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Priyanka Jayashankar
Iowa State University, priyanka@iastate.edu

Sekar Raju
Iowa State University, sraju@iastate.edu

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Keywords

Perceived food availability, Low-income consumers, Social cohesion, Social networks, Social support, Geographic distance

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Factors affecting perceived food availability: Does social cohesion help increase favorable perceptions of food availability?

Priyanka Jayashankar^a

Sekar Raju^b

^a Priyanka Jayashankar is an adjunct assistant professor at the Ivy College of Business and the Seed Science Center. Address: 3122 Gerdin Business Bldg., Iowa State University, 2167 Union Dr, Ames, IA 50011, USA; email: priyanka@iastate.edu; phone: 515.294.8110

^b Sekar Raju is an associate professor at the Ivy College of Business. Address: 2351 Gerdin Business Bldg., Iowa State University, 2167 Union Dr., Ames, IA 50011, USA; email: sraju@iastate.edu; phone: 515.294.8463 [**Corresponding Author**]

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Abstract

How do social factors (social cohesion, social networks) affect low-income consumers and their perceptions of food availability? Across three studies, this research finds that social factors play an important role in determining the perceptions that these consumers have about their food situation. When reminded about their social networks, low-income consumers report higher levels of food availability. However, this effect holds only if social cohesion is high, indicating that social cohesion acts as a moderator. Another moderator of perceived food availability is the distance at which the social networks are located. When social networks are near (same city), strong and weak social relationships help increase perceptions of food availability. However, when the geographic distance increases (different city), only strong social relationships help. This research finds that self-confidence explains the reason why social factors affect perceived food availability.

Keywords: perceived food availability, low-income consumers, social cohesion, social networks, social support, geographic distance

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1. Introduction

Food insecurity among low-income consumers in the U.S. is relatively high (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2016). The decline in funding for welfare programs in the U.S. has made low-income consumers turn to emergency facilities such as food banks and pantries, donor agencies and urban groups for food provisions (Warshawsky, 2010; Chikweche & Fletcher, 2010). Studies show that one out every seven Americans or over 46 million Americans rely on food aid and about 42.6 million American receive SNAP benefits/food stamps (Feeding America, 2014; Kutner, 2017). Food insecurity, defined as the inability to afford nutritionally adequate and safe foods (Anderson, 1990), is not only attributable to low income levels, but also to socio-spatial inequalities such as the lack of availability of food in low-income neighborhoods and the growth of food deserts with limited access to affordable healthy foods such as fruits, vegetables, grains and low-fat milk (Beaulac, Kristjansson, & Cummins, 2009; Talukdar, 2008).

These concerns highlight the need to have a better understanding of consumers' relationship with food. To be fair, much work has been done in this area. Researchers have extensively examined the factors in neighborhood environments that affect access to healthy food such as finances, transportation, socio-economic factors, emotional responses, etc. (Larson, Story, & Nelson, 2009; Morland, Wing, Roux, & Poole, 2002; Pierce, Sheehan, & Ferris, 2002). However, relatively less work has been done on examining the problem from the consumer's perspective (for example, social processes that affect low-income consumers' perceptions of

food insecurity) even though this problem has been identified as being important (Block *et al.*, 2011; Talukdar, 2008). We attempt to redress this gap by examining the socio-spatial dynamics (strength of relationship and proximity to friends/family) of food insecurity and the role of social networks in enhancing food access from a consumer-centric perspective of food well-being.

We focus on low-income consumers to address the paucity of research in this area. As Pham (2016) said, low-income consumers are the “forgotten working-class consumers” and that much is unknown about them. Further, Carey and Markus (2016) argued that working-class, American consumers are inter-dependent and have a greater focus on cooperation and fitting in. These consumers are embedded in dense social relations and are predisposed to think of the world in relational and inter-connected terms (Shavit, Jiang, & Cho, 2016). Since we are studying the social antecedents of food perceptions, such consumers suit our research question well. Finally, nutritional researchers such as Pierce *et al.* (2002) have called for more research on food security from the perspective of low-income consumers.

Social relationships are defined using terms such as social cohesion, social capital, social networks, and social support. In this research, we use social cohesion and social networks to help understand the effects that social relationships have on perceptions of food availability. Social cohesion is defined as the level of social interaction within social networks and the sense of belonging and unity among members of a community (Kawachi & Berkman, 2000). Social networks refer to the interconnected social relationships. These interconnected relationships are important social support mechanisms because of the emotional and instrumental support the networks provide to individuals (Berkman & Glass, 2000). Perceived food availability is defined as the subjective assessment by a consumer about the availability of quality foods such as fresh vegetables, fruits and low-fat products in their neighborhood.

We conducted three studies and examined how social cohesion, social networks, and geographic distance impacted perceived food availability among low-income consumers. Our major findings are that merely reminding people of their social networks, which are in good standing, helps increase perceptions of food availability; recalling social networks that are of poor quality detract from it. Second, geographically close social networks are more valuable than geographically distant ones because distance apparently mitigates the impact of the closeness of the relationship on food availability perceptions. That is, even relationships that are not very close (acquaintances) help increase food availability perceptions if these people are living in physical proximity.

