservative). This demonstrates that beliefs and values about local responsibility versus government responsibility is at the lk of the debate.

Coming down the hierarchy even more is the beliefs and values about personal responsibility. Discourse that includes all the levels makes it clear that this person sees a strong division of responsibility. One level is the government. Another level is the personnel who have been cooking which is at the implementation level. A third level mentioned is the kids. This person sees it this way: At the lowest levels, the cooks know more than the government about cooking. The cooks have the experience to get the right foods to the students. And in the end, it all comes down to individual responsibility.

"Let the personnel that have been cooking the meals do what they know how to do, they have got a lot more experience at cooking for kids than the government, they don't want what the government wants them to eat anyway, and it's not the government's place to tell the kids what to eat anyway." (Conservative). This is a very strong indictment for beliefs that policy from the bottom up is going to be more successful with wider student acceptance.

Many people I talked with, think the policy process should be from the bottom up, but others describe the need for cooperation. They take the stand that a bottom up design for policy formulation could be a barrier. "Local districts just wanting to control everything instead of cooperate." (Neutral) was a response given that shows a value of cooperation over a value of local control at the district level.

The belief the government is corrupt and government contracts are for sale on the buddy system was another opinion seen. Some people were cynical of adding more money to school lunch programs would be helpful. They saw the money going to buddy organizations due to corruption. "No one wants to spend the money. The less money spent, the more the government can use to give government contracts to buddy organizations. I am cynical about the whole thing." (Liberal). Both liberals and conservatives were quick to point out that the government does not work efficiently. This discourse continues to promote the theme that local programs are more likely to reflect progress than federal government programs.

In Phase II, **Focus Groups Clarify Survey Results.** Focus group participants with experience in helping others improve health outcomes expressed frustration. Some frustration was focused at the government, some at the individuals in need and even at the others who were also helping but had diverse perspectives about appropriate foods to meet nutrition needs.

The following comment in a focus group illustrates how many in the general public see the struggles of trying to make changes on the local level. "This month I saw new people coming to the food pantry. Lots coming who I was surprised to see. They have diabetes and are overweight and we don't have a lot to give out but we have a lot of packaged pudding that they want. They come packaged in four packs of pudding. We run out of food and one lady said, 'Let's just give two so everybody can get some.'

I told her, 'I don't think anyone is going to starve if they don't get pudding. That is not even real food.' (Iowa, Liberal). This person is looking at the question in relation to

their own experience at the food pantry and their view on what is healthy food or as they call it, ‘real food’.

In contrast, a young man with a conservative view from North Dakota is looking at the big picture. He is visualizing what nutrition interventions look like when standardized on a large scale. It seems that he is capturing the essence of other conservatives from rural areas who do not think the federal government is going to understand and address issues related to his specific locale, his family or his specific situation. He feels he has a better handle on what his 2 little girls need to be healthy and grow up physically and emotionally strong than the federal government.

“We should leave it up to local entities to deal with the local things rather than make them standardize large scale.” (North Dakota, Conservative). Cramer (2016) addresses this same issue in her book on politics in rural vs. urban areas. She asks the question of why would people with no teeth not support government sponsored dental care? As a Liberal, trying to express the views of a rural conservatives, her conclusion is that they are economically strapped and do not feel that the increased taxes they will have to pay will actually be benefitted back to them at the level that is needed. An alternative idea is that this man from North Dakota really does feel that the local entities understand and can address the issues better than the federal government. Furthermore, this young person sees local as best when determining nutrition interventions as compared to what would take place on a much larger scale if the federal government set the nutrition interventions.

Question 2: Does the General Public Prefer More or Less Government Intervention and can Political Ideology Predict?

This study survey used hypothetical questions to elicit beliefs. Those beliefs are possibly underpinnings of a participant's perceptions of nutrition public policy. The answers to the hypothetical questions give an indication of participant's preferences of government involvement. The two proposed policies were designed to be as similar as possible with the only difference being the titles of local choice versus federal regulated. There also were survey queries that ask direct questions that required participants to judge their feelings and beliefs about the subject. Both the hypothetical and the direct questions were a part of the quantitative survey taken online by 201 participants.

Preference for government involvement, quantitative survey data. Determining if the general public prefers more or less government intervention can be a challenge. When developing the questions for the survey, one reviewer suggested that they were fiscally conservative but socially progressive. Realizing that survey participants may also have similar barriers to answering this type of question, preference for government involvement was asked in four different ways for the quantitative survey. The questions were: How much government intervention would you prefer in your personal life? How much government intervention would you prefer in general social issues? How much government intervention would you prefer in general economic issues?

In order to try to understand values based on deep-seated beliefs, a fourth question was asked to encourage participants make a judgement about the importance of the government's role. This question was worded as follows: The federal government has an

important role in personal, social and economic issues? Choices for answers were: *Strongly Disagree, Slightly Disagree, Neutral, Slightly Agree, Strongly Agree*.

The quantitative survey data was analyzed using descriptive statistics and Pearson correlations. The current study shows many participants would prefer less government involvement regardless of political ideology in personal issues (74%), less government involvement in economic issues (54%) and less in social issues (65%). Survey participants were asked to indicate their level of agreement with the following statement: The federal government has an important role in personal, social and economic issues. 'Slightly agree' was the most common answer (34%).

There was a negative correlation between all four indicators of preference of government intervention and political ideology, personal life, general economic issues, social issues, and importance of role in personal, social and economic issues. Not surprisingly, liberals prefer more government and conservatives prefer less. But what is interesting is that people see government involvement as important but at the same time indicate they prefer less than the current level.

Political ideology of food, quantitative findings. Dimensions of food ideology included four questions taken from the Preference for Government Action survey (Lusk, 2012). Demographics of the Lusk (2012) study showed participants were slightly more liberal than the current study, see Table 1. Based on other questions in the survey, the hypothesis is that a higher percentage of liberal participants would be more likely to favor more government regulation in the current study and fewer in the Lusk study. The

opposite occurred for the issues of food technology, bans on unhealthy foods or food imports, see Table 10.

Table 10. Comparison of Lusk (2012) and Current Survey Data on Preference for Government Intervention.

	More Government		Less Government	
Construct	Lusk	Current Study	Lusk	Current Study
Food Technology Regulation	72.1%	71%	11.3%	12.8%
Food Import Regulation	69.9%	59%	7.63%	11.4%
Fats (Ban on Unhealthy Foods)	53.9%	42.7%	14.5%	24.3%
Healthy Food	29.7%	33.8%	17.2%	23.3%

Note. Lusk (2012) n = 800 participants and the current study n = 201 participants. Both surveys included the listed questions in addition to other questions specific to food, political ideology or nutrition interventions.

Participants in both surveys had very similar attitudes on Food Technology, as the percentages are very similar in each category. The choices in this category ranged from: *Ban controversial new food technologies such as genetic modification, cloning, radiation and nanotechnology. Decrease regulations and make it easier for food companies to use new food technologies genetic modification, cloning, radiation and nanotechnology*. And, *Make no restrictions*.

Both studies, conducted about 4 years apart, show a preference for more government action. The most polarizing issue was on how much government action was desired for what Lusk termed Healthy Food. The answers in this category were: A) *Create an agency to plan food production and distribution to improve nutritional intake* B) *Use extensive taxes and subsidies to promote healthier foods* C) *Maintain current*

regulations designed to promote healthier foods which include mandatory nutritional labels on foods and establishing suggested dietary intake D) *Decrease efforts to promote healthier foods* E) *Eliminate all food health regulations; allow citizens to make their own food choices*.

There was a positive correlation between self-identified political ideology for the question on requiring labeling foods that are imported versus ease regulations in this area. More conservative participants were more likely to hold the views that included less government regulations and liberals were more likely to hold the view that included more government regulations pertaining to regulating food imports, see Table 7.

There was a positive correlation between self-identified political ideology for the question on banning unhealthy ingredients in food production versus leaving people to take responsibility for their own diet. Conservatives were more likely to hold views including less government regulations and liberals were more likely to hold views including more government regulations pertaining to regulations for unhealthy ingredients such as trans and saturated fats. See Table 7 for political ideology of food correlations with self-identified conservative versus liberal views.

It is interesting to note that a specific view of food technology was not significantly correlated to political ideology. This is consistent with data reported in other research (Kahan et al., 2012; Lusk, 2012) which shows a great deal of consensus on this issue within the general population regardless of political ideology, although this view of the general population is in direct conflict with the view of what scientists believe about some of the issues listed in the question.

A comparison of the percentage of respondents who opted for more or less government regulations and the specific 4 issues is shown in Table 10. As an indicator of validity, this chart shows areas where the current study has similar results (Lusk, 2012).

Views on banning fats and other unhealthy foods showed the biggest difference between surveys. In the Lusk study almost 54% wanted increased action on the part of the government and in the current study, conducted about 4 years later, less than 43% choose the same answer. There were 24% of the participants in the current study and 14.5% in the Lusk study saying their view is that the government should "make no law regarding tansfats, unsaturated fats and other unhealthy food ingredients, leaving people to take responsibility for their own diet." (Lusk, 2012, p. 534).

It is important to note that the two surveys are not a perfect comparison, even though an established scale was used, as only 4 of 10 questions from the Lusk study were included in the current survey. Participants of the two studies had different framing since the Lusk study was primarily about food and agricultural issues while the current study was primarily asking questions about nutrition proposals.

The answers in this specific category are loaded with political overtones: *Setting up an agency, taxes, subsidies, mandatory regulations, and allowing citizens to make their own food choices* are all highly controversial standalone issues. Other studies have found that food issues have a higher polarization between what scientists believe and what the general public believes possibly indicating a heightened level of awareness by the general public that food issues are political (Kahan et al. 2012).

Even though the questions in the survey were directed at specific proposals such as increasing fruits or vegetables, many people ignored those ideas and argued instead on levels of government involvement. The next section of reveals diverse attitudes toward government involvement.

Preference for less Government Involvement. For the quantitative open ended questions, pattern matching and outliers were examined. Pattern matching gives a feel for the dominant themes, but outliers are interesting for understanding biases, conflicts, diverse perspectives and values based on deep-seated beliefs. Another interesting phenomena is that individuals can be just as or even more passionate about their beliefs that do not fit comfortably with the status quo. These are the types of beliefs that do not change with new information. These are the beliefs that are labeled 'deep-seated beliefs' in this study and are of research interest for the very fact that they are stable. The outliers define 'diverse perspectives' for the very fact that they are outside of the norm in the data set. Not all deep-seated beliefs are outliers but it is more likely diverse perspectives would be outliers depending on the population.

The wording of the questions in the survey are certainly congenial. Participants are asked about their preferences. Participants are asked their opinions on interventions to improve school lunches. Participants are asked about their ideas for improvement. No mention of any conflicting issues. However, just using the word 'government', even in a very positive way, brought up deep-seated emotions. The open ended questions elicited answers that convey much more depth of emotion compared to those extracted from the qualitative data. Examples are:

"Federal funding linked to ingredients, it's extortion." This quote by a conservative used background information to draw conclusions about the school lunch program that does not have a connection to the science of nutrition but influences this person's perception of nutrition interventions.

Liberals also show a depth of emotion when talking about government nutrition interventions. The following liberal sees bureaucracy as a major impediment to making school lunches better.

"Things like bureaucracy and difference in opinions might make it hard to improve school lunch programs." This liberal is also making note of the diverse perspectives surrounding the issue of nutrition proposals. They see all the differences of opinion as making it hard to improve school lunches.

"Until the government pays for my food they have no place in my kitchen." (Conservative).

"The mere notion of government or any outside influence on people's choices makes people more hesitant to implement the program. Let people have their own choices, and make them responsible for the consequences." (Neutral).

"The federal government should not be regulating that. It should be local governments or the schools." (Conservative).

"Some things like bureaucracy and difference in opinions might make it hard to improve school lunch programs." (Liberal)

"People don't like being told what to do. Parents don't want others to interfere with raising their kids." (Liberal)

Sometimes, what is not said is just as telling as what is said. For instance, participants who self-identified as conservatives were much more likely to mention government in their answers and more likely to mention the government in a negative way than liberals. The questions did not ask for any specific thoughts on government action.

Very few who self-identified as having a neutral political ideology made mention of the government in their responses. Less conflict or bias toward the government is a possible reason. Another is less engagement with the politics and polarization seen in the rest of the country's policy views. A third option, no strong beliefs or personal need to place blame on public policies. Likely, there are individuals who took the online survey who hold each of these diverse viewpoints.

Preference for government involvement, focus group data. Frustration with government mandates in school lunch programs was high. "Policies that in effect are making change difficult" was expressed by one liberal participant, (North Dakota, Liberal) and a conservative who gave a situation where there was no one locally who could fix a problem even when everyone was aware of it expressed it this way:

"No one likes them! I want to know, if everyone knows these are bad, why do they keep making them? It is like if you threw up Chef Boyardee and put it on a plate and that is what you are eating. That is what it tastes like." (California, Conservative).

