



# KA HUAKA'I

2014 Native Hawaiian Educational Assessment

*Ka Huaka'i* includes:

'EKAHI / Chapter One	Native Hawaiian Population
'ELUA / Chapter Two	Material and Economic Well-Being
'EKOLU / Chapter Three	Social, Emotional, and Cultural Well-Being
'EHĀ / Chapter Four	Physical Well-Being
'ELIMA / Chapter Five	Cognitive Well-Being

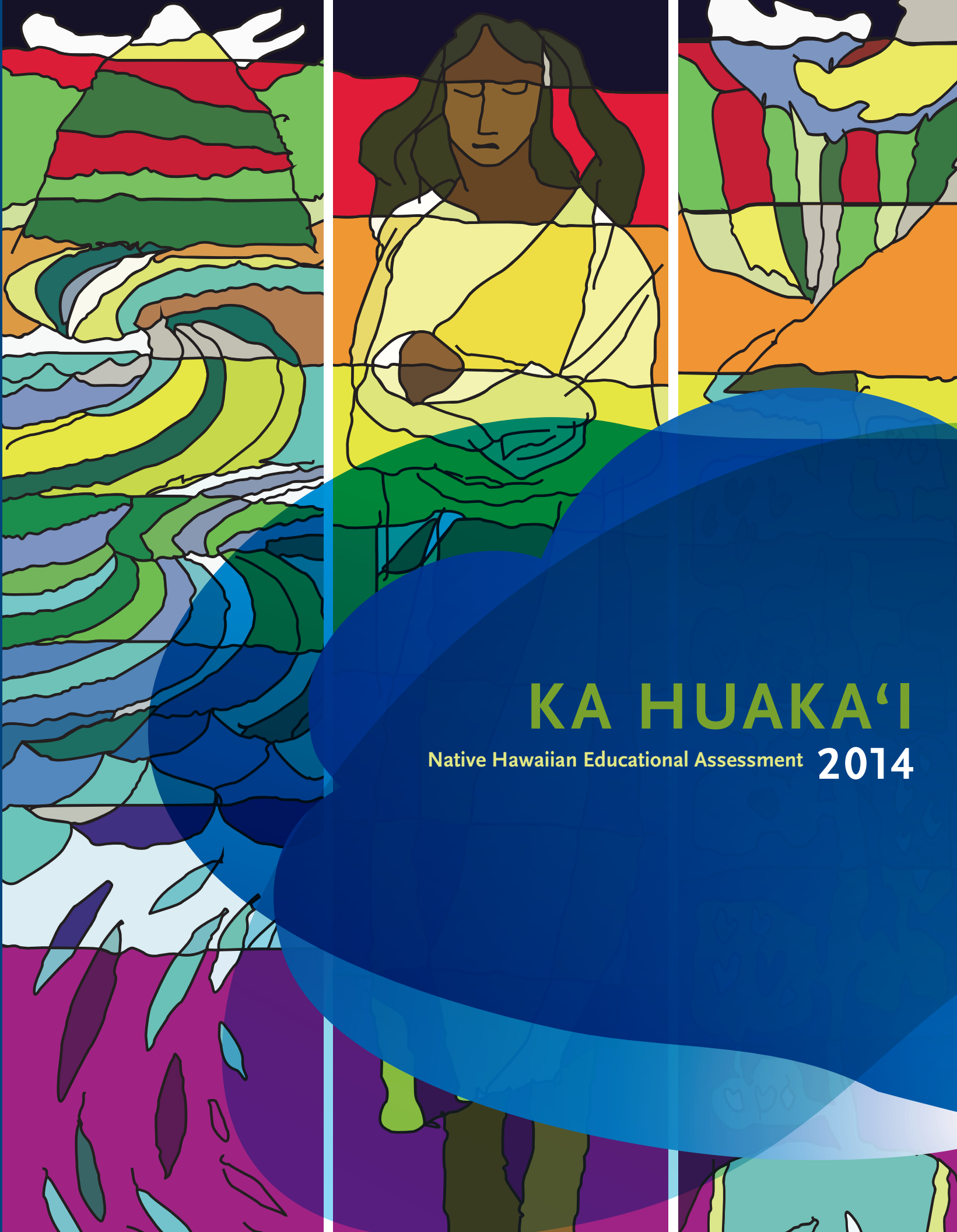
Artwork created by Solomon Enos

*Ka Huaka'i 2014* is an in-depth analysis of Native Hawaiian education and well-being. Recent findings point to both positive gains and persistent challenges among Native Hawaiian learners and families.

The journey to document the educational status and well-being of Native Hawaiians began with the *Native Hawaiian Educational Assessment* in 1983 and 1993, followed by *Ka Huaka'i 2005*. Collectively, these studies demonstrate Native Hawaiian resilience and also highlight ongoing disparities between Native Hawaiian well-being and that of other ethnic groups in Hawai'i.

*Ka Huaka'i 2014* was produced by the Strategic Planning and Implementation Division of Kamehameha Schools. Visit [www.ksbe.edu/spi](http://www.ksbe.edu/spi) for online reference materials and additional studies on Native Hawaiian well-being.

KA HUAKA'I  
2014 Native Hawaiian Educational Assessment



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# ka huakaʻi

2014 Native Hawaiian Educational Assessment





# ka huaka‘i

## 2014 Native Hawaiian Educational Assessment

Kamehameha Schools  
Strategic Planning and Implementation Division  
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Artwork for the cover and divider pages is adapted from a conceptual drawing for a mural project by Solomon Enos. His illustration depicts a woman, taro, the sun, the moon, plants, animals, land, and sea, all of which represent the Mākaha community.

The mural project was initiated to celebrate the fiftieth anniversary of Mākaha Elementary School in 2011. Children, parents, families, teachers, and students were part of the creative process. Years ago, when Enos himself was a sixth-grader at Mākaha Elementary, he was asked to make illustrations for the fifth grade curriculum. Leading the effort to make a commemorative mural was a way for Enos to give back to the school that helped him develop as a young artist.

Design by Stacey Leong Design

*No nā kūpuna a me nā ‘aumākua*

*For the kūpuna and ‘aumākua*



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## The Po‘o of Our Wa‘a

While we continue to mourn the passing of Hawai‘i’s longest seated United States senator in December of 2012, it is with gratitude and respect that we dedicate this fourth major update of the Native Hawaiian Education Assessment, *Ka Huaka‘i*, to the late Senator Daniel Ken Inouye. Through the urging of the first navigator of these assessments, Myron “Pinky” Thompson, honored as such in our last update, Senator Inouye was the po‘o leading the enactment of federal laws to bring fairness and equity to Native Hawaiians. Both were veterans of World War II and colleagues in local governmental affairs. Those commonalities, however, were not what provided their strongest bond; rather, their shared love and appreciation of the native peoples of our land united and empowered them to pilot and navigate our wa‘a (canoe) towards excellence for Native Hawaiian young people.

Two events were critical to Senator Inouye’s commitment to Hawaiian people and he mentioned them often. Many do not know that Senator Inouye’s mother was orphaned as a child while growing up on Maui. She immediately became hānai to a Hawaiian family there. Although she did not stay with them throughout her youth, she remembered with gratitude and love being embraced by this caring family. This act of kindness planted the seed for the Senator’s commitment to our native peoples. Later, after being elected to Congress, he was led on a tour of schools on the Wai‘anae Coast. He was stunned that he did not see any Native Hawaiian teachers. Senator Inouye, keenly aware of the power role modeling has as a learning tool, was dismayed to find that most of the groundskeepers, cafeteria workers, and custodians were the Native Hawaiian roles being modeled for the children in their environment.

When Pinky Thompson approached Senator Inouye to ask for legislation to address the challenges faced by young Native Hawaiian learners, the Senator’s memory of both his mother’s upbringing and his experience in Wai‘anae easily galvanized his commitment to what would become a career-defining partnership between him and Pinky. Starting with inclusion of Native Hawaiians as Native Americans in 1974, myriad laws assisting Native Hawaiians were enacted through this team of po‘o and navigator. Major milestones include the Native Hawaiian Education Act in 1988, the Carl Perkins Vocational and Technical Education Act Amendments of 1990, the Housing and Urban Development Reform Act of 1989, the Indian Health Care Amendments of 1988, the Native American Languages Act of 1990, and the Native American Grave Protection and Repatriation Act of 1990.

Ka wā mamua, the theme of this volume, speaks to reflecting on the past in planning for the future. Senator Daniel K. Inouye was instrumental in providing Native Hawaiians many tools to prepare for the future. We honor him for his lifelong dedication to the cause. We thank and aloha you, Senator Daniel K. Inouye, for your care and devotion to our people.

Sherlyn Franklin Goo



## Message from the CEO

In her day, Ke Ali‘i Pauahi Bishop witnessed the decline of the Hawaiian population and resolved, through education, to channel resources to remedy the problems she observed. Kamehameha Schools has a specific mission to address the educational needs of Native Hawaiians. However, educational success does not happen in a vacuum. Well-being is a complex concept with multiple, interlinked dimensions.

In keeping with the vision and mission imparted to us by Ke Ali‘i Pauahi, Kamehameha Schools is proud to support the publication of *Ka Huaka‘i 2014*. This volume is the fourth major installment in a series that started in 1983. The original purpose of the series was to identify the unique educational needs of Native Hawaiians and to identify or foster the development of programs to effectively address these needs. This purpose continues today.

Since the inaugural volume, we have seen the passage of the Native Hawaiian Education Act and the Native Hawaiian Health Act that bring much needed financial resources to our community to address the enduring effects of the loss of land and culture experienced by Native Hawaiians in the nineteenth and twentieth centuries. We have also seen the creation of the Native Hawaiian Education Council, which serves as a key focal point for the development of strategies and services for Native Hawaiians.

In this volume, we build on the model of well-being first published in the 2005 edition to look at the inter-relationship between material and economic, social and emotional, physical, and cognitive well-being. We also offer projections for the growth of the Native Hawaiian population. While we recognize that we have a long journey before we see a fully thriving Native Hawaiian lāhui, we find hope and inspiration in the progress that the statistics in this volume convey and hope that other readers will see the same.

*Ka Huaka‘i* has been a decades-long tradition for Kamehameha Schools to produce the Native Hawaiian Educational Assessment. We share that tradition with dozens of individuals and community and state organizations. In this regard, this publication represents a kākou effort of which we can all be proud. We offer this latest volume to you in hopes that it will help us better serve Ke Ali‘i Pauahi’s vision of a thriving lāhui.

Dee Jay Mailer  
*Chief Executive Officer, 2004–2014*  
 Kamehameha Schools

## He Waiwai Nui ka Lōkahi

*Unity is a precious possession*

In ‘ōlelo Hawai‘i, the words that describe relationships refer not to groups of people but, rather, to the mana (energy) created by the coming together of two or more individuals. The mana from the joining of so many in unity of purpose has been critical to our ability to accomplish this work. Together we have accomplished more than any one of us could have done alone.

We acknowledge the vision of Ke Ali‘i Pauahi Bishop, who believed that education was the key to the survival of Native Hawaiians and who established the trust that is Kamehameha Schools today. We are grateful for the support of the trustees, CEO, and executive leadership of Kamehameha Schools, particularly that of Chris Pating and Lauren Nahme of the Strategic Planning and Implementation group. We acknowledge the many contributors to the 1983, 1993, and 2005 versions of the Native Hawaiian educational assessments, whose mana‘o forms the foundation on which this present work is built.

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Solomon Enos, Warren Glimpse, Stacey Leong Design, and KJ Ward were instrumental in bringing creativity and technical accuracy to the work. We also acknowledge our coworkers who carried the burden of other priorities and allowed us to focus on this project.

With humility we offer *Ka Huaka‘i 2014* to our leaders and hoa hana who are working in so many important ways to improve the well-being of the Native Hawaiian lāhui.

Katherine Tibbetts  
Principal Research Associate  
Kamehameha Schools

## INTRODUCTION

### Ka Wā Mamua

Native Hawaiians traditionally view the world by looking at what came before because the past is rich in knowledge and wisdom that must inform the perspectives and actions in the present and future. As Lilikalā Kame‘eleihiwa reminds us,

In Hawaiian, the past is referred to as *Ka wā mamua*, or “the time in front or before.” Whereas the future, when thought of at all, is *Ka wā mahope*, or “the time which comes after or behind.” It is as if the Hawaiian stands firmly in the present, with his back to the future and his eyes fixed on the past, seeking historical answers for present-day dilemmas. Such an orientation is to the Hawaiian an eminently practical one, for the future is always unknown, whereas the past is rich in glory and knowledge. (1992, 22–23)

As we introduce *Ka Huaka‘i 2014*, we start with positioning this work relative to previous volumes. *Ka Huaka‘i 2014* is the fourth full-length volume in the Native Hawaiian Educational Assessment (NHEA) series. The two earliest volumes of NHEA pushed the limits of the political discourse on education at the time. In 1983, the first assessment was published with two primary purposes: to identify the unique challenges and needs facing Native Hawaiians in education, and to identify program models that might improve outcomes for Native Hawaiian children (Kamehameha Schools/Bernice Pauahi Bishop Estate 1983). That report showed outcomes for Native Hawaiians and other ethnic groups in the state on various educational indicators. It briefly touched upon promising practices that support culturally relevant teaching and learning of Native Hawaiian children. The report was a crucial element in the passage of the Native Hawaiian Education Act and the provision of funds to address the educational needs of Native Hawaiians. Data collection and analysis continued through the 1990s, resulting in the NHEA 1993 study, which served as an additional major point of reference for Native Hawaiian education (Kamehameha Schools/Bernice Pauahi Bishop Estate-Office of Program Evaluation and Planning 1993).

The first two NHEA volumes established a theoretical and empirical case that disparities in Native Hawaiian educational outcomes are rooted in the historical trauma and cultural marginalization of the Native Hawaiian population. The studies posited that the greatest hope for progress and improvement lay in a return to the foundations of Hawaiian culture and greater responsiveness of schools to the home culture of Native Hawaiian learners.

Since the first two volumes, there has been increasing recognition of the need for data that represents the strengths of indigenous and minority communities and the need to ground solutions to contemporary problems in ancestral wisdom and traditions. This is reflected in Maenette Ah Nee-Benham’s challenge to us to envision “where we can collectively be that is greater than where we are now.” To chart a course to this place we need to heed her call:

Where is the native voice? We have a charge, a calling, to voice the native perspective that will define the future progress of native people. (Ah Nee-Benham 2004, 38)

A partial response to this challenge can be found in *Ka Huaka‘i 2005* (Kana‘iaupuni, Malone, and Ishibashi 2005). *Ka huaka‘i* translates literally as “the journey,” and the metaphor was intended to echo the Hawaiian community’s journey toward a balanced, strengths-based understanding of Hawaiian needs and successes. Toward that end, *Ka Huaka‘i 2005* drew on new types of data and adopted a more

holistic approach that connected the multifaceted nature of well-being. That volume introduced the well-being pua (flower). The pua model was intended to reflect a contemporary Hawaiian worldview and was developed based on other well-being models and a substantial body of cultural and social research.

The 2005 volume also attempted to position available data within a strengths-based framework, devoting more attention to emerging approaches and programs based on community and cultural practices, acknowledging the significant strengths within the Hawaiian community and the connections to people, place, and community that distinguish Native Hawaiians and other indigenous peoples. In *Ka Huaka'i* 2005, we mixed Western deficits-based indicators with strengths-based data and perspectives in an effort to more fully understand and reflect well-being within the Native Hawaiian lāhui.

With the release of this fourth iteration, hindsight and a historical perspective highlight a deepening realization about the role that culture plays in shaping perceptions of well-being and the need to define success from a Hawaiian worldview. Although the data to do this are very limited and the result falls far short of what we would like to achieve, we continue to strive to identify both strengths and needs within the Native Hawaiian community.

The data presented are organized in chapters on population; material and economic well-being; social, cultural, and emotional well-being; physical well-being; and cognitive well-being. The following is a summary of some of the major findings and implications of *Ka Huaka'i* 2014.

## **Population**

The Native Hawaiian population is growing rapidly. According to the 2010 US Census, there were more than 525,000 Native Hawaiians in the United States, with 290,000 (about 55 percent) living in Hawai'i. If current trends continue, the Native Hawaiian population is projected to exceed 1.2 million by the year 2060. Of particular note is the relatively large growth occurring in the population of preschool- and school-age Native Hawaiian children, which indicates an increasing need for educational programs and services.

## **Material and Economic Well-Being**

Homeownership is increasing among Native Hawaiians, from 56 percent in 2003 to 58 percent in 2009. Native Hawaiians are now more likely to be employed in the typically higher-paying professional and managerial occupations.

Although there has been a decrease in the percentage of Native Hawaiian households with income below the poverty guideline, Native Hawaiians continue to have the lowest mean income of all the major ethnic groups in Hawai'i. And, the proportion of Native Hawaiian households with a livable income declined by 10 percentage points between 2003 and 2009 (from 67 to 57 percent of all households—a larger decrease than that of any other major ethnic group in the state).

Education can serve as a vehicle of economic mobility and security, with higher levels of educational attainment among Native Hawaiians linked to increased earnings and livable income rates. Continued investments in education and postsecondary options for Native Hawaiians will be a key driver in future improvements in material and economic well-being.

## **Social, Emotional, and Cultural Well-Being**

The existing body of quantitative data on Hawaiian cultural well-being is limited and incomplete as evidenced by the narrow set of cultural data included in this volume.

Although Native Hawaiians have disproportionately high rates of child abuse and neglect, suicide, and arrests for most major categories of crime, the prevalence of these negative outcomes is declining. Native Hawaiian youth are more likely than their non-Hawaiian peers to have an adult with whom they can talk about their challenges. And, Native Hawaiian adults are more likely than non-Hawaiians to belong to a religious organization and to rely on family for support in times of need. In fact, Native Hawaiians are more likely to live in family households than are non-Hawaiians and to have grandparents in the household who take an active role in their grandchildren's upbringing.

On life satisfaction surveys, Native Hawaiians are relatively less likely to report a high quality of life. However, Native Hawaiians are more likely to report that life has improved over the last five years and that they are optimistic about the future than are non-Hawaiians.

Although progress is apparent in many areas of social and emotional well-being, Native Hawaiians continue to face disadvantages, limited opportunities, and institutionalized inequities that leave a negative social impact. Taken together, these data indicate the need to leverage Native Hawaiian social networks, spiritual strength, and cultural traditions to navigate contemporary problems and create a path toward a more positive future.

## **Physical Well-Being**

The proportion of Native Hawaiians without health insurance continues to decrease—from roughly 10 percent in 2005 to just over 7 percent in 2009. Native Hawaiian rates for late or no prenatal care, births to teenage mothers, and infant mortality also decreased over time. Compared with non-Hawaiians, Native Hawaiian youth are more likely to be physically active, and more Native Hawaiian adults engage in muscle-strengthening activities on a regular basis. Although most measures of tobacco use are higher for Native Hawaiian youth and adults compared with the other major ethnic groups in the state, there have been substantial improvements on all these measures over the last decade.

Despite these signs of progress, Native Hawaiians are the most likely of all the major ethnic groups to miss a medical treatment because of cost, the most likely to have late or no prenatal care, and the least likely to have medical insurance. Native Hawaiian youth are also more likely to be overweight or obese, to engage in risky sexual behaviors, and to abuse alcohol. Native Hawaiians are more likely to suffer from asthma and diabetes than are non-Hawaiians, and are more likely to die from coronary heart disease, diabetes, and cancer. Native Hawaiians have the highest mortality rates and lowest life expectancy among the major ethnic groups in Hawai'i.

Similarities in the health indicators of Native Hawaiian teens and adults suggest that patterns of behavior are established early in life and that intervention from a child's formative years through adolescence is critical. As individuals, communities, and organizations that serve Native Hawaiians seek to preserve recent gains and accelerate Native Hawaiian well-being, affordable healthcare and community-based outreach and educational programs will be essential.

## Cognitive Well-Being

Native Hawaiian preschool enrollment has increased over the last decade and now mirrors the statewide average. In public schools, proficiency in reading and mathematics has increased for Native Hawaiians, and the achievement gap between Native Hawaiian and other students is narrowing at some grade levels. By Grade 8, Native Hawaiian youth in Hawaiian-focused charter schools—despite starting at a distinct disadvantage in Grade 4—close the reading proficiency gap with their Native Hawaiian peers in conventional public schools. In mathematics, Native Hawaiian youth in Hawaiian charter schools show the same amount of growth between Grades 4 and 8 as their peers, although the gap remains essentially unchanged.

After more than a decade of improvement, Native Hawaiian enrollment in postsecondary education and postsecondary degree completion have plateaued. About one in four young Native Hawaiian adults is enrolled in college, compared to one in three young adults statewide. The proportion of Native Hawaiian adults with a bachelor's degree or higher is roughly half the statewide average (14 percent compared to 30 percent).

Greater understanding of the personal, family, school, social-cultural, and political factors that promote or impede school success for Native Hawaiians is needed to develop programs and initiatives that eliminate disparities in educational outcomes. The identification and dissemination of successful methods used in Hawaiian culture-based education may help pave the way forward.

## Ka Wā Mahope

Similar to previous volumes in the NHEA series, *Ka Huaka'i 2014* looks to the past to inform the future. In this volume, we have provided a broad accounting of available data about the well-being of Native Hawaiians. However, as Kame'eleihiwa remarks, "The history has come to an end, but the story is not yet told" (1992, 321). The history reflected in the statistics reported here reveals both challenges and progress. Most importantly, this history reveals resilience and assurance that the stories yet to be told about Native Hawaiians will be stories of a strong and vibrant lāhui.

E ho'omau kākou.





Kalo kanu o ka 'āina.



‘EKAHI | CHAPTER ONE

# Native Hawaiian Population

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TARO PLANTED ON THE LAND.

*Natives of the land from generations back.*

# 1

9	INTRODUCTION
10	POPULATION SIZE
13	POPULATION PYRAMIDS
16	POPULATION PROJECTIONS
23	GEOGRAPHIC DISTRIBUTION
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## CHAPTER ONE INTRODUCTION

Native Hawaiians—individuals descending from the original peoples of the Hawaiian Islands—have persisted through dramatic changes in their population numbers, from the initial decline after Western contact, to the revitalization of the population continuing to the current day. This section focuses on trends in the Native Hawaiian population based primarily on US census data, which reports on population numbers of Native Hawaiians based on self-identification of race/ethnicity.

Current population trends highlight an increasing number of Native Hawaiians in Hawai'i and a growing diaspora of Native Hawaiians who are geographically removed from the islands. The existence of an expanding diaspora points to the importance of access to homelands, traditional practices, and community resources for the social, emotional, and cultural well-being of Native Hawaiians (Kana'iaupuni and Malone 2006; United Nations 2006a, 2006b, 2006c).

POPULATION SIZE

The number of Native Hawaiians is increasing at a rapid rate and now exceeds five hundred thousand (see Table 1.1). Over the thirty-year period from 1980 to 2010, the Native Hawaiian population increased by more than 200 percent. Some of that growth—particularly from 1990 to 2000—can be attributed to changes in race-reporting options offered by the US Census Bureau.

In 2010, the Native Hawaiian population reached 527,077, representing a 31 percent increase over the population in 2000.

TABLE 1.1 Growth of the Native Hawaiian population in the United States  
[1980–2010]

US census year	Hawai‘i total	United States total
1980	115,500	166,814
1990	138,742	211,014
2000	239,655	401,162
2010	289,970	527,077

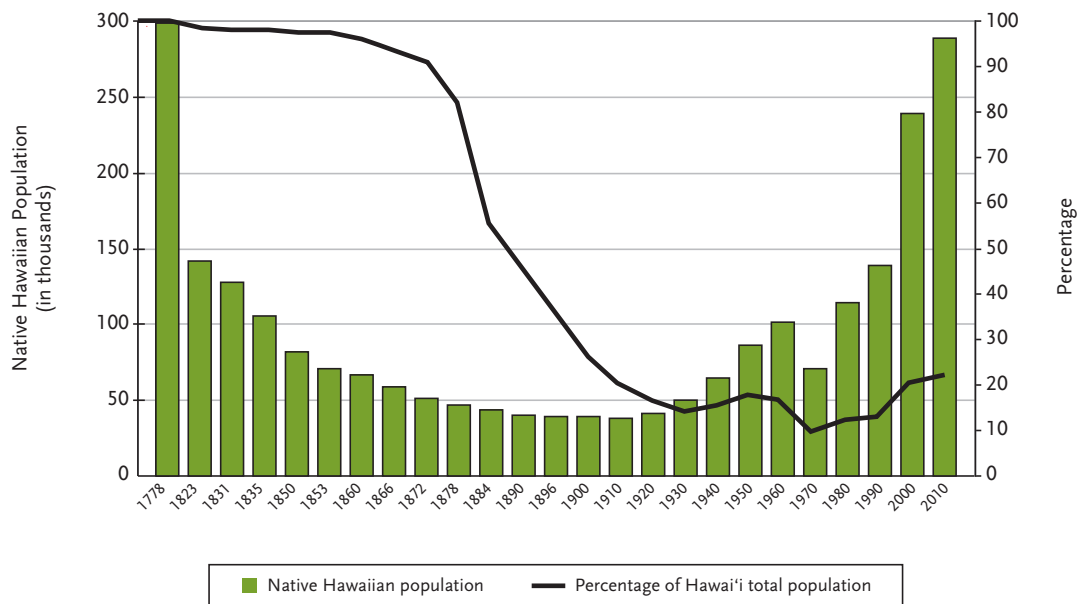
Sources: Gibson and Jung 2002; US Census Bureau 2010, Summary File 2.  
Note: The apparent surge in the Native Hawaiian population in 2000 is attributable in part to the US Census Bureau’s adoption of multiracial/multiethnic reporting. Prior censuses allowed respondents to report only one race/ethnicity.

It is well documented that the Native Hawaiian population suffered a great decline that started with initial Western contact and extended into the early twentieth century. Using 1778 as a starting point, Figure 1.1 shows the trend in the Native Hawaiian population living in the Hawaiian Islands up through 2010. The curving line indicates Native Hawaiians as a percentage of the total population in the Hawaiian Islands.

It should be noted that there is considerable dispute about the size of the Native Hawaiian population at the time of Western contact. Estimates range from Nordyke’s (1989) conservative estimate of 300,000 to Stannard’s (1989) estimate of 800,000.

According to the US census, there were 289,970 Native Hawaiians living in Hawai'i in 2010. Based on the conservative estimates published by Nordyke (1989), the number of Native Hawaiians in Hawai'i is now approaching the level reported at the time of initial Western contact. Native Hawaiians made up about one-fifth (21.3 percent) of Hawai'i's total population in 2010.

**FIGURE 1.1** Trends in the Native Hawaiian population in Hawai'i  
[1778–2010]

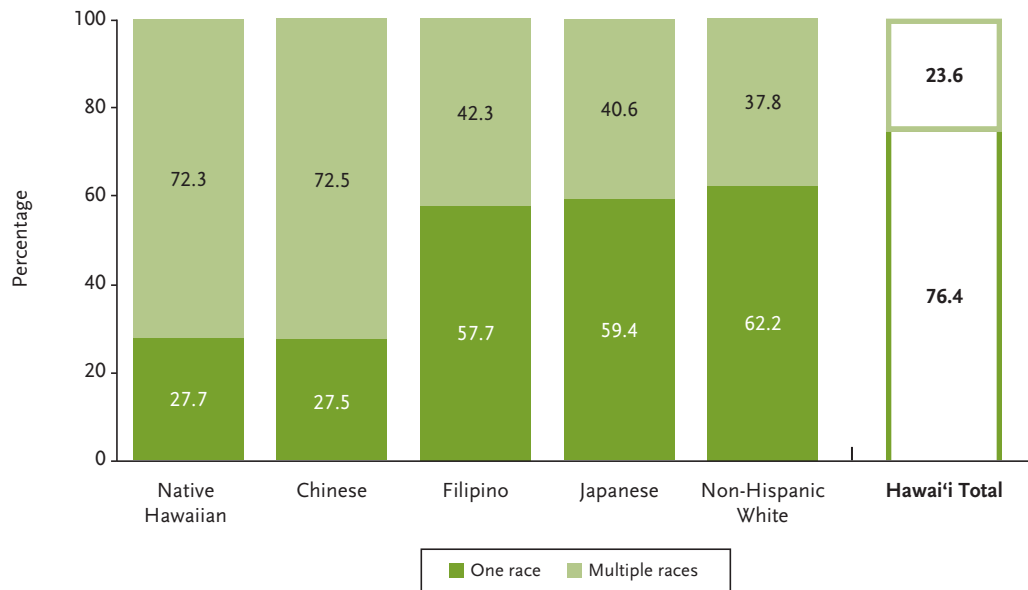


Sources: Nordyke 1989 for population from 1778 through 1980. US Census Bureau 1990, Census of Population; US Census Bureau 2000, Summary File 2; US Census Bureau 2010, Summary File 2.

Note: Figures for 1970 are not directly comparable with those of other years due to changes in census definitions of race that year.

One of the unique aspects of the population in Hawai‘i is the prevalence of people who identify with multiple races or ethnicities. Compared with the United States as a whole, Hawai‘i leads the nation in multiracial composition (23.6 percent compared with 2.9 percent respectively). The state with the second-highest prevalence of multiracial individuals is Alaska (7.3 percent) (US Census Bureau 2010).

**FIGURE 1.2** Multiracial diversity in Hawai‘i  
[by race/ethnicity, 2010]



Source: US Census Bureau 2010, Summary File 2.

Compared with the state average, Native Hawaiians are more than three times as likely to identify as multiracial. Nearly three in four Native Hawaiians (72.3 percent) identify with at least one other racial or ethnic group compared to the statewide rate of 23.6 percent (Figure 1.2). This is particularly impactful when agencies collapse all people who identify with more than one race or ethnic group under the heading “two or more races” because up to 75 percent of Native Hawaiians are then obscured.

Besides multiracial diversity, another defining feature in the Native Hawaiian population is age structure. Understanding the age structure among Native Hawaiians is important for assessing specific needs—such as housing and schools—and for predicting the size of the labor force and of dependent populations.

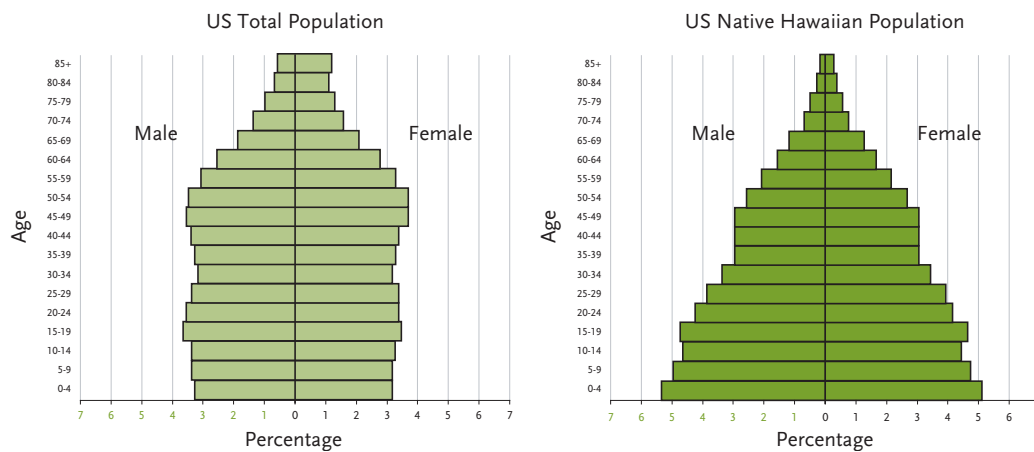
## POPULATION PYRAMIDS

To illustrate the age structure of Native Hawaiians, we use a population pyramid, which shows how the population is distributed across age groups. A pyramid with a wide base denotes a growing population with more young people and best represents the age structure of the Native Hawaiian population. A more rectangular shape denotes a stable population size. An inverted pyramid (narrower at the base) denotes a shrinking population.

The population pyramids below show the age and sex of the US population, the Native Hawaiian population nationwide, the Hawai'i population, and Native Hawaiians residing in Hawai'i. Additional figures show the population pyramids for Native Hawaiians by island.

Figure 1.3 indicates that the overall population in the United States is relatively stable, with slight bulges for the baby boomer and millennial generations. By contrast, the Native Hawaiian population, with its wide base, is a prime example of a growing population. The narrow top of the pyramid may also reflect high mortality and low life expectancy among Native Hawaiians. These topics are discussed in more detail in Chapter 4.

**FIGURE 1.3** Age distribution of the population in the United States [2010]



Source: US Census Bureau 2010, Summary File 2.

On the whole, the age distribution of the overall population in Hawai‘i (Figure 1.4) appears stable and is similar to that of the United States. Within the Native Hawaiian population in Hawai‘i, however, there is evidence of continuing growth and a comparatively young population. The relatively wide base of the Native Hawaiian pyramid reflects a more rapidly growing population for Native Hawaiians than for the statewide population.

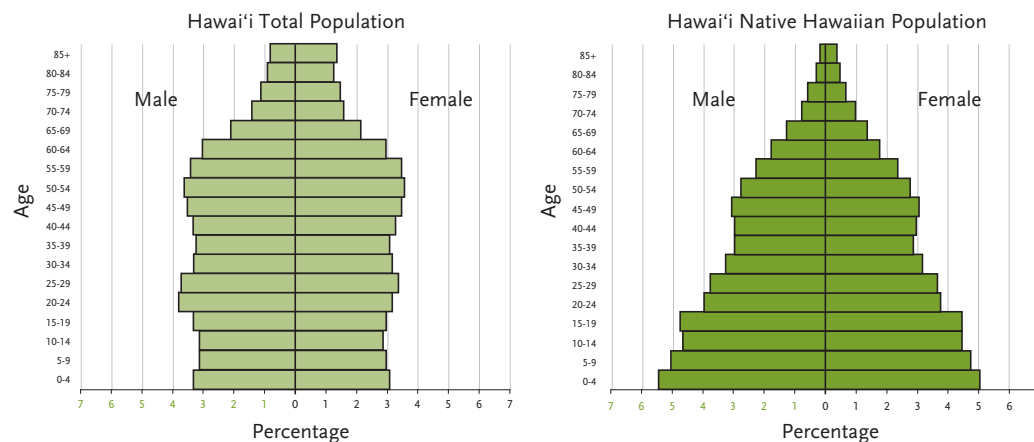
In Hawai‘i, 10.6 percent of Native Hawaiians are preschool age (four and younger), compared with 6.4 percent of the total population. Furthermore, 25.0 percent of Native Hawaiians are school age (five to seventeen), compared with 15.9 percent in the state (not shown). The relatively larger proportion of preschool- and school-aged Native Hawaiians, in addition to the growing Native Hawaiian population, indicates an increasing need for educational support for this population.

Within the Native Hawaiian population, the proportion of college-age individuals (ages eighteen to twenty-four) exceeds that for college-age individuals within the state. However, this trend reverses during the working ages, in which the proportion decreases for Native Hawaiians in relation to the state total population. This may be explained by the fast growth of the younger population, outmigration, and/or higher mortality rates among Native Hawaiians.

In general, population loss among Native Hawaiians accelerates around the ages of forty-five to forty-nine, which contributes to the narrowing peak of the pyramid. This loss is more pronounced among Native Hawaiians than it is among the total population in both the United States and Hawai‘i.

As is typical with most populations, life expectancy of Native Hawaiian females exceeds that of males. This is evidenced in the larger proportion of females compared with males near the top of the population pyramid.

**FIGURE 1.4** Age distribution of the population in Hawai‘i  
[2010]

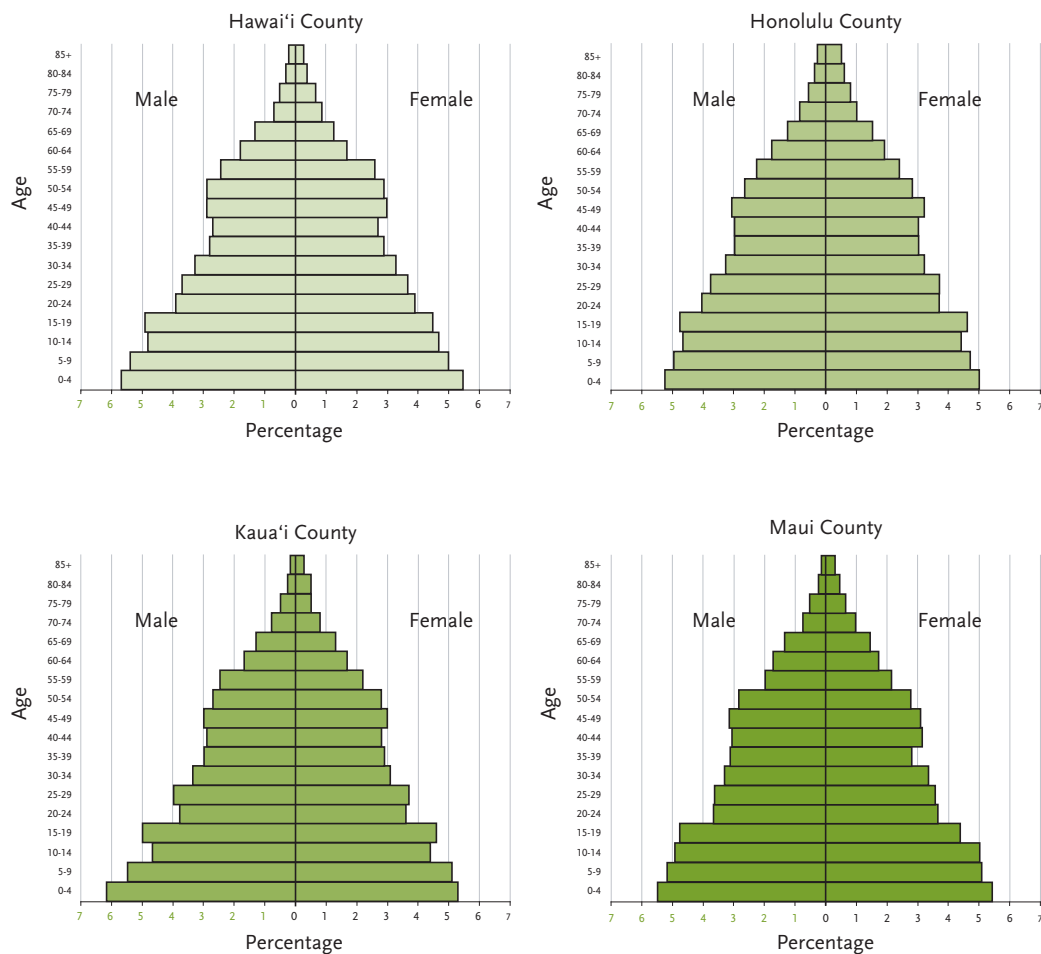


Source: US Census Bureau 2010, Summary File 2.



The next set of figures shows the population pyramids for Native Hawaiians by county (Figure 1.5). The population pyramid for Honolulu County (which contains the majority of Native Hawaiians in the islands) is similar to that of other counties, with some subtle differences. Compared with the other counties, Honolulu County has a slightly smaller proportion of young Native Hawaiians, indicating that the Native Hawaiian population in Honolulu County is growing at a slower rate than in the other counties.

**FIGURE 1.5** Age distribution of Native Hawaiians in Hawai'i, by county  
[2010]



Source: US Census Bureau 2010, Summary File 2.

Note: Kalawao County is combined with Maui County due to the relatively small population of Kalawao County.

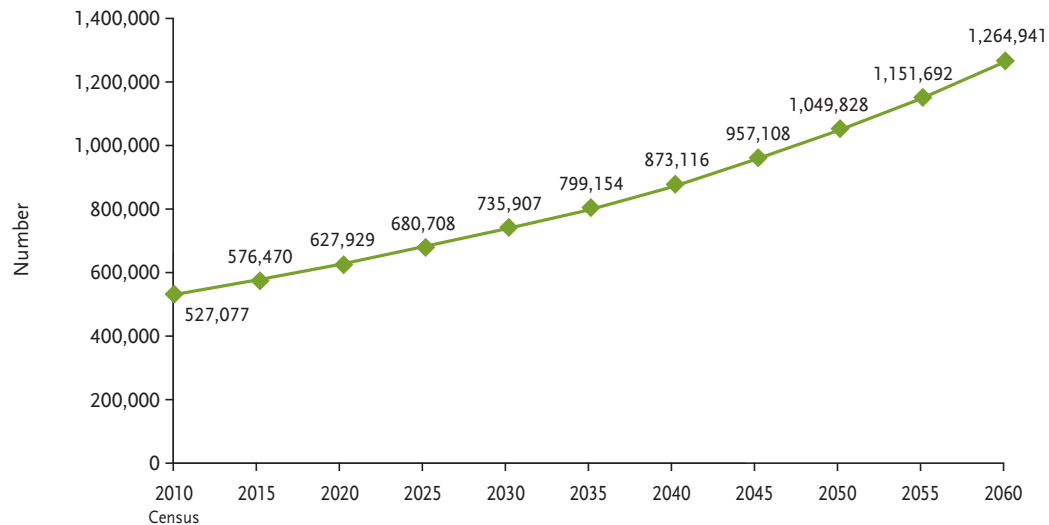
## POPULATION PROJECTIONS

The population projections in this section are based on a model of stability and constancy, which assumes that current fertility, mortality, and migration rates will hold steady from 2010 to 2060. These projections serve as a baseline for understanding and predicting the growth of the Native Hawaiian population. Numerous factors—such as education, the economy, government policy, health-care, and natural events—influence the growth and structure of a population but are not included in the statistical model.

Figure 1.6 shows the total Native Hawaiian population in 2010 and the projected number of Native Hawaiians in the United States through 2060. Based on the model described above, the US Native Hawaiian population will exceed one million by 2050 and reach 1,264,941 by 2060.

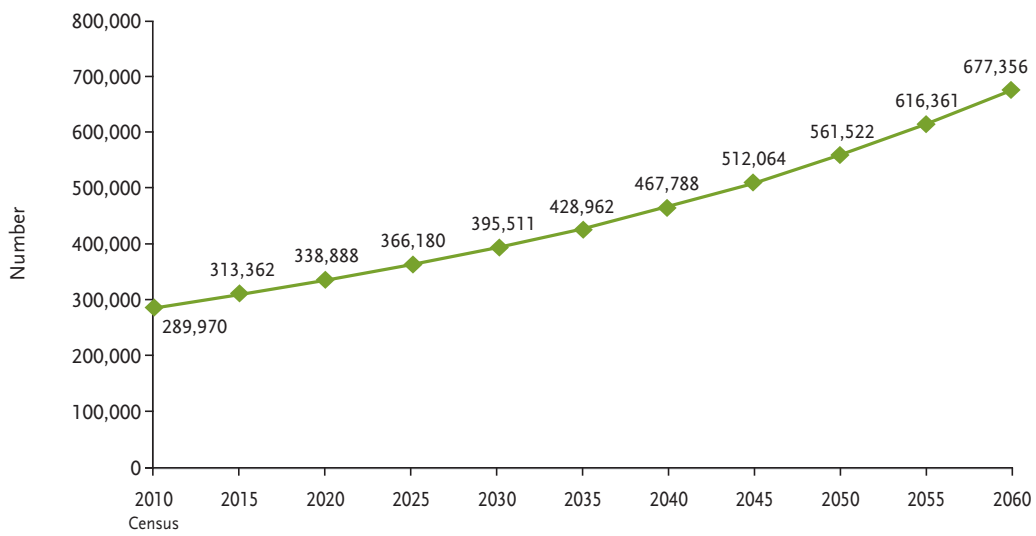
Figure 1.7 shows similar projections for Hawai‘i. According to these projections, the Native Hawaiian population will grow at an average rate of 1.71 percent annually and reach roughly 677,000 Native Hawaiians in 2060. These projections are in line with historical growth trends of Native Hawaiians in Hawai‘i after adjusting for irregularities in historical data (see Figure 1.8).

**FIGURE 1.6** Projected number of Native Hawaiians in the United States  
[2010–60]



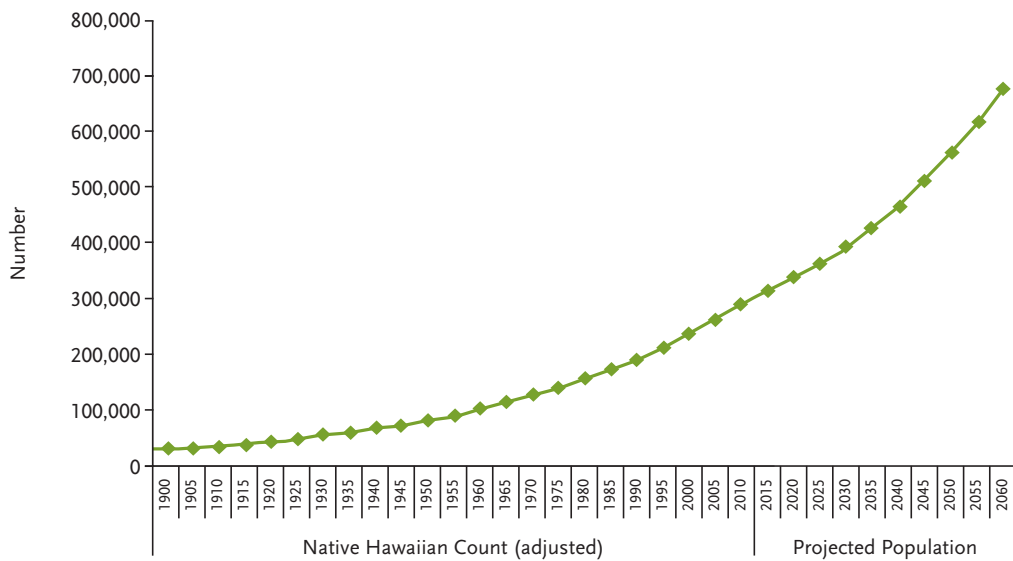
Source: Hong 2012.

**FIGURE 1.7** Projected number of Native Hawaiians in Hawai'i  
[2010–60]



Source: Hong 2012.

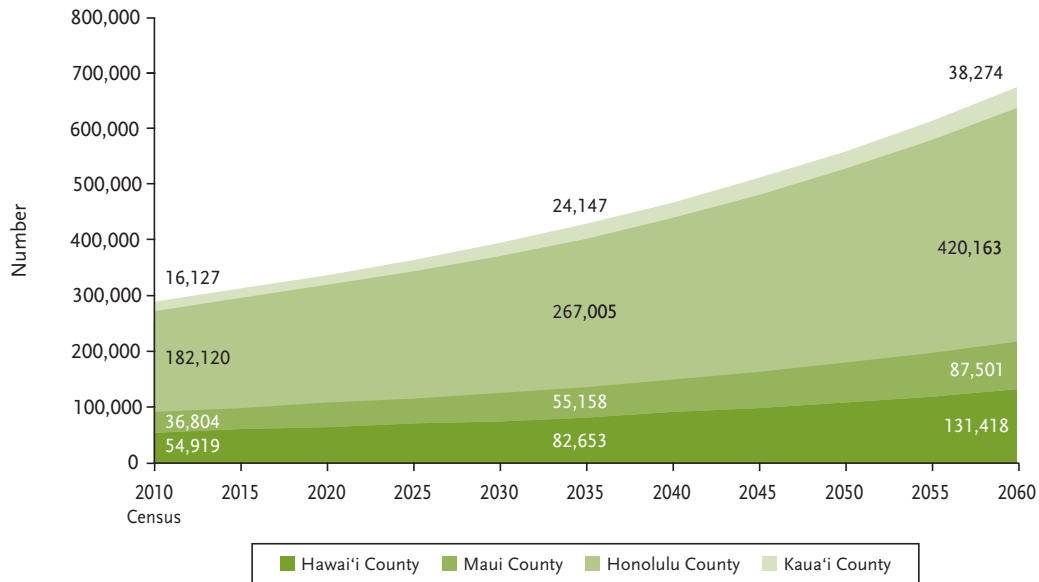
**FIGURE 1.8** Actual and projected number of Native Hawaiians in Hawai'i  
[1900–2060]



Source: Hong 2012.

Population projections by county are provided in Figure 1.9. It should be noted that predictions for smaller geographic units are subject to greater uncertainty due to potential changes in factors such as education, the economy, government policy, healthcare, and natural events.

**FIGURE 1.9** Projected number of Native Hawaiians in Hawai‘i by county  
[2010–60]



Source: Hong 2012.

Note: Kalawao County is combined with Maui County due to the relatively small population of Kalawao County.

The age structure of the population is important for predicting population growth and the needs and resources of specific segments of the population. Table 1.2 and Table 1.3 present the expected age distribution of the Native Hawaiian population between 2010 and 2060.

Table 1.2 contains projections of the Native Hawaiian population in the United States; Table 1.3 provides similar information for Hawai'i.

**TABLE 1.2** Projected number of Native Hawaiians in the United States by age  
[2010–60]

Age group	Census 2010	Projection estimates									
		2015	2020	2025	2030	2035	2040	2045	2050	2055	2060
Total	527,077	576,470	627,929	680,708	735,907	799,154	873,116	957,108	1,049,828	1,151,692	1,264,941
0 to 4 years	55,794	75,610	79,865	83,503	88,446	99,166	112,613	125,305	136,632	148,589	163,432
5 to 9 years	51,852	55,511	75,215	79,451	83,070	87,981	98,638	112,016	124,645	135,916	147,808
10 to 14 years	48,491	51,817	55,473	75,164	79,397	83,014	87,921	98,571	111,940	124,561	135,823
15 to 19 years	50,053	48,318	51,631	55,274	74,895	79,112	82,716	87,608	98,222	111,543	124,118
20 to 24 years	45,029	49,496	47,783	51,058	54,659	74,066	78,235	81,799	86,638	97,137	110,310
25 to 29 years	41,628	44,397	48,799	47,111	50,339	53,889	73,024	77,134	80,648	85,419	95,772
30 to 34 years	36,293	41,024	43,752	48,087	46,426	49,605	53,103	71,960	76,011	79,473	84,175
35 to 39 years	32,320	35,583	40,219	42,891	47,135	45,511	48,626	52,053	70,541	74,511	77,905
40 to 44 years	31,817	31,388	34,571	39,066	41,664	45,775	44,204	47,227	50,554	68,515	72,369
45 to 49 years	32,349	30,266	29,846	32,897	37,159	39,636	43,526	42,043	44,914	48,075	65,165
50 to 54 years	28,019	29,999	28,075	27,674	30,528	34,467	36,768	40,353	38,992	41,649	44,574
55 to 59 years	22,481	25,360	27,156	25,418	25,049	27,652	31,209	33,288	36,519	35,296	37,694
60 to 64 years	17,629	19,800	22,333	23,913	22,388	22,048	24,375	27,491	29,325	32,142	31,082
65 to 69 years	12,707	14,736	16,566	18,683	20,007	18,738	18,445	20,416	23,012	24,544	26,880
70 to 74 years	8,229	10,252	11,895	13,386	15,096	16,172	15,149	14,906	16,518	18,608	19,841
75 to 79 years	5,921	6,250	7,791	9,033	10,182	11,478	12,293	11,526	11,321	12,589	14,155
80 years and older	6,465	6,663	6,960	8,098	9,466	10,845	12,274	13,412	13,396	13,126	13,839

Source: Hong 2012.

**TABLE 1.3** Projected number of Native Hawaiians in Hawai‘i by age  
[2010–60]

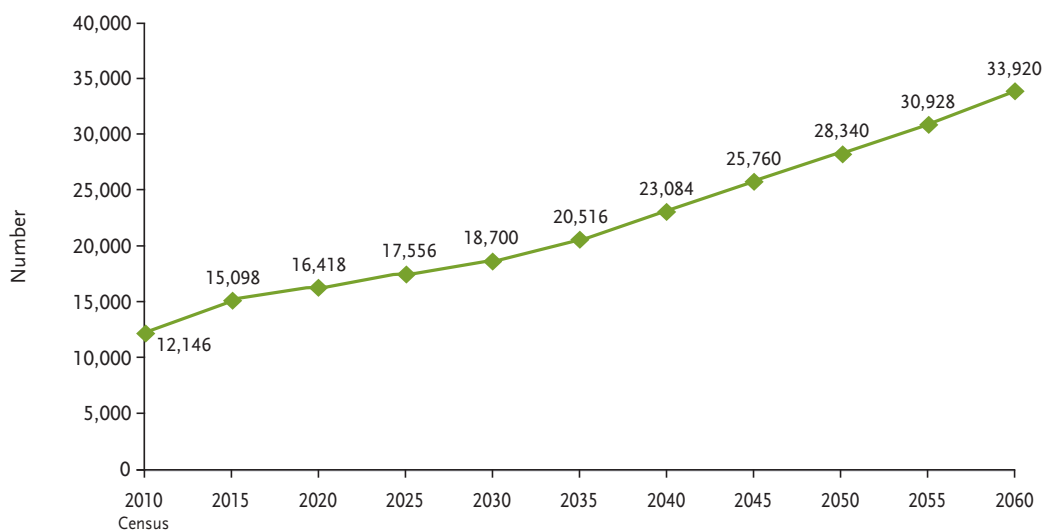
Age group	Census 2010	Projection estimates									
		2015	2020	2025	2030	2035	2040	2045	2050	2055	2060
Total	289,970	313,362	338,888	366,180	395,511	428,962	467,788	512,064	561,522	616,361	677,356
0 to 4 years	30,727	38,965	42,103	44,930	48,107	53,404	59,998	66,672	73,082	79,830	87,768
5 to 9 years	28,829	30,571	38,760	41,883	44,696	47,854	53,120	59,680	66,320	72,698	79,410
10 to 14 years	26,801	28,809	30,550	38,734	41,855	44,666	47,822	53,084	59,640	66,275	72,649
15 to 19 years	27,233	26,705	28,706	30,440	38,596	41,705	44,506	47,651	52,896	59,428	66,040
20 to 24 years	22,450	26,931	26,408	28,387	30,101	38,169	41,243	44,013	47,124	52,311	58,771
25 to 29 years	21,538	22,133	26,551	26,036	27,987	29,676	37,632	40,663	43,394	46,461	51,576
30 to 34 years	18,982	21,224	21,810	26,163	25,656	27,578	29,242	37,084	40,071	42,762	45,785
35 to 39 years	17,235	18,609	20,805	21,378	25,646	25,148	27,033	28,663	36,353	39,281	41,918
40 to 44 years	17,175	16,736	18,077	20,206	20,763	24,909	24,424	26,254	27,835	35,310	38,152
45 to 49 years	17,971	16,336	15,912	17,199	19,216	19,747	23,691	23,227	24,967	26,468	33,585
50 to 54 years	16,058	16,661	15,149	14,749	15,955	17,818	18,310	21,968	21,536	23,150	24,537
55 to 59 years	13,484	14,530	15,078	13,713	13,345	14,445	16,125	16,569	19,880	19,490	20,948
60 to 64 years	10,368	11,869	12,790	13,272	12,074	11,741	12,727	14,197	14,588	17,505	17,157
65 to 69 years	7,958	8,662	9,923	10,695	11,099	10,101	9,816	10,652	11,874	12,199	14,639
70 to 74 years	5,158	6,422	6,988	8,011	8,637	8,966	8,163	7,927	8,611	9,593	9,854
75 to 79 years	3,750	3,918	4,879	5,302	6,085	6,561	6,809	6,206	6,014	6,556	7,289
80 years and older	4,253	4,282	4,399	5,083	5,695	6,474	7,127	7,554	7,336	7,045	7,279

Source: Hong 2012.

In anticipating the educational needs of Native Hawaiians, the projected population for traditional school-age groups can be particularly informative. The next three figures show the projected Native Hawaiian population for age groups typically associated with preschool (ages three and four) (Figure 1.10), K–12 (ages five through seventeen) (Figure 1.11), and college (ages eighteen to twenty-four) (Figure 1.12).

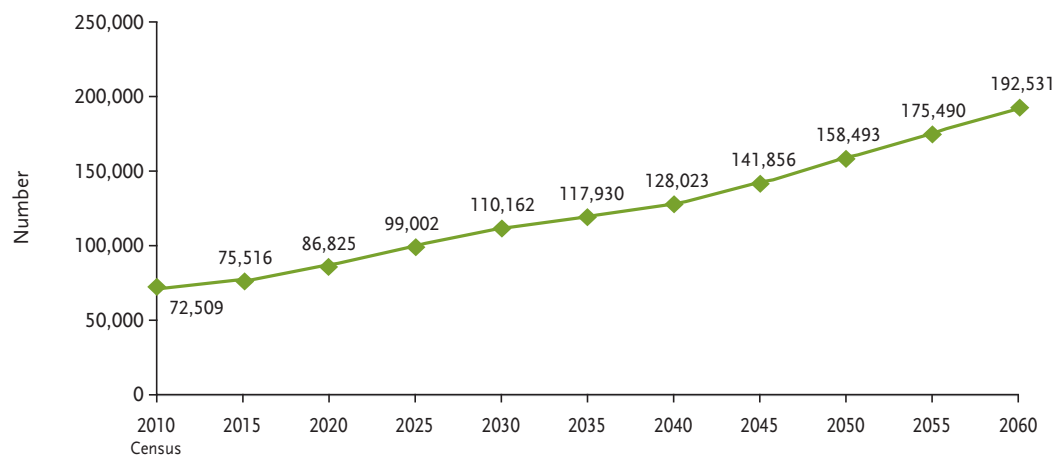
Figure 1.13 presents the estimate for adults ages twenty-five to sixty-five, as many people in this group are likely to be engaged in lifelong learning to maintain job skills and/or for personal growth.

**FIGURE 1.10** Projected number of preschool-age Native Hawaiian children in Hawai‘i  
[Native Hawaiian children ages 3–4, 2010–60]



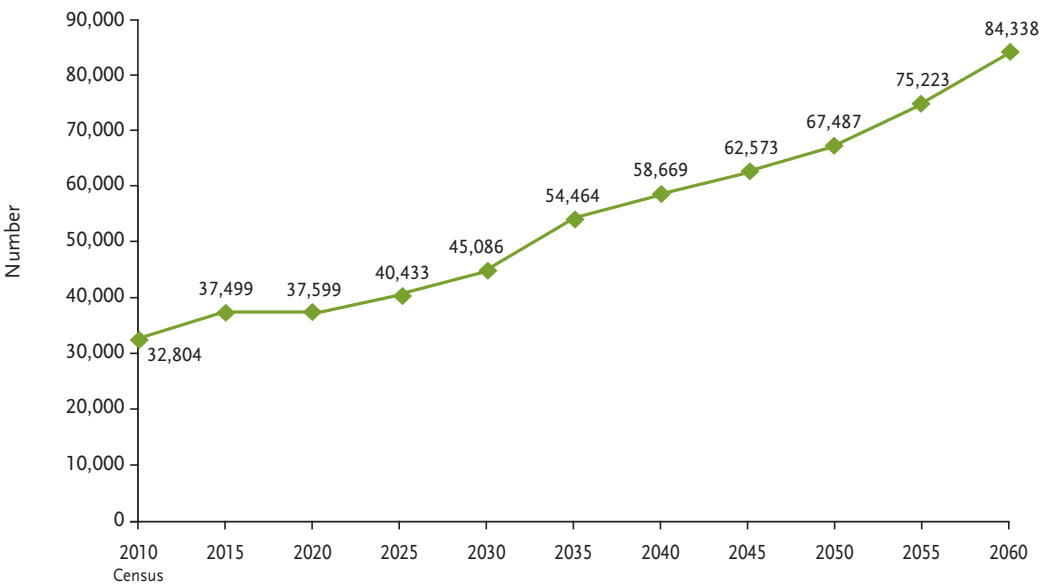
Source: Hong 2012.

**FIGURE 1.11** Projected number of school-age Native Hawaiian children in Hawai‘i  
[Native Hawaiian children ages 5–17, 2010–60]



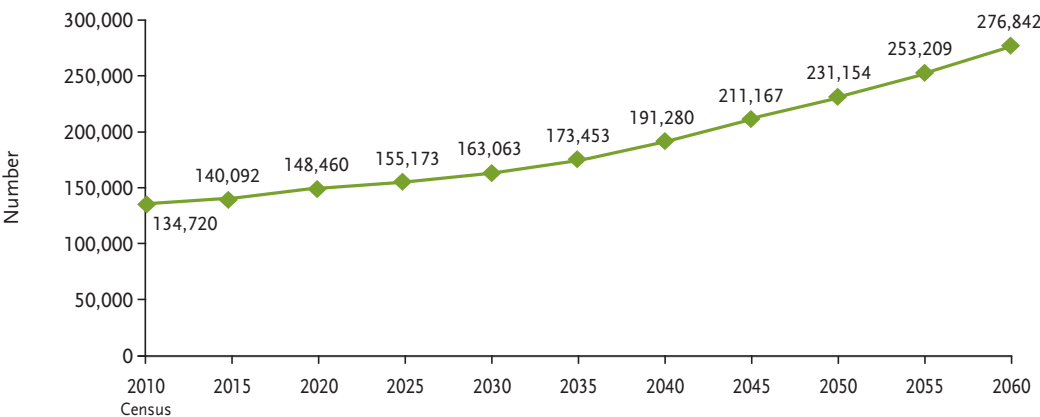
Source: Hong 2012.