The significant contributions of this research are that we provide a consumer-oriented narrative of factors affecting food perceptions. We bring together the literature on social cohesion, social networks and social support in a cohesive manner to study food availability perceptions. Theoretically, we contribute to the literature by introducing self-confidence as a key explanatory variable. We examine geographic and social proximity and contribute to our knowledge about how geographic distance influences consumers' social cohesion - a relatively under-examined area in the marketing literature. Finally, we test our hypotheses with low-income consumers – an under-researched population.

The rest of the paper is organized as follows. We first discuss the theoretical underpinnings of food availability by examining the literature on food well-being. In Study 1, we explore the relationship between social cohesion and perceived food availability in the context of low-income consumers. Study 2 examines the moderating role of the quality of the social network in affecting perceptions of food availability among low-income consumers through a field experiment that reminds or does not remind people of their social networks. Study 3

extends the findings of Study 2 by examining the role that social and geographic proximity play in determining perceptions of food availability.

2. Literature review

Food well-being, defined as “a positive psychological, physical, emotional, and social relationship with food at both the individual and societal levels” is situated in the broader context of food insecurity and food availability (Block *et al.*, 2011). The food well-being literature has largely examined the demographic, behavioral and structural factors that affect a consumer’s relationship with food (Morland *et al.*, 2002.) For instance, in a study on low-income, elderly women, Pierce *et al.* (2002) cited limited finances and transportation as barriers to good nutrition. However, this focus on demographics and behavioral factors is limited in scope because other important factors that affect the nutritional well-being of consumers are not considered. For example, van der Horst, Pascucci, and Bol (2014) found that the emotional response of consumers is important. They found that users feel a sense of shame in using food banks. That is, consumers care about how they perceive themselves and how others perceive them. If perceptions of others matter, we argue that incorporating social factors (social cohesion, social networks, etc.) will help us gain a better understanding of low-income consumers and their food perceptions. This line of argument is consistent with the research that finds that the influence of peers/family members affects consumers’ relationship with food (Bublitz *et al.*, 2013). We build on this idea and examine social cohesion in the context of food availability.

2.1. Social cohesion

As mentioned previously, social cohesion refers to the social interactions within social networks and the sense of belonging and unity among members of a community (Kawachi & Berkman, 2000). The extant literature has extensively studied the relationship between social cohesion and health. The general finding in this literature is that social relationships and interactions with people in one's social network are important. Research has found that social isolation results in lower physical activity and less healthy individuals (House, Landis & Umberson, 1988). Conversely, support from friends and family and neighborhood social interactions are positively linked to physical and mental health outcomes (Mulvaney-Day, Alegria & Sribney, 2007), suggesting that social cohesion matters when it comes to a person's health.

Researchers have postulated two reasons why social cohesion helps with health-related outcomes. The first reason has to do with the coping mechanism that social cohesion provides by shielding the consumer from negative effects of stress. Social support helps consumers cope with stressful life situations and anxiety, which ultimately leads to better health outcomes (Cohen & Wills, 1985; Beckes & Coan, 2011). Similar results have been found with low-income consumers - social networks helps these consumers feel more confident about coping with risks arising from poverty and low literacy (Viswanathan, Sridharan, & Ritchie, 2010.) In a study on vulnerable populations and food, social support provided a buffering effect that reduced food insecurity in those populations (Gichunge *et al.*, 2015).

The second reason relates to the enhanced self-efficacy and self-esteem that a person feels because of the increased social support from social cohesion. For example, in their study on student athletes, Rees and Freeman (2007) have found that perceived social support and actual received social support affect self-confidence positively. Supposedly, students' belief in their

self-efficacy and self-esteem increased to a level that positively reflected on their self-confidence. Bandura (1997) has found that consumers with higher levels of social cohesion report a higher level of self-efficacy that provided them the necessary fortitude to face a challenge. More generally, health researchers have found that people who receive higher levels of social support are more active and lived healthier lives (Anderson, Wojcik, Winnet, & Williams, 2006).

It is pertinent to note that consumers perceive increased social support for both the reasons mentioned previously (coping mechanism or self-efficacy). The difference is that coping is more about avoiding the downsides, while increased self-efficacy is about boosting the positives (self-confidence). Irrespective of the cause, we argue that good social networks contribute to household-level food security (Martin, Rogers, Cook, & Joseph, 2004).

To our knowledge, the consumer behavior literature has not examined the effects of social cohesion on food perceptions. However, the explanation that self-efficacy increases with social cohesion is significant because it provides a mechanism to understand why participants may respond to social cohesion and perceptions of food security. If self-efficacy increases because of social cohesion, we argue that our participants feel less insecure about food availability because they have more self-confidence in their ability to handle their situation.

Therefore,

H1: Social cohesion positively affects perceived food availability.

