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POVERTY AMONG PACIFIC ISLANDER AND HAWAI'IAN ELDERLY IN 1989 AND 1999

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This study uses PUMS data from the 1990 and 2000 Censuses to investigate the economic position of elderly non-Hawai'ian Pacific Islander and Hawai'ian households. The poverty rate of Pacific Islander elderly fell dramatically in the 1990s to a rate close to the U.S. average, but the rate for Hawai'ian elderly changed little. Reduced disability and improved language skills appear to have contributed to the reduction in poverty among elderly Pacific Islander households. The characteristics of elderly Hawai'ian householders changed little during the 1990s. Real incomes of elderly households rose during the 1990s, and the sources of income changed significantly for non-Hawai'ian Pacific Islander households, which were more likely in 1999 than in 1989 to receive income from retirement and Social Security and less likely to receive income from welfare. For Hawai'ian households, sources of income changed little except that poor households were less likely to receive welfare and retirement income.

THE ECONOMIC POSITION of Pacific Islander elderly improved during the 1980s, while the economic fortunes of U.S. whites, Hispanics, and American Indians worsened (Ahlburg 2000). Despite gains over the decade, the poverty rate of Pacific Islander elderly remained high relative to that of most other Pacific Islander households and about twice the national rate. A high poverty rate among the elderly is of concern because of the association between poverty and poor health, exposure to social stress and crime, and diminished economic prospects.

While the 1980s were characterized by various economic difficulties, the 1990s witnessed a prolonged economic expansion that benefited Pacific Islanders in general (Ahlburg and Song 2006). In this paper we consider whether this economic expansion also benefited Pacific Islander elderly. We investigate the change in poverty rates during the 1990s and how the elderly poor differ from the elderly nonpoor. We also investigate how the characteristics of these groups changed over the 1990s and whether they contributed to changes in poverty. In an earlier study of Pacific Islander poverty, the reasons for the high poverty rate among the elderly were clearly identified: one-third of households reported no source of income at all and by far the most important source of income was Public Assistance (Ahlburg 2000). With economic expansion and numerous welfare reforms over the 1990s, it is possible that the sources of income may have changed for the elderly. Therefore we will look in some detail at sources of income for non-Hawai'ian Pacific Islander and Hawai'ian elderly at the start and end of the 1990s.

In our earlier study, we also raised concern about the impact of growing up in an elderly household for children. In this study we use the limited information on children in the Census to attempt to identify any difference in school enrollment of children in elderly and nonelderly households.

Poverty and Health

Poverty is potentially a serious social issue for Pacific Islanders because socioeconomic status (SES) forms the foundation for understanding differences in health status among older adults. Whether SES is measured by income, poverty, education, occupation, wealth, or social class, and whether health is measured by mortality, morbidity, functional limitation, or mental or emotional problems, a positive relationship generally exists between SES and health (Kitagawa and Hauser 1973; Feinstein 1993; Menchik 1993; Smith 1999). Not only are those with lower SES more likely to have poorer health, they are also less likely to use healthcare services (Kahn 1994; Hurd and McGarry 1997), in part because they are also less likely to have health insurance (Hurd and McGarry 1997).

An advantageous SES profile would suggest a low need for many social welfare programs, while a disadvantageous profile would signal a cause for concern (Tanjasiri, Wallace, and Shibata 1995). It is difficult to get an accurate socioeconomic profile for Pacific Islanders because they are generally included in the Census group "Asian and Pacific Islanders." In 2000, Asians and Pacific Islanders constituted 4.2 percent of the population, but Native Hawai'ians and other Pacific Islanders were only 0.3 percent of the population. Thus the characteristics of the group tend to reflect those of Asians

rather than Pacific Islanders. For example, a report from the U.S. Bureau of the Census based on the 1990 Census presented a positive picture of the socioeconomic status of Asian and Pacific Islander elderly (Tanjasiri, Wallace, and Shibata 1995). The data on poverty reported in Ahlburg (2000) for 1990, which focuses solely on Pacific Islanders, present a much less rosy SES picture of Pacific Islanders, particularly the elderly.

A number of researchers have pointed to the bifurcation of income and education in the Asian and Pacific Islander population group, with most Pacific Islander groups being found in the lower end (Morioka-Douglas and Yeo 1990; Tanjasiri, Wallace, and Shibata 1995). Lower income limits the amount of resources, including health resources, that a household can command, and limited ability to speak English limits the ability of household members to fully utilize many public services, including health care providers.

Data on the relation between income and health for Asians and Pacific Islanders is extremely limited. Based on small samples from the National Health Interview survey, Tanjasiri, Wallace, and Shibata (1995:758) found results suggesting that Asian and Pacific Islander elderly living below the poverty line are more likely to report poorer health status and activity limitation than Latinos, blacks, and non-Hispanic whites and, regardless of income, higher rates of being uninsured.

These findings suggest that a link from poverty to ill-health or reduced access to health care may exist.[1] This link for Pacific Islanders may be obscured when they are included with Asians, who tend to have different economic and social characteristics. Thus, when looking at the economic fortunes of Pacific Islanders, it is critical to look at them separately.

