

PERCEPTION OF BUREAUCRACY AND WHY IT MATTERS:
EXPLORING THE RELATIONSHIP BETWEEN WIC CLIENTS' BREASTFEEDING
STATUS AND THEIR PERCEPTIONS OF WIC BUREAUCRACY

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A Thesis submitted to the faculty of
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Master of Public Administration

by

Danielle Pineda Horcabas

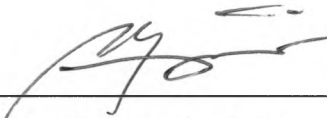
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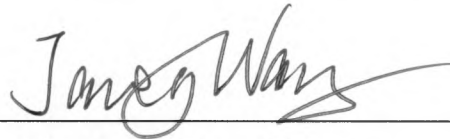
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CERTIFICATION OF APPROVAL

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STATUS AND THEIR PERCEPTIONS OF WIC BUREAUCRACY

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2015

Despite research indicating that breast milk is the best source of infant nutrition, women receiving Supplemental Nutrition Program for Women, Infants and Children (WIC) benefits breastfeed at low rates. This study examines the relationship between WIC clients' perceptions of bureaucratic practices and stance on breastfeeding and the clients' breastfeeding status. Using survey data, correlation and regression are employed for multiple indicators of the independent variable and breastfeeding status. Grounding the analysis in public administration theories, this research concludes that significant associations exist between clients' breastfeeding and their perceptions of bureaucracy, and that policy and programmatic changes directed at modifying the messaging by WIC staff to clients can improve breastfeeding rates among WIC mothers.

I certify that the Abstract is a correct representation of the content of this thesis.



Chair, Thesis Committee

8/10/15

Date

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1. Introduction

The rates of breastfeeding in the U.S. have implications for public health, as this feeding practice is associated with the short- and long-term health outcomes of both children and mothers. Breastfeeding also presents economic implications for families, health care providers, policymakers, and taxpayers, as the immunologic protection that breastfeeding provides can contribute to a decrease in medical costs for individuals and society (Weimer, 2001, p. iv). A 2001 study by the U.S. Department of Agriculture (USDA) Economic Research Service found that a minimum of \$3.6 billion in direct and indirect costs would be saved if exclusive breastfeeding increased to the levels recommended by the Surgeon General [i.e., 75 percent in-hospital and 50 percent at 6 months postpartum] (Weimer, 2001, p. iii). National support for breastfeeding is growing, as evidenced by the inclusion of additional insurance coverage for breastfeeding education and equipment under the Patient Protection and Affordable Care Act of 2010. Despite efforts by federal and state governments to promote breast milk as the optimal food source for infants, however, the U.S. ranks last among industrialized countries for having supportive policies for women who want to breastfeed (Save the Children, 2012, p. 7).

Much research exist documenting why mothers choose not to breastfeed, such as low public acceptance, aggressive marketing of infant formula, lack of education on

breastfeeding techniques, and hospital practices (Weimer, 2001, p. 1). As approximately 53 percent of babies born in the U.S. are participants of the USDA's Supplemental Nutrition Program for Women, Infants and Children or WIC ("WIC at a Glance", 2012), the program is well positioned to promote breastfeeding education and outreach to a significant portion of the country's breastfeeding-eligible population. As such, a significant programmatic strategy of WIC is breastfeeding promotion among pregnant and postpartum participants through several projects, including the *Loving Support Makes Breastfeeding Work* project (Mitra, Khoury, Carothers & Foretich, 2003, p. 168).

Despite these efforts, however, research that highlights low breastfeeding rates among WIC participants compared to rates experienced by the general population of postpartum mothers (McCann, Baydar & Williams, 2007, p. 314) present an intriguing area for exploration. Ryan and Zhou (2006) found that the need for food packages and programmatic changes contributed to this disparity (p. 1136). This requires further study. An understudied variable that may factor behind the low breastfeeding rates among WIC clients is whether client behavior relates to the way public servants and programs, like WIC, are perceived by the clients. Thus, this research explores the following question: *Is breastfeeding status associated with perceptions regarding the WIC bureaucracy and staff, and if so, how may this association be explained through the lenses of public administration and policy?*

1.1. Rationale for Conducting the Study

While WIC takes a public stance in support of breastfeeding as the optimal infant feeding choice, unless medically contraindicated (“Breastfeeding Promotion and Support in WIC”, 2014), WIC’s bureaucratic practices stemming from one-on-one interactions between clients and staff may impact mother’s breastfeeding decisions. This research aims to examine the associations between clients’ breastfeeding status and their perceptions of bureaucrats, specifically WIC staff through the theoretical lenses of street-level bureaucracy, choice architecture and other theories. The results may help inform possible policy or programmatic changes to improve breastfeeding education and support for WIC mothers. This could, in turn, help in increasing rates of breastfeeding initiation and duration at one year to the targeted Healthy People 2020 objectives of 81.9 percent and 34.1 percent, respectively (Office of Disease Prevention and Health Promotion, 2011). As of the writing of this thesis, the author has not found similar research in the field.

1.2. Background

1.2.1. U.S. Government Policies on Breastfeeding

With the knowledge that breastfeeding is one of the most effective preventive measures a mother can chose to promote the health of her child and herself, one of the

goals of the Centers for Disease Control and Prevention (CDC) is to increase rates of breastfeeding in the nation and to promote positive breastfeeding practices. Released in 2011, the agency published the *Surgeon General's Call to Action to Support Breastfeeding*, which outlined the six focus areas to increase breastfeeding: mothers and their families, communities, health care, employment, research and surveillance, and public health infrastructure. Under the focus area of communities, the *Call to Action* promotes:

- Strengthening programs that provide mother-to-mother support and peer counseling;
- Using community-based organizations to promote and support breastfeeding;
- Creating a national campaign to promote breastfeeding; and
- Ensuring that the marketing of infant formula is conducted in a way that minimizes its negative impacts on exclusive breastfeeding.

Also within the report focused on community action, the CDC suggested that WIC programs should expand on the support that women receive during the hospital setting to lengthen the duration of breastfeeding. Moreover, it highlights the negative influence that infant formula marketing has on exclusive breastfeeding and the deterrence it gives for women who have yet to decide on their infant feeding method.

In addition to the *Surgeon General's Call to Action to Support Breastfeeding*, the federal government's health promotion and disease prevention initiative *Healthy People 2020* includes breastfeeding as a major public health issue to be tackled by government agencies at all levels; nonprofit groups, professional organizations, businesses, communities and individuals. The four breastfeeding objectives under the section of Maternal, Infant and Child Health are listed in Table 1 below.

Table 1. Healthy People 2020 Breastfeeding Objectives				
Objectives			Baseline	Target
MICH-21: Increase the proportion of infants who are breastfed				
MICH-21.1	Ever		74.0% of infants born in 2006 were ever breastfed as reported in 2007–09	81.9%
MICH-21.2	At 6 months		43.5% of infants born in 2006 were breastfed at 6 months as reported in 2007–09	60.6%
MICH-21.3	At 1 year		22.7% of infants born in 2006 were breastfed at 1 year as reported in 2007–09	34.1%
MICH-21.4	Exclusively through 3 months		33.6% of infants born in 2006 were breastfed exclusively through 3 months as reported in 2007–09	46.2%
MICH-21.5	Exclusively through 6 months		14.1% of infants born in 2006 were breastfed exclusively through 6 months as reported in 2007–09	25.5%
MICH-22: Increase the proportion of employers that have worksite lactation support programs.			25% of employers reported providing an on-site lactation/mother's room in 2009	38.0%
MICH-23: Reduce the proportion of breastfed newborns who receive formula supplementation within the first 2 days of life.			24.2% percent of breastfed newborns born in 2006 received formula supplementation within the first 2 days of life as reported in 2007–09	14.2%
MICH-24: Increase the proportion of live births that occur in facilities that provide recommended care for lactating mothers and their babies.			2.9% of 2007 live births occurred in facilities that provide recommended care for lactating mothers and their babies as reported in 2009	8.1%

Source: Centers for Disease Control and Prevention

While breastfeeding in the United States is increasing, the rates of duration and exclusivity still remain low, as indicated by the baseline measures above for MICH-21. The implementation of interventions such as those proposed by the *Surgeon General's Call to Action to Support Breastfeeding* would assist in reaching the *Healthy People 2020* targets.

1.2.2. Economic Costs Related to Breastfeeding

The economic impact of suboptimal rates of breastfeeding in the U.S. yields significant excess costs related to preventable health care expenses and infant deaths (Bartick & Reinhold, 2010, p. e1048). A study by Weimer (2001) examined costs savings associated with the treatment of three childhood illnesses that could be expected for varying prevalence of breastfeeding. The analysis indicated that a minimum of \$3.6 billion would be saved annually if the rates for exclusive breastfeeding were at the levels recommended by the Surgeon General (p. iii). This figure reflected costs attributable to the prevention for premature deaths, reduction in medical expenditures (e.g., doctor visits, hospital visits and laboratory tests), and indirect costs, including loss of parental earnings (p. iii).

Bartick and Reinhold (2010) expanded on the 2001 study and conducted a cost analysis for all pediatric diseases impacted by breastfeeding as reported by the Agency

for Healthcare Research and Quality, including necrotizing enterocolitis, otitis media, gastroenteritis, hospitalization for lower respiratory tract infections, atopic dermatitis, sudden infant death syndrome, childhood asthma, childhood leukemia, type 1 diabetes mellitus, and childhood obesity (p. e1048). The researchers found that if 90 percent of families complied with the Healthy People 2010 goal of 17 percent of women exclusively breastfeeding at 6 months, the United States would save \$13 billion annually and prevent 911 deaths (p. e1048 – e1049).

From the results of the research conducted by Weimer (2001) and Bartick and Reinhold (2010), increasing national breastfeeding rates would be cost-effective, as the implementation of these interventions could potentially result in billions of dollars in cost-savings for Americans.

1.2.3. Benefits of Breast Milk

Breast milk is the best food source for most premature and healthy infants, providing the optimal amount of nutrients and antibodies to support a baby's growth (Eidelman & Feldman-Winter, 2012, p. e827). In contrast to infant formula, breast milk has been shown to reduce the risk of obesity, asthma, atopic dermatitis, eczema, celiac disease, inflammatory bowel disease, type 1 diabetes, and childhood leukemia and lymphoma (p. e830). In addition, breastfed babies experience a 36 percent reduction in the risk of Sudden Infant Death Syndrome (SIDS) (p. e829).

Breastfeeding also benefits mothers' health, as they experience a decrease risk of ovarian cancer, breast cancer, Type 2 diabetes and postpartum depression (p. e831). Due to these benefits, the American Academy of Pediatrics recommends that mothers breastfeed exclusively during the first six months of an infant's life and continue to breastfeed for at least one year in combination with the introduction of solid foods (p. e827). As breastfeeding is a public health issue, the National Breastfeeding Awareness Campaign was launched in June 2004 by the U.S. Department of Health and Human Services to promote breastfeeding among first-time parents who otherwise were unlikely to breastfeed ("National Breastfeeding Campaign", 2010).

1.2.4. History of Breastfeeding Campaigns

The history of breastfeeding infants in the U.S. illustrates the resurgence of the feeding practice only within the last 40 years. In the 1900s, public health campaigns promoting breastfeeding were launched in response to high incidences of diarrhea and infant mortality due to the popular feeding practice of using cows' milk that was untreated and stored in unsafe conditions. This feeding practice cut across all income levels, as working class mothers left infants in the care of school-aged children who relied on cows' milk, and more affluent mothers relied on domestic staff and nannies to care for their offspring (Wolf, 2003, p. 2001). With the pasteurization of cows' milk in the 1930s, physicians stopped distinguishing between the benefits of breast milk and cows' milk for

infants (p. 2006). Physicians' indifference to the benefits of breastfeeding contributed to mothers choosing to wean their infants from breast milk when they were only weeks old, and some mothers choosing not to initiate breastfeeding at all. In 1971, only 24 percent of mothers in the U.S. initiated breastfeeding, defined as having breastfed at least once prior to hospital discharge following birth (p. 2004). Due to the "feminist-inspired women's health movement" in the late 1970s, breastfeeding rates began to climb (p. 2004). By 1995, the initiation rates grew as high as 60 percent, and in 2001 the number grew to 69.5 percent (p. 2004). The majority of the increase was among groups that historically experienced low breastfeeding rates, such as Black women, women with a high school education or less, and women enrolled in WIC (p. 2004). While the findings were positive for breastfeeding initiation, the rate for breastfeeding duration by age six months, that is, the infant consumed only breast milk by this age as per the guidelines of the American Academy of Pediatrics and the World Health Organization, was only 17 percent among women in the U.S. (pp. 2004-2005).

1.2.5. History of the WIC Program

The U.S. Department of Agriculture (USDA) Food and Nutrition Service's Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) was established in 1972 (USDA, 2002, p. iii). Its origins began in the 1960s due to growing, national concern over malnutrition and hunger among low-income Americans (p. 7). In

response, the USDA established the Supplemental Food Program in 1969, but it became clear that efforts were insufficient to meet the needs of pregnant women and infants (p. 7).

On September 26, 1972, legislation was authorized creating WIC (P.L. 92-433) as a two-year demonstration pilot (p. 7). It was modeled after the voucher program established by Dr. David Paige of John Hopkins University (p. 7). Under this model, neighborhood health clinics were attached to food commissaries, enabling physicians and other clinic staff to prescribe and provide food packages to women, including those who were pregnant and who were suffering from health conditions caused by malnutrition (p. 7). On January 15, 1974, the first WIC site opened in Kentucky and by year's end, sites were operational across 45 states (p. 8).

In 1975, WIC was established as a permanent health and nutrition program through P.L. 94-105 (p. 8). The legislation stated that the purpose of the program was to "provide supplemental nutritious food as an adjunct to good health during such critical times of growth and development in order to prevent the occurrence of health problems" (p. 8). Eligibility was limited to low-income pregnant women, breastfeeding women, non-breastfeeding women up to six months postpartum, and children up to age five who are at nutritional risk (p. 8).

In addition to providing foods that contained high quality nutrients, WIC also distributed infant formula as an optional substitute and/or supplement for breast milk for infants. By 1987, formula accounted for nearly 40 percent of WIC food costs (p. 8). To contain costs, the Child Nutrition and WIC Reauthorization Act of 1989 (P.L. 101-147) required competitive bidding procedures to be instituted to procure infant formula. This Act was also significant in that its provisions requiring increased coordination with other social service programs transformed the agency's scope. WIC, which was originally envisioned as a supplement to maternal and child health services, evolved into a source and referral partner through which low-income households were introduced to other social services, such as Medicaid and the Food Stamp program (p. 20).

The Child Nutrition and WIC Reauthorization Act of 1989 also required that the USDA promote breastfeeding and mandated \$8 million in administrative funds for the purchase of breastfeeding aids. In 1991, P.L. 102-342 compelled the Secretary of Agriculture to establish a campaign to promote breastfeeding as the optimal method of infant feeding and to promote greater acceptance of this practice. A few years later, the Healthy Meals for Healthy American Act of 1994 (P.L. 103-448) required WIC to spend at least \$21, to be adjusted for inflation annually, for breastfeeding promotion on every pregnant or breastfeeding woman in the program (p. 10).

Since WIC's implementation as a pilot program in the 1970s, participation had exponentially grown from 88,000 participants per month in 1974 to 7.41 million in 1997. This increase was attributed to greater congressional funding as a result of positive program results indicating WIC's success as a cost-effective program. In 1998, participation decreased slightly and continued through 2000. The decrease was concentrated mainly among children and could be attributed to favorable economic conditions that mothers of older children were better able to take advantage of, including increased job opportunities and wages. The decrease may have also been attributed to the implementation of residency and income documentation in 1998 that may have discouraged illegal immigrants from applying for WIC (p. 11).

Today, WIC continues to provide supplemental food, healthcare referrals and nutrition education to pregnant women, postpartum women and to infants and children up to age five who are at nutritional risk ("WIC at a Glance", 2012). To qualify for WIC assistance, families must fall at or below 185 percent of the federal poverty income guidelines ("Nutrition Program Facts: Food and Nutrition Service", 2012). The program, supported by federal grants, continues to be administered through the USDA, which in turn grants funding to state level WIC programs for implementation ("WIC at a Glance", 2012).

1.2.6. Rates of Breastfeeding of WIC Infants

In 1998, under the Healthy Meals for Healthy Americans Act, the USDA began reporting to Congress on the incidence and duration of breastfeeding among WIC participants. While data was initially collected for infants ages 7 to 11 months only, in 2004, states were asked to collect data for infants ages 6 to 13 months old.

For breastfeeding initiation, 86 State WIC agencies serving 99.2 percent of infants ages 6 to 13 months reporting data for the WIC Participant and Program Characteristics: 2012 Final Report. Results indicate that breastfeeding initiation rates have steadily increased since 1998, with 67.1 percent of postpartum WIC mothers in 2012 having ever breastfed or were currently breastfeeding.

For breastfeeding duration, 71 state agencies reported data for at least 75 percent of 6 to 13 month-old infants who were reported as having initiated breastfeeding. Of these state agencies, the median duration of breastfeeding was 12 weeks. The rate for California's median duration of 22 weeks exceeds that of 71 state agencies.

Rates of breastfeeding among postpartum WIC participants are lower than that of the general population, despite having in place a comprehensive breastfeeding education and support program (Racine, 2009, pp. 173-174). The National Immunization Survey collected data on children born during 2003 and 2006 whose mothers were either WIC participants or were eligible for WIC, but were not enrolled in the program ("Morbidity and Mortality Weekly Report", 2010, p. 328). This meant that both groups of postpartum

women's family income were at or below 185 percent of the federal poverty income guidelines ("Nutrition Program Facts: Food and Nutrition Service", 2012). In comparing rates of the two groups, what was notable was that non-WIC participants who were eligible for the program reported higher rates of breastfeeding than WIC participants for initiation, duration at six months and duration at 12 months ("Morbidity and Mortality Weekly Report", 2010, p. 328). Moreover, Ryan and Zhou (2006), who set out to compare breastfeeding rates between WIC participants and non-WIC participants, found that from 1978 to 2003, rates for initiation of breastfeeding were on average 23.6 percentage points less than those of non-WIC mothers, and at six months of age, the gap increased by 20 percent (p. 1136). The researchers pointed to demographic factors that predicted breastfeeding initiation, including some college education, living in the western U.S., not being enrolled in WIC, having a normal birth weight infant, and not working outside of the home (p. 1136). The strongest determinant of breastfeeding at six months of age was WIC status (p. 1136).