3. Study 1

This study was conducted to test the basic premise that social cohesion and perceptions of food availability are correlated as stated in H1. We operationalized perceived food availability by

examining it in a healthy food context. We chose healthy foods for a variety of reasons. (1) Low-income consumers in the United States (U.S.) have more ready access to fast foods and cheaper unhealthy foods than healthy foods. (2) By using healthy foods, rather than all foods, we reduce the variance and increase the sensitivity of our dependent measure. This allows us to examine our hypotheses with a relatively smaller sample size than would be possible using all foods. (3) Prior research suggests that the nutritional value of foods is more important than just the calorific value in determining the quality of life of low-income consumers (Osorio, Corradini, & Williams, 2013). Although we study availability of healthy foods, we believe that our findings apply broadly to all foods since our process explanation is common to all foods and not specific to healthy foods alone.

All questions in the survey were derived from previously published scales. A three-item scale developed by Mujahid, Diez Roux, Morenoff and Raghunathan (2007) was used to measure perceptions of food availability (A large selection of fresh fruits and vegetables is available in my neighborhood grocery/food stores; The fresh fruits and vegetables in my neighborhood grocery/food stores are of high quality; A large selection of low-fat products is available in my neighborhood grocery/food stores). Responses were captured on five-point scales anchored by strongly disagree and strongly agree. An index of perceived food availability was created since the inter-item reliability was high ($\alpha = .81$).

Social cohesion was captured using a four-item, five-point scale anchored by strongly disagree and strongly agree based on a scale by Mujahid *et al.* (2007). Respondents were asked to consider their immediate neighborhood when answering the questions (My neighbors are willing to help; People in my neighborhood generally get along with each other; People in my

neighborhood can be trusted; People in my neighborhood share the same values; $\alpha = .84$). The items were averaged to form a social cohesion scale (see appendix A).

Past studies (Alwitt & Donley, 1997; Cotterill & Franklin, 1995; Morton, Bitto, Oakland, & Sand, 2005; Powell *et al.*, 2007; Pardia, Prasad, Suratkar, & Gittelsohn, 2014) have identified a variety of variables such as distance to grocery stores, food bank infrastructure, ethnicity, race, level of schooling, etc. as being important determinants of disparities in food access. To remove their effects, these variables were collected in the survey and included in the analysis as control variables. They are not discussed in detail since they do not form the main purpose of the study.

The study was conducted among low-income consumers in a large mid-western city in the U.S. Participants were selected from six randomly selected local food pantries from a larger set of food pantries in the city. Trained data collectors visited these pantries over a period of three months and approached every fifth adult participant for participation in the study. Surveys were administered either in English or in Spanish (back-translated) to 435 participants (81% had annual income less than \$25,000). Participants were paid \$5 for their participation. The survey took approximately 15 minutes to complete.

3.1. Results

A regression analysis with perceived food availability as the dependent variable and social cohesion as the independent variable was conducted. Civic infrastructure, food knowledge, food habits, and demographic variables were included as control variables. The final sample with complete information was 411 after accounting for missing data.

As predicted by H1, social cohesion had a significant positive effect on food availability ($\beta = .21, t = 4.42, p < .001$). The analysis also revealed that the control variables (distance to grocery store, civic infrastructure, education, ethnicity, etc.) were significant predictors of perceived food availability consistent with prior research findings. The result from this study supports our hypothesis that social cohesion predicts perceived food availability for low-income consumers.

If social cohesion is positively related to food availability perceptions, this raises an interesting question that might improve consumer's well-being. That is, if social cohesion is an important determinant of food availability, would it be possible to remind low-income consumers of their existing social networks and thereby, increase their social capital awareness and thus influence their food availability perceptions? While Study 1 established a correlation between social cohesion and food availability, the question whether recall of social networks affects food availability (examined in Study 2) establishes a causal link from social cohesion to food availability. This is the major contribution of study 2.

4. Study 2

There is limited research in the consumer behavior literature on how perceptions/cues of social networks affect subjective well-being. Psychology scholars such as Uchida *et al.* (2008) have indicated that perceived emotional support is positively associated with subjective well-being in inter-dependent cultures in comparison to independent cultures. This study and the literature on working-class consumer behavior (see Carey and Markus, 2016) motivated us to posit that working-class consumers are more pre-disposed to view their subjective well-being favorably when they are reminded of their social support.

Past studies have linked social support (market interactions) with the well-being of vulnerable consumers such as the elderly. For example, Kang and Ridgeway (1996) have suggested that elderly consumers who frequently engage in market-based social interactions in commercial environments such as stores were psychologically and physically better off than those that engaged less frequently in such activities. They have reasoned that market-based social support boosts elderly consumers' positive illusions, which, in turn, enhances their physical and psychological health. Besides market-based interactions, social capital and social cohesion at the neighborhood level also enhance physical and behavioral well-being. For example, Cramm, van Dijk & Nieboer (2012) have proposed that neighborhood social capital and cohesion (in the form of dependencies among neighbors) influences well-being through psycho-social processes such as the provision of affective support and the enhancement of self-esteem and mutual respect.