**FIGURE 1.12** Projected number of traditional college-age Native Hawaiians in Hawai‘i  
[Native Hawaiian adults ages 18–24, 2010–60]



Source: Hong 2012.

**FIGURE 1.13** Projected number of Native Hawaiian adults in Hawai‘i  
[Native Hawaiian adults ages 25–65, 2010–60]



Source: Hong 2012.



## GEOGRAPHIC DISTRIBUTION

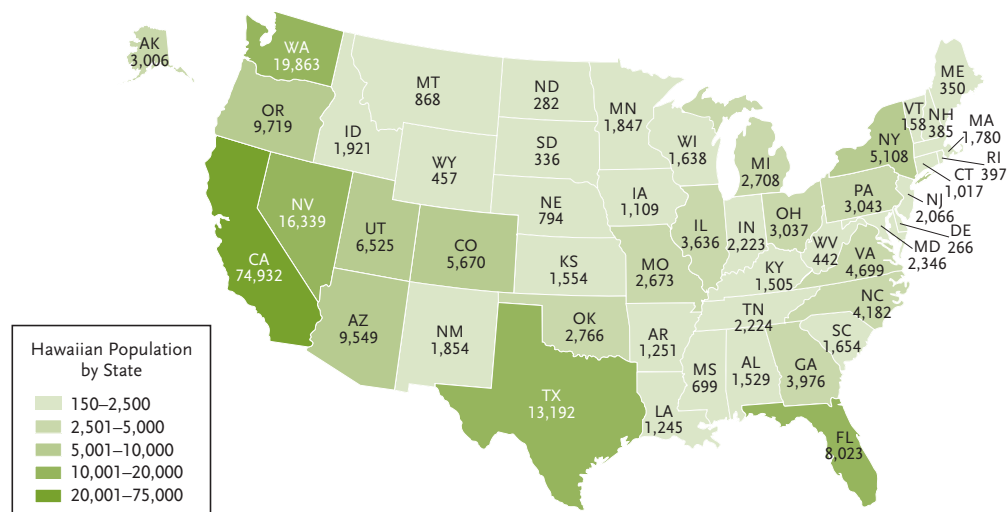
Many Native Hawaiians live outside the islands but maintain strong ties to Hawai‘i as a homeland and cultural base. Access to homelands, traditional practices, and community is central to Native Hawaiian well-being, regardless of place of residence (Kana‘iaupuni and Malone 2006). These realities are important to consider when planning the delivery of programs and services for Native Hawaiians.

Today, there are nearly as many Native Hawaiians who reside outside Hawai‘i as there are living in Hawai‘i. Forty-five percent of the total 527,077 Native Hawaiians identified in the 2010 census live within the continental United States or in Alaska. On the continent, the two states with the most Native Hawaiians are California and Washington. When Native Hawaiians living in Alaska and Hawai‘i are included, a total of 83.6 percent (440,673) of all Native Hawaiians in the United States live in the westernmost states.<sup>1</sup> The West Coast states alone contain nearly 20 percent of the total Native Hawaiian population (see Table 1.4).

In the past decade, the state of Nevada experienced some of the most dramatic growth in the Native Hawaiian population outside Hawai‘i. Nevada’s Native Hawaiian population was reported as 8,264 in 2000 (not shown) and nearly doubled to 16,339 by 2010. The majority of this growth was contributed by Clark County, the most populous county for Native Hawaiians outside Hawai‘i, where 14,071 Native Hawaiians currently reside (not shown).

Just as the concentration and distribution of Native Hawaiians vary across the nation, significant regional differences exist within Hawai‘i. This variation is highlighted in the table and figures that follow. Being aware of the geographic distribution of Native Hawaiians is critical for understanding the role that community resources play in Native Hawaiian outcomes and for ensuring appropriate planning and delivery of support services.

**FIGURE 1.14** Map depicting Native Hawaiian population in the United States, excluding Hawai‘i  
[by state, 2010]



Source: US Census Bureau 2010, Summary File 2.

1. The westernmost states include Washington, Oregon, California, Idaho, Nevada, Utah, Arizona, Montana, Wyoming, Colorado, New Mexico, Alaska, and Hawai‘i.

**TABLE 1.4** Concentration and distribution of Native Hawaiians in the United States by size of the state's Native Hawaiian population  
[2010]

State	Total population	Native Hawaiian population		
		Number	Concentration (%) <sup>1</sup>	Distribution (%) <sup>2</sup>
Hawai'i	1,360,301	289,970	21.32	55.01
California	37,253,956	74,932	0.20	14.22
Washington	6,724,540	19,863	0.30	3.77
Nevada	2,700,551	16,339	0.61	3.10
Texas	25,145,561	13,192	0.05	2.50
Oregon	3,831,074	9,719	0.25	1.84
Arizona	6,392,017	9,549	0.15	1.81
Florida	18,801,310	8,023	0.04	1.52
Utah	2,763,885	6,525	0.24	1.24
Colorado	5,029,196	5,670	0.11	1.08
New York	19,378,102	5,108	0.03	0.97
Virginia	8,001,024	4,699	0.06	0.89
North Carolina	9,535,483	4,182	0.04	0.79
Georgia	9,687,653	3,976	0.04	0.75
Illinois	12,830,632	3,636	0.03	0.69
Pennsylvania	12,702,379	3,043	0.02	0.58
Ohio	11,536,504	3,037	0.03	0.58
Alaska	710,231	3,006	0.42	0.57
Oklahoma	3,751,351	2,766	0.07	0.52
Michigan	9,883,640	2,708	0.03	0.51
Missouri	5,988,927	2,673	0.04	0.51
Maryland	5,773,552	2,346	0.04	0.45
Tennessee	6,346,105	2,224	0.04	0.42
Indiana	6,483,802	2,223	0.03	0.42
New Jersey	8,791,894	2,066	0.02	0.39
Idaho	1,567,582	1,921	0.12	0.36
New Mexico	2,059,179	1,854	0.09	0.35
Minnesota	5,303,925	1,847	0.03	0.35
Massachusetts	6,547,629	1,780	0.03	0.34
South Carolina	4,625,364	1,654	0.04	0.31
Wisconsin	5,686,986	1,638	0.03	0.31
Kansas	2,853,118	1,554	0.05	0.29
Alabama	4,779,736	1,529	0.03	0.29
Kentucky	4,339,367	1,505	0.03	0.29
Arkansas	2,915,918	1,251	0.04	0.24
Louisiana	4,533,372	1,245	0.03	0.24
Iowa	3,046,355	1,109	0.04	0.21
Connecticut	3,574,097	1,017	0.03	0.19
Montana	989,415	868	0.09	0.16
Nebraska	1,826,341	794	0.04	0.15
Mississippi	2,967,297	699	0.02	0.13
Wyoming	563,626	457	0.08	0.09
West Virginia	1,852,994	442	0.02	0.08
Rhode Island	1,052,567	397	0.04	0.08
New Hampshire	1,316,470	385	0.03	0.07
Maine	1,328,361	350	0.03	0.07
South Dakota	814,180	336	0.04	0.06
North Dakota	672,591	282	0.04	0.05
Delaware	897,934	266	0.03	0.05
District of Columbia	601,723	264	0.04	0.05
Vermont	625,741	158	0.03	0.03

Source: US Census Bureau 2010, Summary File 2.

<sup>1</sup> Native Hawaiians as a percentage of the state's total population.

<sup>2</sup> Native Hawaiians as a percentage of the total Native Hawaiian population in the United States.

**TABLE 1.5** Concentration and distribution of Native Hawaiians in Hawai'i by region/county subdivision  
[2010]

Region/county subdivision	Total population	Native Hawaiian population		
		Number	Concentration (%) <sup>1</sup>	Distribution (%) <sup>2</sup>
<b>Hilo–Puna–Ka'ū</b>				
Hilo	45,714	15,357	33.6	5.3
Ka'ū	8,451	2,409	28.5	0.8
Kea'au–Mountain View	34,266	11,362	33.2	3.9
North Hilo	2,041	421	20.6	0.1
Pāhoa–Kalapana	11,060	3,155	28.5	1.1
Pāpa'ikou–Wailea	5,213	1,170	22.4	0.4
<b>Kona–Kohala–Hāmākua</b>				
Honoka'a–Kukuihaele	3,925	1,156	29.5	0.4
North Kohala	6,322	2,284	36.1	0.8
North Kona	37,875	8,821	23.3	3.0
Pā'auhau–Pa'auilo	2,588	635	24.5	0.2
South Kohala	17,627	5,125	29.1	1.8
South Kona	9,997	3,024	30.2	1.0
<b>Maui</b>				
Ha'ikū–Pa'uwela	10,088	2,036	20.2	0.7
Hāna	2,291	1,314	57.4	0.5
Kahului	26,328	5,633	21.4	1.9
Kihei	23,677	2,643	11.2	0.9
Kula	11,580	2,152	18.6	0.7
Lāhainā	22,156	3,164	14.3	1.1
Makawao–Pā'ia	20,219	5,656	28.0	2.0
Pu'unēnē	8	0	0.0	0.0
Spreckelsville	461	40	8.7	0.0
Waihe'e–Waikapū	6,907	2,757	39.9	1.0
Wailuku	20,729	6,271	30.3	2.2
<b>Lāna'i</b>				
Lāna'i	3,135	611	19.5	0.2
<b>Moloka'i</b>				
East Moloka'i	4,503	2,616	58.1	0.9
Kalawao	90	46	51.1	0.0
West Moloka'i	2,752	1,865	67.8	0.6
<b>Kona O'ahu</b>				
Honolulu	390,738	48,024	12.3	16.6
<b>Ko'olaupoko–Ko'olaupoko</b>				
Ko'olaupoko	21,406	6,709	31.3	2.3
Ko'olaupoko	115,164	33,761	29.3	11.6
<b>'Ewa–Waialua</b>				
'Ewa	323,118	56,828	17.6	19.6
Wahiawā	41,216	6,018	14.6	2.1
Waialua	13,046	2,376	18.2	0.8
<b>Wai'anae</b>				
Wai'anae	48,519	28,404	58.5	9.8
<b>Kaua'i</b>				
'Ele'ele–Kalāheo	8,403	1,611	19.2	0.6
Hanalei	7,828	917	11.7	0.3
Kapa'a	8,385	2,176	26.0	0.8
Kaunakani–Hanapēpē	3,771	1,085	28.8	0.4
Kekaha–Waimea	5,561	2,069	37.2	0.7
Kōloa–Po'ipū	5,683	1,189	20.9	0.4
Lihu'e	5,943	1,311	22.1	0.5
Puhi–Hanamā'ulu	8,740	1,700	19.5	0.6
Wailua–Anahola	12,607	3,920	31.1	1.4
<b>Ni'ihau</b>				
Ni'ihau	170	149	87.6	0.1

Source: US Census Bureau 2010, Summary File 2.

<sup>1</sup> Native Hawaiians as a percentage of the area's total population.

<sup>2</sup> Native Hawaiians as a percentage of the total Native Hawaiian population in Hawai'i.

Of the state’s total population of Native Hawaiians, the majority (about 62.8 percent) reside on the island of O‘ahu. Nearly one-quarter (22.5 percent) of all Native Hawaiians in Hawai‘i reside in the ‘Ewa–Waialua area. Although residents of rural areas such as Moloka‘i and Ni‘ihau are predominantly Native Hawaiian, these regions account for a small fraction of the state’s total Native Hawaiian population (1.5 percent and 0.1 percent, respectively).

## CONCLUSION

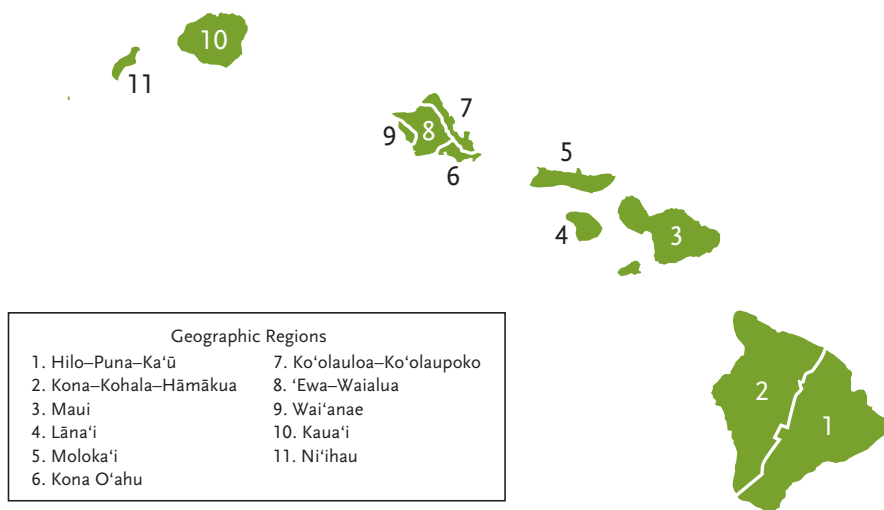
The combined findings of this chapter demonstrate that the Native Hawaiian population is growing at a fast rate, is ethnically diverse, and is distributed throughout various regions in the Hawaiian Islands and on the continent. Of particular note is the relatively large growth occurring in the population of preschool- and school-age Native Hawaiian children.

As organizations seek ways to better serve Native Hawaiians through education and other programs, several persistent questions arise: Which age groups are the highest priority? What balance should planning efforts strike between regions that have the greatest numbers of Native Hawaiians and those with the highest concentrations of Native Hawaiians?

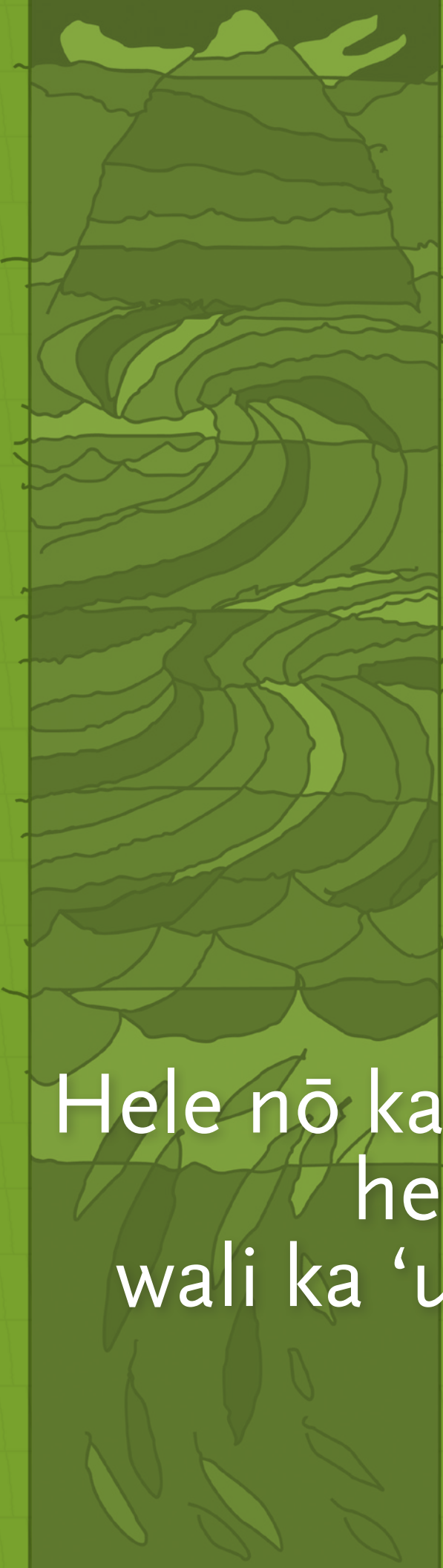
Regardless of how these policy questions are answered, population projections allow organizations to make informed decisions, target specific benchmarks, and determine strategic priorities.

Throughout the remainder of the text, geographic regions are referred to by their traditional Hawaiian moku name. The following map illustrates the naming conventions used throughout *Ka Huaka‘i*.

FIGURE 1.15 Geographic regions and naming conventions







Hele nō ka wai,  
hele nō ka 'alā,  
wali ka 'ulu o Halepua'a.

‘ELUA | CHAPTER TWO

## Material and Economic Well-Being

---

THE WATER FLOWS, THE SMOOTH STONE WORKS, AND THE  
BREADFRUIT OF HALEPUA‘A IS WELL MIXED.

*Everything goes smoothly when one is prosperous.*

## KEY FINDINGS

### Relative strengths/progress over time

#### HOUSING AND HOMEOWNERSHIP

Homeownership among Native Hawaiians has increased. The rate of owner-occupied residences among Native Hawaiians increased from 55.7 percent to 57.8 percent between 2003 and 2009. This growth was slightly higher than the statewide increase in owner-occupied residences over the same period.

#### EMPLOYMENT AND OCCUPATION

Native Hawaiians are now more likely to be employed in professional or managerial occupations than in the past. Comparing Native Hawaiians with the state population, the employment gap for professional and managerial occupations decreased from 9.4 percentage points in 2000 to 8.1 percentage points in 2010.

Native Hawaiian single mothers have continued to be actively engaged in the workforce. Among Native Hawaiian children ages 5–17 in single-mother family households, data from 2006–10 showed that 71.4 percent had a working mother, compared with 67.6 percent statewide.

#### INCOME

Income gaps have narrowed in certain parts of the population. Among family households with children ages 0–4, the income disparity between Native Hawaiians and the statewide average decreased by \$3,246 between 1999 and 2010.

Among adults with an associate's degree, the annual earnings of Native Hawaiians (\$37,642) between 2006 and 2010 were slightly higher than the statewide average (\$36,266).

Among family households where an associate's degree was the highest degree obtained, the livable income<sup>1</sup> rate for Native Hawaiians in 2009 (64.7 percent) was 2.5 percentage points higher than that of non-Hawaiians (62.2 percent).

#### POVERTY AND PUBLIC ASSISTANCE

The poverty rate among Native Hawaiians decreased from 14.6 percent in 2003 to 13.6 percent in 2009. The difference between the poverty rate among Native Hawaiian family households and all family households statewide decreased from 3.5 percentage points in 2003 to 2.7 percentage points in 2009.

Public assistance usage among Native Hawaiian households decreased by 2.8 percentage points between 2003 and 2009, compared with the statewide decrease of 1.3 percentage points.

1. Livable income refers to the annual income required to provide the basic necessities for a comfortable life. Livable income is calculated based on: Economic Policy Institute, "Family Budget Calculator," *Economic Policy Institute: Research and Ideas for Shared Prosperity* (2013).



## Areas of concern

### HOUSING

Homelessness has remained a challenge in the Native Hawaiian population. The number of Native Hawaiians using homeless shelters increased by 55.8 percent, from 1,569 in 2006 to 2,444 in 2013. The number of Native Hawaiians using outreach services, such as assistance with housing and benefits, increased by 18.0 percent during the same period.

### EMPLOYMENT AND OCCUPATION

Native Hawaiians had the highest unemployment rate among the major ethnic groups in Hawai'i. Nearly one in ten Native Hawaiians in the civilian labor force (9.0 percent) was unemployed, compared with approximately one in seventeen (5.7 percent) statewide.

Native Hawaiians were overrepresented in the typically lower paying agriculture, labor, and production jobs and underrepresented in the typically higher paying professional and managerial positions.

### INCOME

Native Hawaiian family households with children had the lowest mean income among the major ethnic groups in the state.

- Among family households with children ages 0–4, the mean income of Native Hawaiians (\$76,925) was \$4,429 less than the statewide average. The difference was more pronounced among family households with children ages 5–17, where the mean income of Native Hawaiians (\$79,468) was \$8,244 less than the statewide average.
- Among adults with a bachelor's degree or higher, the mean earnings of Native Hawaiians was 8.0 percent less than the statewide average (\$47,644 versus \$51,809, respectively).

Compared with the other major ethnic groups in Hawai'i, Native Hawaiian households were the least likely to have a livable income. Native Hawaiian family households with children ages 0–4 had lower livable income rates than did Native Hawaiian family households with children ages 5–17.

### POVERTY AND PUBLIC ASSISTANCE

Native Hawaiian households had the highest rate of public assistance usage, and Native Hawaiian family households had the highest rate of poverty among the state's major ethnic groups. Poverty rates were elevated in areas with high concentrations of Native Hawaiians: Moloka'i, Wai'anae, and Hilo–Puna–Ka'ū.

Single-parent households face a greater risk of poverty than do those headed by a married couple. Native Hawaiian children in single-parent households were more than twice as likely to live in poverty as were Native Hawaiian children in married-couple family households.

## KEY IMPLICATIONS

Native Hawaiian material and economic well-being has improved slightly over the last decade. However, significant challenges remain within some of the most vulnerable segments of the Native Hawaiian population: family households with young children and single-parent family households. Education can serve as a vehicle of economic mobility and security, with higher levels of educational attainment in Native Hawaiians linked to increased earnings and livable income rates. Continued investments in education and postsecondary options for Native Hawaiians will be a key driver in future improvements in material and economic well-being.

# 2

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65 CONCLUSION

## CHAPTER TWO INTRODUCTION

**I**n this chapter, material and economic well-being refers to financial resources such as housing, employment, occupation, income, and other socioeconomic assets.

Consistent with other elements of well-being discussed in this book, material well-being and socioeconomic status<sup>1</sup> are inextricably linked to other aspects of overall wellness. In particular, material and economic well-being is both a cause and an effect of educational outcomes. As a cause, socioeconomic status impacts a child's access to quality schools, supplemental services, enrichment opportunities, learning materials/resources, and educational technologies. Socioeconomic status also provides the backdrop against which learning takes place and may indirectly influence a child's educational experiences, engagement, focus, and motivation through the presence or absence of stressors (Jensen 2009; Marjoribanks 2005). As an effect, material and economic outcomes are closely tied to educational attainment, with each successive level of degree completion garnering substantial increases in earning potential (Bureau of Labor Statistics 2014; US Census Bureau 2011). In an economy with widening income inequality, education provides a path toward financial self-sufficiency.

Turmoil such as the 2007–09 recession raises the question of how the socioeconomic status of individuals interacts with economic conditions as a whole. How are disadvantaged groups with limited financial resources able to weather difficult economic times? How do communities like Native Hawaiians—with a history of social, educational, and economic marginalization—respond to adverse conditions in the larger economy? The data in this section—most of which were collected between 2002 and 2010 by the US Census Bureau—provide a mixed response. In key measures of material and economic well-being, Native Hawaiian figures remain lower than statewide averages. However, the data also highlight substantial improvements over the last decade. Native Hawaiians achieved significant gains relative to other ethnic groups in homeownership, income, poverty rates, and public assistance usage. In addition, the high degree of connectedness to family and community within the Native Hawaiian population may temper the effects of material and economic adversity. Such progress and culturally grounded coping strategies attest to the resilience and strength of the Native Hawaiian population and indicate intergenerational change in progress. This connectedness is discussed in Chapter 3 on Social, Emotional, and Cultural Well-Being.

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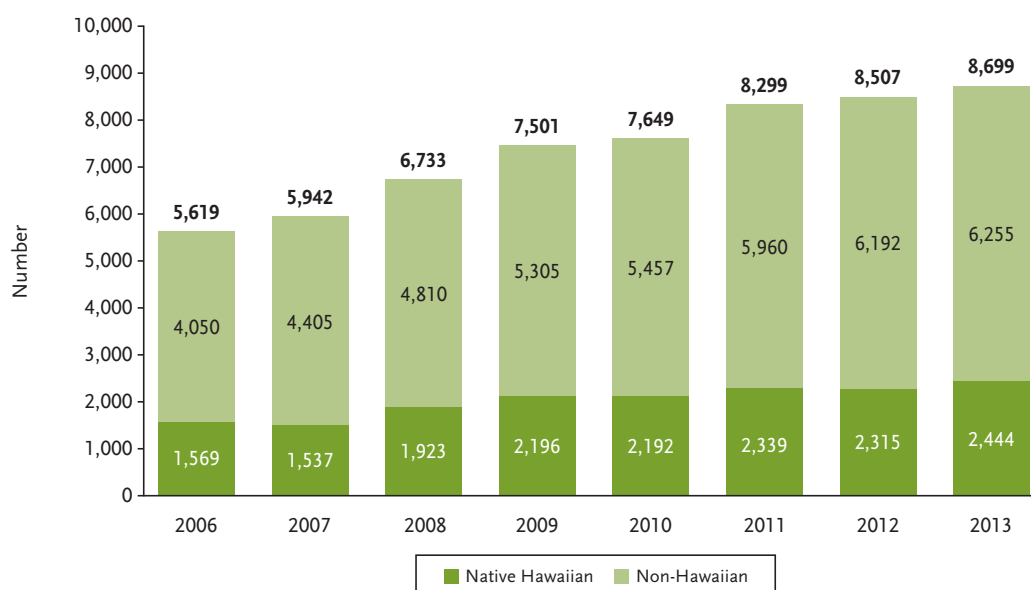
1. The American Psychological Association defines socioeconomic status as the “social standing or class of an individual or group,” as measured by “a combination of education, income, and occupation” (American Psychological Association 2014).

## HOUSING AND HOMEOWNERSHIP

Despite the troubled history in Hawai‘i of Native Hawaiian land loss,<sup>2</sup> the significance of ‘āina to Native Hawaiian identity and culture endures (Kame‘eleihiwa 1992; Kanahele 1986; Osorio 2013). The tension between Native Hawaiians’ spiritual relationship with the ‘āina and ongoing legal and political challenges to their land claims is reflected at the individual level in the daily struggles of homeless Native Hawaiians. Figure 2.1 and Figure 2.2 show that Native Hawaiians account for a substantial proportion of the homeless population within their own homeland.

**FIGURE 2.1** Trends in usage of homeless shelters

[number of homeless shelter clients, by Native Hawaiian and non-Hawaiian, 2006–13, Hawai‘i]



Sources: Yuan, Stern, and Vo 2012, 2013; Yuan and Stern 2011; Yuan, Trundle, and Fong 2010; Yuan and Yuen 2009; Yuan, Kole, and Yuen 2008; Ripke et al. 2007; Ullman et al. 2006.

- The number of Native Hawaiians who received services at government-funded homeless and transitional shelters increased by 55.8 percent over the last eight years, from 1,569 in 2006 to 2,444 in 2013. During the same period, the number of non-Hawaiians served by shelters increased by 54.4 percent.<sup>3</sup>
- The proportion of homeless shelter clients who are Native Hawaiian has held relatively steady over time, increasing by just 0.2 percentage points, from 27.9 percent in 2006 to 28.1 percent in 2013.
- Homeless shelter usage increased most dramatically from 2007 to 2008 and from 2008 to 2009, a period that corresponds with the “Great Recession.” Unfortunately, usage has not declined as the economy moves toward “recovery.”

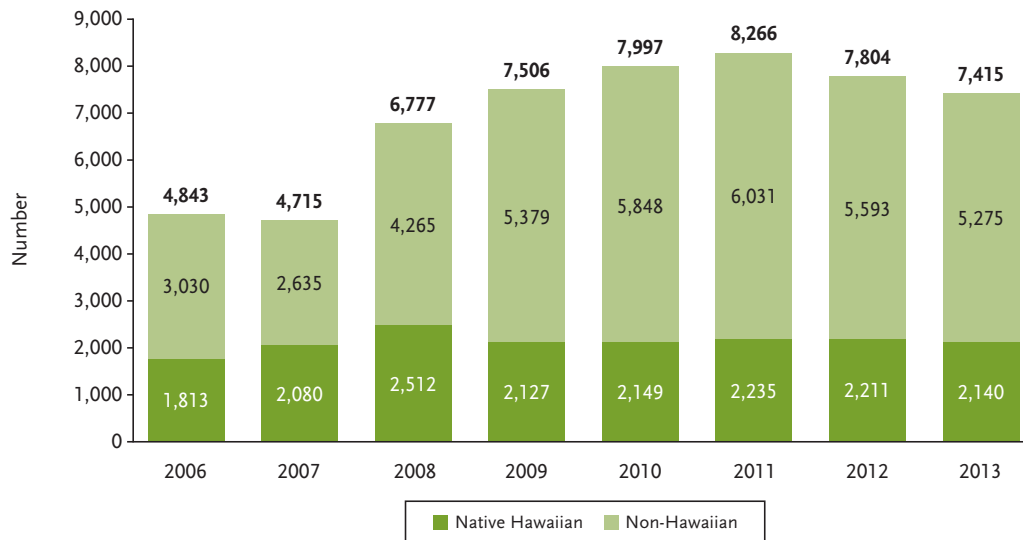
2. See Kame‘eleihiwa (1992) for a comprehensive account of the history through which the traditional Hawaiian model of land stewardship was displaced by a Western system of private ownership and ultimately manipulated by foreign interests.

3. A portion of the increase in homeless shelter usage may be attributable to increased capacity at shelters. Yuan, Trundle, and Fong (2010) note that the number of shelter beds doubled and the number of transitional housing units increased by more than 50 percent between 2006 and 2010.

Regardless of the extent to which rise in the use of services reflects an increased need versus an increased availability of shelters, the fact remains that too many members of our Native Hawaiian community are without a home they can call their own.

**FIGURE 2.2** Trends in usage of homeless outreach services

[number of homeless outreach service clients, by Native Hawaiian and non-Hawaiian, 2006–13, Hawai‘i]



Sources: Yuan, Stern, and Vo 2012, 2013; Yuan and Stern 2011; Yuan, Trundle, and Fong 2010; Yuan and Yuen 2009; Yuan, Kole, and Yuen 2008; Ripke et al. 2007; Ullman et al. 2006.

- The number of Native Hawaiians who received government-funded homeless outreach services increased by 18.0 percent over the last eight years from 1,813 to 2,140.<sup>4</sup>
- During this period, homeless outreach support to Native Hawaiians peaked in 2008 with 2,512 clients served; this represented a 38.6 percent increase in the number of Native Hawaiian outreach clients over the two-year period between 2006 and 2008.
- Since 2011, the number of Native Hawaiian outreach clients has decreased at a slower rate than that of non-Hawaiian clients (4.3 percent versus 12.5 percent, respectively).

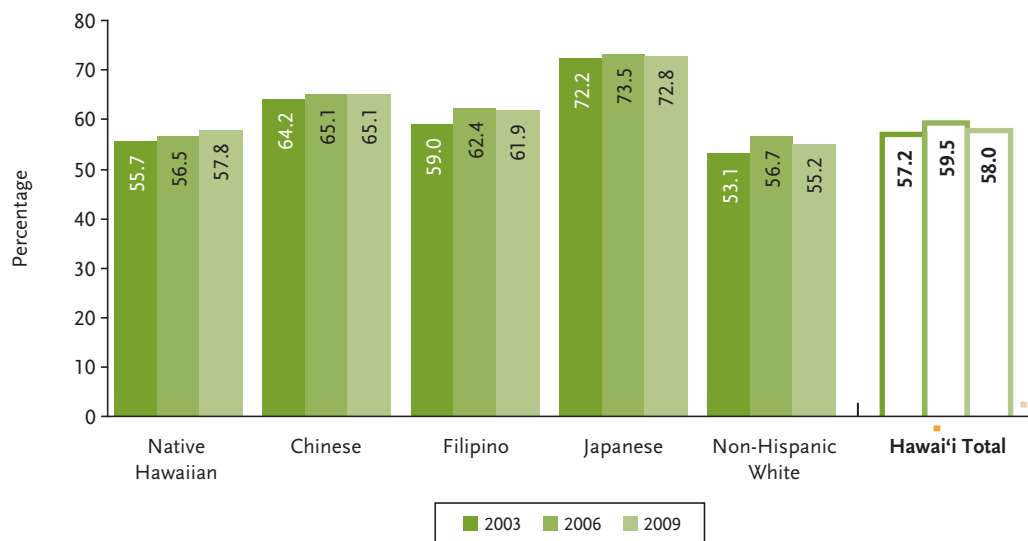
Among Native Hawaiians with housing, aspirations of homeownership in Hawai‘i pose another set of challenges. On the US continent, many high-priced housing markets correspond with high incomes. In Hawai‘i, however, housing prices and the cost of living rank among the highest in the country, yet wages are just above the national average (Kurtzleben 2011; Kotkin 2012). Access to affordable housing was further constrained by the mortgage crisis of 2008. Banks and mortgage lenders severely tightened credit and down payment requirements for prospective home buyers, rendering the goal of homeownership unattainable for many Native Hawaiian families (Schoen 2012; Board of Governors of the Federal Reserve System 2012; Holt 2009).

4. Types of outreach support vary among providers but may include: case management, assessment, and referral; access to supplies such as food, clothing, tents, and toiletries; and assistance in obtaining housing, benefits, and/or employment.

Recent data on the prevalence of owner-occupied housing among Native Hawaiians show mixed results. Figure 2.3 indicates that Native Hawaiian homeownership rates have persistently lagged behind state-wide averages, but they have also steadily increased over the last decade.

**FIGURE 2.3** Trends in owner-occupied residences

[as a percentage of all occupied housing units by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]



Source: US Census Bureau 2002–10, American Community Survey Public Use Microdata (1-year files).

- More than half of all Native Hawaiian-occupied housing units were owned by an individual residing in the household in 2003, 2006, and 2009 (55.7 percent, 56.5 percent, and 57.8 percent, respectively).
- In 2009, Native Hawaiians had the lowest rate of owner-occupied residences of any major ethnic group in Hawai‘i except non-Hispanic Whites. However, the data may be skewed by the high concentration of military personnel within the White population.
- Between 2003 and 2009, the rate of owner-occupied residences among Native Hawaiians increased 2.1 percentage points (from 55.7 percent to 57.8 percent). This growth is slightly higher than the increase of 0.8 percentage points in the statewide average.

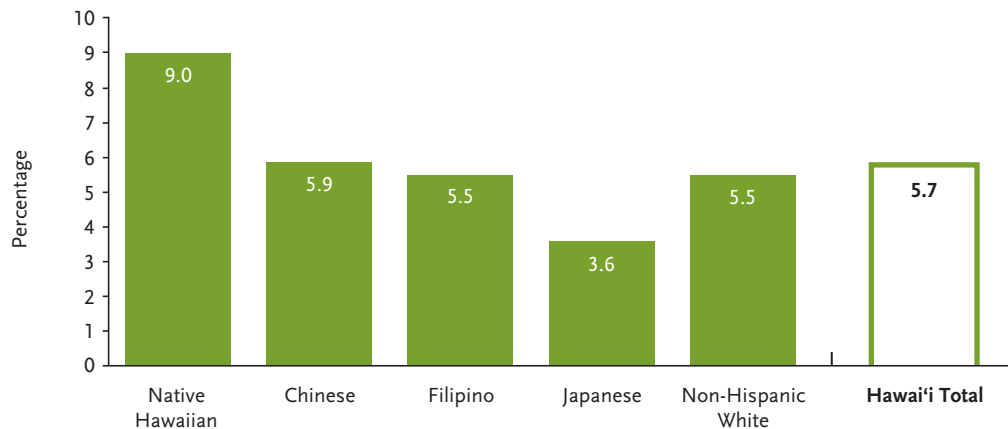
## EMPLOYMENT AND OCCUPATION

Persistently low homeownership rates among Native Hawaiians are likely exacerbated by disparities in employment and occupational outcomes, which serve as the primary sources of income and financial support for working-age adults and their families. Job losses and unemployment were rife throughout the 2007–09 recession and remained a challenge through at least the end of 2012 (Center on Budget and Policy Priorities 2013; Yellen 2013; Russell Sage Foundation n.d.).

Unemployment is both a personal crisis and a public policy problem. At best, unemployment leaves individuals dependent on social networks and safety nets. At worst, it strips families of their means of support. Data compiled from the US Census Bureau show that among the state’s major ethnic groups, Native Hawaiians are most likely to be unemployed (Figure 2.4).

**FIGURE 2.4** Unemployment

[as a percentage of all individuals 16 years and older in the civilian labor force, by race/ethnicity, 2006–10, Hawai‘i]



Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

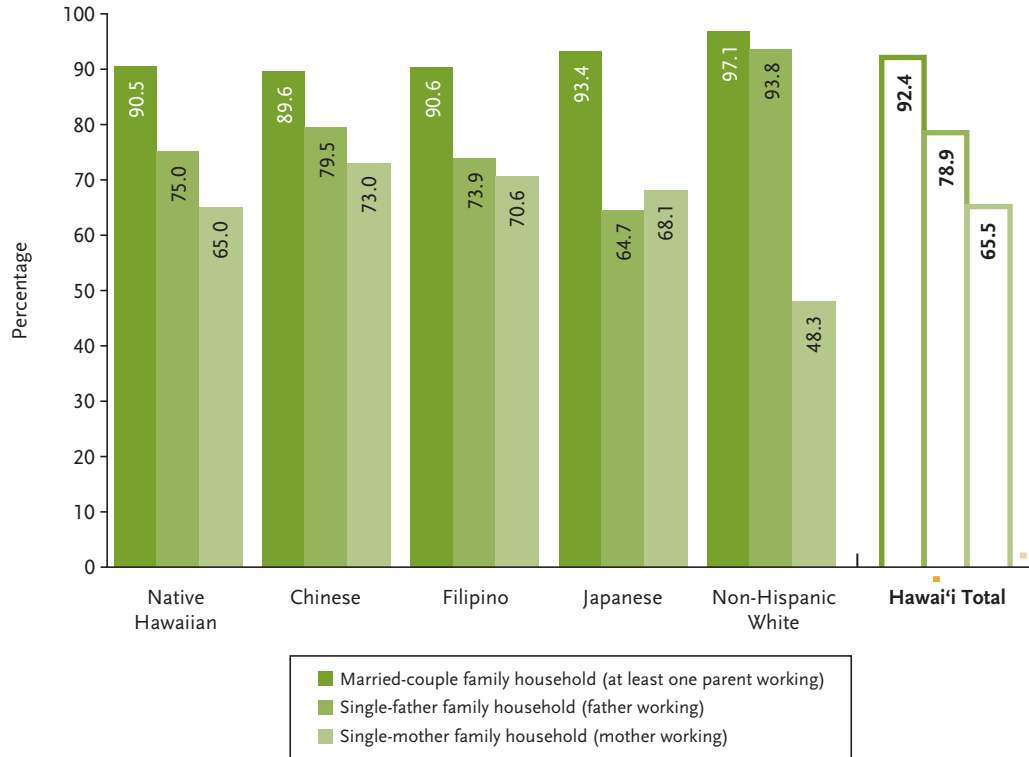
- Native Hawaiians have the highest unemployment rate of any major ethnic group in Hawai‘i. Between 2006 and 2010, nearly one in ten Native Hawaiians in the civilian labor force (9.0 percent) was unemployed, compared with approximately one in seventeen (5.7 percent) statewide.
- However, unemployment among Native Hawaiians decreased from 9.8 percent in 2000 to 9.0 percent in 2010, which is the second greatest decrease among the state’s major ethnic groups (not shown).

Arguably, the impact of job loss and unemployment is greatest among families with children, particularly those led by a single parent. Dependents within a family add to daily household expenses and amplify the consequences of unemployment. Families struggling with unemployment may be unable to provide the basic resources needed for a child’s healthy development, such as nutritious food, adequate housing, quality child care, and critical learning materials.

Given the importance of employment for families, the relatively small racial/ethnic disparities among parents of young and school-age children are a positive sign of equity. As shown in Figure 2.5 and Figure 2.6, parental employment rates among Native Hawaiian children are often comparable to statewide averages.

**FIGURE 2.5** Young children with working parents

[as a percentage of all children 4 years and younger, by race/ethnicity and family household type, 2006–10, Hawai‘i]



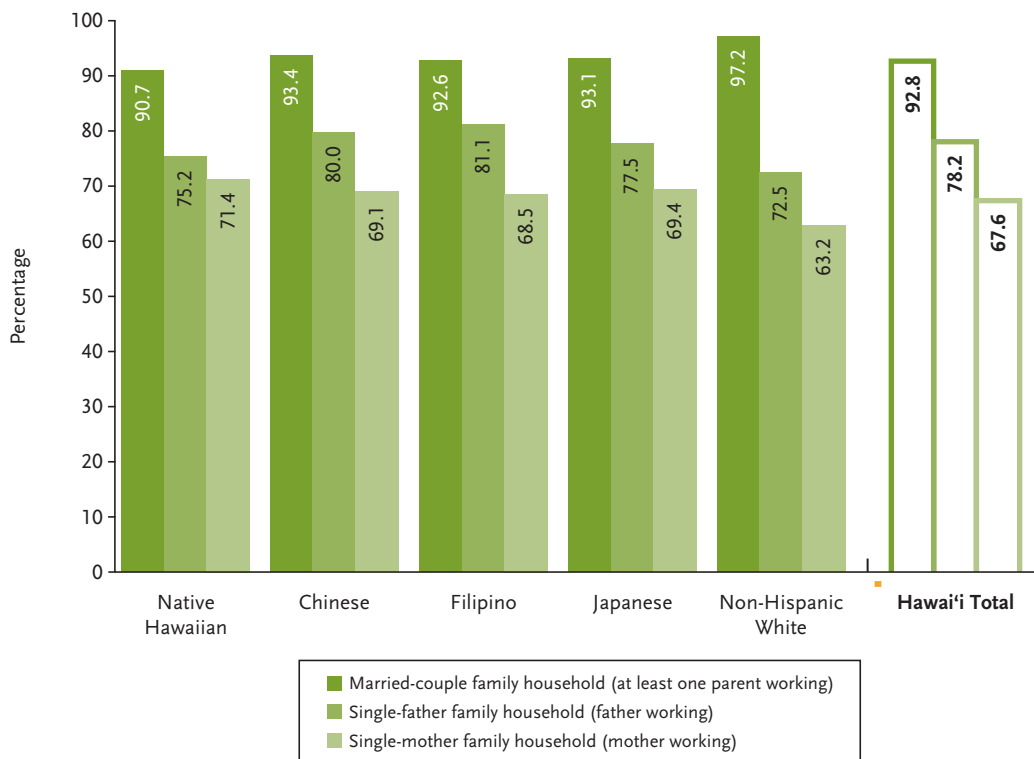
Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- Between three-quarters and two-thirds of young children in single-parent Native Hawaiian family households had a working parent (75.0 percent and 65.0 percent for single-father and single-mother family households, respectively).
- The percentage of young Native Hawaiian children in married-couple family households who have at least one parent working (90.5 percent) is slightly lower than the statewide average (92.4 percent) and is similar to that of the state's other major ethnic groups, except Japanese and non-Hispanic Whites (93.4 and 97.1 percent, respectively).
- The percentage of young children in married-couple family households where both parents were working decreased among all the state's major ethnic groups (not shown). The consistency across ethnic groups points to economic conditions—rather than socioeconomic inequalities—as a causal factor.



Parental employment rates tend to be higher among older school-age children. This may reflect a preference for stay-at-home parenting for young prekindergarten children; it could also suggest the challenge of finding affordable, high-quality child care. However, the relative differences between family household types and ethnic groups remain consistent—regardless of the age group—with parental employment rates among school-age Native Hawaiian children approaching or, in some cases, exceeding those of their non-Hawaiian peers.

**FIGURE 2.6** School-age children with working parents  
[as a percentage of all children ages 5–17, by race/ethnicity and family household type, 2006–10, Hawai‘i]



Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

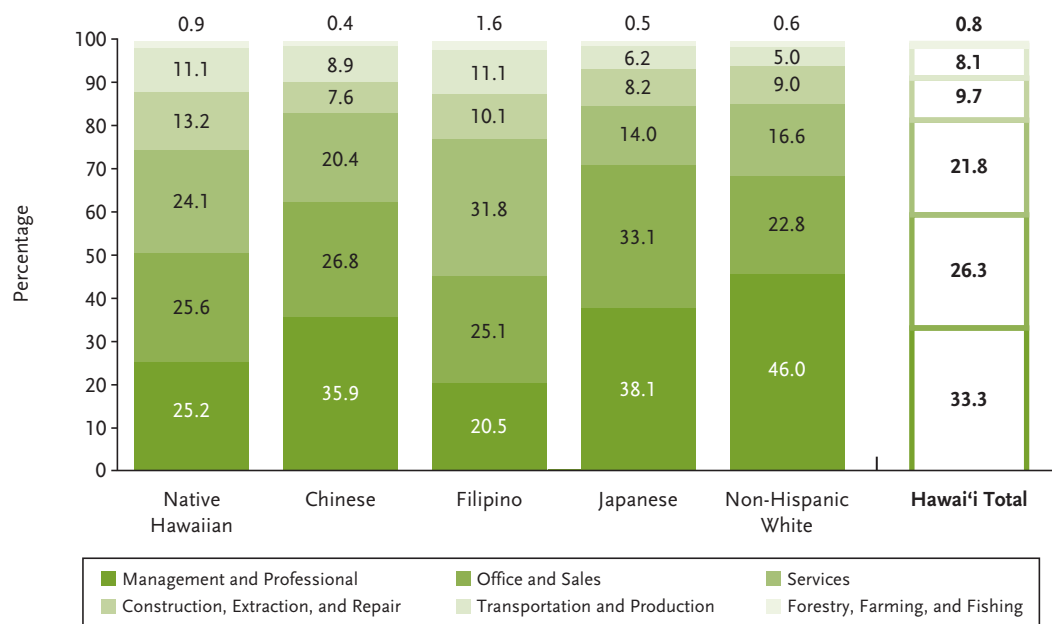
- Among school-age children in single-mother family households, Native Hawaiians were most likely to have their mother working (71.4 percent)—a rate that exceeded the statewide average by 3.8 percentage points.
- School-age Native Hawaiian children in married-couple and single-father family households were slightly less likely than were their non-Hawaiian peers to have a parent working (with the exception of non-Hispanic Whites).

Although the employment rates among the heads of Native Hawaiian families are comparable to statewide averages, these figures may actually underestimate workforce disparities because they fail to account for underemployment—a problem in which workers are overqualified or work fewer hours than preferred (e.g., part-time jobs for those seeking full-time work).

Since the global economic recession from 2007 to 2009, underemployment figures have remained elevated (Economic Policy Institute 2013c). Research suggests that in such situations disadvantaged minorities like Native Hawaiians may be disproportionately impacted (Zhou 1993). In recent years, the underemployment rates among African Americans and Hispanics have exceeded those of Whites by more than 60 percent (Edwards 2009; Economic Policy Institute 2013a).

Systemic disparities in the distribution of workers across occupations contributes to differences in economic and other rewards that are typically tied to job types (Figure 2.7).

**FIGURE 2.7** Distribution of occupation types  
[as a percentage of all individuals in the civilian labor force by race/ethnicity, 2006–10, Hawai‘i]



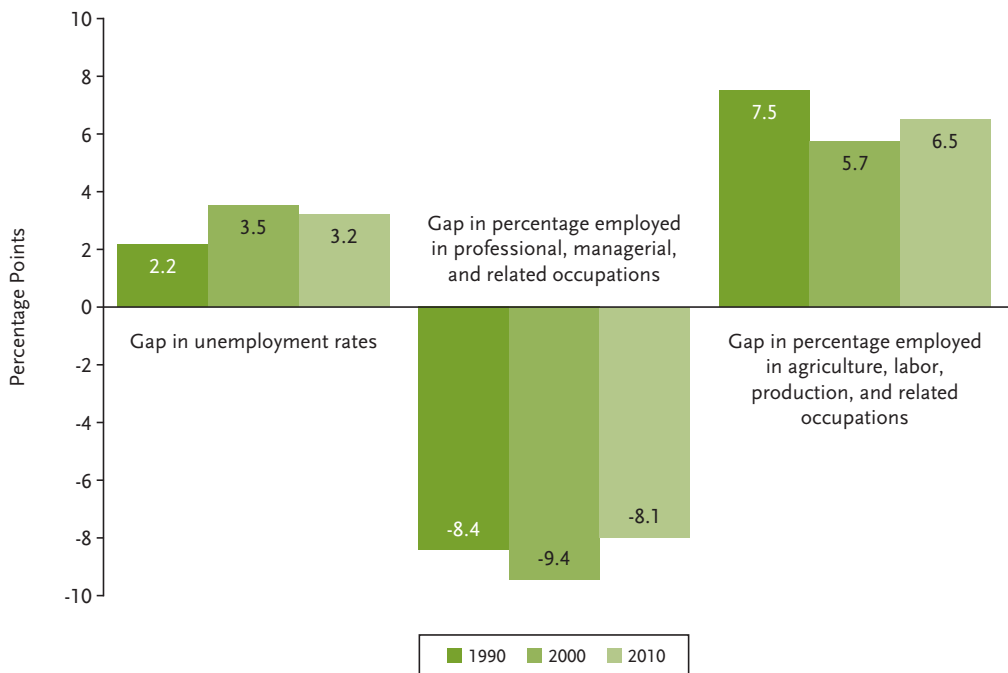
Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- Native Hawaiians are underrepresented in “Management and Professional” occupations, which tend to offer the most economic security. The proportion of Native Hawaiians in “Management and Professional” occupations (25.2 percent) is 8.1 percentage points lower than the statewide average (33.3 percent).
- Native Hawaiians are overrepresented in nonmanagement, nonprofessional occupations. The proportion of Native Hawaiians in “Transportation and Production” occupations (11.1 percent) is 3.0 percentage points higher than the statewide average (8.1 percent). Similarly, the proportion of Native Hawaiians in “Construction, Extraction, and Repair” occupations (13.2 percent) is 3.5 percentage points higher than the statewide average (9.7 percent).

Figure 2.8 expands on these statistics, highlighting trends in the occupational disparities of Native Hawaiian workers as compared with statewide averages. Despite improvements over the last decade, in 2010, Native Hawaiians were still more likely to be unemployed or working in low-wage agricultural, labor, or production occupations. They were less likely to be engaged in professional or managerial occupations.

**FIGURE 2.8** Gap analysis of employment characteristics

[difference in percentage points between Native Hawaiians and the total Hawai'i population, selected years, Hawai'i]



Sources: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files); *Ka Huaka'i* 2005.

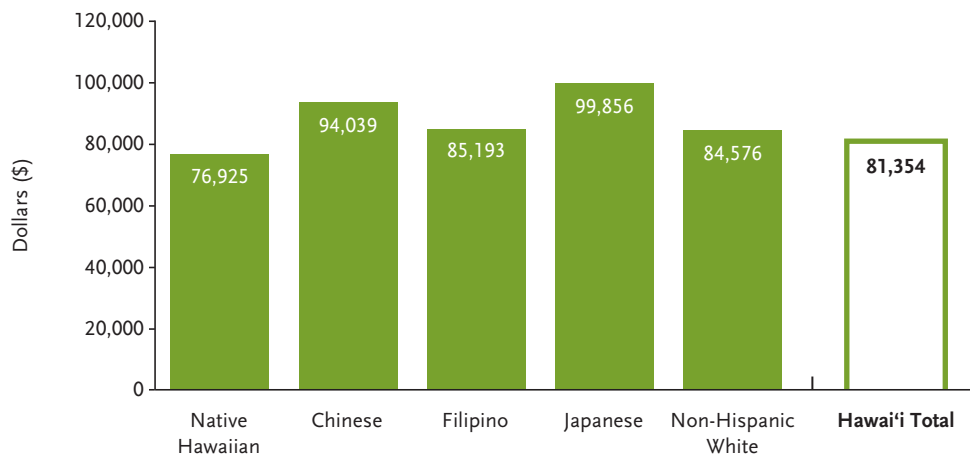
- The unemployment rate among Native Hawaiians has exceeded the statewide average since at least 1990. The gap between the unemployment rate of Native Hawaiians and the state population has increased over the last two decades from 2.2 percentage points in 1990 to 3.5 percentage points in 2000 and 3.2 percentage points in 2010.
- Although Native Hawaiians are still less likely to be employed in professional or managerial occupations, the gap between Native Hawaiians and the state population has decreased over the last ten years from 9.4 percentage points in 2000 to 8.1 percentage points in 2010.
- Consistent with historical trends, Native Hawaiians continue to be employed in agricultural, labor, and production occupations at higher rates than the state population. The gap between the Native Hawaiian rate and the statewide average, however, has ranged from 7.5 percentage points in 1990 to 5.7 percentage points in 2000 and 6.5 percentage points in 2010.

## INCOME

Native Hawaiians in the workforce are overrepresented in lower-wage occupations and, in some cases, are more likely to be unemployed. Therefore, it is not surprising that the mean income among Native Hawaiian families is substantially lower than that of other major ethnic groups in the state. Such income inequalities have real consequences, not just for adults facing the high cost of living in Hawai‘i, but also for children and their educational prospects.

**FIGURE 2.9** Income of family households with young children

[mean annual income, family households with children 4 years and younger, by race/ethnicity, 2006–10, Hawai‘i]



Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

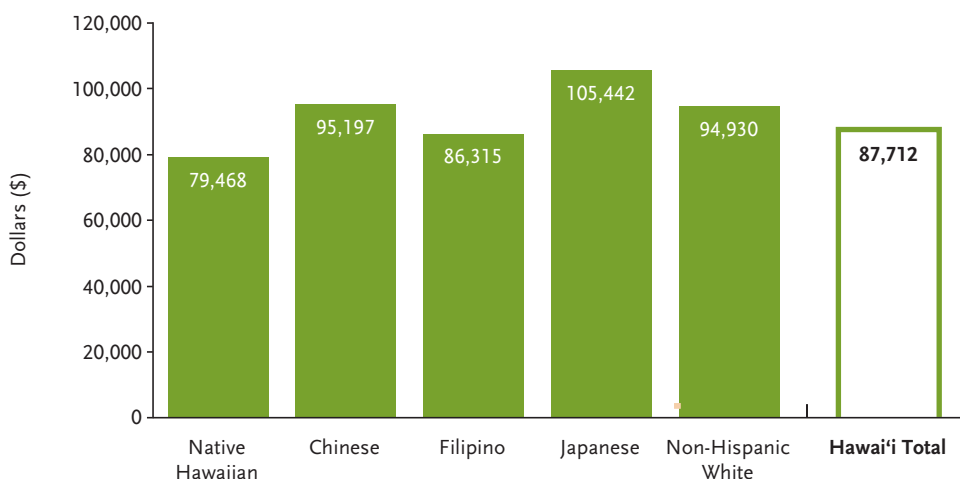
- The mean income of Native Hawaiian family households with young children was \$76,925 between 2006 and 2010, which was \$4,429 less than the statewide average of all family households with young children.
- Between 2006 and 2010, the mean income among Native Hawaiian family households with young children was \$7,651 lower than that of non-Hispanic White family households (the second lowest income group) and \$22,931 lower than that of Japanese family households (the highest income group).
- The difference between the income levels of Native Hawaiian family households with young children and the state average decreased from \$13,575 in 1999 to \$10,329 in 2010.<sup>5</sup>

Consistent with differences in parental employment rates among children of varying ages, mean income is lower among families with young children than families with school-age children (Figure 2.9 and Figure 2.10, respectively).

5. A modified method is used to analyze trends over time; therefore, these numbers are not consistent with those highlighted in Figure 2.9. See Appendix B for more information.

**FIGURE 2.10** Income of family households with school-age children

[mean annual income, family households with children ages 5–17, by race/ethnicity, 2006–10, Hawai‘i]

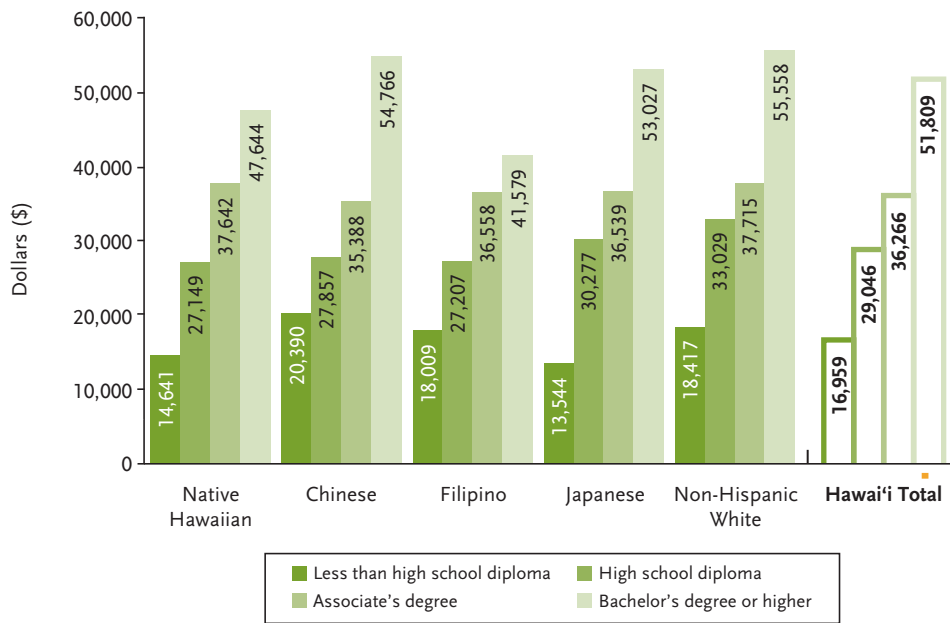


Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- Among family households with school-age children, Native Hawaiians have the lowest mean income (\$79,468) among the state’s major ethnic groups.
- The mean income of Native Hawaiian family households with school-age children is \$6,847 less than that of Filipino family households (the second lowest income group), \$8,244 less than the statewide average, and \$25,974 less than that of Japanese family households (the highest income group).

Education provides a path to financial security, upward mobility, and intergenerational change, and it can counter the longstanding inequities in socioeconomic outcomes and opportunities faced by Native Hawaiians. In Figure 2.11, we shift the focus from income (which includes public assistance, retirement benefits, child support, and money derived from investments and properties) to earnings (which are primarily derived from job-related wages and salaries and are more directly affected by educational attainment). Data from the US Census Bureau confirm that across all ethnic groups in the state, higher levels of educational attainment are associated with significant increases in earnings—although differences between ethnic groups persist with respect to the magnitude of those gains (Figure 2.11).

**FIGURE 2.11** Earnings by educational attainment  
[mean annual earnings, adults ages 25–65, by race/ethnicity, 2006–10, Hawai'i]



Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- Native Hawaiians with a bachelor's degree or higher earn about \$20,000 more annually (\$47,644) than Native Hawaiians with only a high school diploma (\$27,149).
- A bachelor's degree or higher equates to an earnings increase of \$22,763 annually compared to earnings with only a high school diploma statewide.
- Between 2006 and 2010, Native Hawaiian adults with a bachelor's degree or higher earned 8.0 percent less than the average adult with a bachelor's degree or higher statewide (\$47,644 versus \$51,809).

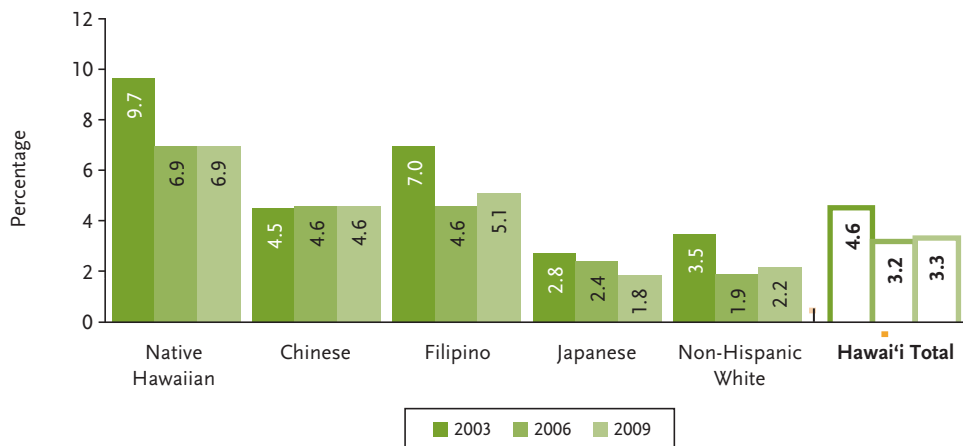
## POVERTY AND PUBLIC ASSISTANCE USAGE

Despite the mitigating effect of educational attainment, the confluence of material and economic inequities to which Native Hawaiians are subject—in homeownership, employment, occupation, and income—contributes to the overrepresentation of Native Hawaiians near the bottom of the socioeconomic distribution. This results in disproportionately high levels of poverty and public assistance usage across the Native Hawaiian community.