1.2.7. Opposition from Infant Formula Companies

Stakeholders adversely affected by increased rates of breastfeeding are companies involved in the production and sale of infant formula. Infant formula companies have a long history of heavily marketing their products, beginning first through direct consumer advertising via women's magazines in the late 1860s, then through the medical

community until the 1980s (Kaplan & Graff, 2008, p. 489). The tactic of using physicians as a marketing tool was highly effective, as women considered their doctors undisputed, credible sources on infant feeding. Formula companies would advise mothers to seek the instruction of their physicians for dosage instructions, thereby increasing office visits and the resulting income for physicians. Moreover, companies would sponsor medical conferences and research on infant nutrition, furthering the buy-in of physicians on infant formula (p. 489).

Today, infant formula companies practice direct consumer marketing through television, Internet and print ads, with the American Academy of Pediatrics and the American Medical Association formally opposing this advertising strategy. Simultaneously, health institutions continue to be influential in the promotion of infant formula, providing discounted coupons and formula samples to health providers that are then distributed to postpartum mothers (p. 489).

WIC is the largest buyer of infant formula in the U.S., purchasing over half of all formula consumed, which is provided for free to its clients (p. 497). In an effort to reduce costs, each state WIC agency contracts with one formula company for its supply. As several studies have noted that marketing by formula companies, both through direct consumer and healthcare provider marketing channels, adversely affects breastfeeding rates (p. 497), infant formula companies' lucrative relationship with WIC fosters the

acceptance among clients that infant formula is a comparable nutritional source to breast milk.

1.2.8. Public Discomfort as Deterrence to Breastfeeding

Issues of modesty, physical exposure and public acceptance regarding breastfeeding in public settings remain contentious issues. As noted by Kaplan and Graff (2008), there is a “generalized social preference for formula-feeding over breastfeeding in the USA” (p. 498). These social norms are reflected in a 2001 study of a national public opinion survey that found that only 43 percent of adults believed that women should have the right to breastfeed in public (The Surgeon General’s Call to Action to Support Breastfeeding, 2011, p. 13).

A focus group study conducted by Raisler (2001) found that women were not comfortable to be seen nursing their infant, pumping or leaking milk, or storing their milk in a public refrigerator where it could be identified by others individuals (p. 259). Over half of the women reported receiving uncomfortable looks or negative comments about breastfeeding from family, friends, co-workers or strangers, and equal numbers of women reported embarrassment over breastfeeding in public and private settings (p. 259). The respondents reported a variety of strategies used to feed their infants in public, such as breastfeeding in their cars, breastfeeding while using a cover-up and breastfeeding in a public bathroom, although mothers described this latter option as filthy and providing

nowhere to sit (p. 260). Many of the mothers resorted to bottle-feeding when in public to avoid the disapproving looks and comments people made over public breastfeeding (p. 260).

2. Literature Review

Studies abound on infant feeding practices in the U.S., specifically among WIC participants. Many of these studies point to the role of public policy choice architects and street-level bureaucrats, without explicitly calling it such. This research fills a gap by examining the breastfeeding status of WIC participants in particular relation to their perceptions of WIC's positions on infant feeding practices. Reviewed below are studies on variables that relate to breastfeeding practices: breastfeeding education during the prenatal and postpartum phases for women enrolled in WIC, the impact of WIC counseling programs on clients' breastfeeding behaviors, and the agency's feeding incentives. With this review, this research establishes the necessity of further research into the association between WIC's bureaucratic practices and clients' breastfeeding behaviors from a public administration perspective.

2.1. Prenatal Breastfeeding Education from Doctors, Midwives, Clinic Staff

Studies have demonstrated the positive impact that prenatal breastfeeding education has on the rate of breastfeeding incidences (Reifsnider & Eckhart, 1997, p.

121). As many of these studies were conducted on the effects of childbirth classes on pregnant women, they more closely reflect the impact on middle-income women who have greater access to these services and breastfeed at higher rates than low-income women (p. 121). Reifsnider and Eckhart (1997) conducted a study that focused on the effects of prenatal breastfeeding education on WIC clients. The experimental group received breastfeeding education in a classroom format and an optional follow-up class, while the control group received the standard prenatal nutrition education class. While the study found that there was no significant difference between the control and experimental groups when it came to breastfeeding initiation, this result was expected as mothers who were selected for the study self-identified as having a desire to breastfeed (p. 124). However, results did demonstrate that breastfeeding duration among low-income women was greater among the experimental group who received additional breastfeeding education (p. 124). The results suggest that breastfeeding information during WIC prenatal nutrition education classes increases the duration of breastfeeding among mothers.

In a focus group study conducted by Raisler (2000) concerning breastfeeding behaviors of low-income mothers, the delivery of breastfeeding education within the primary care setting was examined. Of the 17 mothers who commented on their prenatal experiences, nine stated that their prenatal care setting encouraged breastfeeding (p. 254). Several women made positive comments that a midwife or doctor continuously discussed

breastfeeding at visits, despite a mother having shared her intentions to not breastfeed (p. 254). It appeared that the provider-patient relationship outweighed the provision of breastfeeding materials, such as pamphlets and videos (p. 95). One respondent noted that the personable approach from her physician and his openness to be reached whenever she had questions about breastfeeding helped her decide to breastfeed (p. 96). Similarly, other women commented that the friendly and sincere breastfeeding support of clinic staff, combined with breastfeeding education materials, reinforced the decision to initiate and continue breastfeeding (p. 255).

2.2. Postpartum Breastfeeding Education from Lactation Consultants, Hospital Staff

Studies on the association of postpartum education on breastfeeding initiation and duration have also been conducted. In a nonrandomized study, breastfeeding duration was greater among postpartum women who received an appointment for lactation consultation (Hill, 1987, p. 125). Results suggest that women who receive postpartum breastfeeding education by a lactation consultant are more likely to continue breastfeeding for longer periods of time compared to women who did not receive this service.

Raisler (2000) also examined the hospital experience on mothers' decision to initiate and/or continue breastfeeding through focus group interviews. Nine mothers

reported that their breastfeeding needs were met during their hospital stay, while 11 mothers said they received inadequate breastfeeding support (p. 254). Supportive assistance received during hospital stays included helping with positioning and latching issues with the baby, answering questions in a receptive manner, and honoring mothers' preferences that the baby receive no bottles or pacifiers (p. 255). Five mothers reported that during their postpartum stay, hospital lactation consultants assisted with breastfeeding initiation or resolve issues (p. 255).

Some of the mothers who were dissatisfied reported that they received no breastfeeding assistance, while others received care that was "rough, rude or routine" (p. 256). Moreover, the most frequently cited negative breastfeeding activity during mothers' postpartum hospital stay was the provision of formula to the infants by nurses against mothers' preferences. Reasons reported include, "to see if the baby can suck", the mother needing rest after labor, and the need to measure the milk intake of the infant (p. 256).

2.3. Advice and Support from WIC Counselors

Beal, Kuhlthau and Perrin (2003) studied differences in breastfeeding advice given to African American women and Caucasian women by medical providers and WIC nutrition counselors. The authors examined data from the 1988 National Maternal and Infant Health Survey and compared white women and African American women's self-reported responses on breastfeeding advice from medical providers and WIC, bottle-feeding advice from WIC, and breastfeeding (p. 368). While the results revealed that

African American women and Caucasian women reported receiving the same amount of advice from their medical providers, African American women were less likely to report that WIC counselors advised them on breastfeeding and more likely to report having been advised to bottle-feed (p. 372).

Low-income women statistically initiate breastfeeding at lower rates than higher-income populations, and the findings from this study demonstrating the disparity in breastfeeding advice from WIC nutrition counselors to African American women when compared to Caucasian women only adds to that gap (p. 373). Thus, African American women receiving WIC benefits have a greater risk for low rates of breastfeeding compared to Caucasian women (p. 373).

The focus group study conducted by Raisler (2000) also examined support and advice from WIC and clients' feeding practices. Of the 16 respondents, seven mothers felt that WIC encouraged breastfeeding more than formula, five felt that formula was encouraged over breastfeeding, and four felt that WIC supported both options (p. 257). Several mothers stated that they would likely breastfeed more if WIC did not cover the cost of formula, with one mother sharing her perspective that the provision of free infant formula that WIC provides deters mothers from breastfeeding (p. 257). Conversely, some mothers reported that the limited amount of formula provided by WIC encouraged

breastfeeding (p. 257). Others appreciated WIC staff members who were nonjudgmental and supported the mothers' feeding decisions. One mother reported,

They really want you to breastfeed, but they didn't try to change you....They want to make sure that the baby has the food it needs and that you have what you need... Whatever you are going to do, they are going to help you (p. 257).

The responses received from these WIC clients represent the varying ways in which they perceive WIC bureaucracy. There exists sometimes-competing priorities and messaging from WIC staff, and as in the case above, the promotion of breastfeeding is sometimes outweighed by other factors.

2.4. Training of WIC Breastfeeding Staff

In addition to the studies alluding to the association between WIC staff interaction and mothers' comfort level of breastfeeding, it is important to examine the training received by WIC staff members that are charged with providing breastfeeding education to clients. Khoury and co-authors (2002) conducted an evaluation on the impact of a breastfeeding promotion project to gauge WIC clinic staff's breastfeeding practices, attitudes and knowledge following implementation of physical improvements to the clinic environment and staff training (p. 453). One component of the intervention included environmental changes to the clinic to create private nursing areas for mothers, as well as visual displays of breastfeeding images (p. 455). The second intervention component was implementation of a staff training program entitled, "How to Support a Breastfeeding

Mother”, which was designed to overcome barriers and issues to providing breastfeeding education and support to clients as identified by WIC staff (p. 455). Pre- and post-tests were conducted to measure differences in knowledge, attitudes and confidence in breastfeeding promotion and practice. The intervention group experienced higher levels within each of the indexes when compared to the comparison group (p. 460). Thus, the authors concluded that improvements to the clinic environment, coupled with staff training on breastfeeding education, were helpful in contributing to the effectiveness of WIC breastfeeding promotion programs (p. 460).

2.5. Counseling from WIC Volunteer Peer Support

In addition to breastfeeding education and support provided by health care professionals and WIC staff, volunteer peer counseling programs have been associated with improved breastfeeding activity. For example, Schafer and colleagues (1998) evaluated the effectiveness of a pilot project in which volunteer peer counselors provided WIC mothers with breastfeeding education and support during the prenatal and postpartum periods. The intervention group consisted of trained volunteers who were experienced in providing breastfeeding counseling to low-income women, while the control group did not receive the assistance of the volunteer counselors (p. 101). During mothers’ prenatal and postpartum stages, the counselor conducted in-home, one-on-one sessions about healthy diet and breastfeeding, and stayed in contact with the mothers to

answer any questions (p. 101). Results indicated that women who received the interventions experienced improved nutritional intake and breastfeeding knowledge. Eighty-two percent of the intervention group initiated breastfeeding compared to only 31 percent of the control group (p. 101). By week four postpartum, 56 percent of the intervention group was still breastfeeding compared to 10 percent of the control group (p. 101). Thus, the results indicated a positive association between the provision of volunteer peer counseling and support and rates of breastfeeding initiation and duration among WIC mothers.

2.6. Ambiguities in Perceptions of WIC Feeding Incentives

Holmes and co-authors (2009) examined the provision of infant formula by WIC to mothers as a barrier to exclusive breastfeeding. The researchers conducted interviews of 29 mothers who breastfed either partially or exclusively for at least two months (p. 25). One of the major themes from these interviews suggested a contradictory perception of WIC, in that mothers believed WIC supported breastfeeding, but also perceived the agency as a proponent of formula feeding due to offers of free infant formula (p. 27). Many mothers were either unaware of the expanded food package that WIC provides for mothers who exclusively breastfed, or did not value the food package due to the types of food offered (p. 27). What was also uncovered was that the mothers lacked knowledge on the importance of breastfeeding, indicating that improvements in breastfeeding education

are needed (p. 28). Results of this research support the need to reexamine the food package incentives for breastfeeding offered to WIC mothers, improve education on breastfeeding, and address the contradictory messages about the importance of breastfeeding received by mothers in the WIC clinic.

Baumgartel, Spatz and the American Academy of Nursing Expert Breastfeeding Panel (2013) sought to examine the breastfeeding policy of WIC versus WIC's practice in the promotion of this method. The authors noted that while WIC's position is to place breastfeeding mothers and their infants in the "highest priority level," WIC allotted only 0.6 percent of its budget toward breastfeeding initiatives (p. 466). In contrast, expenses for infant formula accounted for 11.6 percent of its budget for this supplement, 25 times more than its financial resources devoted to breastfeeding (p. 466). According to the authors, this inconsistency in public messaging versus allocation of financial resources requires further examination. The authors recommended reallocating a portion of the financial resources devoted to formula to peer counseling programs, which have been found to be an inexpensive, but effective approach at increasing breastfeeding rates.

2.7. Necessity of Further Research

Numerous studies have touted the health benefits of breast milk over infant formula, citing short- and long-term impact on both mother and baby. Moreover, economic benefits are reaped in the form of cost savings related to the prevention and/or

mitigation of illnesses and diseases, such as pediatric asthma and eczema in children, and ovarian cancer in women. In support of breastfeeding, WIC has instituted breastfeeding campaigns, the federal government has put into place workplace protection laws for mothers to pump breast milk at work, and the Patient Protection and Affordable Care Act of 2010 has required new private health insurance plans to provide coverage with no cost sharing for breastfeeding education, lactation counseling and supplies. However, despite overwhelming evidence on the benefits of breastfeeding and existing interventions and protections in place for women to opt for breast milk as their infants' nutritional source, women receiving WIC benefits continue to experience low rates of breastfeeding initiation and duration.

Filling a gap in existing literature on rates of breastfeeding among WIC clients, this research will examine the association between clients' breastfeeding status and their perceptions of WIC's position on breastfeeding, and apply theories in public administration and policy. As of the writing of this paper, no research from the public administration perspective has been found to exist on this issue, and this research will hopefully contribute to scholarship and to programmatic enhancements and policy changes for improved rates of breastfeeding among WIC clients.

3. Research Design

3.1. Theoretical Framework

To answer the research question, this study relies on a theoretical framework consisting of principles and ideas from street-level bureaucracy, choice architecture, and other theories. Together, these theories can enable a better understanding of the potential relationship between WIC bureaucracy and client breastfeeding practices.

3.1.1. Street-Level Bureaucracy, Emotional Labor, and the Management Environment

As this research explores perceptions of bureaucracy and the potential relationship between bureaucratic practices and the behavioral choices of mothers, it turns to theories that speak to the characteristics of public servants in relation to their clientele. A divergence from the study of public administration through the analysis of formal structures, Michael Lipsky examined policy implementation through the day-to-day interactions between frontline bureaucrats and clients. Defining “street-level bureaucrats” as the central actors that deliver social services, interact directly with the public and exercise a significant amount of influence on their clients, Lipsky (1980) brings to light the perspective that public policy is not completely made by the upper levels of government, but rather refashioned at the implementation stage through the interactions between these workers and the public (p. xii). In addition, Lipsky’s study suggests that while many street-level bureaucrats are driven to public service for altruistic reasons, their challenging job conditions such as lack of resources, unattainable goals and

increased client caseload lead them to seek coping mechanisms with their responsibilities. Although street-level bureaucrats believe they are doing the best job possible given the constraints of the working environment, their interactions with clients could run counter to the formal policies of the government agency they represent (pp. 81-82). According to Lipsky (1991), use of discretion is necessary to implement policy work due to the difficult conditions within the public organization of limited resources and policy confusion (p. 215). The conflict is borne out of policy goals that may be ambitious or vague, and are not backed by adequate resources needed to achieve those goals. Due to this environment, street-level bureaucrats must choose between conflicting policies or ignore those they deem unrealistic (Lipsky 1980, p. 32).

Supplementing the theory of street-level bureaucracy are the observations of James Q. Wilson (2000) regarding the environment in which public servants are managed. He found that when considering different courses of action, the rewards and penalties placed upon workers by their managers influence the behavior of workers (p. 51). In applying the different theoretical lenses to WIC breastfeeding policy, the management environment for WIC public servants is used in this research to speculate how the setting in which supervisors manage and hold their workers accountable might constrain the work of these street-level bureaucrats in dealing with WIC clients. As variations in management environments may affect the practices of street-level

bureaucrats in interacting with their clients, these variations may also be correlated with clients' perceptions of WIC's position on breastfeeding as well.

In relation to the constraints of public service, emotional labor theory describes how employees must deal with their personal emotions in a way that promotes the desired customer response (Kruml & Geddes, 2000, p. 177). Public organizations such as health and human service professions, public education and others are the mainstay of emotional labor (Meier, Mastracci, & Wilson, 2006, p. 899). As direct client interaction is a primary job function of street-level bureaucrats, emotional labor theory can shed light on employees who are expected to compartmentalize their own emotions and sensitivity and who could portray a possibly conflicting set of emotions to the clients they serve.

According to the theory of street-level bureaucracy, the WIC nutrition assistants, lactation consultants and related professionals make and remake public policy – and therefore affect the program goal of encouraging breastfeeding practice – through their behavior and advice toward clients. Supplementing this notion of on-the-job, discretionary policy implementation among street-level WIC staff, emotional labor explains that the coping mechanisms of these staff within their management environment could translate into their interactions with WIC clients, and affect how their work is perceived.