We extended this logic of linking social cohesion with well-being to the food context and examined a simple idea to test the effectiveness of creating mindfulness of consumer's existing social cohesion and social networks. Our premise was that if consumers were reminded about their social networks, they are going to be conscious of their social support. If these social networks are in good standing (we use neighborhood quality as a proxy measure to understand the quality of the social network), consumers should feel more self-confident about the support they have socially and that should positively affect their outlook. This should result in higher perceptions of food availability. On the other hand, reminding consumer of their social networks that are in poor standing (indicated by a poor neighborhood quality score) should make them feel less confident of the social support they have and the diminished social capital should result in lower perceptions of food availability (Morton *et al.*, 2005). Not reminding them of their social networks should not bring to mind their social support.

H2: Reminding consumers of good social networks will enhance perceptions of food availability relative to reminding them of poor social networks or not reminding them of their social networks (interactive effect).

Quality of the neighborhood was deemed an adequate measure of the social network quality because participants in our study were asked to think of their immediate community (neighborhood) when answering the questions in the survey. Therefore, we believe that the questions about the neighborhood quality served as an indirect measure of whether they felt that their immediate social network was of good or poor quality.

4.1 Methodology

Social network cue and social network quality were the variables of interest. Social network cue was a manipulated variable (Cued or Not Cued) and social network quality was measured using neighborhood quality as a proxy as explained previously. Ninety-two participants randomly selected from two local food pantries participated in the study. The experiment was conducted in a non-laboratory setting (food pantry). On agreeing to participate in the study, participants were handed at random one of two versions of the questionnaire that manipulated the cue for social network as explained below.

Participants assigned to the Not Cued condition first reported their perceived food availability using the same questions as in Study 1 followed by questions asking them to think about their social networks and the quality of their neighborhood. Participants were asked to think of their friends, neighbors, relatives and answer questions about the number of friends (relatives) they had, the number of friends (relatives) they felt close to, and how well known they were in their church/religious group to remind them of their social networks. The neighborhood

quality question used three items (Neighborhood is a good place to live in; feel at home in my neighborhood; neighborhood is a good place for kids to grow up). An additional benefit of this indirect measure was that it helped avoid participant's social desirability bias in answering direct questions about their quality of their social networks. Finally, the respondents answered some demographic questions (sex, employment, ethnicity, race, etc.) and completed the study.

Participants assigned to the Cued condition answered the same questions as participants in the Not Cued condition except that the order in which they answered the questions was different. Cued condition participants answered the questions about their social network and neighborhood quality first before answering the questions about perceived food availability and demographics. Therefore, in both conditions, participants answered the same questions except that in the Cued condition, participants recalled their social networks and rated the neighborhood quality before answering the question about perceived food availability. The demographic questions were used for classification purpose and were not analyzed further.

By changing the order of the questions, participants' recall of their social networks was manipulated. Therefore, the questionnaire itself became the tool to manipulate the experimental conditions.

4.2. Results

A linear regression analysis was conducted to test the hypothesis. The expectation was that social network cues and neighborhood quality would jointly predict perceived food availability resulting in an interaction.

 Insert Table 1 and Figure 1 here

The results revealed a significant main effect of social network cue ($\beta = -1.00, t(85) = -2.75, p < .01$) and a marginally significant main effect of neighborhood quality ($\beta = .22, t(85) = -1.75, p = .08$). Importantly, these main effects were qualified by a significant interaction between social network cue and neighborhood quality ($\beta = 1.08, t(85) = 2.92, p < .01$).

Since the hypothesis called for a specific pattern of results, each level of social network cue was examined next. We expected that cuing participants about their social network in good standing would result in perceptions of higher food availability compared to reminding them of poor social networks. When participants were not cued to their social networks, we expected a baseline effect. Consistent with this expectation, neighborhood quality was a significant predictor both in the Cued ($\beta = .59, t(45) = 4.88, p < .001$) and the Not Cued conditions ($\beta = .31, t(40) = 2.07, p < .05$). In both cases, as the neighborhood quality increased, perceived food availability also increased. However, in the case of the Cued condition, the slope of the line was significantly greater than in the Not Cued condition, resulting in the significant interaction effect. Therefore, living in a good quality neighborhood resulted in greater perceived food availability in both Cued and Not Cued conditions, but when reminded of their social networks, the increase in the perceived food availability was significantly greater for good quality neighborhoods compared to living in poor quality neighborhoods. These results support H2.

4.3. Discussion

Do social networks matter in the context of perceptions about food availability? The answer is a qualified one that requires knowledge of the quality of the social network to understand the effect. Just the knowledge of consumer's social networks is insufficient. Whether these social networks are good or bad matters too. When the social networks are in good standing, reminding consumers of their social networks has a positive effect on perceptions of

food availability. Our argument was that strong social networks reminded people of the existence of strong social support, and this affected their outlook about their food availability. When the cues of social networks brought to mind lower quality relationships, these cues made their perceptions of their food availability less favorable. These findings on social networks are consistent with the findings in the food well-being literature and the capabilities framework of well-being that finds that strong social networks and trust empower consumers (Ansari, Munir, & Gregg, 2011). Further, this study adds to the findings from Study 1. While the previous study was based on correlations, this study adds causality and establishes the direction of the effect from social cohesion to food availability perception.

