

EXPLORING DETERMINANTS OF FOOD INSECURITY IN IOWA by Allison Meyer

Food insecurity is a complex and far-reaching issue that defies boundaries of socioeconomic status, age, race, and location. The US Department of Agriculture (USDA) defines food insecurity as “the limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.” In 2018, nearly one in six individuals surveyed in Iowa had experienced food insecurity in the last twelve months. However, food insecurity is not an isolated problem. Oftentimes, it is a result of other issues that an individual may face, as well as causing implications on other areas of an individual’s life. By addressing food insecurity in our community and communities across the nation, we can drastically improve the quality of life of members of these communities. The purpose of this research was to isolate variables that show evidence of an association with food insecurity among individuals in Iowa to help paint a clearer picture of the inter-connectedness of the issue. The results of this research show that individuals failing to fulfill their basic needs are suffering from compounded disadvantages that are not being addressed by the current system.

METHODS

The data used in this research was collected as a part of the State Innovation Model (SIM) Statewide Survey conducted between late 2018 and early 2019. This survey collected data regarding health status and use of health care for 2,472 Iowa residents that were over the age of 18 at the time of the interview. The surveys were administered over the phone.

The main variable of interest in this research, as mentioned above, is food insecurity. Food insecurity was measured based on each individual’s response to a survey question which reads, “In the last 12 months, how often would you say that the food you bought just didn’t last and you didn’t have money to get more?” If an individual responded “Never” to this question, they were considered food secure. If an individual responded “Sometimes” or “Often” to this question, they were considered food insecure. Based on this, 16% of the survey respondents are considered food insecure.

A wide range of variables were included as possible determinants of food insecurity. Basic demographic variables were measured, including age, race, highest level of education attained, number of children in household, and population size of place of residence. Aside from these, other variables measured and included were chronic health conditions, status of mental health, impairments and limitations, stability of housing situation, and possession of a driver’s license. Select variables were collapsed into fewer categories. Collapsing categories that have few observations in them can produce clearer results. For example, the original survey question measuring age divided the respondents into six different age categories. Once this variable was collapsed, respondents were divided into two age categories: over the age of 65, and under the age of 65.

RESULTS

Once the appropriate variables were collapsed, cross-tabulation was run between the main variable of interest, food insecurity, and each of the other variables to look for evidence of associations between the variables. Evidence of relationship between two variables was confirmed if over 50% of individuals identified themselves as having a certain characteristic also identified themselves as food insecure. The results confirmed that a number of the variables did appear to have a relationship with rates of food insecurity.

Table 1. Evidence of Variables’ Relationship with Rates of Food Insecurity

	Evidence of Relationship	No Evidence of Relationship
Physical Environment	Housing Stability	Population Size
	Driver’s License	
Health	Mental Health	
	Chronic Physical Health	
Limitations	Impairment	
	Assistance Required	
Demographics	Level of Education	Age
	Race	Number of children

Characteristics of an individual’s physical environment displayed evidence of a relationship with food insecurity, as displayed in Table 1. Individuals that did not pay the full amount of their rent or mortgage payment in the last 12 months reported higher rates of food insecurity. This supports the findings of existing literature that show connections between housing instability and food insecurity (see, e.g., King 2016). Possession of a driver’s license is a variable that produced substantial evidence of an inverse relationship with food insecurity. 14% of licensed drivers reported that they were food insecure, while 52% of individuals that are not licensed drivers reported being food insecure. Population size of the individuals’ city of residence did not provide evidence of a relationship with rates of food insecurity in this study.

Individuals that reported having physical or mental health limitations also reported higher rates of food insecurity than their counterparts. Overall, mental or emotional health appeared to have a relationship with the variable of interest. Only 8% of those who rated their mental health as “Excellent” or “Very Good” reported being food insecure. On the other hand, 50% of those who rated their mental health as “Fair” or “Poor” reported being food insecure. Similarly, individuals that have been diagnosed with a chronic physical health condition reported higher rates of food insecurity than those who have not.