Perceptions of bureaucrats and what they ought to be doing are important, and is highlighted by Wilson (1989) in his study of bureaucratic behavior. Wilson gave as an example the role of police officers (p. 170). As citizens perceived that “disorderliness of the urban environment” was a job for police departments, departments adjusted officers’ roles to include order-maintenance activities, such as reporting broken street lights, addressing homelessness issues, and managing family quarrels (p. 170). The perception of citizens of what ought to be the role of officers also created a rift between managers and officers who believed their mission should exclusively be law enforcement, and citizens and other groups who believed officers should be involved in order maintenance (pp. 170-171). Due to disagreements between proponents and opponents of order-maintenance activities as a role of police officers, some workers complied with the new orders, while others disregarded them. Although citizens’ perceptions of police bureaucracy was the driving force behind the change in job description, what resulted was employees doing what they believed constituted good work, which may have run counter to their newly expanded roles (p. 171).

3.1.2. Choice Architecture

Decision making studies or behavioral economics was pioneered in public administration beginning in the 1950s by Herbert Simon and James March, to supplement the structural-functional focus of organization theory and fill the gap in our knowledge of

how individuals inside organizations cope with limited cognition, to arrive at satisfactory choices. As a reaction to rational choice theory, this body of thought posited that we look at decision premises as the main variables in understanding efficiency in administrative practices, in which members suffer from resource constraints in maximizing choices. Since then, the decision making or behavioral field has expanded to examine how human biases and decision making shortcuts could be understood to make public policy design better targeted to clients, and policy or program goals more effectively carried out.

The theory of choice architecture is a term coined by Richard Thaler and Cass Sunstein and described in their 2009 book *Nudge: Improving Decisions About Health, Wealth, and Happiness*. The authors describe choice architecture as libertarian paternalism in which individuals are “nudged” by choice architects to make better decisions – without forcing certain outcomes upon them – through subtle or overt changes to the environment (Thaler, Sunstein & Balz, 2014, p. 430). Nudging is emerging as a promising approach for policy makers to encourage changes in citizen behavior, especially those who have limited access to information, time, resources, and voice, while minimizing the costs the nudging would impose on those who would benefit less from it. With the assumption that citizens are boundedly rational, that is, they do not possess all the necessary knowledge of alternatives or the consequences associated with each alternative when making decisions (Simon, 1999, p. 25), incentives can be employed to influence choice within individuals’ limited cognitive capacity (John, Smith

& Stoker, 2009, p. 363). Although the notion of policy makers driving change in the behaviors of citizens creates fears of the rise of a nanny state, choice architecture is preserving citizen choice while steering them to make more positive choices that will benefit not only individuals, but society as a whole (p. 361).

Choice architecture is applied in exploring the staff-client relationship in the policy arena of breastfeeding among WIC clients. This paper examines the use of three methods within choice architecture that can be applied to elicit the favorable response among WIC clients in initiating and maintaining breastfeeding: incentives, the default option, and feedback.

3.1.3. Other public administration and policy theories

The research design is guided primarily by the two preceding bodies of thought. Doubtless, there are many more avenues or theories of public administration and policy that could relate and be explored in this field. In examining the results and their implications for public administration and policy, some of the variables that were found by previous studies in the literature review, such as the role of the different coalitions and interest groups, and the particular actions and program strategies by WIC in promoting breastfeeding, will be explored. In addition, the idea of promoting higher levels of breastfeeding as an example of a “wicked problem” may have relevance in this study. Wicked problems are a class of problems that are highly resistant to solution and are

distinguished from the “tame” problems with which science has been able to address (Rittel & Webber, 1973, p. 155). While scientific evidence on breastfeeding and health has been around for a while, research must pay attention to the interactions of facts with policy dynamics and the multiplicity of actors involved.

3.2. Source of Data and Data Collection Procedure

To test whether breastfeeding status among WIC clients are associated with their perceptions of WIC bureaucracy and staff, this research uses existing data collected by the Public Health Foundation Enterprises (PHFE) WIC program, the largest local WIC agency in the U.S., serving California’s Los Angeles, Orange and San Bernardino counties (Whaley, Koleilat & Jiang, 2012, p. 2). PHFE WIC maintains 61 centers in high areas of need and serves 325,000 clients every month. It serves approximately 4 percent of U.S. WIC participants and 23 percent of California’s WIC participants (PHFE WIC, n.d.).

In August 2010, PHFE WIC enlisted the services of independent survey research firm Field Research Corporation to conduct a telephone survey of a random sample of 2,015 WIC postpartum mothers (p. 2). The survey focused on the feeding practices of postpartum WIC mothers with infants 2 to 12 months old. For example, respondents were asked whether or not certain statements reflected WIC’s position about feeding babies,

such as WIC's encouragement of breastfeeding without the use of formula or feeding using formula. Respondents were asked to respond Yes, No, Don't Know or Refused.

Each participant was invited to partake in the 20-minute telephone survey about her postpartum experiences. The surveyors stated that participants' responses would not affect their WIC benefits (p. 2).

As over 98 percent of the PHFE WIC population speaks English or Spanish, questionnaires were provided in both of these languages (p. 2). The surveys were conducted using a computer-assisted telephone interviewing system. Up to eight attempts were made to reach eligible participants. Among the WIC participants who were reached by telephone, a cooperation rate of 88.2 percent was achieved. Overall, the survey yielded a total response rate of 43.1 percent (p. 2).

The sample listings for the survey were drawn from the population of all infants receiving services from PHFE WIC in July 2010. A stratified sampling approach was used to ensure adequate representation in the same of (1) all infants between the ages of 2 to 12 months, (2) English- and Spanish-speaking mothers, and (3) feeding type preferences. Therefore, sample weights were computed to realign the distribution of the sample to the population of WIC mothers served by PHFE WIC (p. 2).

3.3. Hypotheses and Indicators

This study explores seven hypotheses to test the relationship between one dependent variable, breastfeeding status, and seven measures or indicators of the other independent variable, WIC clients' perceptions of WIC program and WIC staff.

Hypothesis #1: Mother's perception of WIC's position on formula-feeding is associated with breastfeeding status. The null hypothesis states that no association exists between a mother's perception of WIC's position on formula-feeding and her breastfeeding status. The alternative hypothesis states that an association exists between a mother's perception of WIC's position on formula-feeding and her breastfeeding status.

Hypothesis #2 Mother's perception of WIC's position on breastfeeding without using formula is associated with breastfeeding status. The null hypothesis states that no association exists between a mother's perception of WIC's position on breastfeeding without the use of formula and her breastfeeding status. The alternative hypothesis states that an association exists between a mother's perception of WIC's position on breastfeeding without the use of formula and her breastfeeding status.

Hypothesis #3: Mother's perception of WIC's position on both breastfeeding and formula-feeding is associated with breastfeeding status. The null hypothesis states that no association exists between a mother's perception of WIC's position on both breastfeeding and formula-feeding and her breastfeeding status. The alternative hypothesis states that

an association exists between a mother's perception of WIC's position on both breastfeeding and formula-feeding and her breastfeeding status.

Hypothesis #4: Advice received from WIC staff is associated with breastfeeding status. The null hypothesis states that no association exists between the advice received by WIC staff and a mother's breastfeeding status. The alternative hypothesis states that an association exists between the advice received by WIC staff and a mother's breastfeeding status.

Hypothesis #5: Availability of formula from WIC is associated with breastfeeding status. The null hypothesis states that no association exists between the availability of formula from WIC and a mother's breastfeeding status. The alternative hypothesis states that an association exists between the availability of formula from WIC and a mother's breastfeeding status.

Hypothesis #6: The perception that WIC gives support to mothers who breastfeed is associated with breastfeeding status. The null hypothesis states that no association exists between a mother's perception that WIC gives support to mothers who breastfeed and a mother's breastfeeding status. The alternative hypothesis states that an association exists between a mother's perception that WIC gives support to mothers who breastfeed and a mother's breastfeeding status.

Hypothesis #7: Pressure to breastfeed by WIC is associated with breastfeeding status. The null hypothesis states that no association exists between a mother feeling pressured by WIC to breastfeed and a mother's breastfeeding status. The alternative hypothesis states that an association exists between a mother feeling pressured by WIC to breastfeed and a mother's breastfeeding status.

Table 2 details each of the variables involved in the hypotheses, the measures or indicators from the survey or the associated survey question for those variables, and the codes or value representation for each response for use in the statistical analysis.

Table 2. Description of Each Variable in the Hypotheses and Corresponding Questions from the Survey		
Variable	Survey Question	Value Representation
<i>Dependent Variable</i>		
Breastfeeding status (nominal)	Q4. Are you currently breastfeeding (NAME)?	1 = Yes 2 = No 8 = Don't know 9 = Refused
<i>Independent Variables</i>		
Mother's perception of WIC's position on feeding formula (nominal)	Q22b. Please tell me whether or not you think this statement reflects WIC's position about feeding babies: WIC encourages mothers to feed their babies formula	1 = Yes 2 = No 8 = Don't know 9 = Refused
Mother's perception of WIC's position on feeding by breastfeeding without formula (nominal)	Q22c. Please tell me whether or not you think this statement reflects WIC's position about feeding babies: WIC encourages mothers to breastfeed their babies without using formula	1 = Yes 2 = No 8 = Don't know 9 = Refused
Mother's perception of WIC's position on feeding by breastfeeding and	Q22d. Please tell me whether or not you think this statement reflects WIC's position about feeding babies:	1 = Yes 2 = No 8 = Don't know

formula feeding (nominal)	WIC encourages mothers to both breastfeed and feed their babies formula	9 = Refused
Advice that WIC staff gave mothers about feeding (nominal)	Q30. Which of the following best describes the kind of advice that WIC staff gave you about feeding (NAME)	1 = They said you should breastfeed (NAME) and not give (him) (her) formula 2 = They said you should give both breast milk and formula to (NAME) 3 = They said you should only give formula to (NAME) 8 = Don't know 9 = Refused
Mother's perception that formula is available from WIC if needed (nominal)	Q31b. Do you agree or disagree? I can get formula from WIC if I need it	1 = Agree 2 = Disagree 8 = Don't know 9 = Refused
Mother's perception that WIC gives support to mothers who breastfeed (nominal)	Q31d. Do you agree or disagree? WIC gives support to mothers who breastfeed	1 = Agree 2 = Disagree 8 = Don't know 9 = Refused
Mother's feelings of being sometimes pressured by WIC to breastfeed (nominal)	Q31f. Do you agree or disagree? I sometimes feel pressured by WIC to breastfeed my baby	1 = Agree 2 = Disagree 8 = Don't know 9 = Refused

Source: Public Health Foundation Enterprises (PHFE) WIC Post-Partum Women's Breastfeeding Survey. Waley, Koleilat, and Jiang, (2010).

3.4. Statistical Methods

The survey data was received from PHFE in the form of a Microsoft Excel spreadsheet. Statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics were utilized to outline the results for each research question. Frequency graphs were constructed to further portray the grouped

distribution of each variable. Cross tabulations were constructed to display the relationship between the dependent variable of breastfeeding status and the independent variables. In addition, Pearson's chi-square "goodness of fit" test was used to determine if an association exists between these variables. These methods were chosen because all of the variables examined were categorical and the requirements of the chi-square test were met. Specifically, the sample was randomly drawn from the population, the values for the variables are mutually exclusive and there was a minimum expectation of five occurrences in each category. Lastly, logistic regression was used to determine probability of association between the dependent variable and each independent variable. This method was chosen because the independent variable was dichotomous in scale and the research is testing multiple measures of the independent variable, all of which are nominal.

3.5. Limitations

Some limitations exist in this study. First, the use of secondary data prevented the probing of respondents to determine how questions were interpreted as well as reasons for responses to questions that appeared conflicting. Moreover, this data was collected from clients of the Public Health Foundation WIC Program, which services the densely populated Los Angeles area comprised of suburban and urban communities. As such, the findings may not be generalizable to geographic populations in the U.S. that are rural or

sparsely populated. Lastly, PHFE WIC's clients are 84 percent Latino, so findings may be specific to this group and may not be generalizable to other racial groups.

4. Results

4.1. Descriptive Statistics

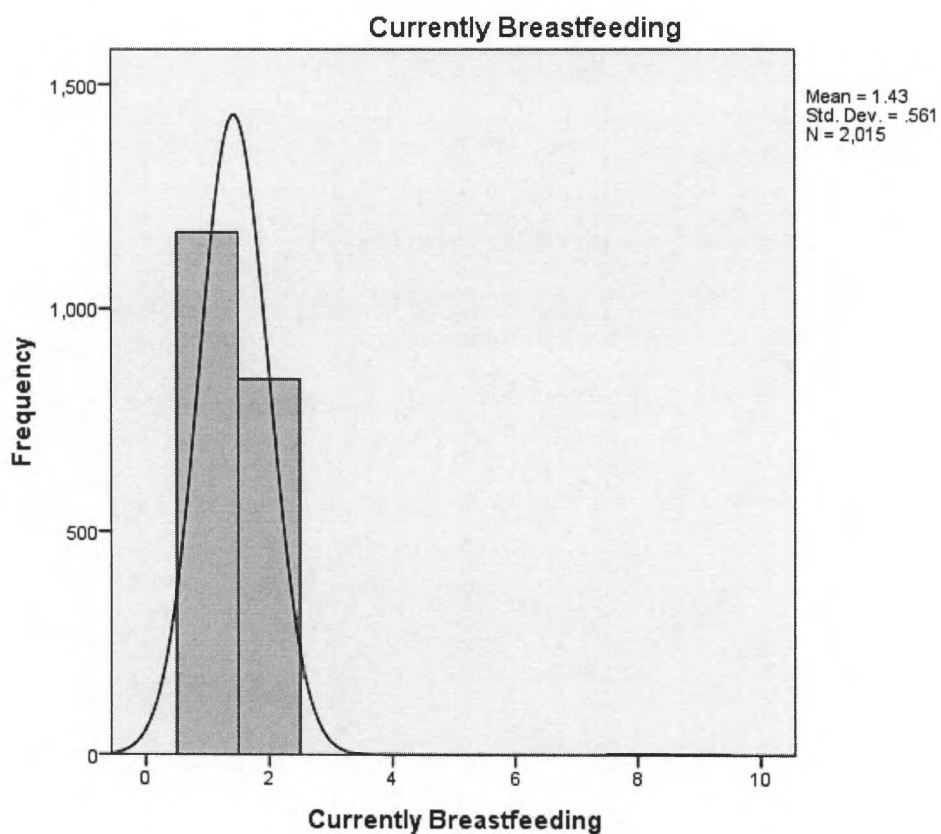
Table 3 summarizes the descriptive statistics associated with the variables in the hypotheses.

	Table 3. Descriptive Statistics for Each Variable						
Condensed Survey Question	Hypothesis	N	Mode	Median	Mean	Variance	Std. Dev.
Are you currently breastfeeding?		2015	1	1	1.43	.315	.561
Does WIC encourage mothers to feed their babies formula?	1	2015	2	2	1.95	1.171	1.082
Does WIC encourage mothers to breastfeed their babies without using formula?	2	2015	1	1	1.60	1.157	1.076
Does WIC encourage mothers to both breastfeed and feed their babies formula?	3	2015	2	2	1.89	1.683	1.297
What kind of advice did WIC staff give you about feeding?	4	2015	1	1	1.41	1.898	1.378
Can you get formula from WIC if you need it?	5	2015	1	1	1.20	1.107	1.052
Does WIC give support to mothers who breastfeed?	6	2015	1	1	1.04	.236	.486
Do you sometimes feel pressured to breastfeed your baby?	7	2015	2	2	1.82	.391	.625

4.1.1. Frequency Graphs for Each Variable

The histograms (Figure 1 to Figure 8) below depict the distribution curve associated with each variable examined in this study.

Figure 1. Frequency by Breastfeeding Status



The histogram (Figure 1) of the dependent, nominal variable of “breastfeeding status” (i.e., Currently Breastfeeding) illustrates that a greater number of respondents

answered 1, currently breastfeeding ($f = 1170$). There were fewer respondents who answered 2, not currently breastfeeding at the time of the survey ($f = 842$)

Figure 2. Frequency by Mother's Perception of WIC's Encouragement of Formula-Feeding

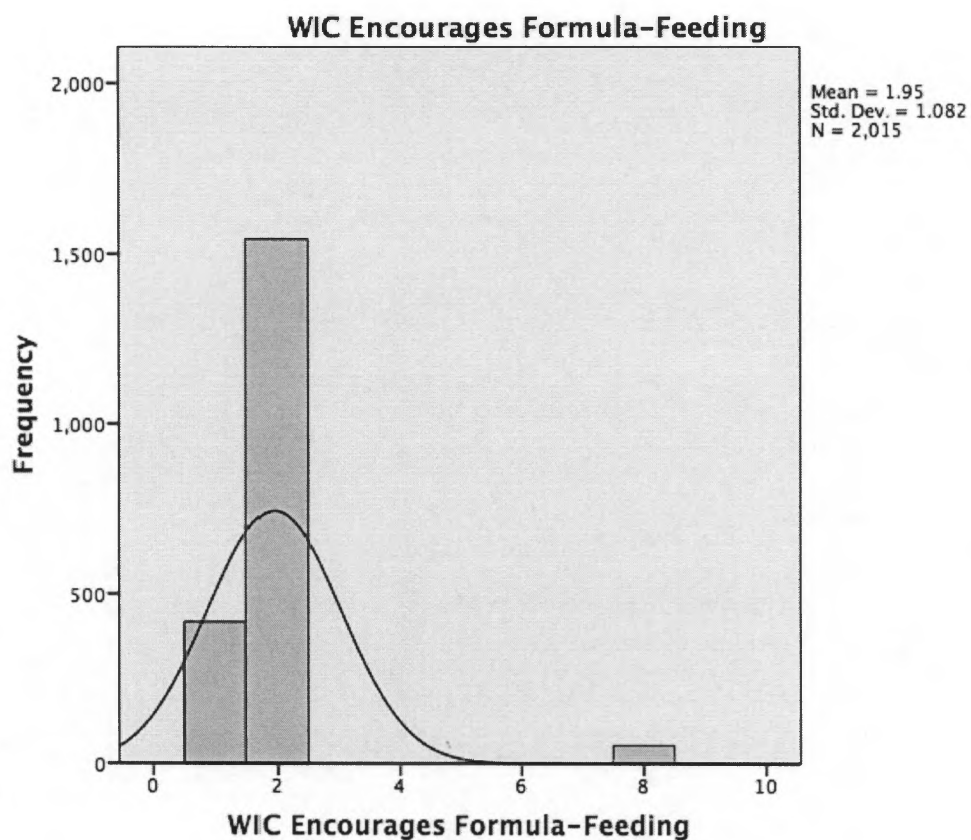


Figure 2 on the independent, nominal variable of “mothers’ perception that WIC encourages formula-feeding” illustrates that the majority of respondents answered 2,

WIC does not encourage mothers to feed their babies formula ($f = 1543$), while a minority of respondents answered 1, yes ($f = 418$).