Data

The data used in this study is taken from the Public Use Micro Sample (PUMS) of the 1990 and 2000 censuses of the United States. The 1990 and 2000 PUMS are five percent samples. The PUMS used were the consistent set maintained by the University of Minnesota IPUMS-USA project (Ruggles and Sobek 1997). Pacific Islanders are defined in this study on the basis of the ancestry questions in the census because the race question lacks comparability between 1990 and 2000.[2] The Census Bureau defines ancestry as "a person's ethnic origin, heritage, descent, or 'roots', which may reflect their place of birth, place of birth of parents or ancestors, and ethnic identities that have evolved within the United States" (U.S. Bureau of the Census 2004:1). Ancestry identifies the largest samples of Pacific Islanders that are comparable over time.

The unit of observation is the household headed by an individual sixteen years of age or older, referred to by the Bureau of the Census as the "house-

holder." The 1990 PUMS identified 1,491 Pacific Island sample households and the 2000 PUMS 2,308 sample households. In this study we will define a householder as "elderly" if he or she is sixty years of age or older. This differs from the usual definition of sixty-five years or older and was adopted in an attempt to increase sample size without introducing an unacceptable degree of heterogeneity into the sample of elderly. Results based on a definition of "elderly" as being sixty and over were similar to those using a definition of elderly as sixty-five years and over.

Just as including Pacific Islanders with Asians tends to obscure differences, so too may including other Pacific Islanders with Hawai'ians. Thus in this study we investigate the poverty status of Hawai'ians separately from other Pacific Islanders. It must also be noted that "Pacific Islanders" are not homogeneous by characteristics. For example, in 1990 the poverty rates of Guamanians, Melanesians, and Micronesians were only 50 percent of those of Samoans and Tongans, and poverty rates of Pacific Islanders in Hawai'i were about twice those in California (Ahlburg 2000). However, the size of the PUMS is too small to allow us to carry out a separate analysis of each separate group and location. The reader should keep in mind that estimates for "non-Hawai'ian Pacific Islanders" represent an average for a "representative non-Hawai'ian Pacific Island household" and that estimates for specific Pacific Island groups may differ from the average estimate as noted above.

Measuring Poverty

As noted by the U.S. Bureau of the Census, poverty data "offer an important way to evaluate economic well-being" (Proctor and Dalaker 2002:1). The definition of poverty used in this study is the federal definition established by the U.S. Office of Management and Budget.[3] The poverty line varies for each household depending on its size, the presence of children under the age of eighteen, and the age of the householder (under sixty-five years and sixty-five years and over). If a household's total income is less than the threshold level set by the federal standard, then that household and every individual in it are considered poor. There are a number of reasons why this definition may overstate or understate "the true poverty rate." The official poverty definition counts money income before taxes and does not include capital gains and noncash benefits such as Medicaid, food stamps, and housing assistance. The census question on sources of income includes an item for "financial assistance from outside the household." Such assistance includes periodic payments from nonhousehold members but excludes gifts or sporadic assistance. The measure also excludes in-kind transfers such as food from family in the United States and from those at home. To the extent that

in-kind transfers are large and remittances received are not reported or are underreported, the true incidence of poverty will be overestimated. The possibility of underreporting of remittances cannot be dismissed since Ahlburg (2000:66) found that only six percent of elderly Pacific Islander households reported any income from a source other than the government or themselves in 1989. The figure is inconsistent with rates of receipt of remittances generally found in Pacific Islander households (see Ahlburg 1995; Brown and Ahlburg 1999). The poverty rate is established for the nation as a whole and does not take into account regional differences in cost of living. Because the majority of Pacific Islanders live in Hawai'i or on the West Coast where the cost of living is higher than the national average, the poverty rates reported in this study may underestimate the true poverty rate. Because of these offsetting factors, we are not able to say whether the poverty estimates given in this paper over- or underestimate "true poverty."

Ahlburg (2000) discusses various criticisms of the official poverty measure but concludes that it is useful as a means to identify the economic well-being of Pacific Islanders. The official poverty line correlates highly with other measures of poverty, and surveys in the U.S. and in Pacific Island states show that it is a concept with which respondents have no difficulty. Finally, the measure is of practical importance since it is used for allocating funds and targeting programs.

The Incidence of Poverty

The poverty rate among elderly non-Hawai'ian Pacific Islander households (identified by ancestry) fell dramatically over the 1990s from 23.9 percent to 10.4 percent (Table 1-a).[4] This fall was much larger than the modest decrease for households headed by individuals aged sixteen to fifty-nine years. The number of persons living in elderly households increased over the 1990s but because of the fall in the poverty rate, fewer poor people were living in elderly households in 1999 than in 1989.[5] The same is not true of younger households, where the growth in population outweighed the fall in the poverty rate. The poverty rates used in this study are based on households rather than individuals. The reader can calculate poverty rates based on individuals using information given in Table 1-a and Table 1-b (total number of poor people living in these households divided by total number of people living in these households).