We now turn our attention to why social networks in good standing have this effect on perceived food availability. Prior research has found that social support networks are important to the well-being of consumers (Golden *et al.*, 2009; Lauder, Mummery, Jones, & Caperchione, 2006). In a recent study, Hammelman (2018) found out that migrant women in the US rely on social networks to obtain affordable, quality food. Consistent with these findings, our consumers, when reminded about their social networks in good standing, might have felt less lonely and more self-confident about their ability to handle a challenge and this would have affected their perceptions about their food availability. Study 3 is conducted to test this process explanation and examined the role of consumer's self-confidence.

Another interesting question that has not received much attention in the literature is the moderating effect of geographic proximity on social networks and food availability. That is, the current study examined the effect of social networks that are located close to the participant. What if these social networks are located in a different city (geographically far) rather than being in the same neighborhood (geographically close)? Further, we examined only close relationships

in this study. What if the relationship is weak rather than strong? Does that affect the perception of social support that one feels from thinking about their social network? That is, the question of how geographic distance (near or far) and social closeness (strong or weak) interact to affect perceptions of food availability is examined in study 3.

5. Study 3

Prior research suggests that both geographic distance and social closeness enhance social influence (Meyners, Barrot, Becker, & Goldenberg, 2017). As was argued previously, social closeness enhances well-being for consumers by increasing emotional support and allowing better coping strategies by increasing the self-confidence that consumers have in being able to handle the stress of daily life (Dominguez & Watkins, 2003). Geographic distance also affects well-being because chance encounters and the opportunity to build and maintain ties, over an extended period of time, benefits consumers when they live in geographic proximity (Rivera, Soderstrom, & Uzzi, 2010). Additional evidence indicates that informal social ties are strengthened by face-to-face communications and by sharing of information through word of mouth that are likely to happen more frequently when social networks are in close proximity (Viswanathan, Echambadi, Venugopal, & Sridharan, 2014).

While social closeness and geographic distance are both independently important, we argue that the interactive effect will shed light on how they jointly affect consumer's food perceptions. Specifically, consumers that have socially weak ties with social networks located far away benefit less from the social support enhancement and self-confidence boosting effect that we argued for in the previous study. Therefore, we expect this condition to have the weakest

effect on food availability; an expectation that is consistent with prior research (Meyners *et al.*, 2017).

When consumers recall social ties that are weak, but the social network is located geographically nearby, we argue that such consumers perceive substantial social support from these networks. This sounds counterintuitive but a substantial body of work based on the seminal study by Granovetter (1973) finds that consumers stand to benefit more from weak ties than strong ties because weak ties allow for greater diffusion of access to resources and other benefits across social networks. As shown with job seekers, individuals who have weak ties display greater opportunities for mobility and benefited more from those weak relationships. In a different context, it has been found that for inventors, the marginal benefit of geographic proximity is greater for those that have weak social relationships (Agrawal, Kapur & McHale, 2008.) Based on this work, we expect people in geographically near, but socially weak relationships to benefit from the social network support and display greater self-confidence, resulting in favorable perceptions about food availability.

In the case of consumers with strong social relationships from geographically proximate networks, we expect the results to replicate the findings from the previous study and show favorable food availability perceptions. When the social relationship is strong, but the geographic distance is far, we believe that consumers will still derive substantial social support from these social networks irrespective of the distance. Distance does not hinder communication that allows social support to exist. Based on the above discussion, we predict an interaction between social closeness and geographic distance.

The key to the interaction explained above is the presence of social support that increases the consumer's self-confidence in facing challenges (see Viswanathan *et al.* 2010). Therefore,

we argue that self-confidence plays a mediating role in the effects on perceived food availability predicted for social closeness and geographic distance.

H3: Social closeness and geographic distance will interact to affect perceptions of food availability.

H4: Self-confidence will mediate the effects of social closeness and geographic distance on perceptions of food availability.

5.1. Methodology

A 2x2 between-subjects factorial design with social closeness (strong versus weak) and geographic distance (near versus far) as the independent variables and perceived food availability as the dependent variable was conducted. The independent variables were manipulated as follows. All participants were asked to think of their friends and family and respond to two questions: “How many friends that are *very dear* (not very dear) to you live in *the same* (a different) city as you do?” and “How many of your relatives that are *very dear* (not very dear) to you live in *the same* (a different) city as you do?” The words in italics were replaced by the words in parenthesis to create four different combinations of the questionnaire. By asking participants to think about and reflect on different social relationships in different geographic locations, we manipulated the focus of their thoughts to reflect on social closeness and geographic distance. The manipulation was followed by the perceived food availability question.

Participants were then asked to think of their current situation and answer questions on their level of self-confidence in their ability to deal with challenges (I feel self-confident; I am confident I can meet the challenges that may come up in my life; scales were anchored by “not at all” and “very much so”; $\alpha = .87$). These questions were adapted from prior research on self-

confidence (Bearden, Hardesty & Rose, 2001). Demographic questions were collected as in previous studies for classification purposes. This completed the study.