"I think everyone thinks that the federal government can't do anything. They get a bad rap so they can't do anything right. I mean in people's minds, even those who are not negative, realize that if there is work to be done at the federal level, for performing any

sort of work it seems to get messed up. On the other hand, the school lunch program is a federal subsidized program isn't it? It almost seems that some of it has to be decided at the federal level because it is a federal program but it seems to be easier to talk to a local person to give them your opinion. You can go up and talk to them. It is just easier to get things done." (Florida, Liberal).

Focus groups were split by political ideology on preference level of government involvement. Two of the most polarizing comments are illustrated here from two different focus groups. When these statements were mentioned, the reaction was either a few heads nodding in agreement or no response. Facial expression did not give any indication to me of disagreement but in the North Dakota conservative group the participant who had moved from Canada had comments later in the discussion indicating she was actually very liberal in a group of strong conservatives. I found it interesting that no dissent was voiced. A possible Brettix situation, named after political polls in Europe where people do not voice what they believe and therefor skewing the vote. A liberal bias towards government involvement in school lunches was barely perceptible and might go completely unnoticed except to a person very attuned to what this person was not saying.

"Government should definitely regulate what is in school lunches." (Florida, Liberal) and "I am sure the consensus would be for less government…The less involved the better." (North Dakota, Conservative).

So even though overall participants indicated a preference for less government involvement in personal issues, Liberals were more likely to want increased government involvement than those who answered Neutral or described themselves as conservatives.

Creswell and Plano Clark (2011) give several ways to determine if mixed methods is a better tool in a survey than if the survey just used closed questions or just used open ended questions (p. 283-284). The quantitative survey analysis did show political ideological bias toward proposed nutrition interventions for school lunch. The open ended questions showed emotion and passion of the respondents and brought out many deep-seated beliefs and values, that helped explain the quantitative data

In the open ended questions, respondents used strong, emotional words. A sample of comments were: "Extortion," "Infringement upon freedom," "No thought about how to support the school's primary function, education," and "Students should be banned from eating unhealthy foods". The comments helped develop a better understanding of core beliefs and values. It is interesting to note that the survey was about nutrition interventions, but many of the open ended answers of survey participants are about values, deep-seated beliefs, conflicts and diverse perspectives having, on the surface, very little to do with nutrition. The underlying concept encompasses *Politics of Values* which drive perceptions. The values do not even have to have anything to do with nutrition to influence views on nutrition policy. For example, people in the focus groups would express a view on whether extra-large soft drinks should be banned that included discourse about the value of being able to make those choices. The value of less government does not seem to have much to do with nutrition but it could be a basis for rejecting a new federal nutrition public policy to ban extra-large soft drinks.

Question 3. What Evidence of Values, Beliefs and Biases Influencing Science of Nutrition and Perceptions of Proposed Nutrition Policies?

Nutrition quantitative survey data. Statistically significant correlations between multi-item survey questions and political ideology is one area where bias of items unrelated to nutrition affect perceptions of nutrition proposals. Other areas of values, beliefs and biases that might seem to have very little to do with nutrition are seen in the qualitative data. Political ideology had the greatest and most consistent impact on perceptions of implementation, efficacy, government involvement and acceptance of the school lunch programs. Conservative or liberal views correlated with desire for more or less government involvement respectively.

The participants, regardless of political ideology, thought that local nutrition interventions for school lunch programs have a greater chance of working and being accepted over those labeled federal regulated. This is supported by a systematic review of 372 research studies that showed that sucessful nutrition intervention schools prioritized parent, student, teacher and community engagement (Wang & Stewart, 2013).While engagement is not the same as localness, many people associate parent, student, teachers and community as local. If this is the group giving out information, it is often considered local. Possibly indicating that perceptions of local interventions are equated to people who care about the school and community beyond which is recognized by the general public to be important. This also illustrtates a growing disenchantment by the general public with government effectiveness at problem solving, a preference to have someone who cares enough to be engaged.

Public policy makers are percieved differently from others in the school lunch debate in this study. The particpants percieved that there would be acceptance by a wide range of people. The exception is that they perceived that public policy makers would not feel the same about local nutriton interventions. This illustrates a growing divide between views of policy makers and the general public. I can also see the perception government is gridlocked and unable to act on any proposal, or perhaps it suggests that policymakers are possessive of their share of influence. Lusk (2012) states that "even if there is agreement on the goals of food and nutrition, there is little reason to anticipate agreement on how to achieve the goals through government action or inaction. (p. 531).

Nutrition qualitative survey data. The survey contained 4 open ended questions, and because participants were being paid only a very nominal fee for answering questions, it was hypothesized before the study began that participants might not take the time to write out an answer. Findings did not validate this concern. Of the 201 participants who completed the survey, only 3 did not write in an answer. Some answers were lengthy and likely took several minutes to compose and write. This shows a certain amount of engagement of the survey particpants to the subject matter. Many of the comments were extended answers to the questions that were purposefully open to introspection. Participants responded with many important comments.

This study was not designed to explicitly look at deep-seated beliefs but at the evidence that they existed. One way of doing this is to see the diverse perspectives on nutrition from participants. Some of these perspectives have very little evidence to support them and others are outliers but they all show a deep-seated belief. It is

interesting to note how many of these beliefs are in direct opposition to other statements made.

A sampling of beliefs mentioned pertain to a halo effect of some foods such as carbs, pre-packaged or organics. Other participants give nuts – protein – a halo instead of carbs.

"I like the inclusion of less refined carbs, since healthier carbs promote less insulin spikes." (Liberal)

"Have more organic and less pre-packaged foods." (Liberal)

"Have more nuts." (Conservative)

Nutrition qualitative focus group data. Focus groups allow the moderator to see body language and facial expressions. Individuals have so many different background experiences that shape their beliefs. Picture how each one of the following experiences might influence how that individual sees policies based on diverse perspectives: not enough to eat, farm to table, sneaking food. The theme in the following quote is a discourse very different from the next one. This illustrates how what food is to one person can be radically different from what food is to the next person. The conservative from North Dakota indicates a value of quantity of food. Food is not personal. Food only sustenance. To the liberal from Florida, food is much more personal and has meaning. They care about the ethics of where the food is from and the importance of where the food is coming from--but not just any farm--one where possibly people believe like they do. While all food ultimately is from some type of farm, this particular discourse indicates to me a concern for how the people think who advertise that their food is from a

farm. It may not be any different from the food across the street but farm to table indicates those people are more likely to care deeply about their food and take food personally. The third discourse shows yet another diverse perspective with several actions based on deep-seated beliefs. First is my thought of this person's belief that food has nutritional value. Secondly, the belief that poor nutrition habits are not as good as healthy ones. Third, this discourse also illustrates an internal belief that good people do things differently than bad people. Fourth, the belief people who make bad judgements on nutrition also make bad judgements on other things such as cleanliness. Fifth are the beliefs of the child who feels compelled to sneak food. Something in the child's environment has made them feel shame in eating or possibly eating at a particular time or at least eating cheese when they want to eat cheese. This is an example of a deep-seated belief that changes how a person perceives food and reacts to any types of mandates about food. (Morris, Jaffee, Goodwin, & Franklin, 2015). These authors talk at length about the wrappers left in the open and other beliefs of children who sneak food.

"I was an athlete. I did football, basketball and track. I was a state champion high jumper. I can never get enough to eat." (North Dakota, Conservative).

"We try to eat at restaurants that are advertised as farm to table and even when we travel we try to google the information." (Florida, Liberal).

"My little sister eats the worst. She will sneak in the (cheese) factory and leave wrappers everywhere. My brother all of sudden got on a health kick." (California, Neutral).

These comments are relative to the larger questions of this study because they show such a diversity of possible beliefs about food. Beliefs that are likely to be very difficult to change. The first person might never be able to understand the need for restrictive food mandates because over-consumption of food is not a problem in his view of the world. Maybe it is something else, like the failure of others to be active and live like he does. The second person might be all for restrictive food mandates so everyone has a better chance to eat farm to table types of foods. They value this type of food and are willing to have a small amount of food if all they can afford is less of the farm to table food. The third person may or may not be for restrictive food mandates because of a strong internal sense of discipline and belief everyone else should have the same. If any one of these four people were in charge of setting the mandates it is evident they have very different perceptions on what needs to be done. The next section is another illustration of how views -this time political ideology- create diverse perspectives.

Political Ideology of food. Analyses of demographics indicated a similarity to the US census, see Table 1. A comparison of the factors using regression suggested the scales choosen predicted several school lunch proposal outcomes.

Political ideology of food, quantitative survey analyses. An interesting finding was that the general public has more consensus for government action for food technology than for any of the other food issues surveyed. In both the current survey and the Lusk (2012) study participants viewed increased government action as the best choice--71% and 72% respectively. This particular food issue has the highest rate of polarization between what scientists believe and what the general public believes (Funk

& Rainie, 2015). Recent governement action in this area has been the beginning of a food fight according to some researchers (Gray, 2016). A lack of compulsory GMO labeling goes against the consensus of the general population but supports the scientific evidence according to many scientists (Kahan et al., 2012). Gray (2016) reports consensus is extremely high for mandatory labeling while saying there is not agreement in the scientific community--which is refuted in the Pew research survey, (Funk & Rainie, 2015)).

Public perceptions of nutrition policy is important for several reasons. Lusk (2012) qualifies his political ideology of food study by saying that public opinion is not usually the most important criterion upon which to build public policy. He asserts that it should be based on benefits and costs but acknowledges that with the entrance of the First Lady of the United States in nutrition policy matters and headlines of popular books, things are different. Policy makers have consituents who elect them into office. If it is true that 92% of the population is for a specific nutrition policy (such as manditory GMO labeling), how much influence does this weild? Accusations have been made concerning which research is likely to be funded and which results are published. Teicholz (2014) maintains that much of our research and therefore public policy surrounding fat is distorted by politics of what is popular to research and write about. She maintains there has been a concerted bias against beef, dairy, dietary fat and cholesterol. Teicholz gives evidence where public perceptions, biased views of our elected officials and unsubstantiated claims of nutrition policy advocates are given preemenece over strong evidence-based research. She emphatically states that this has caused decades of public

policy that has helped perpetuate the obesity problem. Teicholz says this is an example of nutrition public policy based more on popular opinion and less on research.

Political ideology of food, qualitative survey data. Political ideology of food is a far reaching issue that spans technology to foreign imports to nutrition issues. Comments by survey participants on the political ideology of food supported findings in the statistical analysis of survey data.

"Too much bureacracy" (Neutral).

"Don't go overboard on banning everything or students will feel controlled and deprived. Aim for balance and getting kids involved." (Liberal).

"The government needs to ban GMOs from all US food products, especially foods that students consume." (Liberal).

"There needs to be less reliance on frozen/processed foods that can be heated up quickly and more fresh meals made from scratch. It is being done in virtually every other country except for the US. A recent online article showed the balanced, healthy meals that school children in Eurpoe and some Asian and African countries eat and it makes our processed meals here look sick." (Conservative).

Quantitative data from the survey is evidence that people may not be favorable toward the federal government intervening in food issues. However, qualitative data from open ended survey questions shows a more emotional, conflicted polarization of opinions:

"Michelle Obama's lunch program is a joke" (Conservative) versus "Michelle Obama's program is working." (Liberal). When asked what are some things that make it

difficult to improve school lunches, responses ranged from "Fox news, Republicans, Tea Partiers" (Liberal) to "the loud mouth First Lady who has a chef to prepare her meals…Experts messed this up and now we should let locals figure out what works." (Conservative).

Open ended questions were analyzed by pattern matching and outliers to further explore values, beliefs and biases. Outliers are often marginalized in quantitative research using statistical analysis. But for this study, outliers are used as evidence of diverse perspectives. Outliers are opinions that do not easily fit into a specific category, but are important for understanding anger, frustration, deep-seated beliefs and emotional polarization toward nutrition public policy. Outliers in this research study not only showed diverse perspective but are some of the strongest evidence of beliefs that stem from religious convictions. These are convictions are not likely are to be changed by nutrition education or information. Evidence is seen in the responses made to open ended questions in the survey. Evidence of deep-seated beliefs:

"Endeavor to live well and eat well. Treat your body as the temple it truly is." (Neutral).

"I believe we are facing an agricultural crisis. We need to diversify crops to insure adaptability for the future." (Liberal).

"There are powerful political players involved. The sugar, meat and dairy industries wield tremendous amount corporate influence over the government." (Liberal).

"To allow schools more freedom to serve food that is both healthy and people will want to eat. If a 14 year-old wants to eat brownies, I can't imagine George Washington imagined that as falling under his purview when he was president." (Neutral).

"Get government out of it completely. Abolish government schools and allow the free market and private schools to thrive." (Conservative).