The poverty situation for Hawai'ians is quite different from that of other Pacific Islanders (Table 1-b). In 1989, the poverty rate for Hawai'ian households was considerably lower than that for other Pacific Islander households. By 1999, the rates were similar. The poverty rate of elderly households fell

TABLE 1. **Poverty in Pacific Islander and Hawai'ian Households: 1989 and 1999**

TABLE 1-a. **Poverty by Age: Non-Hawai'ian Pacific Islanders**

	Age of Householder			
	1989		1999	
	16–59	60+	16–59	60+
Total number of people living in these households	111,732	10,690	169,139	17,271
Total number of poor people living in these households	21,289	2,075	24,866	1,538
Percentage of households in this age group that are poor	19.05	23.9	14.8	10.4
Percentage of all poor people who live in these households	91.1	8.9	94.2	5.8
Sample size	1,357	134	2,077	231

TABLE 1-b. **Poverty by Age: Hawai'ians**

	Age of Householder			
	1989		1999	
	16–59	60+	16–59	60+
Total number of people living in these households	155,147	24,318	193,725	36,162
Total number of poor people living in these households	21,228	1,573	27,742	2,924
Percentage of households in this age group that are poor	13.8	10.2	14.7	9.9
Percentage of all poor people who live in these households	93.1	6.9	90.5	9.5
Sample size	2,241	443	3,104	708

Source: Calculated from the 1990 and 2000 PUMS, U.S. Bureau of the Census.

very little and increased for younger households, probably reflecting the economic difficulties faced by the state of Hawai'i in the 1990s. The number of persons living in poor Hawai'ian households rose over the 1990s. At the start of the 1990s, the poverty rate of elderly non-Hawai'ian Pacific Islander households was twice the U.S. rate (which was equal to the rate for elderly Hawai'ian households). By the close of the 1990s, the rates were equal.

Table 2 gives some insight into the possible causes of poverty. Poor household heads tend to have about a year less education than all household heads do. What is clear for Hawai'ian and other Pacific Islander household heads is that disability tends to be associated with being in poverty. Although it is possible that being in poverty led to the disability, a more likely causal path is that disability caused lower earnings and thus poverty. The lower percentage of elderly poor who work could also be due to higher disability rates. Those householders who are in poverty have lower facility with English, and this difference is particularly marked among non-Hawai'ian Pacific Islanders in 1999. Also notable is the language advantage of Hawai'ians over other Pacific Islanders that probably contributed to their lower poverty rate, especially in 1989. Poor households are also more likely to be female-headed, especially among Hawai'ian households (Table 2-b). About 25 percent of poor elderly Hawai'ian householders were married compared with about 50 percent of nonpoor householders. These rates of marriage were considerably lower than those among other Pacific Islander households. Poor households tend to be smaller than the average household although they tend to have somewhat more children. The presence of children in these poor households raises concern about the effect on the life prospects of these children.

Average household incomes for the elderly are also shown in Table 2. Real household incomes rose over the 1990s for all households but particularly for non-Hawai'ian households. A likely contributor to the differences in income is work behavior. The average elderly Pacific Islander householder was about three times more likely to work than was a poor householder. In 1989, poor Pacific Islander householders worked about half the number of weeks and hours of the average householder. In 1999, the figure was about one-quarter. For Hawai'ians, the difference between poor households and all households was even greater and did not change much over the decade. Simply put, working lowers the incidence of poverty.

Income Differences by Source Among Elderly Households

Tables 3 through 6 report income by source of income for households. The first column of each table defines the income source or recipient, the second column shows the percentage of households in which the householder or

TABLE 2. **Descriptive Statistics on Pacific Islander and Hawai'ian Elderly Householders**

TABLE 2-a. **Non-Hawai'ian Pacific Islanders**

	Census Year 1990		Census Year 2000	
	All	In Poverty	All	In Poverty
Age (mean years)	67.37	68.66	67.54	67.42
Education (mean years)	10.28	9.50	11.02	9.63
Work experience (mean years)	51.10	53.16	50.52	51.79
Disability (percent)	35.80	56.25	24.68	29.17
Speak English well or very well (percent)	65.63	45.40	83.12	54.17
Female (percent)	24.63	34.40	35.93	41.67
Weeks worked (mean)	16.92	7.25	14.87	3.00
Hours per week (mean)	14.92	7.90	12.75	3.54
Household income* (mean)	34,628	5,708	46,684	7,328
Household size (mean)	3.84	3.19	3.75	3.13
Number of children (mean)	0.84	0.97	0.87	0.88
Number of adults (mean)	3.00	2.22	2.88	2.25
Employed (percent)	31.34	12.50	26.84	8.33
Married (percent)	65.67	56.25	57.14	45.83
Sample size	134	32	231	24

TABLE 2-b. **Hawai'ians**

	Census Year 1990		Census Year 2000	
	All	In Poverty	All	In Poverty
Age (mean years)	68.12	68.56	69.54	70.37
Education (mean years)	11.03	9.96	11.74	10.49
Work experience (mean years)	51.09	52.60	51.80	53.89
Disability (percent)	23.93	44.44	16.95	18.57
Speak English well or very well (percent)	98.19	93.33	98.87	97.14
Female (percent)	40.18	66.67	38.84	52.86
Weeks worked (mean)	15.08	2.36	14.11	2.34
Hours per week (mean)	12.41	2.96	14.81	1.14
Household income* (mean)	37,774	4,931	41,686	5,620
Household size (mean)	2.79	1.67	2.77	2.20
Number of children (mean)	0.43	0.18	0.44	0.53
Number of adults (mean)	2.36	1.49	2.33	1.67
Employed (percent)	28.67	8.89	25.42	10.0
Married (percent)	50.79	24.44	51.55	25.71
Sample size	443	45	708	70

Source: Calculated from 1990 and 2000 PUMS, U.S. Bureau of the Census.