One hundred and twenty participants from two local food pantries were randomly assigned to one of the four conditions and received the appropriate questionnaire in English or in Spanish (back translated) as required. The experiment was conducted in a non-laboratory setting (food pantry) as in Study 2. Participants received a monetary compensation (\$5) for their participation. Three participants were dropped from the study because they did not comply with the study requirements and missing data from one participant left us with a sample size of 116 participants.

A two-way ANOVA with social closeness and geographic distance as the independent variables and perceived food availability as the dependent variable revealed a significant main effect of social closeness ($F(1, 112) = 4.42, p < .05$) with socially close friends and relatives resulting in a perception of greater food availability. As expected, the main effect was qualified by a significant interaction ($F(1, 112) = 5.12, p < .05$).

Contrasts tested the specific nature of the interactions. As expected, participants in the socially weak and geographically far condition ($M = 3.83$) reported significantly lower perceived food availability compared to the other three conditions [socially weak, geographically near condition ($M = 4.17, t(112) = 1.98, p = .05$, significant); socially strong, geographically far condition ($M = 4.35, t(112) = 3.03, p < .01$, highly significant); socially strong and geographically near condition ($M = 4.15, t(112) = 1.90, p = .06$, marginally significant).] No other differences were significant. Collectively, these results support H3.

 Insert Table 2 and Figure 2 here

To test whether self-confidence differed across conditions, a two-way ANOVA with social closeness and geographic distance as the independent variables and self-confidence as the dependent variable revealed a significant interaction ($F(1, 113) = 4.60, p < .05$). None of the main effects were significant. The pattern of results was similar to that found with perceived food availability. The socially weak and geographically far condition revealed the lowest level of self-confidence ($M = 2.86$) compared to the socially weak but geographically near ($M = 3.28$), socially strong but geographically far ($M = 3.31$), and socially strong and geographically near ($M = 3.06$) conditions.

We conducted a moderated mediation analysis with self-confidence as the mediator, social closeness and geographic distance as the independent variables, and perceived food availability as the dependent variable using PROCESS (Hayes 2013; Model 8) with 5000 bootstrap samples and 90% confidence interval. The analysis revealed that the direct path of the effect of the interaction of social closeness and geographic distance was significant ($c = -.43, t(111) = -1.80, p < .08$). Importantly, the indirect effect of the interaction on perceived food availability through self-confidence was significant ($a \times b = -.11; -.27$ to $-.01$), suggesting that self-confidence partially mediated the interactive effect of social closeness and geographic distance on perceived food availability supporting H4.

Overall, the pattern of results revealed that people benefitted from geographically near social networks. Interestingly, the geographical distance mattered for both close relationships and weak relationships, indicating the importance of having social networks in relative proximity even if the relationship bonds were not strong. For people, whose social networks were geographically further away, food availability perceptions were positively impacted only when

social relationships were strong. With geographically far and socially weak social networks, perceptions of food availability were affected negatively. Further, we found evidence that the self-confidence of our participants in handling future life challenges was affected based on the social networks that were primed. Consistent with our argument, self-confidence increased when social support increased, providing evidence that self-confidence played an important role in affecting perceptions of food availability. This result allowed us to understand the path by which the effects we observed occurred. These results attest to the importance of geographic distance and social closeness in understanding the effects on perceptions of food availability.

6. Discussion

What role does social cohesion play in determining food-related perceptions? Across three studies, we find that food perceptions and social cohesion are related. Each of our studies adds a level of complexity that in total provides evidence that social cohesion matters when it comes to perceptions of food availability. The first study established a correlational link between the two variables. The second study found that the quality of the relationship was an important moderator. Social relationships that were in good standing helped increase perceptions of food availability, while reminding consumers about poor social networks had a negative effect. The final study extended these results by combining the effects of geographic distance and social closeness of the social networks on food availability perceptions. We found that strong and weak social relationships affected food perceptions equally when these social networks were geographically near. When distance increased, strong social networks continued to have a positive effect, but socially weak relationships affected food availability perceptions negatively. Finally, we found support that reminding people of their social networks increased the self-

confidence that consumers had in handling challenges that might come their way and this self-confidence partially mediated the effects of the independent variables on food availability perceptions. This allowed us to understand the process through which social and geographic proximity affected food availability perceptions.

Our goal was to provide a consumer-oriented narrative of food security and well-being and to add to the extant literature on transformative consumer research. By establishing the conceptual linkages between social cohesion and perceived food availability, we extend Bublitz *et al.*'s (2013) food well-being concept to low-income consumers in a developed economy. As stated earlier, low-income consumers are an under-represented group in the marketing literature and this research adds insight to this group of consumers (Pham, 2016; Carey & Markus, 2016).

By demonstrating how social complexity positively impacts perceived food availability, we advance new insights into food well-being. Merely reminding consumers about their social network through cues seem to be enough to positively impact consumer perceptions of their food availability. Presumably, this effect also extends more broadly to consumer well-being in areas other than food security such as health, financial well-being, etc. If that is the case, these results suggest a simple and cost-effective way of changing consumer perceptions for the better. An important extension to the current literature is that we find the quality of the relationship is important and must be taken into consideration.