Respondents that are limited in any way in any activities because of any impairment or health problem reported higher rates of food insecurity than those who are not limited. Further, 30% of those individuals that reported having a limitation also reported that they need the help of other persons in handling routine needs, and this subgroup also reported higher rates of food insecurity.

The final category of variables in this study that displayed evidence of an association with rates of food insecurity is basic demographic characteristics. Individuals who completed some college or more reported lower rates of food insecurity than those who completed high school or less. African American and American Indian respondents reported higher rates of food insecurity than white, Asian, and Pacific Islander respondents. As seen in Table 1, age and number of children in a household did not provide evidence of a relationship with rates of food insecurity in this study.

SUBGROUP ANALYSIS RESULTS

After completing the initial analysis, a subgroup analysis was conducted of only respondents that rated themselves as financially insecure, looking at the same range of variables. This was conducted in an attempt to isolate variables that may be associated with food insecurity aside from simply material hardship. Respondents that reported having fair or poor mental health, a chronic physical health condition, limitations because of an impairment, or requiring the help of others for routine needs all reported higher rates of food insecurity. Additionally, inability to pay full rent or mortgage payments and lack of possession of a driver’s license showed evidence of an apparent relationship with rates of food insecurity. Similarly to the initial analysis, age, number of children in a household, and rurality of the place of residence did not appear to have a relationship with food insecurity rates.

LIMITATIONS

A handful of limitations to this research must be considered alongside the results. First, the use of secondary data in this research means that the SIM 2018 Statewide Survey was not administered with the intention to find the determinants of food insecurity. This means that we may not have all the information we need from this survey alone to capture the entirety of the issue. However, the extensivity and depth of the survey lends itself to providing a great foundation from which future research can be pursued. Second, no tests of statistical significance were used. Descriptive patterns in the data were simply observed to provide evidence of apparent relationships. Further research using this data could establish the existence of these relationships by using tests of statistical significance. Third, this research did not take into account the possibility of bidirectionality in the apparent relationships. For example, it is very difficult to establish whether having a chronic health condition determines whether an individual is food insecure, or whether being food insecure can determine whether an individual has a chronic health condition. Therefore, it is important to establish not which direction the apparent relationship may operate, but rather that the two variables are, in fact, connected in some way.

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DISCUSSION

This research adds to the existing literature on food insecurity by using a robust data set to focus on the issue specifically in Iowa. Finding evidence of relationships can assist policymakers in improving the effectiveness of their work. Basic demographic variables appeared to be determinants of food insecurity rates among individuals. Beyond this, however, the consideration and analysis of a wider range of covariates allows the issue of food insecurity to be considered in a farther reaching and more interconnected manner. For example, licensed drivers have much lower rates of food insecurity. Whether or not an individual has a driver’s license can also be related to whether they have impairments, chronic health conditions, and mental health conditions. If these factors are simultaneously considered, then the issue of food insecurity may be able to be addressed more fully. In this regard, this research may also allow Iowa to be used as a case study for states or areas that share characteristics with Iowa. The richness of the data from the SIM Survey is unique and supports the accuracy of the results produced. For these reasons, Iowa proves itself a worthy candidate for other communities to model their research on.

Looking specifically at rates of food insecurity among survey respondents who rate themselves as financially insecure makes an important contribution to previous work that has been done on understanding what may make a poor household food secure. It is imperative, although difficult, to make the distinction between being poor and being food insecure. In this survey, over a third of individuals who reported that they were not financially secure also reported that they were food secure. Observing evidence of relationships within this subgroup can point towards the successes and failures of current policies that target financially insecure populations, who are at a higher risk of being food insecure.

CONCLUSION

The results of this study shed light on vulnerable populations that are struggling to fulfill their basic needs under the current system. By drawing conclusions from a robust data set, I was able to reveal a pattern of disadvantages that highlights both the severity and the interconnectedness of food insecurity in Iowa. Future work should test the relationships between the aforementioned variables, possibly even expanding the range of variables considered. Additionally, interventions must be considered to address food insecurity, its determinants, and its consequences.

References

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