* 1990 constant dollars.

TABLE 3. **Average Income of Non-Hawai'ian Pacific Islander Elderly Households by Income Source: 1989**

TABLE 3-a. **Non-Hawai'ian Pacific Islanders: 1989 (in 1990 constant dollars)**

	All Households				
Income Source	Percent Receiving[2]	House-holder	Spouse	Total	Percent of Total Household Income
Head and spouse					
Wages	46.3	6,865	3,078	9,943	28.7
Business	4.5	1,155	86	1,241	3.6
Social Security	49.3	2,775	647	3,422	9.9
Welfare	20.9	672	305	977	2.8
Investments	18.7	1,409	46	1,455	4.2
Retirement	28.4	2,115	446	2,561	7.4
Supplemental	—	—	—	—	—
Other	8.2	558	0	558	1.6
Head total		15,549	—	15,549	44.9
Spouse total			4,608	4,608	13.2
Children and other relatives				14,496	41.9
Household total				34,653	100.0

Notes: 1. % of households receiving no income at all: 5.2.
2. % of households with householder and/or spouse receiving income from each source.
3. Sample size 134.

TABLE 3-b. **Non-Hawai'ian Pacific Islanders: 1989 (in 1990 constant dollars)**

	Households in Poverty				
Income Source	Percent Receiving[2]	House-holder	Spouse	Total	Percent of Total Household Income
Head and spouse					
Wages	21.9	1,167	388	1,555	26.7
Business	6.3	63	47	110	1.9
Social Security	37.5	952	554	1,506	25.9
Welfare	43.8	1,430	311	1,741	29.9
Investments	3.1	16	0	16	0.3
Retirement	6.3	65	0	65	1.1
Supplemental	—	—	—	—	—
Other	3.1	182	0	182	3.1
Head total		3,875	—	3,875	66.6
Spouse total			1,300	1,300	22.4
Children and other relatives				639	11.0
Household total				5,814	100.0

Notes: 1. % of households receiving no income at all: 21.9.
2. % of households receiving income from each source.
3. Sample size 32.

TABLE 4. **Average Income of Non-Hawai'ian Elderly Households by Income Source: 1999**

TABLE 4-a. **Non-Hawai'ian Pacific Islanders: 1999 (in 1990 constant dollars)**

Income Source	All Households				
	Percent Receiving[2]	House-holder	Spouse	Total	Percent of Total House-hold Income
Head and Spouse					
Wages	42.4	8,785	4,120	12,905	27.7
Business	2.6	273	0	273	0.6
Social Security	54.5	3,516	656	4,172	8.9
Welfare	4.3	58	29	87	0.2
Investments	20.3	1,583	673	2,256	4.8
Retirement	45.0	5,648	710	6,358	13.6
Supplemental	11.3	513	85	598	1.3
Other	18.2	1,151	94	1,245	2.7
Head total		21,527	—	21,527	46.2
Spouse total			6,367	6,367	13.6
Children and other relatives				18,722	40.1
Household total				46,616	100.0

Notes: 1. % of households receiving no income at all: 1.3.
2. % of households with householder and/or spouse receiving income from each source.
3. Sample size 231.

TABLE 4-b. **Non-Hawai'ian Pacific Islanders: 1999 (in 1990 constant dollars)**

Income Source	Households in Poverty				
	Percent Receiving[2]	House-holder	Spouse	Total	Percent of Total House-hold Income
Head and spouse					
Wages	8.3	503	0	503	6.9
Business	0	0	0	0	0
Social Security	45.8	2,210	427	2,637	36.0
Welfare	20.8	321	200	521	7.1
Investments	4.2	0	0	0	0
Retirement	25.0	882	0	882	12.0
Supplemental	20.8	957	0	957	13.1
Other	4.2	0	206	206	2.8
Head total		4,873	—	4,873	66.5
Spouse total			833	833	11.4
Children and other relatives				1,621	22.1
Household total				7,327	100.0

Notes: 1. % of households receiving no income at all: 12.5.
2. % of households with householder and/or spouse receiving income from each source.
3. Sample size 24.

Source: Calculated from 1990 and 2000 PUMS, U.S. Bureau of the Census

TABLE 5. **Average Income of Hawai'ian Elderly Households by Income Source: 1989**

TABLE 5-a. **Hawai'ian: 1989 (in 1990 constant dollars)**

Income Source	All Households				
	Percent Receiving[2]	House-holder	Spouse	Total	Percent of Total Household Income
Head and spouse					
Wages	40.0	7,344	3,071	10,415	27.6
Business	5.6	706	79	785	2.1
Social Security	64.3	3,604	813	4,417	11.7
Welfare	11.3	467	162	629	1.7
Investments	36.8	2,259	302	2,561	6.8
Retirement	49.0	5,032	788	5,820	15.4
Supplemental	—	—	—	—	—
Other	10.3	399	28	427	1.1
Head total		19,811	—	19,811	52.4
Spouse total			5,243	5,243	13.9
Children and other relatives				12,719	33.7
Household total				37,773	100.0

Notes: 1. % of households receiving no income at all: 0.5.
2. % of households with householder and/or spouse receiving income from each source.
3. Sample size 443.