Poverty thresholds are issued annually by the US Census Bureau to estimate the minimum income levels required to support families of varying sizes. Although these federal thresholds serve as a critical benchmark for identifying societal needs, the cutoffs are so low that households with incomes of more than twice the poverty line may still struggle to make ends meet, particularly in high-cost regions such as Hawai‘i. (The disconnect between official definitions of need and the reality of daily expenses for Native Hawaiian families is discussed in more detail in the Livable Income section of this chapter.) Because the cost of living is high in Hawai‘i, the federal government also publishes what is referred to as a poverty guideline for Hawai‘i. For example, in 2013 the poverty threshold for a family of four (including two related children) was \$23,624 and the poverty guideline for Hawai‘i was \$27,090 (US Census Bureau 2013; US Department of Health and Human Services 2013). The figures in this section are based on the poverty guidelines for Hawai‘i.

The data presented below paint a compelling picture of inequality and need among Native Hawaiians throughout the state. They also tell a more complex story of change in action, highlighting decreases in Native Hawaiian poverty rates and public assistance usage over time. We begin our exploration of financial need in Hawai‘i by examining the social “safety net” of supports available to individuals and families living in poverty: public assistance. Given the conservative poverty thresholds in the United States, it is common practice for means-tested public assistance programs to use income criteria that are based on multiples of the official guideline (e.g., in Hawai‘i this is set at 185 percent of the poverty guideline for Hawai‘i).

**FIGURE 2.12** Trends in usage of public assistance  
[as a percentage of all households by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]



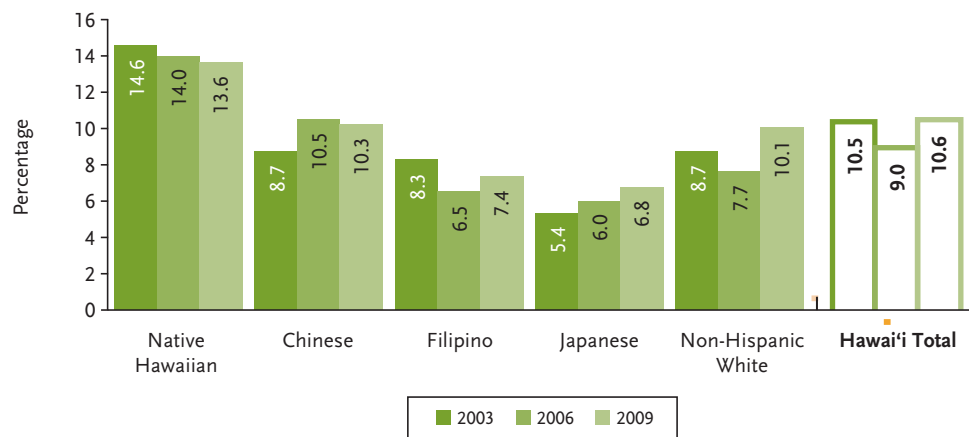
Source: US Census Bureau 2002–10, American Community Survey Public Use Microdata (1-year files).

- Public assistance usage among Native Hawaiian households decreased by 2.8 percentage points between 2003 and 2009, compared with the statewide decrease of 1.3 percentage points.
- Public assistance usage among Native Hawaiians continues to be significantly higher than that of other major ethnic groups in the state. Between 2003 and 2009, the prevalence of public assistance among Native Hawaiian households was more than twice the statewide average.
- In 2009, roughly one in fifteen Native Hawaiian households (6.9 percent) received public assistance.

Public assistance usage and poverty rates are closely related measures that provide complementary perspectives on the level of need within the population. Among Native Hawaiians, the patterns of racial/ethnic disparities in poverty and public assistance data are consistent and clear, showing levels of need that are high relative to other major ethnic groups in the state, but declining over time (Figure 2.13).

**FIGURE 2.13** Trends in poverty among individuals

[as a percentage of all individuals by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]



Source: US Census Bureau 2002–10, American Community Survey Public Use Microdata (1-year files).

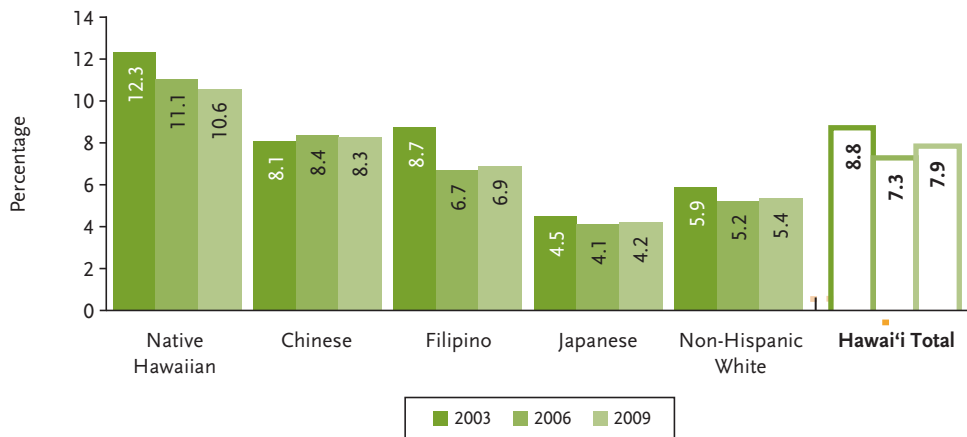
- The proportion of Native Hawaiians living in poverty steadily decreased from 14.6 percent in 2003 to 13.6 percent in 2009; the statewide average increased slightly between 2006 and 2009.
- Between 2003 and 2009, Native Hawaiians experienced the highest poverty rate of the state’s major ethnic groups.
- In 2009, the prevalence of poverty among Native Hawaiians (13.6 percent) was 3.0 percentage points higher than the statewide average.



Shifting the analysis from individuals to family households, the differences between ethnic groups and the trends over time remain roughly the same (Figure 2.14).

**FIGURE 2.14** Trends in poverty among family households

[as a percentage of all family households by race/ethnicity, 3-year weighted averages, selected years, Hawai'i]



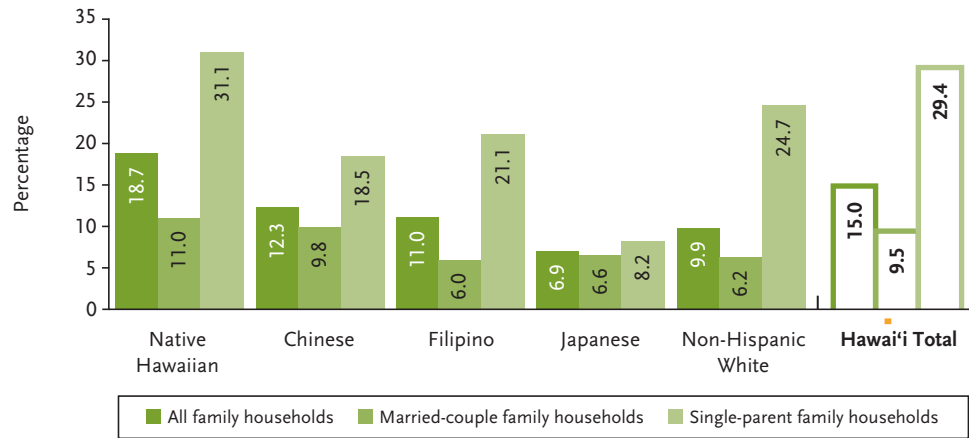
Source: US Census Bureau 2002–10, American Community Survey Public Use Microdata (1-year files).

- Native Hawaiian family households were more likely to be living in poverty than any of the state's other major ethnic groups. Between 2003 and 2009, Native Hawaiian family households were more than twice as likely to live in poverty as were Japanese family households.
- Between 2003 and 2009, Native Hawaiian family households experienced the second largest decrease in poverty (1.7 percentage points) among the major ethnic groups in Hawai'i.
- The difference between the poverty rate of Native Hawaiian family households and the statewide average decreased from 3.5 percentage points in 2003 to 2.7 percentage points in 2009.

Disaggregation of poverty data by family household type highlights the particular plight of single-parent families. About one in three single-parent Native Hawaiian family households with young children falls below the poverty line (Figure 2.15).

**FIGURE 2.15** Poverty among family households with young children

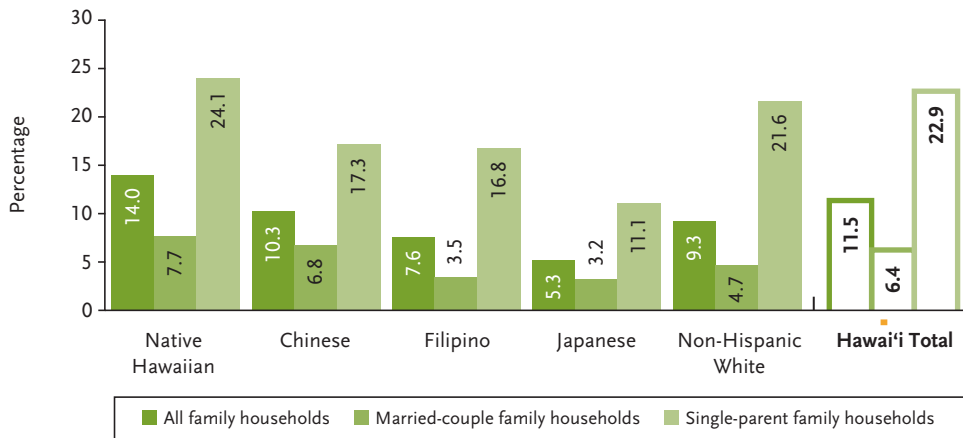
[as a percentage of all family households with children 4 years and younger, by race/ethnicity and family household type, 2006–10, Hawai‘i]



Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- Native Hawaiian family households with young children had the highest poverty rate (18.7 percent) of all the major ethnic groups in Hawai‘i, exceeding the statewide average by 3.7 percentage points.
- Nearly one-third (31.1 percent) of Native Hawaiian family households with young children headed by a single parent lived in poverty; this exceeds the statewide average by 1.7 percentage points and is 22.9 percentage points above the rate among single-parent Japanese family households.

**FIGURE 2.16** Poverty among family households with school-age children  
[as a percentage of all family households with children ages 5–17, by race/ethnicity and family household type, 2006–10, Hawai‘i]



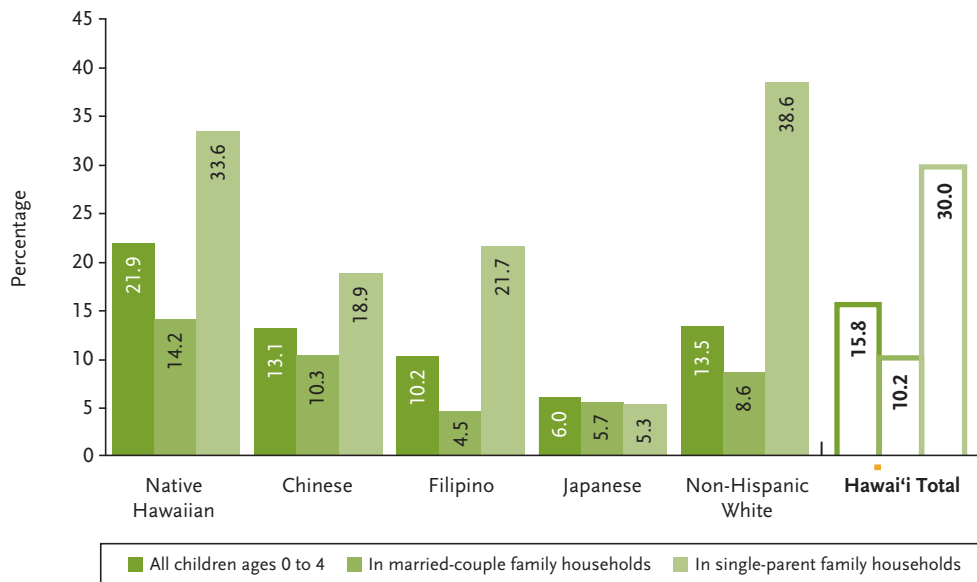
Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- Native Hawaiian family households with school-age children were more likely than the state’s other major ethnic groups to live in poverty. This held true across all family types.
- Native Hawaiian family households with school-age children were more than twice as likely as Japanese family households to live in poverty (14.0 compared with 5.3 percent), and this disparity holds across the subpopulations of married-couple and single-parent family households.

When we focus on childhood poverty in particular—shifting from families to individual children (Figure 2.17 and Figure 2.18)—the picture becomes more discouraging. In particular, young children have higher rates of poverty than do school-age children. This may be due in part to young children being raised by younger parents who are positioned at the beginning of their career paths and who may therefore earn less than their more seasoned peers.

**FIGURE 2.17** Poverty among young children

[as a percentage of all children 4 years and younger, by race/ethnicity and family household type, 2006–10, Hawai‘i]



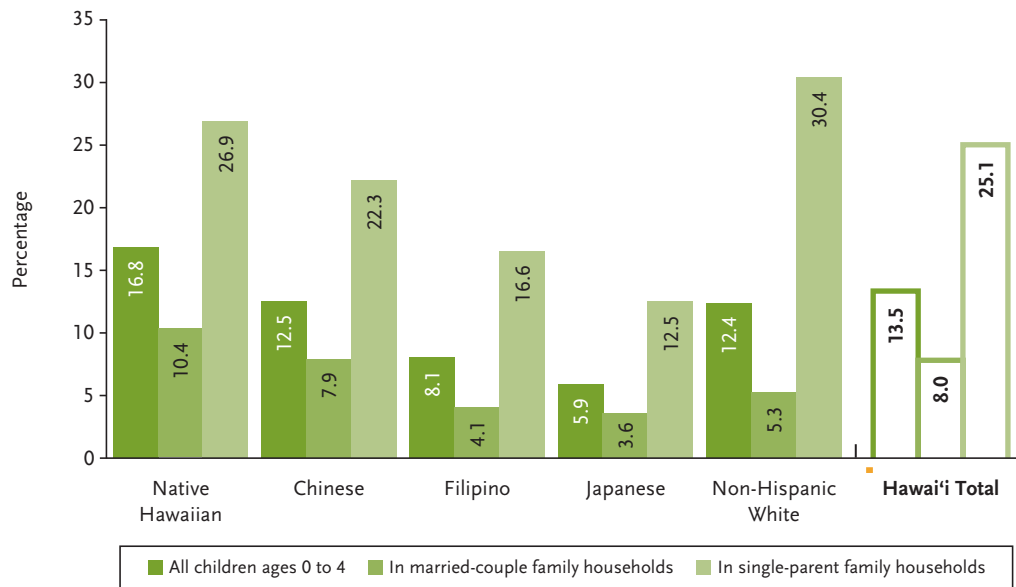
Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- More than one in five young Native Hawaiian children lived in poverty (21.9 percent) between 2006 and 2010, compared with one in seventeen young Japanese children (6.0 percent) and one in six young children across the state (15.8 percent).
- Among young children in married-couple family households, Native Hawaiians were more likely than the state's other major ethnic groups to live in poverty.
- Young Native Hawaiian children in single-parent family households were twice as likely to live in poverty as were young Native Hawaiian children in married-couple family households (33.6 percent versus 14.2 percent, respectively).
- One in three young Native Hawaiian children in single-parent family households lived in poverty (33.6 percent), a rate exceeded only by young non-Hispanic White children (38.6 percent).

As noted above, school-age children have lower poverty rates than younger children, but the patterns and disparities between ethnic groups and family household types remain consistent.

**FIGURE 2.18** Poverty among school-age children

[as a percentage of all children ages 5–17, by race/ethnicity and family household type, 2006–10, Hawai‘i]

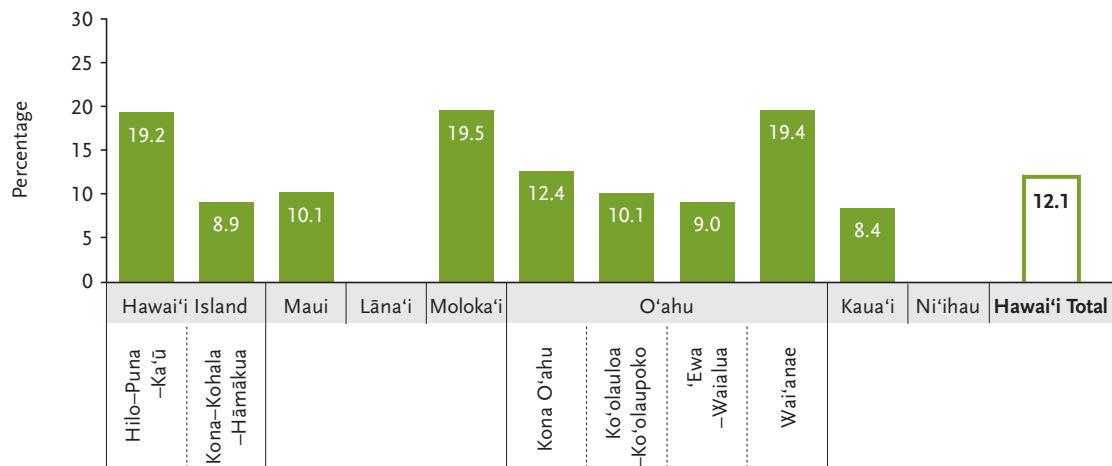


Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- A total of 16.8 percent of school-age Native Hawaiian children were living in poverty, representing the highest rate among Hawai‘i’s major ethnic groups and 3.3 percentage points higher than the statewide average (13.5 percent).
- Between 2006 and 2010, 26.9 percent of school-age Native Hawaiian children in single-parent family households lived in poverty. Although this rate is the second highest among the major ethnic groups in the state and exceeds the statewide average by 1.8 percentage points, it is 8.5 percentage points lower than in 1999 (not shown).
- Poverty rates among school-age Native Hawaiian children in single-parent family households (26.9 percent) were more than double the rates of school-age Native Hawaiian children in married-couple family households (10.4 percent).
- The relatively high poverty rate among Native Hawaiian children is also present in married-couple family households. About one-tenth (10.4 percent) of school-age Native Hawaiian children in married-couple family households lived in poverty, which is 1.3 percentage points higher than in 1999 (not shown) and 2.4 percentage points higher than the 2010 statewide average.

Figure 2.19 examines the concentration of poverty by region, highlighting the critical role that community resources play in the material and economic well-being of families and children. Figure 2.19 also shows elevated poverty levels among Native Hawaiians living on Moloka‘i, in Wai‘anae, and in Hilo–Puna–Ka‘ū. Separate data are not provided for children living in poverty by region because the estimates from the American Community Survey are too unreliable when cut that finely.

**FIGURE 2.19** Poverty among Native Hawaiians by region  
[as a percentage of all Native Hawaiian individuals, 2006–10, Hawai‘i]



Source: US Census Bureau 2006–10, American Community Survey Selected Population Tables Summary File.

Note: Data for Lāna‘i and Ni‘ihau are either unavailable or too limited to yield reliable results.

- Roughly one in eight Native Hawaiians (12.1 percent) lived in poverty between 2006 and 2010, 3.8 percentage points lower than in 1999 (15.9 percent, not shown).
- Poverty among Native Hawaiians was highest on Moloka‘i, in Wai‘anae, and in Hilo–Puna–Ka‘ū (19.5 percent, 19.4 percent, and 19.2 percent, respectively).
- Since 1999, poverty rates have decreased in all regions except Ko‘olaupoko and Wai‘anae (not shown).<sup>6</sup>
- The Native Hawaiian poverty rate was lowest on Kaua‘i, where 8.4 percent lived below the poverty level—nearly half the rate reported in 1999 (16.5 percent).<sup>7</sup>

6. The slight increase in Wai‘anae may be attributable, in part, to changes in that region’s boundaries, which have been redrawn to exclude the ‘Ewa–Kapolei area. That area is now combined with central O‘ahu regions. For more information on the methods used to define regions, see Appendix A.

7. As noted previously, our calculations of the reduction in poverty since 1999 likely underestimate the true magnitude of the decrease because *Ka Huaka‘i 2005* used federal poverty thresholds rather than the poverty guidelines utilized in this volume. For more information on changes in the methodology, see Appendix A.

## LIVABLE INCOME

Measures of poverty among Native Hawaiians in Hawai‘i indicate incremental improvements between 2003 and 2009 (see Figure 2.13 and Figure 2.14). While these data highlight the economic progress of a small proportion of Native Hawaiians, these statistics alone do not tell the full story. To complete the picture of economic well-being among Native Hawaiians, we look at the full income distribution, including the percentage of households and families with a livable income.

Livable income is a term based on the concept of living wage, which refers to the hourly pay required to provide the basic necessities for a comfortable life. Livable income refers to the annual income required to meet the same standard. Living wages were initially synonymous with minimum wages, defined as wages sufficient to maintain the “standard of living necessary for health, efficiency, and general well-being of workers” (Fair Labor Standards Act of 1938).<sup>8</sup> Over time, the minimum wage has not kept pace with the rising cost of living. Thus, a worker earning minimum wage could no longer support the standard of living necessary for general well-being.

We used a more suitable methodology to calculate livable income based on the Economic Policy Institute’s *Family Budget Calculator* (Economic Policy Institute 2013b) (refer to Appendix A for more information). We compared livable income estimates to actual household income and grouped respondents from the American Community Survey sample into one of four categories.

1. Poverty: incomes at or below poverty guidelines defined by federal guidelines for Hawai‘i
2. Low income: incomes between 101 and 185 percent of the poverty guideline (the cutoff used for most income subsidy benefits in Hawai‘i)
3. Gap group: incomes that are more than 185 percent of the poverty guideline, but below the threshold for a livable income<sup>9</sup>
4. Livable income: incomes at or above the livable income threshold

The figures in the following sections portray the distribution of individuals and households<sup>10</sup> across the four income categories. The figures show both trend data for Native Hawaiians and a 2009 snapshot of the major ethnic groups in Hawai‘i. This demonstrates the livable income trend over the decade for Native Hawaiians (which is similar for other ethnic groups) and compares their relative position to other ethnic groups.

Our findings are consistent with recent increases in unemployment and underemployment and with national trends that show “housing and transportation costs rose faster than income during the 2000s” (Hickey et al. 2012). Trends in livable income rates among households suggest that, in Hawai‘i, the 2007–09 economic recession disproportionately affected Native Hawaiians (Figure 2.20 to Figure 2.23).

8. Fair Labor Standards Act of 1938, 29 U.S.C. §201, et seq.

9. The “gap group” is an important pocket of unmet need because it includes individuals and families whose incomes are too low to afford basic necessities but too high to qualify for public assistance.

10. Households include all individuals living in the same unit (including individuals living alone) and are not restricted to nuclear families.

## How to Read the Livable Income Figures

The livable income figures are designed differently from the majority of figures used throughout *Ka Huaka'i*. They are easy to read given two important distinctions.

1. All vertical bars are 100 percent bars.
2. The horizontal axis represents the threshold for livable income and does NOT represent a zero point.

For example, in Figure 2.20, 56.8 percent of Native Hawaiian households in 2009 were above the livable income threshold, while the remaining 43.3 percent were below the livable income threshold. Households below the livable income threshold were further categorized into separate income groups, including 15.2 percent in the gap group, 16.0 percent classified as low income, and 12.1 percent living in poverty. The four income categories combined equal 100 percent\* and represent all Native Hawaiian households in 2009.

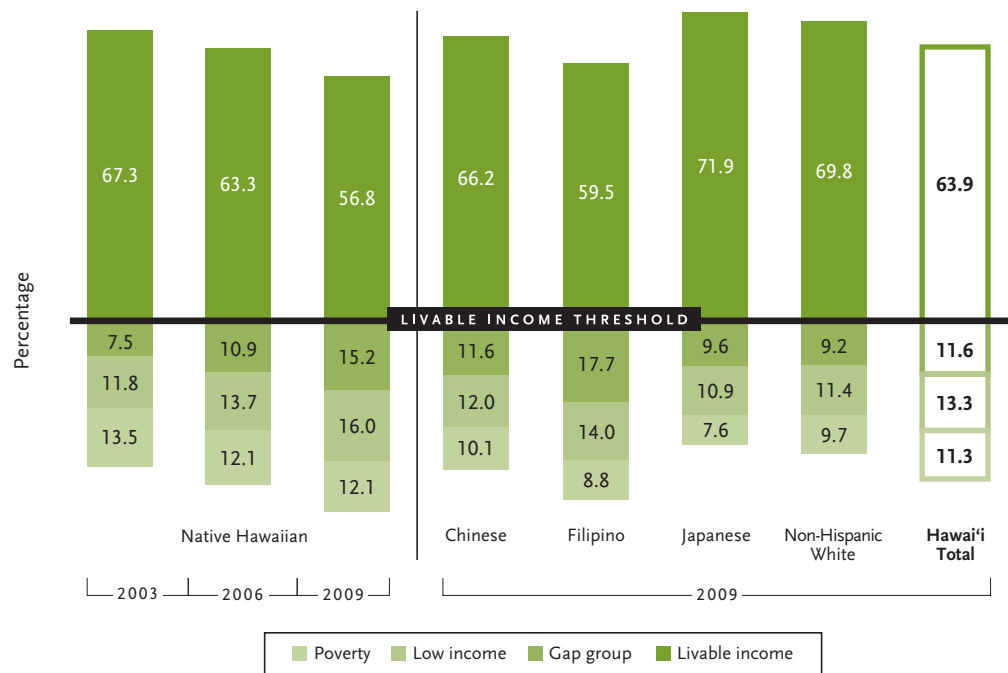
Unlike the poverty guidelines, which are the same for all households of the same size, the amount of income required “to provide the basic necessities for a comfortable life” varies by household size *and* other factors such as the number of young children who may be enrolled in preschool and the distance the adults travel to work. Thus, two four-person households could have different thresholds for a livable income. The proportion of households or individuals categorized as having a livable income is an aggregation across each household’s unique livable income threshold.

*\*Note:* Due to rounding, some percentages may not sum exactly to 100.



**FIGURE 2.20** Livable income among households

[as a percentage of all households by race/ethnicity and income category, 3-year weighted averages, selected years, Hawai'i]



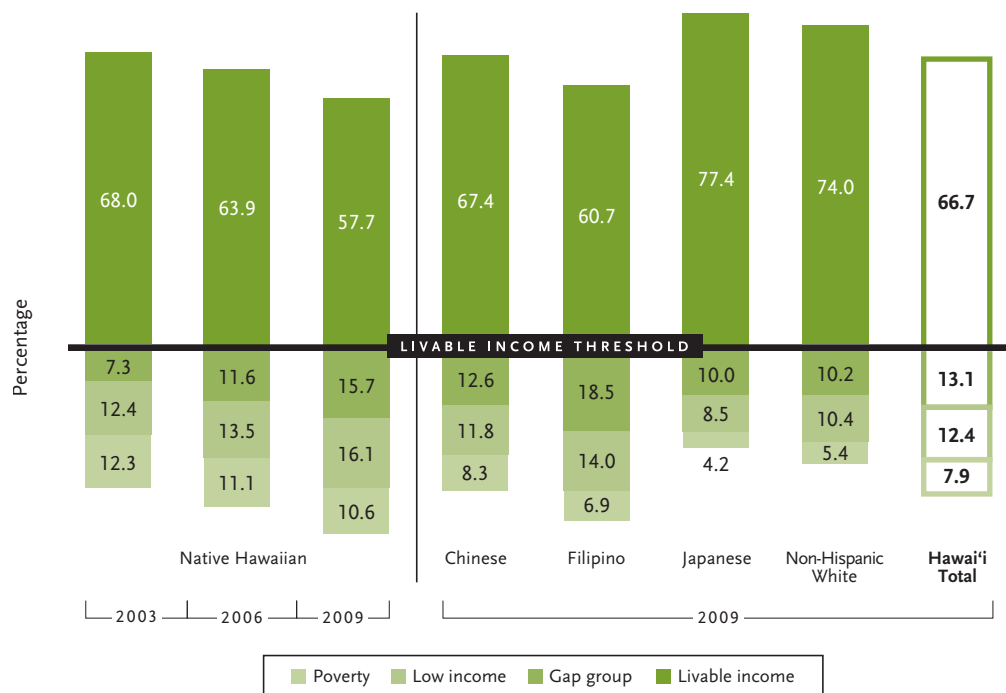
Source: Hong 2013.

- In 2009, Native Hawaiian households were the least likely to have a livable income and the most likely to live in poverty of all the major ethnic groups in Hawai'i.
- In 2009, about half (56.8 percent) of Native Hawaiian households had a livable income, compared with seven in ten Japanese and White households (71.9 percent and 69.8 percent, respectively).
- Among the major ethnic groups in Hawai'i, Native Hawaiians experienced the greatest decline in the percentage of households with a livable income (10.5 percentage point decrease between 2003 and 2009, shown in Table 2.1).
- For all major ethnic groups in Hawai'i, the gap group was the fastest growing income category. The data suggest that growth in the gap group is largely attributable to the decrease in the number of households with a livable income from 2003 to 2009 (Table 2.1).<sup>11</sup>
- The difference between the livable income rates of Native Hawaiian households and households of other major ethnic groups in Hawai'i grew from 2003 to 2009. For example, the percentage of Native Hawaiian and non-Hispanic White households with a livable income differed by 8.2 percentage points in 2003 and 13.0 points in 2009 (Table 2.1).

11. These trends are based on cross sections rather than longitudinal data that track the same group of respondents over time; therefore, our assumption that households are regressing from the livable income category into the gap group cannot be conclusively confirmed.

**FIGURE 2.21** Livable income among family households

[as a percentage of all family households by race/ethnicity and income category, 3-year weighted averages, selected years, Hawai‘i]



Source: Hong 2013.

- Native Hawaiian family households were the least likely to have a livable income compared with the other major ethnic groups in Hawai‘i. Based on 2009 data, 57.7 percent of Native Hawaiian family households had a livable income, compared with the statewide average of 66.7 percent—a difference of 9.0 percentage points.
- During the past decade, the proportion of Native Hawaiian family households in poverty has decreased slightly from 12.3 percent to 10.6 percent; however, the proportion subsisting on less than a livable income has increased.
- Similar decreases in livable income rates are apparent among the state’s other major ethnic groups (Table 2.1). However, the rate of decline is greatest among Native Hawaiians.
- Family households were more likely to have a livable income than nonfamily households by an average of 10 percentage points (not shown). In addition, the decrease in the percentage of households with a livable income between 2003 and 2009 was slightly smaller among family households than among nonfamily households (not shown).

**FIGURE 2.22** Livable income among family households with young children  
[as a percentage of all family households with children 4 years and younger, by race/ethnicity and income category, 3-year weighted averages, selected years, Hawai'i]

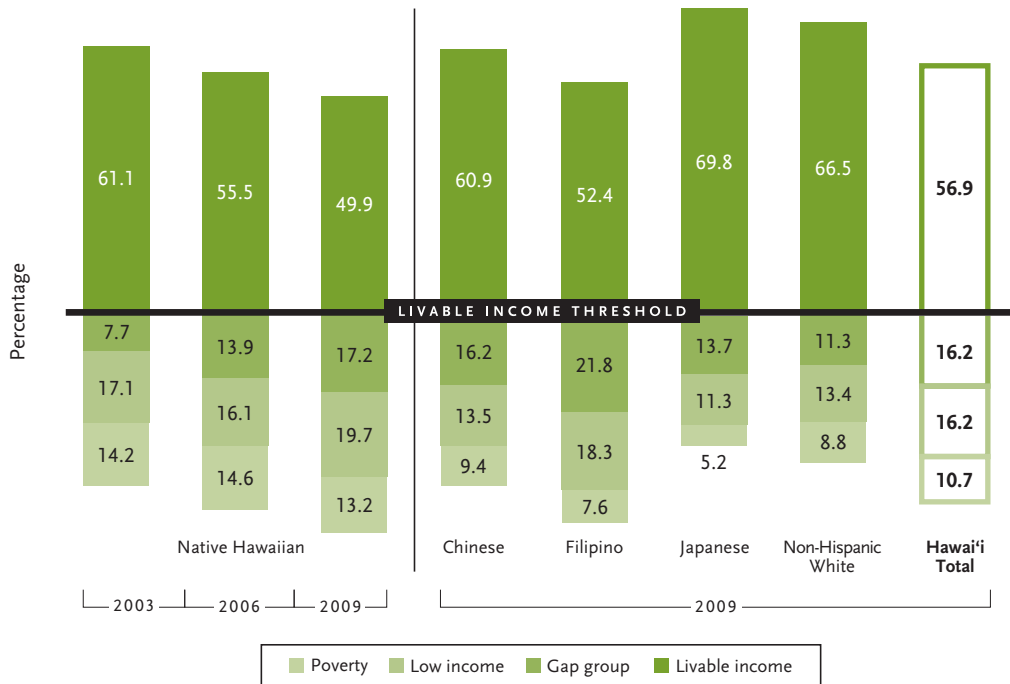


Source: Hong 2013.

- Roughly two-thirds (64.1 percent) of Native Hawaiian family households with young children did not have a livable income in 2009.
- Family households with young children were least likely of all household types to have a livable income and most likely to live in poverty. (Household types include all family households, family households with young children, family households with school-age children, and nonfamily households.)

Family households with school-age children were more likely to have a livable income than were family households with young children.

**FIGURE 2.23** Livable income among family households with school-age children  
[as a percentage of all family households with children ages 5–17, by race/ethnicity and income category, 3-year weighted averages, selected years, Hawai‘i]



Source: Hong 2013.

- Half (49.9 percent) of Native Hawaiian family households with school-age children had a livable income in 2009, compared with 35.9 percent of Native Hawaiian family households with young children (Figure 2.22).
- The decrease in livable income rates among Native Hawaiian family households with school-age children was greater than that of other household types. Between 2003 and 2009, the livable income rate among Native Hawaiian family households with school-age children fell 11.2 percentage points (from 61.1 percent to 49.9 percent), compared with a 7.2 percentage point decrease among Native Hawaiian family households with young children (Figure 2.22).

**TABLE 2.1** Trends in livable income among households  
[distribution across income categories, by race/ethnicity and household type, 3-year weighted averages, selected years, Hawai‘i]

Household type	Income category	Native Hawaiian			Chinese			Filipino			Japanese			Non-Hispanic White			Hawai‘i Total		
		2003	2006	2009	2003	2006	2009	2003	2006	2009	2003	2006	2009	2003	2006	2009	2003	2006	2009
All households	Livable income	67.3	63.3	56.8	72.3	69.1	66.2	66.3	64.5	59.5	81.0	77.1	71.9	75.5	75.1	69.8	<b>72.3</b>	<b>69.8</b>	<b>63.9</b>
	Gap group	7.5	10.9	15.2	7.2	9.4	11.6	10.1	14.2	17.7	4.7	5.9	9.6	5.2	7.0	9.2	<b>5.5</b>	<b>8.0</b>	<b>11.6</b>
	Low income	11.8	13.7	16.0	9.5	11.5	12.0	13.5	13.0	14.0	7.2	9.9	10.9	9.3	9.8	11.4	<b>10.2</b>	<b>11.9</b>	<b>13.3</b>
	Poverty	13.5	12.1	12.1	11.0	10.0	10.1	10.2	8.4	8.8	7.1	7.1	7.6	10.0	8.1	9.7	<b>12.0</b>	<b>10.3</b>	<b>11.3</b>
Family households	Livable income	68.0	63.9	57.7	74.5	71.0	67.4	66.9	65.1	60.7	84.9	81.4	77.4	78.5	77.1	74.0	<b>74.6</b>	<b>71.9</b>	<b>66.7</b>
	Gap group	7.3	11.6	15.7	7.5	10.5	12.6	10.7	15.6	18.5	4.9	6.9	10.0	6.1	8.1	10.2	<b>6.3</b>	<b>9.4</b>	<b>13.1</b>
	Low income	12.4	13.5	16.1	9.9	10.2	11.8	13.7	12.5	14.0	5.7	7.6	8.5	9.6	9.7	10.4	<b>10.3</b>	<b>11.3</b>	<b>12.4</b>
	Poverty	12.3	11.1	10.6	8.1	8.4	8.3	8.7	6.7	6.9	4.5	4.1	4.2	5.9	5.2	5.4	<b>8.8</b>	<b>7.3</b>	<b>7.9</b>
Family households with young children	Livable income	43.1	38.5	35.9	50.3	49.9	48.2	44.6	46.3	41.3	61.9	55.9	57.1	51.2	49.7	46.0	<b>47.1</b>	<b>46.3</b>	<b>40.6</b>
	Gap group	16.5	22.3	27.2	22.0	21.0	26.3	19.0	28.0	30.1	16.3	23.2	23.2	20.3	22.7	26.4	<b>16.7</b>	<b>22.4</b>	<b>27.0</b>
	Low income	19.2	22.0	20.6	16.4	16.5	13.5	22.5	15.6	17.7	12.8	14.8	12.3	20.1	21.3	17.8	<b>20.7</b>	<b>19.7</b>	<b>18.0</b>
	Poverty	21.2	17.3	16.3	11.4	12.7	12.0	13.9	10.2	11.0	9.0	6.1	7.3	8.4	6.4	9.7	<b>15.6</b>	<b>11.7</b>	<b>14.4</b>
Family households with school-age children	Livable income	61.1	55.5	49.9	68.1	61.1	60.9	60.7	58.9	52.4	78.1	71.3	69.8	71.5	67.6	66.5	<b>65.4</b>	<b>61.9</b>	<b>56.9</b>
	Gap group	7.7	13.9	17.2	7.9	13.2	16.2	11.3	17.9	21.8	6.4	11.9	13.7	6.1	10.6	11.3	<b>7.2</b>	<b>12.1</b>	<b>16.2</b>
	Low income	17.1	16.1	19.7	14.4	14.8	13.5	18.0	15.5	18.3	8.6	10.8	11.3	13.4	14.5	13.4	<b>15.1</b>	<b>15.7</b>	<b>16.2</b>
	Poverty	14.2	14.6	13.2	9.6	11.0	9.4	10.0	7.8	7.6	6.9	5.9	5.2	9.0	7.3	8.8	<b>12.4</b>	<b>10.3</b>	<b>10.7</b>

Source: Hong 2013.

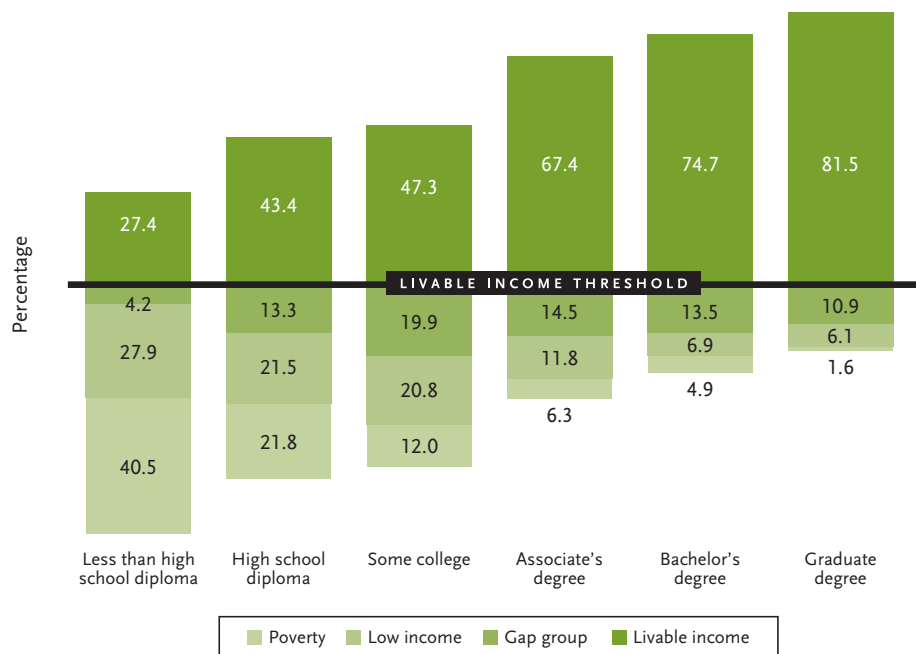
Educational attainment may be one way to address the negative trends in livable income among Native Hawaiians. Various studies find that higher levels of education are linked to higher average incomes (Cantu 2003; Federal Reserve Bank of San Francisco 2004; Goldin and Katz 2007; Symonds, Schwartz, and Ferguson 2011; Tibbetts et al. 2012). Education may also increase resilience to adverse economic conditions. Many analyses of the effect of the Great Recession demonstrated that those with the least education were most negatively impacted (Sum and Khatiwada 2010).

Higher income levels affect not only the individual, but also dependents supported by that individual. For example, “children of affluent parents . . . are eight times more likely to earn college degrees than their low-income counterparts” (Symonds, Schwartz, and Ferguson 2011).

Benefits also accrue to the communities in which more highly educated and higher-wage individuals live. Adults with higher levels of educational attainment are more likely to contribute to the social good of the community by, for example, engaging in volunteer and service activities (Institute for Higher Education Policy 1998, 2005). We posit that educated adults also provide positive role models for youth in their communities, contributing to intergenerational changes in well-being.

Figure 2.24 and Figure 2.25 show the relationship between education and income among Native Hawaiians. Similar to the analyses in previous sections, we determined whether Native Hawaiian households fell into the livable income, gap group, low income, or poverty ranges. The sample was then further categorized by highest degree attained within the household.<sup>12</sup> The results show a clear and consistent relationship between education and household income among Native Hawaiians.

**FIGURE 2.24** Livable income among Native Hawaiian households by educational attainment  
[as a percentage of all Native Hawaiian households, by highest degree attained within household and by income category, 3-year weighted averages, 2009, Hawai‘i]

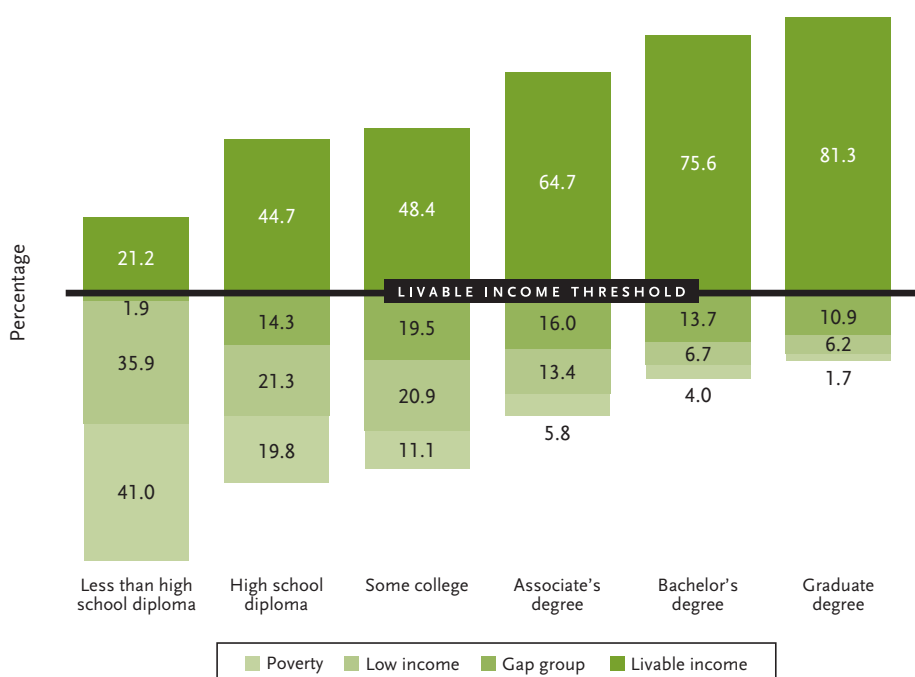


Source: Hong 2013.

- A total of 43.4 percent of all households with an adult with a high school diploma had a livable income, compared to 27.4 percent of households without a high school diploma. Livable income rates were even greater for households with an associate's degree or bachelor's degree, among which 67.4 percent and 74.7 percent had a livable income, respectively.
- Native Hawaiian households with a graduate degree were the most likely to have livable incomes (81.5 percent). These households are also the least likely to fall below poverty guidelines (1.6 percent).

12. For example, the "Graduate" group includes households in which the highest degree obtained by any member is a graduate degree.

**FIGURE 2.25** Livable income among Native Hawaiian family households by educational attainment  
[as a percentage of all Native Hawaiian family households, by highest degree attained within family household and by income category, 3-year weighted averages, 2009, Hawai'i]



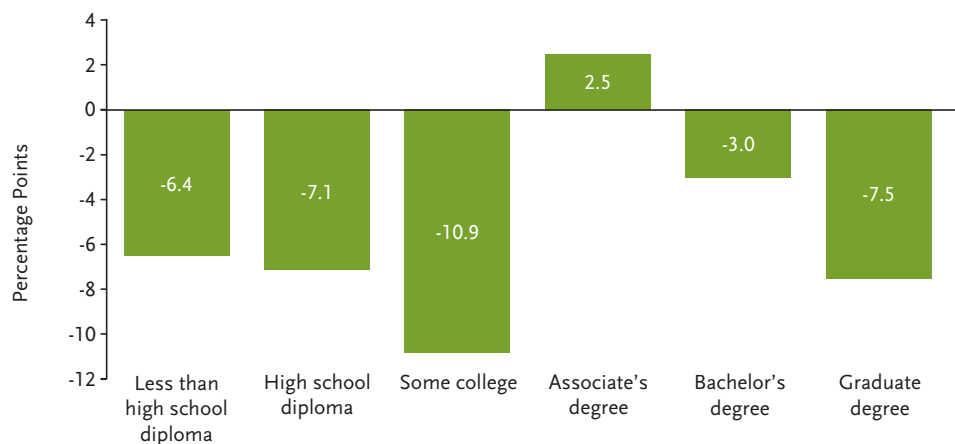
Source: Hong 2013.

- The poverty rate for Native Hawaiian family households with less than a high school diploma (41.0 percent) was more than double that of households where the highest degree is a high school diploma (19.8 percent). Similarly, Native Hawaiian family households with a high school diploma were twice as likely to earn a livable income (44.7 percent) as were Native Hawaiian family households without a high school diploma (21.2 percent).
- The livable income rate for Native Hawaiian family households with a high school diploma and those with some college differed only slightly (44.7 percent and 48.4 percent, respectively). However, a larger difference of 8.7 percentage points was apparent in the poverty rates of the two groups. Thus, family households with some college were more likely to have incomes above the poverty level than were family households with a high school diploma or less.
- Educational attainment has a large impact on household income even at the lowest levels of postsecondary degree attainment. Native Hawaiian family households with an associate's degree had nearly half the poverty rate of those with some college and were more likely to have a livable income (64.7 percent compared with 48.4 percent, respectively).
- Native Hawaiian family households with a bachelor's degree were more likely to have a livable income than those with an associate's degree (75.6 percent compared with 64.7 percent, respectively). Native Hawaiian family households with a bachelor's degree were more than three and a half times as likely to have a livable income as were family households without a high school diploma (75.6 percent compared with 21.2 percent, respectively).
- Livable income rates were highest (81.3 percent) among Native Hawaiian family households with a graduate degree, and those with a graduate degree were least likely to live in poverty (1.7 percent).

The magnitude of education's impact on household income differs between Native Hawaiians and non-Hawaiians, although the general relationship between educational attainment and income is consistent across the major ethnic groups. Figure 2.26 depicts the difference between Native Hawaiians and non-Hawaiians in the percentage of family households with a livable income. Negative numbers indicate Native Hawaiians lagging behind non-Hawaiians, and data are disaggregated based on the highest level of educational attainment in each household. At nearly all educational levels, Native Hawaiian family households were less likely to have a livable income. The associate's degree category was the only group of family households within which Native Hawaiians had a higher livable income rate than non-Hawaiians.

**FIGURE 2.26** Gap analysis of livable income by educational attainment

[difference in percentage points between Native Hawaiian family households and non-Hawaiian family households, by highest degree attained within household, 3-year weighted averages, 2009, Hawai'i]



Source: Hong 2013.

- In five of the six education levels reported, Native Hawaiian family households were less likely to have a livable income than were non-Hawaiian family households.
- Among family households where an associate's degree is the highest degree obtained, the livable income rate was slightly higher (2.5 percentage points) among Native Hawaiians than non-Hawaiians.
- Native Hawaiian family households without a college degree were less likely to have a livable income than were their non-Hawaiian counterparts.
- Among households with a bachelor's or graduate degree, the Native Hawaiian family households were less likely than were the non-Hawaiian households to have a livable income.
- The difference between the livable income rates of Native Hawaiian and non-Hawaiian family households was greatest (10.9 percentage points) in households where the highest education level is some college with no postsecondary degree attainment. This highlights the economic potential of degree completion for Native Hawaiians who enroll in postsecondary educational programs.



Higher earnings among caregivers affect dependents supported by those caregivers. The higher earning potential of family households with higher educational attainment, as described in Figure 2.25, means increased access to the educational resources and basic necessities that support healthy development in children. Furthermore, educational attainment may be an important factor in sustaining a livable income as families grow in size (e.g., children are introduced) and expenditures increase. Figure 2.27 and Figure 2.28 present the income levels of family households with young and school-aged children, disaggregated by the households' highest degree attained.

**FIGURE 2.27** Livable income among Native Hawaiian family households with young children by educational attainment [as a percentage of all Native Hawaiian family households with children 4 years and younger, by highest degree attained within family household and by income category, 3-year weighted averages, 2009, Hawai'i]



Source: Hong 2013.

- Roughly one in three Native Hawaiian family households with young children (35.9 percent) had a livable income (Figure 2.22). However, the livable income rate improved to 62.5 percent among Native Hawaiian family households with a bachelor's degree and 75.5 percent for those with a graduate degree.
- None of the Native Hawaiian family households with young children and without a high school diploma had a livable income, nor were they present in the gap group. A total of seven in eight of these households (87.3 percent) were living in poverty; the remaining one in eight (12.7 percent) fell in the low income category (between 101 and 185 percent of the poverty guideline).

Family households with school-age children also see the benefits of education on income (Figure 2.28), although the differences between levels of educational attainment are less pronounced than in family households with young children (Figure 2.27).

**FIGURE 2.28** Livable income among Native Hawaiian family households with school-age children by educational attainment

[as a percentage of all Native Hawaiian family households with children ages 5–17, by highest degree attained within family household and by income category, 3-year weighted averages, 2009, Hawai‘i]



Source: Hong 2013.

- Among Native Hawaiian households with school-age children where the highest level of education was less than a high school diploma, 93.2 percent fell in the low income or poverty categories; just 6.8 percent had a livable income.
- College degree attainment mitigates the risk of poverty in family households with school-age children. The vast majority of households with a college degree or higher were above the poverty level.
- Among Native Hawaiian family households with school-age children, 80.3 percent of those with a graduate degree and 74.9 percent of those with a bachelor's degree had a livable income.

## CONCLUSION

Native Hawaiian progress in material and economic well-being is apparent throughout this chapter. Despite the worst economic recession in recent history, Native Hawaiians have made notable gains over the last decade, including increased rates of homeownership and employment, and decreased levels of poverty and public assistance usage.

However, substantial challenges remain. Our analyses of income distribution suggest that while poverty rates are declining, significantly fewer Native Hawaiians are earning a livable income. High concentrations of economic need persist in predominantly Native Hawaiian communities and within some of the most vulnerable segments of the Native Hawaiian population: family households with young children and single-parent family households.

The data in this chapter highlight the potential of education as a vehicle of economic mobility and security. Higher levels of educational attainment among Native Hawaiians are linked to increased earnings and livable income rates. Continued investments in education and postsecondary options for Native Hawaiians will be a key driver in future improvements in material and economic well-being.



He lani i luna,  
he honua i lalo.

‘EKOLU | CHAPTER THREE

## Social, Emotional, and Cultural Well-Being

---

HEAVEN ABOVE, EARTH BENEATH.

*Said of a person who owns his own property, or of one who is sure of his security.*

## KEY FINDINGS

### Relative strengths/progress over time

#### CHARACTERISTICS OF FAMILIES AND HOUSEHOLDS

Native Hawaiians tend to live with family members.

- More than nine out of ten Native Hawaiians (91.9 percent) lived in family households, compared with the statewide average of 86.4 percent.
- Native Hawaiians were the most likely of the state’s major ethnic groups to have households where grandparents live with and care for their grandchildren.

Native Hawaiian households with children ages 5–17 had the highest rate of nonparental caregiving among the state’s major ethnic groups, which is consistent with the traditional cultural practice of hānai parenting or child fostering.

#### CHILD ABUSE AND NEGLECT

The rate of confirmed child abuse and neglect among Native Hawaiians decreased from 29.5 per 10,000 in 2006 to 23.8 per 10,000 in 2009.

#### CRIMINAL BEHAVIOR

Native Hawaiian arrest rates for violent crimes, robbery, and drug manufacturing or sales decreased between 2003 and 2009.

- Arrests for violent crimes decreased from 61.3 to 56.8 per 10,000.
- Arrests for robbery decreased from 5.5 to 4.4 per 10,000.
- Arrests for drug manufacturing or sales decreased from 7.4 to 4.1 per 10,000.

#### SOCIAL SUPPORT

Social support from an adult, with whom a student could talk, was more common among Native Hawaiian high school students than among their non-Hawaiian peers.

Reliance on family support during difficult times was more prevalent among Native Hawaiians than among non-Hawaiians (90.6 percent compared with 86.9 percent, respectively).

#### SPIRITUALITY AND RELIGION

When encountering challenges, Native Hawaiians more frequently turned to a higher power than did non-Hawaiians (76.4 percent compared with 63.2 percent, respectively).

High levels of spiritual fulfillment were more common among Native Hawaiians than among non-Hawaiians (51.6 percent compared with 42.5 percent, respectively).

Native Hawaiians were more likely to describe their spirituality, or relationship with God, as perfect or really good than were non-Hawaiians (63.6 percent compared with 56.4 percent, respectively).

Membership in a religious organization was more common among Native Hawaiians than among non-Hawaiians (59.2 percent compared with 46.3 percent, respectively).

#### QUALITY OF LIFE

Compared with non-Hawaiians, Native Hawaiians were more likely to report that life had gotten better over the past five years (43.2 percent versus 36.0 percent) and to expect that life will get better over the next five years (60.8 percent versus 47.8 percent).

#### STRESS AND SUICIDE

The suicide rate among Native Hawaiians decreased from 57.2 per 100,000 in the 2001–06 reporting period to 46.2 per 100,000 in the 2007–11 reporting period.

## Areas of concern

### CHARACTERISTICS OF FAMILIES AND HOUSEHOLDS

Native Hawaiian children were more likely to live in single-parent households than were the children of other major ethnic groups in the state.

Native Hawaiians had the largest proportion of single-mother family households among the major ethnic groups in the state.

### CHILD ABUSE AND NEGLECT

Abuse and neglect have continued to afflict a disproportionate number of Native Hawaiian children. The rate of confirmed child abuse and neglect among Native Hawaiians (23.8 per 10,000 children) was significantly higher than the statewide average (13.4 per 10,000).

### ANTISOCIAL AND CRIMINAL BEHAVIOR

Physical fights—both on and off school property—were more common among Native Hawaiian high school students than among their non-Hawaiian peers.

The rates of arrest for violent crime, aggravated assault, robbery, and drug manufacturing or sales among Native Hawaiians continued to exceed statewide averages.

Compared with juveniles across the state, Native Hawaiian youth had the highest rate of arrest for all serious offenses (commonly referred to as index offenses) combined and for less serious (part II) offenses combined.

### INCARCERATION

Native Hawaiian adults constituted 17.7 percent of the total adult population in Hawai'i in 2010. However, in 2012, Native Hawaiians accounted for 37.0 percent of the state's male prison population and 40.0 percent of the state's female prison population.

### QUALITY OF LIFE

One in eleven Native Hawaiians (8.9 percent) reported being extremely or very dissatisfied with life, compared with 6.5 percent of non-Hawaiians.

Native Hawaiians were less likely than were non-Hawaiians to describe themselves as extremely or very happy (51.5 percent compared with 55.4 percent, respectively).

### STRESS AND SUICIDE

Thoughts and behaviors associated with depression and suicide were more likely among Native Hawaiian high school students than among their non-Hawaiian peers.

One in fourteen Native Hawaiians (7.4 percent) reported sadness or depression for fifteen or more days in the past month, compared with one in eighteen adults (5.7 percent) statewide.

Among individuals ages 15–44, Native Hawaiians were more likely to commit suicide than were their counterparts from other major ethnic groups in Hawai'i.

## KEY IMPLICATIONS

Native Hawaiian families struggle with challenges such as single parenting but continue to use coping strategies like grandparent and hānai caregiving that are grounded in Hawaiian cultural values. Although progress is apparent in many areas of social and emotional well-being, Native Hawaiians continue to face disadvantages, limited opportunities, and institutionalized inequities that leave a negative social impact. Taken together, these data indicate the need to leverage Native Hawaiian social networks, spiritual strength, and cultural traditions to navigate contemporary problems and create a path toward a more positive future.

# 3

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## CHAPTER THREE INTRODUCTION

Social, emotional, and cultural well-being are closely related concepts that center around the mind and spirit. Social well-being—our external connections to the world around us—encompasses the collective set of relationships we have with others, from our immediate family to the community at large. Social well-being is reflected in the structure and depth of our social networks, how we communicate and interact with others, how we make sense of and navigate cultural contexts, and our engagement with the community. In contrast, emotional well-being is an internally focused state that includes one’s feelings of place and purpose, outlook on life, and capacity to handle life’s stressors, from routine challenges to significant events. Culture is the milieu within which social and emotional well-being develop—the knowledge, values, beliefs, norms, customs, and traditions that bind a community together and shape one’s worldview.

Although the title of this chapter—“Social, Emotional, and Cultural Well-Being”—might suggest an in-depth exploration of the dynamic interdependence of social, emotional, and cultural resources within the Native Hawaiian community, we must, regretfully, temper such expectations. The social and emotional dimensions of well-being are by themselves difficult to quantify and are, therefore, often tracked with somber measures of deficiency (e.g., arrests, domestic violence, suicides). Emotional stability and social cohesion are less likely to be monitored than are the conspicuous behaviors associated with social or emotional dysfunction.

Cultural dimensions of well-being remain an even more elusive construct. Culture is a highly personal attribute that expresses itself differently in different people, and its manifestations may be constrained by opportunity. For example, many Native Hawaiian elders were forced by Westernized schools to abandon their native tongue as children but now act as cultural resources, sharing traditional ‘ike, nohona, and mo‘olelo with their children and grandchildren. Are these kūpuna less culturally grounded because they are not fluent in ‘ōlelo Hawai‘i? Such questions are impossible to answer, and the misconceptions they can invite oblige researchers of Hawaiian culture to proceed with caution. Speed in data accumulation is often sacrificed in favor of a more respectful developmental process that includes the evolution of more authentic means to collect, analyze, and disseminate cultural data. The existing body of quantitative data on Hawaiian cultural well-being thus remains limited and incomplete as evidenced by the narrow set of cultural data included in this volume.

Because of such data constraints—and the closely related nature of social, emotional, and cultural assets—we chose to integrate these three facets of well-being into a single chapter. This consolidation is not intended to diminish the importance of each individual dimension. Social, emotional, and cultural well-being are perhaps less tangible than physical or economic well-being but are just as critical. Even the more individualistic and empirically oriented traditions of mainstream social science have generated a substantial body of research documenting the impact of social, emotional, and cultural resources on children’s developmental and educational outcomes. For example, studies have shown that children who have supportive and stable families and who are nurtured by strong relationships with a caring adult have higher achievement levels and are more resilient to challenges (Benard 1991; McClure, Yonezawa, and Jones n.d; Werner and Smith 1977). Similarly, spiritual and emotional wellness are highly correlated with decision-making, risk-taking behavior, and other wellness outcomes (Cotton et al. 2005).

Social and emotional well-being may be especially important for the Native Hawaiian population because of the sustained significance in Hawaiian culture of ‘ohana, community, and Ke Akua (God), as well as connections to one’s ancestors, cultural heritage, and ‘āina (land). Social connections and pilina (relationships) form the foundation upon which traditional Hawaiian society was built and upon which contemporary Hawaiian culture continues to evolve. The continuing importance of culture is apparent in the relative successes of programs and service models that replace Western approaches with culture-based strategies that leverage the Hawaiian focus on collective and spiritual wellness. For example, a study conducted by Kamehameha Schools in collaboration with several Hawaiian-focused charter schools and the Search Institute found that spirituality had a moderate, positive correlation with pro-social values and behaviors and with attachment to family, place, and culture (Scales 2009).

As the field of Hawaiian research and strengths-based models of social and emotional health continue to grow and flourish, we hope that future studies will reflect a more expansive understanding of social, emotional, and cultural well-being. In the meantime, we provide as much of the picture as we are able, drawing on a mix of conventional data sources—like the 2010 US Census and various state agencies—and a handful of more culturally focused resources.

The predominance of the government-derived and deficit-focused data points may suggest a lack of social and emotional assets within the Native Hawaiian community, which is faced with high numbers of single-parent families and high rates of arrest, incarceration, and depression. However, a closer look at some of the more probing measures highlights the spiritual strength of Native Hawaiians and the value of cultural strongholds such as the ‘ohana. Although the resources on which many Native Hawaiians rely (e.g., grandparent caretakers, hānai families, and spiritual connections with Ke Akua) may be considered by some to be unconventional and markers of dysfunction or distress, these represent cultural underpinnings of social and emotional health in the Hawaiian community. Understanding the role of these cultural assets in addressing other challenges is critical to describing, understanding, and portraying the strengths and well-being of the Native Hawaiian community.