This research also adds to the literature on geographic distance and its effects on consumers. Much of the work on geographic distance and its effects in the marketing literature has been on adoption of new technology or as a response to company actions. Very few studies have examined geographic distance and its effects on consumer thought processes and attitudes. When social closeness is added to the mix and experiments are considered, even fewer studies

exist (for an exception, see Meyners *et al.*, 2017). However, the impact that geographic distance has on consumers is real and significant. This research improves our understanding of the importance of geographic distance and its interaction with social closeness.

The extant marketing literature discusses how subsistence consumers fulfill both survival and higher order needs such as honoring social relationships or promoting local stores (Subrahmanyam & Gomez-Arias, 2008.) In a similar vein, Carey and Markus (2016) argue that working class consumers in the US depend on their social networks to cope with limited resource availability and to fulfil their duties to others. We build on the above streams of consumer behavior literature by examining how cues on social cohesion, social networks and social support further enhance low-income consumers' subjective well-being.

The role that self-confidence plays in affecting low-income consumers' lives is revealing. Even simple efforts at reminding consumers about their social support seem to boost self-confidence. This adds to the evidence on low-income consumers and their confidence levels when interacting with others (Viswanathan *et al.*, 2010). While consumer self-confidence has been discussed in the context of information acquisition, personal outcomes, knowledge and marketplace interfaces (Bearden *et al.*, 2001), there is limited scholarship on how self-confidence along with social support cues enable low-income consumers to cope with perceived food insecurity. The implications of our findings are far-reaching, as confidence (through social support cues) could help vulnerable consumers in developed economies cope better with felt deprivation. Since self-confidence often underlies consumer behavior, understanding the levers that control this is a major finding.

Another area that we delineate through our research is the difference between “felt deprivation” and actual deprivation. Prior research has identified this difference and we find

evidence that felt deprivation is a useful tool to study (Blocker *et al.*, 2013). This research contributes to the extant literature on how social cohesion and social networks mitigate “the felt deprivation” of consumers. However, an unanswered question is to what extent perceived (felt) deprivation correlates with actual deprivation.

6.1. Conclusions

This research suggests a simple approach to leveraging social networks for the well-being of consumers. Reminding consumers that they do have social support networks might help them feel more self-confident and enhance their well-being. However, more research is required to document this effect. Tracking behavioral measures rather than just relying on self-reports will enhance our understanding of the magnitude of the effects suggested in this research. A future research opportunity exists in studying the interactions between members of the social network. That is, we relied on recall of the social structures in our studies. There is value in also knowing how interactions take place within these social networks.

Food policy makers are faced with a paradoxical challenge of tackling food insecurity and countering obesity. Several food-insecure households have no choice but to fall back on food that is calorie-dense but not nutritious. Further research on how healthy food choices can be promoted by providing social cohesion cues might be helpful. While our study focused on perceived food availability, we encourage more in-depth, longitudinal studies that examine how social cues affect healthy food consumption among subsistence consumers.

Our experiment on social cues focused on perceived food availability with low-income consumers. We recommend that a similar experimental design could be used for studying other aspects of felt deprivation. For example, can social cohesion cues mitigate perceptions of

financial insecurity, or help with quality of life perceptions for patients with long-term medical conditions? Another area of interest would be to study how children perceive social cohesion and its effects on their food choice (Raju, Rajagopal, & Gilbride, 2010).

Our research has important implications for food policy makers and marketing practitioners serving subsistence consumers. Our findings indicate that low-income consumers respond favorably to social cues. We suggest that food marketers use social cues to create favorable attitudes among low-income consumers with the goal of helping them make healthier food choices. This will help address some of the concerns of having consumers make calorie rich but nutritionally poor choices. Our findings on self-confidence, social closeness and geographic distance can also inform policy. For example, policy makers can make vulnerable consumers more inclined toward making healthy food choices by boosting their self-confidence through appropriate social networks.

Our research underscores the importance of socially and geographically close networks in affecting the perceived well-being of low-income consumers. Policy makers and food marketers can tap the potential of consumer-to-consumer networks and neighborhood support groups to educate communities on making healthy food choices (Osorio *et al.*, 2013). This opens the possibility for food marketers to consider creating inclusive business models that harness the value of social networks, peer pressure and communally managed resources for low-income consumers (Weidner, Rosa, & Viswanathan, 2010).