TABLE 5-b. **Hawai'ian: 1989 (in 1990 constant dollars)**

Income Source	Households in Poverty				
	Percent Receiving[2]	House-holder	Spouse	Total	Percent of Total Household Income
Head and Spouse					
Wages	11.1	282	51	333	6.8
Business	2.2	14	0	14	0.3
Social Security	66.7	2,439	132	2,571	52.1
Welfare	24.4	582	80	662	13.4
Investments	4.4	37	11	48	1.0
Retirement	22.2	480	357	837	17.0
Supplemental	—	—	—	—	—
Other	6.7	105	0	105	2.1
Head total		3,939	—	3,939	79.9
Spouse total			631	631	12.8
Children and other relatives				361	7.3
Household total				4,931	100.0

Notes: 1. % of households receiving no income at all: 4.4.
2. % of households with householder and/or spouse receiving income from each source.
3. Sample size 45.

TABLE 6. **Average Income of Hawai'ian Elderly Households by Income Source: 1999**

TABLE 6-a. **Hawai'ian: 1999 (in 1990 constant dollars)**

Income Source	Percent Receiving[2]	House-holder	Spouse	Total	Percent of Total Household Income
	All Households				
Head and Spouse					
Wages	38.3	7,002	3,664	10,668	25.6
Business	5.9	428	261	689	1.7
Social Security	71.6	4,904	1,522	6,426	15.4
Welfare	3.1	54	27	81	0.2
Investments	36.7	2,428	438	2,866	6.9
Retirement	50.1	6,294	1,182	7,476	17.9
Supplemental	6.8	329	30	359	0.9
Other	18.9	1,516	254	1,770	4.2
Head total		22,955	—	22,955	55.1
Spouse total			7,378	7,378	17.7
Children and other relatives				11,331	27.2
Household total				41,664	100.0

Notes: 1. % of households receiving no income at all: 1.1.
2. % of households with householder and/or spouse receiving income from each source.
3. Sample size 708.

TABLE 6-b. **Hawai'ian: 1999 (in 1990 constant dollars)**

Income Source	Percent Receiving[2]	House-holder	Spouse	Total	Percent of Total Household Income
	Households in Poverty				
Head and spouse					
Wages	7.1	177	29	206	3.7
Business	1.4	11	0	11	0.2
Social Security	60.0	2,354	397	2,751	49.0
Welfare	11.4	190	2	192	3.4
Investments	8.6	-17	0	-17	---
Retirement	11.4	434	0	434	7.7
Supplemental	11.4	489	30	519	9.2
Other	11.4	182	124	306	5.4
Head total		3,820	—	3,820	68.0
Spouse total			582	582	10.4
Children and other relatives				1,218	21.7
Household total				5,620	100.0

Notes: 1. % of households receiving no income at all: 11.4.
2. % of households with householder and/or spouse receiving income from each source.
3. Sample size 70.

Source: Calculated from 1990 and 2000 PUMS, U.S. Bureau of the Census

spouse receives income from that source, and the third through fifth columns report the average amount of income received from each source by the householder only, spouse only, and both. The eight entries in the final column show the percentage of total household income accounted for by income received by the householder or spouse from each source. The next three entries show the percentage of total household income contributed by the householder, spouse, and children and other relatives respectively. In poor households children and other relatives provide little income while in nonpoor households they are an important source of income.

As noted by Ahlburg (2000), a large fraction of elderly Pacific Islander households report that they have no income from any source. In 1989, 21.9 percent of poor non-Hawai'ian Pacific Islander households reported no income (Table 3-b), while only 4.4 percent of poor Hawai'ian households reported no income (Table 5-b). In 1999, the percentage of poor non-Hawai'ian Pacific Islander householders reporting no income had fallen to 12.5 percent (Table 4-b), but the percentage for Hawai'ian householders had increased to 11.4 percent (Table 6-b). This latter increase is consistent with the large falls in the percentage of householders receiving wage, Social Security, retirement, and welfare income.

Non-Hawai'ian Pacific Islander Households

In 1999, 42 percent of elderly non-Hawai'ian Pacific Islander householders or spouses received income from wages but only 8 percent of poor households did so (Table 3-2a and b). The average wages received for all households were 26 times the value of those received by poor households. A critical factor contributing to the poverty of poor households is the relatively small economic contribution made by the spouse and by resident children and other relatives. On average, a spouse earned $6,367 in 1999 and children and other relatives $18,722 (Table 4-a). However, in poor households these figures were $833 and $1,621, respectively (Table 4-b).

In 1999, nonpoor households also received income from businesses and investments whereas poor households received little or nothing from this source (Tables 4a and b). Nonpoor households were more likely to receive retirement income, and the value of that income was seven times that received by poor households. Poor households were less likely to receive Social Security income, and the average value of this income was only about two-thirds of that of the average household. Social Security income of the householder and spouse accounted for only nine percent of income for the average household but thirty-six percent of income for poor households (Tables 4a and b). These figures indicate that not only does current work behavior of

poor and nonpoor households differ but that past work behavior that affects Social Security and retirement payments also differed.

Fully twenty-one percent of poor households received supplementary income, and it accounted for thirteen percent of household income in 1999 (Table 4-b). Although eleven percent of all households receive this form of income, it is a trivial percentage of average household income. Nearly twenty-one percent of poor households received welfare income, and it accounted for about seven percent of income.