"I believe the government should require food companies to label these kinds of controversial items so that the public can make informed decisions. If the public still chooses them, then the market has spoken." (Neutral).

Political ideology of food, qualitative focus group data. The survey questions from the Lusk (2012) study explored the participants judgement of how much government action is optimum. Time did not permit the same questions to be asked of focus group participants but many topics relevant to food technology, labeling, unhealthy foods or questionable ingredients came up in the discussions.

Diverse perspectives are accepted in some areas of nutrition such as what types of foods a family enjoys at Thanksgiving. Other subjects such as whether turkey is cage-free can be a contentious issue with diverse perspectives. The focus group data gives evidence of nutrition policy where people seem to believe: We would all be better off if everyone sees it the way I do. Diverse perspectives are illustrated by focus group participants who shared the following:

> We were in this park. We were grilling steaks on one of the grills. As someone walked by they said, "You must be rich to be able to eat like that." But we always ate good food because we lived on a farm and raised

> most of our own food. I tried to sell produce at a farmers' market but it is hard. By the time I till the soil and plant, pick the produce and shell the peas, I hardly get paid but a few cents per hour. We tried to get a community garden going. It would be nice if people could come and work. But the people will come to the food pantry to get pudding but are unwilling to work the garden. It is hard work! It takes a lot of effort to grow food. We can't even find anyone willing to donate land for a place for a community garden. We asked (name withheld) but they did not want to have messy gardens in that space. (Iowa, L).

The above in an example of a young lady with strong beliefs like those seen in the qualitative survey responses. It illustrates food has value. In this discourse, people with certain kinds of food are seen as rich. In the same discourse the subject changes to what it means to be food poor. Some people value fresh food and others value the comfort of pudding. This one discourse shows many other values about food: the willingness to expend energy for food, the inconvenience of a messy garden space or kitchen, eating packaged pudding so the kitchen stays clean. This connects to beliefs and values by showing a wide range of factors influence food policy opinions. Many of these factors have very little to do with nutrition but create a barrier to accepting nutrition interventions designed to improve health outcomes.

These themes were outliers in that they were not the norm or most common themes but for the people who made the following comments, their beliefs translate into

values that they could easily articulate. They seemed to form perceptions of nutrition policy that are unwavering.

Whereas many of participants did not have well-formed beliefs to base their opinions on and were much more likely to change their opinion depending upon what the 'group think' was. A young father from North Dakota told about how hard he worked at a warehouse facility that he manages. He said that his workers drive better vehicles than he does and spend money on mega-sized soft drinks day in and day out. He felt they had more disposable income than he did even though he made considerably more. His values are based on strong conviction. His preference for government intervention was described like this:

> I just don't like paying for other people. I mean at the end of the day. I like to know where the money is going. I don't like things mandated. I think church and family can handle a lot of things." (North Dakota, Conservative).

This father has an interesting perspective for dealing with health disparities reminiscent of neighbors helping neighbors in generations past. It is interesting to note the intervention this North Dakotan mentions has been implemented in Florida and other states (University of Florida Extension, 2016). Government programs to address low resource families' nutrition needs are specifically designed to take place in churches with local congregations at high risk for health disparities. The programs recruit a church lay member to train as a nutrition mentor who is given supports to teach others in an effort to improve health outcomes. This is an example of faith based organization's (FBO) taking

up where government programs leave off as mentioned in the literature review of this dissertation.

For another father with young kids, his convictions drive his view why people do not want another federal regulation. It is not about the food, the nutrition, or even the school. It is about a loss. Something he feels has been taken away. He sees nutrition proposals through a lens that has very little to do with nutrition but influences his perceptions of nutrition public policy just the same. For many, a systematic disappointment in our country, the presidential candidates, our options and in our leaders spills out into how other issues are perceived.

> I see it in kids. I think people are losing touch with faith based-things. Not reading the bible. Everything is getting so far away from the bible. You can't talk about religion. You can't do this; you can't do that. (California, Conservative).

I see this discourse as similar to other frustrations expressed about what the government has taken away. Research has shown that people are more sensitive to a loss than a gain. Even though both of these people have likely benefitted from government programs, the stories of losses are the ones used to explain their preference for less government regulation in food and nutrition interventions.

Question 4. Even with Inherent Beliefs, Values and Polarized Political Ideologies, is there Common Ground on Nutrition Policy?

Common ground: student acceptance is key. The quantitative survey data showed that participants perceived common ground in talking about acceptance of local proposed nutrition interventions. The question asked was "How likely is each proposal to

gain acceptance from students?" A Likert-type scale with the following choices was available: Very Unlikely, Unlikely, Neutral, Likely, Very Likely.

Participants perceived that students would accept *local choice* proposal for nutrition interventions over a *federal regulated* proposal see Table). The qualitative data builds on the statistically significant results by giving evidence that participants saw this student acceptance as important.

On the open ended survey questions, participants supported the idea that students would accept local choices, especially those they have a say in. Many of the following comments have a priority on the students and what they want which could be an interpretation of *local choice* nutrition interventions. The comments demonstrate the desire to give students the responsibility but at the same time, expressing concern about poor choices students make. The huge potential for poor choices drives the argument for paternalism but compare a counter argument of ethics (Buchanan, 2008) or as outlined in the discourse below. They expressed the need of students being able to work out decision making so students can make better decisions when there are no restraints.

"Work with students to get their ideas" (Neutral).

"Student preferences (are important to improve school lunches)" (Liberal).

"Students should have accessibility but should be informed about dangers and make informed choices. Otherwise they are more likely to make poor choices once they have the freedom after school." (Liberal)

"The food needs to taste better. The schools have their hands tied in some cases. They are not allowed to season the food a whole lot." (Conservative).

"How about fixing healthier foods kids will like?" (Liberal)

The five different discourses mentioned are only a few of the diverse opinions about the importance of student acceptance and how to improve it. The tension seen in the discourse contrasts the desired for more local choice with the knowledge kids need guidance to make healthy choices.

Focus groups also gave feedback on student acceptance of meals. Participants in many rural groups seemed to think that if the food was as good as it was when they attended school, there would be increased student acceptance. Most focus groups, regardless of political ideology expressed the idea that student acceptance is an important issue.

"Acceptance by students would be higher if someone right there could make the decision" (California, Conservative).

"Local sounds like it would be better. More what kids would like." (North Dakota, Liberal). This discourse demonstrates the beliefs that local choice is equivalent to serving foods kids like. Local choice may lead to what kids like within the school lunch menu, but that is not always the case. It really comes down to the skills of individuals implementing the policies. An excellent school cook can make a wonderful meal on marginal ingredients and there are instances where a cook with low skills starts with wonderful ingredients and ends up with barely edible food.

Common ground: Administration supports local. Statistically significant correlations of political ideology and the proposed nutrition policies gives evidence that participants thought school administrators would be more likely request to adopt or take

part in the local choice rather than the federal regulated nutrition intervention regardless of political ideology, see Table 5.

Responses to the question asking for judgement about how school administrators might see *local choice* as a nutrition policy intended to improve school lunches followed in line with the other groups who viewed *local choice* as more likely to be accepted. Open ended questions did not ask specifically about administrator's opinions. However, it is likely that people consider administrators a part of the local choice. Any discourse about embracing what students desire or economics of the school lunch might come under the purview of what the administration would support. Economics was a common theme in the survey data comments. People regardless of political ideology said, "Money" was a barrier for improving school lunch. These same people might logically see administrators as accepting a local choice proposal where they say how the money is spent and control how much.

Focus group participants brought up some interesting issues for administrators that were not even thought of in the development of this study. The study was designed to look at biases and values coming from deep-seated beliefs but participants in focus groups provided evidence that probably some people thought those in positions with constituents might be looking out for their own best interests. One participant thought that administrators would find nutrition policies more acceptable if it helped student retention.

> It depends, I don't' quite know. I can say both good and bad. I think banning foods would be bad because even though fast food is not good for

you, it is quick and easy. The bad thing would be that no one would eat the cafeteria food. If your school does not serve what other schools do? (pause) You can have two schools in our conference. A school that is rich, pretty foundation and no fast food in their school. The other school has fast food and all your friends are like come on over here and you go over there (enroll in school there). It's a competition. Cheetos is my favorite food. If a school ever bans Cheetos, I would change [to a different school]. (North Dakota, Liberal).

Common Ground: Local Options are Better. The four survey questions probing perceived acceptance of the proposed nutrition polices were summed when added into SPSS to determine Pearson correlations. Statistically significant correlations of political ideology and the proposed nutrition policies gives evidence that participants perceived that the parents and public would be more likely to accept local choices as a nutrition policy, see Table 5.

Responses to open ended survey questions show participants did perceive that the general public would be supportive of local choices – and the hope for consensus – for nutrition policy proposals as evidenced by the following data collected from the open ended survey questions.

"Cooperation from all parties" (Conservative).

"I hope we can reach a compromise to suit the kids and the parents and administrators and nutritionists one day soon." (Neutral)

These comments show a support for solutions involving people who likely have diverse perspectives. The final comment shows a specific acknowledgement of different groups of people from different backgrounds. I see a theme of local acceptance in this because all three groups of people mentioned fit under the category of local. The general public desires cooperation and see the local people as the ones to come together to compromise.

Initially, the focus groups received a question about the qualitative survey results and why they think that it showed that people perceived the local nutrition intervention would be easier to implement into school lunches even though the interventions were designed to be similar except for the titles. Answers to this query were similar in all focus groups. It is evident from the following discourse; people understand why *local choice* is popular.

"That's just the American way of thinking. Once the federal government gets their hands on it, they screw it up." (California, Conservative).

"There are multiple things. No one likes the government telling them what to do." (Connecticut, Liberal).

"For one thing, people are antigovernment."

"I was going to say the exact same thing." (Florida, Conservative).

The discourse chosen above reflects comments from conservatives and liberals. The common theme is federal regulated programs do not have a great reputation. *Local choice* may be the default option just because of the strong sentiment towards government programs that do not work well. In theory, the duplication of local efforts

seems less efficient than to provide services coming from the federal level where implementation could be well defined and repeatable. Additional research into the efficacy of nutrition interventions coming from federal mandates compared to local interventions is needed.

Common Ground: Community Chooses Local. Survey questions probing perceived acceptance of the proposed nutrition polices were summed when used to determine Pearson correlations. Statistically significant correlations of political ideology and the proposed nutrition policies gives evidence that participants perceived that parents and community leaders would be more likely to accept local choices in an attempt to improve school lunch meals.

Participants were asked to make a judgement on how parents and community leaders might view the two nutrition proposals in the survey. The open ended questions were purposefully devoid of specific language that might direct responses in one direction versus the other. Some of the comments show that participants wanted to say more on parent's role in nutrition. The nutrition literature on responsibility of nutrition and obesity is quite extensive. This controversial and hotly debated issue by public policy advocates did not have debaters in the qualitative data for this study. Instead, a common ground seems evident on parents' role. Some of the comments do fall in line with research showing nutrition education for parents is more effective than nutrition interventions aimed at their children (Langford, Bonell, Jones, & Campbell, 2015).

"Students do not know the long term affects (sic) of these foods it is up to the parents and the adults to make these decisions in the school." (Liberal)

"Better education of parents is the very first place to start. If parents don't understand and implement good nutrition, there is zero chances that any school lunch program can make any effective changes in children's health." (Conservative).

The above discourse is similar to what is being said in the following discourse but in very different ways. Research shows that people with weight problems are more negative in their assessments of the subject and tend to believe more in a personal responsibility approach to weight loss. The following quote illustrates the belief that there are reasons for being fat and there are solutions involve parents. This might intuitively lead to the belief that local choice would be accepted because parents and the community make up the very definition of local.

> My thoughts are that it should be a topic of conversations within the family. If Mom and Dad see that Junior is getting fat, sloppy, and love handles at 12, maybe they should push him out the door to play or exercise. This is the United States. We have 'access' to a lot of things including all makes of food, alcoholic products, and street drugs. Tell your children to choose wisely. If parents have a cupboard full of Cheetos, Twinkies, and sugary drinks, the kids are going to be over-sized lard buckets, and that's a fact. (Neutral).

The above discourse is an adult's view of the issue of obesity. Similar shaming in school lunch rooms happen across the country. Teaching peer pressure toward healthier eating, such as in a smarter lunchroom program, encourages shaming. Mature adults do not know how to talk about healthy eating: Will students get it right 100% of the time

even with the training that the smarter lunchroom curriculum provides. Any less than 100% and we are encouraging bullying.

Common ground is parents have an important role in the nutrition of kids. This consensus might lead people to see that the local choice would be better accepted by parents and community leaders, widely acknowledged as a part of what it means to be local and have decisions made at the local level.

Data derived from focus groups, provided evidence of parents on the front lines of dealing with school lunch issues. Most participants felt that parents would accept the *local choice* nutrition proposal. In focus groups, participants gave evidence of how their parents would deal with school lunch issues. An African-American D-1 football player attended a few different high schools and said students needed parental permission to get off campus fast food at one school, but that was not a barrier for most kids.