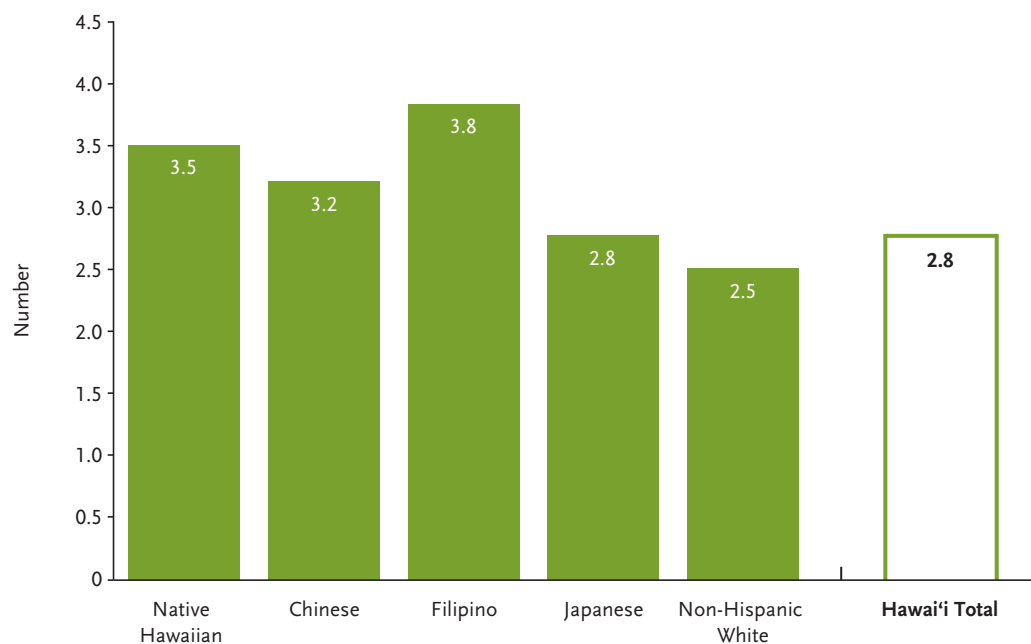
## FAMILIES AND HOUSEHOLDS

Family living situations and household structures are strong predictors of educational, economic, behavioral, and emotional outcomes. Research shows that children from single-parent families are less successful academically (e.g., test scores, grades) and have lower levels of educational attainment (e.g., college enrollment and completion) than are students in married-couple families. This may not be surprising given the challenges single parents face as the sole providers of income and caregiving within their families. However, claims about the extent to which this disparity can be explained by other correlates, such as income and educational attainment of parents, differ from one study to the next (Painter and Levine 1999; Biblarz and Raftery 1999; Sandefur and Wells 1999; Mulkey, Crain, and Harrington 1992; Grissmer et al. 1994).

Research also indicates that the children of single-parent families have poorer social and mental health outcomes. For example, Bramlett and Blumberg (2007) found that, compared with their counterparts raised by married parents, children in single-mother families were more likely to exhibit mental health problems such as depression or anxiety, difficulty managing emotions, behavioral issues, and learning disabilities. Similarly, in a review of the research literature, Parke (2003) cited a number of sources indicating that children who did not live with both biological parents were more likely to have behavioral and psychological issues. In particular, Parke (2003) found that children with divorced parents “are more than twice as likely to have serious social, emotional, or psychological problems as children of intact families” (p. 4). Looking at longer-term consequences, Harper and McLanahan (2004) reported that children raised without their fathers faced an increased risk of incarceration even after controlling for other contributing factors, such as teenage parenting, low parent educational attainment, poverty, and racial inequities.

The data in this section provide an in-depth look at the composition of households and families in Hawai‘i and highlight strengths and challenges within the Native Hawaiian community. For example, Native Hawaiian children are significantly more likely to live in single-parent families than are children from the state’s other major ethnic groups, but they are also more likely to enjoy the benefits of living with grandparent caregivers. We begin with an examination of household size.

**FIGURE 3.1** Household size  
[mean number of residents by race/ethnicity, 2006–10, Hawai‘i]

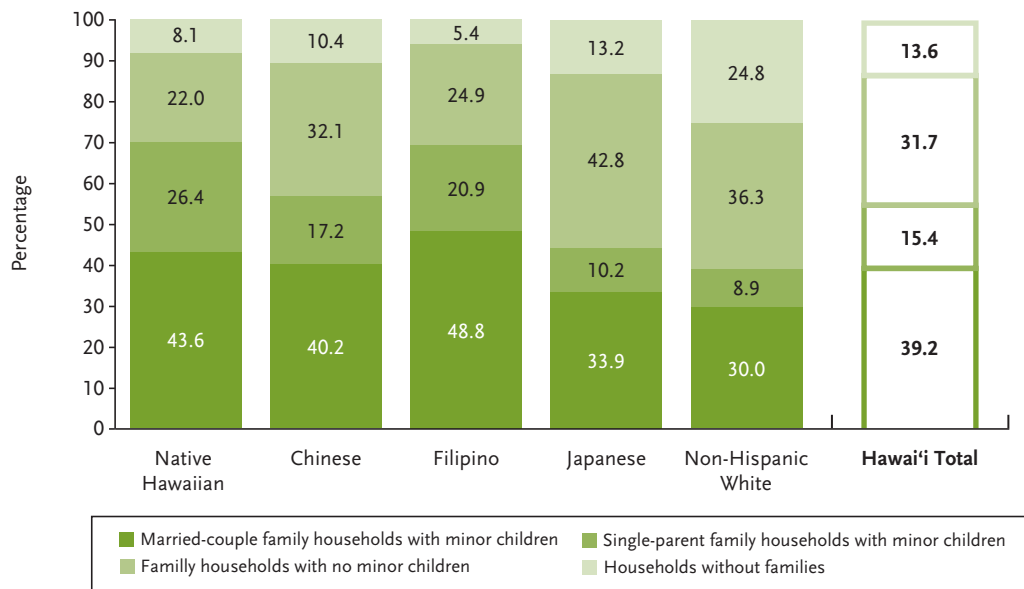


Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- The average household size among Native Hawaiians was 3.5 persons between 2006 and 2010, compared with the statewide average of 2.8 persons.
- Filipinos were the only major ethnic group with a larger average household size than Native Hawaiians (3.8 persons compared with 3.5 persons, respectively).

One of the primary reasons Native Hawaiian households may be larger is that they are more likely to include minor children.

**FIGURE 3.2** Distribution of population by household type  
[as a percentage of all individuals by race/ethnicity, 2006–10, Hawai‘i]



Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

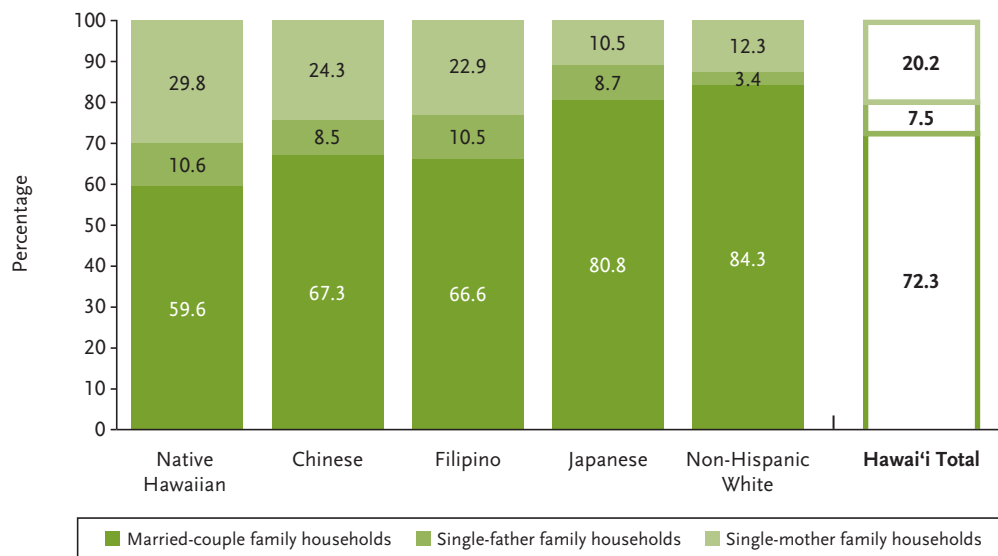
- More than nine out of ten (91.9 percent) Native Hawaiians lived in family households between 2006 and 2010, compared with the statewide average of 86.4 percent.<sup>1</sup>
- Seven in ten Native Hawaiians lived in households with minor children (70.0 percent), compared with just over half of the population statewide (54.6 percent).
- The proportion of Native Hawaiian individuals in single-parent households with minor children (26.4 percent) was greater than that of all other major ethnic groups in Hawai‘i.<sup>2</sup>

1. In this publication, family household is defined as a household comprised of a married couple (with or without minor children) or a single adult and his or her minor child. By contrast, nonfamily households consist of either a single person or multiple persons, none of whom are related by marriage, birth, or adoption. See Appendix A for more information.

2. According to the US Census Bureau, a “single-parent family” is any household in which at least one minor child lives in the absence of married, opposite-sex parents. We recognize that families come in many configurations and that the commonly cited indicators of childhood outcomes do not always consider the protective factors present in many non-Western or “untraditional” families, e.g., cohabitating, unmarried biological parents, hānai families, and same-sex couples with children.

The prevalence of single-parent households within the Native Hawaiian population is especially salient when we focus in on children, roughly two-fifths of whom live in single-father or single-mother households. Young Native Hawaiian children are particularly affected.

**FIGURE 3.3** Distribution of young children by type of family household  
[as a percentage of all children 4 years and younger, by race/ethnicity, 2006–10, Hawai‘i]

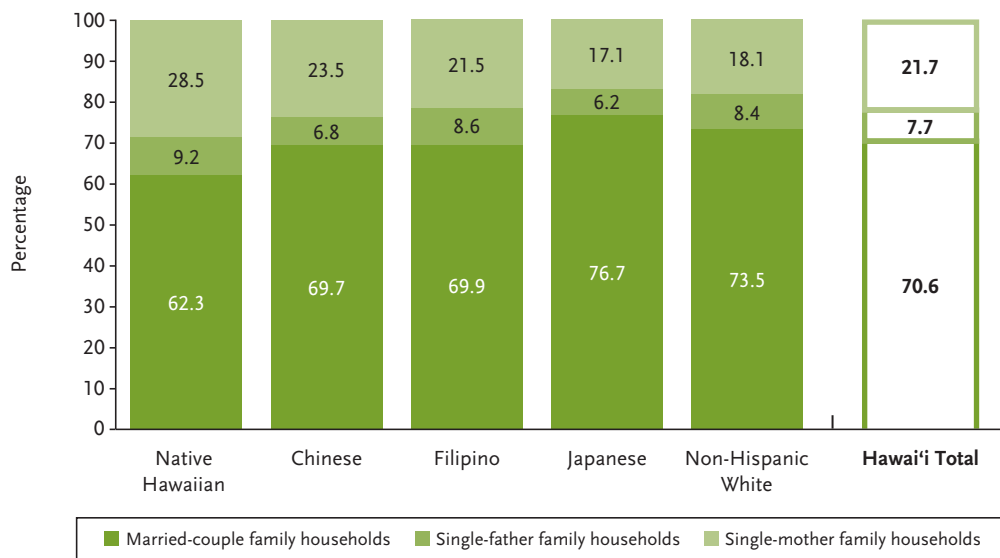


Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- Three in five young Native Hawaiian children (59.6 percent) lived in married-couple family households, compared with 72.3 percent statewide.
- Young Native Hawaiian children were more likely to live in a single-parent family household than were young children of any other major ethnic group in the state. The proportion of young Native Hawaiian children in single-parent family households (40.4 percent) was 12.7 percentage points higher than the statewide average (27.7 percent) and more than twice the rate among young Japanese and non-Hispanic White children.

Similar but less pronounced racial disparities in household type are seen in the population of school-age children. Compared with their younger counterparts, school-age Native Hawaiian children are more likely to live in married-couple households, while school-age Japanese and non-Hispanic White children are less likely to do so.

**FIGURE 3.4** Distribution of school-age children by type of family household  
[as a percentage of all children ages 5–17, by race/ethnicity, 2006–10, Hawai‘i]

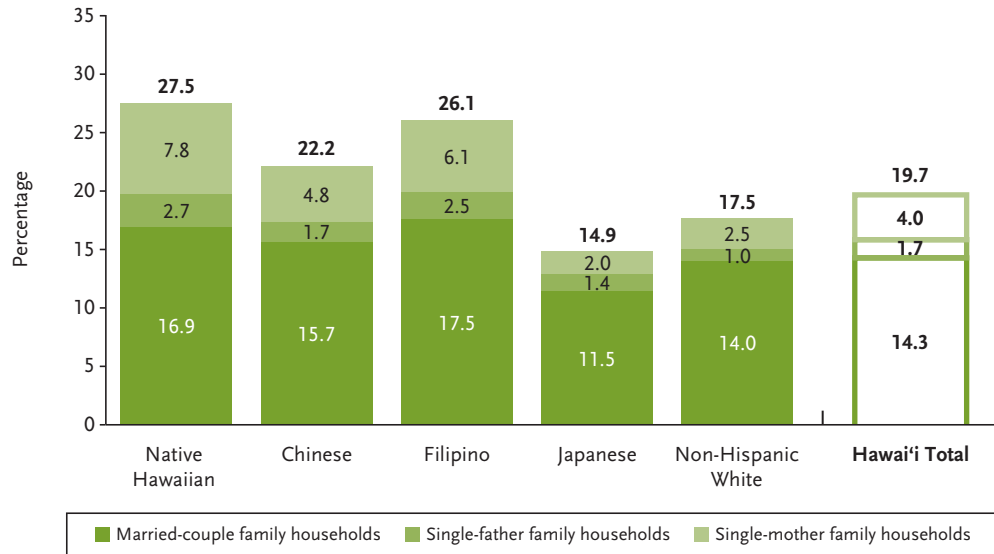


Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- More than one in three school-age Native Hawaiian children (37.7 percent) lived in family households headed by a single parent between 2006 and 2010, compared with 29.4 percent statewide.
- Among school-age children, Native Hawaiians were the least likely of the major ethnic groups to be raised in married-couple family households. Just 62.3 percent of school-age Native Hawaiian children lived in married-couple family households, compared with 70.6 percent of school-age children statewide.
- Across all major ethnic groups in the state, school-age children were two to three times more likely to live in a single-mother family household than in a single-father family household.

Even as the unit of analysis shifts from individual children to family households, the pattern of disparities persists, with Native Hawaiian family households more likely to be headed by a single parent than are family households from other major ethnic groups in the state.

**FIGURE 3.5** Family households with young children  
[as a percentage of all family households, by race/ethnicity and family household type, 2006–10, Hawai‘i]

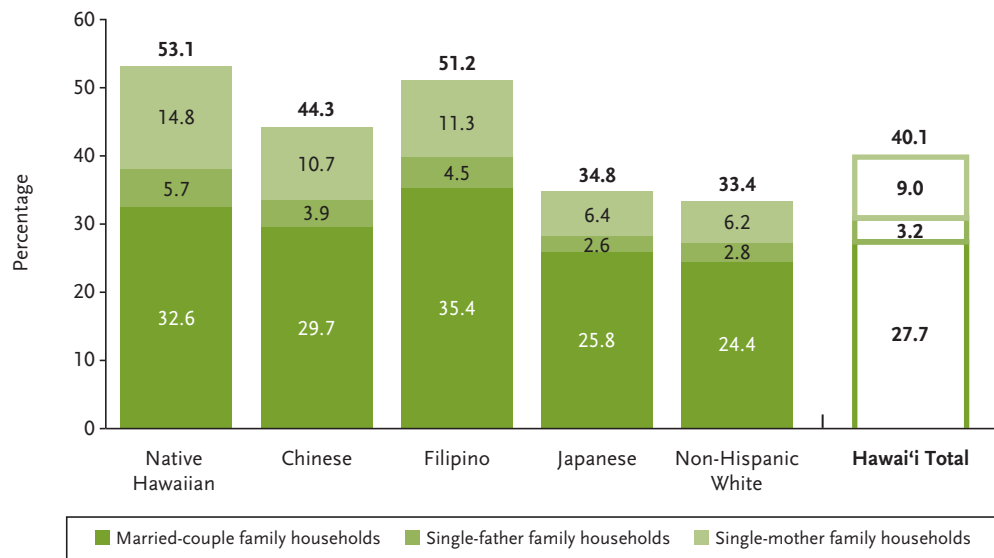


Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- Between 2006 and 2010, a total of 27.5 percent of Native Hawaiian family households included young children, compared with the statewide average of 19.7 percent.
- One in ten Native Hawaiian family households (10.5 percent) consisted of single parents raising young children, compared with one in seventeen family households (5.7 percent) statewide.



**FIGURE 3.6** Family households with school-age children  
[as a percentage of all family households, by race/ethnicity and family household type, 2006–10, Hawai'i]



Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- More than one-half of Native Hawaiian family households (a total of 53.1 percent) included school-age children between 2006 and 2010, which was 13.0 percentage points higher than the statewide average (40.1 percent).
- One in five Native Hawaiian family households (20.5 percent) consisted of single parents raising school-age children, compared with one in eight family households (12.2 percent) statewide.

Recent data from the American Community Survey suggest that the percentage of Native Hawaiian family households headed by a single parent has increased slightly over the last decade. For the purposes of tracking such trends, we focus in the following figures on single-mother family households only, which are two to three times more common than single-father family households.

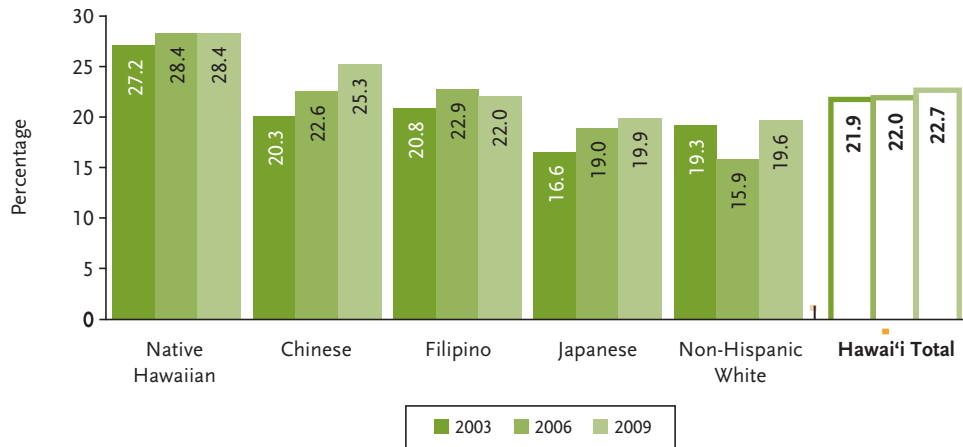
**FIGURE 3.7** Trends in single-mother family households with young children  
[as a percentage of all family households with children 4 years and younger, by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]



Source: US Census Bureau 2002–10, American Community Survey Public Use Microdata (1-year files).

- More than one in four Native Hawaiian family households with young children (27.5 percent) were headed by a single-mother in 2009, which was 2.9 percentage points higher than in 2003 (24.6 percent) but slightly lower than in 2006 (29.2 percent).
- The prevalence of single mothers among Native Hawaiian family households with young children was the highest in the state, 7.8 percentage points higher than the statewide average in 2009 (19.7 percent).

**FIGURE 3.8** Trends in single-mother family households with school-age children  
[as a percentage of all family households with children ages 5–17, by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]



Source: US Census Bureau 2002–10, American Community Survey Public Use Microdata (1-year files).

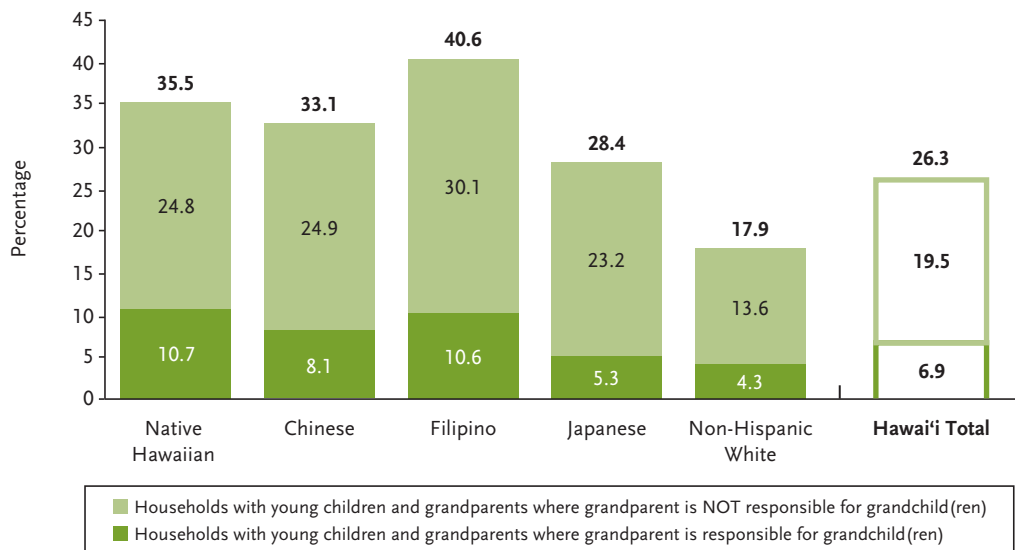
- The proportion of Native Hawaiian family households with school-age children that were headed by a single mother increased 1.2 percentage points between 2003 and 2009.
- The prevalence of single mothers among Native Hawaiian family households with school-age children (28.4 percent) was the highest in the state and 5.7 percentage points higher than the statewide average in 2009 (22.7 percent).

## Grandparent Caretakers

The effects of single-parent family households may be mitigated by the number of households within the Native Hawaiian population where grandparents and grandchildren live together. Such living arrangements are consistent with Native Hawaiian cultural values, emphasizing the importance of both ‘ohana and kūpuna, and have been shown to act as protective factors for children. DeLeire and Kalil (2002) looked at the relationship between household types and the likelihood that teenagers would complete high school, enroll in college, and/or engage in risk behaviors (e.g., drinking, smoking, engaging in sexual activity). Their research found that teenagers in single-mother family households who lived with at least one grandparent had outcomes that were as good as—and often better than—those of children in married-couple family households (DeLeire and Kalil 2002). Such studies highlight the continuing relevance of traditional Native Hawaiian values and their potential benefits for families struggling with contemporary challenges.

Figure 3.9 shows that compared with other major ethnic groups in the state, Native Hawaiian households are among the most likely to have grandparents and grandchildren living together, and that grandparents are more likely to be responsible for the care of their grandchildren in Native Hawaiian households.

**FIGURE 3.9** Households with grandparents and young grandchildren  
[as a percentage of all households with children 4 years and younger, by race/ethnicity and grandparent responsibility, 2006–10, Hawai‘i]

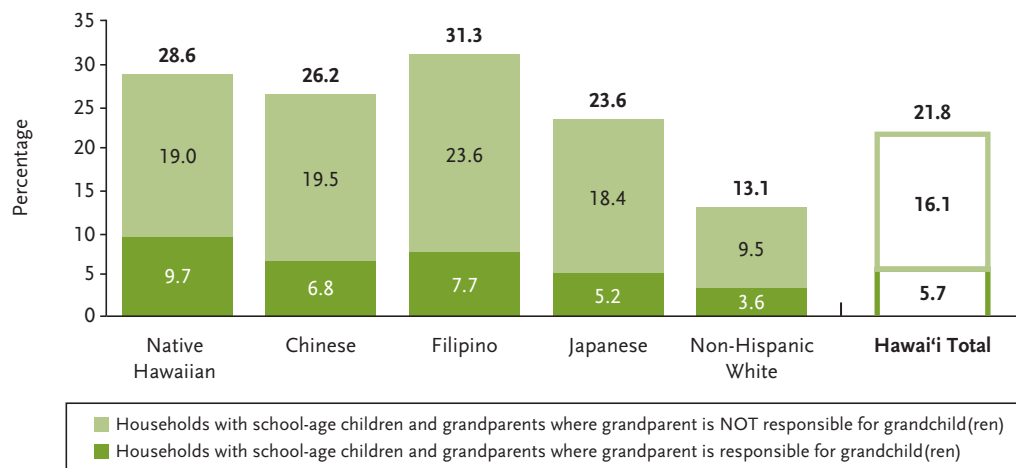


Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- More than one-third of Native Hawaiian households with young children (a total of 35.5 percent) included grandparents living with grandchildren.
- The percentage of Native Hawaiian households with young children and live-in grandparents was 9.2 percentage points higher than the statewide average (26.3 percent).
- In nearly one-third of these multigenerational Native Hawaiian households, grandparents served as caregivers for their young grandchildren.

Households with school-age children are less likely than those with young children are to have grandparents and grandchildren living together.

**FIGURE 3.10** Households with grandparents and school-age grandchildren  
[as a percentage of all households with children ages 5–17, by race/ethnicity and grandparent responsibility, 2010, Hawai'i]



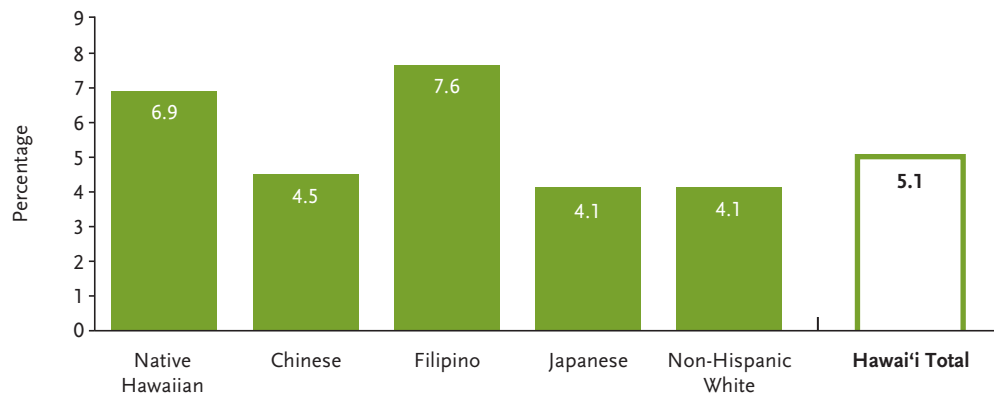
Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- Native Hawaiian households with school-age children were more likely to have grandparents and grandchildren residing together compared with the statewide average (28.6 percent versus 21.8 percent statewide).
- Among the major ethnic groups in the state, Filipino households with school-age children were most likely to have grandparents living with grandchildren (a total of 31.3 percent). About one-quarter of those households indicated that the resident grandparent was responsible for the grandchild(ren), compared with one-third of multigenerational Native Hawaiian households.

## Nonparental Caregiving

Another cultural tradition that mitigates the impact of family challenges is the concept of hānai parenting, or child fosterage, in which children who do not live with their parents are cared for by other adults. The adults are often relatives from the child’s extended family or close friends of the ‘ohana.<sup>3</sup> Figure 3.11 and Figure 3.12 show the prevalence of hānai parenting within the Native Hawaiian population.

**FIGURE 3.11** Households with nonparental caregivers and young children  
[as a percentage of all households with children 4 years and younger, by race/ethnicity, 2006–10, Hawai‘i]



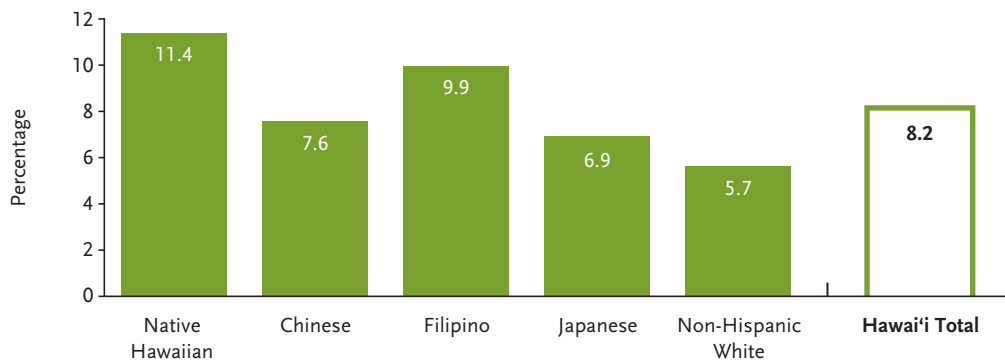
Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- Among households with young children, Native Hawaiians had the second highest rate of nonparental caregiving (6.9 percent); only Filipino households were more likely to be headed by a nonparental caregiver.
- The rate of nonparental caregiving among Native Hawaiian households with young children exceeded the statewide average (5.1 percent) by 1.8 percentage points.

Nonparental caregiving is more common among households with school-age children than those with young children.

3. A nonparental caregiver is defined as the head of a household with a minor child who does not reside with his/her own parents, and whose relationship to the head of household is that of a grandchild, sibling, in-law, other relative, foster child, or other nonrelative.

**FIGURE 3.12** Households with nonparental caregivers and school-age children  
[as a percentage of all households with children ages 5–17, by race/ethnicity, 2006–10, Hawai‘i]



Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- One in nine Native Hawaiian households with school-age children (11.4 percent) was headed by a nonparent caregiver.
- Among households with school-age children, Native Hawaiians had the highest rate of nonparental caregiving of the state's major ethnic groups, 3.2 percentage points higher than the statewide average (8.2 percent).

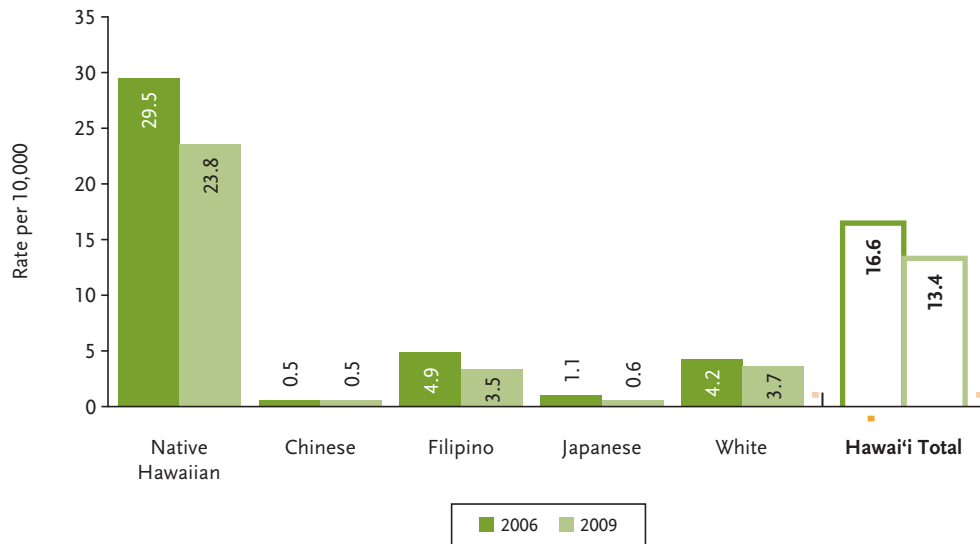
## CHILD ABUSE AND NEGLECT

Despite the protective effect of cultural values and practices, the prevalence of destabilizing stressors such as financial insecurity and unemployment among Native Hawaiian family households contribute to a disproportionately high rate of child abuse and neglect.

The Hawai‘i Department of Human Services changed the way it processes reports of child abuse and neglect in 2005. This resulted in a significant reduction in confirmed cases (US Department of Health and Human Services 2005, 131). Therefore, the data reported below should not be compared to historical data (e.g., trends in abuse and neglect reported in *Ka Huaka‘i* 2005).

**FIGURE 3.13** Trends in child abuse and neglect

[number of confirmed cases per 10,000 people by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]



Sources: Hawai‘i Department of Human Services 2002–10; US Census Bureau 2000, Summary File 2; US Census Bureau 2010, Summary File 2.

- The rates of confirmed child abuse and neglect among Native Hawaiians since 2006 have been roughly six times those of the next highest ethnic groups, Filipinos and Whites.
- The prevalence of confirmed child abuse and neglect among Native Hawaiians decreased from 29.5 per 10,000 in 2006 to 23.8 per 10,000 in 2009.
- In 2009, the rate of confirmed child abuse and neglect among Native Hawaiians (23.8 per 10,000 people) was 10.4 per 10,000 more than the statewide average (13.4 per 10,000).

Previous versions of this volume have complemented child abuse and neglect statistics with information on the rate of arrests for offenses against family members and children; however, significant changes to the methodology used for categorizing such arrests have undermined the reliability and utility of these data. Additional information about the prevalence of domestic violence with data sources disaggregated by race/ethnicity could not be located.

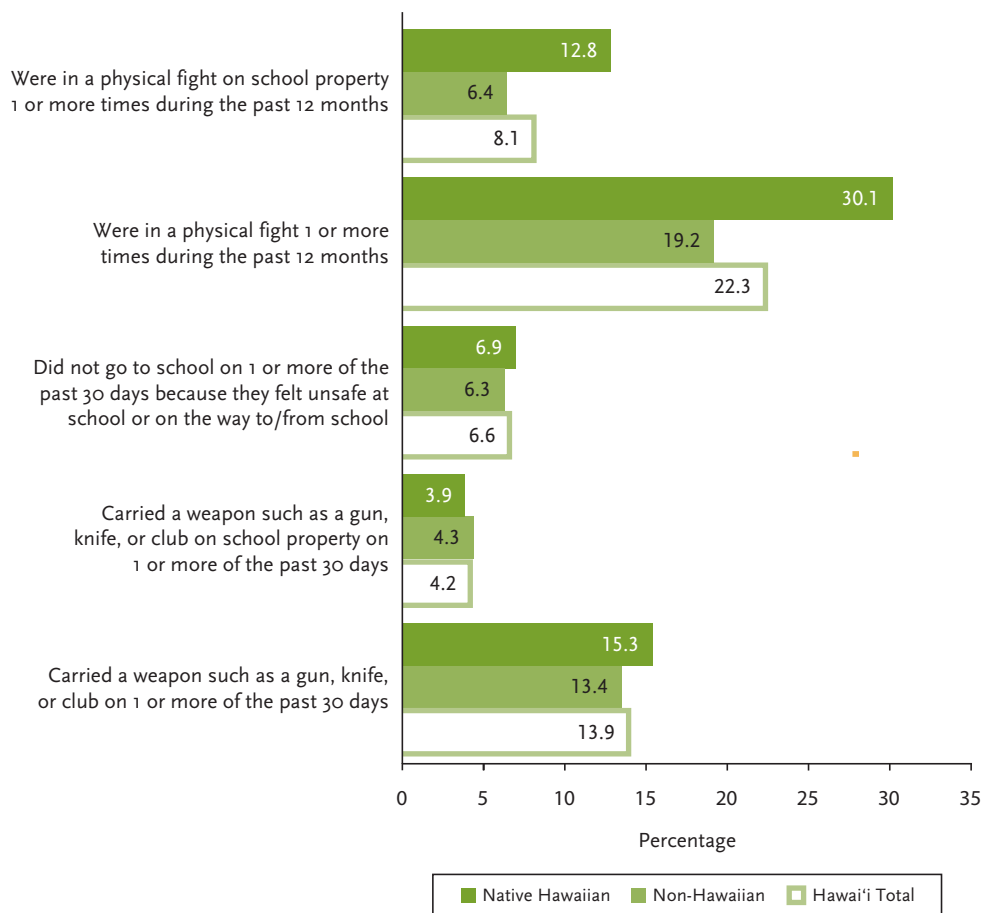


## ANTISOCIAL BEHAVIORS AND THE CRIMINAL JUSTICE SYSTEM

Within populations that face longstanding historical disadvantage, antisocial behaviors among adolescents tend to be higher. Figure 3.14 shows that Native Hawaiian high school students are especially prone to physical fights.

**FIGURE 3.14** Violence and safety concerns among high school students

[as a percentage of all high school student respondents, by Native Hawaiian and non-Hawaiian, 2011, Hawai'i]



Source: Hawai'i Department of Health, YRBS 2011.

- Native Hawaiian high school students were more likely than were their non-Hawaiian peers to engage in physical fights, both on and off school property.
- Approximately one in three Native Hawaiian high school students (30.1 percent) and one in five non-Hawaiians (19.2 percent) was involved in a physical fight at some point during the previous year.
- The proportion of high school students who skipped school because they felt unsafe and who carried weapons on school property was roughly comparable between Native Hawaiians and non-Hawaiians.

Disparities in the prevalence of antisocial behaviors like fighting among Native Hawaiians and their non-Hawaiian peers carry over into more serious and criminal behavior. Rates of crime and drug use are disproportionately high within the Native Hawaiian population. This problem is exacerbated by a criminal justice system in which race and ethnicity unduly influence outcomes at multiple points in the process (Rosich 2007), including arrests (Tapia 2010; Parker and Maggard 2005; Beckett, Nyrop, and Pfingst 2006), prosecution and sentencing (Kutateladze, Lynn, and Liang 2012), and incarceration (Kansal 2005).

Although most research on race in the criminal justice system is national in scope and focused on discrimination against the African American population, two recent reports looked at the question of differential treatment of Native Hawaiians by Hawai‘i’s criminal justice system. The first was a comprehensive examination of the local penal system carried out by the Office of Hawaiian Affairs. The study used multivariate analyses to control for factors such as age, gender, and type/severity of charge, and found that compared with other major ethnic groups, Native Hawaiians are more likely to be sentenced to prison, to receive longer prison sentences and probation terms, and to have their parole revoked (Office of Hawaiian Affairs et al. 2010). The second study, which was commissioned by the Juvenile Justice State Advisory Council and the State of Hawai‘i Office of Youth Services, looked specifically at local juvenile justice data. This study concluded that “Native Hawaiian youth are the most overrepresented group relative to their proportion of the youth population and face disproportionately negative outcomes at the greatest number of decision points [in the juvenile justice system] compared to other ethnic groups” (Umemoto et al. 2012). Together, these two studies highlight the role that institutional structures play in perpetuating historical disadvantages—a fact that must be considered in any serious study of criminal behavior among Native Hawaiians.

## Arrests

Our review of local disparities within the criminal justice system starts with an examination of juvenile arrest rates and trends in arrests over time.<sup>4</sup> These figures should be interpreted with caution because of data quality and comparability issues and because the methodologies used to collect and report on arrests have changed repeatedly over time without consistent documentation. Despite these limitations, we find the data useful as a depiction of ongoing racial/ethnic disparities within the criminal justice system; disaggregation according to the state’s major ethnic groups shows that Native Hawaiians generally have the highest arrest rates across most types of offenses.

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4. Due to changes in methodology, the data are not comparable with *Ka Huaka‘i* 2005 data. Refer to Appendix A for more information about crime data.

We begin with an examination of index offenses, which are more serious in nature and are used to monitor crime rates over time and across the nation. The data also show that Native Hawaiian juveniles are more likely to be arrested for an index offense than are juveniles of the other major ethnic groups in the state.<sup>5</sup>

**TABLE 3.1** Juvenile arrests for index offenses  
[number of arrests per 10,000 children ages 10–17, by race/ethnicity, 2010, Hawai‘i]

	Native Hawaiian	Chinese	Filipino	Japanese	White	Hawai‘i Total
Total	130.3	10.6	71.1	36.4	78.2	146.5
Murder	0.2	0.0	0.0	0.0	0.0	0.2
Forcible rape	0.2	0.0	0.4	0.0	1.2	1.0
Robbery	6.6	0.4	3.2	1.6	2.9	9.6
Aggravated assault	8.7	0.0	4.7	2.2	4.3	9.6
Burglary	11.9	0.4	2.8	1.3	5.5	10.0
Larceny-theft	95.5	9.5	56.0	30.1	60.5	109.4
Motor vehicle theft	6.6	0.4	3.2	1.0	3.3	5.6
Arson	0.5	0.0	0.9	0.3	0.4	1.1

Sources: Hawai‘i Department of the Attorney General 2010; US Census Bureau 2010, Summary File 2.

- Compared to other major ethnic groups in the state, Native Hawaiian juveniles had the highest rate of arrest for all index offenses combined.<sup>6</sup>
- Native Hawaiian juveniles were the most likely to be arrested for murder, robbery, aggravated assault, burglary, larceny-theft, and motor vehicle theft, but they had the second-highest rate of arrest for arson and the third-highest rate of arrest for forcible rape.

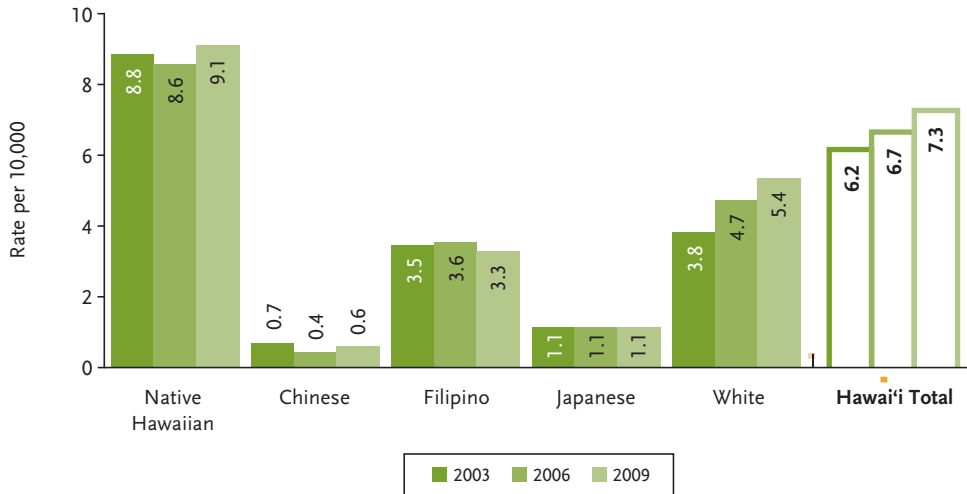
Racial/ethnic disparities in arrest rates persist when we aggregate the population of juveniles and adults.

5. See Appendix A for more information on juvenile arrest statistics.

6. In both tables relating to juvenile arrests, the statewide average (i.e., the Hawai‘i Total) exceeds the rates associated with each of the major ethnic groups in the state. The seeming contradiction can be attributed to the “alone or in combination” definition we use to estimate the population associated with each major ethnic group. This inclusive approach creates substantial overlap between the ethnic groups because multiracial/multiethnic individuals are counted in more than one category. Since these population estimates are used to scale the arrest counts, the denominators of the arrest rates for the major ethnic groups sum to a number nearly 60 percent higher than the denominator of the state total, which counts each individual—whether multiracial/multiethnic or not—just once. In short, the count of arrests for each ethnic group is scaled against a relatively high estimate of that group’s population. This deflates that ethnic group’s rate relative to the total population rate, which is scaled against an unduplicated count.

**FIGURE 3.15** Trends in arrests for aggravated assault (index offense)

[number of arrests per 10,000 people, juveniles and adults combined, by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]

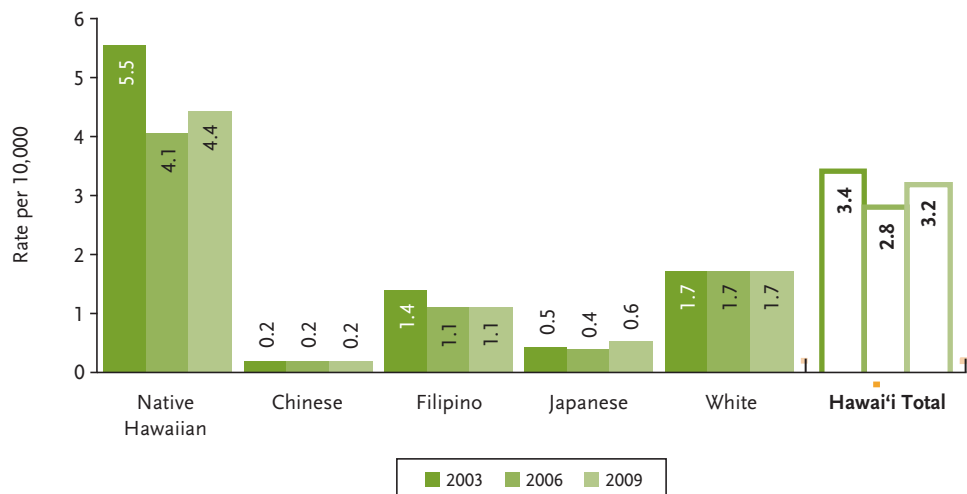


Sources: Hawai‘i Department of the Attorney General 2002–10; US Census Bureau 2000, Summary File 2; US Census Bureau 2010, Summary File 2.

- The rate of arrest for aggravated assaults among Native Hawaiian juveniles and adults increased from 8.8 per 10,000 in 2003 to 9.1 per 10,000 in 2009.
- Among the major ethnic groups in the state, Native Hawaiians have been the most likely to be arrested for aggravated assault since at least 2003. In 2009, the Native Hawaiian rate of arrest for aggravated assault exceeded the statewide average by 1.8 arrests per 10,000.

**FIGURE 3.16** Trends in arrests for robbery (index offense)

[number of arrests per 10,000 people, juveniles and adults combined, by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]



Sources: Hawai‘i Department of the Attorney General 2002–10; US Census Bureau 2000, Summary File 2; US Census Bureau 2010, Summary File 2.

- Although the Native Hawaiian rate of arrest for robbery decreased by 1.1 arrests per 10,000 between 2003 and 2009, the 2009 rate exceeded the statewide average by 1.2 arrests per 10,000.
- Between 2003 and 2009, Native Hawaiians had the highest rate of arrest for robbery and were the only major ethnic group whose robbery arrest rate consistently exceeded statewide averages.

Across all of the less serious (part II) offenses tracked by law enforcement officials, Native Hawaiian juvenile arrest rates exceeded the rates of all other major ethnic groups in the state.

**TABLE 3.2** Juvenile arrests for part II offenses  
[number of arrests per 10,000 children ages 10–17, by race/ethnicity, 2010, Hawai'i]

	Native Hawaiian	Chinese	Filipino	Japanese	White	Hawai'i Total
Total	643.8	29.3	331.4	142.4	357.2	<b>661.5</b>
Violent	79.9	0.4	31.1	9.8	35.8	<b>75.8</b>
Property related	24.3	1.5	7.2	2.2	10.2	<b>21.1</b>
Drug manufacturing/sale	2.3	0.0	0.4	0.0	1.7	<b>1.8</b>
Drug possession	37.1	2.6	17.0	13.0	32.5	<b>41.2</b>
Gambling	1.1	0.0	0.0	0.3	0.2	<b>0.5</b>
Alcohol related	32.1	1.1	18.3	1.9	21.3	<b>33.8</b>
Other	185.7	11.0	124.0	42.4	98.8	<b>212.1</b>
Status	281.4	12.8	133.3	72.8	156.7	<b>275.2</b>

Sources: Hawai'i Department of the Attorney General 2010; US Census Bureau 2010, Summary File 2.

- The rate at which Native Hawaiian juveniles were arrested for part II offenses (643.8 per 10,000) was more than four and a half times the rate in the Japanese population and twenty-two times the rate in the Chinese population.
- For violent and property-related crimes, Native Hawaiian juvenile arrest rates were more than twice the rates of the second-highest group (Whites).

Again, these disparities persist when we look at juvenile and adult arrests for part II offenses aggregated into a single rate.

**FIGURE 3.17** Trends in arrests for violent crimes (part II offense)

[number of arrests per 10,000 people, juveniles and adults combined, by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]

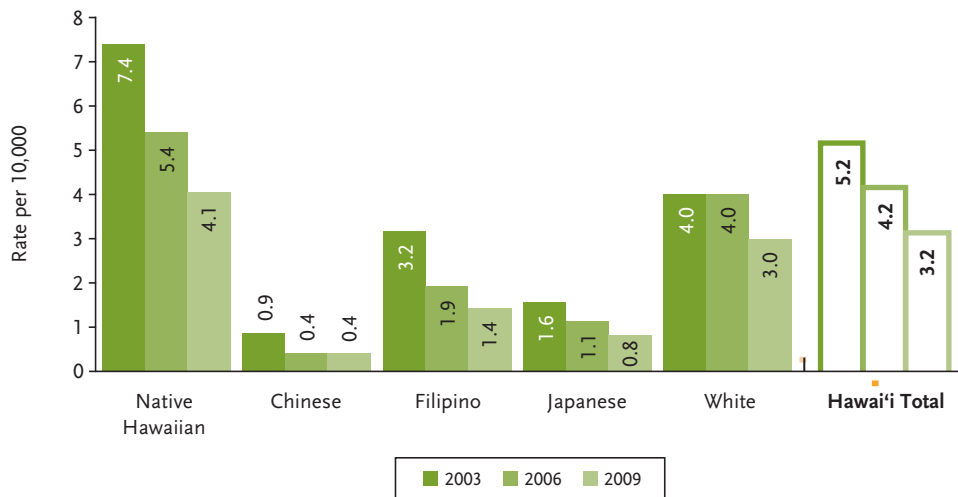


Sources: Hawai'i Department of the Attorney General 2002–10; US Census Bureau 2000, Summary File 2; US Census Bureau 2010, Summary File 2.

- Native Hawaiian juveniles and adults were arrested for violent crimes at a higher rate than that of any other major ethnic group between 2003 and 2009.
- The rate of Native Hawaiian arrests for violent crimes declined by 7.9 per 10,000 from 2003 to 2006, but has escalated in recent years, increasing by 3.4 arrests per 10,000 Native Hawaiians between 2006 and 2009.
- In 2009, Native Hawaiians exceeded the state's average rate of arrest for violent crime by 14.1 per 10,000 people.

**FIGURE 3.18** Trends in arrests for drug manufacturing or sales (part II offense)

[number of arrests per 10,000 people, juveniles and adults combined, by race/ethnicity, 3-year weighted averages, selected years, Hawai'i]



Sources: Hawai'i Department of the Attorney General 2002–10; US Census Bureau 2000, Summary File 2; US Census Bureau 2010, Summary File 2.

- Arrests for drug manufacturing or sales among Native Hawaiians decreased from 7.4 arrests per 10,000 in 2003 to 4.1 per 10,000 in 2009—a slightly steeper decline than the decrease in statewide figures from 5.2 to 3.2 per 10,000 over the same period.
- The arrest rate for drug manufacturing or sales among Native Hawaiians in 2009 (4.1 per 10,000) exceeded the statewide average by 0.9 per 10,000.

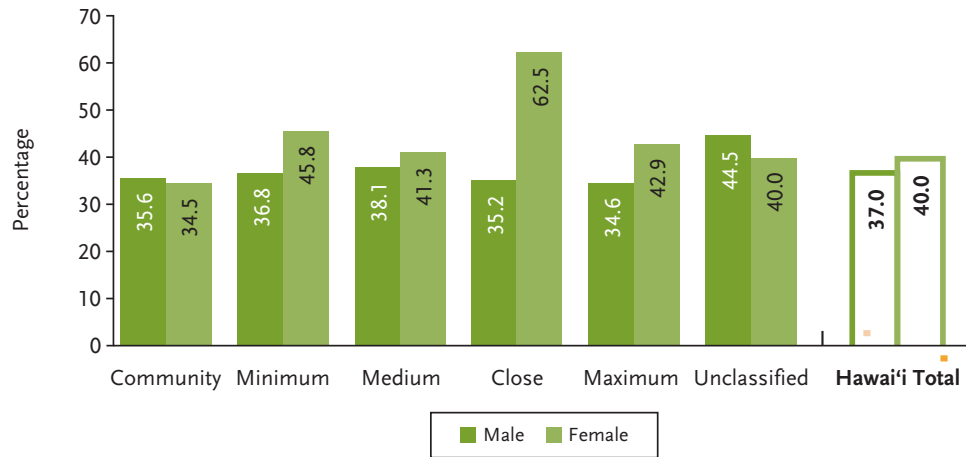
## Incarceration

Elevated arrest rates among Native Hawaiians and a criminal justice system with acknowledged inequities (Native Hawaiian Justice Task Force 2012; Umemoto et al. 2012) contribute to the overrepresentation of Native Hawaiians in the state's prison system. The high incarceration rates among Native Hawaiians affect not only those incarcerated but also their families. Children may grow up without the social, emotional, and economic support of one of their parents and may be vulnerable to emotional problems, social stigma, high-risk behaviors, and future incarceration (Hairston 2007; Murray and Farrington 2008; Travis, McBride, and Solomon 2005).

Figure 3.19 shows the percentage of the incarcerated population accounted for by Native Hawaiians. Statistics are disaggregated by sex and by custody level, the latter of which is determined based on behavior and on the duration and balance of the sentence being served.<sup>7</sup>

**FIGURE 3.19** Incarceration of Native Hawaiians

[as a percentage of the state prison population, by custody classification and sex, 2012, Hawai‘i]



Source: Hawai‘i Department of Public Safety 2012.

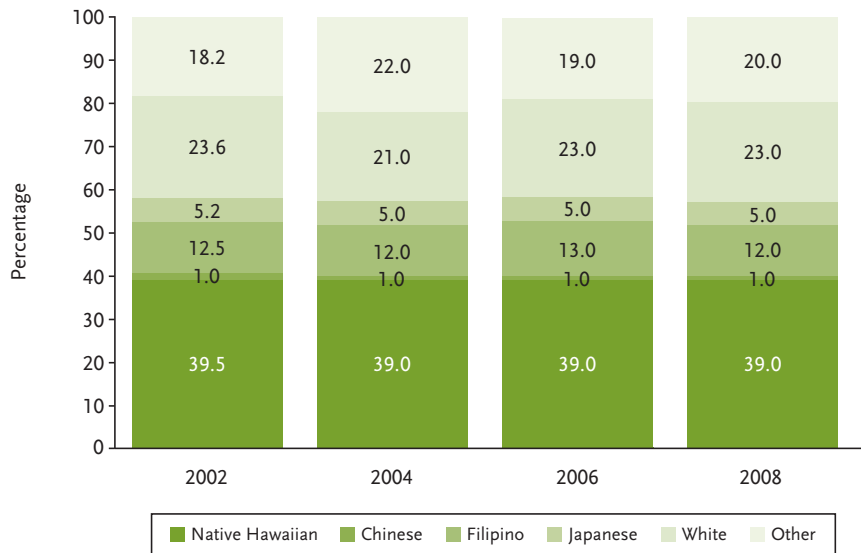
- Native Hawaiian adults constitute 17.7 percent (not shown) of the total adult population in Hawai‘i. However, in 2012, Native Hawaiians accounted for 37.0 percent of the state’s male prison population and 40.0 percent of the state’s female prison population.
- In 2012, Native Hawaiian women constituted two-fifths (40.0 percent) of females incarcerated in state prisons and 34.5 to 62.5 percent of each security classification.
- Native Hawaiians accounted for 37.0 percent of the state’s male prison population and 34.6 to 44.5 percent of each custody classification.

7. The five custody levels shown are defined by the Hawai‘i Department of Public Safety (2012) as follows:

- Community: “for inmates who have 24 months or less to serve on their sentence and are eligible to participate [in] furlough programs, extended furlough, or residential transitional living facilities.”
- Minimum: “for inmates with less than 48 months until their parole eligibility date; who have demonstrated through institutional conduct that they can function with minimal supervision in a correctional setting, or in the community under direct supervision.”
- Medium: “for inmates who have more than 48 months to their parole eligibility date; whose institutional conduct and adjustment require frequent supervision/intervention.”
- Close: “for those who have minimum sentences of 21 years or more, who are serious escape risks or have chronic behavioral/management problems.”
- Maximum: “inmates who are chronically disruptive, violent, predatory or are a threat to the safe operation of a facility.”



**FIGURE 3.20** Trends in the racial/ethnic distribution of the incarcerated population  
[as a percentage of the state prison population, selected years, Hawai'i]



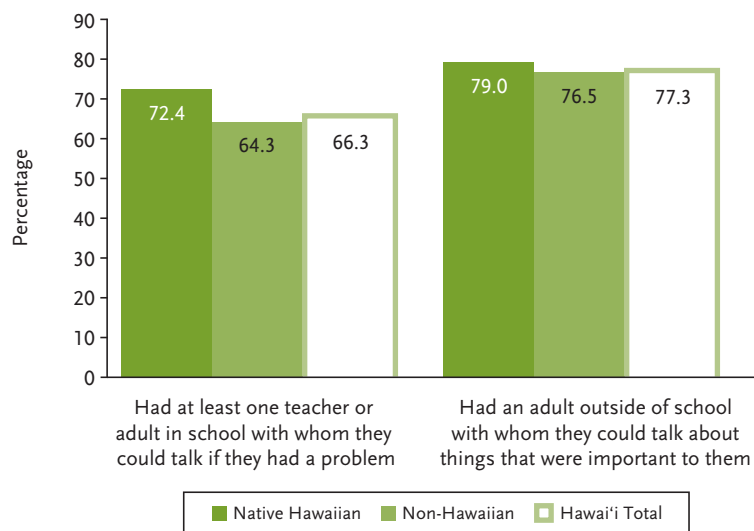
Sources: Hawai'i Department of Public Safety 2008; *Ka Huaka'i* 2005.

- The ethnic distribution of Hawai'i's incarcerated population has remained relatively stable in the last decade.
- Since 2002, the Native Hawaiian population in prison has been nearly twice the size of the next largest ethnic group, Whites (39.0 to 39.5 percent versus 21.0 to 23.6 percent, respectively).

## SOCIAL SUPPORT

Despite the high number of single-parent family households and high rates of arrest and incarceration, data from a variety of sources indicate that ‘ohana, community, and faith serve as critical resources for Native Hawaiian resilience. For example, Native Hawaiian high school students are more likely to have adults with whom they can talk, both inside and outside of school, than are their non-Hawaiian peers.

**FIGURE 3.21** Social resources among high school students  
[as a percentage of all high school student respondents, by Native Hawaiian and non-Hawaiian, 2011, Hawai‘i]



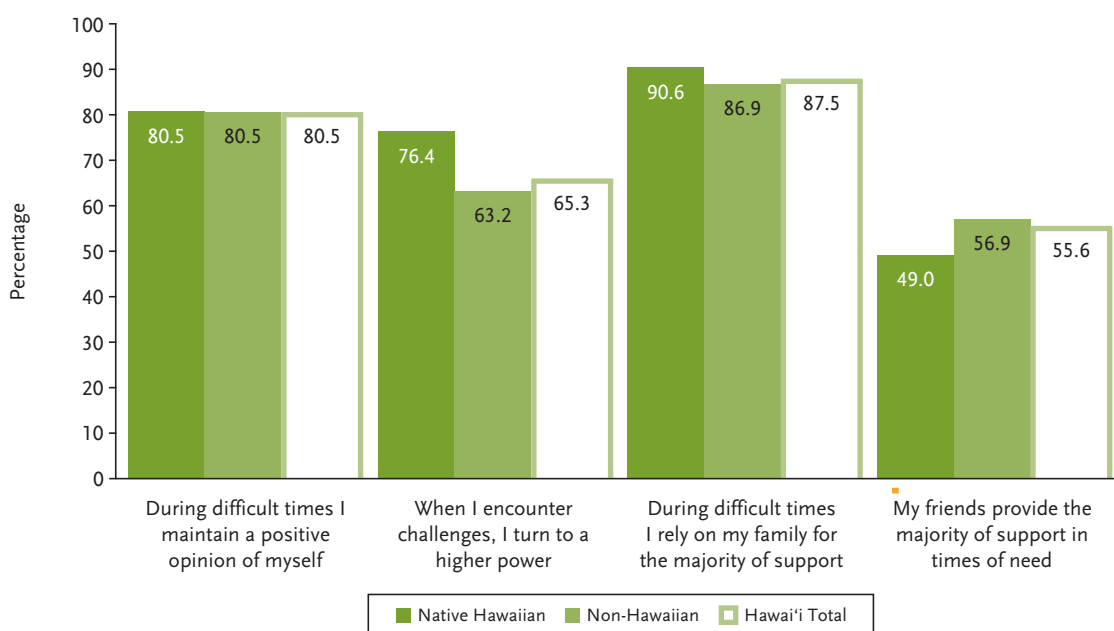
Source: Hawai‘i Department of Health, YRBS 2011.

- Nearly three out of every four Native Hawaiian high school students (72.4 percent) had at least one teacher or adult in their school with whom they could talk if they had a problem, compared with two out of every three non-Hawaiians (64.3 percent).
- Almost four of every five Native Hawaiian high school students (79.0 percent) reported that they had an adult outside of school with whom they could talk about things that were important to them.