Income by source for household in 1989 is shown in Table 3a and b. For the average household the significant changes over the decade were a dramatic decline in the percentage receiving welfare and increases in the percentage receiving income from Social Security and retirement. The poor experienced large declines in the receipt of welfare and wage income but increases in the receipt of Social Security, retirement, and supplemental income. The real value of retirement income and Social Security income for both poor and nonpoor households rose over the 1990s.

Hawai'ian Households

In 1999, the average Hawai'ian householder and spouse were more likely to receive income from Social Security, investments, and retirement than were the average non-Hawai'ian Pacific Islander householder and spouse, implying better jobs or a stronger past connection to the labor market for the former (Table 6-a compared with Table 4-a). As well as being more likely to receive these forms of income, the average value of income from these sources was also higher for Hawai'ian households. However, overall, the total income for Pacific Islander households was higher than that for Hawai'ian households. The difference in household income was due to the higher income of children and other relatives resident in Pacific Islander households. Poor Hawai'ian households had lower total income than other Pacific Islander households in 1999 due principally to the lower income of the householder. Poor Hawai'ian households were more likely to receive Social Security but less likely to receive either retirement income or supplemental security income. The sources of income did not change much over the 1990s for the average Hawai'ian household but they did change for poor households. Poor households were much less likely to receive welfare and retirement income in 1999 than in 1989.

Multivariate Analysis of Poverty

Poverty is associated with both economic and demographic characteristics of individuals and households (Danziger and Weinberg 1994). Insufficient hu-

man capital to meet the demands of the labor market may result in poverty and a large family size, or marital disruption can also lead to poverty. Ahlburg (2000) and Ahlburg and Song (2005) investigated the correlates of poverty among all Pacific Islander households and found that poverty was associated with lack of employment, lower education, disability, poorer English language skills, the householder being a single mother, being born outside the United States, and more recent immigration to the United States.

Table 7 shows the results of a regression of these variables on the poverty rate for non-Hawai'ian Pacific Islander households for 1989 and 1999, and Table 8 reports the results for Hawai'ian households. The first column shows the regression coefficient, the second the standard error, and the third the marginal effect. Since the dependent variable, poverty, is a binary variable (a household is either in poverty or it is not), multivariate probit analysis is used because ordinary least squares is inappropriate with a binary dependent variable. The marginal effects in this case are the effects of each independent variable on the probability that a household will be in poverty. For continuous variables such as age, the effect is the impact of a one-unit increase in the independent variable, for example one year of age. For example, in 1999 a Pacific Islander household whose head was thirty-five years old was 0.3 percentage points less likely to be poor than a household whose head was thirty-four years old. For dummy variables such as disability, the effect is the impact of being in that category relative to not being in that category. For example, in 1989, a Pacific Islander household was 18.7 percent more likely to be poor if the householder was disabled than if he or she was not disabled. The impact of education is measured by whether the householder has more education than a high school diploma relative to having less education, by speaking English well or very well relative to speaking it less well or not at all, employment by whether the householder or his or her spouse is employed relative to not being employed, occupation by whether the householder is employed in the service sector or blue-collar occupations rather than being in white-collar occupations, marriage by whether the householder is married with spouse present, and year of immigration by whether the householder immigrated to the U.S. after 1984 (for the 1990 Census) or after 1994 (for the 2000 Census) relative to the earlier periods shown in Table 7.

Many but not all of the variables that were found to distinguish poor from nonpoor households in the general Pacific Islander population also tend to discriminate between these two types of households in the elderly non-Hawai'ian Pacific Islander population. Poorer English language skills and disability were associated with a higher incidence of poverty. The effects were substantial and statistically significant in 1989, but over the 1990s the impact of English and disability decreased (the impact of disability was not significant in 1999). Edu-

TABLE 7 **Determinants of Poverty of Non-Hawai'ian Pacific Islander Elderly Households**

TABLE 7-b. **Non-Hawai'ian Pacific Islander Households, 1989**

Variable	Coefficient	Standard Error	Marginal Effect (%)
Constant	2.778	1.927	
Education	-0.115	0.416	-3.0
Age	-0.021	0.020	-0.6
English	-0.852	0.370**	-22.5
Disability	0.709	0.287**	18.7
Householder employed	-0.997	0.507†	-26.3
Occupation			
Service	-1.041	0.664	-27.5
Blue-collar	-0.929	0.518†	-24.5
Married	-0.292	0.295	-7.7
Household size	-0.076	0.063	-2.0
Year of immigration			
1981–85	0.101	0.538	2.7
1971–80	-0.215	0.473	-5.7
1961–70	-0.173	0.460	-4.6
1960 or before	-0.384	0.370	-10.1

Log likelihood: -60
Restricted log likelihood: -74
Chi-square (13): 28
Sample size = 134
** denotes statistical significance at at least the 0.01 level
* denotes statistical significance at at least the 0.05 level
† denotes statistical significance at at least the 0.10 level

TABLE 7-b. **Non-Hawai'ian Pacific Islander Households, 1999**

Variable	Coefficient	Standard Error	Marginal Effect (%)
Constant	1.766	1.534	19.1
Education	-0.649	0.369†	-7.0
Age	-0.900	0.304**	-0.3
English	-0.908	0.293**	-9.7
Disability	0.152	0.312	1.6
Householder employed	-0.614	0.444	-6.6
Occupation			
Service	0.563	0.593	6.1
Blue-collar	0.558	0.504	6.9
Married	-0.124	0.283	-1.3
Household size	-0.120	0.660	-1.3
Year of immigration			
1991–95	0.576	0.587	6.2
1981–90	-0.270	0.435	-2.9
1971–80	0.735	0.392	0.8
1961–70	-0.747	0.503	-8.1
Before 1960	-0.189	0.390	-2.0