> Some schools I went to would allow some certain kids to go off campus to eat. They would have their mom sign for them to go and eat. The school lunch was bad so I would go to McDonalds. In my 10th grade year I went there. My class of 3000, maybe 300 would go to the lunch in school. Everyone else would go off campus. They could eat there or eat out. I rarely see anyone with blue trays walking around with the school lunch." (North Dakota focus group but from another stat. (Liberal).

This discourse is a reminder that parents are very aware of the problems surrounding the NSLP. If parents in record numbers are supporting the students' desire to eat fast food at lunches, I would guess it is a source of frustration for the parents. One

area of frustration is eating out every day is expensive. Another area of frustration is they realize their kids are probably not ordering very healthy food. For parents of students who are eating the school lunches, possibly because they are free or reduced lunches, not a great situation either. Focus group participants seemed to all realize the school lunch needed fixing and might view parents, school personnel and the community to all see the issues in a similar light. Like the following father, they did not see government programs as the answer. They might also feel a disconnect between how public policymakers might look at the issues and the rest of the general population.

> I don't think government intervening would do anything. It is a parenting thing. Not having the stuff in the house from day one. Try to keep good stuff in the house, try not to have a lot of processed foods. Try to have fresh foods, make dinners every night. Try to have time to make our own pasta sauces. (North Dakota, Conservative).

This father admitted earlier that making lunches for school was a struggle. Having homemade meals at home and less processed foods is a priority, but he told the group that it was really hard. With both parents working, homemade pasta sauce was hard to accomplish, he explained to the group. But no matter how hard all of this was, he felt parents are at the front line and still have ways of doing it better than the government. It seems his family values influence who he would see as accepting a local proposal over a federal regulated proposal.

Common Ground: Disconnect with Public Policy Experts. Judging the local choice as more acceptable across regardless of ideology with the exception that public

policy makers would not find local choice acceptable. Public policy maker's acceptance found consensus toward but in the opposite direction as seen in Figure 5.

A review of the literature provided studies with similar findings in that participants perceived that policy makers might not react the same way as students, parents and administrators toward nutrition public policy interventions. Lusk (2012) concluded that the general public and policy makers see the problems and solutions to nutrition issues differently.

Policy makers were the only group judged to be polar opposite of how the rest of Americans see local nutrition interventions. A consensus toward public policy makers as outliers. People do not think policy makers think about the issues the way the rest of the country does, see Figure 5.

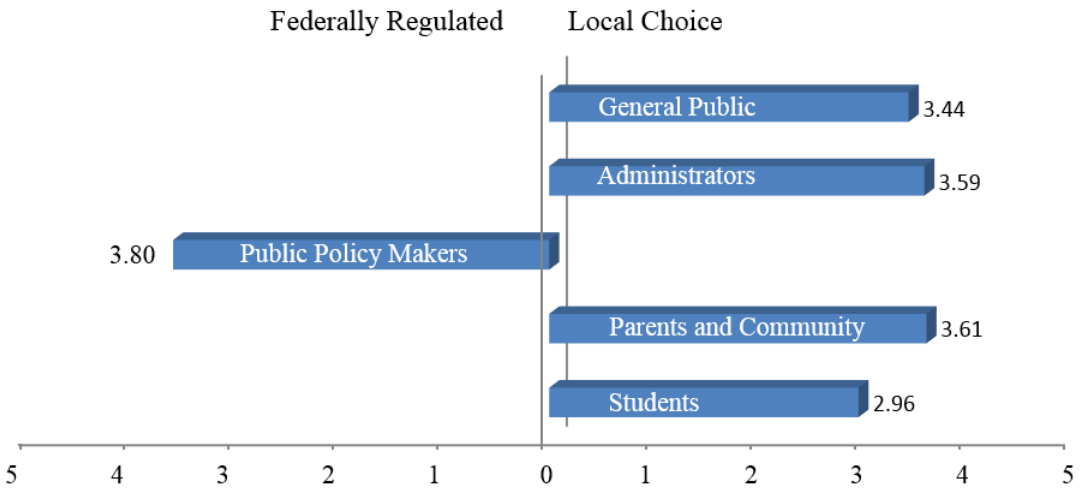

Figure 5. Federal Regulated or Local Choice: Which is more likely to gain acceptance? This graph illustrates survey answers in Phase I which are supported by a consensus in survey comments and Phase II focus group comments. The left bar shows policy makers are the only group people judged would accept *Federal Regulated* above *Local Choice* policy proposals. The right bars show all other groups would see *Local Choice* . The means of each group were used to determine length of bars. Scale was 1 very unlikely through 5 as very likely.

"The politicians that refuse government intervention for the betterment of everyday citizens." (Liberal). This survey participant is alluding to partisan politics. This liberal supports more government intervention and actually sounds frustrated about the barriers such as other politicians who prevent the government from instituting more programs to help ordinary citizens. Other survey participants expressed frustration over the exact opposite issues: too many regulations. It did not seem to matter if participants preferred more or less government, they all blamed politics for gridlock in improving health outcomes. A few examples are: "There seems to be overregulation of all things related to schools with no thoughts as to how they support the school's primary function, education." (Neutral)

"General resistance by politically motivated people trying to make a larger point about the government's role in society." (Liberal)

The new NSLP mandates that have gone into effect over the last year have received a lot of media attention. Students have posted You-tube videos that have gone viral with spoofs of students falling over from lack of calories and depicting the NSLP changes as creating a hardship for growing kids. The Washington Post and other national media outlets ran headlines about students refusing to eat school lunches (Harrington (2014). Even though the new regulations were never mentioned in the survey, they were on people's mind as evidenced by the following comment: "Kids are growing and they're hungry so making them diet at lunch at school is crazy. I've seen some of those government approved school lunches recently and they're awful." (Conservative). A common theme of public policy makers not having strong research evidence for policies

they set up causes frustration. Dietric Bonhoffer explains when something is not fully understood, it is better to not say anything, to let the unsolved be just that (Bonhoeffer, 2010). I think people would like transparency. They would like public policy makers to not just put regulations in place just to be making policy. If there are unsolved areas, allow those areas to be--until there is scientific evidence to base policy on. As one person said, "Come up with a scientifically verifiable good diet." Americans that I talked to across the country are tired of regulations making more work and not effective. There is a feeling that people can work at a local level to find solutions.

Participants were asked what might be some things that make it hard to improve school lunches, several responded with "Politics" (Liberal). Or, "Political roadblocks" (Liberal). Disappointment over partisan politics seemed to be a common theme. Logically, this might lead to the feeling that political policy makers have a different agenda than setting up a system with local decision making in the title.

Common ground in focus group data seen toward public policy makers is evident in this discourse from a conservative in California. Their experience of working in the government is used to explain why the survey results showed that many participants did not prefer more government intervention.

> This is the thing I see from being in the government. Some people say, 'We need to improve what kids are eating at school'. But when you look at what vegetables they are eating, you see they are eating iceberg lettuce with carrot shreds in it. Growing up I had great produce. We would eat produce that was in season and when it was not in season we would eat

> something else that was really good at that time of the year. It is unfortunate that some kids, or parents, do not have the money to buy good food for their kids. That is why you see some kids eating crappy Jell-O or mandarin oranges out of a can instead of an orange. I think if you say that the federal government should regulate the food. This is what is going to happen. The schools are going to have to meet the intent of the regulations by giving mandarin oranges, canned. This is what they are going to feed the students: Mandarin oranges, iceberg lettuce with a few carrot shreds, some kind of a main entrée. As soon as they leave they are going to head to their backpacks and pull out a bag of chips." (California, Conservative).

As is clear from the discourse above, this participant is aware of the complexities of trying to match implementation of a mandate to the intent of the intervention designed to improve nutrition. Although this participant might at first seem just critical of the whole government system, I heard understanding of the complexities of making it all work. This person is alluding to the idea of possibly poor decision making, unskilled staffing, lack of support for implementation, or poor communication at a level -where the salad is being prepared - far removed from policy makers. I see this discourse as giving a rationale of why policy makers might be perceived of accepting a different type of proposal than the general population. The Following discourse is also a person who is trying to explain why public policymakers in Washington DC might think differently. Both the conservative in the above quote and the liberal in the lower quote have their personal theory on why public policy makers might see things differently.

> It almost feels like some local people decided this (local choice nutrition intervention proposals) and these are people who are more like us. Washington, DC people are ivory tower kind of people (nutrition public policy makers). These people (with the local proposal) are more like me and are going to represent me. There is a disconnect between what they (nutrition public policy makers) are doing and what I would like." (Connecticut, Liberal)

Later on in the focus group, this older lady from Connecticut explained she does not necessarily feel this way. She said it is common knowledge that others feel that way.

> "I think that the awareness of that perspective is out there, especially around the time of elections……you hear a lot more about not wanting big government." (Connecticut Liberal).

This is a second quote where the participant is trying to explain the disconnect between how survey respondents saw acceptance by public policy makers versus all of the other groups mentioned. This person spoke as though it was their opinion and then seemed to realize that it sounded conservative and then qualified the statement about 20 minutes later with the second statement. This later statement showed an understanding of the effects of an incredibly contentious political climate as the 2016 presidential elections drew near. Once again, the following is a liberal giving a theory to explain the divide.

> The federal government might require minimum requirements. State government would set requirements. Local might be able to add on top of those requirements as long as they are following federal and state. As you

go farther down the line, local might be seen as more efficient because they can implement certain policies themselves. (California, Liberal).

The above quotes fit into the overall theme of this study in several important ways: One, by showing an understanding of how values influence views regardless of political ideology. Another, by acknowledging that political ideology can influence views. I also feel that these quotes show a sense that people see deep-seated beliefs.

Summary

This chapter reported results for the four research questions set out in this study. Questions from an online multi-item survey were analyzed using SPSS statistical software to determine the commonality between study variables. The results indicate that participants did perceive the effectiveness, acceptance and ease of implementation differently based on their political ideology.

Discourse that was analyzed shows that even if people are not totally frustrated with what is happening in politics leading up to the 2016 debate, they were able to conceptualize why others are. This is in agreement with Bartels (2016) who sees this election as contentious because of a failure to have candidates who unite the general electorate. Bartels sees this as a source of frustration. This frustration was felt in the focus groups by strong emotional responses mentioned at the beginning of this section.

Polarization is seen even in who is allowed to talk about nutrition. Uniformly, people are supportive of good nutrition. The caveat is a wide range of differences in beliefs in food practices but also in the perceptions of better implementation, efficacy and increased ease of following mandates set by what is seen as local.

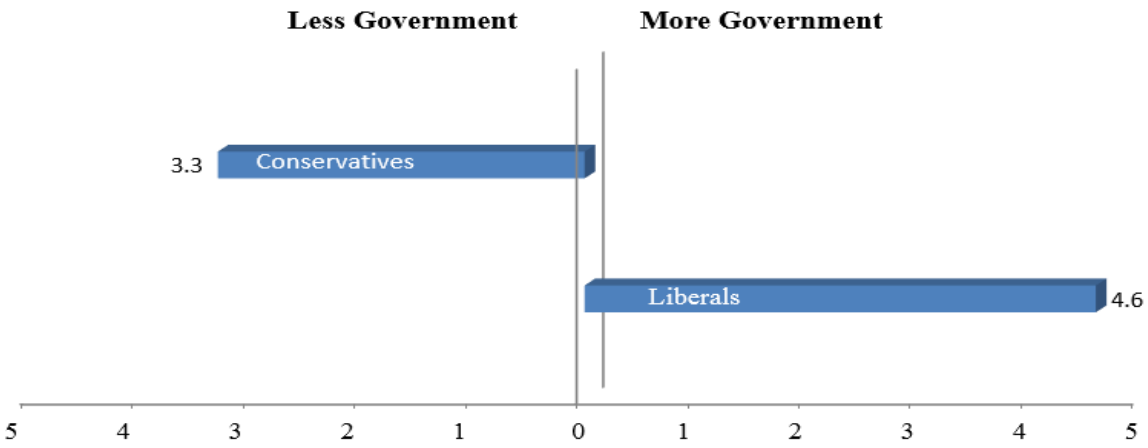

Figure 6. Political ideology predicts preference for government involvement. Beliefs and values about personal responsibility versus government responsibility is at the heart of the debate. Self-identified conservatives preferred less government. Liberals preferred more. Means were used to determine length of bars.

Findings included prediction of political ideology based on preference for more or less government intervention see Figure 6. Results also indicated areas of consensus such as perception that local nutrition interventions would be more widely accepted than federal regulated proposals. Consensus was also seen in the perception that public policy makers would be less likely to accept the local nutrition proposal over the federal regulated proposal.