Figure 3. Frequency by Mother's Perception of WIC's Encouragement of Breastfeeding without Using Formula

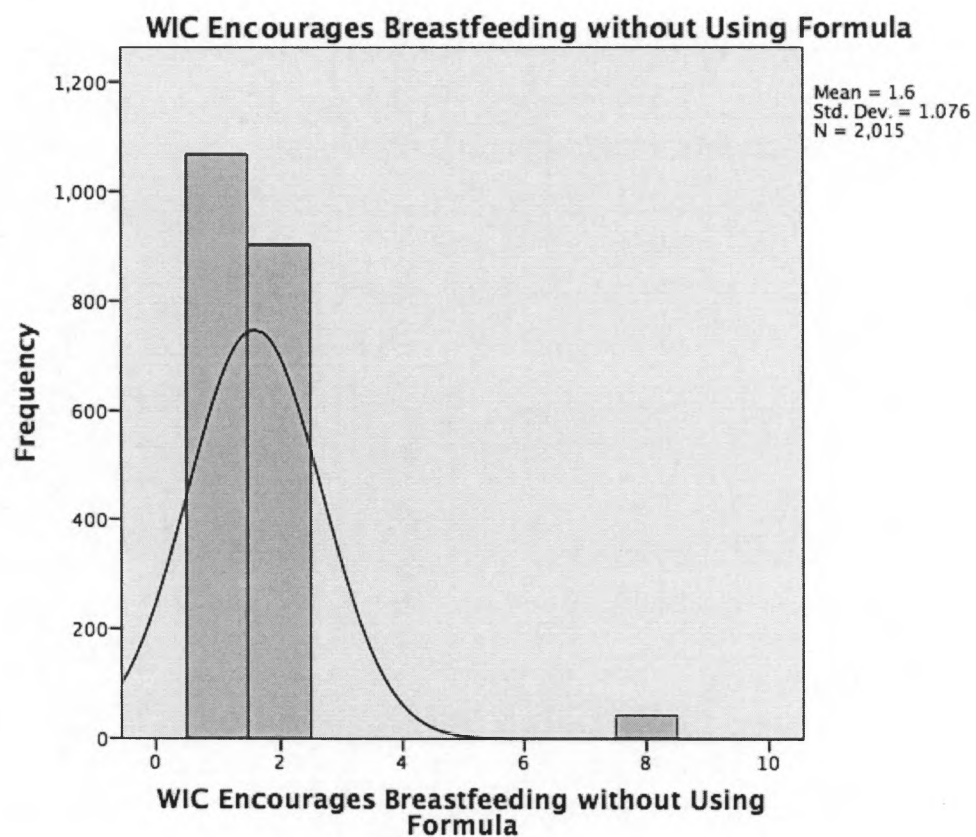


Figure 3 on the independent, nominal variable of “mothers’ perception that WIC encourages breastfeeding without the use of formula” illustrates that the majority of

women agreed with this statement ($f = 1068$), but a significant number of women believed that WIC does not encourage breastfeeding without the use of formula ($f = 903$).

Figure 4. Frequency by Mother's Perception of WIC's Encouragement of Both Breastfeeding and Formula-Feeding

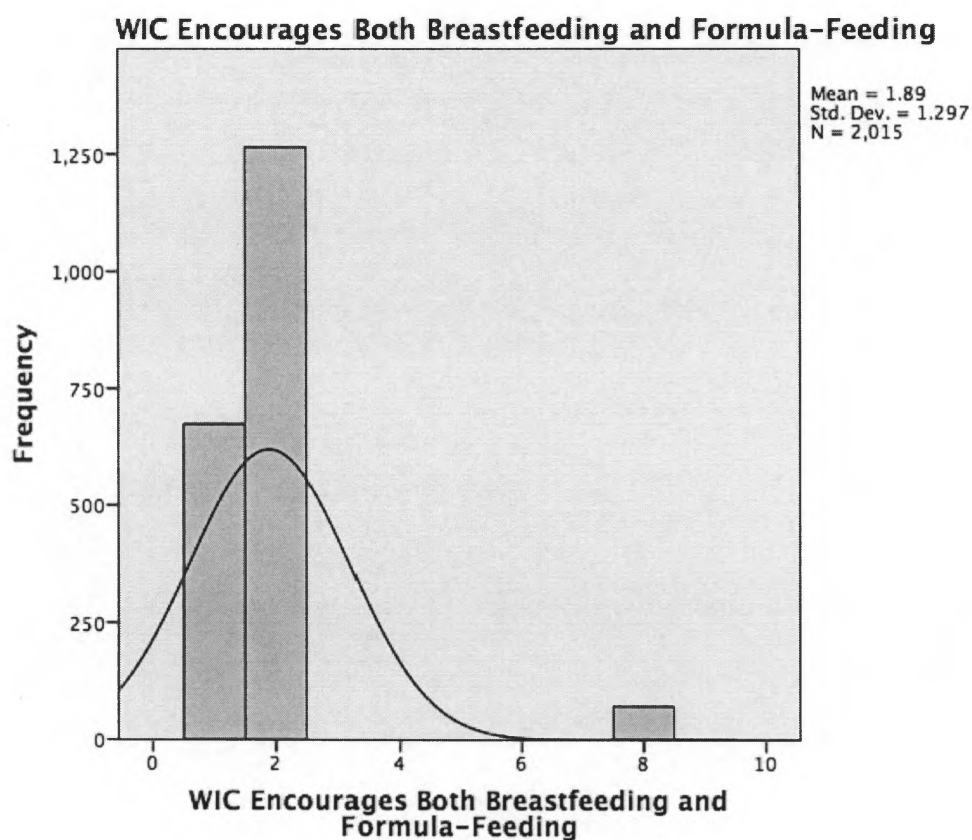


Figure 4 on the independent, nominal variable of “mothers’ perception that WIC encourages feeding through both breastfeeding and formula feeding” illustrates that the

majority of women disagreed with this statement ($f = 1265$), while a minority agreed with the statement ($f = 675$).

Figure 5. Frequency by the Kind of Advice on Feeding Received by WIC Staff

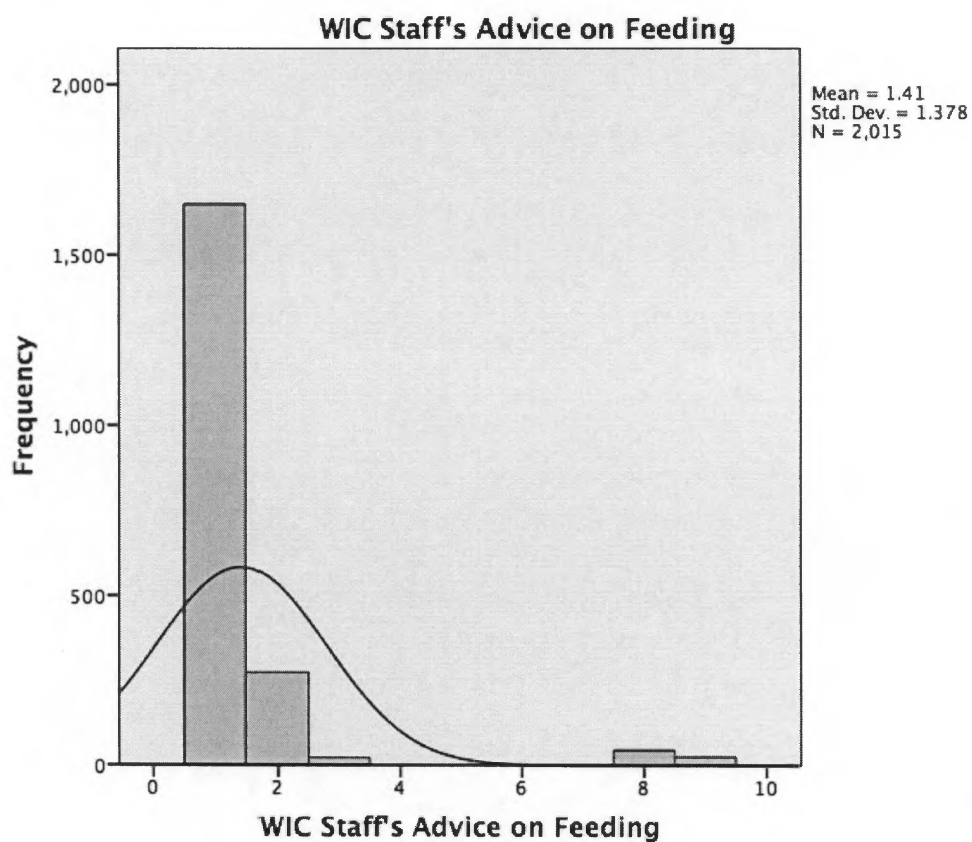


Figure 5 on the independent, nominal variable of “advice given by WIC staff about feeding” indicates that the majority of women were advised to breastfeed and not use formula ($f = 1649$), while a minority of women reported being advised to feed using

both breast milk and formula ($f = 274$). A small number of women reported being advised to feed their infant only formula ($f = 22$).

Figure 6. Frequency by Availability of Formula from WIC

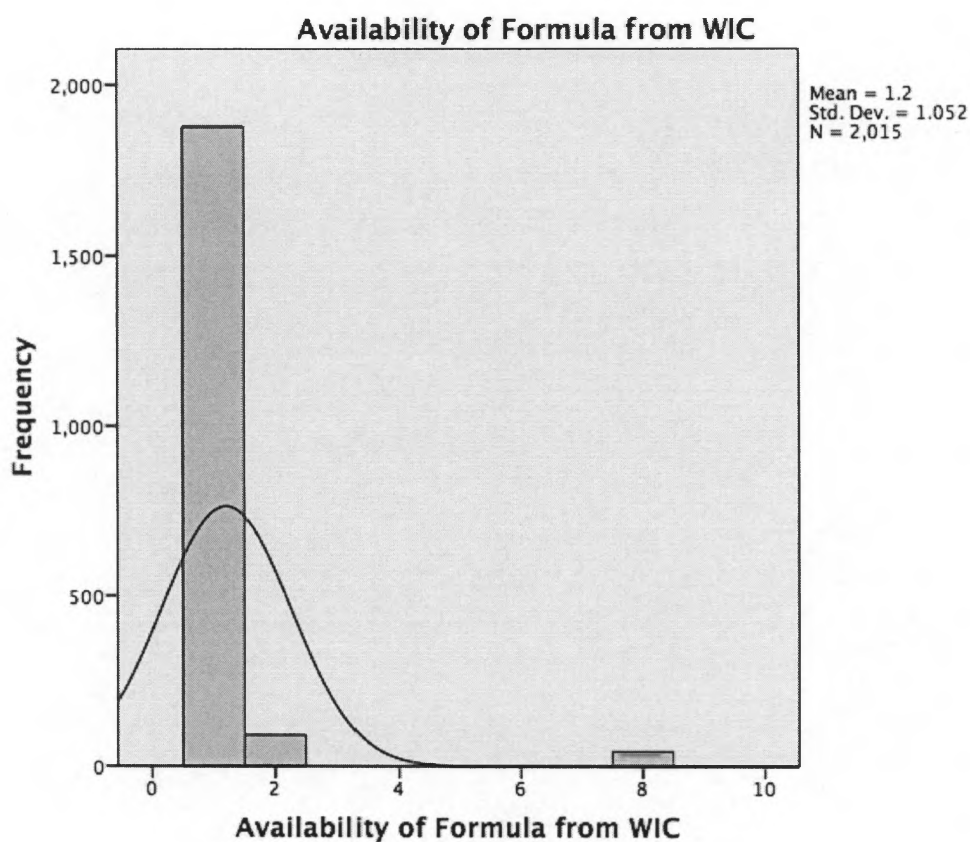


Figure 6 on the independent, nominal variable of “mothers’ perception of the availability of formula from WIC if they need it” illustrates that the majority of respondents agreed with the statement. ($f = 1878$), while a minority disagreed ($f = 92$).

Figure 7. Frequency by Support Given by WIC to Mothers Who Breastfeed

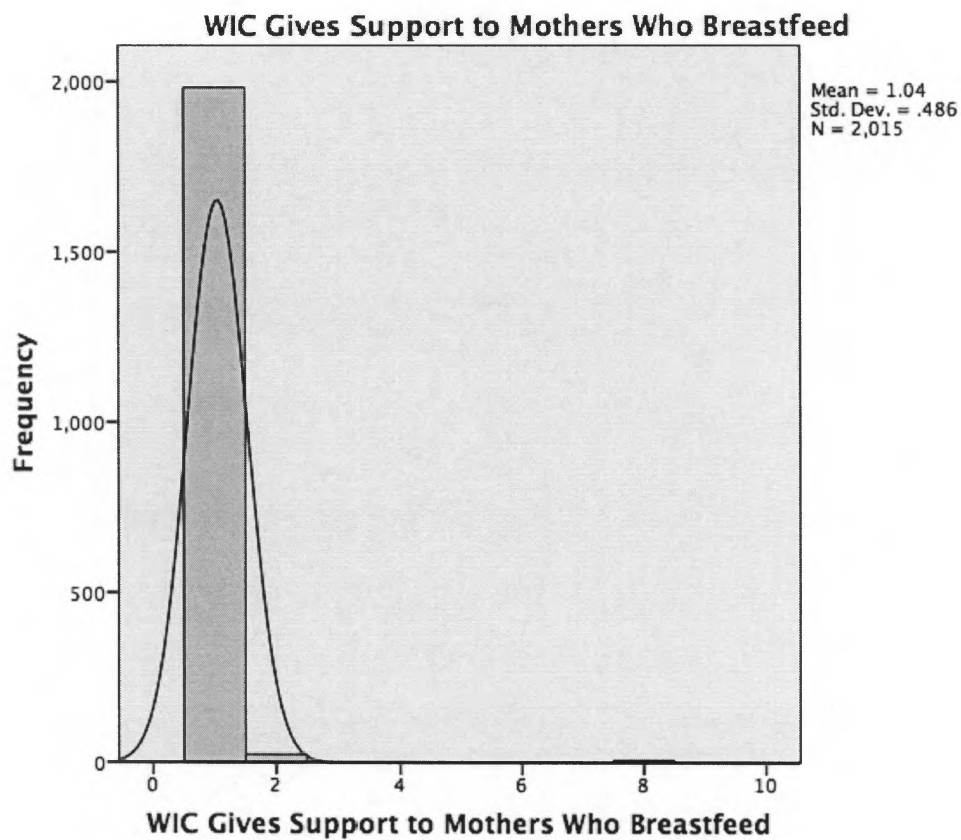


Figure 7 on the independent, nominal variable of “mothers’ perception that WIC gives support to mothers who breastfeed” illustrates that the majority of respondents agree with this statement ($f = 1982$), while a minority disagreed ($f = 24$).

Figure 8. Frequency by Pressure to Breastfeed

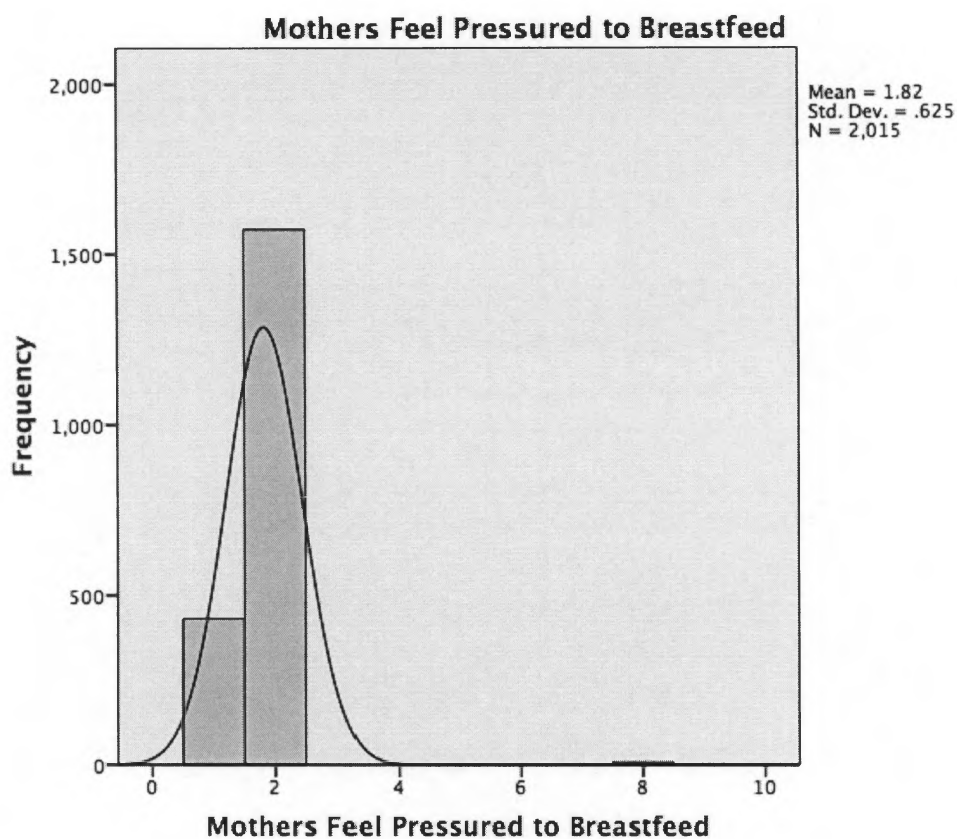


Figure 8 on the independent, nominal variable of “mothers feeling pressured to breastfeed” illustrates that the majority of respondents disagreed with this statement ($f = 1573$), while a minority agreed with the statement ($f = 431$).