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Table 1

Effect of Social Network Cues and Neighborhood Quality on Perceived Food Availability (Study 2)

Variable	Unstandardized Coeff. B	SE B	β	<i>t</i>
Constant	3.40	0.35		9.69*
Social Network cue (SNC)	-1.43	0.52	-1.0	-2.75*
Neighborhood quality (NQ)	0.16	0.09	.22	1.75
Interaction: (SNC x NQ)	0.40	0.14	1.08	2.92*

Note: * $p < .01$; SE_B – Standard error of unstandardized coefficient

Table 2

Effect of Social Closeness and Geographic Distance on Perceived Food Availability (Study 3)

Social closeness	Geographic Distance	
	Near	Far
Strong	4.15	4.35
	(.61) n = 31	(.55) n = 29
Weak	4.17	3.83
	(.66) n = 29	(.73) n = 27

Note: Table displays means and standard deviation (numbers in parenthesis)

Figure 1

Predicted Values for Social Cue and Neighborhood Quality (Study 2)

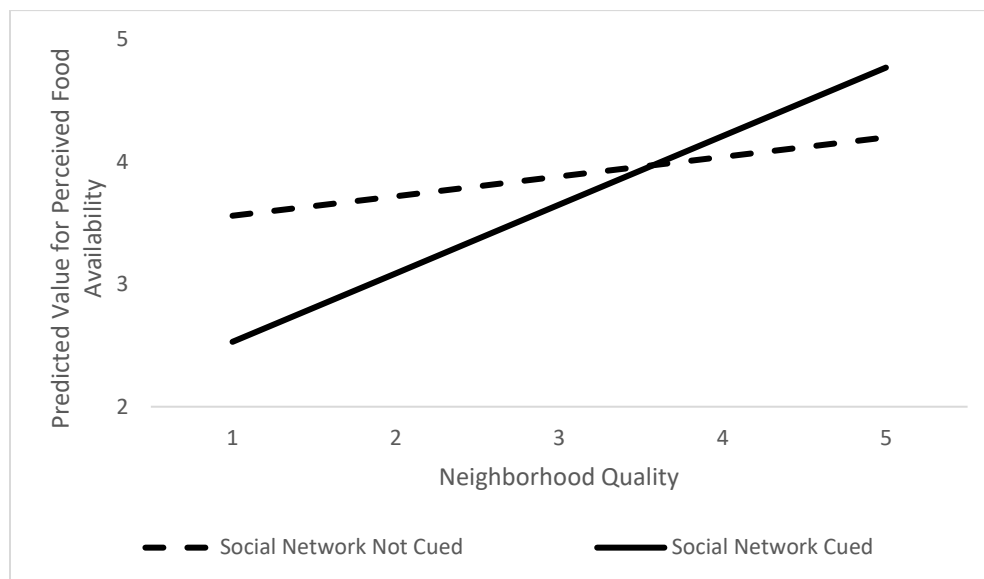
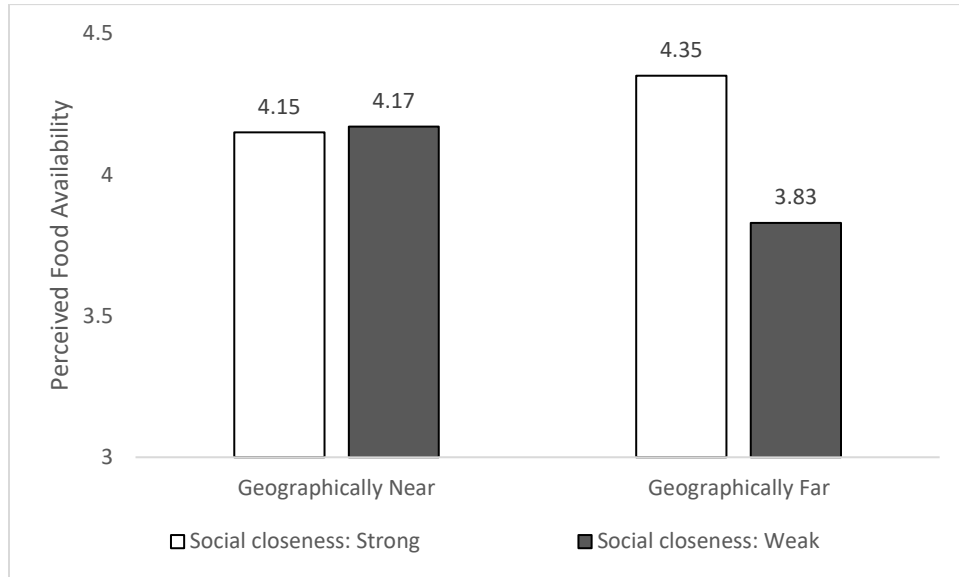


Figure 2

Study 3: Social Closeness and Geographic Distance on Perceived Food Availability



Appendix A

List of items used to measure key variables.

Construct	Items
Social Cohesion	<ul style="list-style-type: none"> • My neighbors are willing to help. • People in my neighborhood generally get along with each other. • People in my neighborhood can be trusted. • People in my neighborhood share the same values.
Neighborhood Quality	<ul style="list-style-type: none"> • My neighborhood is a good place to live in. • I feel at home in my neighborhood. • My neighborhood is a good place for kids to grow up.
Perceived Food Availability	<ul style="list-style-type: none"> • A large selection of fresh fruits and vegetables is available in my neighborhood grocery/food stores. • The fresh fruits and vegetables in my neighborhood grocery/food stores are of high quality. • A large selection of low-fat products is available in my neighborhood grocery/food stores.
Self-confidence	<ul style="list-style-type: none"> • I feel self-confident. • I am confident I can meet the challenges that may come up in my life.