Native Hawaiians, like other groups, seek support from a variety of sources in times of adversity. Compared with non-Hawaiians however, Native Hawaiians more often draw strength and support from spiritual and family relationships and less so from friends.

**FIGURE 3.22** Social resources among adults

[as a percentage of all adult respondents, by Native Hawaiian and non-Hawaiian, 2011, Hawai'i]



Source: Kamehameha Schools, Hawaiian Community Well-Being Survey 2011.

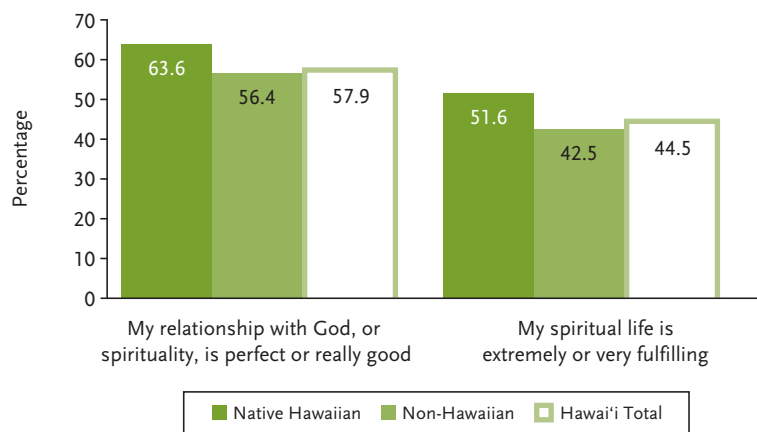
- Four out of five Native Hawaiians (80.5 percent) reported that they maintain a positive opinion of themselves during difficult times.
- Three out of four Native Hawaiians (76.4 percent) reported that they turn to a higher power when they encounter challenges, compared with two out of three non-Hawaiians (63.2 percent).
- Native Hawaiians were slightly more likely than were non-Hawaiians to rely on their family for the majority of support during difficult times (90.6 percent compared with 86.9 percent, respectively).
- Native Hawaiians were less likely than were non-Hawaiians to report that their friends provide the majority of support in times of need (49.0 percent compared with 56.9 percent, respectively).

## SPIRITUALITY AND RELIGION

As highlighted in Figure 3.22, Native Hawaiians look to spirituality as a source of strength and resiliency. Spiritual well-being takes on many forms. We define spirituality as an individual’s connection to a power or purpose greater than his or her own. The self-reported quality of this connection is positively correlated not just with overall well-being but also with educational outcomes and risk behaviors in adolescence and early adulthood (University of California 2005; Scales 2007a, 2007b).

**FIGURE 3.23** Spirituality among adults

[as a percentage of all adult respondents, by Native Hawaiian and non-Hawaiian, 2011, Hawai‘i]

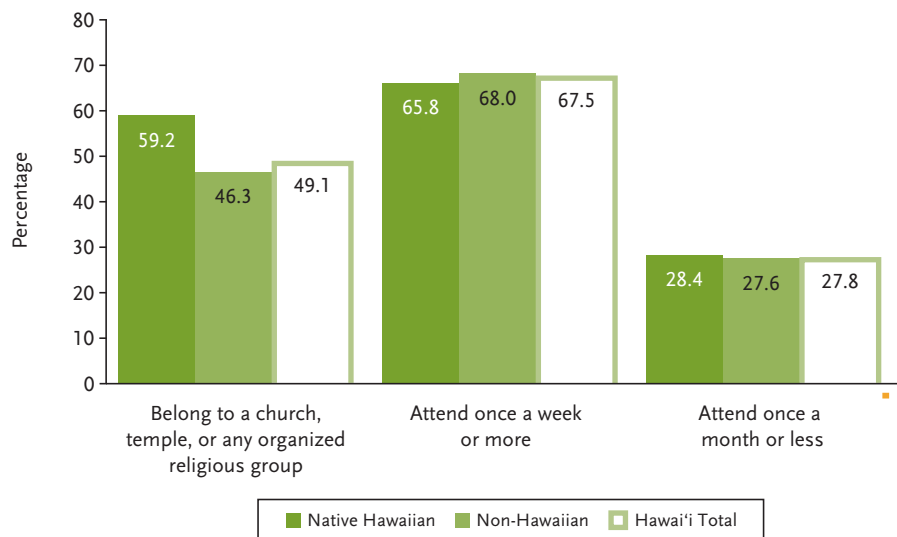


Source: Kamehameha Schools, Hawaiian Community Well-Being Survey 2011.

- Native Hawaiians were more likely than were non-Hawaiians to describe their relationship with God or their spirituality as perfect or really good (63.6 percent compared with 56.4 percent, respectively).
- Native Hawaiians were more likely to express high levels of fulfillment with their spiritual lives than were Non-Hawaiians (51.6 percent compared with 42.5 percent, respectively).

Religious participation is an important indicator of the extent to which individuals seek connection to a higher power and a spiritual community, both of which act as social and emotional assets. Compared with non-Hawaiians, Native Hawaiians are more likely to be members of a church or organized religious group but are slightly less likely to attend regularly.

**FIGURE 3.24** Membership and participation in religious groups among adults  
[as a percentage of all adult respondents, by Native Hawaiian and non-Hawaiian, 2011, Hawai'i]



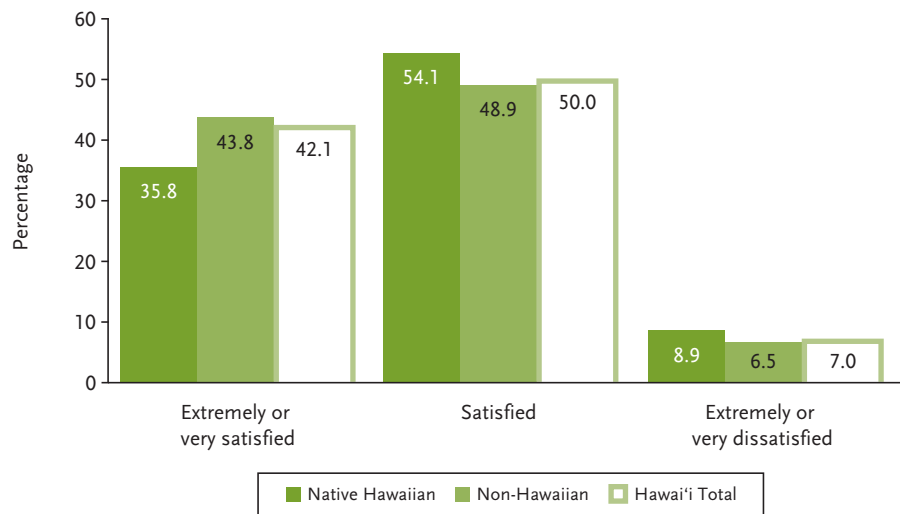
Source: Kamehameha Schools, Hawaiian Community Well-Being Survey 2011.

- Native Hawaiians were more likely than were non-Hawaiians to belong to a church, temple, or other organized religious group (59.2 percent versus 46.3 percent).
- Weekly participation in religious services was less common among Native Hawaiians (65.8 percent) than among non-Hawaiians (68.0 percent).
- There was little difference between the proportion of Native Hawaiians and non-Hawaiians who said they attend service once a month or less (28.4 percent and 27.6 percent, respectively).

## QUALITY OF LIFE

Quality of life is often correlated with tangible indicators of well-being such as wealth, employment, social connectedness, and physical health. However, quality of life is largely a subjective measure based in part on individuals’ perceptions of their current lives and future prospects. The following figures suggest that, compared with non-Hawaiians, Native Hawaiians are slightly less satisfied with their current lives but more optimistic about the future.

**FIGURE 3.25** Satisfaction with quality of life among adults  
[as a percentage of all adult respondents, by Native Hawaiian and non-Hawaiian, 2011, Hawai‘i]

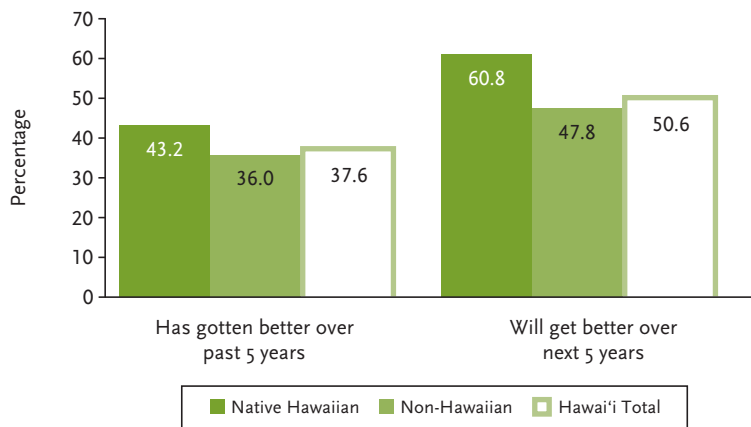


Source: Kamehameha Schools, Hawaiian Community Well-Being Survey 2011.

- Native Hawaiians were more likely than non-Hawaiians to use the term “satisfied” when asked about the quality of their lives (54.1 percent versus 48.9 percent) but less likely to describe themselves as “extremely” or “very satisfied” with life.
- One in eleven Native Hawaiians (8.9 percent) reported that they were extremely or very dissatisfied with their life, compared with one in fifteen non-Hawaiians (6.5 percent).

One way of measuring emotional well-being is to ask questions that prompt individuals to reflect on their lives and make predictions for their futures.

**FIGURE 3.26** Retrospective and prospective views about quality of life among adults  
[as a percentage of all adult respondents, by Native Hawaiian and non-Hawaiian, 2011, Hawai'i]



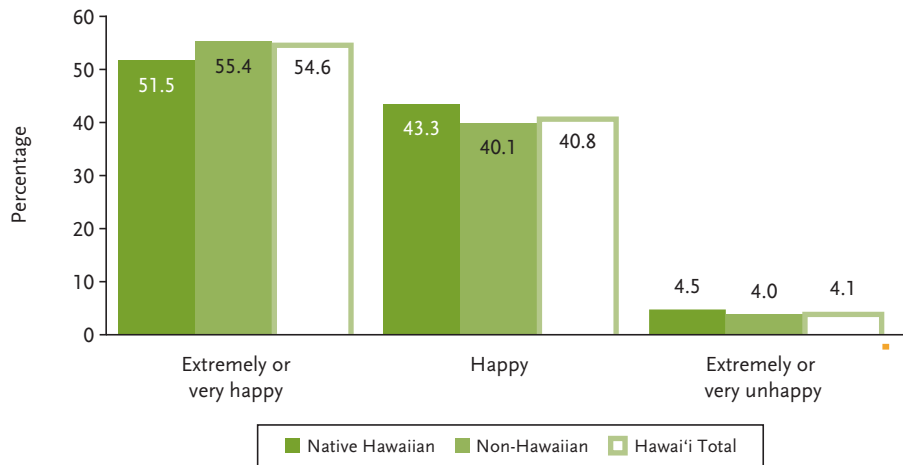
Source: Kamehameha Schools, Hawaiian Community Well-Being Survey 2011.

- Native Hawaiians were more likely than were non-Hawaiians to report that their lives had gotten better over the past five years (43.2 percent versus 36.0 percent).
- Three in five Native Hawaiians (60.8 percent) expected that their lives will get better over the next five years, compared with nearly half (47.8 percent) of non-Hawaiians.

Happiness is a difficult concept to measure because it can be defined and expressed in many different ways. Still, questions about the perception of happiness (i.e., how happy people say they are) can also contribute to discussions of emotional well-being.

**FIGURE 3.27** Happiness among adults

[as a percentage of all adult respondents, by Native Hawaiian and non-Hawaiian, 2011, Hawai‘i]



Source: Kamehameha Schools, Hawaiian Community Well-Being Survey 2011.

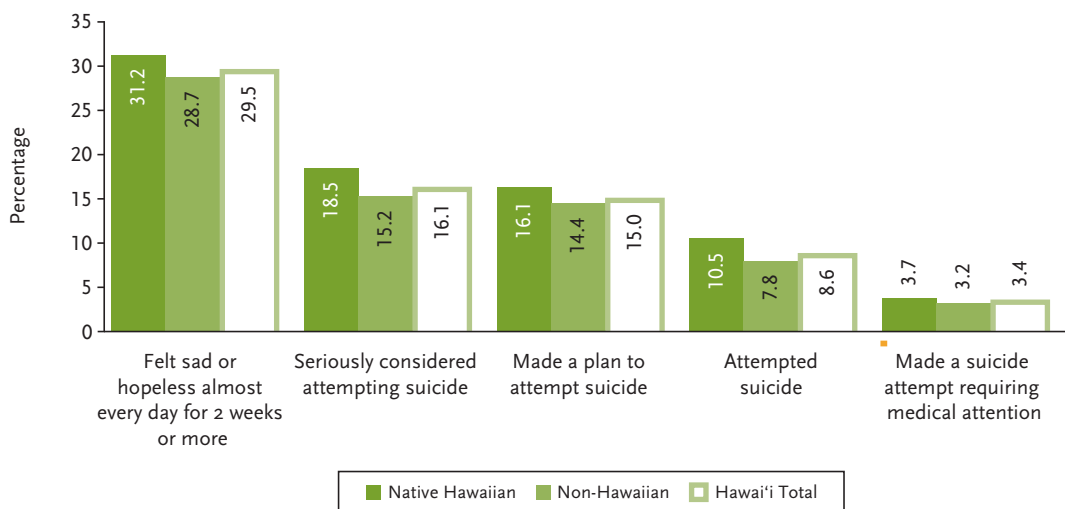
- Native Hawaiians were more likely than were non-Hawaiians to use the term “happy” when asked about their lives (43.3 percent versus 40.1 percent), but they were less likely to describe themselves as “very happy” or “extremely happy.”
- The proportion of Native Hawaiians who were extremely or very unhappy (4.5 percent) was roughly equal to the rate among non-Hawaiians (4.0 percent).



## STRESS AND SUICIDE

Despite a relatively strong network of social, emotional, and spiritual resources, Native Hawaiians are subject to a disproportionately high burden of stressors, disadvantages, and inequities that can take an emotional toll, particularly among adolescents. The problem is apparent in the relatively high rates of depressive symptoms among Native Hawaiian teens and adults.

**FIGURE 3.28** Depressive symptoms and suicidal risks among high school students  
[as a percentage of all high school student respondents, by Native Hawaiian and non-Hawaiian, 2011, Hawai'i]



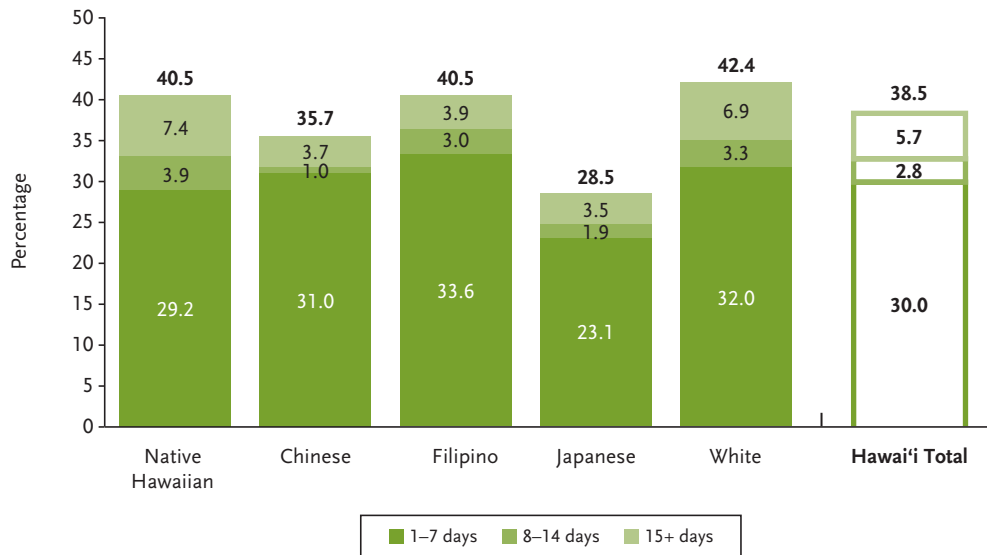
Source: Hawai'i Department of Health, YRBS 2011.

- Overall, Native Hawaiian high school students were more likely than were their non-Hawaiian peers to report thoughts and behaviors associated with depression and suicide.
- Nearly one out of three Native Hawaiian students (31.2 percent) felt sad or hopeless for two weeks or more, compared with 28.7 percent of non-Hawaiians.
- Almost one out of five Native Hawaiian students (18.5 percent) seriously considered attempting suicide, and one out of six (16.1 percent) made a plan to attempt suicide.
- One out of ten Native Hawaiian students (10.5 percent) attempted suicide and one in twenty-seven (3.7 percent) made an attempt that required medical attention.

Disproportionate rates of depression and suicidal ideation are not limited to the adolescent population of Native Hawaiians. Figure 3.29 shows that, on average, Native Hawaiian adults report feeling sad or depressed for longer periods than do adults of other major ethnic groups in the state.

**FIGURE 3.29** Adults who felt sad, blue, or depressed

[as a percentage of all adult respondents by race/ethnicity and by number of days in the past month, 2008, Hawai‘i]

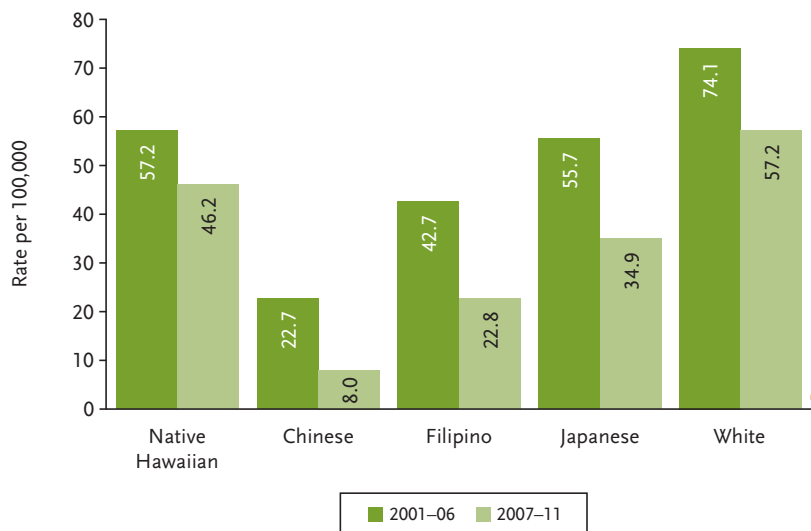


Source: Hawai‘i Department of Health, BRFSS 2008.

- Native Hawaiians adults were the most likely of the state’s major ethnic groups to have felt sad or depressed for more than seven days in the month prior to being surveyed.
- Approximately one in fourteen Native Hawaiians (7.4 percent) reported being sad or depressed for at least half of the previous month (i.e., fifteen or more days) compared with one in eighteen adults (5.7 percent) statewide.
- The proportion of Native Hawaiians who felt sad or blue for eight days or more during the previous month (11.3 percent) was more than twice that of either Chinese or Japanese adults (4.7 percent and 5.4 percent, respectively).

**FIGURE 3.30 Suicide**

[unadjusted rates per 100,000 people by race/ethnicity, 2001–06 and 2007–11, Hawai'i]



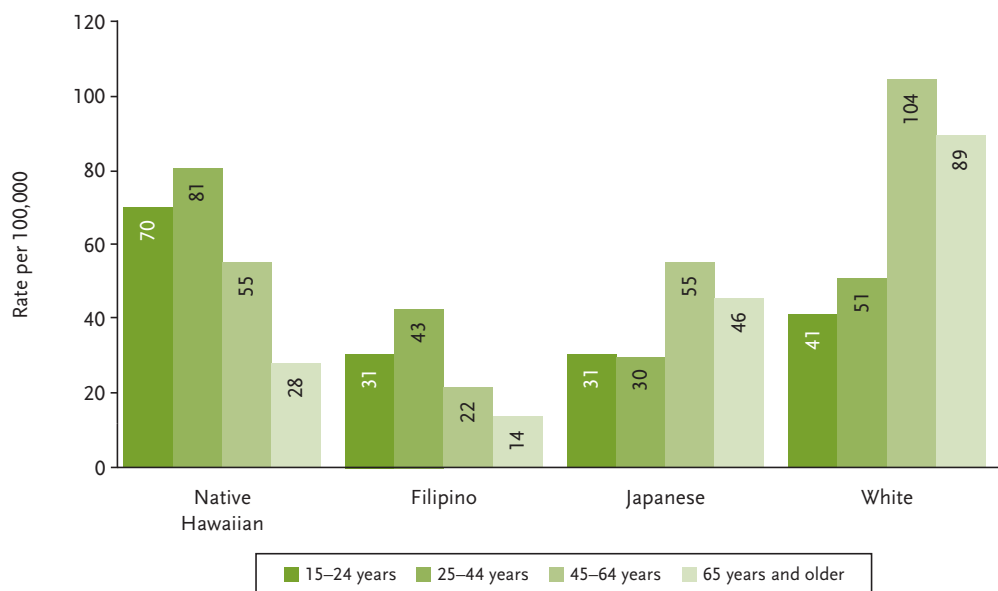
Source: Hawai'i Department of Health, Injury Prevention and Control Program, Injuries in Hawai'i 2001–06, 2007–11.

Note: Comparable statewide rates were not provided by the data source.

- Approximately 57 Native Hawaiians committed suicide per 100,000 in the total Native Hawaiian population during the 2007–11 reporting period.
- Between the 2001–06 and 2007–11 reporting periods, the Native Hawaiian suicide rate decreased by 11.0 percentage points from 57.2 suicides per 100,000 to 46.2 per 100,000. A portion of the decrease may be attributable to differences in the length of the reporting periods, but the decline in the Native Hawaiian rate is the smallest among the major ethnic groups in Hawai'i.
- The Native Hawaiian suicide rate was nearly six times the rate of the Chinese population and twice the rate of the Filipino population during the 2007–11 reporting period.
- The suicide rate among Native Hawaiians (46.2 per 100,000) trailed that of Whites (57.2 per 100,000) by 11.0 per 100,000 during the 2007–11 reporting period.

**FIGURE 3.31** Suicide by age

[unadjusted rates per 100,000 people by race/ethnicity and age, 2007–11, Hawai‘i]



Source: Hawai‘i Department of Health, Injury Prevention and Control Program, Injuries in Hawai‘i 2007–11.

Note: Comparable rates for the Chinese and statewide population were not provided by the data source.

- Within the Native Hawaiian population, suicide rates were disproportionately high among young adults and declined in older age groups. The opposite was true for the Japanese and White populations.
- Among adults ages forty-five and older, Whites were significantly more likely to commit suicide than were adults of the other major ethnic groups.
- Between 2007 and 2011, Native Hawaiians ages fifteen to twenty-four were more than twice as likely to commit suicide as were their counterparts in the Filipino and Japanese populations (70 per 100,000 versus 31 per 100,000, respectively).

## CONCLUSION

Data for the last decade paint a complex picture of Native Hawaiian social and emotional well-being that points to ongoing inequities, important cultural assets, and significant improvements over time.

Native Hawaiian families struggle with challenges such as single parenting—particularly families with young children—but also continue to tap resources like grandparent and hānai caregiving that are grounded in Hawaiian cultural values emphasizing ‘ohana, kūpuna, and community. Culture also underlies the social support networks and spiritual faith that Native Hawaiians credit as sources of strength and resilience as well as the optimism with which Native Hawaiians assess their quality of life.

Despite these social and emotional assets, the ongoing disadvantages, limited opportunities, and institutionalized inequities faced by Native Hawaiians have a negative social impact, contributing to high rates of arrest, incarceration, and adolescent depression. However, trend data also show signs of progress, including a decline in child abuse and neglect rates, and decreases in the rates of arrest for violent crimes, drug manufacturing/sales, and robbery. Taken together, these data indicate the need to leverage Native Hawaiian social networks, spiritual strength, and cultural traditions to navigate contemporary problems and create a path toward a more positive future.



Ua ola loko i ke aloha.

‘EHĀ | CHAPTER FOUR  
Physical Well-Being

---

LOVE GIVES LIFE WITHIN.

*Love is imperative to one's mental and physical welfare.*

## KEY FINDINGS

### Relative strengths/progress over time

#### ACCESS TO HEALTHCARE

Uninsured rates within the Native Hawaiian population have steadily declined over time, from 9.6 percent in 2005 to 7.4 percent in 2009.

#### MATERNAL AND INFANT HEALTH

The rates for late or no prenatal care, births to teenage mothers, and infant mortality among Native Hawaiians have decreased over time.

- Late or no prenatal care decreased from 22.4 to 17.6 percent between 2005 and 2010.
- Births to teenage mothers decreased from 19.1 to 16.1 percent between 2000 and 2008.
- Infant mortality decreased from 11.1 to 6.3 per 1,000 live births between 1981 and 2010.

#### HEALTHY LIFESTYLES

Native Hawaiian adolescents were more likely to participate in team sports and physical education at school and less likely to spend hours playing video/computer games and watching TV than were non-Hawaiian students.

Among Native Hawaiian students, 42.5 percent spent an hour or more engaged in physical activity five days out of the week, compared with 36.4 percent of non-Hawaiians.

Among Native Hawaiian adults, 37.3 percent engaged in muscle-strengthening activities two or more times per week, compared with 32.1 percent statewide.

#### RISK BEHAVIORS

The prevalence of smoking has decreased among Native Hawaiian youth and adults.

- The percentage of Native Hawaiian high school students who smoked cigarettes in the month prior to the survey declined from 36.5 to 9.0 percent between 1997 and 2011.
- The percentage of Native Hawaiian adults who smoke declined from 26.5 to 23.4 percent between 2005 and 2009.

#### DISEASE

The prevalence of certain chronic diseases has decreased among Native Hawaiians.

- The prevalence of diabetes decreased from 12.4 to 11.6 percent between 2005 and 2009.
- The prevalence of coronary heart disease decreased from 4.5 to 3.1 percent between 2005 and 2009; heart attacks decreased from 5.1 to 4.2 percent over the same period.

The incidence of certain types of cancer among Native Hawaiians has remained relatively low.

- The incidence of prostate cancer among Native Hawaiian men (106.7 per 100,000) was lower than the statewide average (131.0 per 100,000).
- The incidence of colon cancer among Native Hawaiian women (35.4 per 100,000) was lower than the statewide average (42.0 per 100,000).

#### LIFE EXPECTANCY

Life expectancy among Native Hawaiians increased from 71.8 years in 1980 to 74.3 years in 2000.



## Areas of concern

### ACCESS TO HEALTHCARE

The rate at which Native Hawaiians missed medical treatment because of cost was 11.1 percent in 2009, compared with the statewide average of 7.3 percent. In addition, Native Hawaiian adults had the lowest checkup rates of the state's major ethnic groups between 2005 and 2009.

### MATERNAL AND INFANT HEALTH

Native Hawaiians have experienced the highest rates of late or no prenatal care and infant mortality among the major ethnic groups in Hawai'i.

The proportion of live births to teenage mothers was about twice as high among Native Hawaiians (16.1 percent) as in the statewide population (8.4 percent).

### HEALTHY LIFESTYLES

Native Hawaiian high school students were more likely than non-Hawaiian students to be overweight (15.4 versus 12.7 percent) or obese (16.6 versus 12.0 percent).

The prevalence of overweight and obesity among Native Hawaiian adults (76.5 percent) exceeded the statewide average (57.5 percent) in 2009.

### RISK BEHAVIORS

Native Hawaiian high school students were more likely than their non-Hawaiian peers to have sexual intercourse, drink alcohol, and try marijuana before age thirteen.

Among adults in Hawai'i, Native Hawaiians were the most likely of the major ethnic groups to smoke cigarettes, abuse alcohol, and engage in activities that increase the risk of HIV infection.

### DISEASE

The prevalence of asthma among Native Hawaiian children (24.7 percent) was higher than the statewide average (17.9 percent) in 2009. Similarly, the asthma rate among Native Hawaiian adults (26.7 percent) was the highest among the major ethnic groups in the state.

Native Hawaiian men were the most likely of the state's major ethnic groups to be diagnosed with lung cancer, while Native Hawaiian women were most likely to be diagnosed with breast or lung cancer.

The diabetes mortality rate among Native Hawaiians (130.6 per 100,000) was nearly twice the statewide average (70.3 per 100,000).

The heart disease mortality rate among Native Hawaiians (135.4 per 100,000) greatly exceeded the statewide average (81.3 per 100,000).

### MORTALITY

Native Hawaiians suffered the highest mortality rate among the major ethnic groups in the state at 857.9 deaths per 100,000 in 2005, compared with 626.2 deaths per 100,000 statewide.

## KEY IMPLICATIONS

Physical well-being remains an area of significant challenge for the Native Hawaiian population. The high cost of medical services and lack of insurance continue to affect access to healthcare, which impacts the progression and prognosis for chronic diseases. Similarities in the health indicators of Native Hawaiian teens and adults suggest that patterns of behavior established early in life are critical. As individuals, communities, and organizations that serve Native Hawaiians seek to preserve recent gains and accelerate Native Hawaiian well-being, affordable healthcare and community-based outreach and educational programs will be essential.

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## CHAPTER FOUR INTRODUCTION

Physical well-being is defined broadly within this report to encompass not just the health of one's body but also the conditions—both biological (e.g., the presence of disease) and social (e.g., the accessibility of healthcare)—under which we make decisions that affect our physical welfare. At a time when medical research is increasingly finding that health outcomes are shaped, in part, by factors outside of the body, an examination of access to critical health resources and of the quality and consequences of our lifestyle choices (e.g., dietary habits, exercise routines, and risk behaviors like smoking and drug use) is critical to understanding physical well-being.

The relationship between physical well-being and education is strong. Like material and economic well-being, physical health and education are tied together in a mutually reinforcing, intergenerational cycle (Currie 2008). Physical health affects educational outcomes—as in the negative impact of asthma on student attendance (Milton et al. 2004; Moonie et al. 2008) and the negative correlation between childhood weight problems and student achievement and behavior (Shore et al. 2008; Datar and Sturm 2006). Conversely, research shows that education has a significant positive impact on health outcomes, with additional years of education correlated with lower mortality and a reduced risk of chronic illnesses like heart disease and diabetes (Silles 2009; Kemptner, Jürges, and Reinhold 2011; Cutler and Lleras-Muney 2006).

Analyses in this chapter show that physical well-being continues to be an area of concern for the Native Hawaiian community. Many of the positive developments in Native Hawaiian health parallel national trends and progress—including significant decreases in rates of smoking, teen pregnancy, infant mortality, and unwanted pregnancies. However, we see less evidence of gains made in relation to the broader state population or of progress that is specific to the Native Hawaiian community. Native Hawaiians therefore remain disadvantaged in key indicators of physical well-being, including access to healthcare, smoking and alcohol consumption, weight problems, infant mortality, and deaths related to heart disease, diabetes, and cancer.

However, policy changes at the national level, such as passage of the Patient Protection and Affordable Care Act of 2010<sup>1</sup> and the growing focus on preventive medicine, signify a trend toward increased access to quality health services among disadvantaged populations like Native Hawaiians. Such changes in the policy climate, coupled with a growing public awareness about health risk behaviors and medical advances improving the treatment of chronic illnesses, suggest that the direction of Native Hawaiian health may be about to change for the better.

## ACCESS TO HEALTHCARE

The formal infrastructure that supports physical well-being is the healthcare system, a network of public and private entities that mediate access to medical services within a regulatory framework established by state and federal governments. Key players within the healthcare system include patients, healthcare providers, and insurance companies. Medical insurance facilitates access to healthcare, promotes the use of preventive medicine, and enables timely and appropriate treatment for illness and injury.

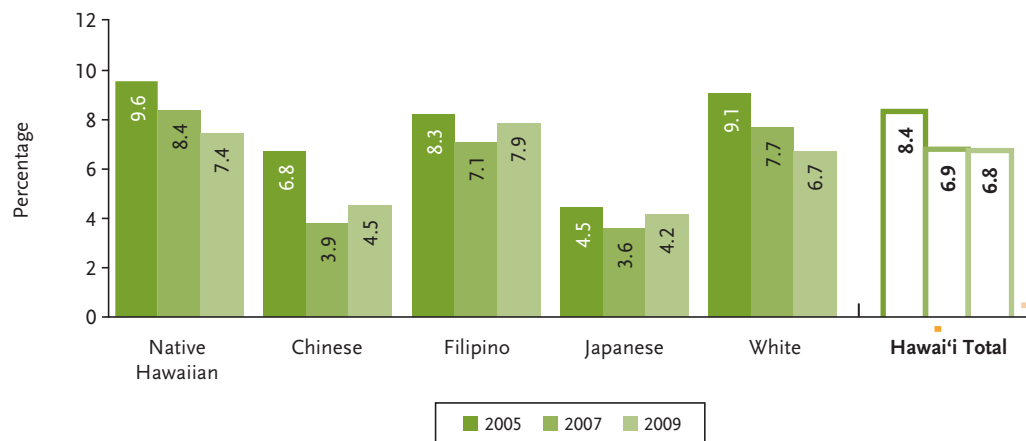
Although Hawai‘i—with its employer-centered healthcare system—has served as a model for policy reforms aimed at expanding health coverage, pockets of uninsured people remain throughout the population, primarily among part-time workers who are excluded from the employer mandate (Buchmueller, DiNardo, and Valletta 2011). Patterns of coverage are likely to change over the coming years as new provisions within the Affordable Care Act of 2010 are phased in. However, current data on uninsured rates from the Behavioral Risk Factor Surveillance System (BRFSS)<sup>2</sup> confirm the existence of ethnic disparities within Hawai‘i’s healthcare system.

1. Patient Protection and Affordable Care Act of 2010, Pub. L. No. 111-148, 124 Stat. 119 (2010).

2. The 2011 administration of BRFSS implemented a significant change in the sampling and weighting methodology: inclusion of cell phone users in the sampling pool, an addition that broadens the survey’s demographic and accounts for the population’s decreasing reliance on landlines. Given this significant methodological shift, the 2011 BRFSS data represent a snapshot in time and do not lend to an apples-to-apples comparison with data from previous years. To make a clear distinction between the different data, figures are used to summarize BRFSS trends in three-year weighted averages covering years 2004 through 2010. Relevant data from 2011 are listed as bullet points and may be treated as a new baseline against which future BRFSS data points can be compared.

**FIGURE 4.1** Trends in adults without medical insurance

[as a percentage of all adult respondents, by race/ethnicity, 3-year weighted averages, selected years, Hawai'i]



Source: Hawai'i Department of Health, BRFSS 2004–10.

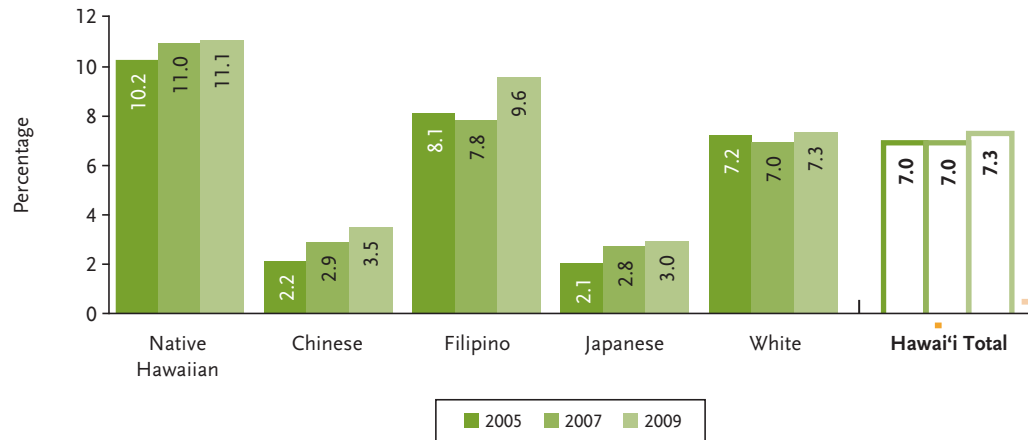
Note: Due to recent changes in methodology, the Hawai'i Department of Health advises against comparing 2011 results with data from previous years. For this reason, figures are used to summarize trends through 2010, and relevant data from 2011 are listed in bullet points. The 2011 data may be treated as a new baseline against which future results can be compared. See Appendix A for more details.

- Uninsured rates within the Native Hawaiian population have steadily declined over time, from a three-year weighted average in 2005 of 9.6 percent to a three-year weighted average in 2009 of 7.4 percent. Among other major ethnic groups in the state, only Whites saw a pattern of consistent decline comparable to that of Native Hawaiians.
- Three-year weighted averages for 2005 and 2007 showed Native Hawaiian adults with the highest uninsured rates, compared with the other major ethnic groups in the state. In 2009, the Filipino uninsured rate exceeded that of Native Hawaiians by 0.5 percentage points.
- More recent data from 2011 (not shown) confirm the persistence of health coverage disparities, indicating that approximately one in seven Native Hawaiian adults (14.5 percent) did not have medical insurance, compared with approximately one in ten adults (9.6 percent) statewide.

A lack of medical insurance may directly affect the healthcare choices and behaviors of individuals and families, which in turn may impact their physical well-being.

Recent data highlight the impact of financial considerations on healthcare choices. Compared with the other major ethnic groups in the state, Native Hawaiians are more likely to skip a needed doctor's visit because of cost and less likely to have received a checkup in the last year.

**FIGURE 4.2** Trends in adults who missed a needed doctor visit within the past year because of cost  
[as a percentage of all adult respondents, by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]



Source: Hawai‘i Department of Health, BRFSS 2004–10.

Note: Due to recent changes in methodology, the Hawai‘i Department of Health advises against comparing 2011 results with data from previous years. For this reason, figures are used to summarize trends through 2010, and relevant data from 2011 are listed in bullet points. The 2011 data may be treated as a new baseline against which future results can be compared. See Appendix A for more details.

- Approximately one in ten Native Hawaiian adults (between 10.2 and 11.1 percent) missed a needed visit to the doctor because of the associated cost.
- Among the major ethnic groups in the state, Native Hawaiians were most likely to have missed a needed visit to the doctor because of cost—a disparity that is consistent across all years of data reported.
- Between 2005 and 2009, the percentage of adults who missed a needed visit to the doctor increased slightly across all major ethnic groups in the state except Whites.
- In 2011 (not shown), the rate of missed medical treatment among Native Hawaiians was 15.6 percent, compared with the statewide rate of 9.5 percent. Native Hawaiians were more than five times as likely as Japanese adults to skip a needed doctor’s appointment.

Data from the Hawai‘i Department of Health suggest that the percentage of Native Hawaiians who receive preventive checkups is lower than the rate among non-Hawaiians.

**FIGURE 4.3** Trends in adults who had a checkup within the past year  
[as a percentage of all adult respondents, by race/ethnicity, 3-year weighted averages, selected years, Hawai'i]



Source: Hawai'i Department of Health, BRFSS 2004–10.

Notes: Due to recent changes in methodology, the Hawai'i Department of Health advises against comparing 2011 results with data from previous years. For this reason, figures are used to summarize trends through 2010, and relevant data from 2011 are listed in bullet points. The 2011 data may be treated as a new baseline against which future results can be compared. See Appendix A for more details.

Due to the lack of comparable data from the 2004 survey administration, the 2005 data point is a two-year weighted average covering 2005 and 2006.

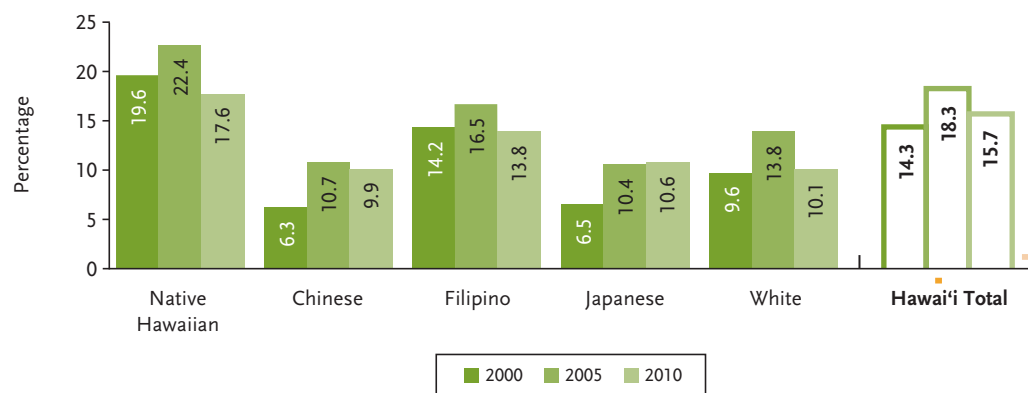
- Native Hawaiian adults had the lowest checkup rates of the state's major ethnic groups across all years shown.
- Between 2005 and 2009, the gap between the Native Hawaiian checkup rate and the statewide total increased from 1.9 percentage points to 5.0 percentage points.
- Three-year weighted averages for 2005 through 2009 suggest a slow but steady decline in the percentage of adults in Hawai'i receiving checkups.
- More recent data from 2011 (not shown) indicate that the percentage of Native Hawaiian adults who had a checkup (59.8 percent) was comparable to the statewide total of 60.0 percent.

## MATERNAL AND INFANT HEALTH

Access to healthcare is critical early in pregnancy, when prenatal care can enable timely identification of problems and provide early support and guidance for expectant mothers. For these reasons, public health officials nationally and internationally are investing in efforts to expand prenatal care access (US Department of Health and Human Services 2009; US Department of Health and Human Services 2012b; Department of Reproductive Health and Research 1999).

Unfortunately, access to quality prenatal care has often varied along racial and ethnic lines, with national data showing that African American, Hispanic, and American Indian women are more likely to receive late or no prenatal care than are their White counterparts. This finding persists even where financial barriers are removed (American Medical Association 1999). Data on prenatal care in Hawai‘i also show disparities in utilization.

**FIGURE 4.4** Trends in late or no prenatal care  
[as a percentage of all live births, by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]



Source: Hawai‘i Department of Health, Vital Statistics Reports 1999–11.

- Rates of late or no prenatal care declined between 2005 and 2010 across all of the state’s major ethnic groups except among Japanese. The greatest decrease (from 22.4 percent to 17.6 percent) is apparent among Native Hawaiians.
- However, since at least 1980 (not shown), Native Hawaiian mothers have been the most likely of the state’s major ethnic groups to receive late or no prenatal care.
- In 2010, approximately one in six new Native Hawaiian mothers (17.6 percent) did not receive prenatal care during the first trimester of pregnancy.

Compounding the risks to maternal and child health among Native Hawaiians is the prevalence of teen pregnancies. Research shows that children born to teen mothers face significant challenges. Compared with their peers, such children are at greater risk for low birth weight and infant mortality, are less prepared for kindergarten, are more likely to suffer from chronic medical problems, and exhibit greater



behavioral issues and lower levels of academic achievement (Hoffman and Maynard 2008). Figure 4.5 shows that new Native Hawaiian mothers are more likely to be teenagers than are their counterparts among the state's major ethnic groups.<sup>3</sup>

**FIGURE 4.5** Trends in births to teenage mothers  
[as a percentage of all live births, by race/ethnicity, 3-year weighted averages, selected years, Hawai'i]



Source: Hawai'i Department of Health, Vital Statistics Reports 1999–09.

Note: Data are not available for Chinese births; nor are data disaggregated by race/ethnicity available for years 2010 forward.

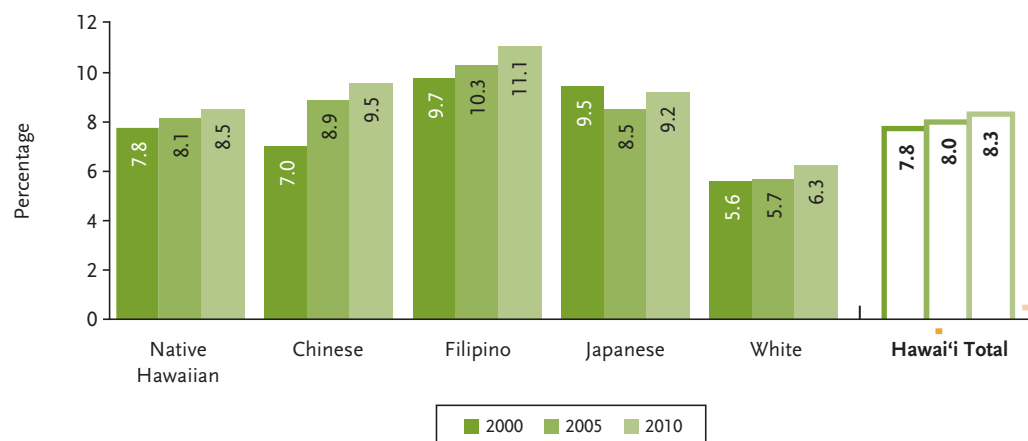
- Native Hawaiians have seen the largest decrease (3.0 percentage points) in the incidence of births to teenage mothers over the last decade among the state's major ethnic groups.
- In 2000, 2004, and 2008, the proportion of live births to teen mothers was about twice as high among Native Hawaiians as in the statewide population.

Despite the progress in maternal and child health reflected in increased utilization of prenatal care and decreased births to teen mothers, the percentage of low-birthweight babies in the Native Hawaiian population has increased slowly but steadily over the last decade, a trend that is mirrored at the national level (Donahue et al. 2010). Low-birthweight newborns face an increased risk of serious medical conditions and death (March of Dimes 2012). Some studies have shown that very low birth weight is associated with below-average IQ scores, lower academic achievement, and increased rates of physical challenges (Hack 2002).

3. Note that these teen birth rates may differ substantially from those reported in *Ka Huaka'i* 2005 because the definition of "teenage" has been expanded to include eighteen- and nineteen-year-old mothers. This broader age range is consistent with definitions used by public health organizations for risk monitoring.

**FIGURE 4.6** Trends in low-birthweight births

[as a percentage of all live births, by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]



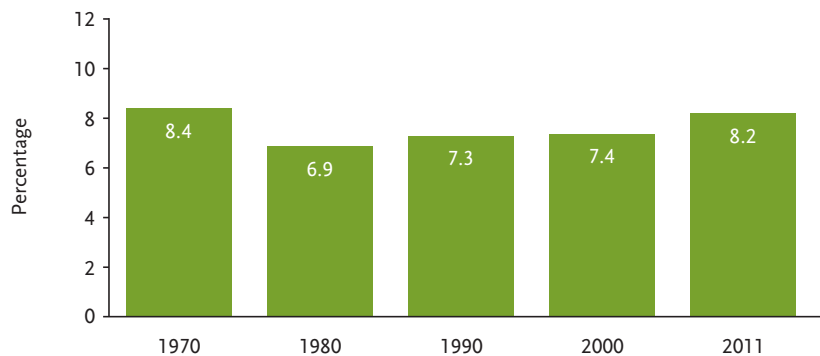
Source: Hawai‘i Department of Health, Vital Statistics Reports 1999–11.

- The incidence of low-birthweight babies within the Native Hawaiian population increased from 7.8 percent in 2000 to 8.5 percent in 2010.
- The increase in low birth weights among Native Hawaiians is consistent with changes at the state level—where rates increased from 7.8 percent in 2000 to 8.3 percent in 2010—and across all major ethnic groups in Hawai‘i except for the Japanese population.
- Although trends in low birth weights were relatively consistent across the major ethnic groups in the state, significant differences are apparent in the actual rates, with Filipino and Chinese newborns most likely to be underweight and White babies the least.<sup>4</sup>

Figure 4.7 provides a longer-term perspective on trends in low birth weight within the Native Hawaiian population, showing that the slow but steady increase in the percentage of underweight newborns began sometime in the late 1970s or early 1980s. This fact may distinguish the Native Hawaiian trend from changes at the national level, where the decline in birth weights seems to have begun in the 1990s (Donahue et al. 2010).

4. One potential reason low-birthweight rates may not exhibit the racial/ethnic disparities seen in other measures of physical well-being is that the thresholds used to identify low-birthweight births are based on weight standards for White babies. Chinese and Japanese newborns are, on average, smaller than White newborns; thus, a weight that is low for a White baby may actually be typical for a Chinese or Japanese baby. This inconsistency has led some researchers to argue for the establishment of sex- and ethnicity-specific thresholds and growth charts (Janssen et al. 2007).

**FIGURE 4.7** Trends in low-birthweight births among Native Hawaiians  
[as a percentage of all Native Hawaiian live births, selected years, Hawai'i]



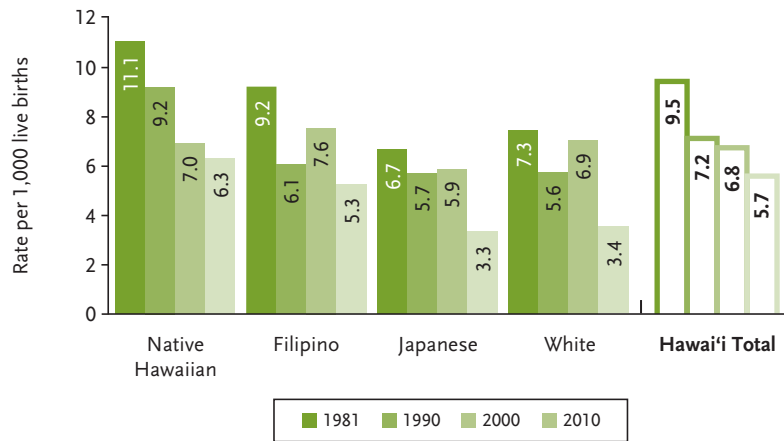
Source: Hawai'i Department of Health, Vital Statistics Reports 1970, 1980, 1990, 1999–11.

- The percentage of low-birthweight Native Hawaiian babies decreased sharply between 1970 and 1980, from 8.4 percent to 6.9 percent.
- Since 1980 the low-birthweight rate among Native Hawaiians has steadily increased, rising to 8.2 percent in 2011—just 0.2 percentage points shy of the 1970 rate.

Despite the increases in low-birthweight babies, infant mortality is in decline across all major ethnic groups in the state, including Native Hawaiians. The decline parallels national trends that show decreased mortality across four of the five leading causes of death among infants, including congenital malformations, short gestation/low birth weight, maternal complications, and sudden infant death syndrome (MacDorman, Hoyert, and Mathews 2013). Research suggests that such decreases may be largely attributable to medical advancements (Cutler and Meara 2001, 1999) and, more recently, to public campaigns discouraging the scheduling of preterm deliveries for nonmedical reasons, a practice that had been increasing in obstetrics (Castillo 2013; Bowser 2013).

**FIGURE 4.8** Trends in infant mortality

[rate per 1,000 live births, by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]



Source: Hawai‘i Department of Health, Vital Statistics Reports 1981, 1990, 1999–11.

Note: Chinese rates are not provided because the number of infant deaths within the Chinese population was too low to be reported by the Hawai‘i Department of Health.

- Infant mortality within Hawai‘i has generally been in decline since at least the 1980s. Among Native Hawaiians, infant mortality rates decreased from 11.1 per 1,000 live births in 1981 to 6.3 per 1,000 in 2010. Statewide rates declined at a comparable pace, from 9.5 per 1,000 live births in 1981 to 5.7 per 1,000 in 2010.
- Despite the gains made over time, Native Hawaiians continue to experience the highest rates of infant mortality among the state’s major ethnic groups. In 2010, the Native Hawaiian rate of 6.3 infant deaths per 1,000 live births was nearly twice the rate among Whites (3.4 deaths per 1,000 live births).

Abortion rates offer an alternative perspective on women’s health, acting as a rough indicator for a number of interrelated health issues, including early sexual activity, availability and use of contraception, and access to reproductive health procedures. Data from the Hawai‘i Department of Health indicate that, over the last decade, the proportion of intentionally terminated pregnancies has decreased across most major ethnic groups in the state.<sup>5</sup> These trends should, however, be interpreted with caution because the cause of the decline in abortions is unclear and may reflect, for example, increased use of contraceptives or decreased access to reproductive health services.

5. The Hawai‘i Department of Health refers to these procedures as “intentional terminations of pregnancy,” rather than the more common term, “abortion.”

**FIGURE 4.9** Trends in abortions

[rate per 1,000 live births, by race/ethnicity, 3-year weighted averages, selected years, Hawai'i]



Source: Hawai'i Department of Health, Vital Statistics Reports 2000–11.

Note: Data for 2000 are an average of 2000 and 2001.

- Abortion rates declined between 2000 and 2010 across all major ethnic groups in the state, including Native Hawaiians, whose rate decreased by 26.1 per 1,000 live births.
- Among the major ethnic groups in the state, Native Hawaiians are the least likely to terminate their pregnancies, with abortion rates that are nearly half the statewide average.

## HEALTHY LIFESTYLES

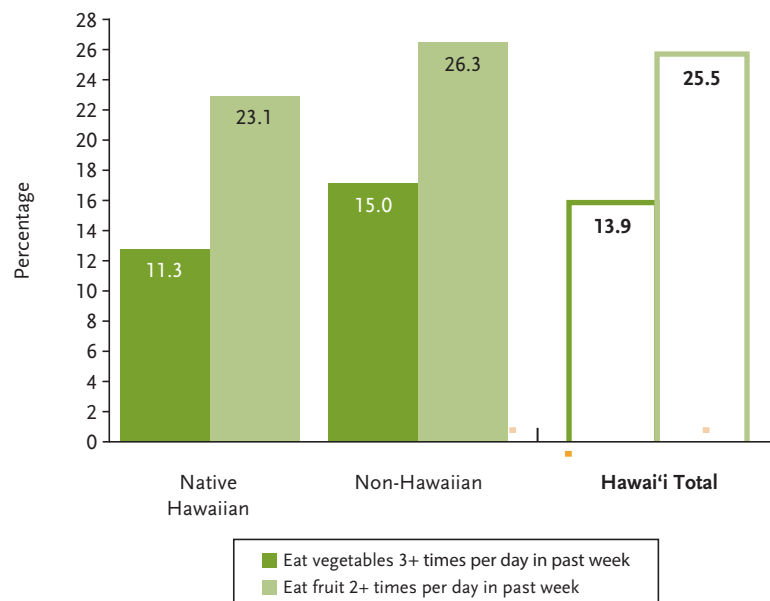
Given some of the early risks to which Native Hawaiian children are subject—including late or no prenatal care and low birth weights—healthy lifestyle choices are a critical counterbalance, laying a foundation of behaviors and habits that promote lifelong physical well-being. Typical indicators of healthy lifestyles include dietary habits, exercise, and weight management. This review of Native Hawaiian lifestyle choices begins with a focus on the fuel for physical health: diet and nutrition.

### Nutrition

Diet and nutrition physically and mentally support the basic functions of one’s body. Nutrition is particularly important for children because it affects academic performance, behavior, and physical and cognitive development (Florence, Asbridge, and Veugelers 2008; Benton 2010; Bellisle 2004). Early dietary habits also lay the groundwork for healthy choices throughout one’s lifetime (Kelder et al. 1994). Among adults, nutrition and dietary choices can mitigate the risk of serious illnesses such as heart disease, diabetes, and cancer (Kastorini et al. 2011), while more immediately improving mood, lowering stress, and increasing cognitive functioning and alertness (Benton and Donohoe 1999; Dallman et al. 2003; Barnes and Joyner 2012; American Academy of Sleep Medicine 2013).

Fruits and vegetables are significant sources of nutrition, and data from the Hawai‘i Department of Health suggest that Native Hawaiian adolescents may eat fewer fruits and vegetables than do their non-Hawaiian peers.

**FIGURE 4.10** Vegetable and fruit consumption among high school students  
[as a percentage of all public high school student respondents, by Native Hawaiian and non-Hawaiian, 2011, Hawai‘i]

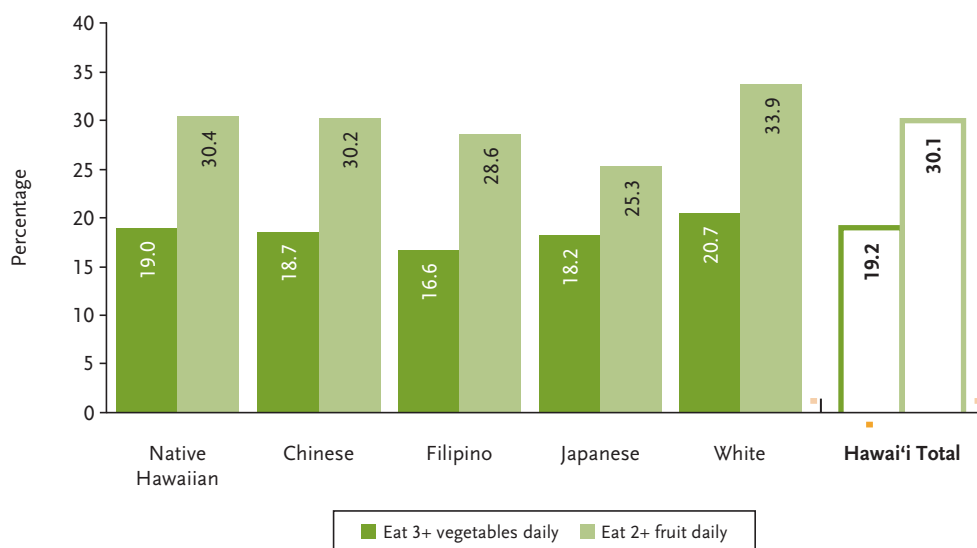


Source: Hawai‘i Department of Health, YRBS 2011.

- Native Hawaiian students were slightly less likely than were non-Hawaiians to include vegetables and fruit in their diet.
- About one in nine Native Hawaiian students (11.3 percent) reported eating vegetables three or more times per day in the past week, compared with one in seven non-Hawaiian high school students (15.0 percent).
- Fewer than one in four Native Hawaiian students (23.1 percent) reported eating fruit two or more times per day in the past week, compared with 26.3 percent of non-Hawaiian students.

Adult responses to a similar survey question suggested that eating habits may converge as the population ages, with the diet of Native Hawaiian adults roughly mirroring that of the other major ethnic groups in the state.

**FIGURE 4.11** Vegetable and fruit consumption among adults  
[as a percentage of all adult respondents, by race/ethnicity, 2011, Hawai'i]



Source: Hawai'i Department of Health, BRFSS 2011.

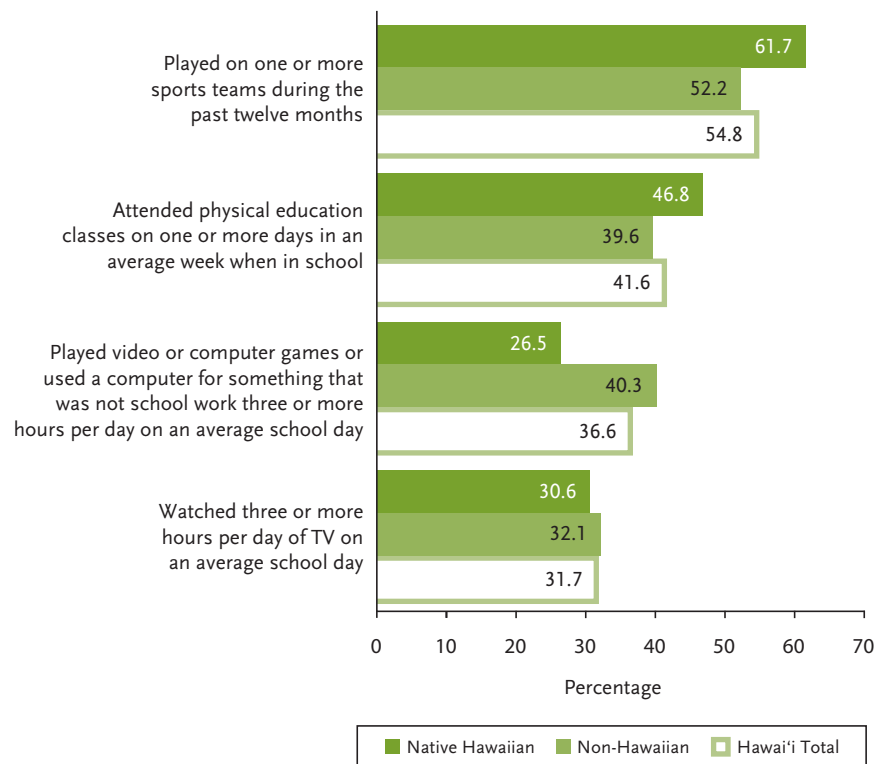
- Approximately one in five Native Hawaiian adults (19.0 percent) reported eating vegetables three or more times per day. This figure is nearly identical to that of the statewide population (19.2 percent).
- Fruit consumption habits were similarly comparable, with 30.4 percent of Native Hawaiians and 30.1 percent of all adults in the state reportedly eating fruits two or more times per day.
- Among the state's major ethnic groups, only Whites were more likely than Native Hawaiians to eat fruits and vegetables multiple times per day.

