
Intergenerational Households Maintained by African American Grandmothers: New Roles and Challenges for the 21st Century

Dorothy S. Ruiz, Associate Professor, Department of African American and African Studies, The University of North Carolina at Charlotte; Research Fellow, Center for the Study of Aging and Human Development, Duke University

The family and the church have been the most important institutions in African American families and communities since slavery. African American grandmothers have played a pivotal role in both institutions. Their role responsibilities, especially in the extended family context, are broad and elastic. They have performed crucial roles in the care and welfare of grandchildren, great-grandchildren, fictive kin, and others who may or may not be related by birth. In addition to caregiving, African American grandmothers have provided social and emotional support to family members, communicated important social values to offspring, engaged in the birth of babies, worked in the fields along with their husbands, and engaged in important leadership positions in the family, church, and community. From slavery to freedom, reconstruction to Jim Crowism, to the present, African American grandmothers have been a major force in the socialization of children and the stabilization of black families. The strength and resilience of African American motherhood is embedded in the ability to withstand the harshness of slavery and oppression, the ability to perform multiple roles, love of family, and strong religious beliefs. The African American grandmother is appropriately described by E. Franklin Frazier (1939) as the *guardian of the generations*.

In contemporary American society, African American grandmothers have continued their roles as guardians and caregivers as they are faced with new and challenging responsibilities as we approach the 21st century. Over the past decade, there has been an enormous amount of policy and research interest in the roles grandparents play in raising and providing care for their grandchildren. This interest is stimulated by the increasing numbers of grandparent maintained households. According to the U.S. Bureau of the Census (1997), since 1970, there has been a 77 percent increase in the number of households headed by grandparents. Grandparent headed households represent all socioeconomic levels and ethnic/racial groups. However, the greatest increase is among African American grandmothers in the role of surrogate parent, where neither parent is present. In spite of the rapid increase, policy interest, and the proliferation of research on intergenerational family relationships in the 1990s, very little research has been devoted to the incidence, prevalence, and problems of grandmother maintained households within African American communities. This article provides

an overview of (1) the increase in grandparent headed households, (2) historical roles of African American grandmothers, (3) changes in structure of African American families, (4) new and challenging roles — with specific emphasis on the crack-cocaine epidemic and the incarceration of young mothers—, and, (5) suggestions for future research.

Increase in Grandparent Maintained Families

In 1970, 2.2 million or 3.2 percent of American children lived in a home maintained by a grandparent. This number had increased to 3.9 million or 5.5 percent by 1997 (Casper & Bryson, 1998; U.S. Bureau of the Census, 1998; Velkoff & Lawson, 1998). In 1998, this figure had risen to 4 million or 6 percent of all children under 18 (U.S. Bureau of the Census, 1998). The greatest increase was among children with only one parent in the household. This pattern, grandchildren living in households maintained by grandparents with only mother present, increased by 118 percent from 1970 to 1997 (Casper & Bryson, 1998; U.S. Bureau of the Census, 1997). Since 1990, however, the greatest growth has been in the number of grandchildren living with their grandparents only, with neither parent present (Casper & Bryson, 1998; U.S. Bureau of the Census, 1998).

In their analysis of census data, Taylor, Tucker, Chatters, and Jayakody (1997) observed that White and Hispanic children who lived in their grandparent's home are more likely than black children to have both parents present in the same household (U.S. Bureau of the Census, 1992). Data show that 23 percent of White children and 26 percent of Hispanic children who lived in their grandparent's home, had both parents present, in comparison to only 2 percent of African American children. Thirty-five percent of African American children who reside with their grandparents live there without either parent present, whereas 21 percent of White, and 21 percent of Hispanic children live with grandparents only. Sixty-three percent of the families headed by White grandparents had both grandparents present, in comparison to thirty-five percent of families headed by African American grandparents (Taylor, Tucker, Chatters, & Jayakody, 1997; U.S. Bureau of the Census, 1992). African American children are more likely to live in the home of their grandparents than are Whites or Hispanics.