4.1.2. Analysis using Cross Tabulation

Cross tabulations were conducted to compare the relationship between the dependent variable of breastfeeding status with the seven independent variables.

Hypothesis #1: Mother's perception of WIC's position on formula-feeding is associated with breastfeeding status. Results of the contingency table as outlined in Table 4 indicate that of women who believe WIC encourages feeding using formula, 8 percent more clients are currently breastfeeding than not breastfeeding. Of women who do not believe WIC encourages formula feeding, 18 percent more clients are currently breastfeeding than not breastfeeding.

	WIC encourages formula-feeding	WIC does not encourage formula-feeding
Currently breastfeeding	54%	59%
Not currently breastfeeding	46%	41%
Difference	8%	18%

Hypothesis #2: Mother's perception of WIC's position on breastfeeding without using formula is associated with breastfeeding status. Results of the contingency table as outlined in Table 5 indicate that of women who believe WIC encourages breastfeeding without formula, 16 percent more clients are currently breastfeeding than not breastfeeding. Of women who do not believe WIC encourages breastfeeding without formula feeding, 17 percent more clients are currently breastfeeding than not breastfeeding.

	WIC encourages breastfeeding without formula	WIC does not encourage breastfeeding without formula
Currently breastfeeding	58%	59%
Not currently breastfeeding	42%	42%
Difference	16%	17%

Hypothesis #3: Mother's perception of WIC's position on both breastfeeding and formula-feeding is associated with breastfeeding status. Results of the contingency table as outlined in Table 6 indicate that of women who believe WIC encourages feeding by breastfeeding and formula feeding, 4 percent more clients are currently breastfeeding than not breastfeeding. Of women who do not believe WIC encourages feeding by breastfeeding and formula feeding, 17 percent more clients are currently breastfeeding than not breastfeeding.

	WIC encourages feeding by breastfeeding and formula feeding	WIC does not encourage feeding by breastfeeding and formula feeding
Currently breastfeeding	52%	61%
Not currently breastfeeding	48%	39%
Difference	4%	22%

Hypothesis #4: Advice received from WIC staff is associated with breastfeeding status. Results of the contingency table as outlined in Table 7 indicate that of women who reported that WIC said to breastfeeding and not give formula, 22 percent more were

currently breastfeeding than not breastfeeding. Of women who reported that WIC said to give both breast milk and formula, 20 percent fewer women were currently breastfeeding than not breastfeeding. Of women who reported that WIC said to give only formula, 72 percent fewer women were breastfeeding than not breastfeeding. Of the women who reported “don’t know”, 24 percent more were currently breastfeeding than not breastfeeding.

Table 7. Contingency Table: Currently Breastfeeding * Advice that WIC Staff Gave Mothers About Feeding				
	WIC said to breastfeed not give formula	WIC said to give both breast milk and formula	WIC said to only give formula	Don't know
Currently breastfeeding	61%	40%	14%	62%
Not currently breastfeeding	39%	60%	86%	38%
Difference	22%	-20%	-72%	24%

Hypothesis #5: Availability of formula from WIC is associated with breastfeeding status. Results of the contingency table as outlined in Table 8 indicate that of women who believed that they could get formula from WIC if they needed it, 18% more women were currently breastfeeding than not breastfeeding. Of women who believed that they could not get formula from WIC if they needed it, 13% fewer women were currently breastfeeding than not breastfeeding.

	I can get formula from WIC if I need it	I cannot get formula from WIC if I need it
Currently breastfeeding	59%	44%
Not currently breastfeeding	41%	57%
Difference	18%	-13%

Hypothesis #6: The perception that WIC gives support to mothers who breastfeed is associated with breastfeeding status. Results of the contingency table as outlined in Table 9 indicate that of women who believed that WIC gives support to mothers who breastfeed, 17 percent more women were currently breastfeeding than not breastfeeding. Of women who believed that WIC does not give support to mothers who breastfeed, 42 percent fewer women were currently breastfeeding than not breastfeeding.

	WIC gives support to mothers who breastfeed	WIC does not give support to mothers who breastfeed
Currently breastfeeding	58%	29%
Not currently breastfeeding	41%	71%
Difference	17%	-42%

Hypothesis #7: Pressure to breastfeed by WIC is associated with breastfeeding status. Results of the contingency table as outlined in Table 10 indicate that of women who sometimes felt pressured by WIC to breastfeed, 2 percent more women were

currently breastfeeding than not breastfeeding. Of women who did not feel pressured to breastfeed, 20 percent were currently breastfeeding than not breastfeeding.

	I sometimes feel pressured by WIC to breastfeed	I do not feel pressured by WIC to breastfeed
Currently breastfeeding	51%	60%
Not currently breastfeeding	49%	40%
Difference	2%	20%

4.2. Analysis using the Chi-Square Method

The chi-square goodness-of-fit test was conducted to determine the probability that a relationship exists between the dependent variable of breastfeeding status and the independent variables. Table 11 below summarizes of the results.

Independent Variable	Chi-Square Test		
	Value	df	Asymp. Sig. (2-sided)
Mother's perception of WIC's position on feeding formula	8.016	6	.237
Mother's perception of WIC's position on feeding by breastfeeding without formula	2.542	6	.864
Mother's perception of WIC's position on feeding by both breastfeeding and formula feeding	18.551	9	.029
Advice that WIC staff gave mothers about feeding	67.255	12	.000
Mother's perception that formula is available from WIC if needed	31.763	9	.000
Mother's perception that WIC gives support to mothers who breastfeed	9.394	9	.402
Mother's feelings of being sometimes pressured by WIC to breastfeed	19.182	9	.024

Below are the results of each hypothesis tested to determine associations between clients' breastfeeding status and their perceptions of WIC's position on breastfeeding.

Hypothesis #1: Mother's perception of WIC's position on formula-feeding is associated with breastfeeding status. Chi-square test results indicate a P-value of .237, which is larger than an alpha at .05, so the null hypothesis was retained, $X^2(6) = 8.016$, $p > .05$. The alternative hypothesis that an association exists is not supported.

Hypothesis #2: Mother's perception of WIC's position on breastfeeding without using formula is associated with breastfeeding status. Chi-square test results indicate a P-value of .864, which is larger than an alpha at .05, so the null hypothesis was retained, $X^2(6) = 2.542$, $p > .05$. The alternative hypothesis that an association exists is not supported.

Hypothesis #3: Mother's perception of WIC's position on both breastfeeding and formula-feeding is associated with breastfeeding status. Chi-square test results indicate a P-value of .029, which is smaller than an alpha at .05, so the null hypothesis was rejected, $X^2(9) = 18.551$, $p \leq .05$. The alternative hypothesis that an association exists is supported.

Hypothesis #4: Advice received from WIC staff is associated with breastfeeding status. Chi-square test results indicate a P-value of .000, which is smaller than an alpha at

.05, so the null hypothesis was rejected, $X^2(12) = 67.255$, $p \leq .05$. The alternative hypothesis that an association exists is supported.

Hypothesis #5: Availability of formula from WIC is associated with breastfeeding status. Chi-square test results indicate a P-value of .000, which is smaller than an alpha at .05, so the null hypothesis was rejected, $X^2(9) = 31.763$, $p \leq .05$. The alternative hypothesis that an association exists is supported.

Hypothesis #6: The perception that WIC gives support to mothers who breastfeed is associated with breastfeeding status. Chi-square test results indicate a P-value of .402, which is larger than an alpha at .05, so the null hypothesis was retained, $X^2(9) = 9.394$, $p > .05$. The alternative hypothesis that an association exists is not supported.

Hypothesis #7: Pressure to breastfeed by WIC is associated with breastfeeding status. Chi-square test results indicate a P-value of .024, which is smaller than an alpha at .05, so the null hypothesis was rejected, $X^2(9) = 19.182$, $p \leq .05$. The alternative hypothesis that an association exists is supported.

4.3. Analysis using Logistic Regression

To supplement the chi-square results, and explore further the relationship between mothers' perceptions of WIC and their behavioral choice in breastfeeding, logistic regression was used to test the probability of the associations between the dependent

variable and the independent variables. Binomial logistic regression was applied to the categorical, independent variables with two categories (i.e., Yes or No, Agree or Disagree), which included hypotheses #1, 2, 3, 5, 6, and 7. This regression was conducted to predict the status of currently breastfeeding using the independent variables as predictors. Nagelkerke's R^2 of .031 indicated a weak relationship between prediction and grouping. Prediction success overall was 59.1 percent (90.3 percent for Yes and 16.2 percent for No).

The clients' bureaucratic perception variables found to have a significant predictive ability ($p \leq 0.05$) in regard to breastfeeding status were the following four variables:

- Mother's perception of WIC's position on feeding by both breastfeeding and formula feeding ($p = .000$);
- Mother's perception that formula is available from WIC if needed ($p = .012$);
- Mother's perception that WIC gives support to mothers who breastfeed ($p = .012$); and
- Mother sometimes feels pressured by WIC to breastfeed ($p = .001$).

The highest probability was found with hypothesis #6, mother's perception that WIC gives support to mothers who breastfeed. The Exp(B) value indicates that when the

independent variable of clients' belief that WIC gives support to mothers who breastfeed is increased by one unit, the odds ratio is 3 times as large and therefore clients are 3 times more likely to be currently breastfeeding. The second highest probability was found with hypothesis #5, mother's perception that formula is available from WIC if needed. The Exp(B) value indicates that when the independent variable of clients' belief that formula is available from WIC if needed is increased by one unit, the odds ratio is 1.76 times as large and therefore clients are 1.76 more likely to be currently breastfeeding. The Exp(b) value for hypothesis #2, mother's perception of WIC's position on feeding by breastfeeding without formula, indicated an odds ration of 1.14 times as large and therefore clients are 1.14 times as likely to be currently breastfeeding. The variables for the remaining hypotheses resulted in an Exp(B) value of less than 1, indicating less likelihood to be currently breastfeeding. Table 12 summarizes the results of the binomial logistic regression.

Table 12. Summary of Binomial Logistic Regression Results			
Independent Variable	Binomial Logistic Regression Results		
	B	Sig.	Exp(B)
Mother's perception of WIC's position on feeding formula	-.011	.931	.989
Mother's perception of WIC's position on feeding by breastfeeding without formula	.131	.194	1.140
Mother's perception of WIC's position on feeding by both breastfeeding and formula feeding	-.424	.000	.654
Mother's perception that formula is available from WIC if needed	.566	.012	1.761
Mother's perception that WIC gives support to mothers who breastfeed	1.162	.012	3.197
Mother's feelings of being sometimes pressured by WIC to breastfeed	-.378	.001	.685

The multinomial logistic regression analysis, displayed in Table 13, was conducted to predict the status of currently breastfeeding using the independent variable of WIC staff's advice on feeding as predictors. This regression was used for hypothesis #4 because the dependent variable is nominal, and there are more than two categories. Nagelkerke's R^2 of .043 indicated a weak relationship between prediction and grouping. WIC staff's advice to breastfeed and not give formula ($p = .000$) and WIC staff's advice to give both breast milk and formula ($p = .023$) were smaller than alpha at .05 so the alternative hypothesis is supported. The Exp(B) value indicates that when WIC staff members advise clients to breastfeed and not give formula is increased by one unit, the odds ratio is 10 times as large and therefore clients are 10 times more likely to be currently breastfeeding. When WIC staff members advise to give both breast milk and formula is increased by one unit, the odds ratio is 4 times as large and therefore clients are 4 times more likely to be currently breastfeeding.

Table 13. Summary of Multinomial Logistic Regression Results			
Independent Variable: WIC Staff's Advice on Feeding	Multinomial Logistic Regression Results		
	B	Sig.	Exp(B)
WIC staff said you should breastfeed and not give formula	2.312	.000	10.093
WIC staff said you should give both breast milk and formula	1.437	.023	4.209
WIC staff said you should only give formula	0	.	.

4.4. Discussion of the Results

Results using different types of analyses provide us a generally positive, but still a mixed picture of the relationship as far as the hypotheses are concerned, as associations with breastfeeding status were found in only five of the seven variables tested. One could claim that most of the assumptions of the study were borne out, if not in all cases. In summary, analyses using chi-square and logistic regression uncovered similar or consistent results, which is encouraging for further studies along this theme. Perceptions of bureaucracy seem to matter to clients' behavioral choices. The hypotheses supported by the results of both statistical methods were:

1. Hypothesis #3: Mother's perception of WIC's position on both breastfeeding and formula-feeding is associated with breastfeeding status.
2. Hypothesis #4: Advice received from WIC staff is associated with breastfeeding status.
3. Hypothesis #5: Availability of formula from WIC is associated with breastfeeding status; and
4. Hypothesis #7: Pressure to breastfeed by WIC is associated with breastfeeding status.

While the chi-square test did not reveal support for hypothesis #6, the perception that WIC gives support to mothers who breastfeed is associated with breastfeeding status, the

binomial logistic regression did indicate an association, controlling for all other variables. This is one of the areas where the picture is mixed.

These results overall support the conclusion that while WIC supposedly maintains a public position that supporting breastfeeding mothers is a high priority, clients' perceptions on WIC's stance and support regarding breastfeeding is associated with client breastfeeding status. The findings of this research are in line with existing literature concluding that breastfeeding support and education from WIC counselors and staff are related to breastfeeding rates among women receiving WIC benefits. To further delve into the association between WIC clients' breastfeeding status and WIC staff interaction with prenatal women and mothers, examination of these results from a public administration perspective is needed to inform possible programmatic and policy changes that contribute to increased rates of breastfeeding, as the succeeding sections will show.

4.5. Results from the Perspectives of Public Administration Theories

While this research supports the overall conclusion that associations exist between the breastfeeding status of WIC clients and their perceptions of bureaucrats, how is this association explainable using different theories of public administration and policy?

Client perceptions on the bureaucratic practices of WIC and its association with the breastfeeding status of WIC clients, despite the agency's public support of the feeding

practice, can be examined through the decision-making notions from the theory of street-level bureaucracy. Lipsky (1980) coined the term street-level bureaucrats to describe “those men and women who, in their face-to-face encounters with citizens, ‘represent’ government to the people” (p. 1). As the author argued, “public policy is not best understood as made in legislatures or top-floor suites of high-ranking administrators, because in important ways it is actually made in the crowded offices and daily encounters of street-level workers” (Lipsky, 1980, p. xii). Specifically, Lipsky defines these individuals as public employees whose work is characterized by:

- Constant interaction with citizens as a standard requirement of the job;
- Independence to exercise discretion in decision-making; and
- The possible, extensive impact on citizens with whom the street-level bureaucrat interacts (p. 2).

Street-level bureaucracy centers on the discretion that street-level workers utilize in their interactions with the public, which may lead to practices that undermine or impede the policy goals of the organization. This use of discretion, which is fundamental to understanding street-level bureaucracy, creates opposing goals for street-level bureaucrats and their managers. The priorities of street-level bureaucrats, in a difficult working environment, is to make their working conditions as tolerable as possible, which is achieved through the use of their discretion, while the priorities of the managers are to

implement policy as effectively as possible (p. 18). To maximize effectiveness, managers focus on the overall achievement of the work unit and minimizing the autonomy of street-level bureaucrats (p. 25). The relationship between workers and their managers becomes one of interdependency, as managers' ability to control street-level bureaucrats is limited (p. 164), and employees must be careful not to push the boundaries of behavior considered tolerable by their superiors (p. 24).

Based on the theory, therefore, WIC staff who counsel women on infant feeding practices function as street-level bureaucrats, as they are government employees who work directly with pregnant women and mothers, use their discretion in their counseling of clients, and their recommendations to clients have the potential to greatly impact clients' decisions, feelings or beliefs about breastfeeding. Instead of formal policies, it is the judgments, coping mechanisms and decisions of street-level bureaucrats that become the public policies that they implement (p. xii). In this way, it is the professional advice on infant feeding that WIC counselors give to their clients that becomes WIC policy on breastfeeding. Hypothesis #3, that mother's perception for WIC's position on both breastfeeding and formula feeding is associated with breastfeeding status, and hypothesis #4 that advice received from WIC staff is associated with breastfeeding status, were supported, using this framework. The theory of street-level bureaucracy supports this research's finding of an association between public servants' practices and the breastfeeding status of the WIC clients they serve.

Also addressing the association between public servants' actions and client outcomes, the theory of emotional labor can inform the apparent divide between WIC's public position on breastfeeding and the actions of WIC staff who work directly with clients. Guy, Newman and Mastracci (2008) define emotional labor as "the work which requires the engagement, suppression, and/or evocation of the worker's emotions in order to get the job done....Simply put, emotional labor requires affective sensitivity and flexibility with one's own emotions as well as those of others" (p. xii). The authors examine emotional labor through the experiences of public service workers such as counselors, teachers, human service providers and others whose position expects that they are able exercise an appreciation and understanding for their clients' situations. While emotional labor, the authors argue, is fundamental to public service positions, the skill is disappearing from job descriptions, minimizing its importance. This lack of attention to a critical skill contributes to its diminishment and absence during the staff recruitment process, within the staff training process, and in employee performance assessments.