The quantitative data showed that participants perceived that local choice nutrition proposals would have increased ease of implementation, efficacy and acceptance. The data in this study showed that participants preferred less government in their personal lives. They also were asked about preference for government intervention in social issues and general economic issues which showed a more modest preference for less government intervention. A fourth question asking about importance of government intervention in all three areas, participants were slightly more positive. The data in this

study also gave evidence to support the prediction of preference of government involvement by political ideology. The qualitative data supported the quantitative findings and helped explain both the liberal and conservative viewpoints.

CHAPTER V

DISCUSSION

Researchers, political pundits, and everyone else seems to be trying to make sense of politics in America after the 2016 Presidential election. One headline screams *Trump won because leftist political correctness inspired a terrifying backlash. What every liberal who didn't see this coming needs to understand (Soave, 2016).* The Washington Post headlines declare that finally they have discovered a theory that makes sense. The theory goes this way: those who vote Republican are either ignorant—because they vote against the very politicians who would give them more—or they are resentful and angry at the urban elites (Cramer 2016). My research and talking to folks across the country showed a really different perspective. People did not sound angry to me, although there were many stories about conservative anger in the media at the time (Guo, November 8,2016). People in rural communities I visited with during the course of this research did not sound ignorant—although for sure that is a bias found in the literature (Cramer, 2016).

Here is what I heard as I was headed across the US in an F-150 pickup. My son just returned from deployment with the United States Marine Corps Battalion Landing Team as a rifle platoon commander. He was soon to make captain and I was driving his pickup to make the physical hand-off of the truck keys. I started in Florida and crossed through Alabama, Mississippi, Louisiana, Texas, New Mexico and into Colorado where I

would eventually meet up with Coulter where he was hunting elk. Many people know I am a foodie, but only my immediate family knows that I am no ordinary foodie. It doesn't matter if it is in Mexico or backwoods USA, I look for the dives. I look for local license plates, usually pickups, all lined up at a shack, likely with a faded sign plying local grub. Dave and the kids have been known to absolutely refuse to enter the dives I uncover. They say "Mom, are you serious? We are not going in there!" But on this trip I was by myself and nothing was stopping me from eating with the locals and finding out what they thought of food, politics, and America. The formal focus groups were complete, the data compiled, and the results set out in graphs, but this was another chance to see how Americans who are rarely polled make sense of politics.

They were plain-spoken, down-home type of people who clearly said, "We do not want more government." "We want to make our decisions and if it has to be outside help, we want it to be local." One home schooling mom said, "How can they even pretend to know what is best for my child? I want the freedom to be able to live in the way I believe is right. I am so tired of swimming upstream against the controversy of the liberal bias, I just want to be left alone." I did not hear resentment in their voices. It was a feeling of resignation. A feeling of "just let me get on with my life."

Cramer (2016) is a liberal who spent several years trying to explain how and why conservatives see things the way they do. She concluded that the rural people resented the urbanites and that defined her study of the *Politics of Resentment. Rural Consciousness and the Rise of Scott Walker in Wisconsin*. A liberal media outlet proclaimed a victory in finding a theory that actually made sense. Now think of the irony here. Liberals making

sense of how conservatives think by listening to a liberal researcher say conservatives are the angry ones. Her new theory is that those who are not ignorant must be full of resentment and seething anger. Why else would a guy without teeth not vote for government funded dental programs, she asks. The current study asks the same question, albeit in a slightly different context: Why do people not support government nutrition programs designed to help them? As a conservative sitting down over a meal with mainstream America, it can be summed up in a theory of *Politics of Values*. I met intelligent people in all walks of life who are not angry or resentful but who just say "No" to a government who wants a bigger footprint in their life. For sure I saw a frustration, but nothing like the anger the media portrayed or the anger of the left after the election of Trump as President in 2016. For sure I saw Americans tired of the demand for political correctness, but that is a symptom, not the cause. Not a reason for why policy is less accepted outside of what might be considered "local". The people I talked to in the diners, dives, and focus groups across America feel they have better solutions and better ideas of how their family can get to where they are going than public policy makers, see Figure 6.

Strong resistance to proposals by public policy makers is evident in the responses from people across the country. There are several reasons Americans feel a disconnect with the policy process. First is a failure of policy makers to see policy issues as many individuals do: As very personal. How I celebrate a special occasion, whether with a homemade cake or a mega expensive party, defines my family? How I regroup after a huge loss, whether with a workout at the gym or watching a movie with a quart of ice

cream and a spoon, is a comfort measure. How I deal with hot, dirty manual labor, whether with a big-gulp sized soft drink or a tall glass of water, is part of my modus operandi.

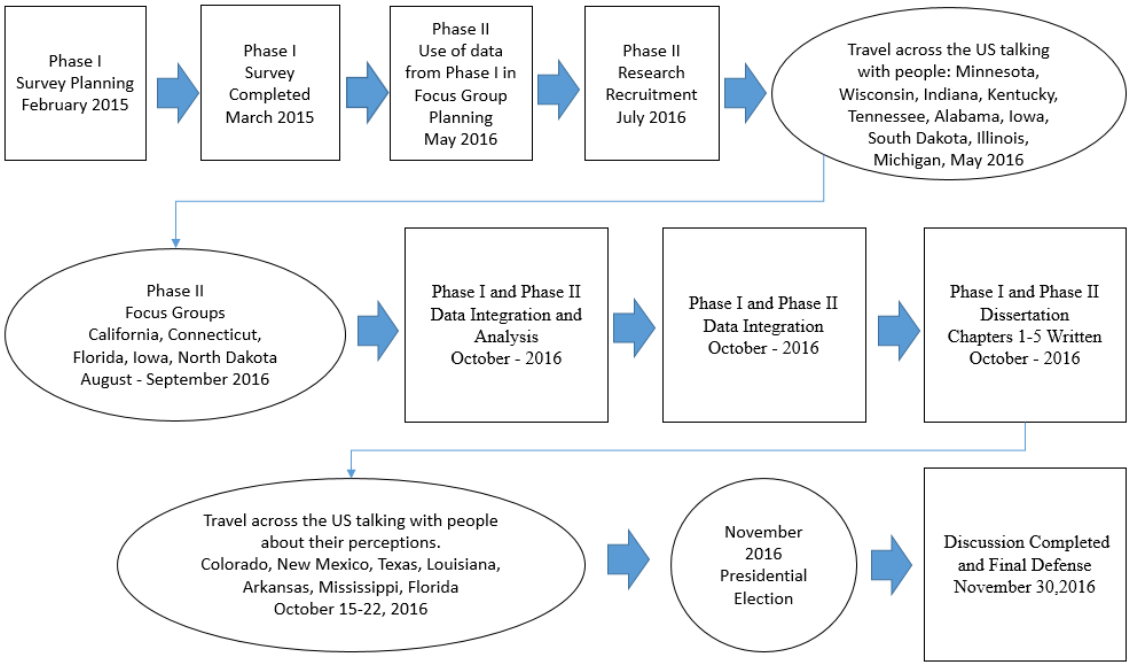

Figure 7. Timeline of research study in relation to 2016 US Presidential Election. Phase I was completed 18 months before the election and phase II just weeks before the election. Data analysis, integration and writing of dissertation was completed days before the election with additional editing and discussion added in the aftermath the election when protests of anger broke out in major cities across the US in response to the election results.

People of all political ideologies resist the idea of government intervention in personal issues, see Figure 8. Second, people do not think public policy makers share their values. One scathing description of public policy makers is they "are suffering from cognitive dissonance believing in their righteous superiority and are not capable of realizing that it is they who have become the adversary of the American people" (Allen West Republic). It is remarkable that people in this study clearly defined public policy

experts as adversarial to policy deemed easier to implement and one with increased efficacy. Americans recognize there is a dissonance between the policy makers plan and what the rest of the population embraces. If the policy deals with telling others what to eat, there is a risk of categorical cognitive dissonance—especially if it is a policy built on preferences instead of evidence based research.

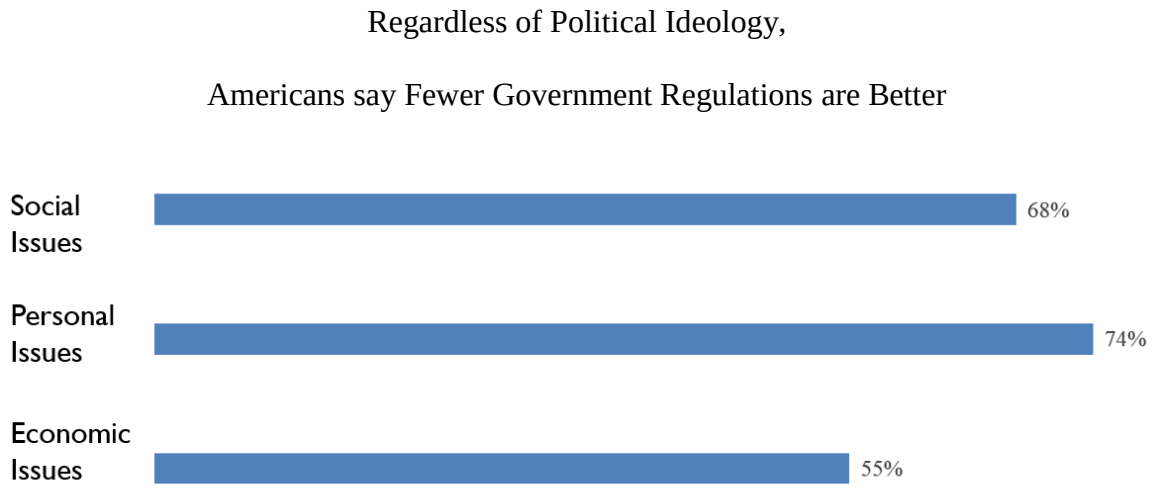

Figure 8. Americans want less government regulations in their lives. In personal issues, 74% of the people, regardless of political ideology wanted less government regulations, 68 % wanted less in social issues and 55% wanted less in economic issues.

I set out to examine and explore the general public's perceptions of proposed nutrition public policies and through this process developed a better understanding of factors that influence how Americans see policy through their core beliefs and values. I also saw how beliefs and diverse perspectives that come from conflicting values having a huge impact on the implementation and acceptance of public policy.

Dissertation Summary

Growing evidence that diverse perspectives of nutrition public policy often come from deep-seated beliefs, values, and biases was introduced in Chapter I. Polarization of the general public is recognized as a factor in many areas of conflict. Constructs of nutrition public policy have not been met with much success. In conclusion, it is suggested that nutrition public policy can benefit from understanding the perspectives that the general public have toward proposed nutrition interventions.

A review of literature was presented in Chapter II. It led with an overview of the nutrition public policy process. Next, factors complicating efforts designed to improve diets were reviewed. An agricultural history of the early school lunch program gave background information taken from multiple sources to form a theoretical basis as an argument against some of the popular themes in historical accounts of the NSLP. Also included is a discussion of a feedback loop that contributes to the perpetuation of poor nutrition decision making. The review of literature revealed several gaps regarding how people interpret nutrition policy, some of which were addressed in this study's online survey with open-ended questions and focus groups.

Chapter III described the methods that are used in this study. The strengths and limitations of surveys, qualitative survey questions, and focus groups were dissected and analyzed as methods that could help understand perceptions toward proposed nutrition policies. An online survey (n=201participants) with multi-item variables on a Likert-type scale were combined with four open-ended questions. A sequential mixed methods approach was used to first collect the quantitative and qualitative data from the survey.

Descriptive statistics were obtained through SPSS. The statistically significant findings were then used to develop questions for use in focus groups. The purpose of the focus groups was to elicit information that would show core beliefs, biases, conflicts, and diverse perspectives affecting attitudes toward nutrition policies.

The results of the study were detailed in Chapter IV. Quantitative analysis involved statistical tests used to determine significant correlations and commonalities. The open-ended questions were analyzed to determine themes and outliers of perceptions of nutrition proposals designed to improve school lunches. The converged findings were used to develop questions for focus groups. The focus groups in turn were analyzed using pattern matching and outliers to explore the findings in the quantitative data as well as to examine other deep-seated beliefs, values, biases, and diverse perspectives.

The quantitative data showed that participants perceived that local choice nutrition proposals would have increased ease of implementation, efficacy, and acceptance. The data in this study showed that participants preferred less government in their personal lives. They also were asked about preference for government intervention in social issues and general economic issues which showed a more modest preference for less government intervention. In responding to a fourth question asking about importance of government intervention in all three areas, participants were slightly more positive. The data in this study also gave evidence to support the prediction of preference of government involvement by political ideology. The qualitative data supported the quantitative findings and helped explain both the liberal and conservative viewpoints.

Research Questions

Question 1: Do the perceptions of the general public follow political ideology when evaluating acceptance, ease of implementation, and efficacy of proposed nutrition school lunch proposals used as indicators of beliefs and biases toward proposed nutrition interventions?