Historical Roles of African American Grandmothers

Outstanding among the many characteristics of the African American family during slavery was the role of older women. The historical roles of grandmothers in extended families are intricately connected to their contemporary roles. Older women, usually grandmothers, gave the family its unity, coherence, wisdom, and sense of values. In his book, *The Negro in the United States*, E. Franklin Frazier noted that

African American grandmothers “played important roles in the survival of the family.” Frazier describes the importance of grandmothers in the following passage:

“The Negro grandmother’s importance is due to the fact not only that she has been the ‘oldest head’ in a maternal family organization but also to her position as ‘granny’ or midwife among a simple peasant folk. As the repository of folk wisdom concerning the inscrutable ways of nature, the grandmother has been depended upon by mothers to ease the pains of childbirth and ward off the dangers of ill luck. Children acknowledge their indebtedness to her for assuring them, during the crisis of birth, a safe entrance into the world. Even grown men and women refer to her as a second mother and sometimes show the same deference and respect for her that they accord their own mothers” (p 117).

The wisdom and influence of the grandmother was not only familiar to the country people, its reaches were seen in the city as well. As Frazier notes, “the Negro grandmother has not ceased to watch over the destiny of the Negro families as they have moved in increasing numbers to the cities during the past century.” The African American grandmother still acts as guardian and caretaker to her grandchildren more than one century after emancipation. Although beset by a different set of problems, her commitment to her grandchildren and great-grandchildren has remained unchanged.

In many ways, the grandmother has been the foundation of Black families in the face of difficulties. As noted by Jones (1973), “no matter what social and economic conditions the Black family faced, the Black grandmother has been a steady, supporting influence, as well as a connecting link between branches of the extended family.” She is viewed as a source of strength and the communicator of family values; providing the religious orientation to family members, and stressing the importance of service to others, racial pride, educational achievement, strong family ties, commitment to children, self-respect, discipline and hard work. The African American grandmother “has socialized her children and grandchildren into values and patterns essential to their survival, growth, and development” (Jones, 1973), providing the foundation for the resilience and endurance of the Black family.

Grandmothers are viewed as strong and resourceful figures for the stability and the organization of family and community. In *Darkwater* (1920), Du Bois writes, “even higher than strength and art loom human sympathy and sacrifice as characteristic of Negro womanhood” (p.177). Her unwavering sacrifice has transcended slavery, emancipation, reconstruction, Jim Crowism, the Great Migration, the Civil Rights Movement, and into the Age of Technology. Through all of these hardships, the African

American grandmother has stayed the course as she continues to sing “swing low sweet chariot.” Her own strength has been nurtured by her strong religious beliefs and her deep commitment to family values. In spite of the drastic changes that have taken place in the structure of Black families, these two factors have proven to be most important.

Changes in African American Family Structure

Structural changes in society have influenced a rearrangement of nuclear families. Within the last decade, there has been a number of structural changes in African American family life. In his discussion of the diversity in family structure in African American communities, Billingsley (1992) notes that from 1865-1965 (the hundred-year period between the end of slavery and until after World War II), the African American family was characterized by a high degree of stability. Meaning, the central focus of the traditional family was the nuclear family unit, consisting of the mother, father and their children. The decline in two-parent families began after the 1960s, and at a time when it became difficult for Black men to maintain decent wages as blue collar workers in the industrial sector. At the beginning of the 1960s, 78 percent of all Black families were headed by married couples, followed by 64 percent in 1970, 48 percent in 1980, and 39 percent in 1990 (Billingsley, 1992). Given the social and structural problems faced by African Americans, this downward trend in two parent families is likely to continue, and grandmother maintained households will likely increase.

In 1980, Billingsley (1992) notes, for the first time since slavery, a majority of African Americans lived in single-parent families. The nuclear as well as the extended family forms which were adopted after slavery as an adaptive mechanism, “are in a rapid state of decline” (Billingsley, 1992). Post-industrialization has resulted in a number of alternative family structures, and grandmothers raising grandchildren alone is among the most obvious. The grandmother-headed family is an adaptive strategy for meeting the basic needs of its members given the situation they face in contemporary society (Billingsley, 1992). Technological changes since the 1950s, and more recently the crack-cocaine epidemic, the HIV/AIDS epidemic, and the incarcerations of young mothers have all contributed to the restructuring of the African American family. And, grandmothers have been thrust into unfamiliar and nontraditional caregiving roles “that threaten their morale and increase their role confusion” (Hayslip, Shore, Henderson, & Lambert, 1998; Emick & Hayslip, 1996).