## Physical Activity

Another aspect of a healthy lifestyle is regular exercise, which is critical for maintaining a healthy weight and has been shown to increase student engagement and academic performance (Hillman et al. 2009; Center for Disease Control and Prevention 2010). Regular exercise alleviates anxiety and depression (Blumenthal et al. 2007; Smits et al. 2011) and reduces the risk of chronic illnesses like heart disease, diabetes, and cancer (Kruk 2007).

Data from the Hawai‘i Department of Health suggest that Native Hawaiian adolescents are more likely to participate in physical activities at school and spend less of their leisure time engaged in sedentary pursuits.

**FIGURE 4.12** Physical activity and sedentary behavior among high school students  
[as a percentage of all public high school student respondents, by Native Hawaiian and non-Hawaiian, by type of activity, 2011, Hawai‘i]



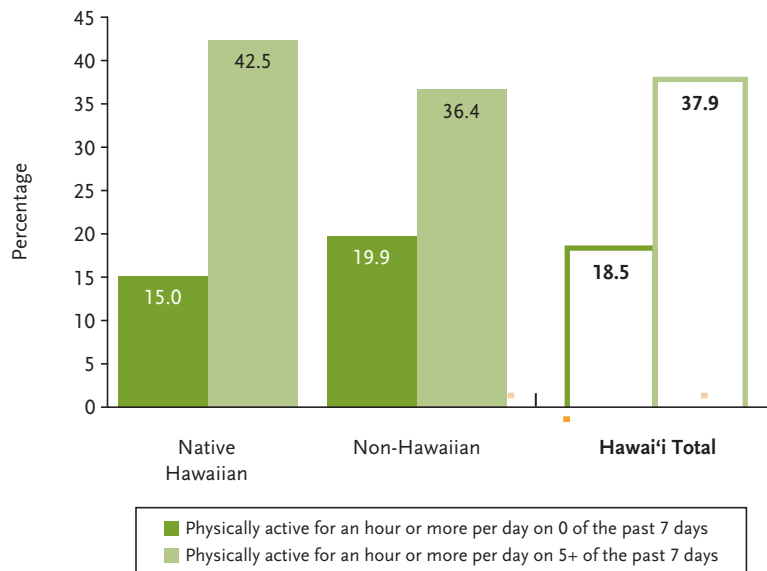
Source: Hawai‘i Department of Health, YRBS 2011.

- Native Hawaiian high school students were more likely to play on sports teams and attend physical education classes than were non-Hawaiian students.
- Three in five Native Hawaiian students (61.7 percent) participate in sports teams, compared with approximately half of all non-Hawaiian students (52.2 percent).
- On an average school day, 26.5 percent of Native Hawaiian students spend three or more hours on their computers or playing video games, compared with 40.3 percent of non-Hawaiians.
- Nearly one in three high school students—both Native Hawaiian and non-Hawaiian—spends three or more hours watching television on the average school day.



Compared with non-Hawaiian high school students, Native Hawaiians are also more frequently engaged in physical activity.

**FIGURE 4.13** Duration and frequency of physical activity among high school students  
[as a percentage of all public high school student respondents, by Native Hawaiian and non-Hawaiian, by number of days with at least 60 minutes of physical activity, 2011, Hawai'i]

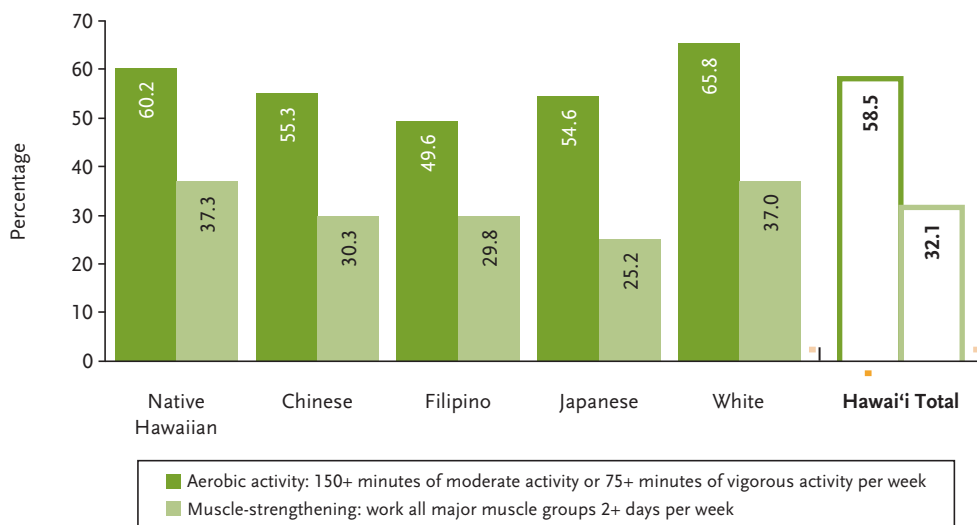


Source: Hawai'i Department of Health, YRBS 2011.

- Overall, Native Hawaiian high school students spent more time engaged in physical activity than non-Hawaiian students.
- Among Native Hawaiian students, 42.5 percent spent an hour or more engaged in physical activity on five days during the past week, compared with 36.4 percent of non-Hawaiians.
- Just 15.0 percent of Native Hawaiians and 19.9 percent of non-Hawaiians reported that they had not spent a full hour engaged in physical activity at any time in the prior week.

Within the adult population, the activity levels of Native Hawaiians are also slightly higher than average. Figure 4.14 shows the percentage of adults who meet recommendations issued by the US Department of Health and Human Services (DHHS) for aerobic and muscle-strengthening activity (US Department of Health and Human Services 2008). Among the major ethnic groups surveyed, only Whites reported levels of physical activity that equaled or exceeded those of Native Hawaiians.

**FIGURE 4.14** Duration and frequency of physical activity among adults  
[as a percentage of all adults respondents, by race/ethnicity, by type of physical activity, 2011, Hawai‘i]



Source: Hawai‘i Department of Health, BRFSS 2011.

- Native Hawaiians had the second highest aerobic activity rates (60.2 percent) among the major ethnic groups in the state. Only Whites were more likely to meet the DHHS aerobic activity recommendations (65.8 percent).
- Native Hawaiians were the most likely of the major ethnic groups in Hawai‘i to meet the DHHS muscle-strengthening recommendations. More than one in three Native Hawaiian adults (37.3 percent) engaged in muscle-strengthening activities two or more times per week, compared with one in four adults (25.2 percent) in the Japanese population.

The similar patterns in adolescent and adult activity levels among Native Hawaiians suggest that lifelong exercise habits may be established early in life, a pattern that is consistent with research (Kelder et al. 1994).

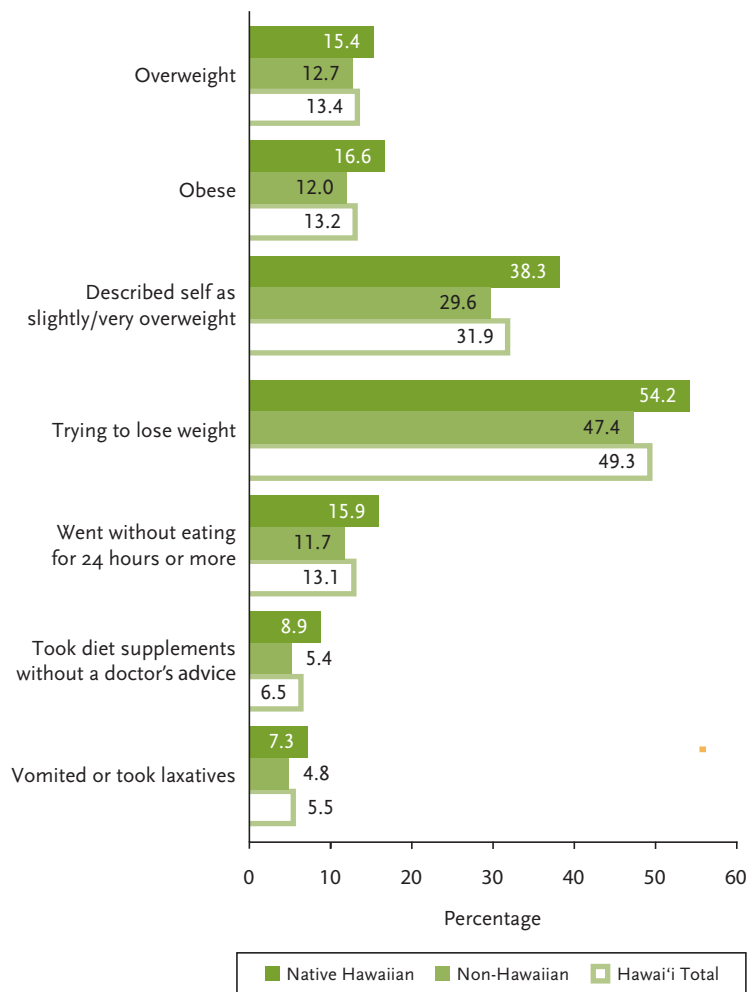
## Weight

Despite the relatively healthy diet and high levels of physical activity reported above, Native Hawaiians are significantly more likely to be classified as overweight or obese than are their non-Hawaiian counterparts. Weight issues are typically assessed using the body mass index (BMI), a measure that gauges weight relative to height. However, a growing number of experts argue that BMI may be a poor indicator of weight problems because it does not directly measure body fat or waist size, and fails to account for differences in bone and muscle mass. BMI may, therefore, inappropriately classify people as overweight or obese based on variations in their athleticism, age, and even ethnicity—all of which are associated with differences in bone and muscle mass (Nightingale et al. 2011; Cawley and Burkhauser 2006; Brooks et al. 2007). Despite these limitations, BMI remains the most common indicator of healthy body weight because of the simplicity with which the data can be collected and the measure calculated.

Based on BMI, Native Hawaiians are more likely to be considered overweight or obese than are the other major ethnic groups in the state. This disparity puts Native Hawaiians at an increased risk for serious illnesses such as heart disease, diabetes, and cancer (US Department of Health and Human Services 2012a). Being overweight may also impact the social, emotional, and educational outcomes of children (Janssen et al. 2004; Neighmond 2010; Edmunds 2008; Datar and Sturm 2006; Shore et al. 2008).

**FIGURE 4.15** Weight issues among high school students

[as a percentage of all public high school student respondents, by Native Hawaiian and non-Hawaiian, 2011, Hawai'i]

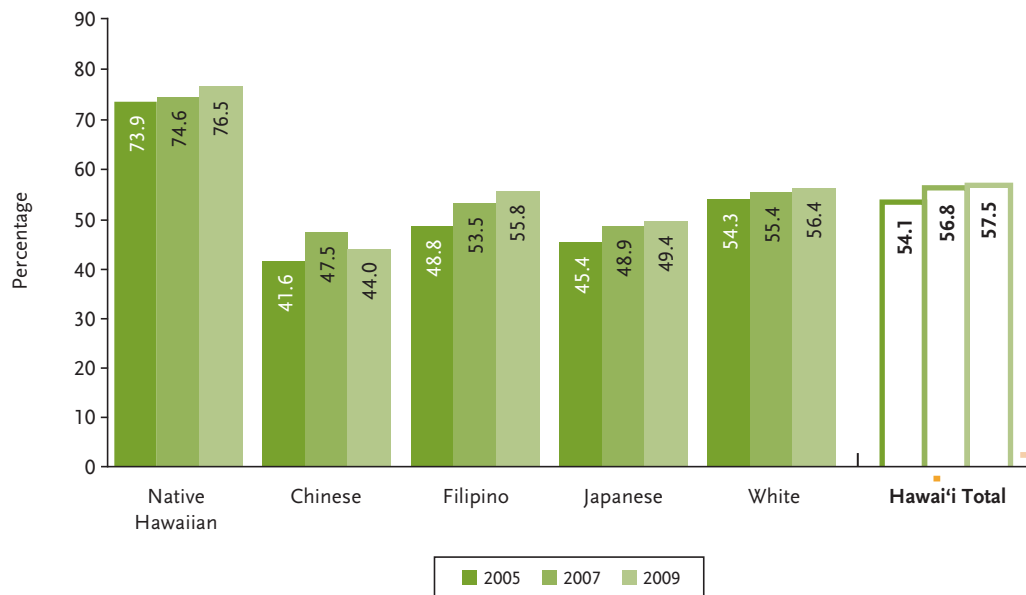


Source: Hawai'i Department of Health, YRBS 2011.

- Based on national height and weight guidelines, Native Hawaiian high school students were more likely than their non-Hawaiian peers to be overweight (15.4 percent versus 12.7 percent) or obese (16.6 percent versus 12.0 percent).<sup>6</sup>
- Native Hawaiian students were also more likely than their non-Hawaiian counterparts were to describe themselves as being slightly or very overweight.
- The majority of Native Hawaiian high school students (54.2 percent) reported that they were trying to lose weight, compared with 47.4 percent of non-Hawaiian students.
- Native Hawaiians were more likely than their non-Hawaiian peers were to employ unhealthy or dangerous weight loss strategies such as fasting for at least twenty-four hours, taking diet supplements or laxatives, or vomiting.

Weight issues among adolescents often worsen with age (Kelder et al. 1994; Serdula et al. 1993), resulting in widespread obesity within the adult population. According to the Hawai‘i Department of Health’s BRFSS, more than half of all adults across Hawai‘i are overweight or obese, with Native Hawaiians represented at higher rates.<sup>7</sup>

**FIGURE 4.16** Trends in overweight and obesity among adults  
[as a percentage of all adult respondents, by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]



Source: Hawai‘i Department of Health, BRFSS 2011.

6. Adolescents are considered overweight if their BMI is between the 85th and 95th percentile for their age and sex. Adolescents with a BMI at the 95th percentile or higher are considered obese.

7. Adults are considered overweight if their BMI is between 25 and 30; a BMI of 30 or higher indicates obesity.

- The prevalence of weight problems and obesity among Native Hawaiians consistently exceeded state-wide averages by about 19 percentage points between 2005 and 2009.
- Native Hawaiian rates of overweight and obesity exceeded those of Whites (the group with the second highest rates) by about 20 percentage points and Chinese (the group with the lowest rates) by roughly 30 percentage points.
- Between 2005 and 2009, the prevalence of weight problems increased across nearly all of the major ethnic groups in the state.
- In 2011 (not shown), almost three in four Native Hawaiian adults (74.3 percent) were overweight or obese, compared with slightly more than one in two adults (55.7 percent) statewide. Among most of the other major ethnic groups in the state—Filipino, Japanese, and White—an unhealthy weight was apparent in roughly half the population.

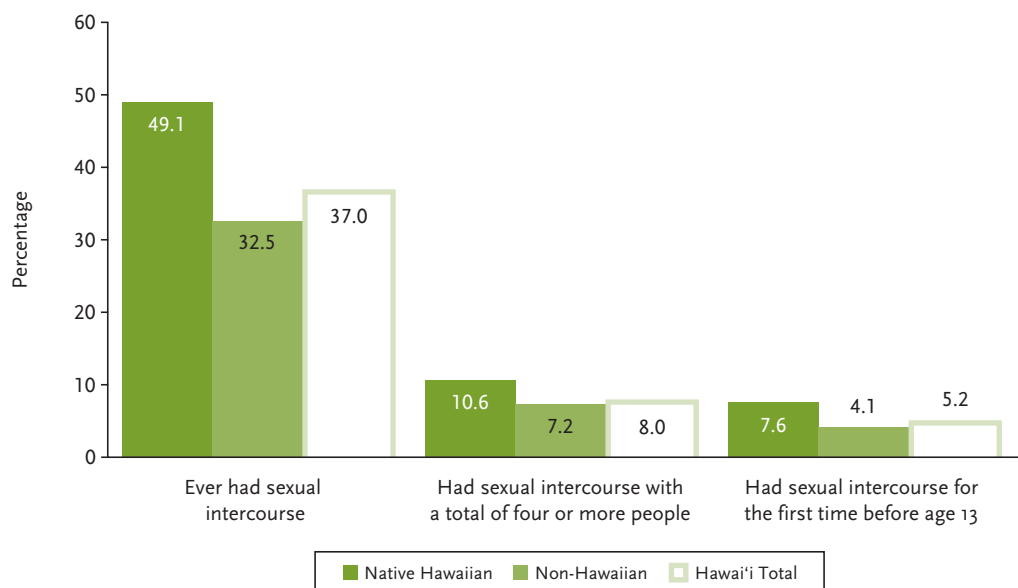
## RISK BEHAVIORS

Just as choices about diet and exercise can significantly impact one’s risk of disease, risk behaviors can have far-reaching consequences for one’s health. Many risk behaviors such as sexual activity, alcohol consumption, and use of tobacco and illicit drugs are more common among Native Hawaiians than in the broader state population.

### Sexual Activity

Data from a state survey of youth show that Native Hawaiian high school students are more likely than their non-Hawaiian peers to be sexually active.

**FIGURE 4.17** Sexual activity among high school students  
[as a percentage of all public high school student respondents, by Native Hawaiian and non-Hawaiian, 2011, Hawai‘i]



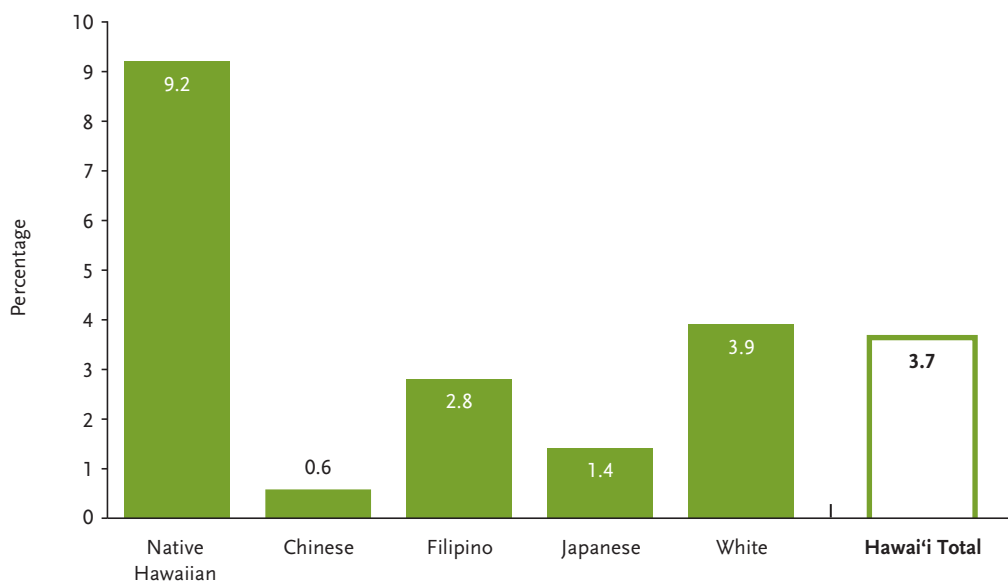
Source: Hawai‘i Department of Health, YRBS 2011.

- Nearly one-half of Native Hawaiian high school students (49.1 percent) have had sexual intercourse, compared with less than one-third of non-Hawaiians (32.5 percent).
- One in ten Native Hawaiian high school students (10.6 percent) has had sexual intercourse with four or more people, compared with only one in fourteen non-Hawaiians (7.2 percent).
- Native Hawaiian high school students were nearly twice as likely as their non-Hawaiian peers were to have had sexual intercourse before the age of thirteen (7.6 percent versus 4.1 percent).

Research suggests that early sexual activity among adolescents may be associated with other high-risk sexual behaviors such as engaging with multiple partners and not using a condom (Coker et al. 1994). Such behaviors increase the risk of pregnancy and infection with HIV/AIDS or other sexually transmitted diseases (Kaestle et al. 2005; Joffe et al. 1992).

Disparities in high-risk activity persist across age groups, with Native Hawaiian adults being 2.5 times as likely as the statewide population to engage in situations associated with an increased HIV risk (e.g., using intravenous drugs, contracting other sexually transmitted diseases, or having anal sex without a condom).

**FIGURE 4.18** Activities that increase HIV risk among adults  
[as a percentage of all adult respondents ages 18–64, by race/ethnicity, 2011, Hawai‘i]

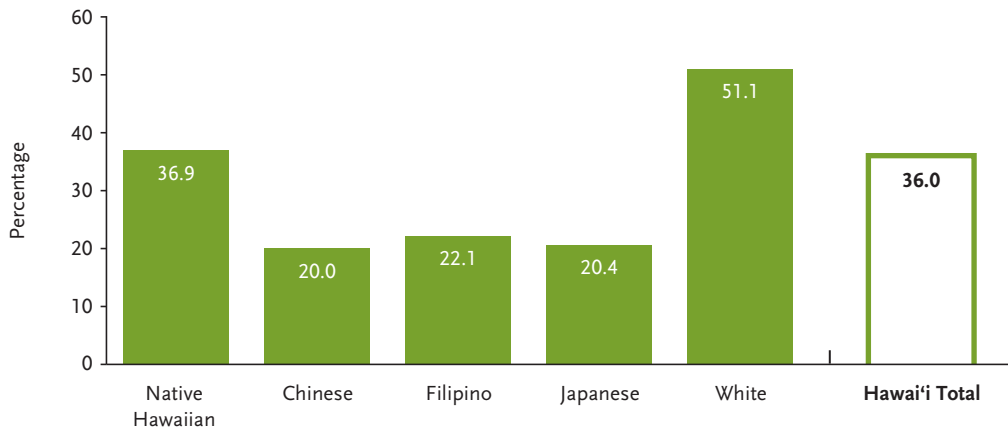


Source: Hawai‘i Department of Health, BRFSS 2011.

- Nearly one in ten Native Hawaiian adults (9.2 percent) has engaged in activities or exhibits other risk factors that greatly increase the likelihood of contracting HIV, compared with about one in twenty-five adults (3.7 percent) across the state.
- Compared with the Japanese population, Native Hawaiian adults are 6.5 times more likely to engage in activities that increase the risk of HIV infection.

Despite being at greatest risk for contracting HIV among the state’s major ethnic groups, Native Hawaiians are not more likely to undergo testing for HIV/AIDS.

**FIGURE 4.19** HIV testing among adults  
[as a percentage of all adult respondents ages 18–64, by race/ethnicity, 2011, Hawai‘i]



Source: Hawai‘i Department of Health, BRFSS 2011.

- More than one-third of Native Hawaiian adults (36.9 percent) have been tested for HIV—a screening rate about the same as that of the state population (36.0 percent).
- Among the state’s major ethnic groups, Whites are the most likely to have been tested for HIV (51.1 percent), even though the proportion of White adults who are at high risk for contracting HIV is comparable with the statewide rate (see Figure 4.18). However, the data may be skewed by the high concentration of military personnel within the White population.

Monitoring of the prevalence and incidence of HIV/AIDS within the population is typically structured to align with federal reporting standards. Such efforts use federal racial categories, which lack the granularity necessary to track HIV/AIDS trends within the Native Hawaiian population. However, a recent analysis conducted by the Hawai‘i Center for AIDS at the University of Hawai‘i–Mānoa’s John A. Burns School of Medicine found that “HIV/AIDS is being diagnosed in Native Hawaiians more than twice as often as Caucasians, and that Native Hawaiians with HIV/AIDS are three times more likely to need hospitalization” (Shelton 2012). Such statistics underscore the need for more refined data collection within the health system and more research on treatment access and utilization within the Native Hawaiian community.

## Smoking

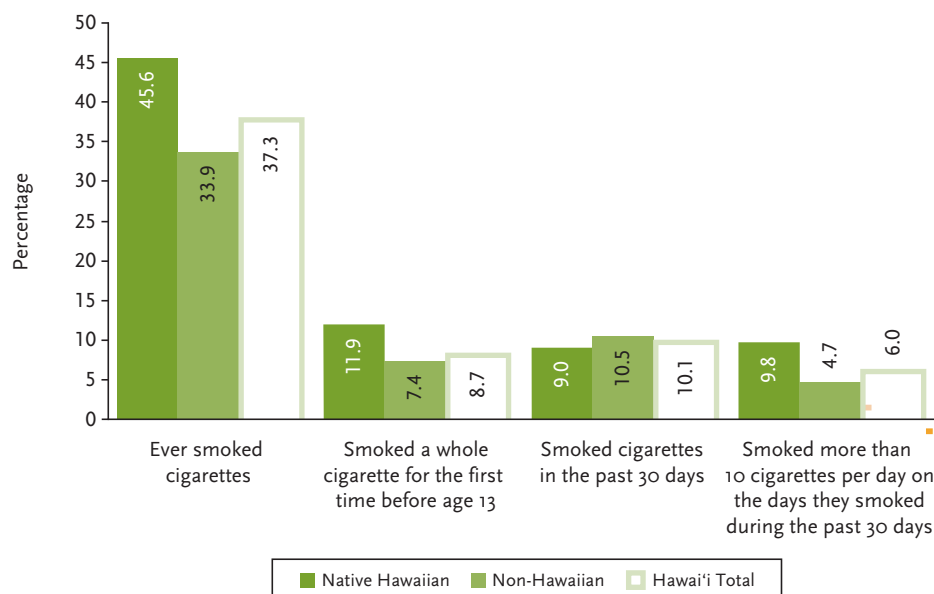
Despite a wealth of literature on the dangers of tobacco (Center for Disease Control and Prevention 2013), smoking remains a common risk behavior, particularly among socioeconomically disadvantaged groups like Native Hawaiians. Research suggests such groups may be driven to unhealthy habits like tobacco use in part because of the stress associated with social inequality and financial uncertainty, the lack of knowledge or doubts about the consequences of health risk behaviors, and the influence of social networks and class politics (Cutler and Lleras-Muney 2010; Pampel, Krueger, and Denney 2010).



Figure 4.20 highlights ongoing disparities in tobacco use between Native Hawaiian high school students and their non-Hawaiian peers. However, the 2011 data fail to show the substantial gains achieved over time across both groups.

**FIGURE 4.20** Smoking among high school students

[as a percentage of all public high school student respondents, by Native Hawaiian and non-Hawaiian, 2011, Hawai'i]



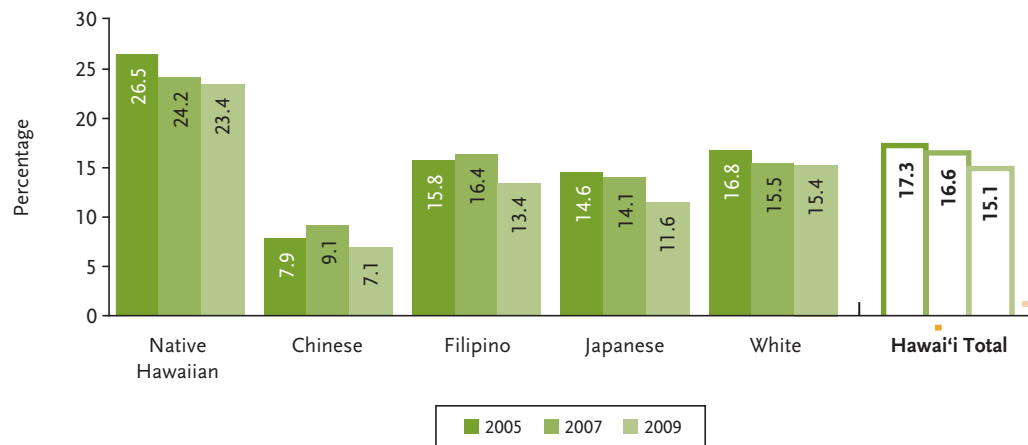
Source: Hawai'i Department of Health, YRBS 2011.

- The percentage of Native Hawaiian high school students who smoked cigarettes in the month prior to being surveyed has steadily declined from 36.5 percent in 1997 to 25.2 percent in 2001 (not shown) and most recently to 9.0 percent in 2011. Significant decreases are also apparent among non-Hawaiian students, although the rate of decline is lower than that seen among Native Hawaiian students.
- Nearly one-half of Native Hawaiian high school students (45.6 percent) reported that they had smoked cigarettes, compared with one-third of non-Hawaiians (33.9 percent).
- Native Hawaiians were more likely than non-Hawaiians were to have smoked a whole cigarette before age thirteen (11.9 percent versus 7.4 percent).
- A comparable percentage of Native Hawaiians and non-Hawaiians reported smoking within the past thirty days (9.0 percent and 10.5 percent, respectively).
- Among students who had smoked, Native Hawaiians were more than twice as likely as were non-Hawaiians to have smoked more than ten cigarettes per day on the days they smoked during the past month (9.8 percent versus 4.7 percent).

Survey results for adults suggest that the disparities in smoking behavior seen among adolescents may persist into adulthood. However, trend data highlight positive gains achieved over time.

**FIGURE 4.21** Trends in smoking among adults

[as a percentage of all adult respondents, by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]



Source: Hawai‘i Department of Health, BRFSS 2004–10.

Note: Due to recent changes in methodology, the Hawai‘i Department of Health advises against comparing 2011 results with data from previous years. For this reason, figures are used to summarize trends through 2010, and relevant data from 2011 are listed in bullet points. The 2011 data may be treated as a new baseline against which future results can be compared. See Appendix A for more details.

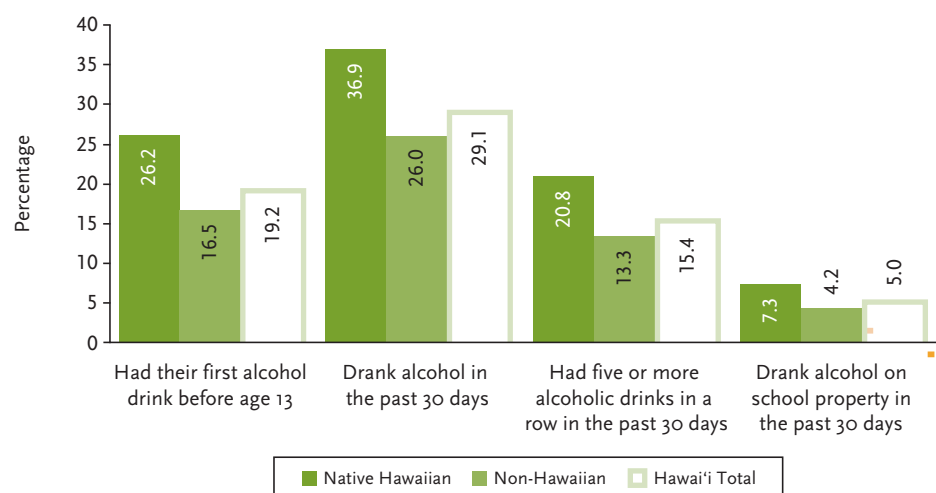
- Trends between 2005 and 2009 suggest that smoking is in slow decline, with Native Hawaiian rates decreasing from 26.5 percent to 23.4 percent.
- Statewide rates during the same period have decreased from 17.3 percent to 15.1 percent.
- Since 2005, rates of smoking among Native Hawaiian adults have consistently exceeded statewide rates by more than 7 percentage points.

## Alcohol

Alcohol consumption is not consistently monitored as a risk factor because, in moderate amounts, it may have a positive effect on the physical health of adults. However, data show that dangerous alcohol-related behaviors such as underage drinking, binge-drinking, and heavy drinking are more common within the Native Hawaiian community than among non-Hawaiians.

**FIGURE 4.22** Alcohol use among high school students

[as a percentage of all public high school student respondents, by Native Hawaiian and non-Hawaiian, 2011, Hawai'i]

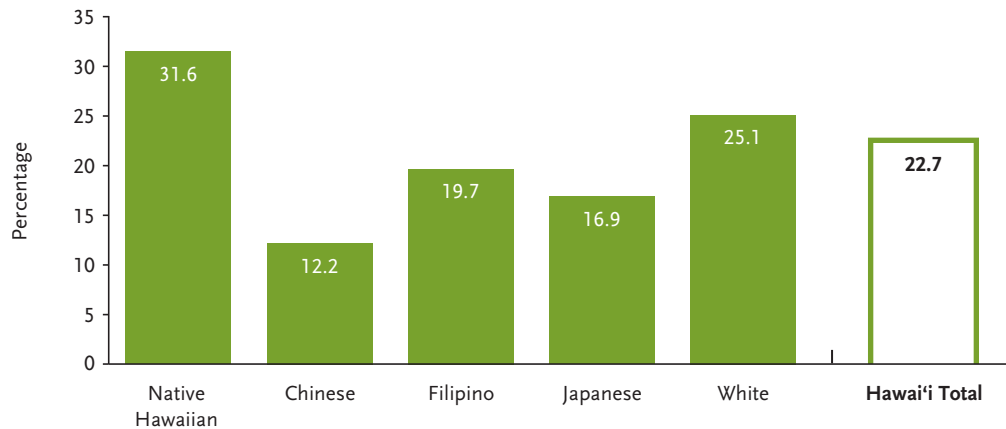


Source: Hawai'i Department of Health, YRBS 2011.

- Native Hawaiian high school students were more likely than their non-Hawaiian peers were to report risk behaviors related to alcohol use, including drinking before age thirteen, having five or more drinks in a row, and drinking alcohol on school property.
- More than one in four Native Hawaiian high school students (26.2 percent) had their first alcoholic drink before age thirteen, compared with 16.5 percent of non-Hawaiians.
- More than one-third of Native Hawaiian high school students (36.9 percent) drank alcohol in the thirty days leading up to the survey, compared with one-fourth of non-Hawaiians (26.0 percent).
- One in five Native Hawaiian high school students (20.8 percent) had five or more alcoholic drinks in a row, compared with fewer than one in seven non-Hawaiians (13.3 percent).

As with other risk behaviors, disparities in alcohol consumption among Native Hawaiian teens are also reflected in the adult population.

**FIGURE 4.23** Binge drinking or heavy drinking among adults  
[as a percentage of all adult respondents, by race/ethnicity, 2011, Hawai‘i]



Source: Hawai‘i Department of Health, BRFSS 2011.

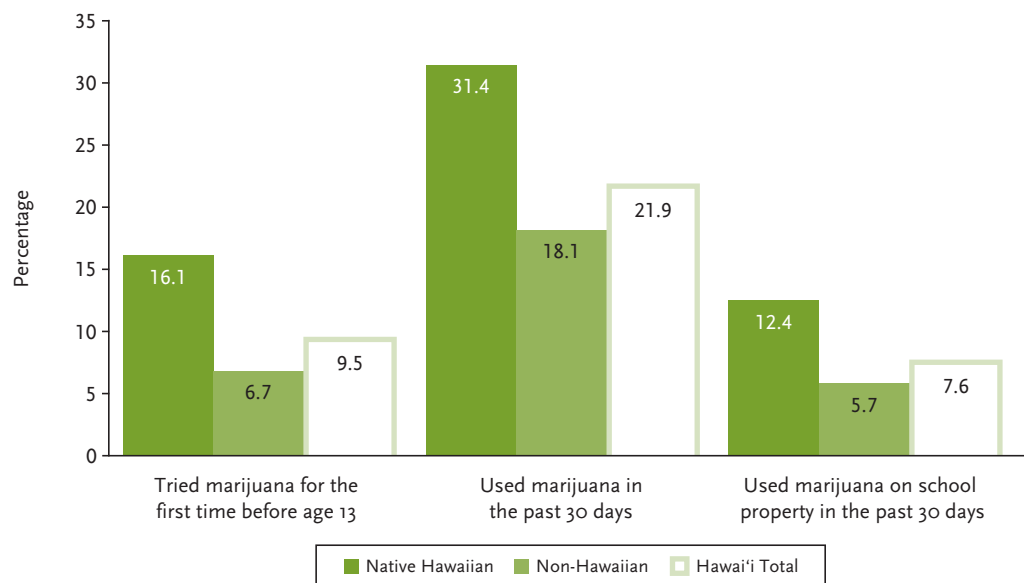
- Nearly one-third of Native Hawaiian adults (31.6 percent) report being heavy drinkers or engaging in binge-drinking within the past thirty days, compared with less than one-fourth (22.7 percent) of the statewide population.<sup>8</sup>
- Native Hawaiians are almost twice as likely as Japanese adults are to have engaged in such high-risk, alcohol-related behaviors (31.6 percent versus 16.9 percent, respectively).

8. In this survey, binge drinking is defined as having had, within the past 30 days, four or more drinks on a single occasion for women and five or more drinks on a single occasion for men. Heavy drinking is defined as having more than one drink per day for women and more than two drinks per day for men.

## Illicit Drugs

The pattern of disparities between racial/ethnic groups changes when we shift the analysis from commonly regulated substances like alcohol and tobacco to illicit drugs. Marijuana, however, is an exception. Patterns of marijuana use among high school students mirror the disparities we see in alcohol and tobacco figures, with Native Hawaiians reporting significantly higher rates of use than non-Hawaiians.

**FIGURE 4.24** Marijuana use among high school students  
[as a percentage of all public high school student respondents, by Native Hawaiian and non-Hawaiian, 2011, Hawai'i]

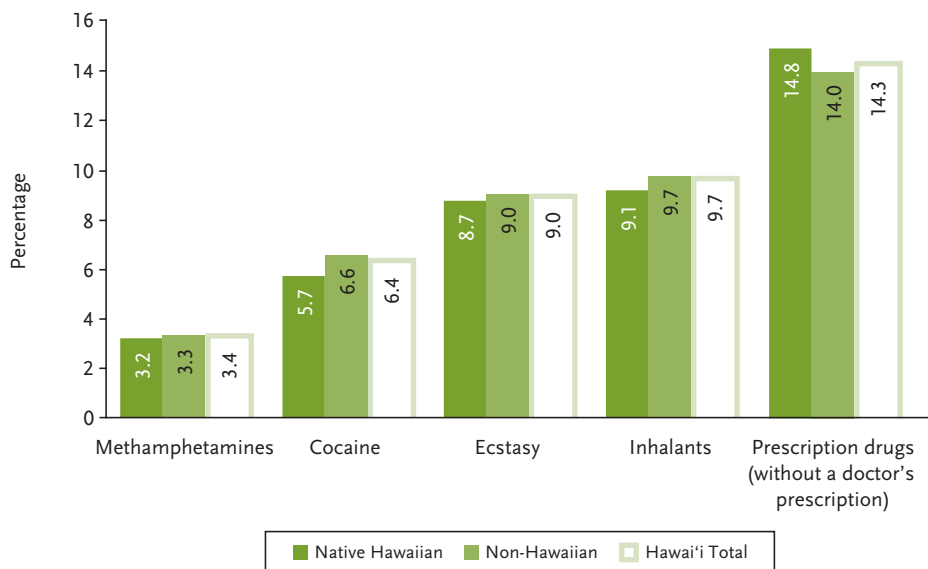


Source: Hawai'i Department of Health, YRBS 2011.

- Native Hawaiians were more than twice as likely as non-Hawaiians to report trying marijuana before age thirteen (16.1 percent versus 6.7 percent).
- Nearly one in three Native Hawaiians (31.4 percent) reported using marijuana in the thirty days leading up to the survey, compared with only one in five non-Hawaiians (18.1 percent).
- Native Hawaiians were more than twice as likely as their non-Hawaiian peers were to report using marijuana on school property (12.4 percent versus 5.7 percent).

In contrast to disparities in marijuana use, Figure 4.25 shows that the proportion of Native Hawaiian high school students who use other illicit drugs (e.g., methamphetamines, cocaine, and ecstasy) is comparable to the rates of use among non-Hawaiians.

**FIGURE 4.25** Illicit drug use among high school students  
[as a percentage of all public high school student respondents, by Native Hawaiian and non-Hawaiian, by drug type, 2011, Hawai‘i]



Source: Hawai‘i Department of Health, YRBS 2011.

- Native Hawaiian high school students reported using methamphetamines, cocaine, ecstasy, inhalants, and prescription drugs not prescribed to them at rates similar to or lower than non-Hawaiian students.
- The only category for which Native Hawaiian drug use exceeded that of non-Hawaiians was the prescription drugs group and, even in that case, the difference was not pronounced (0.8 percentage points).
- About one-third (31.7 percent) of high school students statewide were offered, given, or had purchased methamphetamines, cocaine, ecstasy, inhalants, or prescription drugs while on school property (not shown).

## DISEASE

The disproportionate incidence of health risk factors among Native Hawaiians might be expected to result in an inordinately high likelihood of serious, chronic diseases. The data, however, show mixed outcomes. Prevalence among Native Hawaiians and non-Hawaiians is comparable for several serious illnesses, including coronary heart disease and cancer. However, age-adjusted mortality rates among Native Hawaiians far exceed those of other major ethnic groups in the state.

This contradiction may be explained by the differences in age distributions across ethnic groups and the lower life expectancy of Native Hawaiians. The Native Hawaiian population is dominated by younger age groups that are less affected by chronic illnesses such as diabetes, heart disease, and cancer. When comparing the younger Native Hawaiian population to the older non-Hawaiian population, group statistics may hide the elevated risk of disease for Native Hawaiians. Such disparities become more readily apparent when comparing Native Hawaiians to non-Hawaiians of similar ages.

For this reason, the use of age-adjusted statistics—where population data are weighted to account for differences in the age distribution—is critical for an accurate understanding of racial/ethnic differences in disease risk. Age-adjusted morbidity and mortality rates are common in federal data but, unfortunately, are less common among state statistics that report Native Hawaiians as a separate and distinct ethnic group. Throughout this section, we intentionally provide a mix of data on disease prevalence and mortality, noting for the reader whether data are age-adjusted. We begin with an examination of unadjusted rates of disease prevalence.

### Asthma

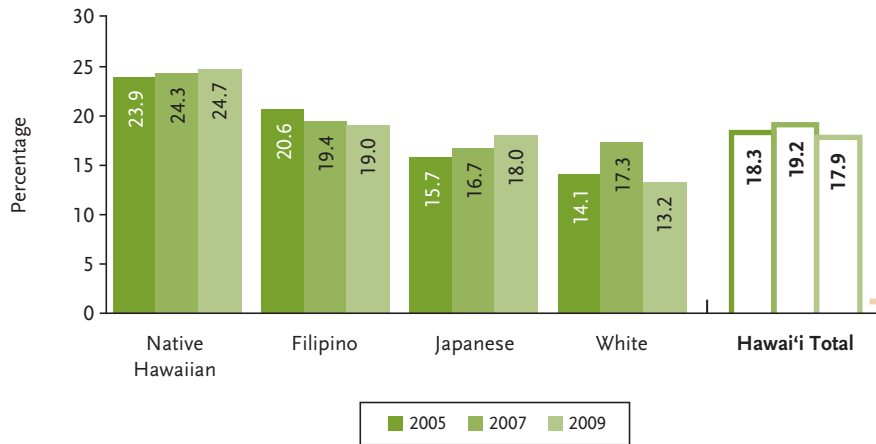
Compared with other types of chronic disease, asthma is commonly seen across all age groups. Age-adjusted rates are, therefore, less critical for understanding the relative prevalence of asthma in different ethnic groups.

Asthma is rarely fatal and is highly manageable with proper treatment and medication (Moorman et al. 2012). Still, asthma decreases the quality of life of those with the condition (Ampon, Williamson, and Marks 2005), increases medical expenses (Corso and Fertig 2009), decreases productivity in adults, and negatively affects educational outcomes in children (Milton et al. 2004).

Data from the Hawai'i Department of Health (Figure 4.26 and Figure 4.27) show that Native Hawaiians are disproportionately prone to asthma, both in childhood and as adults.

**FIGURE 4.26** Trends in asthma among children

[as a percentage of all respondents with children ages 17 and younger, by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]



Source: Hawai‘i Department of Health, BRFSS 2004–10.

Notes: Due to recent changes in methodology, the Hawai‘i Department of Health advises against comparing 2011 results with data from previous years. For this reason, figures are used to summarize trends through 2010, and relevant data from 2011 are listed in bullet points. The 2011 data may be treated as a new baseline against which future results can be compared. See Appendix A for more details.

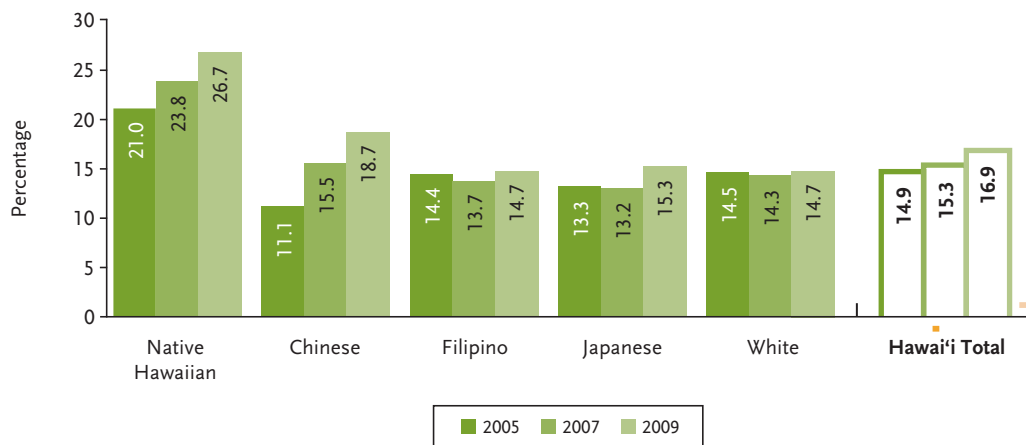
Chinese rates are excluded because sample sizes were too small to yield reliable estimates.

- Data from 2005 to 2009 consistently show that about one in four Native Hawaiian children suffers from asthma.
- Among the state’s major ethnic groups, Native Hawaiian children are most likely to suffer from asthma, with rates that exceed the statewide average by more than 5 percentage points across all years reported.
- In 2011 (not shown), three in ten Native Hawaiian children (29.9 percent) were diagnosed with asthma, compared with fewer than two in ten children (18.0 percent) statewide. The asthma rate among Filipino children (20.3 percent)—which is the second highest among the major ethnic groups in the state—is still almost 10 percentage points lower than the 2011 rate among Native Hawaiians.

Elevated asthma rates in the population of Filipino children are not evident at the adult level. However, the disparities persist among Native Hawaiians as shown in Figure 4.27.



**FIGURE 4.27** Trends in asthma among adults  
[as a percentage of all adult respondents, by race/ethnicity, 3-year weighted averages, selected years, Hawai'i]



Source: Hawai'i Department of Health, BRFSS 2004–10.

Note: Due to recent changes in methodology, the Hawai'i Department of Health advises against comparing 2011 results with data from previous years. For this reason, figures are used to summarize trends through 2010, and relevant data from 2011 are listed in bullet points. The 2011 data may be treated as a new baseline against which future results can be compared. See Appendix A for more details.

- Trend data suggest that asthma may be a growing problem among the Native Hawaiian adult population, with the prevalence of asthma increasing from 21.0 percent in 2005 to 26.7 percent in 2009.
- Among the major ethnic groups in the state, only the Chinese population saw a steeper increase in asthma rates than Native Hawaiians.
- Data from 2011 (not shown) indicate that approximately one in every four Native Hawaiian adults (24.0 percent) suffers from asthma, compared with one in six adults (16.2 percent) statewide.

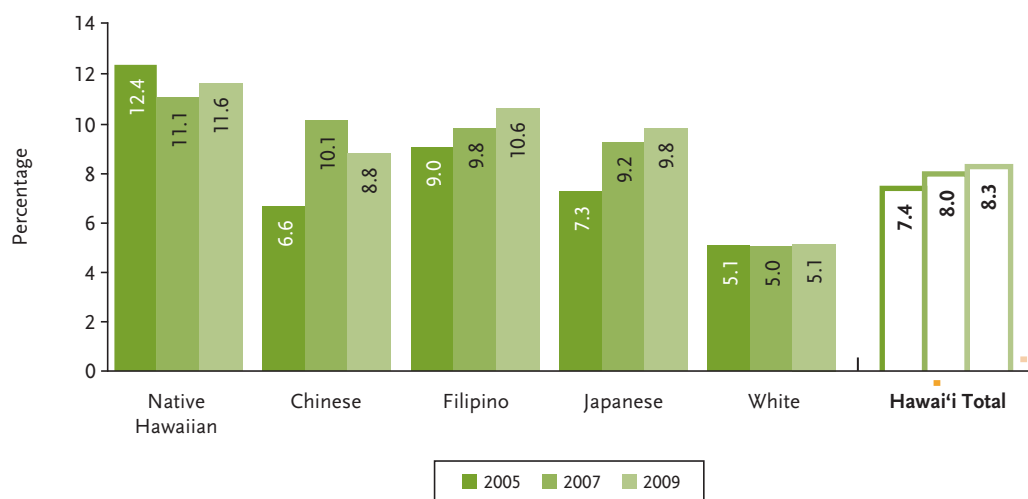
High rates of asthma are consistent with the prevalence of risk factors like smoking and obesity within the Native Hawaiian population (Black et al. 2013; Stapleton et al. 2011). Smoking and obesity also can be associated with more serious illnesses such as diabetes and heart disease, two closely related and often co-occurring conditions.

## Diabetes

Despite positive gains in the last decade, Native Hawaiians are still the most likely of the state’s major ethnic groups to have diabetes.

**FIGURE 4.28** Trends in diabetes among adults

[as a percentage of all adult respondents, by race/ethnicity, unadjusted 3-year weighted averages, selected years, Hawai‘i]



Source: Hawai‘i Department of Health, BRFSS 2004–10.

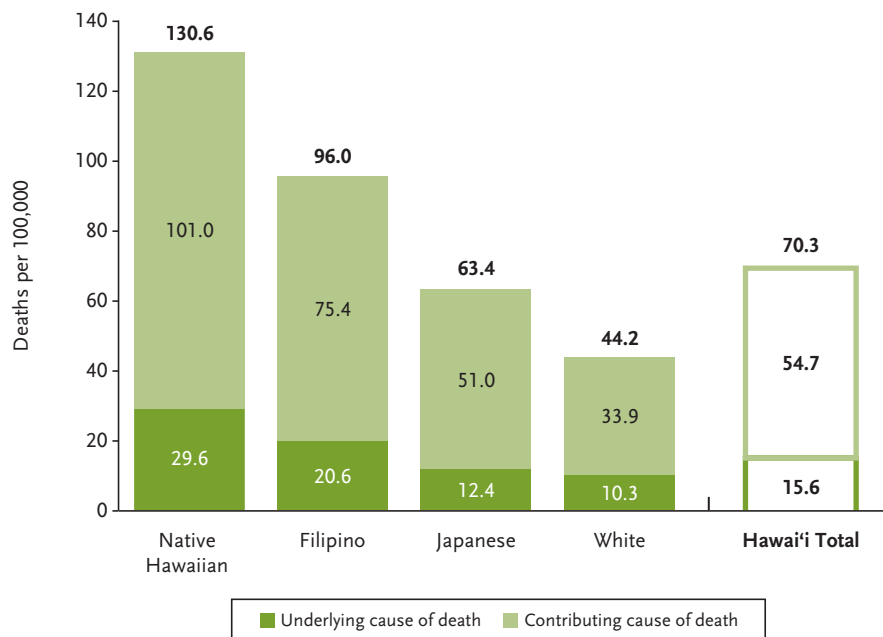
Note: Due to recent changes in methodology, the Hawai‘i Department of Health advises against comparing 2011 results with data from previous years. For this reason, figures are used to summarize trends through 2010, and relevant data from 2011 are listed in bullet points. The 2011 data may be treated as a new baseline against which future results can be compared. See Appendix A for more details.

- Native Hawaiians are the only major ethnic group in the state whose diabetes prevalence decreased between 2005 and 2009 (from 12.4 percent to 11.6 percent). Over the same period, statewide averages increased slightly from 7.4 percent to 8.3 percent.
- However, Native Hawaiian adults have historically had the highest rates of diabetes among the major ethnic groups in Hawai‘i.
- Data from 2011 (not shown) indicate that one in ten Native Hawaiians (9.8 percent) had diabetes, compared with one in twelve adults (8.4 percent) statewide. Among the major ethnic groups, the prevalence of diagnosed diabetes was highest for Japanese adults (12.3 percent) and second highest for the Native Hawaiian population (9.8 percent).

Our understanding of racial and ethnic disparities in chronic illness rates depends to a large extent on the specific types of measures employed. Thus far, based on unadjusted data from a statewide survey of adults, it appears that Native Hawaiians are more likely than the state’s other major ethnic groups to suffer from asthma and diabetes. However, age-adjusted mortality rates highlight the full extent of the disparities in diabetes data and the disproportionate toll the disease takes on the Native Hawaiian population.

**FIGURE 4.29** Diabetes mortality

[deaths per 100,000 people, by race/ethnicity, age-adjusted estimates, 3-year weighted averages, 2004–06, Hawai'i]



Source: Pobutsky et al. 2010.

Note: Chinese rates are excluded because sample sizes were too small to yield reliable estimates.

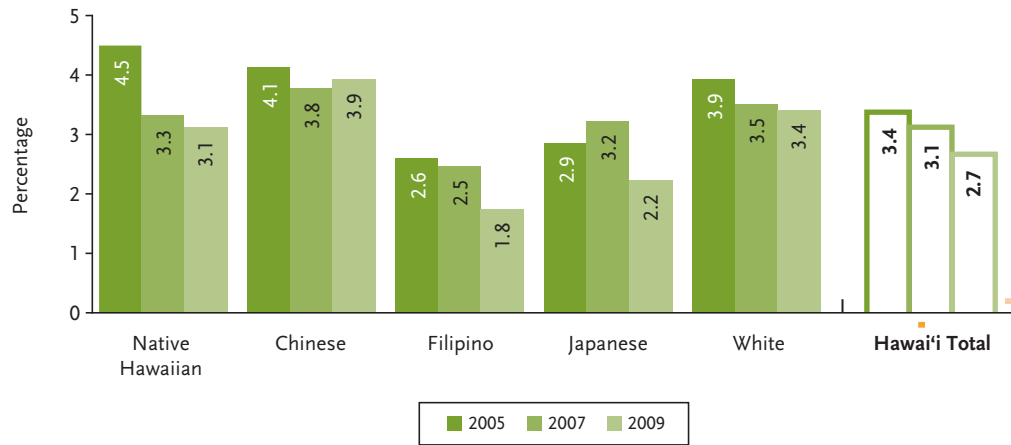
- Native Hawaiians had the highest diabetes mortality rates (underlying, contributing, and total) of the major ethnic groups in the state.
- The total diabetes mortality rate among Native Hawaiians (130.6 per 100,000) was roughly three times that of Whites (44.2 per 100,000) and nearly twice the rate of the statewide population (70.3 per 100,000).

## Heart Disease

One might expect that Native Hawaiians would be disproportionately prone to heart disease due to the prevalence of other health risk factors, such as smoking and obesity, and because of the high rate of co-occurrence between diabetes and heart disease. However, survey data collected by the Hawai'i Department of Health suggest otherwise. The findings show a high prevalence of heart disease (unadjusted for age) in the Chinese and White populations and, more recently, among Japanese adults.

**FIGURE 4.30** Trends in coronary heart disease among adults

[as a percentage of all adult respondents, by race/ethnicity, unadjusted 3-year weighted averages, selected years, Hawai‘i]



Source: Hawai‘i Department of Health, BRFSS 2004–10.

Notes: Due to recent changes in methodology, the Hawai‘i Department of Health advises against comparing 2011 results with data from previous years. For this reason, figures are used to summarize trends through 2010, and relevant data from 2011 are listed in bullet points. The 2011 data may be treated as a new baseline against which future results can be compared. See Appendix A for more details.

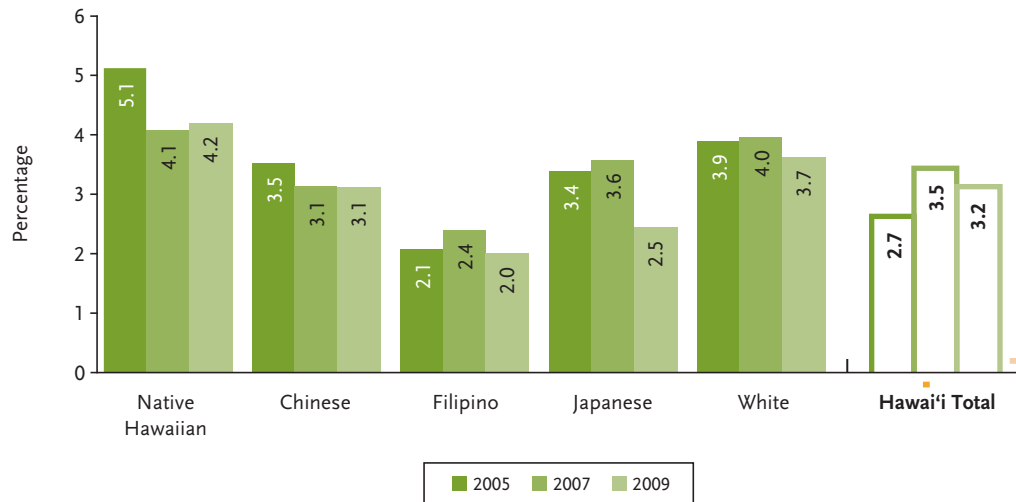
2005 is an average of 2005 and 2006 only; no data for 2004 are available.

- The prevalence of coronary heart disease within the Native Hawaiian community has been trending downward—from 4.5 percent in 2005 to 3.1 percent in 2009—but has remained slightly higher than the statewide average.
- Data from 2011 (not shown) suggest that the rate of coronary heart disease within the Native Hawaiian community (2.7 percent) fell below the statewide average (3.0 percent) and the rates among White (3.2 percent) and Japanese adults (4.4 percent). Among the major ethnic groups in the state, only the Chinese and Filipino populations had lower heart disease rates in 2011 than Native Hawaiians.

Related data on the prevalence of heart attacks align more predictably with risk factor disparities for Native Hawaiians. Between 2005 and 2009, Native Hawaiians reported the highest unadjusted rate of heart attacks among the state’s major ethnic groups.

**FIGURE 4.31** Trends in heart attacks among adults

[as a percentage of all adult respondents, by race/ethnicity, unadjusted 3-year weighted averages, selected years, Hawai'i]



Source: Hawai'i Department of Health, BRFSS 2004–10.

Note: Due to recent changes in methodology, the Hawai'i Department of Health advises against comparing 2011 results with data from previous years. For this reason, figures are used to summarize trends through 2010, and relevant data from 2011 are listed in bullet points. The 2011 data may be treated as a new baseline against which future results can be compared. See Appendix A for more details.

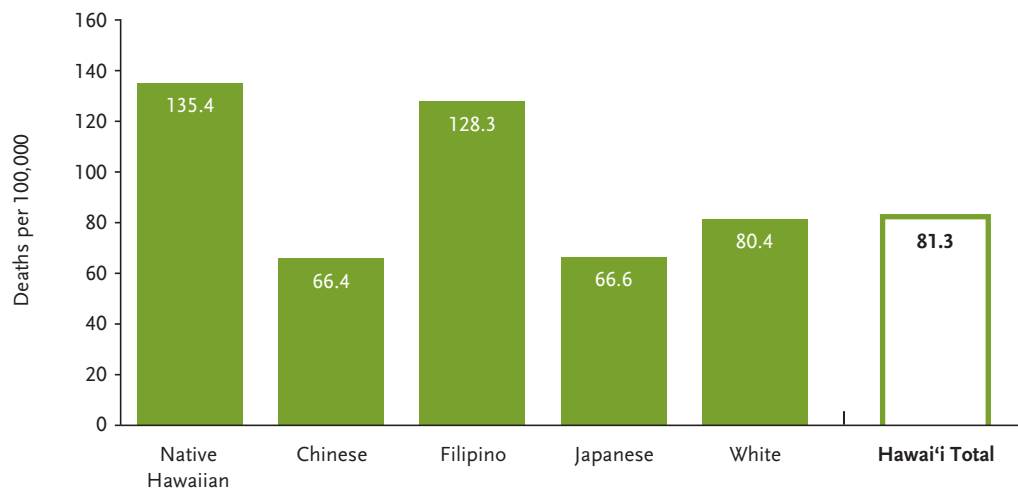
- The prevalence of heart attacks among Native Hawaiians fell from 5.1 percent in 2005 to 4.2 percent in 2009.
- Between 2005 and 2009, however, Native Hawaiians were the most likely of the state's major ethnic groups to report having suffered a heart attack.
- Data from 2011 (not shown) indicate that the reported prevalence of heart attacks among Native Hawaiians (2.3 percent) was lower than the statewide average (3.2 percent) and half the rate among Japanese adults (4.6 percent).<sup>9</sup>

The unadjusted estimates of heart disease prevalence depict mixed results, with the differences between Native Hawaiians and other ethnic groups varying significantly from year to year. Again, age-adjusted mortality rates provide a clearer, more consistent perspective on the impact of heart disease on the Native Hawaiian population.

9. Given the substantial inconsistencies between 2011 heart disease and heart attack rates and those of previous years, we wonder about the accuracy of the statistics generated during this first year of the new cell phone-based survey methodology.