Log likelihood: -60
Restricted log likelihood: -77
Chi-square (14): 34
Sample size = 231
** denotes statistical significance at at least the 0.01 level
* denotes statistical significance at at least the 0.05 level
† denotes statistical significance at at least the 0.10 level

TABLE 8. **Determinants of Poverty of Hawai'ian Elderly Households**

TABLE 8-a. **Hawai'ian Households, 1989**

Variable	Coefficient	Standard Error	Marginal Effect (%)
Constant	1.232	1.180	12.2
Education	-0.405	0.270	-4.0
Age	-0.027	0.015†	-0.3
English	-0.336	0.482	-3.3
Disability	0.468	0.197**	4.6
Householder employed	-0.479	0.301	-4.8
Spouse employed	-0.635	0.483	-6.3
Occupation			
Service	0.121	0.469	1.2
Blue-collar	0.592	0.303†	5.9
Married	-0.344	0.219	-3.4
Household size	-0.266	0.081**	-2.6

Log likelihood: -115
Restricted log likelihood: -146
Chi-square (10): 60
Sample size = 443
** denotes statistical significance at at least the 0.01 level
* denotes statistical significance at at least the 0.05 level
† denotes statistical significance at at least the 0.10 level

TABLE 8-b. **Hawai'ian Households, 1999**

Variable	Coefficient	Standard Error	Marginal Effect (%)
Constant	0.258	0.858	3.51
Education	-0.275	0.175	-3.7
Age	-0.008	0.009	-0.1
English	-0.761	0.491	-10.3
Disability	0.090	0.180*	1.2
Householder employed	-0.457	0.232*	-6.2
Spouse employed	-0.497	0.347	-6.8
Occupation			
Service	0.301	0.286	4.1
Blue-collar	0.365	0.229	5.0
Married	-0.505	0.159**	-6.9
Household size	-0.066	0.039†	-0.1

Log likelihood: -205
Restricted log likelihood: -228
Chi-square (10): 47
Sample size = 708
** denotes statistical significance at at least the 0.01 level
* denotes statistical significance at at least the 0.05 level
† denotes statistical significance at at least the 0.10 level

cation and employment of the householder, which had statistically significant effects on poverty in the general Pacific Islander population (Ahlburg 2000), had less consistent effects on the elderly. The education of non-Hawai'ian Pacific Islander householders had a large impact in 1999 but was only marginally statistically significant (at the 0.10 level). Employment of the householder had a very large negative impact in 1989 (26.3 percent) but a smaller and not statistically significant impact in 1999. Working in a blue-collar occupation was associated with higher poverty in 1989 (at the 0.10 level) but not in 1999. Age of the householder had a significant effect in 1999 but not in 1989. Marriage, household size, and the year in which the householder immigrated to the U.S. did not have statistically significant associations with poverty.

In 1989, a Hawai'ian household was more likely to be poor if the householder was disabled, the household was smaller, and the householder worked in a blue-collar job (Table 8a). An additional family member was associated with a 2.6 percent reduction in the probability of being poor, probably because this additional family member was working. In 1999, households were more likely to be poor if the householder was not employed (6.2 percent), was disabled (1.2 percent), and was married (6.9 percent). Lower levels of education and being employed in a blue-collar job also increased the probability of poverty by amounts similar to those in 1989, but these variables were only statistically significant at levels near 0.10 in two-tailed tests.

Elderly Households and Children

Ahlburg (2000: 66) noted that in 1990 the average elderly Pacific Islander household (using a race-based definition) contained one child under the age of eighteen years, and the average poor elderly household contained 1.4 children. Although multigenerational households have potential advantages for both children and the elderly, because of the generally lower income of these households there may be disadvantages as well. The Census allows only a limited analysis of potential disadvantages. Table 9 compares school enrollment rates for children under the age of eighteen years in elderly Pacific Islander and Hawai'ian households in 1990 and 2000 with those for children in nonelderly households. In 1990, children below the age of twelve were almost five percentage points less likely to be enrolled in school if they lived in an elderly Pacific Islander household (Table 9a), whereas young children in elderly Hawai'ian households were two to five percentage points more likely to be in school than children in households headed by a younger individual (Table 9b). By 2000, the enrollment rates for young children were quite close. For both populations, children fifteen to eighteen years of age

TABLE 9. **Enrollment of Children in School by Age of Child**
TABLE 9-a. **Non-Hawai'ian Pacific Islander Households**

	Percent Enrolled in School			
	Census Year 1990		Census Year 2000	
	16–59	60+	16–59	60+
Age 0–5	15.7	11.1	22.6	23.2
Age 6–12	94.8	90.0	98.9	100.0
Age 13–14	96.0	100.0	99.7	100.0
Age 15–18	87.3	88.0	92.5	88.0
Total	64.4	69.3	74.1	72.0

TABLE 9-b. **Hawai'ian Households**

	Percent Enrolled in School			
	Census Year 1990		Census Year 2000	
	16–59	60+	16–59	60+
Age 0–5	20.9	25.8	28.3	31.5
Age 6–12	95.9	98.2	98.9	97.8
Age 13–14	98.6	87.5	99.4	100.0
Age 15–18	88.6	82.6	89.5	85.7
Total	69.1	77.7	76.6	80.2

were less likely than children six to fourteen years of age to be in school if they resided in an elderly household.