New Roles and Challenges

African American grandmothers raising grandchildren and other family members is not new in black communities. However, it is the unprecedented proliferation of

grandparents, especially grandmothers, who are taking care of large numbers of grandchildren that has gotten the nation's attention. Elderly persons raising grandchildren face a myriad of challenges, such as their own declining health or the need to provide support to the absent parent of a grandchild. Other challenges include lack of support and respite services, affordable housing, access to medical care, and physical, emotional and family strains (AoA, 1997; Burton & DeVries, 1993; Kelly, 1993; Minkler and Roe, 1993; Minkler & Roe, 1996). Some may not have the financial resources to raise another family, and may need to deplete their savings to support their grandchildren. Others do not welcome the role of grandparenthood, especially in the case of young grandmothers who experience role conflict between work and caregiving (Burton & DeVries, 1993).

Among the reasons for grandparents having to care for their grandchildren are drug abuse, incarcerations, divorce, abandonment, death of a parent, child abuse, unemployment, teenage pregnancy, and HIV/AIDS (Barnhill, 1996; Brown & Monye, 1995; Barnette, 1997; Burton, 1992; Burton & Bengston, 1985; Burton, Dilworth-Anderson & DeVries, 1995; Caliandro & Hughes, 1998; Donaldson-Northrup, 1994; Dowdell, 1995; Dressel & Barnhill, 1994; Emick & Hayslip, 1996; Hayslip, Shore, Henderson & Lambert, 1998; Honey, 1988; Joslin & Brouard, 1995; Kee, 1997; Ladner & Gourdine, 1984; Larsen, 1991; LeBlanc, London & Aneshensel, 1997; Lesar, Gerber & Semmel, 1995; Longino & Earle, 1996; Minkler & Roe, 1993; 1996; Minkler, Roe & Price, 1992; 1994; Minkler, Roe, & Robertson-Beckley, 1994; Pruchno & Johnson, 1996; Roe, Minkler, & Barnwell, 1994; Sands & Goldberg-Glen, 1996; Schable, et al., 1995; Seamon, 1992). The crack-cocaine epidemic and the incarceration of young mothers are among the most challenging and devastating to the stability of African American families, having very demanding consequences for the grandmother caregiver.

African American Grandmothers: Caring for Children and Grandchildren Affected by the Crack-Cocaine Epidemic

The crack-cocaine epidemic has serious consequences for African American families and communities (Seamon, 1992). A number of studies have cited the impact of the crack-cocaine epidemic on African American grandmothers who are caring for their grandchildren (Burton, 1992; Minkler, Roe, & Robertson-Beckley, 1994; Roe, Minkler & Barnwell, 1994; Seamon, 1992). Drug addiction is among the most recent reasons for surrogate parenting among African American grandmothers. Burton (1992) notes that grandparents raising children of drug-addicted parents has only recently attracted the attention of social scientists. Only a small number of studies have been conducted (Seamon, 1992) concerning the magnitude of the problem. However, substance abuse has been cited as the most prevalent reason for the increase in the number of children living with relatives (AARP, 1994; Minkler, Roe, & Robertson-Beckley, 1994).

The responsibility of raising grandchildren in the midst of the drug epidemic can cause emotional problems and hardships for the grandmother caregiver. In a 1992 Congressional Hearing on "Grandparents as Parents: Raising a Second Generation," Evelyn Davis, Director of Developmental Pediatrics at Harlem Hospital Center, testified that approximately 40% of all children referred to her were cared for by grandparents. She reported that grandparents caring for their drug-exposed grandchildren had to deal with the problem of how to care for children with unique behavioral and developmental problems with which they have no prior experience. In a retrospective study of 175 children in her care who were under 6 years old, and prenatally exposed to drugs, Davis (1992) observed a number of abnormalities. Among these were premature births (36%), language delay (90%), fine motor delay (63%), gross motor delays (37%), delay in social skills (over 50%), hyperactivity (39%), neurological problems requiring treatment (30%), retardation and autism (8%), cerebral palsy (8%), and sleep problems (50%). A majority of the children had problems with impulsive behavior, and the inability to learn from past mistakes.