Participants were asked to make judgements on a multi-item Likert-type scale about two proposed nutrition policies designed to improve school lunches. Statistically significant correlations were found in support of positive perceptions of local choice proposed nutrition policies in the areas of ease of implementation, efficacy, and acceptance.

Political ideology did influence the general public's perceptions of proposed nutrition policies. Although statistical correlations do not always represent causation, comments on the open-ended survey questions supported statistical evidence that nutrition public policies are seen through a political ideology lens. Focus group comments such as "Local is better" and "I would pick the local choice" supported the quantitative data. Statements about a wide range of issues may seem to have little to do with nutrition but the core beliefs and values were seen to be transferred to the nutrition policies that were being discussed.

Question 2: Does the general public want more or less government intervention in nutrition policy and can political ideology predict?

Statistically significant data gives evidence most participants favor less government in their personal lives and to varying degrees in social and economic issues. It is possible to predict political ideology based on views on government intervention. Those who prefer more government intervention were more likely to be liberal and those

who prefer less are more likely to be conservative. This could be expected, of course, as relationship to government is a defining characteristic of these ideologies.

One of the interesting findings in the focus group qualitative data pattern matching was that liberals were more likely to express ambivalence or even conflicting opinions. For example, Sandy, a white 50-something from Connecticut, said, "I know I just said the opposite a little while ago, but I don't think we want too much interference." Conservatives were more likely to be consistent and unwavering in the degree of government intervention they prefer. One example is: "Government involvement in our food choices is a bad precedent."

The change in political climate that took place in the months leading up to the US 2016 presidential elections may have influenced how participants viewed the focus group questions. The informal political debates were remarkably polarized and negative in tone. Frustrations, conflict, and diverse opinions were all evident. What was not seen was positive support of what the government was doing.

The qualitative data taken from the open-ended survey questions conveyed a feeling of compassion for the difficulty of running the school lunch program. Comments from individuals, regardless of political ideology, mentioned: "Lack of funding," "Time constraints," and "High cost of healthy foods." Very little compassion was seen in the focus groups. The focus group participants were more likely to attack the programs rather than feel compassion for the people involved or the institutions who ran them or the government which mandated the rules.

This type of rhetoric could possibly come from the interaction seen between participants in focus groups. If even just one person is emotionally charged about an issue, it influences others to voice the same opinion. On the other hand, it can cause others with an opposing view to not share their opinion.

Question 3: What Evidence of Values, Beliefs and Biases Influencing Science of Nutrition and Perceptions of Proposed Nutrition Policies?

Quantitative survey data provided evidence of statistically significant biases toward proposed nutrition policies intended to improve school lunches. Qualitative data provided further evidence of nutrition policies not being evaluated on nutrition alone. Gard and Wright (2005) explain a possible reason for the deep-seated beliefs, biases, emotional conflicts, and diverse perspectives. They state, "how we approach issues of weight, weight control, and body image shows us what kind of people we are." (p. xxvi).

> Again, I say, the government has no place in our kitchens or in our school lunch rooms. When I was in school, our lunches consisted of, usually beans and rice, a vegetable a desert, milk and bread. We got plenty of exercise and enjoyed it. (Conservative).

Participants often mentioned their background, core beliefs, biases and values when stating their opinion on nutrition policies, giving evidence that they are relevant. Family values such as parents' responsibility for what their kids eat outside of school are expressed in the following discourse. This person shows multiple other values such as: beans and rice are economical foods.; physical education as an important part of health outcomes; what students eat outside of the school day makes a difference, too. Childhood obesity is a complex issue, encompassing many factors.

> It doesn't matter what changes are made to a school lunch program, if the parents don't support it, and especially if they continue to feed their children junk outside of school, the school lunch program really won't do much to reduce childhood obesity. (Conservative)

Diverse perspectives on parents and their role was evident in statements such as, "I don't trust parents to not have a kneejerk, anti-regulation reaction". (Liberal)

Deep-seated beliefs evidenced by statements of faith were heard, "Endeavor to live well and eat well. Treat your body as the temple it truly is." (Neutral).

Political biases were evident in many answers, such as, "Sure, federal government provided meals may certainly help the district's budget, but leaves the children with tasteless food and small portions." (Conservative). The liberal counterpoint is expressed by another survey participant.

"Until the government turns its support to local farming instead of giant corporate mono-agriculture, little will change." (Liberal).

According to Dreher, (2006) individuals may be making a statement of who they are when they describe nutrition beliefs. And, it may be a political statement. This study presents evidence of biases and diverse perspectives toward food, nutrition and agriculture of a political nature. The questions were all focused on food and nutrition, but one discourse focused specifically on agriculture and the issue big companies who lobby the USDA for continuing price supports.

Question 4: Even with inherent beliefs, values and polarized political ideologies, is there common ground on nutrition issues?

There was evidence of consensus in all phases of the research. It was statistically significant that participants would prefer less government involvement in their personal lives. Qualitative data explored how their interpretation of this may be an underlying factor in how they value government action in nutrition public policy. Qualitative data from focus groups in California, Connecticut, Iowa, Florida, and North Dakota explained in detail a frustration with government's ability to deal with important issues, citing "political roadblocks" as a common theme.

The online survey was conducted in February of 2015 and the focus groups were conducted 18 months later in the fall of 2016. The US political climate is even more polarized and frustrating to many of the general population now, at the time of this writing, than at the start of this study due to the national elections just a few weeks away. Participants noted this in the focus group discussions by saying, "I think that the awareness of that perspective is out there, especially around the time of elections" (Connecticut, Liberal).

Common ground: Local is the better option came through in both the qualitative and quantitative data. Implications here include images suggesting those closest to us understand us. They are more likely to know how we think, act, and feel. Of course, this is not necessarily reality, but it is a belief that many of us carry. In some instances, such as a school with a high proportion of migrant workers—where the students work alongside their parents—certain foods are favored over other foods. This is a situation where the staff would understand the needs of the students. However, consider another

school just across town that does not have the same type of population. It is possible that a local decision made for both schools in that area would completely ignore, deny, or otherwise marginalize the needs of one part of the population in favor of the other. More research needs to take place to determine if a local decision includes better nutrition outcomes than a decision that is not local. There are possibilities of either system working or failing. Participants perceived increased efficacy with the local choice option, but, in actual practice, this discounts schools across the country duplicating efforts and re-inventing solutions that could be shared.

Regardless of political affiliation or ideology, focus groups voiced understanding of why survey participants thought that the local choice nutrition proposal would be better. A liberal in Connecticut articulated the frustration clearly, and then later in the discussion qualified it and said she was taking the perspective of how others think and did not necessarily feel that way. She said conflicts and diverse perspectives are common knowledge. This perspective explains why so many of the focus group answers seem to be anti-government.

After studying the emergent themes from the qualitative comments, one should ask, "Do liberals feel as frustrated and ready to disengage from supporting government intervention as the conservatives stereotypically have and as is statistically reported in this study?" The answer to this changed from before the election to after the 2016 Presidential Election. Liberals were confident in winning the election so they did not feel the same frustration at that point. After the election, they were faced with the reality that they no longer were in control. The implications were enormous. Organized riots and

protests broke out in virtually every major city in the US. College campuses were trying to deal with inconsolable, child-like behavior of someone who lost. University students had been insulated by a liberal president since they were 10 to 12 years old and arguably by an educational system with a liberal bias most of their lives. All of this changed overnight. They were going to have to consider how to live in a society where beliefs and values of the right could no longer be completely dismissed as ignorant.

Even Americans who do not agree with the preference for less government to bring lasting change still had a compassionate understanding of why it seemed like government programs do not work. In this vein, some quotes are not the participant's judgement of their own values, but an acknowledgement of how others view more government regulation. In this way, the quantitative data can be used to strengthen the qualitative data. The quantitative data gives strong evidence of how the participant would judge a situation since the questions ask, "Which proposal do you think would most likely bring lasting changes?" The Americans I met spoke clearly and succinctly on this subject.

Based on the evidence of this study, I found many in the general public do not have faith in the federal government to set nutrition public policy. There were three themes of consensus surrounding these issues. First dealt with challenges the federal government has in implementing policies. Regardless of political ideology, people understood this frustration. A conservative from Northern California who is totally disgusted with the way things are going in the country and especially leading up to the presidential election of 2016 expressed her disgust this way, "The government fails at

everything they do." Others in this particular focus group laughed as though in agreement, but of course the problem is far more complicated.

The second emerging theme was inefficiency. A dentist from Long Beach, California, mentions the lunch ladies and the inefficiency of the NSLP at her school. She said she took her lunch, and when asked why, she explained, "Lunch ladies were serving food that was expired and bugs in it, the food is not very nutritious." It wasn't just inefficiency at one level. There was food served past the expiration date, then there was the issue of pests in the food. But, the last straw was the poor nutritional value. This could be a district-, state-, or nation-wide decision of what foods are available. Contracts can often be the source of less nutritious foods, if the contracting companies primarily provide high-calorie, low-nutrient foods, or if commodities are used for processed foods instead of being available as whole foods.

A third theme was a view that local entities are more understanding of the needs of the community. A liberal who felt confident her party's candidate would win the 2016 election explained how government gets a bad rap. She mentioned several reasons she felt people are more likely to like the local choice proposal. She said, "It seems to be easier to talk to a local person to give them your opinion. You can go up and talk to them. It is just easier to get things done." The tension these debates cause is evident but one question that was never asked was "What is local?" This is a common term, but used to mean many different things. It can mean something in a 5-state region or it can mean something within 1 mile. Whatever specific meaning the general public has for the term

'local' there seems to be a consensus that 'local' is a more positive term than 'federal regulated'.

If government policymakers are to turn this around, they will have to focus on nutrition policy backed by strong evidence-based research. Consensus for having all nutrition policy based on strong evidence-based research is evidenced by, "Come up with scientifically verifiable 'good' diet and offer those items at the cafeteria." (Neutral).

"Current science facts." (Liberal) and

"Use sound nutrition guidelines." (Conservative). In order to do that, there needs to be adequate funding for nutrition research that can inform the nutrition policy process.

There was a strong consensus on the importance of this research subject and the need for improvement. Participant's responses – in the qualitative survey portion – were, "This is an interesting topic and something that definitely needs a big improvement" (Liberal). "Awareness is important." (Conservative). Good survey and message." (Conservative).

Consensus for nutrition policies as a deeply held concern was seen in all of the qualitative data. The participants expressed the feeling that what we are doing is not enough. Quantitative data shows statistically significant support for local choices but not for federal regulated nutrition proposals. One survey participant suggested reducing unhealthy foods but that it be done "by the schools not government". (Conservative). Consensus that our nutrition policies do not seem to be heading us in the right direction was also evident. "The school lunch mess is distracting from educating our kids." (Liberal).

The major finding of this dissertation is evidence of biases, deep-seated beliefs, conflicts and diverse perspectives. A possible inference from this is that the general public recognizes this and feels more accepting of local entities to make the best nutrition policy. Americans see it as important for policy makers to only mandate federal nutrition policies that are driven by evidence-based research that has conclusive results. Popular food practices, political ideology bias or a commonly held belief of nutrition are what makes our country diverse, but it shouldn't drive the public policy process unless it is based on strong evidence-based research for meeting specific, strategic health outcomes.

Implications

One implication of the current research is the continued study of factors that contribute to the implementation, efficacy and acceptance of nutrition proposals for school lunch programs. The general public's perceptions of nutrition public policy are seen through a lens of *Politics of Values*. Political ideology, core beliefs, values and diverse perspectives of people often have very little to do with nutrition but they influence how we make sense of public policies. This lends strong support for embracing diverse perspectives and finding consensus for nutrition public policy on the basis of evidence-based research.

This study adds to the current literature by showing participants recognize public policy makers do not think like most Americans they know. There was an underlying feeling policy makers do not have the peoples' best interests in mind. The qualitative data provided possible reasons. Drawing on evidence from other studies, surveys can be extremely useful in understanding why a phenomenon is happening. The qualitative

portion of this study shows a link between negative feelings toward government competency and how participants perceive public policy maker's acceptance in the opposite direction the general population supports.

This research gives evidence of several reasons why it is better to refrain from making policy until the research evidence is strong and clear. Evidence of diverse perspectives show that policy experts cannot expect to choose a nutrition preference and assume the general public will agree. Furthermore, basing a proposed nutrition policy shift on research that does not align with randomized control studies (RCT) does not give solid evidence to inform the policy process (Maki, Slavin, Rains, & Kris-Etherton, 2014). Slavin (2015) points out the confusion, wide-spread misinformation, and the appearance of unstable decisions if it becomes necessary to retract the policy. That will be the end result of policy built on anything other than solid research evidence.