Although these results are limited to school enrollment, they do suggest that there may be a human capital penalty to children who grow up in elderly households. Because the income of these households is lower than that of nonelderly households, children may be less likely to be enrolled in preschool programs and may be more likely to leave school before graduating from high school to supplement household income. It is possible that the differences are even greater for children in poor elderly households. The consequences of growing up in a poor household tend to persist: Gottschalk, McClanahan, and Sandefur (1994:100) found that growing up in a poor household increases the chance that an individual will experience poverty as an adult. These results are merely suggestive because they are based on small sample sizes. Other approaches to studying the impact on a child of growing up in a household headed by an elderly person are likely to be more productive. The issue is important and warrants further study.

Conclusion

The poverty rate of non-Hawai'ian Pacific Islander elderly households fell dramatically in the 1990s to a rate close to the U.S. average. In contrast, the rate for

Hawai'ian elderly changed little. Although this finding holds true for the "representative" non-Hawai'ian Pacific Islander household, it may mask possible differences among subgroups of Pacific Islanders. Our descriptive analysis shows that the poor differ from the nonpoor by being less educated, working less, having a greater incidence of disability, and having poorer English language skills. Some of these differences held up in our multivariate analysis. Poverty among elderly households was principally associated with disability and poorer English language skills (for non-Hawai'ian Pacific Islanders). Disability may decrease the ability to work, and poor language skills may limit access to and utilization of public services and programs. The high incidence of disability and lack of language skills among the elderly and their significant impact on poverty suggest that government programs may need to be expanded to address these problems. Years of formal education played a less important role among the elderly than it did among the general Pacific Islander population.

Real incomes of elderly households rose over the 1990s, and the sources of income also changed significantly for non-Hawai'ian Pacific Islander households. The percentage of non-Hawai'ian Pacific Islander elderly households receiving no income fell by 3.9 percentage points. For poor households the decline was 9.4 percentage points. Among Hawai'ian elderly households the respective figures were increases of 0.6 percentage points and 7.0 percentage points. These figures raise several questions. First, did these householders really have zero income, and if so, how did they survive? Second, why did the percentage of non-Hawai'ian Pacific Islander householders reporting no income fall over the 1990s while that of Hawai'ian householders rose? Third, what caused these changes? One suspects that changes in welfare played a role, but the impacts on Hawai'ians and non-Hawai'ian Pacific Islanders seem to have differed.

Non-Hawai'ian Pacific Islander households in 1999 were more likely than in 1989 to receive income from retirement and Social Security and less likely to receive income from welfare. In addition, the real value of receipts from activities connected to work (wages, retirement, and Social Security) increased. For Hawai'ian households, sources of income changed little with the exception that poor households were less likely to receive welfare and retirement income. These results suggest that the labor market attachment of non-Hawai'ian Pacific Islanders in the U.S. is increasing and that the returns from this attachment are also increasing.

The improving economic position of non-Hawai'ian Pacific Islander elderly households suggests that they may be experiencing similar improvements in their socioeconomic conditions, including health status. Declines in reported disability suggest that this is the case. However, disability is a rather broad and subjective measure, and the rates of disability are still quite high. Further study of the health of Pacific Islander elderly is needed. Although the overall

economic condition of these households has improved, there are still some areas of concern. As mentioned above, considerable numbers of non-Hawai'ian Pacific Islander and Hawai'ian elderly householders reported no source of income at all. We need to know whether these households are underreporting income or, if not, how they are able to survive. Do they exist on food stamps, housing assistance, Medicaid, and charity? What impact does this lack of income have on their well-being? The average elderly household contains one child under the age of eighteen years. We found that these children are less likely to be enrolled in school between the ages of fifteen and eighteen than are children in nonelderly households. Given the importance of education to future economic success, growing up in an elderly household may be reducing their life prospects. This too is an area that needs further study.

NOTES

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1. It is, of course, possible that ill-health causes poverty or that both are caused by some third factor. The majority of the literature suggests that the main causality runs from SES to health (Robert and House 2000).

2. In an earlier study of poverty among Pacific Islanders, Ahlburg (2000) used race to identify Pacific Islanders. The results of this study differ very little whether race, ancestry, or race and ancestry questions are used to identify households.

3. The U.S. Bureau of the Census has been experimenting with adjustments to the official definition of poverty to take account of medical expenses and geographic variations in costs. These experimental poverty rates tend to be thirty to sixty percent higher than the official poverty rate for elderly households (Proctor and Dalaker 2000:18).

4. The poverty rate for households age sixty-five and over in 1989 was about 4 percentage points higher than households headed by an individual sixty and over, as one would expect given the lower rates of poverty among somewhat younger "elderly" households (Ahlburg 2000:57). A more inclusive definition of "elderly" does not have a great impact on the findings of this study.

5. Income data in the census refer to income in the year before the census. Thus, we will refer to income and poverty in 1989 and 1999 rather than in 1990 and 2000.

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