The a one year fi scale. the

Nutrition

The United States offers numerous importantgovernmental support programs, such as the Supplemental Nutrition AssistanceProgram (SNAP) (formerly known as Food Stamp Program1), NationalSchool Lunch Program (NSLP), and the Special Supplemental Nutrition Program forWomen, Infants and Children (WIC). The purpose of these programs are toincrease food security, and more importantly the quality and quantity of foodavailable to individuals. Considering its nutritional perspective, the WICincludes a specific goods lists, such as milk, eggs and, vegetables. Similarly, the NSLP stipulates that each meal for children must to include vitamins A, andC, iron, calcium, protein and less than 10% saturated fat. Hence, both the NSLPand WIC address not only the quantity of food available but also the quality.

SNAP does not have any such restrictions2. The body of literature regardinginvestigations of SNAP is broad. Some studies indicate positive results, namelythat SNAP participation reduces food insecurity (FI) (Kabbani and Kmeid, 2005).

Ratcliffe etal (2011) investigatethe effectiveness of SNAP in reducing FI by using a dummy endogenous variablemodel with that instrumental variables (IV estimator) to manage the mostsignificant issue highlighted in the literature, which is the selection biasproblem. The results show that by using a strong IV model on nationallyrepresentative (Self Invested Personal Pension) SIPP, evidence was obtainedthat SNAP reduced the food- related hardship of a household. Furthermore, Mykerezi, and Mills (2010) evaluatedthe impact of SNAP on FI using the Panel Survey of Income Dynamics (PSID) 1999 data. The authors investigated SNAP participants endogenously to estimate treatmentimpacts as a binary choice by using

state-level errors in over payments orunderpayments of SNAP benefits and a one year FI scale. The results of studyprovide strong positive evidence that FI may decrease at least 19% by participating inSNAP.

The decrease of FI isdeemed to increase participants' health. However, some issues, such as obesityand diabetes have arisen with program, as it supplies additional food, but thegoods chosen depend on participants' preferences. In another words, SNAP does not restrict people's food choices, unlike the WIC or NSLP as mentioned previously. Minnesota requested permissionfrom the U. S. Department of Agriculture (USDA) to prohibit the purchase ofcandy and soft drinks with SNAP benefits (Guthrie et al, 2007). This proposalwas intended to promote diet quality by limiting the purchase of empty caloriesbut it was rejected. California, on the other hand has passed a " HealthyPurchase" pilot program.

For every $1 of SNAP spent on fresh produce, participants refunded a specific portion as a bonus under this program (Guthrieet al, 2007). Nevertheless, no specific restrictions or limitations existregarding the purchasing of junk food such as candy, soft drinks, or fattyfoods. Huang et al (1981) conducted one ofthe early studies regarding SNAP participants' food choices.

The authors usedConsumer Expenditure Dairy Survey (CEDS) to examine the impact of SNAP on low-incomefamilies' food patterns. Their results indicate that behavior related to theamount of food purchased by households may be influenced by SNAP. Theseresearchers focused only on the low-income group, but the sample for currentstudy includes, different income groups.

While the food classifications in thestudy (Huang et al, 1981) refer to food consumed at home, I included both food consumed at home and food eaten away from home in this study. Alsodifferent income groups and food choices are included this study. It may provide more comprehensiveperspective of the evaluation of food choices. Basiotis et al. (1983) evaluatedthe nutrition consumption patterns of low-income SNAP receivers.

They use theEngel curve and data from 1977-1978 Nationwide Food Consumption survey. Theauthors apply a simultaneous equation system for the estimation of food costsand diet component availability levels of food at home. The results of thestudy show that diet component availability level was relatively constantacross households with different income levels. Because different income levelsare address in the current study, I believe it may provide more comprehensiveknowledge about SNAP participants' food choices than Huang et al (1981) andBasiotis et al (1983) did.
Furthermore, Wilde and Ranney (2000)evaluated the mean of food spending among SNAP users and found that participantsspend increased amounts within the first three days of receiving benefits. Thesespending patterns represent shopping frequency and food intake decisions overtime in light of SNAP benefits. The researchers used a non linear Engel curveon CEDS data set. The results indicate that the frequency of households'grocery shopping may be influenced by involvement in the program.

Guthrie et al, (2007) mention thesignificance of SNAP participants choosing food with high nutritional qualityrather than focusing on quantity. Their results suggest that the efficiency ofthe program may be affected by economic factors such as, the budget share ofSNAP and food expenditure

patterns of participants. Correspondingly, Wiig andSmith (2009) investigated the relationship between low-income women's shoppingbehavior and participation in SNAP to examine food choices. They applied ademographic and diet/ health perception questionnaire before measuringparticipants' weight, height, and body mass index (BMI). The results show thatfood choices and grocery shopping behavior depend on participants' economic, environmentalconditions and preferences.

Although the study is similar to the current studybecause it considers the SNAP users' food choices, Smith and Wiig restrictedtheir study only to low-income women. Larson and Story (2009) indicate theimportance of the influence of environmental conditions on households' foodchoices, likewise, Wiig and Smith (2009) mentioned before. Their findings showthat a diet-related environment and supplemental nutrition program, such asSNAP or policy interventions are supported at a population level due toindividual changes. The authors thought possibly ease and sustain if the environment within which choices are made supportshealthful food options. Kreider et al(2012) analyzed the impact of SNAP onchildren's health outcomes by applying a binaryoutcome model and calculating average treatment impact (ATE) for SNAPrecipients on each of the health related outcomes, namely anemia, obesity, andpoor general health. Beatty and Tuttle, (2015)investigated the effects of large benefit changes in SNAP on the foodexpenditure of participants during the economic crisis. The authors used ConsumerExpenditure Quarterly Interview Survey (CEX) data from 2007 to 2010, a periodduring which SNAP benefits increased significantly several times.

Additionally, they use difference-in-difference method, a placebo policy dummy, to check therobustness of the results on expenditure on food eaten away from home collectedCPS. The results show that households change their purchase behavior because ofan increase in in-kind transfer. In another words, SNAP participantssignificantly increase spending on food at home due to benefit increases, and SNAP participation may affectthe receivers health. In summary, the studies mentioned provide some insights into how food choices may be influenced byenvironmental effects, policy intervention and individuals' income level, whichis increased through involvement in SNAP. Subsequently, people's general healthmay be affected. Therefore, the purpose of this study is toexamine how SNAP participation influences households' food choices.

1Consistency of the paper, I use SNAP instead of Food stamp program.
2SNAP only has restriction about alcoholic beverage, tobacco and non food items, such as pet foods and household supplies. For more information see: http://www. fns. usda. gov/snap/eligible-food-items.