Future efforts in this area would do well to focus on developing strong research funding for nutrition and health outcomes to inform lasting and effective nutrition policy. Future efforts for additional nutrition public policy must search for higher levels of consensus. This consensus will likely be what the general public characterizes as a local choice. Randomized control trials (RCTs) are the gold standard of nutrition research (Nestle, 2013), but there are situations where RCTs are not feasible due to cost, time or ethical constraints (Greener, Douglas, & Van Teijlingen, 2010). Surveys can be quicker, less expensive and reach a broader audience but do not diminish the need for stronger evidence-based research conclusions before solid recommendations for nutrition public policy can be made.

Assertions

- This study gives evidence of wide consensus toward the importance of school nutrition but also numerous school nutrition issues need our attention.
- A systematic disappointment across our country in the presidential candidates for 2016, in our elected officials, in our options and in our government spills out into how other issues such as nutrition federal proposals and regulations are perceived.
- This study gives evidence of, when asked to judge very similar nutrition proposals, people identify the local choice over a federal regulated one, regardless of political ideology.
- Regardless of political ideology, people prefer less government intervention in their personal lives. Nutrition is a very personal issue to many Americans and this affects perceptions of nutrition policy. On the other hand, people realize government does have an important role so if it has to be top down policy making, local decisions are more acceptable than a federal level policy process.
- Political ideology, beliefs and values are shown in this study to be statistically significant predictors of attitudes toward school nutrition policies.
- Local options for nutrition policies increases acceptance. Americans choose *local* because in their experience local expresses tangibles in line with their values and beliefs. Consensus for nutrition policy is to have bottom up decision making and implementation strategies. People judged that it will increase acceptance of everyone except public policy makers.

- People judged that policy makers will not accept bottom up public policy. Large portions of the population are frustrated by the feeling of swimming upstream against the current culture—which they see the government and public policy makers as supporting--and say they will put their support behind anything that lessens that pressure. I heard from many people this is the reason for their attitude of preference for less government. The strongest expressions of core beliefs and values included several who said they wanted the government to 'leave me and my family alone'. Not because of resentment or anger but because it makes it so hard for familes to live out their personal beliefs and values.
- Beliefs based on core values and stable convictions are very strong across America. There has been an emergence of family values, faith-based values and the acknowledgement of belief-systems as paramount importance in decision making. People with values based on teachings of Christ voted as an influential block in the 2016 presidential election—over 60% of evangelicals and 52% of Catholic voters regardless of political ideology (Smith & Martinez, 2016). The Washington Post declared that this voting block—based on beliefs--turned the election (Rubin, 2016). In talking to people with faith-based beliefs across the country, they voted for the party platform in the 2016 Presidential election once again giving evidence of deep-seated values as being the basis for decision making.
- In talking to people across the country, I found evidence of *Politics of Values.* I see this as more influential in the 2016 election than *Politics of Resentment* which is how

conservatives' attitudes are depicted by liberal researchers such as Cramer (2016) and The Washington Post (Guo, 2016).

- A significant number of people of all political ideologies see policy through a lens of inherent beliefs and values but public policy makers underestimate *Politics of Values*. And, people recognize this about public policy makers. People believe public policy makers have a different frame of reference.
- *Politics of Values* is a theory proposing core beliefs and values as a strong tool creating a lens which people use to make sense of politics, nutrition and public policies.

Future Research

The school lunch program has been the focus of many nutrition interventions over the last few decades, but with very little success. Enthusiasm for government intervention is tenuous at best. Poor nutrition public policy – based on something other than strong evidence-based science – has left the general public wary of regulations, unsure of what are best nutrition practices and wanting for better information. Moving forward there needs to be stronger evidence-based research to inform nutrition public policy.

This study provides evidence of areas of consensus. It is not the type of consensus where everyone believes the same thing about food practices. It is the type of consensus where diverse perspectives are embraced, forcing the nutrition public policy process to be grounded in the strongest possible evidence-based research to improve health outcomes. Only the strongest evidence-based research will provide a firm foundation for informing nutrition public policy.

Some gaps in our evidence of percpetions of implementation, acceptance and effectiveness of community and individual nutrition interventions remain. The way forward will include prioritization on *Politics of Values* for public polices because this research gives evidence values affect attitudes toward policies.

This study seeks to develop an awareness of the diversity of perspectives toward policy intended to improve nutrition. Future directions include increasing the validity, reliability and applicability of scales to measure ease of implementation and acceptance of nutrition interventions that can inform the policy process.

Political pressure for policymakers coming from constiuents is a given, but good questions to ask are: Should public perceptions influence directions in public policy? How do public perceptions influence the success of a policy? More research is needed to determine how much percpetions actually matter in the policy process? What type of research and at what level is most beneficial for informing policy?

Summary

The purpose of this study was to examine and explore the general public's perceptions of proposed nutrition public policies and to develop a better understanding of factors that influence perceptions of nutrition interventions. It also explored core beliefs, biases, conflicts and diverse perspectives affecting attitudes toward nutrition policies.

Consensus and perceptions do not provide a stable platform for nutrition public policy. The general public has deep-seated beliefs, values, conflicts, biases and diverse perspectives on food practices. Food practices are not nutrition, often having very little to do with nutrition (Dixon & Isaacs, 2013). Nutrition public policy built on strong,

evidence-based research can move us toward consensus. As Funk and Rainie (2015) concluded from a survey of over 2000 citizens, "Americans recognize the accomplishments of scientists in key fields and, despite considerable dispute about the role of government in other realms, there is broad public support for government investment in scientific research." (p.1).

This dissertation highlights some of the challenges, controversies and tensions of a wide range of disciplines weighing in on nutrition issues including confusion and diametrically opposing perspectives. However, the variety of scientific disciplines and the wide range of research tools they bring to the table can also be thought of as strengthening the base of the scientific research behind nutrition public policy. The more diverse voices and perspectives contributing to the process, the stronger nutrition public policy will be.

APPENDICES

APPENDIX A

SCHOOL LUNCH NUTRITION INTERVENTION SURVEY QUESTIONS AND SCALES

School Lunch Nutrition Intervention Survey Questions and Scales

Name	Item	*M*	*SD*
	Demographics		
Age	What is your age?		
Gender	What is your gender?	54%M	46%F
Ethnicity	Which of the following best describes you?	82%W	18% O
Income	Which of the following best describes your annual household income?	See Table #5	
	Political Ideology		
PoltView	Which of the following best describes your political views? ...	50% lib	30% cons
PoltAffil	Which of the following best describes you?	42%Dem 6%other	22%Rep 30% Ind
	Government Involvement		
GovPers	How much government intervention would you prefer in your personal life?	1.26	44
Govimport	The Federal Government has an important role in personal, social and economic issues? ...	Yes20%	

GovEcon	**How much government intervention would you prefer in general economic issues?**	**1.46**	**.50**
GovSoc	How much government intervention would you prefer in general social issues?	1.35	.48
	Implementation		
FfollowF	Obesity and overweight issues affects about 70% of the US population. Children are overweight at...	2.79	1.04
FfollowL	Local Choice School Lunch Proposal?	3.62	1.01
Fimprove	How likely is each proposal to improve children's school lunch nutrition choices? Federal Regu...	3.38	1.12
Limprove	Local Choice School Lunch Proposal?	3.44	1.00
	Efficacy		
Feffective	How effective do you think each proposal would be? Federal Regulated School Lunch Proposal?	3.39	1.30
Leffective	Local Choice School Lunch Proposal?	3.66	1.13
Flasting	How likely do you think each proposal would have lasting nutrition and health benefits for studen...	3.37	1.20
Llasting	Local Choice School Lunch Proposal?	3.54	1.10
Frushed	If a student is rushed and has very little time at lunch, which proposal is most likely to lead t...	3.20	1.15
Lrushed	Local Choice School Lunch Proposal?	3.40	1.13
Fbetchoic	How likely is each proposal to help students make better choices at lunch time? Federal Regula...	3.40	1.15
Lbetchoic	Local Choice School Lunch Proposal?	3.6	1.00
	Acceptance		
Faccept	How likely is each proposal to gain acceptance by the general public? Federal Regulated School...	3.13	1.10
Laccept	Local Choice School Lunch Proposal?	3.44	.99
Fadminreq	How likely are school administrators to request to take part in each proposal? Federal Regulated	3.33	1.10

Ladminreg	Local Choice School Lunch Proposal?	3.59	1.0
Fparenencour	How likely are parents and community leaders to encourage schools to adopt each proposal? Federal Regulated	3.19	1.0
Lparenencour	Local Choice School Lunch Proposal?	3.60	.99
Fstudaccept	How likely is each proposal to gain acceptance by students? Federal Regulated	2.70	1.30
Lstudaccept	Local Choice School Lunch Proposal?	2.96	1.13
Fpolicysup	How likely are public policy makers to support each proposal? Federal Regulated School Lunch...	3.60	1.00
Lpolicysup	Local Choice School Lunch Proposal?	3.56	.98

Government Action in Food Scale (Lusk, 2012)

irradiation	Which of the following best describes your view on what the US government should do? Choose one.	2.31	1.05
promothea	Which of the following best describes your view on what the US government should do?	2.87	1.28
imports	Which of the following best describes your view on what the US government should do?	2.52	.85
badfats	Which of the following best describes your view on what the US government should do?	2.90	1.20

APPENDIX B

CODEBOOK

The codebook for the survey is a list of the variable names used in the dataset. The prefix of the names such as "FfollowLC" indicate which intervention has the higher level of numeracy. These were randomized in the study. Recoded 1 is Federal Regulated Program intervention has numeracy, 2 is Local Choice intervention has numeracy. "follow" is the position of the shortened name for the question. L for Local Choice is the question, F for federal regulated intervention is the question. Consent: A person who is to participate in this research must give his or her informed consent to participate.

	What is your age?
Gender	What is your gender?
Ethnicity	Which of the following best describes you?
Income	Which of the following best describes your annual household income?
PoltView	Which of the following best describes your political views? ...
PoltAffil	Which of the following best describes you?
GovPers	How much government intervention would you prefer in your personal life?
Govimport	The Federal Government has an important role in personal, social and economic issues? ...
GovEcon	How much government intervention would you prefer in general economic issues?
GovSoc	How much government intervention would you prefer in general social issues?
LfollowL	Obesity and overweight issues affects about 70% of the US population. Children are overweight at...
LCfollowF	Federal Regulated School Lunch Proposal
FfollowF	Obesity and overweight issues affects about 70% of the US population. Children are overweight at...
FfollowL	Local Choice School Lunch Proposal?
Fimprove	How likely is each proposal to improve children's school lunch nutrition choices? Federal Regu...

Limprove	Local Choice School Lunch Proposal?
Faccept	How likely is each proposal to gain acceptance by the general public? Federal Regulated School...
Laccept	Local Choice School Lunch Proposal?
Feffective	How effective do you think each proposal would be? Federal Regulated School Lunch Proposal?
Leffective	Local Choice School Lunch Proposal?
Flasting	How likely do you think each proposal would have lasting nutrition and health benefits for studen...
Llasting	Local Choice School Lunch Proposal?
Frushed	If a student is rushed and has very little time at lunch, which proposal is most likely to lead t...
Lrushed	Local Choice School Lunch Proposal?
Fbetchoic	How likely is each proposal to help students make better choices at lunch time? Federal Regula...
Lbetchoic	Local Choice School Lunch Proposal?
Fstudaccep	How likely is each proposal to gain acceptance from students? ...
Lstudaccep	Local Choice School Lunch Proposal?
Fadminreq	How likely are school administrators to request to take part in each proposal? Federal Regulat...
Ladminreg	Local Choice School Lunch Proposal?
Fparenencour	How likely are parents and community leaders to encourage schools to adopt each proposal? Fede...
Lparenencour	Local Choice School Lunch Proposal?
Fpolicysup	How likely are public policy makers to support each proposal? Federal Regulated School Lunch...
Lpolicysup	Local Choice School Lunch Proposal?
irradiation	Which of the following best describes your view on what the US government should do? Choose one.
promothea	Which of the following best describes your view on what the US government should do?
Imports	Which of the following best describes your view on what the US government should do?
Badfats	Which of the following best describes your view on what the US government should do?
ideasimp	The following will allow you to tell us more about how you feel. Please answer openly and honestl...

Barriers	What might be some things that make it hard to improve school lunch programs?
Fatsugar	What are some of your thoughts about student accessibility to high fat, high sugar or high calori...
addissues	Is there any other information about nutrition, school lunch programs or other issues you would l...