WIC staff, such as lactation consultants, nutritionists, nutrition paraprofessionals and others, to be successful and effective at promoting breastfeeding, must exercise compassion, empathy and understanding when counseling clients on breastfeeding. This emotion-intensive work has costs, such as emotional exhaustion, which causes employees to disengage from their jobs, and cynicism, which contributes to workers depersonalizing

clients and becoming apathetic to their breastfeeding issues (p. 105). Another cost is ineffectiveness, which is accompanied by feelings of inadequacy and low professional self-esteem (p. 107). It is the costs of emotional labor that may contribute to detachment and ineptitude by public servants in effectively counseling their clients on breastfeeding.

4.6. Conclusions and Recommendations

The results of the study lead us to reflect on their implications for the work of public administrators, how theories could help mediate the relationship between bureaucrats and clients, and some practical steps that may be taken to engender choice for clients toward breastfeeding.

4.6.1. Bureaucrats and Wicked Problems

As clients behave partly in response to how they perceive the work of government, it is important to note that increasingly, wicked problems confront bureaucrats. As a public policy issue, the campaign to increase rates of breastfeeding in the U.S. among WIC clients may be viewed as a wicked problem. Wicked problems are a category of problems encountered by government officials and public managers that “defy solution, even with our most sophisticated analytical tools” (Roberts, 2000, p. 1). Kolko (2012) classifies wicked problems as being a social or cultural problem that is “difficult or impossible to solve for as many as four reasons: incomplete or contradictory

knowledge, the number of people and opinions involved, the large economic burden, and the interconnected nature of these problems with other problems.”

Tapping Kolko’s classification of wicked problems to breastfeeding, it is apparent that the issue goes beyond a complex problem. While mothers may be receiving accurate breastfeeding education through WIC staff or educational materials provided by the agency, contradictory messaging in the form of the promotion and availability of infant formula from WIC impedes progress at increasing breastfeeding rates. In addition, breastfeeding advice to mothers may be received by numerous sources with different opinions on infant feeding, such as WIC staff, hospitals, infant formula companies, family members, friends and others who may give contradictory information or advice. Moreover, tactics that may improve breastfeeding rates may have economic burdens that may hinder implementation, such as increased expenses related to improved training and compensation of WIC staff, public service announcements on breastfeeding, the provision of paid maternity leave to allow for extended time to breastfeed, and paid breaks at mothers’ places of employment for the purpose of expressing milk. Lastly, breastfeeding is interconnected with other problems, such as disparities in income and employment, the absence of paid maternity leave in the U.S., the lack of regulation of marketing from infant formula companies and others.

While it is widely known that breast milk is the gold standard for infant feeding, the lack of consensus on the nature of the problem and the best solution, plus the numerous competing stakeholders involved, contributes to the conclusion that no singular solution will solve this public health problem. However, addressing bureaucratic influence may help uncover effective interventions at improving breastfeeding rates among WIC clients.

Supplementing the theory of street-level bureaucracy, James Q. Wilson (2000) addressed the relationship between bureaucrats' attitudes and behaviors on how tasks are defined and performed. The author noted that the rewards and penalties of an alternative course of action that could influence bureaucratic behavior with their clients (p. 51). Wilson (2000), citing a study in which two welfare offices were observed, found that behavioral differences were the result of how the offices were managed. Differences were observed between offices in which one supervisor stressed the importance of workers being considerate to clients while the other office did not (p. 52).

Wilson's (2000) perspective of bureaucratic behaviors to WIC and the findings that bureaucratic practices are associated with clients' breastfeeding status could help us speculate why the low rates of breastfeeding is at least partly attributable to the WIC bureaucracy and staff. The management environment of street-level bureaucrats shapes the behaviors of front-line staff. Due to an environment of dwindling or scarce resources

and possibly conflicting or unachievable goals, street-level bureaucrats may not be equipped to achieve WIC's goal of greater breastfeeding rates among its clients. This is enforced by research indicating that only 0.6 percent of WIC's budget is allocated toward breastfeeding initiatives despite the proclamation of breastfeeding families being the highest priority for the agency (Baumgartel, Spatz & the American Academy of Nursing Expert Breastfeeding Panel, 2013, p. 466). In contrast to resources for breastfeeding initiatives, 11.6 percent of the budget is allotted to the purchase of infant formula. This disparity in financial allocation may create inconsistency between policy versus practices (p. 466), affecting the environment in a way that promotes formula as an equivalent nutritional substitute for breast milk. As the environment from a budget allocation perspective indicates 25 times greater support for formula than breastfeeding initiatives, workers may be dissuaded, penalized or disincentivized through limited resources for breastfeeding support to provide adequate counseling to difficult or complex clients who express hesitance or unwillingness to breastfeed through the infant's first year of life. As such, the lack of client resources by WIC for breastfeeding promotion may signal to clients that supporting breastfeeding mothers is a not a major priority of the agency. This perception may influence women's decisions to use formula or discontinue breastfeeding earlier than they anticipated due to a perception of formula as an adequate substitute for breast milk or lack of support to address common barriers to breastfeeding.

4.6.2. Recommendations from Choice Architecture Theory

Herbert Simon (1999) introduced the theory of bounded rationality, the idea that rationality is limited, or bounded, because humans do not possess the ability to have all knowledge of what is relevant, deliberate every consequence of their actions, consider all possible courses of action and know how to balance competing decisions (p. 25). Under the premise that individuals are humans, not econs, and make decisions that are boundedly rational, choice architecture proposes that individuals can be influenced to make decisions through changes in the decision-making environment. The term choice architect describes individuals who “indirectly influence the choices other people make” (Thaler, Sunstein & Balz, 2014, p. 430). Choice architecture can enlighten WIC policymakers as to how the environment in which pregnant women and mothers make decisions about infant nutrition affects their breastfeeding choices. While one may conclude that policy makers and WIC managers are the obvious choice architects when it comes to its clients, this definition is also applicable to WIC’s street-level bureaucrats whose interactions with clients “nudge” mothers in making certain feeding choices for their infants.

In nudging individuals to make the desired decision, the authors recommend several strategies: the use of a default option, the expectation of human error, the provision of feedback on what they are doing well and where there are opportunities for improvement, the implementation of mapping to help direct people to the most appropriate choice, the structuring of complex choices in which individuals are unable to

sort through all options available, and incentives (p. 430-438). These interventions can be especially impactful on WIC's clientele given studies demonstrating disparities in breastfeeding among low-income women (Hurley et. al., 2008, p. 95), and the conclusion that improving breastfeeding knowledge and building confidence in women so they can successfully breastfeed can help low-income women address barriers to breastfeeding (Mitra et. al., 2004, p. 65). A few of these strategies are examined within the context of WIC's breastfeeding promotion efforts below.

4.6.1.3. Use of Incentives through WIC Food Packages

To encourage individuals to choose a desired option, the theory of choice architecture proposes the use of incentives. The authors identify salience as critical to the analysis of incentives, posing the question of whether humans are aware of the incentives offered (p. 437). Applying this line of inquiry to WIC clients, a follow up question is raised on the types of incentives for mothers and whether they are informed of these incentives to encourage them to initiate breastfeeding and maintain duration through the first year of their infants' lives.

In 2009, to increase rates of exclusive breastfeeding, the USDA enacted new rules, including regulations that increased the value of WIC food packages for mothers who fully breastfeed, a reduction in the amount of formula for mothers who partially breastfeed, and calibrated formula amounts for infants by age (California WIC

Association & PHFE WIC, September 2011, p. 1). These changes were implemented throughout WIC clinics in California the same year, in addition to a default option described in greater detail below, which prevented the routine issuance of formula for infants under 30 days old. Moreover, these clinics adopted Healthy Habits Begin at Birth, a curriculum for clients about making breastfeeding decisions and about the breastfeeding incentives in the new food package. These changes – enhanced food packages for fully breastfeeding mothers, reduction in formula, and enhanced staff curriculum for the dissemination of information on new food packages – were implemented to incentivize mothers to exclusively breastfeed and breastfeed at greater frequencies.

The local WIC agency serving counties in southern California, PHFE WIC, investigated the impact of these new incentives on WIC breastfeeding rates. This research examined the rates of the three WIC food packages: fully breastfeeding (no formula received by client), combination breastfeeding (some formula received by client) and formula-only (client received the maximum allowable amount of formula) (p 2). The analysis of the data found that the issuance of the fully breastfeeding food packages to clients increased significantly following staff training and participant education alone, and continued in increasing following implementation of the USDA's policy changes. Moreover, there was a significant decrease in the issuance of combination food packages and some decrease in the issuance of formula-only packages (p. 2). Six months after implementation of the new policies, rates for food packages for fully breastfeeding

infants grew by an astounding 86 percent (p. 3). Increases in breastfeeding were observed at two months and six months of age. The researchers concluded that the educational and policy changes implemented were successful at increasing exclusivity and duration of breastfeeding.

As the research of PHFE WIC concluded, the incentives set forth through policy and promotion through educational initiatives were successful at increasing breastfeeding rates and decreasing formula usage (p. 3). PHFE WIC's results are in line with this research's findings that the availability of formula from WIC is associated with breastfeeding status (hypothesis #5). By minimizing the incentive of formula availability through alternative incentives of new food packages and through education of street-level bureaucrats on the promotion of the new food packages, breastfeeding rates improved among WIC clients.

4.6.1.4. Use of Default Options to Promote Breastfeeding

The assumption of choice architecture is that for varying reasons, individuals will choose whatever option requires the least amount of effort (Thaler, Sunstein & Balz, 2014, p. 430). Operating under this premise, the authors highlight the power of a default option, the option that the chooser receives if he or she chooses nothing (p. 430).

California created a default for WIC clients in 2009 by changing the approach to how they were prescribing food packages for infants. Recognizing that establishing successful breastfeeding is hindered by the introduction of formula in the first 30 days of life (California Department of Public Health, 2009, p. 29), California enacted a powerful policy of no routine issuance of formula in the first 30 days for breastfeeding infants (California WIC Association & PHFE WIC, September 2011, p. 1). This policy meant that if a breastfeeding mother of a one-week old infant came to WIC and requested one can of formula just in case she stopped producing milk, the policy prevented a WIC staff member from granting the client's request unless a nutritional issue, health reason or extenuating circumstance was identified (San Francisco Department of Public Health, 2009, p. 1). During the assessment, the WIC staff member would encourage the mother to continue fully breastfeeding, provide education and offer additional resources, such as peer counseling support when available.

Other defaults stemming from the 2009 policy changes included the restructuring of food packages for women who were formula-feeding or feeding their infants through a combination of breast milk and formula. For example, prior to the changes, prescription age breaks were 0-5 months, 6 months with infant cereal, and 7-11 months with cereal and juice (California Department of Public Health, 2009, p. 2). With the new policy, age breaks for formula fed infants and those who were fed a combination of formula and breast milk were changed to 0-3 months and 4-5 months to adjust the amounts of infant

formula prescribed, and 6-11 months with cereal and infant food (p. 2). Furthermore, for women who were combination feeding, the amount of formula provided was adjusted based on whether they reported as mostly breastfeeding or some breastfeeding during assessment interviews with WIC staff (p. 16). As such, these new defaults limited the amount of formula prescribed based on an infant's age and the feeding behaviors of the client.

As mentioned above, these policy and others enacted in California led to the dramatic increase of fully breastfeeding WIC clients, as well as a reduction in the issuance of food packages for mothers who partially breastfed or fully formula fed their infants. (California WIC Association & PHFE WIC, September 2011, pp. 3- 4). The results of the policy changes are in line with the findings of this research in which the hypotheses are supported. For example, the implementation of the new defaults for infant feeding packages provides WIC street-level bureaucrats with detailed directions on how to assess each client, reducing the opportunity for bureaucratic discretion in how they advise their clients (hypothesis #4). It also reduces the availability of formula (hypothesis #5), which is associated with breastfeeding status.

4.6.1.5. Improving Decisions through Feedback

Providing feedback helps improve the decision performance of individuals that public policies are supposed to aid. According to choice architecture, well-designed

systems signal individuals when they are doing well and when they are making errors (p. 433). Examples the authors note include the feature on digital cameras that allow users to view the photographic image just captured to improve photo satisfaction, which cameras relying on film did not offer. Another example dealt with road safety within a treacherous stretch of highway in Chicago's Lake Shore Drive. To encourage drivers to comply with the 25 mph speed limit in a series of S curves, the city painted perpendicular white lines that gave drivers the illusion of speeding up, which nudged them to slow their speed (p. 433). Following this intervention, crashes were reduced by 36% after a six-month period (p. 433).

In applying the concept of feedback to WIC clients, breastfeeding rates may be improved through this method. As reported by Reifsnider and colleagues, (2003), some of the barriers to breastfeeding among WIC clients as reported to WIC staff were pain and difficulty with latch-on techniques, resulting in women giving up on breastfeeding instead of finding a solution (p. 10). Moreover, many of these women during their prenatal care were not educated to expect these challenges, which contributed to frustration and their choice to turn to formula-feeding (p. 10). To help overcome this challenge, the use of WIC peer counselors can provide feedback to clients to contribute to improved breastfeeding rates. Peer counselors who are trained to assist clients during the prenatal stage and at frequent intervals in the first few months of the infants' lives has been shown to be successful in improving rates of breastfeeding (Long et. al., 1995, p.

279). This intervention can provide useful feedback for mothers who experience pain from breastfeeding and difficulty establishing a latch position for their infant, as these counselors can offer advice and assistance on how to minimize discomfort and educate women on a variety of latching techniques.

One study conducted on a Utah WIC population examined the implementation of a peer counseling program for WIC clients in which counselors contacted subjects during the prenatal stage and at one, two, and four to six weeks postpartum experienced higher rates of breastfeeding initiation and duration at three months postpartum when compared to the control group (p. 279). By providing this feedback mechanism at a greater number of WIC sites, the potential for making an impact on breastfeeding rates through peer counseling is positive.

4.6.2. Recommendations from other Theories: Issue Networks

As the task of addressing low breastfeeding rates among WIC clients is a wicked problem requiring collaboration among multiple stakeholders, notions from issue networks may help promote breastfeeding compliance with Healthy People 2010 goals. Hecllo (1978) coined the term issue network, defining it as “a shared-knowledge group having to do with some aspect [or, as defined by the network, some problem] of public policy” (p. 448). Issue networks are descriptive of how contemporary government makes policy today, with interest groups playing a significant role in promoting policy.

Applying the author's definition, the network consists of the multiple individuals and organizations that seek to influence policy. Some of these actors are represented in the federal government's Breastfeeding Promotion Consortium, which was established in 1990 to "exchange ideas on how the Federal government and private health organizations can collaboratively promote breastfeeding as the optimal form of infant nutrition" (U.S. Department of Agriculture, 2013). Comprised of over 25 organizations from health professional associations, advocacy groups and federal agencies, these entities include:

- African-American Breastfeeding Alliance
- American Academy of Family Physicians
- American Academy of Pediatrics
- American Association of Health Plans
- American College of Obstetricians and Gynecologists
- American Dietetic Association
- American Medical Association
- Association of Maternal and Child Health Programs
- Association of State and Territorial Public Health Nutrition Directors
- Association of Women's Health, Obstetric, and Neonatal Nurses
- Baby Friendly USA
- Center for Male and Family Research and Resources
- Healthy Mothers, Healthy Babies Coalition
- International Lactation Consultant Association
- La Leche League International
- March of Dimes Birth Defects Foundation
- National Alliance for Breastfeeding Advocacy (NABA)
- National Perinatal Association
- National Alliance for Hispanic Health
- National Association of Pediatric Nurse Practitioners
- National WIC Association
- Washington Business Group on Health
- Wellstart International
- U.S. Agency for International Development

- U.S. Department of Health and Human Services
 - Centers for Disease Control and Prevention
 - Food and Drug Administration
 - Headstart Bureau
 - Health Resources and Services Administration
 - Indian Health Service
 - Office on Women's Health
- U.S. Department of Agriculture
 - Cooperative State Research Education & Extension Service
 - Food and Nutrition Service
- U.S. Department of Defense
 - U.S. Department of Labor, Women's Bureau (U.S. Department of Agriculture, 2013)

According to WIC, its ability to leverage its relationships with other relevant organizations and agencies allows it to be most effective in breastfeeding promotion and education (National WIC Association, n.d., p. 5), as many of the organizations identified, which are professional health associations, have published position papers or statements recommending breastfeeding as the optimal nutrition source for infants (p. 5). The impact of this issue network may be credited with the passage of federal and state legislation aimed at creating workplace protections and accommodations for breastfeeding mothers (p. 6).

4.6.3. Application of Policy Advocacy Theories to Improve Breastfeeding

Moving beyond the existence of issue networks in breastfeeding policy, the next step is to examine how certain interest groups attempt to influence policy. Gen and

Wright (2014) developed a conceptual framework of policy advocacy that links theory to activities. This section examines a sampling of policy advocacy activities – coalition building and public mobilization, informational campaign, and pilot projects – and the public administration theories associated with them, which advocacy groups have used or can use to influence policy on breastfeeding among WIC clients.

4.6.3.1. Coalition Building and Public Mobilization

Coalition building and mobilization of the public are two activities in which the theory of issue networks can be applied (p. 14). Public acceptance of breastfeeding has been associated with a mother's decision to cease breastfeeding (Weimer, 2001, p. 1). Moreover, only 43 percent of adults believed that women should have the right to breastfeed in public (The Surgeon General's Call to Action to Support Breastfeeding, 2011, p. 13). Societal acceptance of public breastfeeding in the U.S. appears to be lagging behind state laws in which 49 states, the District of Columbia and the Virgin Islands have laws that allow women to breastfeed in any public or private location (National Conference of State Legislatures, 2015). In California, the 1997 law allows a mother to breastfeed her child in any location, public or private (National Conference of State Legislatures, 2015). Interest groups within the issue network of public breastfeeding have taken different approaches to promoting the practice. For example, the American Public Health Association's call to action on breastfeeding identified the lack of national legislation to "protect women from persecution or harassment for breastfeeding in

public” (American Public Health Association, 2007). La Leche League International published a pamphlet on breastfeeding in public that addressed cultural attitudes and provides tips on the best places to breastfeed and the best clothing suited for public breastfeeding (La Leche League International, 2006).