These problems are stressful for grandmothers. Burton (1992) found that caring for grandchildren caused considerable stress for grandparents, citing 86% of her sample stated that they felt depressed or anxious most of the time. Davis (1992) found that grandparents reported feeling overwhelmed by the many clinic visits required by their grandchildren. Special programs for retarded or autistic children require the weekly involvement of the primary caregiver. It is reported that African American grandparents often neglect their own physical problems in order to make sure their grandchildren's problems are treated (Davis, 1992). In their study of instrumental and emotional support among 71 African American grandmothers raising grandchildren as a consequence of the crack-cocaine epidemic, Minkler, Roe and Robertson-Beckley, (1994) found that many of the women reported "decreased contact with family and friends and a decline in marital satisfaction." Others reported that providing care for grandchildren was complicated because they had not finished rearing their own children. The importance of African American grandmothers in black families is unquestioned (Billingsley, 1992; Frazier, 1939; Hill, 1971; Ladner, 1971; Ladner & Gourdine, 1984). However, new roles and responsibilities present a challenge, if not a threat, to the strong traditions of African American families.

The Impact of Incarcerations on African American Grandmother Caregivers

There has been a dramatic increase in the rate of incarcerations among women over the past decade. Incarcerations among women have increased by 202% over the last ten years (Dressel & Barnhill, 1994). Approximately 50,000 women are in state and federal prisons, and some 39,000 more are in jails. Two-thirds of these women have children under the age of 18 years, and approximately 53 percent of these children live with their grandparents while their mother is in prison. In most cases, the grand-

mother is the primary caregiver. Approximately 32,000 older women are primary caregivers for their grandchildren whose mothers are incarcerated (Dressel & Barnhill, 1994). It is estimated that 75,000 grandmothers will be faced with the increasing incidence of incarcerations of their grandchildren's mothers before the century's end (Barnhill, 1996). African American grandmothers are increasingly called upon to act as surrogate parents for their grandchildren whose mothers are incarcerated or otherwise incapacitated because of drug abuse (Barnhill, 1996; Dressel & Barnhill, 1994).

The increasing prevalence of incarcerations among young African American mothers create additional problems for poor and elderly African American grandmothers who are living on fixed incomes, and who may have other child care or kin care responsibilities. In their 1994 case study, Dressel and Barnhill found that this particular population of grandmothers had material needs in almost all basic aspects of life. They also found that the grandmother's psychological needs focused on respite from and validation for their family work, desire for a better relationship with the incarcerated daughter, and ways to deal with the emotional needs of grandchildren and their behavioral disruptions at home and school (Dressel & Barnhill, 1994). The authors also reported problems centered around transition periods, such as when the grandmother takes in the children after the daughter's arrest, the conviction, and the release after many years. These transitions may present critical problems in family relationships between the daughter and the grandmother caregiver.

The increase in incarcerations of young mothers is serious and requires attention from social scientists as well as the African American community. Little or no empirical research has been done on the burden of the incarcerations of daughters on African American grandmothers who must take care of the imprisoned daughter's children. Although the numbers are not very large they are increasing rapidly (Dressel & Barnhill, 1994). We need to know more about the particular needs and problems of this population of grandmother caregivers, and assess some similarities and differences to other groups.

Conclusion and a Look to the Future

Demographic and socioeconomic trends have changed the structure of the American family. Since 1977, there has been a rapid increase in the number of families maintained by grandparents. This article has addressed the rise in grandparent headed households and some problems associated with raising grandchildren whose parents are incarcerated or addicted to drugs. A number of reasons may account for the rapid increase in households maintained by grandparents. While functioning in the role of surrogate parents in the case of crack-cocaine addiction and the incarceration of their daughters, African American grandmothers experience much stress and many problems. To date, very little systematic research is available on the incidence and preva-

lence of African American grandmothers who have primary care responsibility for raising their grandchildren. Research on surrogate parenting among grandmothers is a relatively new phenomenon and open to many diverse approaches. The following research questions are recommended for study: (1) What is the impact of primary caregiving on the health and well-being of African American grandmothers?; (2) What are the incidence and prevalence rates of grandparents who care for their grandchildren in African American communities?; (3) How does the impact of incarcerations, drug addiction, and HIV/AIDS affect surrogate parenting among African American grandmothers?; (4) Are there rural-urban differences in caregiving?; (5) What is the influence of different levels of caregiving on stress and depression?; and (6) What are the sources and types of social support received by grandmother caregivers? It is anticipated that this paper will motivate other social scientists to seriously explore some of the issues involved in surrogate parenting among African American grandmothers.