APPENDIX C

ONLINE SURVEY TOOL

Consent:

A person who is to participate in this research must give his or her informed consent to such participation. This consent must be based on an understanding of the nature and risks of the research. This document provides information important for this understanding. Research projects include only subjects who choose to take part. Please take your time in making your decision as to whether to participate. If you have questions at any time, please ask. You are invited to be in a research study about perceptions of two proposed school lunch interventions. The purpose of this research study is to test the factors that predict acceptance of school lunch interventions. The researchers conducting this study are Jacquelyn Nyenhuis, a PhD student in the Educational Foundations and Research Doctoral Program at UND, and Dr. Marcus Weaver-Hightower PhD, Professor and Chair of the Department of Educational Foundations and Research at UND. Approximately 200 people will take part in this study by completing an online survey. Your participation in the online survey will last approximately 10 to 12 minutes. The survey will contain questions pertaining to demographics, nutrition, and perceptions of school lunch interventions. Although there is minimal risk in this study, some participants may become more aware of health related issues or uncomfortable while answering questions regarding nutrition and health questions. Should you become upset

at any point in the study, you can withdraw at any time with no penalty. You will not incur any costs for being in this research study, you will be paid $.50 for being in this research study. It is hoped that, in the future, other people will benefit from this study because a better understanding of the factors that predict school lunch interventions is an important addition to the current literature in the field. The University of North Dakota and the research team are receiving no payments from other agencies, organizations, or companies to conduct this research study. The records of this study will be kept private to the extent permitted by law. In any report about this study published in the future, you will not be identified. Your study record may be reviewed by Government agencies, the UND Research Development and Compliance. To ensure confidentiality, data will be collected using the secure, encrypted UND Qualtrics survey program. The data will be stored in a locked office on a password protected computer. Only the researchers will have access to the data. All survey data and consent forms will be kept for a minimum of 3 years. After that time, the data will be properly deleted such that no traces are remaining. Your name will not be used in data analysis, and in any final reports, we will describe the study results in a strictly summarized manner. Your participation is voluntary. You may choose not to participate or you may discontinue your participation at any time without penalty or loss of benefits to which you are otherwise entitled. If you have any other questions, concerns, or complaints about the research please contact the principle investigator Jacquelyn Nyenhuis 906-399-1477. You can also contact the adviser to the principle investigator, Dr. Marcus Weaver-Hightower, at (701) 777-3238. If you have questions regarding your rights as a research subject, or if you have any

concerns or complaints about the research, you may contact the University of North Dakota Institutional Review Board at (701) 777-4279. Please call this number if you cannot reach research staff, or you wish to talk with someone else. Clicking "I consent" indicates that this research study has been explained to you, that your questions have been answered, and that you agree to take part in this study.

- ❍ I consent (1)
- ❍ I decline (2)

Q1 Please click the box and key in your answer. What is your age?

Q2 What is your gender?

- ❍ Male (1)
- ❍ Female (2)

Q3 Which of the following best describes you?

- ❍ White, non-Hispanic (1)
- ❍ Black or African American, non-Hispanic (2)
- ❍ Hispanic (3)
- ❍ Other race (4)

Q4 Which of the following best describes your annual household income?

- ❍ less than $20,000 (1)
- ❍ $20,000 to $39,999 (2)
- ❍ $40,000 to $59,999 (3)
- ❍ $60,000 to $79,999 (4)
- ❍ $80,000 to $99,999 (5)
- ❍ Over $100,000 (6)

Q5 Which of the following best describes your political views?

- ❍ Strong Liberal (1)
- ❍ Slightly Liberal (2)
- ❍ Neutral (3)
- ❍ Slightly Conservative (4)
- ❍ Strong Conservative (5)

Q6 Which of the following best describes you?

- ❍ Republican (1)
- ❍ Democrat (2)
- ❍ Independent (3)
- ❍ Tea Party (4)
- ❍ Other (5)

Q7 How much government intervention would you prefer in your personal life?

- ❍ I prefer less government (1)
- ❍ I prefer more government (2)

Q8 The Federal Government has an important role in personal, social and economic issues?

- ❍ Strongly Disagree (1)
- ❍ Slightly Disagree (2)
- ❍ Neutral (3)
- ❍ Slightly Agree (4)
- ❍ Strongly Agree (5)

Q9 How much government intervention would you prefer in general economic issues?

- ❍ I prefer less government (1)
- ❍ I prefer more government (2)

Q10 How much government intervention would you prefer in general social issues?

- ❍ I prefer less government (1)
- ❍ I prefer more government (2)

Q11-L1 Obesity and overweight issues affects about 70% of the US population. Children are overweight at levels that out-rank any of the previous generations. Many feel this is a public health crisis that will create epidemic-like proportions of a future generation with diabetes, heart disease and a wide range of other health issues associated with excess weight. Below are two school lunch proposals designed to help students make better nutrition decisions. The local choice school lunch proposal is designed and implemented by the local school and community. The Federal Regulated School Lunch Proposal is set by the federal government. Please read each proposal below and answer the questions about them.

Local Choice School Lunch Proposal to promote healthier eating

1. Keep saturated fats to less than 10% of calories
2. Reduce protein to 10 to 12% of calories
3. Eat 5 servings of fresh fruits and vegetables
4. Maintain refined grains to less than 50%

Federal Regulated School Lunch Proposal to promote healthier eating

1. Eat plenty of fresh fruits and vegetables
2. Replace refined grains, breads and cereals with whole grains
3. Choose healthier proteins
4. Reduce unhealthy fats

How easy would it be to follow each proposal?

Local School Lunch Proposal

- ❍ Very Difficult (1)
- ❍ Difficult (2)
- ❍ Neutral (3)
- ❍ Easy (4)
- ❍ Very Easy (5)

Q11-L2 Federal Regulated School Lunch Proposal

- ❍ Very Difficult (1)
- ❍ Difficult (2)
- ❍ Neutral (3)
- ❍ Easy (4)
- ❍ Very Easy (5)

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4. Reduce unhealthy fats

How easy would it be to follow each proposal?

Federal Regulated Lunch Proposal?

- ❍ Very Difficult (1)
- ❍ Difficult (2)
- ❍ Neutral (3)
- ❍ Easy (4)
- ❍ Very Easy (5)

Q11-F2 Local Choice School Lunch Proposal?

- ❍ Very Difficult (1)
- ❍ Difficult (2)
- ❍ Neutral (3)
- ❍ Easy (4)
- ❍ Very Easy (5)

Q12-F How likely is each proposal to improve children's school lunch nutrition choices? Federal Regulated School Lunch Proposal?

- Very Unlikely (1)
- Unlikely (2)
- Neutral (3)
- Likely (4)
- Very Likely (5)

Q13-L Local Choice School Lunch Proposal?

- Very Unlikely (1)
- Unlikely (2)
- Neutral (3)
- Likely (4)
- Very Likely (5)

Q14-F How likely is each proposal to gain acceptance by the general public? Federal Regulated School Lunch Proposal?

- Very Unlikely (1)
- Unlikely (2)
- Neutral (3)
- Likely (4)
- Very Likely (5)

Q15-L Local Choice School Lunch Proposal?

- Very Unlikely (1)
- Unlikely (2)
- Neutral (3)
- Likely (4)
- Very Likely (5)

Q16-F How effective do you think each proposal would be? Federal Regulated School Lunch Proposal?

- ❍ Very Ineffective (1)
- ❍ Slightly Ineffective (2)
- ❍ Neither Effective nor Ineffective (3)
- ❍ Slightly Effective (4)
- ❍ Very Effective (5)

Q17-L Local Choice School Lunch Proposal?

- ❍ Very Ineffective (1)
- ❍ Slightly Ineffective (2)
- ❍ Neither Effective nor Ineffective (3)
- ❍ Slightly Effective (4)
- ❍ Very Effective (5)

Q18-F How likely do you think each proposal would have lasting nutrition and health benefits for students? Federal Regulated School Lunch Proposal?

- ❍ Very Unlikely (1)
- ❍ Unlikely (2)
- ❍ Neutral (3)
- ❍ Likely (4)
- ❍ Very Likely (5)

Q19-L Local Choice School Lunch Proposal?

- ❍ Very Unlikely (1)
- ❍ Unlikely (2)
- ❍ Neutral (3)
- ❍ Likely (4)
- ❍ Very Likely (5)

Q20-F If a student is rushed and has very little time at lunch, which proposal is most likely to lead to good nutrition choices? Federal Regulated School Lunch Proposal?

- ❍ Very Unlikely (1)
- ❍ Unlikely (2)
- ❍ Neutral (3)
- ❍ Likely (4)
- ❍ Very Likely (5)

Q21-L Local Choice School Lunch Proposal?

- ❍ Very Unlikely (1)
- ❍ Unlikely (2)
- ❍ Neutral (3)
- ❍ Likely (4)
- ❍ Very Likely (5)

Q22-F How likely is each proposal to help students make better choices at lunch time? Federal Regulated School Lunch?

- ❍ Very Unlikely (1)
- ❍ Unlikely (2)
- ❍ Neutral (3)
- ❍ Likely (4)
- ❍ Very Likely (5)

Q23-L Local Choice School Lunch Proposal?

- ❍ Very Unlikely (1)
- ❍ Unlikely (2)
- ❍ Neutral (3)
- ❍ Likely (4)
- ❍ Very Likely (5)

Q24-F How likely is each proposal to gain acceptance from students?
Federal Regulated School Lunch Proposal?

- Very Unlikely (1)
- Unlikely (2)
- Neutral (3)
- Likely (4)
- Very Likely (5)

Q25-L Local Choice School Lunch Proposal?

- Very Unlikely (1)
- Unlikely (2)
- Neutral (3)
- Likely (4)
- Very Likely (5)

Q26-F How likely are school administrators to request to take part in each proposal?
Federal Regulated School Lunch Proposal?

- Very Unlikely (1)
- Unlikely (2)
- Neutral (3)
- Likely (4)
- Very Likely (5)

Q27-L Local Choice School Lunch Proposal?

- Very Unlikely (1)
- Unlikely (2)
- Neutral (3)
- Likely (4)
- Very Likely (5)

Q28-F How likely are parents and community leaders to encourage schools to adopt each proposal? Federal Regulated School Lunch Proposal?

- ❍ Very Unlikely (1)
- ❍ Unlikely (2)
- ❍ Neutral (3)
- ❍ Likely (4)
- ❍ Very Likely (5)

Q29-L Local Choice School Lunch Proposal?

- ❍ Very Unlikely (1)
- ❍ Unlikely (2)
- ❍ Neutral (3)
- ❍ Likely (4)
- ❍ Very Likely (5)

Q30-F How likely are public policy makers to support each proposal? Federal Regulated School Lunch Proposal?

- ❍ Very Unlikely (1)
- ❍ Unlikely (2)
- ❍ Neutral (3)
- ❍ Likely (4)
- ❍ Very Likely (5)

Q31-L Local Choice School Lunch Proposal?

- ❍ Very Unlikely (1)
- ❍ Unlikely (2)
- ❍ Neutral (3)
- ❍ Likely (4)
- ❍ Very Likely (5)

Q32 Which of the following best describes your view on what the US government should do? Choose one.

- ❍ Ban controversial new food technologies such as genetic modification, cloning, irradiation or nanotechnology. (1)
- ❍ Require food companies to label foods that use genetic modification, cloning irradiation or nanotechnology. (2)
- ❍ Maintain current level of regulations on genetic modification, cloning, irradiation and nanotechnology (3)
- ❍ Decrease regulations and make it easier for food companies to use new food technologies genetic modification, cloning, irradiation or nanotechnology (4)
- ❍ Make no restrictions on new food technologies such as genetic modification, cloning, irradiation, and nanotechnology. (5)

Q33 Which of the following best describes your view on what the US government should do?

- ❍ Create an agency to plan food production and distribution to improve nutritional intake (1)
- ❍ Use extensive taxes and subsidies to promote healthier foods (2)
- ❍ Maintain current regulations designed to promote healthier foods which include mandatory nutritional labels on foods and establishing suggested dietary intake (3)
- ❍ Decrease efforts to promote healthier foods (4)
- ❍ Eliminate all food health regulations; allow citizens to make their own food choices (5)

Q34 Which of the following best describes your view on what the US government should do?

- ❍ Ban imports of foreign foods (1)
- ❍ Require country of origin labeling for all foods produced outside the US (2)
- ❍ Maintain current policies toward foreign foods (3)
- ❍ Reduce regulations on food imports (4)
- ❍ Repeal all laws which would impede food imports (5)

Q35 Which of the following best describes your view on what the US government should do?

- ❍ Ban the use of trans fats, saturated fats, and other unhealthy ingredients in food production (1)
- ❍ Increase regulations to restrict the use of trans-fats, and other unhealthy ingredients in food production (2)
- ❍ Maintain current policies on trans fats and saturated fats (e.g., mandatory labeling in the supermarket) (3)
- ❍ Reduce regulations on trans fats and saturated fats (4)
- ❍ Make no law regarding trans fats, saturated fats, and other unhealthy food ingredients, leaving people to take responsibility for their own diet (5)

Q36 The following will allow you to tell us more about how you feel. Please answer openly and honestly. In your opinion, what are some ideas to improve the school lunch program?

Q37 What might be some things that make it hard to improve school lunch programs?

Q38 What are some of your thoughts about student accessibility to high fat, high sugar or high calorie foods?

Q39 Is there any other information about nutrition, school lunch programs or other issues you would like to share with us on this survey?

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