**FIGURE 4.32** Coronary heart disease mortality

[deaths per 100,000 people, by race/ethnicity, age-adjusted estimates, 2005, Hawai‘i]



Source: Balabis et al. 2007.

- Native Hawaiians had the highest mortality rate for heart disease (135.4 per 100,000) of the major ethnicities in the state.
- Heart disease mortality among Native Hawaiians was more than twice the rates of either the Chinese or the Japanese populations (66.4 and 66.6 per 100,000, respectively) and exceeded the statewide average by 54.1 per 100,000.

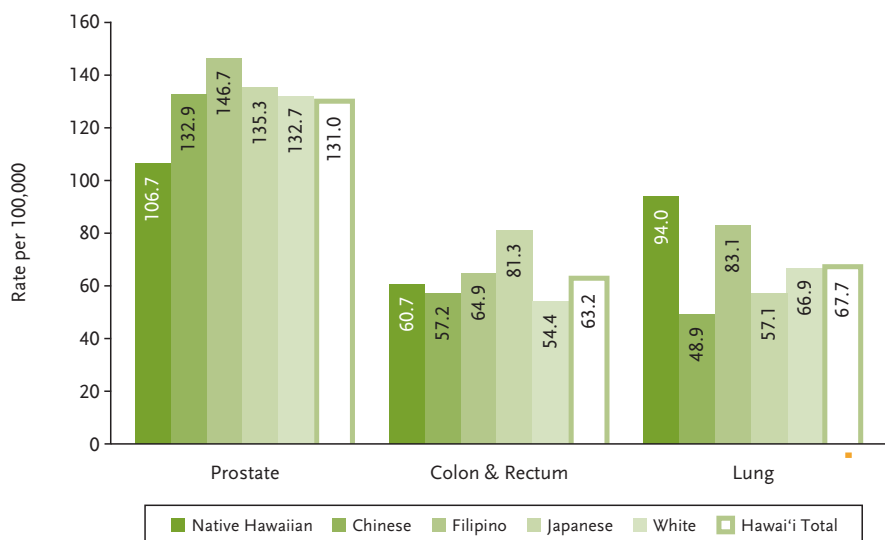
Heart disease prevalence and mortality rates depict a complex model of illness. The data, which suggest that heart disease is no more common among Native Hawaiians than it is within the broader state population—yet heart attacks and deaths related to heart disease are more prevalent—hint at the importance of healthcare as a mediator of disease progression and consequence. Similar patterns are apparent in the cancer data.

## Cancer

Owing to the existence of locally dedicated research programs like the Cancer Research Center of Hawai'i, cancer is the one disease for which we are consistently able to locate incidence rates that are specific to the state's major ethnic groups and adjusted to account for varying age profiles.

Incidence rates for 2000 to 2005 (the last years for which age-adjusted data are currently available) show that Native Hawaiians are more likely to be diagnosed with lung cancer than are the state's other major ethnic groups. Similarly, Native Hawaiian women are more likely than other women in the state to have breast cancer.

**FIGURE 4.33** Cancer incidence among males  
[rate per 100,000 people, by race/ethnicity, by cancer type, 2000–05 (combined), Hawai'i]



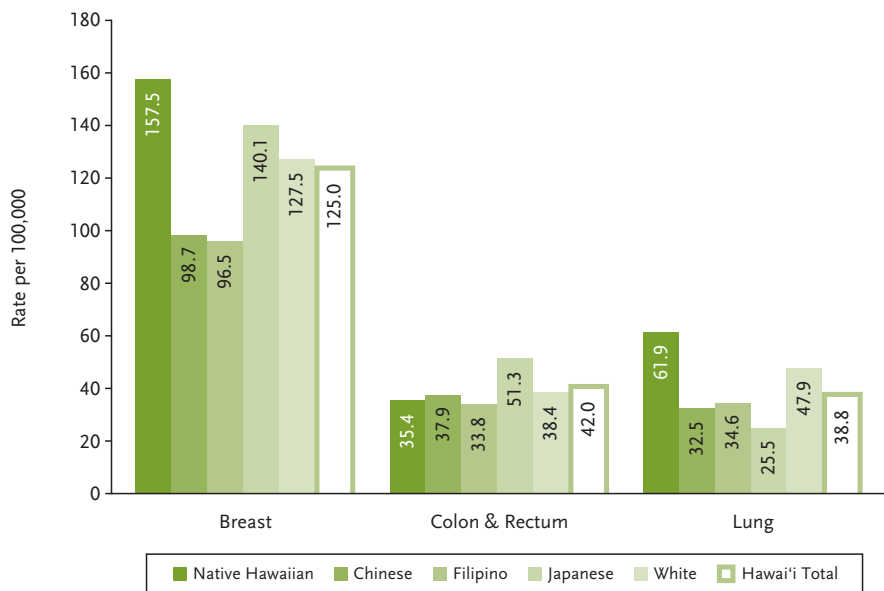
Source: American Cancer Society, Cancer Research Center of Hawai'i, and Hawai'i Department of Health 2010.

- Native Hawaiian men had the lowest incidence of prostate cancer (106.7 per 100,000) and the highest incidence of lung cancer (94.0 per 100,000) compared with the other major ethnic groups in the state.
- The lung cancer incidence rate among Native Hawaiian men (94.0 per 100,000) is nearly twice that of Chinese men (48.9 per 100,000).
- For cancer of the colon and rectum—one of the most frequently diagnosed types of cancer—incidence among Native Hawaiian men (60.7 per 100,000) is lower than the statewide average (63.2 per 100,000).

Racial/ethnic differences in cancer incidence are similar in both men and women (aside from prostate and breast cancer, which are typically gender-specific), with Native Hawaiians most likely to be diagnosed with lung cancer and Japanese most likely to be diagnosed with colorectal cancer.

**FIGURE 4.34** Cancer incidence among females

[rate per 100,000 people, by race/ethnicity, by cancer type, 2000–05 (combined), Hawai‘i]



Source: American Cancer Society, Cancer Research Center of Hawai‘i, and Hawai‘i Department of Health 2010.

- Native Hawaiian women suffered the highest incidence of breast cancer (157.5 per 100,000) and lung cancer (61.9 per 100,000) among the state’s major ethnic groups.
- Lung cancer incidence among Native Hawaiian women exceeded the statewide average (38.8 per 100,000) by 23.1 per 100,000.
- Native Hawaiian women are among the least likely of the state’s major ethnic groups to be diagnosed with colorectal cancer.

Although cancer incidence data hint at underlying disparities across the major ethnic groups in the state, perhaps the most troubling statistics are apparent in the divergence between cancer incidence and mortality rates. As with heart disease and diabetes, racial/ethnic differences in rates of cancer diagnosis do not necessarily mirror differences in the risk of dying from the disease.



**FIGURE 4.35** Cancer incidence and mortality among males

[rate per 100,000 people, by race/ethnicity, all types of cancer combined, 2000–05 (combined), Hawai'i]

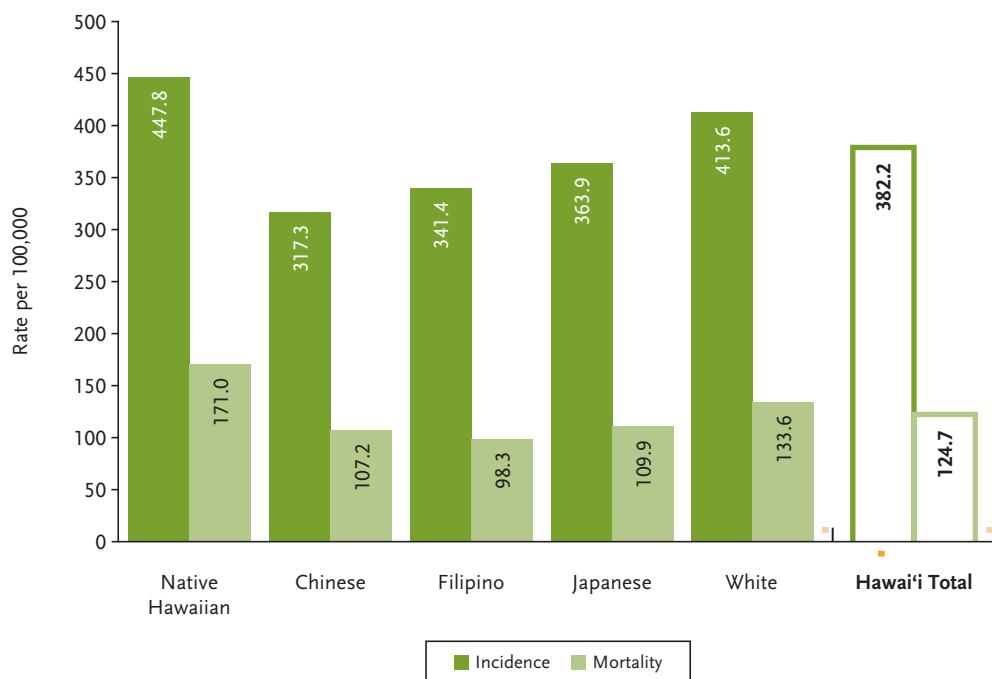


Source: American Cancer Society, Cancer Research Center of Hawai'i, and Hawai'i Department of Health 2010.

- In comparing Native Hawaiian and White males from 2000 to 2005, White men are more likely to be diagnosed with cancer, but Native Hawaiian men are more likely to die from cancer.
- The ratio of cancer mortality to incidence among Native Hawaiian men was approximately 5 to 10 (0.48), meaning that for every two Native Hawaiian men diagnosed with cancer, approximately one died from malignancy.
- By contrast, the statewide mortality to incidence ratio was 4 to 10 (0.40), indicating a greater chance of survival.

**FIGURE 4.36** Cancer incidence and mortality among females

[rate per 100,000 people, by race/ethnicity, all types of cancer combined, 2000–05 (combined), Hawai‘i]



Source: American Cancer Society, Cancer Research Center of Hawai‘i, and Hawai‘i Department of Health 2010.

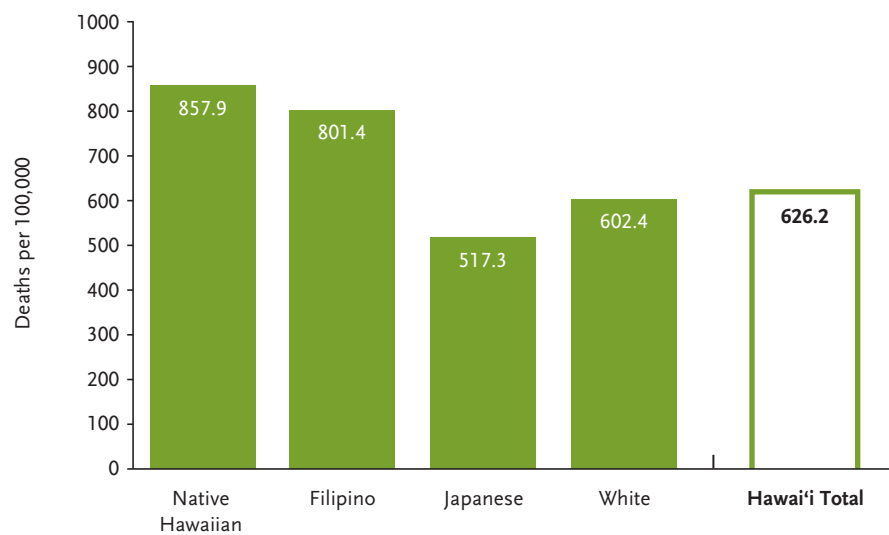
- Native Hawaiian women are the most likely to be diagnosed with cancer and to die from cancer compared with females from the other major ethnicities in the state.
- Between 2000 and 2005, cancer incidence among Native Hawaiian women exceeded the rate among White women by 34.2 per 100,000 and the statewide rate by 65.5 per 100,000.
- Total cancer mortality among Native Hawaiian women exceeded the statewide rate by 46.3 per 100,000.
- The ratio of cancer mortality to incidence among Native Hawaiian women was approximately 4 to 10 (0.38), meaning that for every ten Native Hawaiian women diagnosed with cancer, approximately four died from malignancy—higher than the statewide ratio of 3 to 10 (0.33) but not as disparate as the rates for men shown above.

## MORTALITY AND LIFE EXPECTANCY

The disproportionately high risk of death Native Hawaiians face for specific diseases like cancer, heart disease, and diabetes contributes to an overall mortality rate for Native Hawaiians that is significantly higher than that for non-Hawaiians.

**FIGURE 4.37** Mortality

[deaths per 100,000 people, by race/ethnicity, age-adjusted estimates, aggregated across all causes, 2005, Hawai'i]



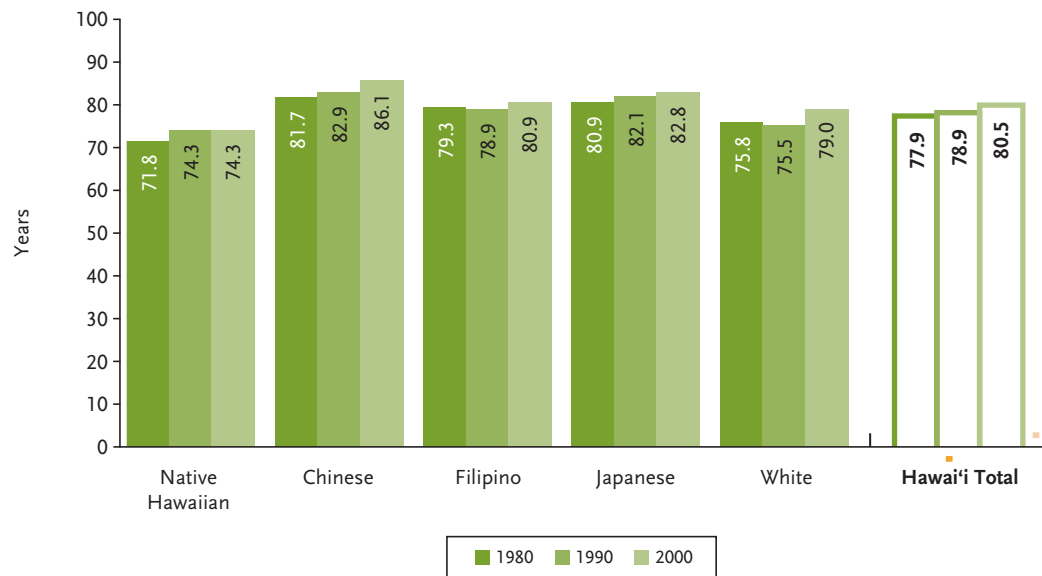
Source: Liu, Blaisdell, and Aitaoto 2008.

Note: Chinese rates are excluded because sample sizes were too small to yield reliable estimates.

- Native Hawaiians suffered the highest mortality rate among the major ethnic groups in the state at 857.9 deaths per 100,000 in 2005, compared with 626.2 deaths per 100,000 statewide.
- In 2005, the mortality rate among Native Hawaiians exceeded that of the Japanese population and the total state population by 340.6 per 100,000 and 231.7 per 100,000, respectively.
- Filipinos are the only major ethnic group in the state with a mortality rate approaching that of Native Hawaiians (801.4 per 100,000 and 857.9 per 100,000, respectively).

Directly related to the high mortality rates among Native Hawaiians is the comparatively low life expectancy within the population.

**FIGURE 4.38** Trends in life expectancy  
[average years, by race/ethnicity, selected years, Hawai‘i]



Source: Braun, Mokuau, and Browne 2010.

- Native Hawaiians have had the lowest life expectancy among the major ethnic groups in the state since at least 1980.
- As of 2000, Native Hawaiian life expectancy was an average of 6.2 years lower than that of the state-wide population.
- Native Hawaiians were the only major ethnic group in the state for whom life expectancy did not increase between 1990 and 2000.

## CONCLUSION

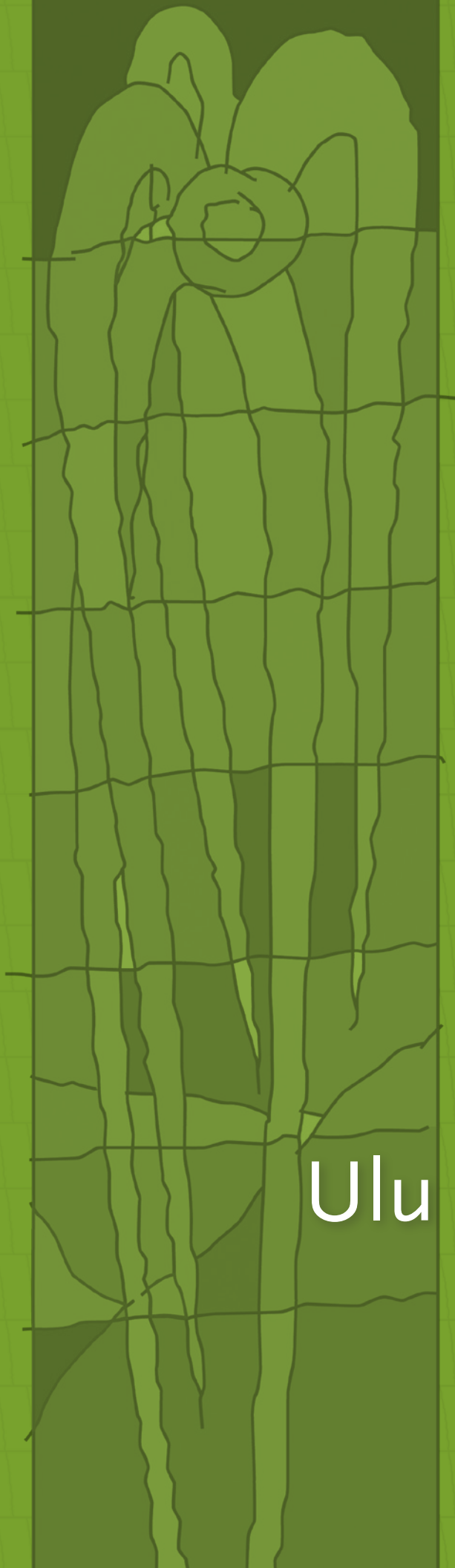
Physical well-being unfortunately remains an area of significant challenge for the Native Hawaiian population. Compared with the other major ethnic groups in the state, Native Hawaiians have limited access to healthcare, are more likely to be overweight or obese, and are more likely to engage in high-risk behaviors such as smoking and excessive drinking. Native Hawaiians also suffer higher mortality rates for infants and those afflicted with chronic illnesses such as heart disease, diabetes, and cancer.

Many of the improvements in Native Hawaiian health—such as decreases in the prevalence of smoking, teen pregnancy, and infant mortality—mirror national trends. This highlights the success of public health initiatives in reaching and supporting all parts of the population, including disadvantaged minorities like Native Hawaiians. However, the parallel nature of these trends also suggests that Native Hawaiians are making minimal gains relative to the other major ethnic groups in the state. Health disparities among ethnic groups have been stubbornly persistent over time, and Native Hawaiians continue to trail non-Hawaiians across a range of physical well-being measures.

Despite the ongoing concerns regarding Native Hawaiian health, there is reason to hope for improvement. In addition to the quantifiable gains described in this chapter, there are also positive influences emerging from external sources. System-level shifts initiated by the Affordable Care Act, technological advances in medicine, and the growing policy emphasis on promoting wellness rather than treating disease provide a backdrop that is conducive to positive change.

In addition, the wealth of data on physical health acts as a critical resource that programs and service providers can use to identify ideal intervention points and strategies. Risk factors such as obesity, early sexual activity, smoking, and excessive alcohol consumption—all of which may be prevented or mitigated—present opportunities for positive intervention. Similarities in the health indicators of Native Hawaiian adolescents and Native Hawaiian adults suggest that patterns of behavior are established early in life and that intervention in a child's formative years is critical.

Finally, a substantial body of research highlights the strong relationship between physical health and the social and economic context, suggesting the need for support services to address the underlying drivers of high-risk behaviors and choices—such as socioeconomic inequalities, lack of information, and peer group pressures—to achieve greater success. The multifaceted and intergenerational nature of well-being, in combination with the complex nature of physical health and disease, means that the path toward improved Native Hawaiian health will require efforts that are both holistic and strategic.



Ulu o ka lā.

‘ELIMA | CHAPTER FIVE

## Cognitive Well-Being

---

GROWTH OF THE SUN.

*Said of the sunrise just as the sun's rim touches the horizon.*

## KEY FINDINGS

### Relative strengths/progress over time

#### PREKINDERGARTEN YEARS

Preschool enrollment among Native Hawaiians has increased. The percentage of Native Hawaiian three- and four-year-olds enrolled in preschool programs increased from 47.5 percent in 2000 to 53.8 percent in 2010.

Kamehameha Schools-supported preschoolers (the only for whom we have access to test data) were less likely to score in the below-average range on a test of vocabulary development than were children in the national norm group: 14.2 percent scored in the below-average range compared with 23.0 percent nationally.

#### KINDERGARTEN THROUGH GRADE 12

Reading and mathematics proficiency rates among Native Hawaiian students (Grades 3, 5, 8, and 10) on the Hawai‘i State Assessment have increased over time.

- Reading proficiency among Native Hawaiian elementary school students increased from 50.8 percent proficient in SY 2006–07 to 61.6 percent in SY 2011–12. Similar gains were seen among middle school students. Increases at the high school level also occurred, although these were smaller.
- Mathematics proficiency among Native Hawaiian elementary school students increased from 33.4 percent proficient in SY 2006–07 to 55.9 percent in SY 2011–12. Again, similar increases were seen at the middle school level. Although smaller than at the elementary and middle school levels, gains in proficiency were seen at high school for Native Hawaiian and non-Hawaiian students.

Reading and mathematics proficiency gaps between Native Hawaiian and non-Hawaiian students have narrowed over time in certain grade levels.

- The reading proficiency gap in elementary school decreased from a high of 15.3 percentage points in SY 2007–08 to 11.6 percentage points in SY 2011–12.
- The reading proficiency gap in middle school decreased from 17.4 percentage points in SY 2006–07 to 11.5 percentage points in SY 2011–12.
- The mathematics proficiency gap in elementary school decreased from 15.8 percentage points in SY 2008–09 to 11.8 percentage points in SY 2011–12.

#### HAWAIIAN-FOCUSED CHARTER SCHOOLS

A longitudinal analysis of proficiency rates in a single cohort of Native Hawaiian students found that students who attend Hawaiian-focused charter schools showed improvement between elementary and middle school that was as strong as or stronger than that of Native Hawaiian students in conventional public schools.

- In reading, the proportion of Native Hawaiian charter school students who were proficient increased from 32.4 percent in Grade 4 to 57.7 percent in Grade 8, completely closing the gap with Native Hawaiian students in conventional public schools.
- In mathematics, the proportion of Native Hawaiian charter school students who were proficient increased from 18.6 percent in Grade 4 to 32.9 percent in Grade 8, an increase of 14.3 percentage points compared to a 12.6 point increase for Native Hawaiian students in conventional public schools.



## Areas of concern

### FAMILY RESOURCES

Research has shown that children with highly educated parents enter school better prepared for academic learning and subsequently achieve better academic outcomes than do children whose parents have lower levels of educational attainment. Native Hawaiian families with children were the least likely of the major ethnic groups in Hawai'i to include a parent with a bachelor's degree or higher.

### PREKINDERGARTEN YEARS

Native Hawaiian children ages 0–4 in Wai'anae, 'Ewa–Waialua, and Hilo–Puna–Ka'ū were underrepresented in the population of Native Hawaiian preschoolers.

Kamehameha Schools-supported preschoolers were less likely to score in the above-average range on a test of vocabulary development than were children in the national norm group: 19.0 percent scored in the above-average range compared with 23.0 percent nationally.

### KINDERGARTEN THROUGH GRADE 12

Reading proficiency rates ranged from a low of 53.4 percent in Grade 5 to a high of 58.6 percent in Grade 10 (compared with 63.1 to 69.7 percent at the same grade levels statewide).

Mathematics proficiency rates ranged from a low of 23.4 percent in Grade 10 to a high of 49.1 percent in Grade 3 (compared with 38.2 to 57.7 percent at the same grade levels statewide).

The mathematics proficiency gap between Native Hawaiian students and statewide averages increased with each successive grade level, from 8.6 percentage points in Grade 3 to 14.8 percentage points in Grade 10.

Fewer than three in four Native Hawaiians completed high school within four years, compared with four in five public school students statewide.

Native Hawaiians in the public school system had the lowest rates of timely graduation of all the major ethnic groups in the state.

### CULTURE-BASED EDUCATION AND CHARTER SCHOOLS

Although longitudinal analyses suggest that they may achieve greater gains over time, as a group, Native Hawaiian students in Hawaiian-focused charter schools lagged behind their peers in conventional public schools. On the whole, the Hawaiian-focused charter school students were less likely to score at the proficient level in reading and mathematics than were their peers in traditional public schools.

### POSTSECONDARY EDUCATION

Compared with Hawai'i's other major ethnic groups, Native Hawaiians were the least likely to be enrolled in college. A total of 25.7 percent of Native Hawaiian young adults were enrolled in college, compared with 35.7 percent statewide.

The gains in bachelor's degree attainment rates among Native Hawaiian students made between 1990 and 2000 have plateaued over the last decade.

## KEY IMPLICATIONS

There are many signs of progress in cognitive well-being over the last decade. Yet Native Hawaiians continue to lag behind their non-Hawaiian peers on key indicators of cognitive well-being, including reading and mathematics achievement, high school graduation, and postsecondary outcomes. Greater understanding of the personal, family, school, social-cultural, and political factors that promote or impede school success for Native Hawaiians is needed to develop programs and initiatives that eliminate disparities in educational outcomes. The identification and dissemination of successful methods used in Hawaiian culture-based education may help pave the way forward.

# 5

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## CHAPTER FIVE INTRODUCTION

Cognitive development is the process by which we make sense of the world. It includes the acquisition of language, the development of literacy and problem-solving skills, and the cultivation of critical thinking.

Cognitive development is highly correlated with the economic, physical, and emotional well-being of individuals (e.g., Reynolds et al. 2011). Families and communities are also healthier when their members make positive, timely strides toward the various milestones of healthy cognitive development. For example, higher levels of parent education are correlated with higher levels of education on the part of their children (Davis-Kean 2005). And, adults with higher levels of education are more likely to engage in service to their communities (Hillygus 2005).

Cognitive development begins long before a child first enters school and reaches far beyond the walls of traditional classrooms. Still, the facilitation and assessment of cognitive development—through pedagogy, curriculum, and school-administered, standardized tests—are a focal point of public and private schools in the United States. For this reason, academic success has become the primary marker of cognitive development in young children and adolescents.

This chapter presents educational outcomes for Native Hawaiians living in Hawai‘i. We begin by examining the educational resources of families and the effect of such resources on children’s educational prospects. From there, we look at school enrollment information, academic outcomes, and other available data in three main areas: prekindergarten, kindergarten to Grade 12, and postsecondary education.<sup>1</sup> The chapter also includes a section on Hawaiian culture-based education, a topic of growing interest that holds great promise for Native Hawaiian students.

To fully understand the multiple factors that influence educational outcomes would require nuanced data and sophisticated analytical models that are beyond the scope of this report. Instead, we use available data to highlight the relationships between educational outcomes and the characteristics of families, students, and schools.

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1. In this chapter, all education data from the US Census Bureau come from the American Community Survey 2006–10 file released in December 2011. The aggregation of five years of data counterbalances the small sample sizes for regional and sociodemographic subpopulations, allowing for more robust estimates of group characteristics. However, this method also reduces sensitivity to changes over time.

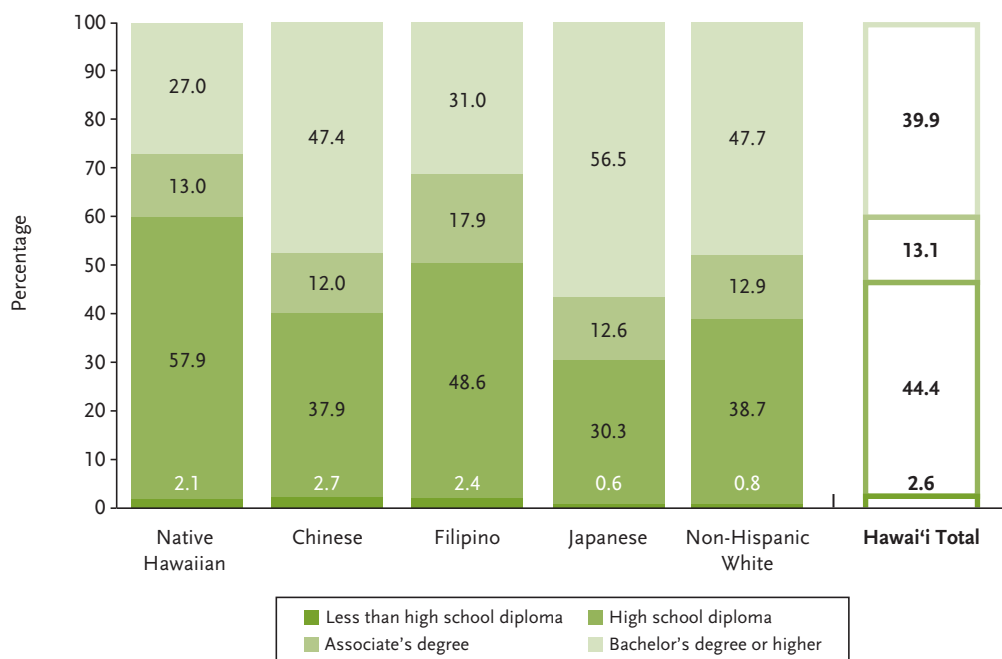
## FAMILY RESOURCES

A popular truism in education is that “parents are a child’s first teachers.” Research has repeatedly demonstrated a strong correlation among parenting styles, family socioeconomic status, and educational outcomes. Using data from the Early Childhood Longitudinal Study, Duncan and Magnuson (2005) investigated the link between socioeconomic status and achievement at the beginning of children’s formal schooling. They identified family income, parental education, family structure, and neighborhood conditions as resources that are directly and significantly correlated with children’s achievement.

Here we present information on the education levels of parents of young children and school-age children. While few adults in Hawai‘i have less than a high school diploma, the rate of college completion varies dramatically across the major ethnic groups. The data suggest that many Native Hawaiian children enter school without the advantages provided by higher levels of parental education.

In previous editions of *Ka Huaka‘i*, households were identified by the race/ethnicity of the head of household. This approach was consistent with the definition employed by the US Census Bureau, but failed to account for the high rates of intermarriage in Hawai‘i and, in particular, in the Native Hawaiian population. In *Ka Huaka‘i* 2014, we changed the approach and identified the race/ethnicity of households by the race/ethnicity of all members of the household. While this “containing” methodology is more inclusive and more accurately reflects the diversity of the Native Hawaiian population, the results are not directly comparable to *Ka Huaka‘i* 2005. Therefore, comparison tables based on the head-of-household method are provided in Appendix B, and the results are explained in bullet points below the following figures.

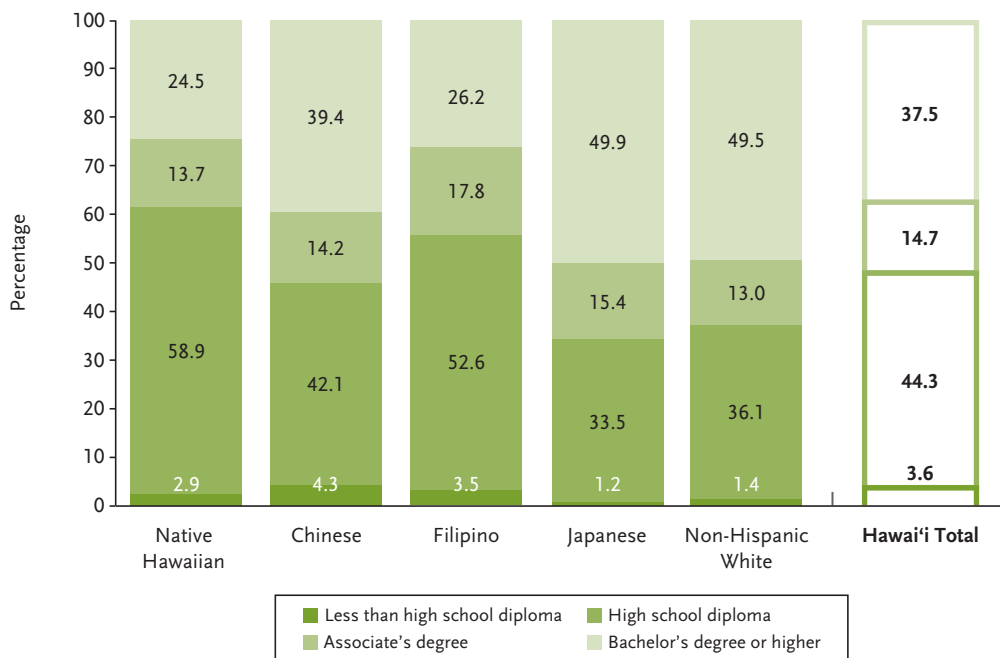
**FIGURE 5.1** Parent’s educational attainment in families with young children  
[as a percentage of all families with own children 4 years and younger, by race/ethnicity within household and by highest degree attained by parents, 2006–10, Hawai‘i]



Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- Among Native Hawaiian families with young children, slightly more than one-fourth (27.0 percent) included a parent with a bachelor's degree or higher. This was the lowest rate among the major ethnic groups in Hawai'i and was two-thirds of the statewide average (39.9 percent).
- Ten-year trends (see Appendix B) show an increase of 2.8 points in the percentage of Native Hawaiian-headed families with young children where at least one parent had a bachelor's degree or higher (21.1 percent in 2000 versus 23.9 percent in 2010).
- The gains in parent educational attainment among families with young children headed by a Native Hawaiian (shown in Appendix B) lagged far behind the statewide increase of 8.2 percentage points (from 31.7 percent in 2000 to 39.9 percent in 2010).

**FIGURE 5.2** Parent's educational attainment in families with school-age children  
[as a percentage of all families with own children ages 5–17, by race/ethnicity within household and by highest degree attained by parents, 2006–10, Hawai'i]



Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- Among Native Hawaiian families with school-age children, about one-fourth (24.5 percent) included a parent who had completed a bachelor's degree or higher.
- Ten-year trends (see Appendix B) show an increase of 7.7 points in the percentage of Native Hawaiian-headed families with school-age children where at least one parent had a bachelor's degree or higher (13.8 percent in 2000 versus 21.5 percent in 2010).
- The gain in educational attainment among Native Hawaiian-headed families with school-age children (shown in Appendix B) was comparable to the statewide increase of 7.8 percentage points (from 29.7 percent in 2000 to 37.5 percent in 2010).

- Among Native Hawaiian-headed families with school-age children, 3.3 percent had parents who did not complete a high school diploma—a decrease of 4.3 percentage points since 2000 (shown in Appendix B) and slightly lower than the state average (3.6 percent).

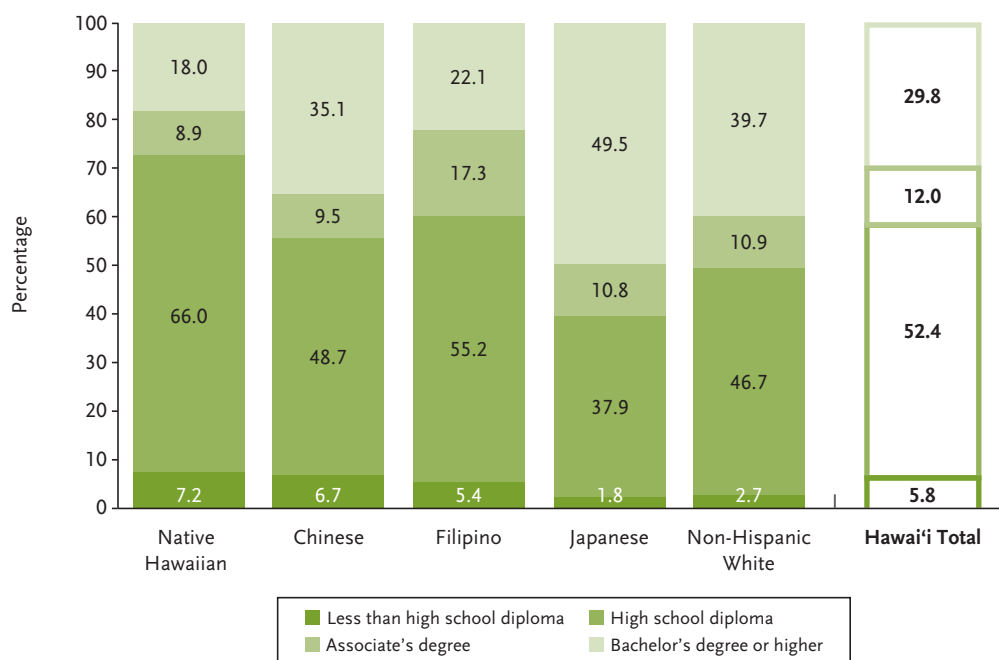
Research shows that children with highly educated parents enter school better prepared for academic learning, with more developed skills in hand, and subsequently achieve better academic outcomes than do children whose parents have lower levels of educational attainment (Davis-Kean 2005, Haveman and Wolfe 1995). Studies also show that children from households with highly educated parents maintain their early academic advantage throughout their school careers (Magnuson 2007b). Since mothers tend to be the primary caregivers in the home—spending more time alone with children in qualitatively different roles than those of fathers or other males in the household—the mother’s level of education is a critical indicator predicting a child’s later academic success (Roska and Potter 2011).<sup>2</sup>

The impact of a mother’s education plays out in the child’s earliest years. Magnuson (2007a) found that mothers who furthered their own education while their children were young (ages six to eight) created a positive impact on their children’s academic achievement that was much larger and more enduring than that of mothers who did so while their children were in the middle years (ages eight and older). Educational policy analysts therefore have advocated for increased focus on early childhood and investments in workforce training and literacy for young mothers and young families.

The following figures show educational attainment levels for mothers with children, demonstrating the need for increased access to higher education for Native Hawaiian mothers.

**FIGURE 5.3** Educational attainment of mothers with young children

[as a percentage of all mothers living with own children 4 years and younger, by race/ethnicity of the child and by highest degree attained, 2010, Hawai‘i]

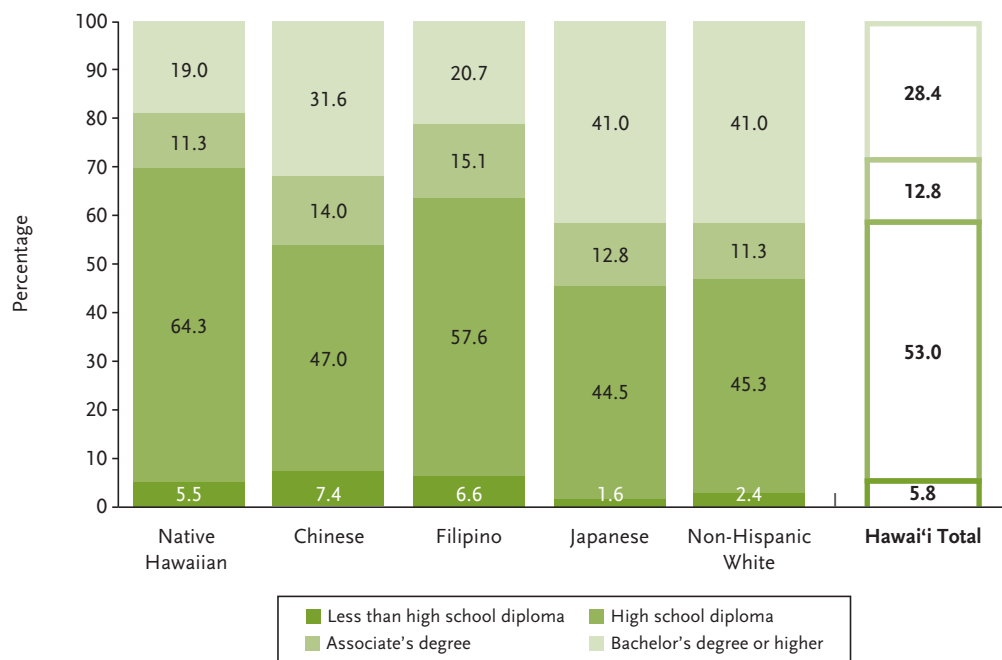


Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

2. At Kamehameha Schools, recent studies of student achievement for Native Hawaiians in preschool and elementary school show a stronger correlation between the mother’s education and student test scores than is the case with the father’s education (unpublished research).

- Mothers with young Native Hawaiian children had the lowest levels of educational attainment relative to mothers of young children among the major ethnicities in Hawai'i.
- The rate of bachelor's degree attainment among mothers with young Native Hawaiian children was 18.0 percent, compared with the statewide average of 29.8 percent.
- The highest level of educational attainment for three-fourths (74.9 percent) of all mothers with young Native Hawaiian children was a high school or associate's degree.
- Among mothers of young children, mothers of young Native Hawaiian children were the most likely to not have a high school diploma (7.2 percent).

**FIGURE 5.4** Educational attainment of mothers with school-age children  
[as a percentage of all mothers living with own children ages 5–17, by race/ethnicity of the child and by highest degree attained, 2010, Hawai'i]



Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- The educational attainment of mothers with school-age Native Hawaiian children was slightly higher than that of mothers with young Native Hawaiian children.
- The rate of bachelor's degree attainment among mothers with school-age Native Hawaiian children was 19.0 percent, compared with the statewide average of 28.4 percent.
- About one out of every eighteen mothers with school-age Native Hawaiian children (5.5 percent) had less than a high school diploma.

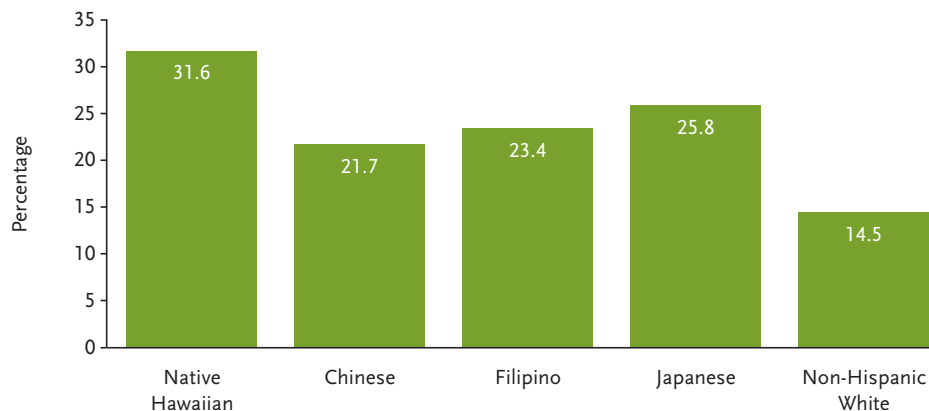
## THE PREKINDERGARTEN YEARS

The importance of cognitive development in the prekindergarten years cannot be overstated. Longitudinal research projects that began in the 1960s, such as the Perry Preschool Study (Schweinhart 2005), the Chicago Longitudinal Study (Reynolds et al. 2011), and the Abecedarian project (Campbell et al. 2002), have demonstrated the benefits of participation in a high-quality preschool program. These benefits include higher levels of educational attainment, higher earnings, and lower costs to society related to public assistance and incarceration. High-quality preschool education has also been shown to be an effective strategy to reduce the achievement gap between students at risk of educational underachievement and their more advantaged peers (Barnett 2008). Economists have documented the long-term value of investing in early childhood education as a preventive measure compared to later, remedial investments. As Heckman (2008, 52) notes, “Skills beget skills and capabilities foster future capabilities.”

### Preschool Enrollment

Preschool enrollment is mediated by many factors, including financial costs, hours of service, perceived benefits of kith and kin versus out-of-home care, and access to available preschool spaces. Other important variables related to preschool are addressed in the American Community Survey (ACS) conducted by the US Census Bureau. Figure 5.5 uses these data to portray the distribution of preschool enrollment among the major ethnic groups in Hawai‘i. In the ACS data reported here, students are counted in each ethnic group they are identified with. That is, a Hawaiian-Chinese-Filipino student contributes to the count for each of those groups. Therefore, the sum of the groups exceeds 100.

**FIGURE 5.5** Distribution of preschool students by race/ethnicity  
[as a percentage of all children enrolled in preschool, 2006–10, Hawai‘i]



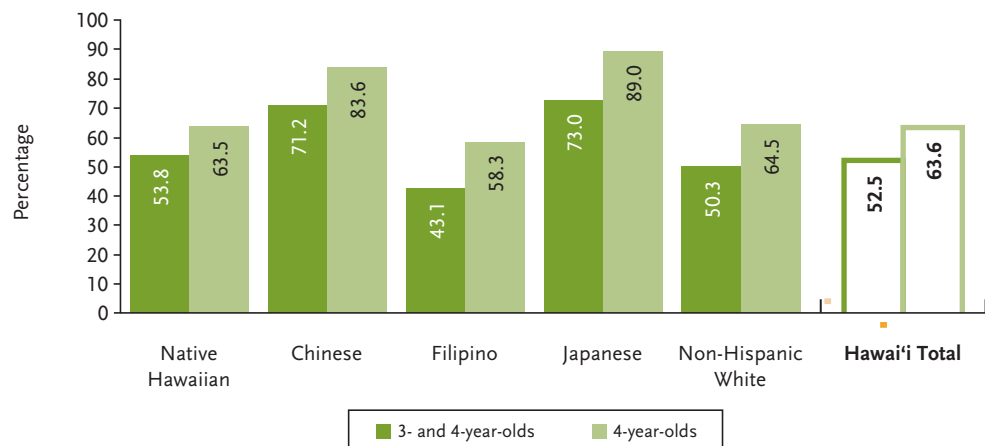
Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).



- Native Hawaiian was the most prevalent race/ethnicity among Hawai'i's preschoolers.
- Between 2006 and 2010, almost one-third of children enrolled in preschool were Native Hawaiian (31.6 percent), commensurate with the proportion of all preschool-aged children in the state who are Native Hawaiian (31.2 percent).
- Japanese children comprised the second-largest proportion (25.8 percent) of preschoolers, while non-Hispanic Whites made up the smallest percentage (14.5 percent).

Figure 5.6 presents estimates for enrollment in preschool programs. Data are presented separately for three- and four-year-olds combined and for four-year-olds alone. This is because ages three and four are often thought of as “preschool-age” and there are specific targets in Hawai'i for preschool enrollment for four-year-olds. As shown in the figure, the rate of preschool enrollment among Native Hawaiian keiki, while promising, falls short of the state of Hawai'i's target of 75 percent preschool enrollment among four-year-old children (Early Learning Educational Task Force 2008).

**FIGURE 5.6** Preschool enrollment among pre-school age children  
[as a percentage of all children ages 3 and 4, by race/ethnicity and by age, 2006–10, Hawai'i]

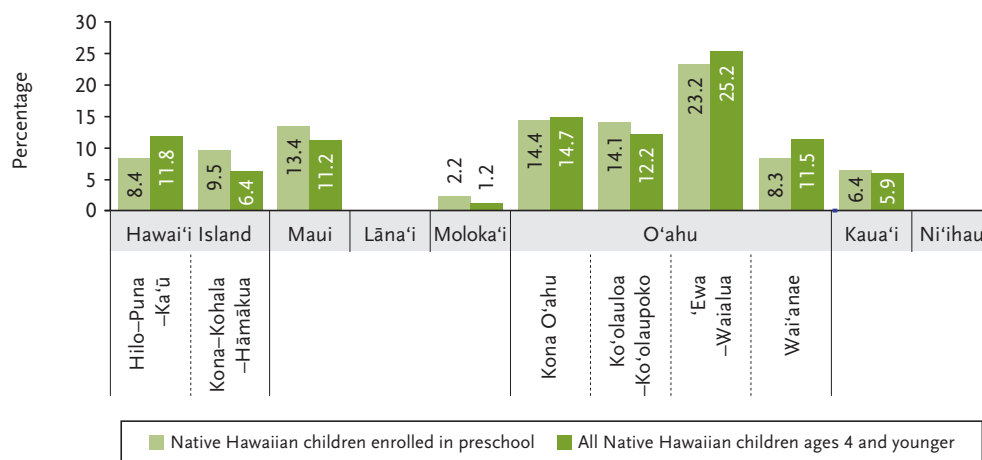


Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- Preschool enrollment has increased in the past decade. Between 2006 and 2010, more than one-half (53.8 percent) of Native Hawaiian three- and four-year-olds were enrolled in preschool programs, compared with 47.5 percent in 2000 (not shown).
- The enrollment rate for preschool among Native Hawaiians was on par with the state average for four-year-olds (63.5 percent and 63.6 percent, respectively) and was slightly higher than the state average for three- and four-year-olds in combination (53.8 percent and 52.5 percent, respectively).

Preschool enrollment varies widely by community. The distribution of preschool enrollment across communities is shown in Figure 5.7. Differences between the proportion of total preschool enrollment from a given region and the proportion of young Native Hawaiian children who live in that community may reflect disparities in access to preschool, rates of parental employment, and the prevalence of caregiving by extended family members.

**FIGURE 5.7** Distribution of Native Hawaiian preschoolers and preschool-age children by region  
[as a percentage of all Native Hawaiian children enrolled in preschool, and as a percentage of all Native Hawaiians 4 years and younger, 2006–10, Hawai‘i]



Source: US Census Bureau 2006–10, American Community Survey Selected Population Tables Summary File.

Note: Data for Lāna'i and Ni'ihau are either unavailable or too limited to yield reliable results.

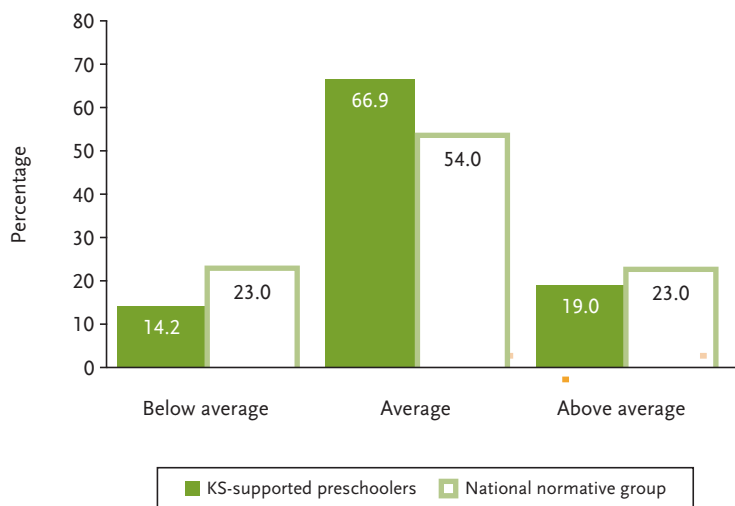
- Three regions had higher-than-expected preschool enrollment. The Kona–Kohala–Hāmākua region had 9.5 percent of the Native Hawaiian preschoolers in the state and 6.4 percent of the children ages 4 and under. Similarly, Maui had 13.4 percent of the preschoolers and 11.2 percent of the young children, and Ko'olaupoko had 14.1 percent of the preschoolers and 12.2 percent of the young children.
- Based on the distribution of Native Hawaiian children ages four and younger, Hilo–Puna–Ka'ū, 'Ewa–Waialua, and Wai'anae were underrepresented in the population of Native Hawaiian keiki enrolled in preschool.
- Out of all the Native Hawaiian keiki enrolled in preschool in Hawai'i, the majority (60.0 percent) were found on O'ahu.

## Outcomes

The educational and social benefits to keiki and society from participation in high-quality preschools are well documented (Campbell et al. 2002, Reynolds et al. 2011, Schweinhart 2005). Kamehameha Schools uses standardized assessments as one indicator of the quality of its preschool programs. At present, KS-supported preschoolers include children who attend any of the thirty KS preschool sites across the islands and those who participate in Pauahi Keiki Scholars, a scholarship program for children attending non-KS preschools.

Figure 5.8 shows test scores of KS-supported preschoolers at the end of the preschool year.<sup>3</sup> The test used is the Peabody Picture Vocabulary Test (Version IV), which measures children’s receptive understanding of Standard American English. Results from this test are known to correlate well with later achievement test results in both reading and mathematics.

**FIGURE 5.8** Distribution of vocabulary scores among KS-supported preschoolers  
[Peabody Picture Vocabulary Test-IV, as a percentage of all children tested, SY 2011–12, Hawai‘i]



Source: Kamehameha Schools 2011–12.

- KS-supported preschoolers were less likely to score in the below-average range than were preschoolers in the national population. A total of 14.2 percent scored in the below-average range, and 66.9 percent scored in the average range (compared nationally with 23.0 percent in the below-average range and 54.0 percent in the average range).
- Although the proportion of KS-supported preschoolers scoring in the above-average range fell short of national norms (19.0 percent versus 23.0 percent, respectively), pretest data (not shown) suggest that participants entered preschool well behind their peers at the national level and made significant gains relative to the norm over the course of the program.

3. Although results for all Native Hawaiian keiki would be ideal, presently the only quantifiable and readily available evidence of the benefits of preschool for Native Hawaiian keiki comes from KS studies about its own preschool programs.

## KINDERGARTEN THROUGH GRADE 12

Access to formal education is widely viewed as critical for personal growth and for building a stable society and a competitive workforce. From kindergarten to Grade 12, participation in formal education is nearly universal in contemporary US society. Access to high-quality public education is considered a civil right in the United States (Office for Civil Rights 2011) and is defined as a basic human right by the United Nations (United Nations 1948).

The following data are drawn largely from the Hawai‘i Department of Education (Hawai‘i DOE).

### Public and Private School Enrollment

With over 19 percent of all children ages 5–17 enrolled in private schools, Hawai‘i has the highest rate of private school participation in the United States. (The nationwide rate of private school enrollment is approximately 11 percent). Table 5.1 shows public and private school enrollment for Native Hawaiians according to ACS estimates from 2006 to 2010.

**TABLE 5.1** School enrollment among Native Hawaiian school-age children  
[as a percentage of all Native Hawaiian children ages 5–17, by school type and by age, 2006–10, Hawai‘i]

School level	Public schools	Private schools	Not enrolled	Total
Elementary school years: ages 5 to 11	83.3	13.8	2.9	100.0
Middle school years: ages 12 to 14	78.9	20.3	0.9	100.0
High school years: ages 15 to 17	77.2	17.0	5.8	100.0
Total: ages 5 to 17	80.8	16.1	3.1	100.0

Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- Among Native Hawaiian children ages five to seventeen, 80.8 percent were enrolled in public schools, 16.1 percent were enrolled in private schools, and 3.1 percent were not enrolled in school.
- By comparison, among non-Hawaiian children ages five to seventeen (not shown), 75.9 percent were enrolled in public schools, 20.6 percent were enrolled in private schools, and 3.5 percent were not enrolled.
- One in seventeen (5.8 percent) Native Hawaiians between the ages of fifteen and seventeen was not enrolled in school compared to about one in twenty-one (4.7 percent) non-Hawaiians in this age group.
- Among Native Hawaiian students, the private school enrollment rate for middle school was 20.3 percent, compared with 13.8 percent for elementary school students.
- Patterns in enrollment in private schools among Native Hawaiians were similar to those for non-Hawaiian students with increasing rates of private school enrollment in upper grade levels. Non-Hawaiian enrollment in private schools was 19.4 percent in the elementary grades, 22.9 percent in the middle school grades, and 21.0 percent in the high school grades (not shown).

Kindergarten is not mandatory in Hawai‘i, and the relatively high percentage of five-year-olds not enrolled in school (7.9 percent according to the ACS) reflects this. The results of this same survey indicate that 76.4 percent of five-year-olds in Hawai‘i were enrolled in public schools, and 15.8 percent were enrolled in private schools (not shown).

The Hawai‘i DOE collects ethnicity data for its students based on parent reports. Historically, parents or guardians have been asked to identify one “dominant” ethnicity for their children. However, in 2011, the Hawai‘i DOE implemented a more inclusive approach to the collection of racial/ethnic data, allowing parents to select multiple races/ethnicities for their children while also asking for a single “primary” ethnicity that serves as the basis for reporting categories. A comparison of Hawai‘i DOE enrollment data and birth records—along with KS surveys that asked parents to report their children’s dominant ethnicity and, separately, whether or not their children are of Hawaiian ancestry—suggests that as many as 20 percent of children with Hawaiian ancestry in the public schools may not be identified as Native Hawaiian or part-Hawaiian in Hawai‘i DOE reports.<sup>4</sup>

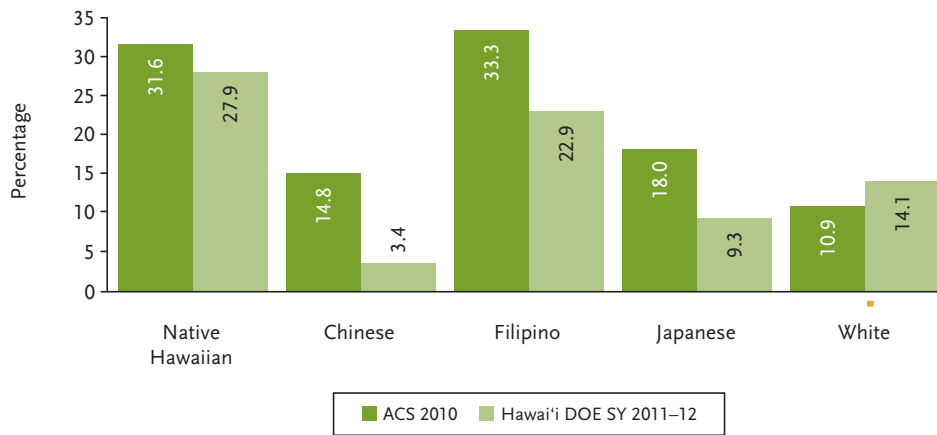
Two concepts are important in understanding how Native Hawaiian students are represented in public schools in Hawai‘i: concentration and distribution. Concentration statistics refer to a subpopulation of students represented *within* a given region or grade level. Distribution statistics reveal how those students are dispersed *across* regions or grade levels.

Figure 5.9 shows the distribution of public school students across racial/ethnic categories using two different data sources and reporting systems: the Hawai‘i DOE and the ACS. Note, in the Hawai‘i DOE data, although students can report more than one ethnic ancestry, they are grouped by their self-identified “primary” ethnicity. In the ACS data reported here, students are counted in each ethnic group they are identified with. That is, a Hawaiian-Chinese-Filipino student contributes to the count for each of those groups.

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4. For more information on the Hawai‘i DOE’s data collection and reporting policies regarding race/ethnicity, see Appendix B.

**FIGURE 5.9** Distribution of public school students by race/ethnicity  
[as a percentage of all public school students by source, multiyear comparisons, Hawai‘i]

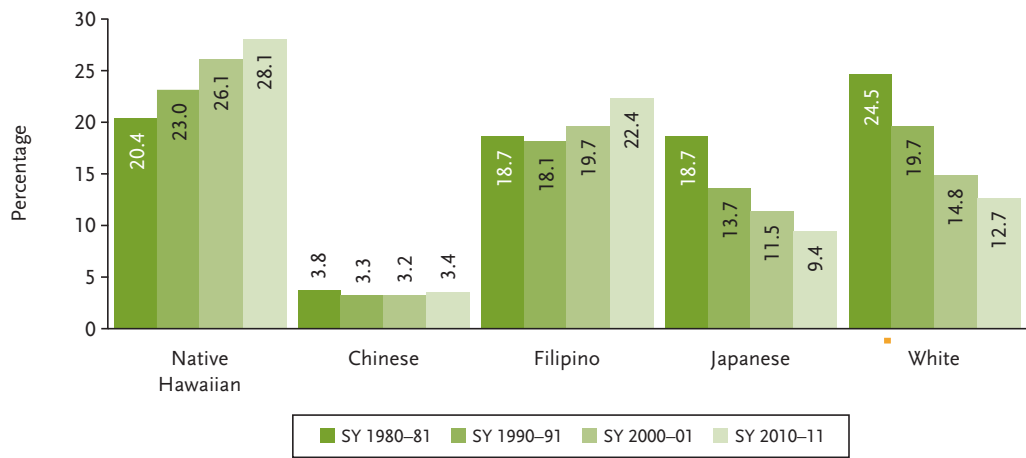


Sources: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files); Hawai‘i Department of Education SY 2011–12.

- More than one-quarter of public school students (27.9 percent) were identified by their parents as “primarily” Hawaiian or part-Hawaiian (based on data from the Hawai‘i DOE for school year 2011–12).
- ACS 2010 data, which reported up to four races/ethnicities per respondent, reflected a slightly higher proportion, with nearly one-third of public school students (31.6 percent) reporting Native Hawaiian background. The gaps between the Hawai‘i DOE and ACS distributions are due in part to differences in their respective methods of data collection.
- According to Hawai‘i DOE data, Native Hawaiians constituted the largest single ethnic group among public school students (27.9 percent), with Filipinos and non-Hispanic Whites representing the next largest groups (22.9 percent and 14.1 percent, respectively).
- According to ACS 2010, Native Hawaiians represented the second-largest ethnic group within the public school system (31.6 percent), exceeded in size only by Filipinos (33.3 percent).