Acknowledgement:

This work was supported by The National Institutes of Health, National Institutes on Aging, Behavior and Physiology in Aging. Grant # 2T32AG0029

References

AARP, 1994. *Grandparent-headed households and their grandchildren*. American Association of Retired Persons. Grandparent Information Center Fact Sheet.

AoA, 1997. U.S. Department of Health and Human Services, Washington, D.C.

Barnhill, S. 1996. *Three generations at risk: The imprisoned women, their children, and the grandmother caregiver*. *Generations*, 20(1) p39(2).

Billingsley, A. 1992. *Climbing Jacob's ladder: The enduring legacy of African American families*. New York: Simon and Schuster.

Brown, D.R., & Monye, D.B. 1995. *Mid-life and older African Americans as inter-generational caregivers of school-aged children*. AARP Andrus Foundation Final Report. Research Information Center, 601 E. Street NW, Room B3-221, Washington, DC 20049.

Burnette, D. 1997. *Grandparents raising grandchildren in the inner city*. *Families and Society*, 78(5), 489-499.

Burton, L.M., 1992. *Black grandparents rearing children of drug-addicted parents:*

Stressors, outcomes, and social service needs. The Gerontologist, 32(6), 744-751.

Burton, L.M., & Bengtson, V.L. 1995. *Black grandmothers: Issues on timing and continuity of roles.* In L.M. Burton & V.L. Bengtson (Eds.). Grandparenthood. Sage.

Burton, L.M., & DeVries, C. 1993. *Challenges and rewards: African American grandparents as surrogate parents.* In L.M. Burton (ed). Families and Aging. Amityville, N.Y.: Baywood.

Burton, L.M., Dilworth-Anderson, R., & Merriwether-DeVries, C. 1995. *Context of surrogate parenting among contemporary grandparents.* Marriage and Family Review, 20(3/4), 349-366.

Caliandro, G., & Hughes, C. 1998. *The experience of being a grandmother who is the primary caregiver for her HIV-positive grandchildren.* Nursing Research, 47(2), 107-113.

Casper, L.M., & Bryson, K.R. 1998. *Co-resident grandparents and their grandchildren: Grandparent maintained families.* U.S. Bureau of the Census, Population Division, Fertility and Family Statistics Branch.

Donaldson-Northrup, D. 1994. *These are mine: African American grandparents as second or third generation parents.* M.A. thesis. California State University, Dominguez Hills.

Dowdell, E.B. 1995. *Caregiver burden: Grandparents raising their high risk children.* Journal of Psychosocial Nursing, 33(3), 27-30.

Dressel, P., & Barnhill, S. 1994. *Reframing gerontological thought and practice: The case of grandmothers with daughters in prison.* The Gerontologist, 34, 685-690.

Du Bois, W.E.B. *Darkwater: Voices from within the veil.* New York: Schocken Books, 1920, 1969.

Emick, M., & Hayslip, B. 1996. *Custodial grandparenting: New roles for middle aged and older adults.* International Journal of Aging and Human Development, 43(2), 135-154.

Fraser, E.F. 1939. *The Negro family in the United States.* Chicago: University of Chicago Press.

Hayslip, B., Shore, R., Henderson C., & Lambert, P. 1998. *Custodial grandparenting*

and the impact of grandchildren with problems on role satisfaction and role meaning. *Journal of Gerontology: Social Sciences*, 53B(3), S164-S173.

Hill, R. 1971. *The strength of black families*. New York: Emerson-Hall.

Honey, E. 1988. *AIDS and the inner city: Critical issues*. *Social Casework: The Journal of Contemporary Social Work*, June, 365-370.

Jones, F. 1973. The lofty role of the black grandmother. *Crisis*, 19-21.

Joslin, D., & Brouard, A. 1995. *The prevalence of grandmothers as primary caregivers in a poor pediatric population*. *Journal of Community Health*, 20(5), 383-401.

Kee, D.M. *Grandparents as caregivers for adolescent grandchildren*. M. A. Thesis. California State University. Long Beach. 1997.

Kelly, S.J. 1993. *Caregiver Stress in grandparents raising grandchildren*. *Image: Journal of Nursing Scholarship*, 25(4), 331-337.