In addition to these two organizations, mothers and others who support public breastfeeding mobilized a nationwide “nurse-in” following a 2011 incident in which a Texas woman who was breastfeeding her infant at a Target store received critical treatment and made to feel uncomfortable by several employees, despite the state’s public breastfeeding law (“Breastfeeding at Target: Moms Stage National Demonstration”, 2011). This display of public mobilization, which drew national attention through multiple media outlets, brought to light the issue of lack of acceptance of public breastfeeding, despite state laws allowing the feeding practice. Through the issue network’s multipronged approach to addressing the barrier of criticism over public breastfeeding, the coalition is supporting the examination of current policies that may provide additional protection to women who choose to breastfeed publicly. It is hoped that through greater acceptance of public breastfeeding, fewer women will turn to formula and discontinue breast milk to avoid public condemnation.

4.6.3.2. Informational Campaign

Arguably one of the most prevalent of advocacy activities to increase breastfeeding rates is informational campaigning. One category of informational campaigning is research activities, which includes “the analysis of empirical data as well as the construction of arguments based on rationality” (Gen & Wright, 2014, p. 17). Rational choice theory holds the assumption that humans act rationally, calculating the costs and benefits before making a decision (Scott, 2000, p. 126). As such, informational campaigning provides decision makers with the scientific knowledge they need to determine their policy preference and the best ways to address the policy problem. Several examples exist of informational campaigning through research activities. One of the main examples is the American Academy of Pediatrics (2012) policy statement on breastfeeding and the use of human milk (p. e827). This document summarizes numerous research studies conducted on the association between breastfeeding and the occurrences of certain health conditions in infants, maternal health outcomes and the economic benefits of breastfeeding (pp. e828-e832). This policy statement concludes with a call to action for pediatricians and employers, highlighting the integral roles of pediatricians being active advocates and educators, as well as the benefits of mother/baby-friendly worksites, which provide an economic return to employers (p. e836). Through the consolidation of the most recent, comprehensive scientific literature under one policy statement, this activity provides policy advocates who are proponents of breastfeeding

with a powerful tool to garner additional allies and substantiate their case for support to policymakers.

4.6.3.3. Pilot Projects

Pilot or demonstration projects are one approach used by advocates to influence policy (Gen & Wright, 2014, p. 20). Pilots can be seen as an application of the theory of incrementalism introduced by Charles Lindblom (1959). According to Lindblom (1959), policy changes in Western democracies are almost exclusively through incremental or marginal adjustments (p. 84), which run counter to the rational-comprehensive method (p. 81). As most policy changes are incremental, pilot projects can be persuasive, as they can demonstrate success of effective approaches on a smaller scale, minimizing risk that may be involved with large scale, sweeping changes. One study conducted that exemplifies a successful pilot is the implementation of a peer counseling program for Native American WIC population in Utah (Long, et. al., 1995, p. 279). Trained peer counselors contacted clients at different stages: prenatally, and at one, two, and four to six weeks postpartum (p. 279). Results indicated that clients who received peer counseling experienced higher rates of breastfeeding initiation and at three months postpartum when compared to the control group (p. 279). These positive results which found an association between the institution of peer counseling and increased breastfeeding rates among a local WIC population, can be used by policy advocates to

propose the expansion of the peer counseling intervention to other WIC sites as a means of increasing breastfeeding rates. As success of the pilot's model has already been established, the incremental policy change involved in the pilot's expansion would have greater success in persuading policymakers to support this intervention.

5. Summary and Conclusion

The first part of this research aimed to determine whether breastfeeding status was associated with perceptions regarding the WIC bureaucracy and staff. Although the hypotheses tested using correlation and logistic regression returned mixed results, five of the seven hypotheses were supported, leading to the conclusion that associations exist between the breastfeeding status of clients and their perceptions of WIC bureaucracy and staff. Client perceptions of bureaucracy do matter.

Of those hypotheses that were not supported, this author speculates whether qualitative data on the interpretation of the survey questions by the respondents would uncover reasons behind the statistical results. As the author did not have these data for this study, this line of inquiry could not be carried out; however, future studies into client perceptions should be supplemented with qualitative data.

The research also explored how the associations are explainable through the lenses of public administration and policy. The research applied a framework based on

principles from street-level bureaucracy and choice architecture, as well as other notions in the literature such as wicked problems, emotional labor, issue networks, and advocacy. Through the examination of theories and that understanding of the correlations between the variables at-hand, this research supports the development and implementation of policy and programmatic changes directed at modifying messaging by WIC bureaucracy and staff to improve clients' breastfeeding rates. Several recommendations, grounded in theory, have been proposed based on the results, and include under choice architecture the use of defaults to increase breastfeeding initiation and decrease formula usage within a infants' first 30 days of life, the use of incentives to persuade clients to breastfeed more frequently and reduce dependence on formula in exchange for enhanced food packages, and the provision of feedback to clients by peer counselors to support women and help them troubleshoot breastfeeding difficulties, decreasing the likelihood of breastfeeding discontinuation. Under the different approaches to advocacy, strategies proposed include coalition building and public mobilization to increase knowledge about breastfeeding laws and public acceptance, the use of informational campaigns through research to provide scientific data on the impact of breastfeeding, and pilot projects to demonstrate the feasibility of interventions that have been successfully implemented and can be scaled to serve a broader population.

While some limitations characterize this study, it is hoped that the findings contribute to current literature on factors associated with breastfeeding among WIC

clients. By examining the issue from a public administration perspective, this research brings forth strategies that may contribute to greater compliance of the Healthy People 2020 goals, and improved economic benefits for society through cost savings related to prevented health conditions. By addressing the perceptions that WIC clients have about the agency's position on breastfeeding, and providing WIC with adequate financial resources for breastfeeding support services to address those perception issues, policy makers can set a greater number of infants and their mothers on a path to better health, benefitting all.

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Appendix

1. Public Health Foundation Enterprises (PHFE) WIC Post-Partum Women's Breastfeeding Survey

**Post-Partum Women's Breastfeeding Survey
 – Questionnaire –**

2. When you were pregnant with (NAME), which of the following best describes how you thought you would feed (NAME) once (NAME) was born?
- 1. you didn't know how you would feed (NAME) 1
 - 2. you thought you might breastfeed (NAME) 2
 - 3. you knew that you would feed (NAME) only breast milk 3
 - 4. you knew that you would feed (NAME) both breast milk and formula 4
 - 5. you knew you would feed (NAME) only formula 5
 - DON'T KNOW DK
 - REFUSED REF

IF Q2 = 2, 3 OR 4 (CONSIDERED BREASTFEEDING), ASK:

3. When you were pregnant with (NAME), for how many months did you expect that you would feed (NAME) breast milk after you gave birth? (READ CATEGORIES IF NECESSARY)
- LESS THAN 1 MONTH 0
 - 1 MONTH 1
 - 2 MONTHS 2
 - 3 MONTHS 3
 - 4 MONTHS 4
 - 5 MONTHS 5
 - 6 MONTHS 6
 - 7 MONTHS 7
 - 8 MONTHS 8
 - 9 MONTHS 9
 - 10 MONTHS 10
 - 11 MONTHS 11
 - 12 MONTHS OR LONGER 12
 - DON'T KNOW DK
 - REFUSED REF

4. Are you currently breastfeeding (NAME)?
- YES 1
 - NO 2
 - DON'T KNOW DK
 - REFUSED REF

IF Q4 = YES (CURRENTLY BREASTFEEDING), ASK:

- 4a. About how many times do you breastfeed in a typical 24-hour day? _____ TIMES
- DON'T KNOW DK
 - REFUSED REF
- 5x. Does (NAME) also get infant formula?
- YES 1
 - NO 2
 - DON'T KNOW DK
 - REFUSED REF

IF YES (ALSO GETS FORMULA), ASK:

5. Does (NAME) get infant formula every day or only on some days?
- EVERY DAY 1
 - SOME DAYS 2
 - DON'T KNOW DK
 - REFUSED REF

IF EVERY DAY, ASK:

5c.	About how many ounces of formula does (<u>NAME</u>) get in a typical day?	_____ OUNCES PER DAY (RANGE 1-65 OZ)	
		DON'T KNOW	DK
		REFUSED	REF

IF SOME DAYS, ASK:

5d.	About how many ounces of formula does (<u>NAME</u>) get in a typical week?	_____ OUNCES PER WEEK (RANGE 1-200 OZ)	
		DON'T KNOW	DK
		REFUSED	REF

IF Q4 = NO (NOT CURRENTLY BREASTFEEDING), ASK:

5.	Does (<u>NAME</u>) get infant formula every day, only on some days or not at all?		
		EVERY DAY	1
		SOME DAYS	2
		NOT AT ALL	3
		DON'T KNOW	DK
		REFUSED	REF

IF EVERY DAY, ASK:

5c.	About how many ounces of formula does (<u>NAME</u>) get in a typical day?	_____ OUNCES PER DAY (RANGE 1-65 OZ)	
		DON'T KNOW	DK
		REFUSED	REF

IF SOME DAYS, ASK:

5d.	About how many ounces of formula does (<u>NAME</u>) get in a typical week?	_____ OUNCES PER WEEK (RANGE 1-200 OZ)	
		DON'T KNOW	DK
		REFUSED	REF

6a.	Did you ever breastfeed (<u>NAME</u>)?		
		YES	1
		NO	2
		DON'T KNOW	DK
		REFUSED	REF

IF YES (EVER BREASTFED), ASK:

6b.	How old was (<u>NAME</u>) when you stopped breastfeeding (him) (her)? How many weeks or months was (he) (she)? (READ CATEGORIES IF NECESSARY)		
		LESS THAN 1 WEEK	1
		1 WEEK	2
		2 WEEKS	3
		3 WEEKS	4
		1 MONTH	5
		2 MONTHS	6
		3 MONTHS	7
		4 MONTHS	8
		5 MONTHS	9
		6 MONTHS	10
		7 MONTHS	11
		8 MONTHS	12
		9 MONTHS	13
		10 MONTHS	14
		11 MONTHS	15
		DON'T KNOW	DK
		REFUSED	REF

IF Q5 = EVERY DAY OR SOME DAYS (USES FORMULA) AND Q4=YES OR Q6A=YES (EVER BREASTFED), ASK:

7.	How old was (NAME) when (he) (she) first got formula? How many weeks or months was (he) (she)? (READ CATEGORIES IF NECESSARY)	LESS THAN 1 WEEK	1
		1 WEEK	2
		2 WEEKS	3
		3 WEEKS	4
		1 MONTH	5
		2 MONTHS	6
		3 MONTHS	7
		4 MONTHS	8
		5 MONTHS	9
		6 MONTHS	10
		7 MONTHS	11
		8 MONTHS	12
		9 MONTHS	13
		10 MONTHS	14
		11 MONTHS	15
DON'T KNOW	DK		
REFUSED	REF		

IF Q4 = YES (CURRENTLY BREASTFEEDING), Q5X = NO OR Q5 = NOT AT ALL (NOT USING FORMULA), ASK:

8.	Did (NAME) ever get formula for a short period of time and then go back to fully breast feeding?	YES	1
		NO	2
		DON'T KNOW	DK
		REFUSED	REF

IF YES, ASK:

8a.	How old was (NAME) when (he) (she) first got formula if only for a short period of time? (READ CATEGORIES IF NECESSARY)	LESS THAN 1 MONTH OR IN HOSPITAL	1
		1 MONTH	2
		2 MONTHS	3
		3 MONTHS	4
		4 MONTHS	5
		5 MONTHS	6
		6 MONTHS	7
		7 MONTHS	8
		8 MONTHS	9
		9 MONTHS	10
		10 MONTHS	11
		11 MONTHS	12
DON'T KNOW	DK		
REFUSED	REF		

8x.	Did you give birth to (NAME) in a hospital or in some other setting?	IN A HOSPITAL	1
		OTHER SETTING	2
		REFUSED	REF

IF Q4 = YES (CURRENTLY BREASTFEEDING) OR Q6a = YES (EVER BREASTFED), ASK:

9.	How would you describe your breastfeeding experience with (NAME)? Would you say it (is) (was) easy, mostly easy but with challenges, or difficult?	EASY	1
		MOSTLY EASY BUT WITH CHALLENGES	2
		DIFFICULT	3
		DON'T KNOW	DK
		REFUSED	REF

10. How helpful were each of the following in providing you with breastfeeding support for (NAME)... (READ ITEMS IN RANDOM ORDER, ASKING:) How helpful (was) (were) (ITEM) in providing you with breastfeeding support – very helpful, somewhat helpful or not helpful?

	VERY HELPFUL	SOMEWHAT HELPFUL	NOT HELPFUL	DK	REF
() a. (IF Q8X = HOSPITAL) the hospital where you gave birth.....	1	2	3	DK	REF
() b. your doctor	1	2	3	DK	REF
() c. (NAME)'s doctor	1	2	3	DK	REF
() d. family members and friends.....	1	2	3	DK	REF
() f. your current or former employer	1	2	3	DK	REF
(IF NOT APPLICABLE, ENTER '4')					
() g. WIC.....	1	2	3	DK	REF

• NOTE: IF Q8X NOT 1 (HOSPITAL), SKIP TO Q43. OTHERWISE, CONTINUE.

The next few questions are about your experience at the hospital where (NAME) was born...

11. Did you have a C-section with (NAME)?	YES.....	1
	NO.....	2
	DON'T KNOW.....	DK
	REFUSED.....	REF

IF Q4 = YES (CURRENTLY BREASTFEEDING) OR Q6a = YES (EVER BREASTFED), ASK:

12. Did you breastfeed (NAME) in the hospital within the first hour after birth?	YES.....	1
	NO.....	2
	DON'T KNOW.....	DK
	REFUSED.....	REF

IF NO, DON'T KNOW OR REFUSED, ASK:

13. Did you hold (NAME) skin-to-skin on your chest within the first hour after birth?	YES.....	1
	NO.....	2
	DON'T KNOW.....	DK
	REFUSED.....	REF

12a. Did you breastfeed (NAME) at any time during your hospital stay?	YES.....	1
	NO.....	2
	DON'T KNOW.....	DK
	REFUSED.....	REF

12b. Did a nurse, lactation consultant or other member of the hospital staff talk to you about how to breastfeed (NAME)?	YES.....	1
	NO.....	2
	DON'T KNOW.....	DK
	REFUSED.....	REF

IF Q6A=NO (NEVER BREASTFED), ASK:

13. Did you hold (NAME) skin-to-skin on your chest within the first hour after birth?	YES.....	1
	NO.....	2
	DON'T KNOW.....	DK
	REFUSED.....	REF

14. Did (NAME) stay in the same room with you in the hospital?	YES.....	1
	NO.....	2
	DON'T KNOW.....	DK
	REFUSED.....	REF

IF NO, ASK:

14a.	Did (NAME) stay in the hospital nursery or was (he) (she) in the Neo-natal Intensive Care Unit?	NURSERY.....	1
		NIC UNIT.....	2
		OTHER.....	3
		DON'T KNOW.....	DK
		REFUSED.....	REF

IF NURSERY, ASK:

14b.	Did (NAME) stay in the hospital nursery because you requested it, because it was hospital policy or did (he) (she) have special medical needs?	YOUR REQUEST.....	1
		HOSPITAL POLICY.....	2
		SPECIAL NEEDS.....	3
		OTHER.....	4
		DON'T KNOW.....	DK
		REFUSED.....	REF

IF Q4= YES (CURRENTLY BREASTFEEDING) OR Q6A =YES (EVER BREASTFED), ASK:

15a.	Was (NAME) fed formula at the hospital?	YES.....	1
		NO.....	2
		DON'T KNOW.....	DK
		REFUSED.....	REF

IF YES, ASK:

15b.	Was this done at your request or did hospital staff do this without asking you?	YOUR REQUEST.....	1
		HOSPITAL STAFF DID THIS.....	2
		DON'T KNOW.....	DK
		REFUSED.....	REF

IF HOSPITAL STAFF DID THIS WITHOUT YOUR ASKING, ASK:

15c.	Was it okay with you that the hospital staff fed formula to (NAME)?	YES, OKAY.....	1
		NO, NOT OKAY.....	2
		DON'T KNOW.....	DK
		REFUSED.....	REF

16.	Did the hospital give you formula to take home when you left the hospital?	YES.....	1
		NO.....	2
		DON'T KNOW.....	DK
		REFUSED.....	REF

IF Q4 = YES (CURRENTLY BREASTFEEDING) OR Q6a = YES (EVER BREASTFED), ASK:

17.	Did the hospital give you a telephone number to call if you had questions or needed help with breastfeeding (NAME)?	YES.....	1
		NO.....	2
		DON'T KNOW.....	DK
		REFUSED.....	REF

18.	Were you and (NAME) both discharged from the hospital at the same time or did (NAME) have to remain there for a while?	BOTH DISCHARGED AT SAME TIME.....	1
		BABY HAD TO REMAIN IN HOSPITAL.....	2
		DON'T KNOW.....	DK
		REFUSED.....	REF

IF BABY HAD TO REMAIN IN HOSPITAL, ASK:

18a.	For how many days after you were discharged did (NAME) have to stay in the hospital?	_____ DAYS	
		DON'T KNOW.....	DK
		REFUSED.....	REF

IF Q4 = YES (CURRENTLY BREASTFEEDING) OR Q6A = YES (EVER BREASTFED), ASK:

43.	How likely would you be to refer your friend to (ITEM) for breastfeeding support – very likely, somewhat likely or not too likely? (READ ITEMS IN ORDER)					
		VERY LIKELY	SOMEWHAT LIKELY	NOT TOO LIKELY	DK	REF
a.	(IF Q8x = HOSPITAL) the hospital where you gave birth to (NAME)	1	2	3	DK	REF
b.	your doctor	1	2	3	DK	REF
c.	WIC, if your friend is eligible for WIC	1	2	3	DK	REF

19x.	Around the time (NAME) was born, did you receive any coupons that would save you money for formula? Please do <u>not</u> include any formula vouchers that you can get from WIC.	YES.....1	NO.....2	DON'T KNOW.....DK	REFUSED.....REF
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IF YES, ASK:

19a/b.	From which of the following did you get these coupons – (IF Q8x = HOSPITAL, SAY: the hospital,) your or your baby's doctor, from family or friends, in the mail or some other source? (ANSWER CAN BE A MULTIPLE)	HOSPITAL.....1	DOCTOR.....2	FAMILY/FRIENDS.....3	IN THE MAIL.....4	OTHER.....5	DON'T KNOW.....DK	REFUSED.....REF
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IF Q5 = EVERY DAY OR SOME DAYS (USES FORMULA) OR Q8 = YES (EVER USED FORMULA), ASK:

20.	I am going to read some reasons mothers sometimes start using formula to feed their babies. For each, please tell me if this was a reason why you started using formula to feed (NAME). (READ ITEMS IN RANDOM ORDER, ASKING:) Was this a reason why you started using formula to feed (NAME)?					
		WAS	WAS NOT	DK	REF	
()	a. (IF Q4=YES OR Q6A=YES (EVER BREASTFED), ASK:) My baby had difficulty nursing or did not like being breastfed	1	2	DK	REF	
()	b. (IF Q4=YES OR Q6A=YES (EVER BREASTFED), ASK:) I thought my baby was not gaining enough weight	1	2	DK	REF	
()	c. My baby was sick and could not breastfeed	1	2	DK	REF	
()	d. (IF Q4=YES OR Q6A=YES (EVER BREASTFED), ASK:) My nipples were sore, cracked or bleeding	1	2	DK	REF	
()	e. (IF Q4=YES OR Q6A=YES (EVER BREASTFED), ASK:) I thought I was not producing enough breast milk	1	2	DK	REF	
()	f. (IF Q6A=YES (EVER BREASTFED), ASK:) I felt it was the right time to stop breastfeeding	1	2	DK	REF	
()	g. I was sick or had a medical condition and could not breastfeed	1	2	DK	REF	
()	h. (IF Q4=YES OR Q6A=YES (EVER BREASTFED), ASK:) I went back to work or school	1	2	DK	REF	
()	i. Most of the mothers I know use formula when feeding their babies	1	2	DK	REF	
()	j. (IF Q4=NO (NOT CURRENTLY BREASTFEEDING), ASK:) I felt overwhelmed and breastfeeding was too much to deal with	1	2	DK	REF	
()	k. A family member or close friend advised me to use formula	1	2	DK	REF	
()	l. WIC gave me formula	1	2	DK	REF	
()	m. (IF Q4=NO AND Q6A=NO (NEVER BREASTFED), ASK:) I didn't want to breastfeed	1	2	DK	REF	

21. Which of the following best describes how you learned to mix formula to feed (NAME)... (READ ALL CATEGORIES IN ORDER)?

	1. A doctor or nurse taught me.....1
	2. Friends or family members taught me.....2
	3. WIC staff taught me.....3
	4. I knew how to do this from past experience.....4
- or -	5. I taught myself.....5
	DON'T KNOW..... DK
	REFUSED.....REF

22. I am going to read some statements. For each, please tell me whether or not you think this statement reflects WIC's position about feeding babies. There are no right or wrong answers; we would just like your opinion. (READ IN RANDOM ORDER, ASKING:) Do you think this reflects WIC's position?

	YES	NO	DK	REF
() a. WIC encourages mothers to breastfeed their babies.....	1	2	DK	REF
() b. WIC encourages mothers to feed their babies formula.....	1	2	DK	REF
() c. WIC encourages mothers to breastfeed their babies without using formula.....	1	2	DK	REF
() d. WIC encourages mothers to both breastfeed and feed their babies formula.....	1	2	DK	REF

23. Are you currently receiving powdered or concentrated infant formula from WIC to help feed (NAME)? (IF YES: Which do you get – powdered formula or concentrated formula?)

	YES, POWDERED FORMULA..... 1
	YES, CONCENTRATED FORMULA..... 2
	NO..... 3
	DON'T KNOW..... DK
	REFUSED.....REF

IF POWDERED FORMULA, ASK:

24a. How many cans of <u>powdered</u> formula are you currently receiving each month from WIC to help feed (NAME)?	_____ CANS DON'T KNOW..... DK REFUSED.....REF
--	---

IF CONCENTRATED FORMULA, ASK:

24b. How many cans of <u>concentrated</u> formula are you currently receiving each month from WIC to help feed (NAME)?	_____ CANS DON'T KNOW..... DK REFUSED.....REF
--	---

IF Q23 = 1 OR 2, ASK:

25. Is the amount of formula that you get from WIC to help feed (NAME) more than you usually need, less than you usually need or about right?	MORE THAN YOU NEED..... 1 LESS THAN YOU NEED..... 2 ABOUT RIGHT..... 3 DON'T KNOW..... DK REFUSED.....REF
---	---

IF LESS THAN YOU NEED, ASK:

27a. About how many <u>more</u> cans of infant formula do you have to get, in addition to those that you receive from WIC, to feed (NAME) in a typical month?	_____ ADDITIONAL CANS DON'T KNOW..... DK REFUSED.....REF
28. When you need more formula to help feed (NAME), do you usually buy it, get it from a family member or friend, or get it some other way?	BUY IT..... 1 GOT IT FROM FAMILY/FRIEND..... 2 OTHER WAY..... 3 DON'T KNOW..... DK REFUSED.....REF

IF Q5= EVERY DAY OR SOME DAYS (USES FORMULA), ASK:

26.	When mixing formula for (NAME), how often do you add more water than what's usually recommended – never, some of the time, most of the time or all of the time (IF Q23 = NO, ADD: or are you not using formula at all?)	NEVER 1 SOME OF THE TIME 2 MOST OF THE TIME 3 ALL OF THE TIME 4 NOT USING FORMULA AT ALL 5 DON'T KNOW DK REFUSED REF
-----	---	--

IF SOME, MOST OR ALL OF THE TIME, ASK:

26a.	Do you do this so you can stretch out the amount of formula that you have to feed (NAME) or for some other reason?	TO STRETCH OUT AMOUNT USED 1 OTHER REASON 2 DON'T KNOW DK REFUSED REF
------	--	--

IF Q23 = NO (NOT RECEIVING FORMULA FROM WIC) OR Q24a < 5 CANS OR Q24b < 5 CANS, ASK:

29	It is WIC's current policy to give breastfeeding mothers who receive less than 5 cans of formula per month additional food for themselves and their babies. How much did this policy influence your decision to get less than 5 cans of formula from WIC for (NAME) each month? Was this a big influence, a small influence or did it have no influence on your decision to get less formula?	BIG INFLUENCE 1 SMALL INFLUENCE 2 NO INFLUENCE 3 DON'T KNOW DK REFUSED REF
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30. Lots of people may have given you advice about how to feed (NAME), including WIC staff persons. Which of the following best describes the kind of advice that WIC staff gave you about feeding (NAME):
- (1) They said you should breastfeed (NAME) and not give (him) (her) formula 1
 - (2) They said you should give both breast milk and formula to (NAME) 2
 - or – (3) They said you should only give formula to (NAME) 3
 - DON'T KNOW DK
 - REFUSED REF

31. I am going to read some comments that we have heard from moms about WIC. Please tell me whether you agree or disagree with each one. (READ ITEMS IN RANDOM ORDER, ASKING:) Do you agree or disagree?

	AGREE	DISAGREE	DK	REF
() a. WIC staff listen to me and support my feeding choices	1	2	DK	REF
() b. I can get formula from WIC if I need it	1	2	DK	REF
() c. I can call WIC if I have questions about breastfeeding	1	2	DK	REF
() d. WIC gives support to mothers who breastfeed	1	2	DK	REF
() e. I sometimes feel pressured by WIC to give formula to my baby	1	2	DK	REF
() f. I sometimes feel pressured by WIC to breastfeed my baby	1	2	DK	REF

- 32x. Are you currently working for pay outside the home?
- | | |
|---------------------|-----|
| WORKING FOR PAY | 1 |
| NOT WORKING FOR PAY | 2 |
| REFUSED | REF |

IF NOT WORKING FOR PAY, ASK:

32.	Do you have any plans to work for pay outside your home in the near future?	YES 1 NO 2 DON'T KNOW DK REFUSED REF
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IF WORKING FOR PAY AND EITHER Q4 = YES (CURRENTLY BREASTFEEDING) OR Q6 = YES (EVER BREASTFED), ASK:

33.	Did your returning to work after the birth of (NAME) change how you were feeding (NAME)?	YES.....1
		NO2
		DON'T KNOW DK
		REFUSEDREF

IF YES, ASK:

33a.	Did your returning to work reduce the amount you breast fed (NAME) or did it stop your breastfeeding of (NAME) altogether?	REDUCED.....1
		STOPPED2
		OTHER3
		DON'T KNOW DK
		REFUSEDREF

IF WORKING FOR PAY AND Q4 = YES (CURRENTLY BREASTFEEDING), ASK:

34.	Do you use a breast pump at work to express milk?	YES.....1
		NO2
		DON'T KNOW DK
		REFUSEDREF

IF YES, ASK:

35a.	Do you use a manual or electric pump?	MANUAL1
		ELECTRIC.....2
		BOTH3
		DON'T KNOW DK
		REFUSEDREF
35b.	Did you get your pump from WIC or from another source?	WIC.....1
		OTHER SOURCE2
		DON'T KNOW DK
		REFUSEDREF

IF Q34 = NO, ASK:

36.	If you had had a breast pump available to you around the time you returned to work, would you have used it?	YES.....1
		NO2
		DON'T KNOW DK
		REFUSEDREF

IF Q32X=YES (WORKING FOR PAY) OR Q32=YES (EXPECT TO WORK) AND Q4 = YES (CURRENTLY BREASTFEEDING), ASK:

37.	Did you know that WIC provides breast pumps for free to mothers who request one and meet certain eligibility requirements or have you not heard anything about this?	YES, HAVE HEARD ABOUT THIS1
		NO, HAVE NOT HEARD2
		DON'T KNOW DK
		REFUSEDREF

(NOTE TO INTERVIEWER: IF MOTHER ASKS FOR MORE INFORMATION ABOUT THIS, TELL THEM THEY CAN CALL WIC AT 1-888-278-6455.)

38.	Did you know that employers in California are required to allow women to pump breast milk for their infants at work or have you not heard anything about this?	YES, HAVE HEARD ABOUT THIS1
		NO, HAVE NOT HEARD2
		DON'T KNOW DK
		REFUSEDREF

39. I am going to read some statements about breastfeeding and formula feeding. Please tell me whether you agree or disagree with each one. (READ ITEMS IN RANDOM ORDER, ASKING:) Do you agree or disagree?

	<u>AGREE</u>	<u>DISAGREE</u>	<u>DK</u>	<u>REF</u>
() a. If a baby is hungry 1 or 2 hours after being breastfed, it means the mother is not making enough breast milk	1	2	DK	REF
() b. If a mother is going to return to work, she should start the baby on a bottle as soon as possible after birth	1	2	DK	REF
() c. Mothers should breastfeed newborn babies as often as possible to build up their supply of breast milk	1	2	DK	REF
() d. Breastfed babies can have trouble breastfeeding if they are given a bottle too early	1	2	DK	REF
() e. If a breastfed baby is hungry less than 4 hrs after breastfeeding, the mother should give a bottle of formula	1	2	DK	REF
() f. After breastfeeding, babies should be given some formula to fill them up	1	2	DK	REF
() j. Feeding formula to a baby reduces the amount of breast milk a mom makes	1	2	DK	REF
() k. A baby who gets formula in addition to breast milk gets the same benefit as a baby who only gets breast milk	1	2	DK	REF
() l. The longer and more a woman breastfeeds, the more it reduces her <u>own</u> risk for various diseases	1	2	DK	REF
() m. Formula provides benefits to the baby that breast milk does not provide	1	2	DK	REF
() n. The best thing for babies is to receive both breast milk and formula	1	2	DK	REF

IF Q4 = YES (CURRENTLY BREASTFEEDING) OR Q6 = YES (EVER BREASTFED), ASK:

40. How comfortable (are) (were) you breastfeeding (NAME) in a public place – very comfortable, somewhat comfortable, not too comfortable or not at all comfortable?	VERY COMFORTABLE	1
	SOMEWHAT COMFORTABLE	2
	NOT TOO COMFORTABLE	3
	NOT AT ALL COMFORTABLE	4
	DON'T KNOW	DK
	REFUSED	REF
41. Did you know that California laws protect a woman's right to breastfeed in public or have you not heard anything about this?	YES, HAVE HEARD ABOUT THIS	1
	NO, HAVE NOT HEARD	2
	DON'T KNOW	DK
	REFUSED	REF

41a. How many children have you given birth to before you had (NAME)?

_____ OTHER CHILDREN
REFUSED REF

IF ONE OR MORE, ASK:

41b1. (IF ONE:) Did you breastfeed that child?	YES	1
	NO	2
	REFUSED	REF
41b2. (IF MORE THAN ONE:) How many of those children did you breastfeed?	_____ OTHERS BREASTFED	
	REFUSED	REF

IF Q41B1=YES OR Q41B2=ONE OR MORE, ASK:

41c1. (IF Q41B1=YES OR Q41B2=ONE:) How long did you breastfeed that child?	LESS THAN 1 MONTH.....	0
	1 MONTH.....	1
41c2. (IF Q41B2=MORE THAN ONE:) Not counting (NAME), what is the longest you breastfed any of your older children? How many months or years? (READ CATEGORIES IF NECESSARY)	2 MONTHS.....	2
	3 MONTHS.....	3
	4 MONTHS.....	4
	5 MONTHS.....	5
	6 MONTHS.....	6
	7 MONTHS.....	7
	8 MONTHS.....	8
	9 MONTHS.....	9
	10 MONTHS.....	10
	11 MONTHS.....	11
	12 MONTHS OR LONGER.....	12
	DON'T KNOW.....	DK
	REFUSED.....	REF

41x. Do you think there is a chance that you will have another baby at some point in the future?	YES.....	1
	NO.....	2
	DON'T KNOW.....	DK
	REFUSED.....	REF

IF YES OR DON'T KNOW, ASK:

42. Would you consider breastfeeding your next baby?	YES.....	1
	NO.....	2
	DON'T KNOW.....	DK
	REFUSED.....	REF

Finally, some questions about yourself for background purposes...

D1. In what month and year were you born?	<u>MONTH OF BIRTH</u>	
	JANUARY.....	1
	FEBRUARY.....	2
	MARCH.....	3
	APRIL.....	4
	MAY.....	5
	JUNE.....	6
	JULY.....	7
	AUGUST.....	8
	SEPTEMBER.....	9
	OCTOBER.....	10
	NOVEMBER.....	11
	DECEMBER.....	12
	<u>YEAR OF BIRTH</u>	
	(ONLY ACCEPT YEARS 1992 OR EARLIER)	
	REFUSED.....	REF
D2. Right now, about how much do you weigh, without shoes?	_____ LBS	
	DON'T KNOW.....	DK
	REFUSED.....	REF
D3. How tall are you, without shoes?	_____ FEET	
	_____ INCHES	
	DON'T KNOW.....	DK
	REFUSED.....	REF

- D4. What is the highest level of school you have completed or the highest degree you have received? (IF HIGH SCHOOL, ASK:) What was the highest grade you completed?
- NO FORMAL SCHOOLING1
 8TH GRADE OR LESS2
 GRADES 9-12 BUT NOT A HIGH SCHOOL GRADUATE3
 HIGH SCHOOL GRADUATE4
 SOME COLLEGE/TRADE SCHOOL/ ASSOCIATE DEGREE5
 (4-YEAR) COLLEGE GRADUATE6
 POST GRADUATE/PROFESSIONAL DEGREE7
 DON'T KNOW DK
 REFUSEDREF
- D5. Are you of Latino or Hispanic origin? (IF NECESSARY, SAY: such as Mexican-American, Latin American, South American or Spanish-American)?
- YES, HISPANIC1
 NO, NON-HISPANIC2
 DON'T KNOW DK
 REFUSEDREF
- D6. For classification purposes, we'd like to know what your racial background is. Are you White, Black or African-American, Asian, Pacific Islander, American Indian or Alaskan Native, a member of another race or a combination of these? (ANSWER CAN BE A MULTIPLE)
- WHITE1
 BLACK/AFRICAN AMERICAN2
 ASIAN3
 PACIFIC ISLANDER4
 AMERICAN INDIAN/ALASKAN NATIVE5
 HISPANIC/LATINO (VOLUNTEERED)6
 OTHER _____7
 (SPECIFY)
- DON'T KNOW DK
 REFUSEDREF
- D7. Were you born in the U.S. or outside the U.S.?
- BORN IN U.S.1
 BORN OUTSIDE U.S.2
 REFUSEDREF
- IF BORN OUTSIDE U.S., ASK:**
- | | | |
|---|---|---|
| D7x. In what country were you born? (REFER TO COUNTRY CODES AND ENTER TWO DIGIT CODE) | <input type="text"/> <input type="text"/> | REFUSEDREF |
| D7xx. In total, how many years have you lived in the U.S.? | _____ YEARS | DON'T KNOW DK
REFUSEDREF |
- D8. One last question. We may want to conduct a follow-up survey in the future. Would it be okay if we called you back at that time to ask you some additional questions?
- YES1
 NO2
 DON'T KNOW DK
 REFUSEDREF

These are all of my questions. Thank you very much for taking the time to be a part of this important survey.
 (HANG UP)