Ladner, J. 1971. *Tomorrow's Tomorrow*. New York: Anchor Books.

Ladner, J., & Gourdine, R. 1984. *Intergenerational teenage motherhood: Some preliminary findings*. *A Scholarly Journal of Black Women*, 1(2), 22-24.

Larsen, D. 1991. *Grandparent redefining the role: Unplanned parenthood*. *Modern Maturity*, December/January, 32-36.

LeBlanc, A., London, A. & Aneshensel C. 1997. *The physical costs of AIDS caregiving*. *Social Science and Medicine*, 45(6), 915-923.

Lesar, S., Gerber, M., & Simmel, M. 1995/6. *HIV infection in children: Family Stress, Social Support and adaptation*. *Exceptional Children*, 62(3), 224-236.

Longino, C., & Earle, J. 1996. *Who are the grandparents at century's end?* *Generations*, 20 (1), p13(4).

Minkler, M., & Roe, K. 1993. *Grandmothers as caregivers. Raising children of the crack cocaine epidemic*. Newbury Park, CA: Sage.

Minkler, M., & Roe, K. 1996. *Grandparents as surrogate parents*. *Generation*, 20, 34-38.

Minkler, M., Roe, K., & Price, M. 1992. *The physical and emotional health of grandmothers raising grandchildren in the crack cocaine epidemic*. *The Gerontologist*, 32, 752-60.

Minkler, M. Roe, K. & Robertson-Beckley, R. 1994. *Raising grandchildren from crack-cocaine households: Effects on family and friendship ties of African American women*. *American Journal of Orthopsychiatry*, 64, 20-29.

Pruchno, R., & Johnson, K. 1996. *Research on grandparenting: Review of current studies and future needs*. *Generations*, 20(1), p.65(6).

Roe, K., Minkler, M., & Barnwell, R. 1994. *The assumption of caregiving: Grandmothers raising the children of the crack-cocaine epidemic*. *Qualitative Health Research*, 4(3), 281-303.

Saluter, A. F. 1992. *Marital status and living arrangements: March 1991, Current Population Reports, Population Characteristics (Series P-20, No. 461)*. Washington, DC: U.S. Government Printing Office.

Sands, R.G., & Goldberg-Glen, R.S. 1996. *The impact of surrogate parenting on grandparents: Stress, well-being, and life satisfaction*. AARP Andrus Foundation Final Report. Research Information Center, 601 E. Street NW, Room B3-221, Washington, DC 20049.

Schable, B., Diaz, T., Chu, S., Caldwell, M., Conti, L., Alston, O., Sorvillo, F., Checko, P., Herman, P. Davidson, A., Boyd, D., Fann, S., Herr, M., Frederick, M. 1995. *Who are the primary caretakers of children born to HIV-infected mothers? Results from a multistate surveillance project*. *Pediatrics*, 95(4), 511-515.

Seamon, F. 1992. *Intergenerational issues related to the crack-cocaine problem*. *Family and Community Health*, 15(3), 11-19.

Taylor, R.J., Tucker, M.B., Chatters, L.M., & Jayakody, R. 1997. *Recent demographic trends in African American family structure*. In R.J. Taylor, J.S. Jackson, & L.M. Chatters (Eds.), *Family life in black America*. Newbury Park, CA: Sage.

U.S. Bureau of the Census, 1990 Census of the Population, Marital Status and Living Arrangements. *Current Population Reports, Population Characteristics, Series P-20, No. 468*. Washington, D. C.: U.S. Government Printing Office, March 1992.

U.S. Bureau of the Census, 1970 and 1980 Censuses and 1990 and 1997 Current Population Surveys as reported in *Marital Status and Living Arrangements: March*

1994, Table A-6 and Marital Status and Living Arrangement. U.S. Government Printing Office, March 1997.

U.S. Bureau of the Census, Current Population Reports, Series P20-574, Marital Status and Living Arrangements. U.S. Government Printing Office, March 1998.

U.S. House of Representatives, *Grandparents: New roles and responsibilities*. Select Committee on Aging Comm. Pub. No. 102-876, 1992.

U.S. Senate, *Grandparents as Parents: Raising a second generation*. Special Committee on Aging Serial No. 102-24, 1992.

Velkoff, V.A., & Lawson, V.A. 1998. *Gender and aging*. International Programs Center, U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census, December 1998.