As shown in Figure 5.10, the proportion of public school students who identified as Native Hawaiian or part-Hawaiian increased substantially over the last three decades.

**FIGURE 5.10** Trends in distribution of public school students by race/ethnicity  
[as a percentage of all public school students, selected years, Hawai'i]

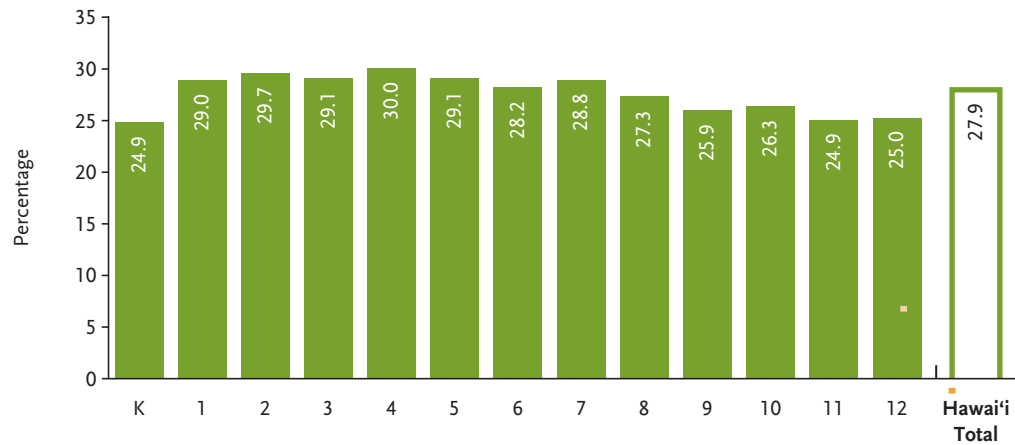


Source: Ka Huaka'i 2005; Hawai'i Department of Education SY 2010-11.

- Native Hawaiian students were the most prevalent race/ethnicity within the public school system, representing more than one-fourth (28.1 percent) of all students in school year 2010-11.
- Between school years 2000-01 and 2010-11, there was an increase of 2.0 percentage points in the proportion of parent-identified Native Hawaiian students (from 26.1 percent to 28.1 percent). The only other major ethnic group to grow in share over the same period was Filipinos (2.7 percentage points).
- Native Hawaiians were the only major ethnic group that grew in relative size across each decade shown.
- Between school years 1980-81 and 2010-11, the Japanese and White share of the public school population decreased by almost half. This was due in part to a large increase in the proportion of students of other ethnicities (from 13.9 percent in 1980 to 24.0 percent in 2010-11, not shown).

Figure 5.11 shows the concentration of Native Hawaiian children within each grade in the public school system.

**FIGURE 5.11** Concentration of Native Hawaiian public school students by grade  
[as a percentage of all public school students, SY 2011–12, Hawai‘i]



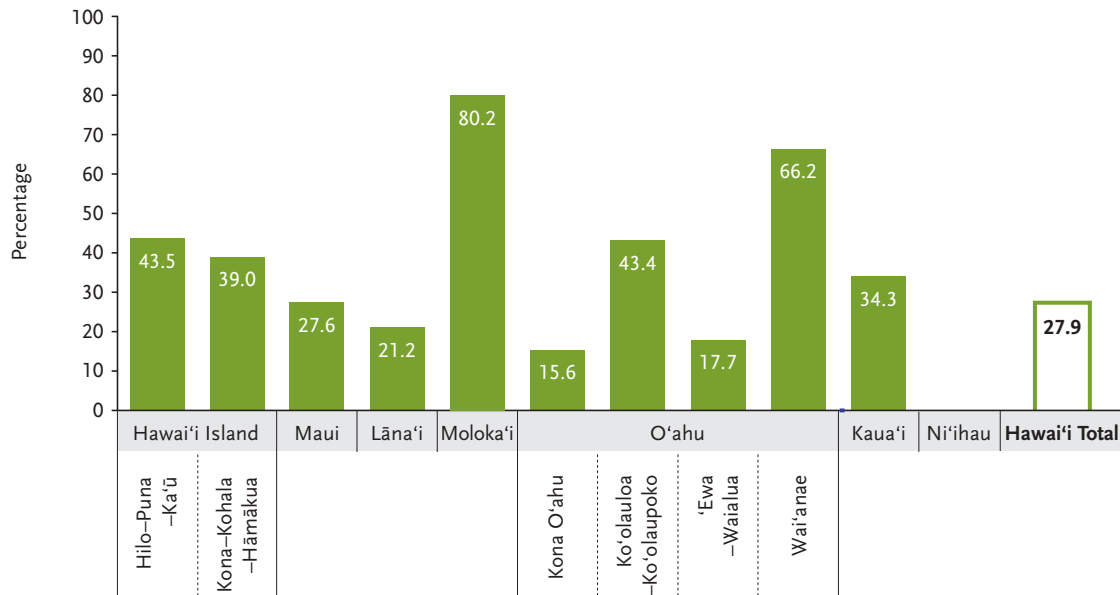
Source: Hawai‘i Department of Education SY 2011–12.

- The concentration of Native Hawaiians in public schools in school year 2011–12 was highest in the elementary grades, hovering at or above 29.0 percent between Grades 1 and 5 and peaking at 30.0 percent in Grade 4.
- The concentration of Native Hawaiian students was generally lower in older cohorts, with small but notable dips apparent in the transitions from elementary to middle school (Grade 6) and from middle school to high school (Grade 9).
- Grades 11 and 12 contained the smallest percentage of Native Hawaiians (24.9 percent and 25.0 percent, respectively).
- The concentration of Native Hawaiians in Grade 12 was 4.0 percentage points lower than in Grade 1. This may be explained in part by the disproportionately high number of Native Hawaiian students leaving high school before graduation (see Figure 5.38 for a comparison of timely high school completion rates by race/ethnicity).



Figure 5.12 shows the concentration of Native Hawaiian students by region.

**FIGURE 5.12** Concentration of Native Hawaiian public school students by region  
[as a percentage of all public school students, SY 2011–12, Hawai‘i]



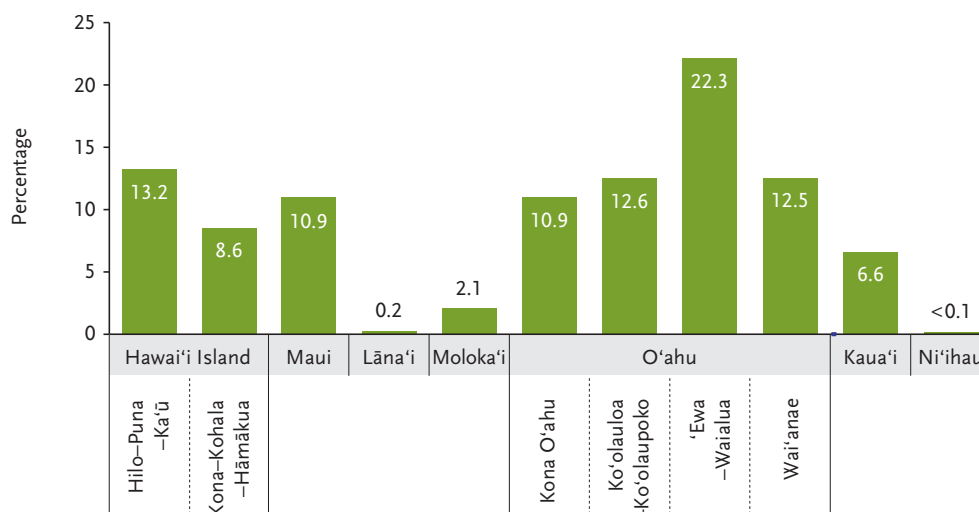
Source: Hawai'i Department of Education SY 2011–12.

Note: Data for Ni'ihau are either unavailable or too limited to yield reliable results.

- Moloka'i had the highest concentration of Native Hawaiian students in school year 2011–12 (80.2 percent).
- Approximately two out of every five public school students on Hawai'i Island were Native Hawaiian (43.5 percent in Hilo–Puna–Ka'u and 39.0 percent in Kona–Kohala–Hāmākua).
- The concentration of Native Hawaiians was lowest in 'Ewa–Waialua (17.7 percent) and Kona O'ahu (15.6 percent).

Areas with higher *concentrations* of Native Hawaiians do not always have greater *numbers* of Native Hawaiians. For example, a rural area with a small population that is predominantly Native Hawaiian may have lower numbers of Native Hawaiian inhabitants compared with an urban area with a large and ethnically diverse population. Figure 5.13 shows the distribution of Native Hawaiian public school students across regions. The majority of Native Hawaiian public school students (58.3 percent) attend school on O'ahu.

**FIGURE 5.13** Distribution of Native Hawaiian public school students by region  
[as a percentage of all public school students, SY 2011–12, Hawai‘i]



Source: Hawai‘i Department of Education SY 2011–12.

- Among the Hawaiian Islands, O‘ahu had the highest number of Native Hawaiian public school students in school year 2011–12.
- Nearly one out of every four Native Hawaiian public school students (22.3 percent) attended a school in the ‘Ewa–Wai‘anae region.
- Although the vast majority of public school students on Moloka‘i and Ni‘ihau were Native Hawaiian, they accounted for a small percentage of the total Native Hawaiian population in Hawai‘i’s public school system (2.1 percent and less than 0.1 percent, respectively).

## Outcomes

Equality in educational outcomes is a major concern for Native Hawaiians. This section presents data on achievement test results and timely high school graduation.

In this section, outcome data are reported first by Hawai‘i’s five major ethnic groups to provide a clear picture of outcomes by ethnicity. The outcomes data are then presented by Native Hawaiian ancestry and community poverty rates (a rough indicator of socioeconomic status and access to resources). Finally, outcomes are reported by the concentration of Native Hawaiian students within schools (less than 25 percent, 25 to 50 percent, and over 50 percent or higher).

Because there is no shared repository of test scores for students in private schools, this section reports outcomes for public school students only.

### *Achievement Test Results*

Two types of achievement test results are available for students in Hawai'i public schools: standards-based and norm-referenced. The difference between these two types of tests can be explained by using an analogy of a group of climbers ascending a mountain. Standards-based tests tell us where a climber is on the mountain—near the peak, at the mid-level, or near the base. Norm-referenced tests tell us where a climber is relative to the other climbers—near the lead, in the middle, or near the rear.

Like all standardized assessments, the tests highlighted in this section have limitations. For example, the content of the test and the actual content taught in schools and in classrooms can vary dramatically. Furthermore, the restricted length and format of tests naturally limit the number of learning objectives they can assess and the ways questions can be asked and answered. Another limitation is the accuracy of the individual's scores. Some students' scores are higher than their true achievement levels (e.g., they may correctly guess answers to questions they don't really know). At the same time, the scores of other students may be lower than their true achievement levels (e.g., they make mistakes in answering questions when they know the correct response). Standardized test scores are therefore an imperfect estimate of a student's true knowledge and skills. Still, the results provide value as an approximation of student achievement relative to content and performance standards and relative to the scores of other students.<sup>5</sup>

### *Hawai'i State Assessment: Proficiency*

The Hawai'i State Assessment (HSA) is a standards-based assessment and provides information about student performance relative to the Hawai'i Content and Performance Standards. The HSA Reading and Mathematics tests are administered at Grades 3 through 8, and 10. Student results are reported in four categories: well-below proficiency, approaches proficiency, meets proficiency, or exceeds proficiency. To make the data easier to use, results reported here are aggregated into proficiency rates (i.e., the percentage who either meet or exceed proficiency) and limited to students in Grades 3, 5, 8, and 10.<sup>6</sup>

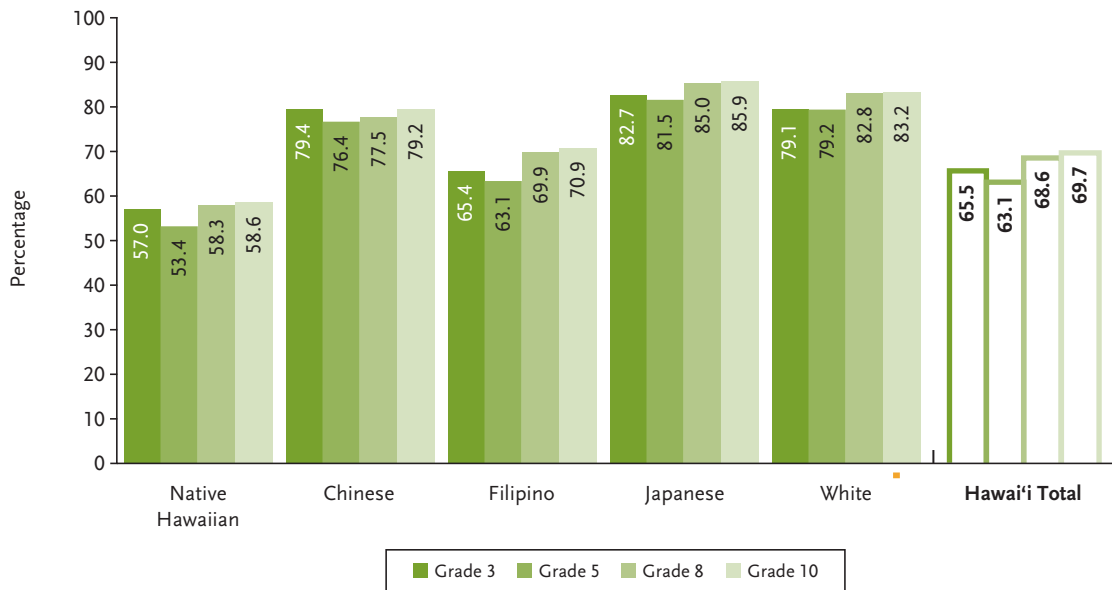
Figure 5.14 depicts the percentage of students who scored at or above the proficient level for reading on the HSA for the school years 2007–08 through 2011–12. These data are aggregated across several years to even out the effects of any particularly high or low achieving cohorts of students. The data are further grouped by student grades.

5. See Popham (1999) for a fuller explanation of the limitations and uses of standardized assessments.

6. These grade levels mark the first standardized assessment at the end of Grade 3, a point at or near the end of elementary school (Grade 5), a point at the end of middle school (Grade 8), and the last systematic data collection before high school graduation (Grade 10).

**FIGURE 5.14** Reading proficiency

[HSA reading scores at or above proficient level, as a percentage of all public school students tested, by race/ethnicity, for selected grades, SY 2007–08 to SY 2011–12 (combined), Hawai‘i]



Source: Hawai‘i Department of Education SY 2007–08 to SY 2011–12.

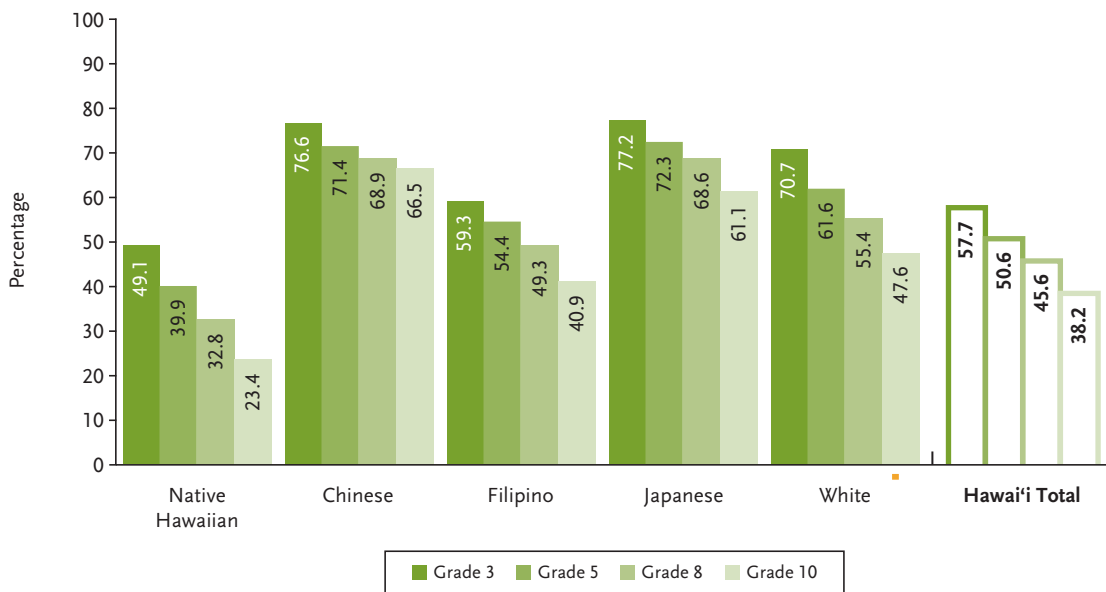
- HSA reading proficiency rates among Native Hawaiian students were lower than those of the other major ethnic groups in Hawai‘i, ranging from 53.4 percent to 58.6 percent. However, Native Hawaiian students in all grades made improvements since the period between school years 2001–02 and 2002–03 (not shown), when proficiency rates ranged from 26.1 percent to 30.8 percent.<sup>7</sup>
- For all major ethnic groups, except Whites, reading proficiency rates were lowest in Grade 5.
- Native Hawaiian reading proficiency rates trailed the Hawai‘i average by 8.5 percentage points in Grade 3 and 11.1 percentage points in Grade 10.

7. Changes in proficiency rates over time may, in part, be attributable to the revised set of Hawai‘i Content and Performance Standards (HCPS III) adopted in school year 2006–07, as well as annual reviews of proficiency cut scores.

The percentage of students who scored at or above the proficient level for mathematics on the HSA for the school years 2007–08 through 2011–12 is shown in Figure 5.15. Unlike the reading outcomes, there is a clear pattern of decreasing mathematics proficiency for students in upper grades for all ethnic groups.

**FIGURE 5.15 Mathematics proficiency**

[HSA mathematics scores at or above proficient level, as a percentage of all public school students tested, by race/ethnicity, for selected grades, SY 2007–08 to SY 2011–12 (combined), Hawai'i]



Source: Hawai'i Department of Education SY 2007–08 to SY 2011–12.

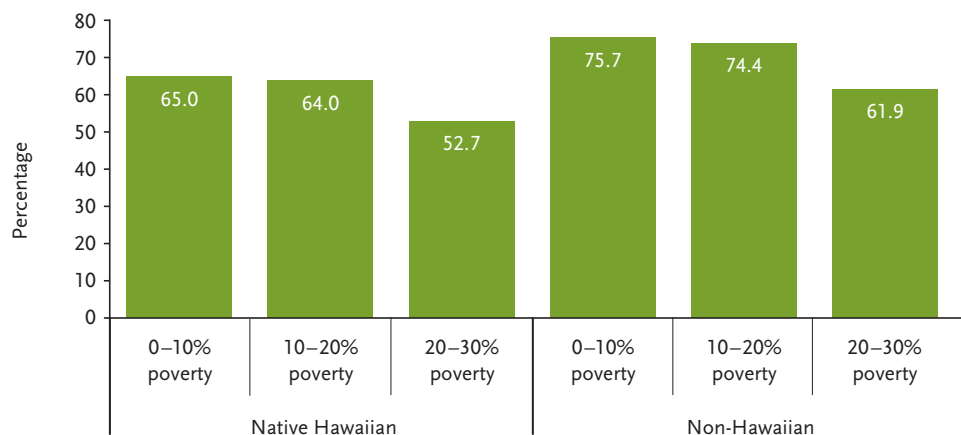
- HSA mathematics proficiency rates among Native Hawaiians were lower than those of the other major ethnic groups in Hawai'i, ranging from 23.4 percent (Grade 10) to 49.1 percent (Grade 3). However, all grades made improvements since school years 2001–02 to 2002–03 (not shown), when proficiency rates ranged from 7.5 percent to 13.0 percent.
- A pattern of lower mathematics proficiency rates at successively higher grades was apparent across all major ethnic groups in the state.
- The gap between Native Hawaiian mathematics proficiency rates and the Hawai'i average is greater in successively higher grade levels shown, with a gap of 8.6 percentage points in Grade 3 compared with 14.8 percentage points in Grade 10.

Research has repeatedly demonstrated a link between poverty and educational achievement. In the next set of figures we look at proficiency rates by the level of poverty in the communities served by the schools. As a point of reference, the statewide poverty rate is 11.2 percent.<sup>8</sup>

8. Clearly, the effects of poverty only partially explain the discrepancies in achievement between Native Hawaiian students and their non-Hawaiian peers. Poverty rates in these analyses are derived by school complex areas. See the Hawai'i DOE description of the complex areas on the MySchool website (Hawai'i State Department of Education).

**FIGURE 5.16** Reading proficiency by community poverty level

[HSA reading scores at or above proficient level, as a percentage of all public school students tested in Grades 3, 5, 8, and 10 (combined), by Native Hawaiian and non-Hawaiian, by poverty level in high school complex, SY 2011–12, Hawai‘i]



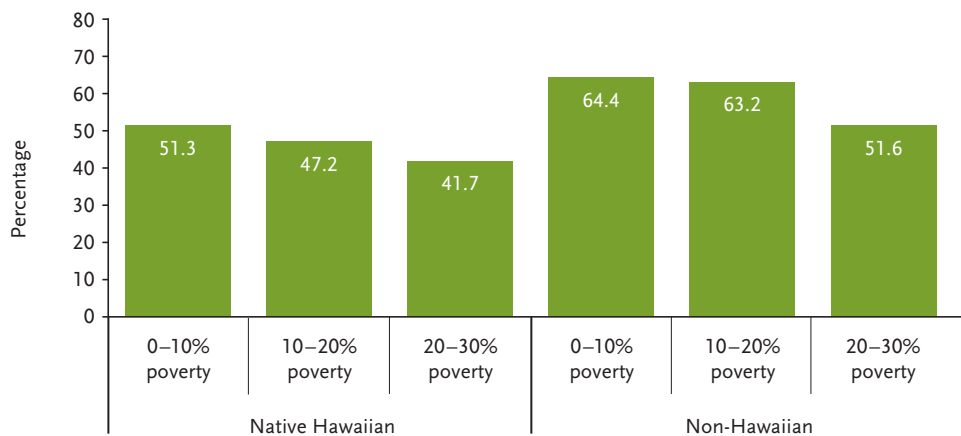
Source: Hawai‘i Department of Education SY 2011–12.

- HSA reading proficiency rates were lower in communities with higher levels of poverty among both Native Hawaiian and non-Hawaiian students.
- Compared with non-Hawaiians, Native Hawaiians exhibited lower levels of reading proficiency across all levels of poverty in their communities.

Similar results are seen in the relationship between mathematics proficiency, community poverty, and Native Hawaiian ethnicity (see Figure 5.17).

**FIGURE 5.17** Mathematics proficiency by community poverty level

[HSA mathematics scores at or above proficient level, as a percentage of all public school students tested in Grades 3, 5, 8, and 10 (combined), by Native Hawaiian and non-Hawaiian, by poverty level in high school complex, SY 2011–12, Hawai‘i]



Source: Hawai‘i Department of Education SY 2011–12.

- HSA mathematics proficiency rates were lower in communities with higher levels of poverty among both Native Hawaiian and non-Hawaiian students.
- Across all types of communities shown, mathematics proficiency rates were consistently lower for Native Hawaiians than non-Hawaiians.
- The largest gap between Native Hawaiian and non-Hawaiian mathematics proficiency rates (16.0 percentage points) was observed in communities where 10 to 20 percent of residents lived in poverty. This gap was 13.1 percentage points in communities with the lowest levels of poverty and 9.9 percentage points in communities with the highest levels of poverty.

Poverty and other factors that influence achievement are not distributed evenly across the islands. The tables presented below summarize reading and mathematics proficiency among Native Hawaiians by region.

**TABLE 5.2** Reading proficiency among Native Hawaiian students by region

[HSA reading scores at or above proficient level, as a percentage of all Native Hawaiian public school students tested, for selected grades, SY 2007–08 to SY 2011–12, Hawai‘i]

Region	Grade 3	Grade 5	Grade 8	Grade 10
<b>Hawai‘i Island</b>				
Hilo–Puna–Ka‘ū	53.3	48.4	56.9	52.6
Kona–Kohala–Hāmākua	56.1	53.4	61.6	62.5
Maui	59.3	50.9	54.0	58.4
Lāna‘i	n/a	n/a	n/a	n/a
Moloka‘i	52.6	49.3	43.8	48.1
<b>O‘ahu</b>				
Kona O‘ahu	62.4	60.9	65.3	65.0
Ko‘olaupoko–Ko‘olaupoko	65.6	59.5	59.2	55.6
‘Ewa–Waialua	61.1	59.2	62.8	65.2
Wai‘anae	41.7	40.8	47.1	48.7
Kaua‘i	53.2	49.4	59.0	59.3
Ni‘ihau	n/a	n/a	n/a	n/a
<b>Hawai‘i Total</b>	<b>57.0</b>	<b>53.4</b>	<b>58.3</b>	<b>58.6</b>

Source: Hawai‘i Department of Education SY 2007–08 to SY 2011–12.

- The lowest HSA reading proficiency rates for Native Hawaiians were in Wai‘anae (Grades 3 and 5) and on Moloka‘i (Grades 8 and 10).
- Wai‘anae was the only area in which Native Hawaiian reading proficiency rates at all grades shown were below 50 percent.

**TABLE 5.3** Mathematics proficiency among Native Hawaiian students by region

[HSA mathematics scores at or above proficient level, as a percentage of all Native Hawaiian public school students tested, for selected grades, SY 2007–08 to SY 2011–12, Hawai‘i]

Region	Grade 3	Grade 5	Grade 8	Grade 10
<b>Hawai‘i Island</b>				
Hilo–Puna–Ka‘ū	43.5	34.7	31.4	20.7
Kona–Kohala–Hāmākua	45.0	37.1	36.4	25.2
Mauī	52.5	38.4	25.9	20.6
Lāna‘i	n/a	n/a	n/a	n/a
Moloka‘i	48.4	48.5	34.6	20.1
<b>O‘ahu</b>				
Kona O‘ahu	53.6	46.2	33.7	25.2
Ko‘olaupoko–Ko‘olaupoko	56.4	44.7	33.7	22.1
‘Ewa–Waialua	53.8	44.5	37.0	30.1
Wai‘anae	38.4	32.6	26.9	15.4
Kaua‘i	44.4	32.7	35.0	24.5
Ni‘ihau	n/a	n/a	n/a	n/a
<b>Hawai‘i Total</b>	<b>49.1</b>	<b>39.9</b>	<b>32.8</b>	<b>23.4</b>

Source: Hawai‘i Department of Education SY 2007–08 to SY 2011–12.

Note: Data for Lāna‘i and Ni‘ihau are either unavailable or too limited to yield reliable results.

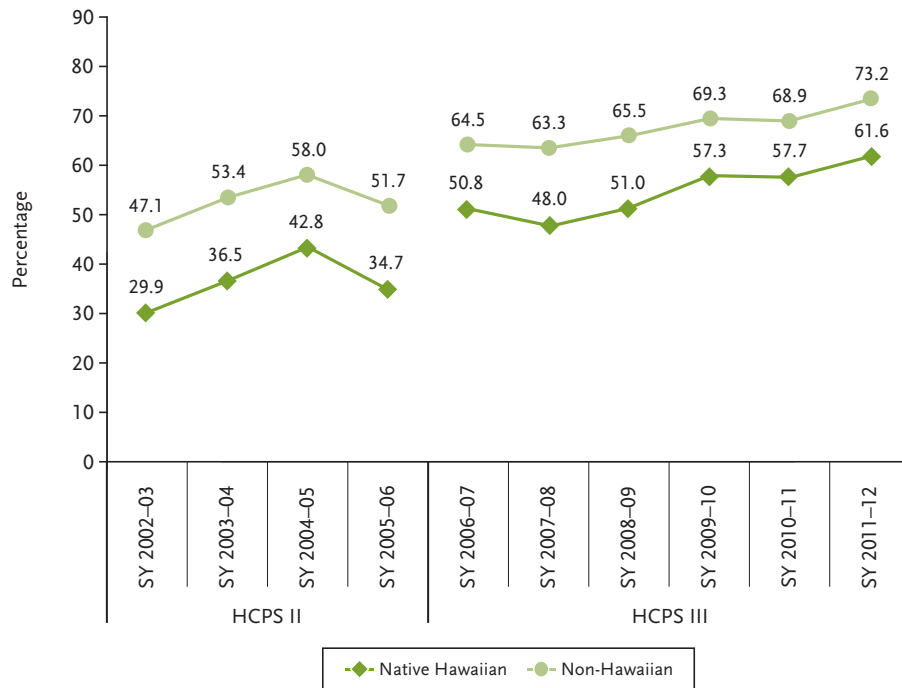
- HSA mathematics proficiency rates among Native Hawaiians were lower at successively higher grade levels, with a statewide difference of 25.7 percentage points between Grade 3 and Grade 10.
- This pattern of lower proficiency rates at higher grades was apparent on all islands.
- Across all grades shown, the highest mathematics proficiency rates among Native Hawaiians (with the exception of Moloka‘i) occurred in Grade 3; the lowest were in Grade 10.
- Wai‘anae exhibited the lowest mathematics proficiency rate in each grade shown except Grade 8, ranging from 15.4 percent in Grade 10 to 38.4 percent in Grade 3.

Closing the gap in proficiency between Native Hawaiian students and their peers is critical to the future well-being of Hawai‘i in general and Native Hawaiians in particular. The next set of figures illustrates the gap in HSA proficiency rates at the elementary, middle, and high school levels from school years 2002–03 to 2011–12.<sup>9</sup>

9. During the time frame covered by these figures, the Hawai‘i DOE adopted a revised set of standards. The scores shown therefore span two different versions of the HSA that measure two different sets of standards: the Hawai‘i Content and Performance Standards (HCPS) II and III. In addition, trends may be influenced by annual reviews of the cut scores used to determine proficiency.



**FIGURE 5.18** Trends in reading proficiency among public elementary school students  
[HSA reading scores at or above proficient level, as a percentage of all public school students tested in Grades 3 and 5 (combined), by Native Hawaiian and non-Hawaiian, SY 2002–03 to SY 2011–12, Hawai‘i]

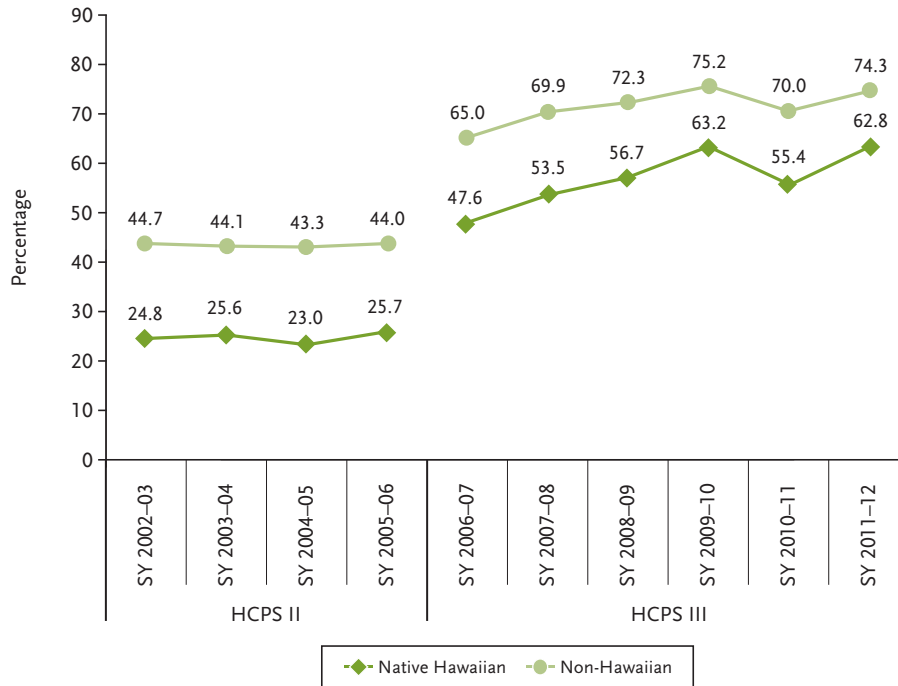


Source: Hawai‘i Department of Education SY 2002–03 to SY 2011–12.

- In Hawai‘i elementary schools, HSA reading proficiency rates among both Native Hawaiian and non-Hawaiian students increased significantly and consistently from school year 2002–03, with the only major decrease in year-over-year averages occurring between 2004–05 and 2005–06.
- The gap between Native Hawaiian and non-Hawaiian reading proficiency rates in elementary schools decreased gradually from 13.7 percentage points in school year 2006–07 to 11.6 percentage points in 2011–12.

**FIGURE 5.19** Trends in reading proficiency among public middle school students

[HSA reading scores at or above proficient level, as a percentage of all public school students tested in Grade 8, by Native Hawaiian and non-Hawaiian, SY 2002–03 to SY 2011–12, Hawai‘i]

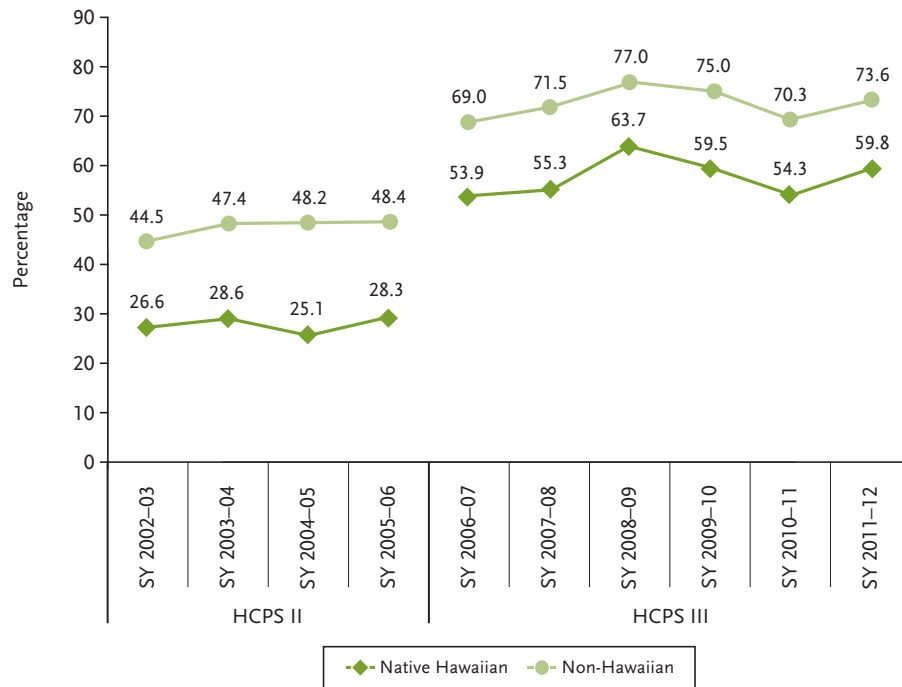


Source: Hawai‘i Department of Education SY 2002–03 to SY 2011–12.

- In Hawai‘i middle schools, the shift from HCPS II to HCPS III was marked by a surge in reading HSA proficiency rates among both Native Hawaiian and non-Hawaiian students. It is likely that this upswing reflects changes in the test and cut scores, rather than actual gains in reading.
- Since implementation of HCPS III testing in school year 2006–07, proficiency rates among Native Hawaiian and non-Hawaiian middle school students increased steadily until 2010–11, at which point Native Hawaiian averages decreased from 63.2 percent to 55.4 percent and non-Hawaiian averages from 75.2 percent to 70.0 percent. However, in the following year, scores for both groups rebounded and nearly matched the 2009–10 peaks.
- Since adoption of HCPS III, the gap in reading proficiency among Native Hawaiian and non-Hawaiian middle school students has steadily decreased, from 17.4 percentage points in school year 2006–07 to 11.5 percentage points in 2011–12. This trend was interrupted only briefly in 2010–11—the same year the anomalous decrease in proficiency rates occurred.

**FIGURE 5.20** Trends in reading proficiency among public high school students

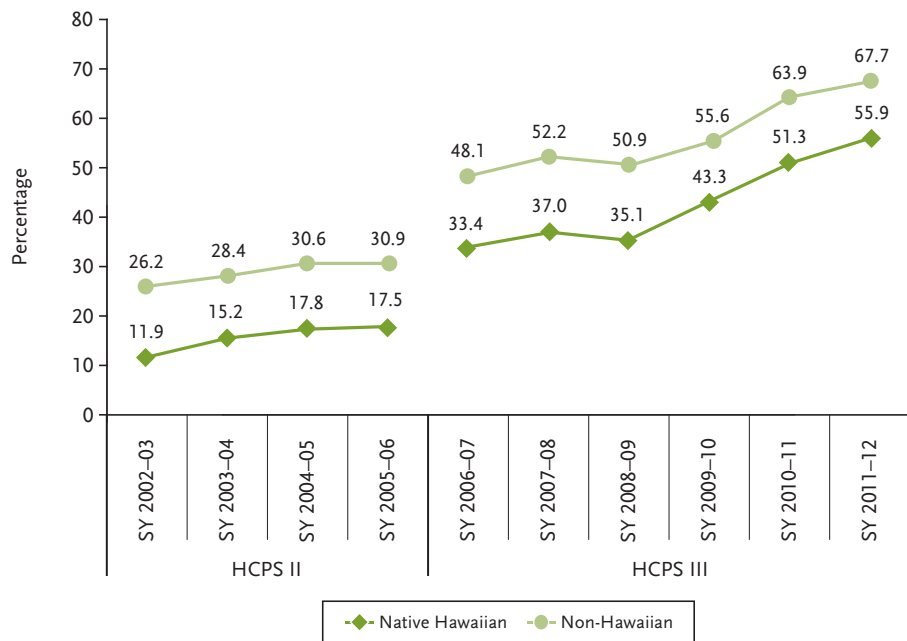
[HSA reading scores at or above proficient level, as a percentage of all public school students tested in Grade 10, by Native Hawaiian and non-Hawaiian, SY 2002–03 to SY 2011–12, Hawai‘i]



Source: Hawai‘i Department of Education SY 2002–03 to SY 2011–12.

- In Hawai‘i high schools, the gap between the HSA reading proficiency rates of Native Hawaiian and non-Hawaiian students increased from 17.9 percentage points in school year 2002–03 to 20.1 percentage points in 2005–06 (using HCPS II standards).
- Since the shift to HCPS III in school year 2006–07, the gap in high school reading proficiency and the proficiency rates themselves have fluctuated from year to year with no clear pattern. However, consistencies in the shape of the Native Hawaiian and non-Hawaiian trend lines suggest that the gap has persisted over time.

**FIGURE 5.21** Trends in mathematics proficiency among public elementary school students  
[HSA mathematics scores at or above proficient level, as a percentage of all public school students tested in Grades 3 and 5 (combined), by Native Hawaiian and non-Hawaiian, SY 2002–03 to SY 2011–12, Hawai‘i]

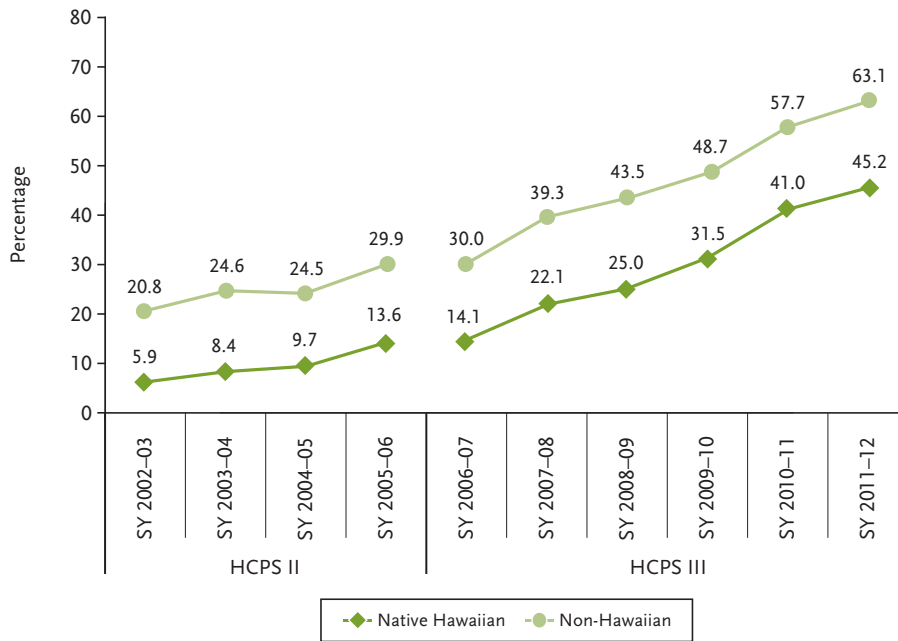


Source: Hawai‘i Department of Education SY 2002–03 to SY 2011–12.

- In Hawai‘i elementary schools, HSA mathematics proficiency rates among Native Hawaiian and non-Hawaiian students increased significantly and consistently from school year 2002–03, with the only notable decrease in year-over-year averages occurring between 2007–08 and 2008–09.
- The mathematics proficiency gap between Native Hawaiian and non-Hawaiian elementary school students declined, from its peak of 15.8 percentage points in school year 2008–09 to a ten-year low of 11.8 percentage points in 2011–12.

**FIGURE 5.22** Trends in mathematics proficiency among public middle school students

[HSA mathematics scores at or above proficient level, as a percentage of all public school students tested in Grade 8, by Native Hawaiian and non-Hawaiian, SY 2002–03 to SY 2011–12, Hawai'i]

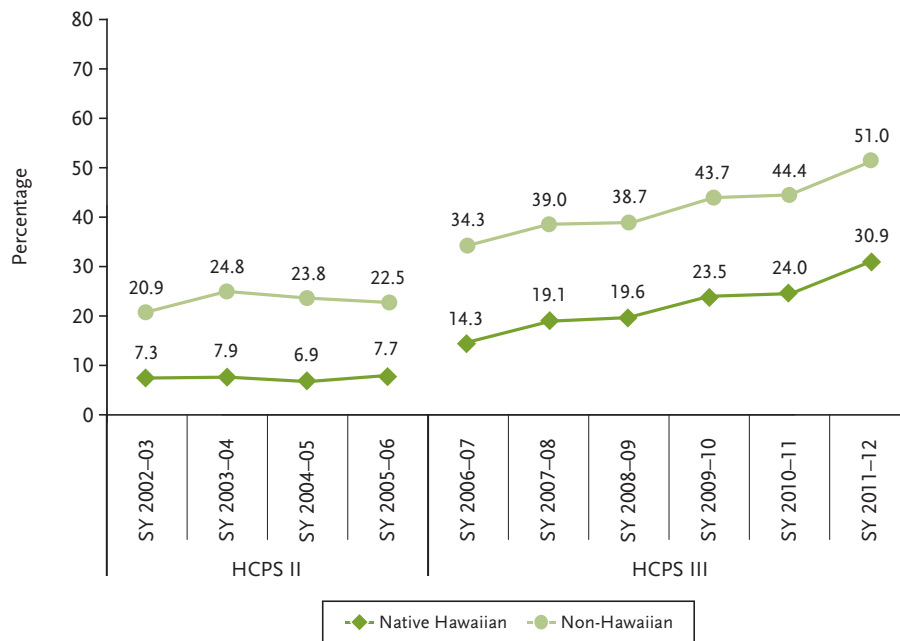


Source: Hawai'i Department of Education SY 2002–03 to SY 2011–12.

- In Hawai'i middle schools, HSA mathematics proficiency rates among Native Hawaiians and non-Hawaiians followed a trend similar to that seen among elementary school students, with steady increases apparent throughout the last ten years.
- In school year 2011–12, the mathematics proficiency rate for Native Hawaiian middle school students was roughly eight times the rate seen in 2002–03 (45.2 percent versus 5.9 percent, respectively). The non-Hawaiian rate tripled over the same period (from 20.8 percent in school year 2002–03 to 63.1 percent in 2011–12).
- Although differences in the mathematics proficiency rates of Native Hawaiian and non-Hawaiian middle school students have fluctuated from year to year, the gap has generally increased since the implementation of HCPS III, from an average of 15.6 percentage points between school years 2002–03 and 2005–06 to an average of 17.2 percentage points between school years 2006–07 and 2011–12.

**FIGURE 5.23** Trends in mathematics proficiency among public high school students

[HSA mathematics scores at or above proficient level, as a percentage of all public school students tested in Grade 10, by Native Hawaiian and non-Hawaiian, SY 2002–03 to SY 2011–12, Hawai‘i]

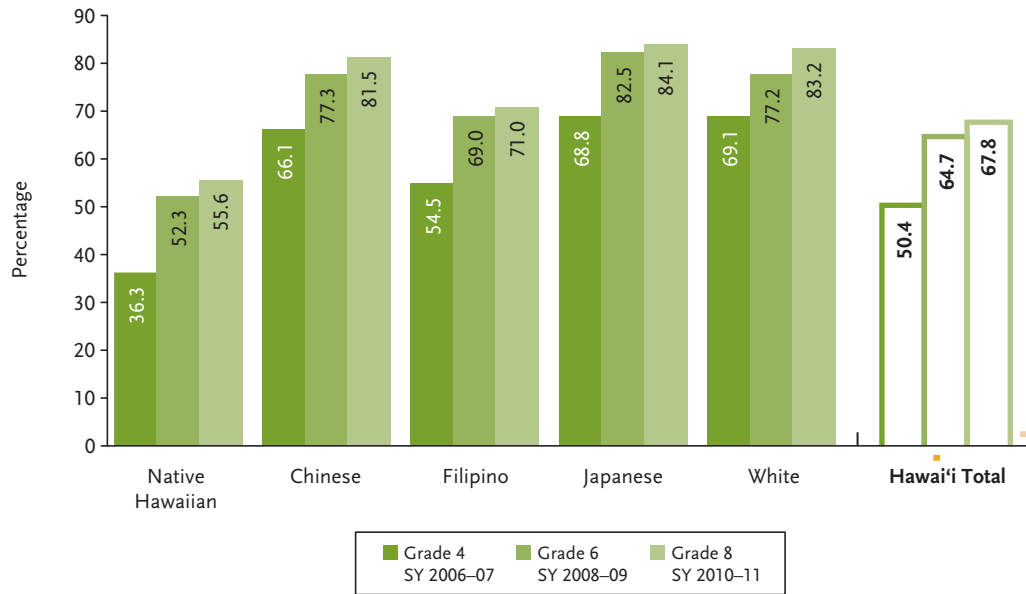


Source: Hawai‘i Department of Education SY 2002–03 to SY 2011–12.

- In Hawai‘i high schools, HSA mathematics proficiency rates among Native Hawaiian and non-Hawaiian students increased steadily from school year 2006–07—from 14.3 percent to 30.9 percent among Native Hawaiians and from 34.3 percent to 51.0 percent in non-Hawaiians.
- Among high school students, the shift to HCPS III was associated not only with gains in mathematics proficiency but also with a persistent gap of about 20 percentage points between the proficiency rates of Native Hawaiians and non-Hawaiians.

The previous figures have looked at reading and mathematics proficiency rates across several cohorts of students. The figures below track the progress of a single cohort of students from Grade 4 through Grade 8. This longitudinal analysis is promising because it indicates that the pattern of lower mathematics achievement in the upper grades may be reversing. It also suggests that additional years of instruction in the public school system may lead to greater proficiency among Native Hawaiian and non-Hawaiian students.

**FIGURE 5.24** Longitudinal trends in reading proficiency within a single cohort of public school students  
[HSA reading scores at or above proficient level, as a percentage of all public school students in the cohort tested in Grades 4, 6, and 8, by race/ethnicity, for selected grades, selected years, Hawai'i]

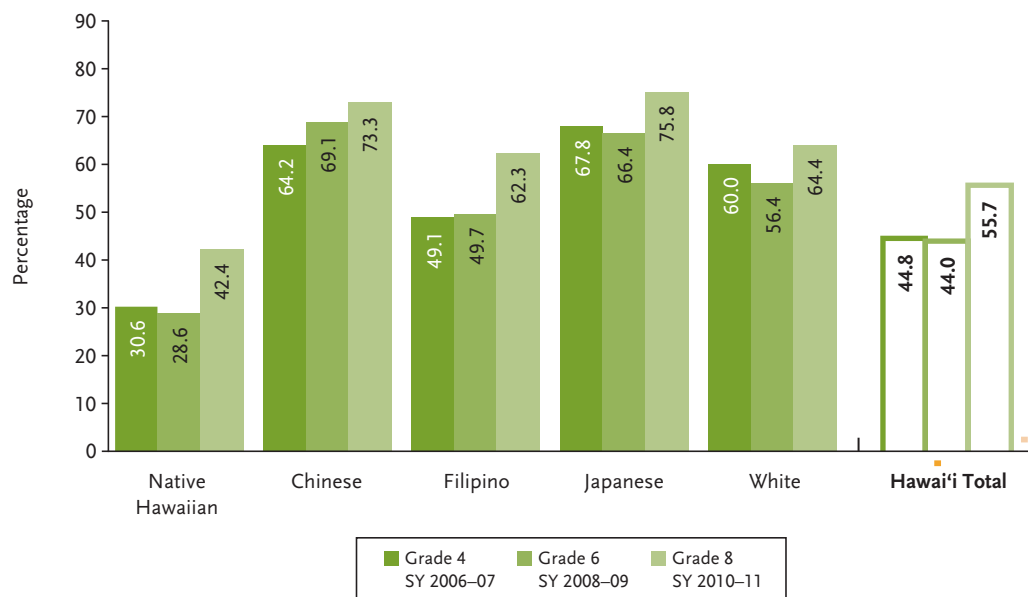


Source: Hawai'i Department of Education SY 2006-07 to SY 2010-11.

- The HSA reading proficiency rates among Native Hawaiian students were the lowest among those of the major ethnic groups in this cohort at all grades shown.
- Among Native Hawaiian students, the reading proficiency rate increased from 36.3 percent in Grade 4 to 55.6 percent in Grade 8.
- The gap between the reading proficiency rates of Native Hawaiian students and the statewide average decreased from 14.1 percentage points in Grade 4 to 12.2 percentage points in Grade 8.
- The gains made relative to statewide averages are particularly important because previous longitudinal studies showed an increasing gap in scores between Native Hawaiian and other students as they moved up in grade (Tibbetts 2002, Kana'iaupuni and Ishibashi 2003).

Similar progress is apparent in mathematics proficiency rates.

**FIGURE 5.25** Longitudinal trends in mathematics proficiency within a single cohort of public school students [HSA mathematics scores at or above proficient level, as a percentage of all public school students in the cohort tested in Grades 4, 6, and 8, by race/ethnicity, for selected grades, selected years, Hawai‘i]



Source: Hawai‘i Department of Education SY 2006–07 to SY 2010–11.

- The HSA mathematics proficiency rates of Native Hawaiians were the lowest among those of the major ethnic groups in this cohort at all grades shown.
- Despite a small dip in rates at Grade 6, Native Hawaiians within this cohort achieved significant gains in mathematics by the end of middle school, with proficiency rates that increased from 30.6 percent in Grade 4 to 42.4 percent in Grade 8.
- The gap between Native Hawaiian students and the statewide average decreased slightly over time, from 14.2 percentage points in Grade 4 to 13.3 percentage points in Grade 8.
- The gains made relative to statewide averages are particularly important because previous longitudinal studies showed an increasing gap in scores between Native Hawaiian and other students as they moved up in grade (Tibbetts 2002, Kana‘iaupuni and Ishibashi 2003).

### TerraNova: Rankings Relative to National Norms

TerraNova is a norm-referenced test that assesses student performance relative to nationwide outcomes. TerraNova’s Reading and Mathematics tests were administered in Hawai‘i public schools during the 2010–11 school year in Grades 3 through 8 and Grade 10.<sup>10</sup>

TerraNova results are reported here as percentile ranks of the average Normal Curve Equivalent scores (i.e., the percentage of students nationally who scored lower than the average student in Hawai‘i public schools). As with the HSA, results are reported for students in Grades 3, 5, 8, and 10 to make the data presentation easier to use.

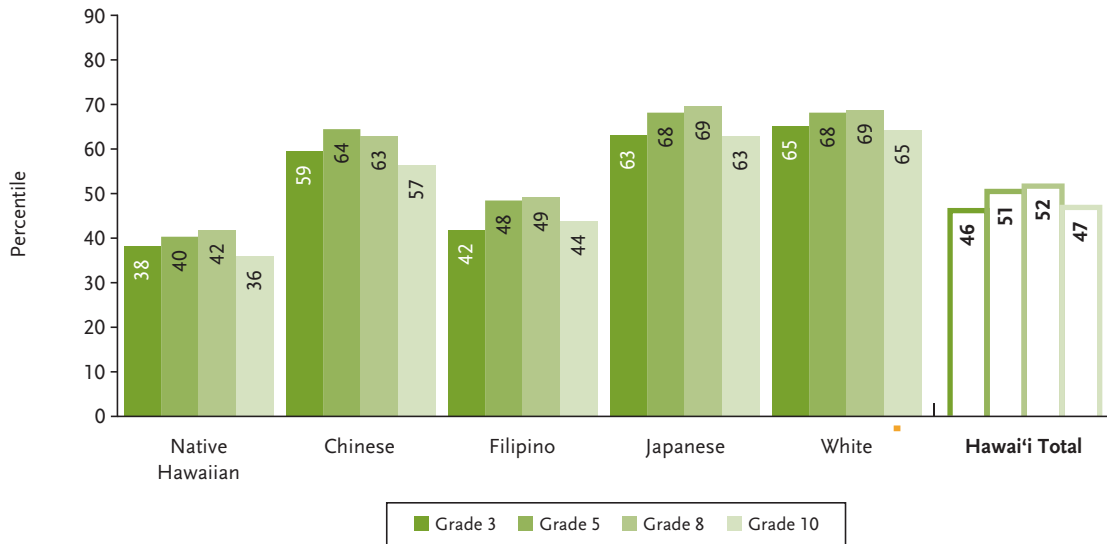
10. TerraNova testing was discontinued in school year 2011–12 as the Hawai‘i DOE prepared for shifts in testing consistent with Common Core requirements.



Figure 5.26 shows TerraNova reading results aggregated across school years 2006–07 through 2010–11. As with the HSA, these data are aggregated across several years to even out the effects of any particularly high- or low-achieving cohorts of students.

**FIGURE 5.26** Reading achievement among public school students

[percentile rank of mean TerraNova reading scores, by race/ethnicity, for selected grades, SY 2006–07 to SY 2010–11 (combined), Hawai‘i]

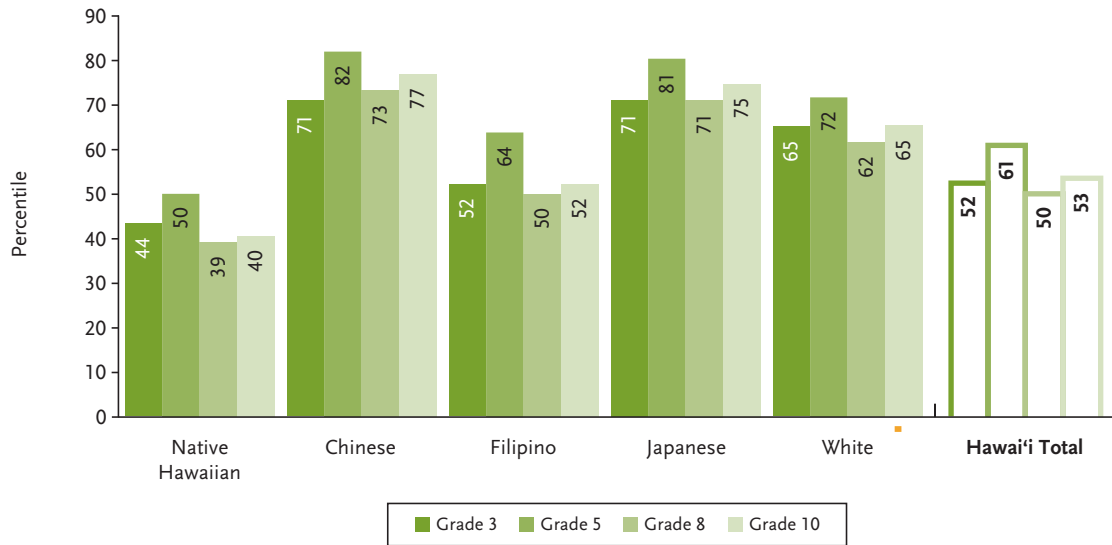


Source: Hawai‘i Department of Education SY 2006–07 to SY 2010–11.

- TerraNova reading test scores among Native Hawaiian students were lower than those of the other major ethnic groups in Hawai‘i. In each grade shown, the average reading scores of Native Hawaiian students lagged behind statewide averages by 8 to 11 percentile points.
- The reading scores of Native Hawaiian students were an average of 11.0 percentile points lower than the national mean (i.e., the 50th percentile).
- Across all major ethnic groups in Hawai‘i, Grade 10 scores averaged 4 to 6 percentile points lower than Grade 8 scores.

Figure 5.27 shows TerraNova mathematics results aggregated across school years 2006–07 through 2010–11.

**FIGURE 5.27** Mathematics achievement among public school students  
[percentile rank of mean TerraNova mathematics scores, by race/ethnicity, for selected grades, SY 2006–07 to SY 2010–11 (combined), Hawai‘i]



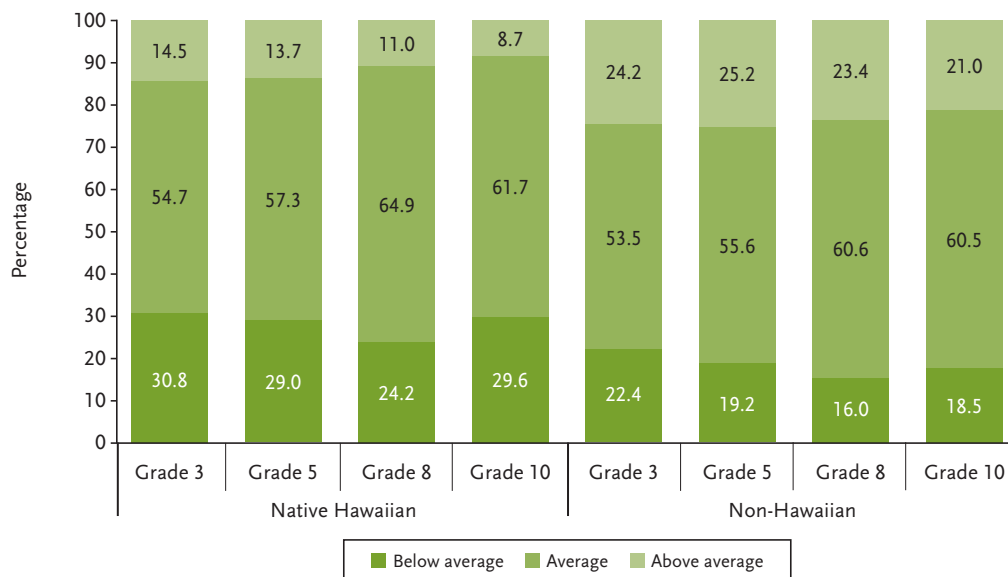
Source: Hawai‘i Department of Education SY 2006–07 to SY 2010–11.

- TerraNova mathematics scores among Native Hawaiian students were lower than those of the other major ethnic groups in Hawai‘i. In each grade tested, the average mathematics score of Native Hawaiian students lagged behind total state averages by 8 to 13 percentile points.
- The mathematics scores of Native Hawaiian students were an average of 6.8 percentile points lower than the mean nationwide score (i.e., the 50th percentile), a smaller gap than was apparent in reading scores (Figure 5.26).
- Across all major ethnic groups, mathematics averages at Grade 8 were 9 to 14 percentile points lower than those at Grade 5. Among Native Hawaiians, the mathematics average in Grade 10 was just 1 percentile point higher than in Grade 8. By comparison, the statewide average in Grade 10 exceeded the Grade 8 average by 3 percentile points.

Another way of displaying norm-referenced results is to group the data into achievement bands. The figures below use standard conventions to classify student performance in below-average, average, and above-average ranges. Based on national norms, we would expect to see 23 percent of students scoring in the below-average range, 54 percent scoring in the average range, and 23 percent scoring in the above-average range.

Figure 5.28 shows reading achievement as being close to national norms for non-Hawaiian students but not for Native Hawaiian students.

**FIGURE 5.28** Distribution of reading achievement scores by grade  
[as a percentage of all TerraNova reading scores, by Native Hawaiian and non-Hawaiian, SY 2006–07 to SY 2010–11 (combined), Hawai'i]

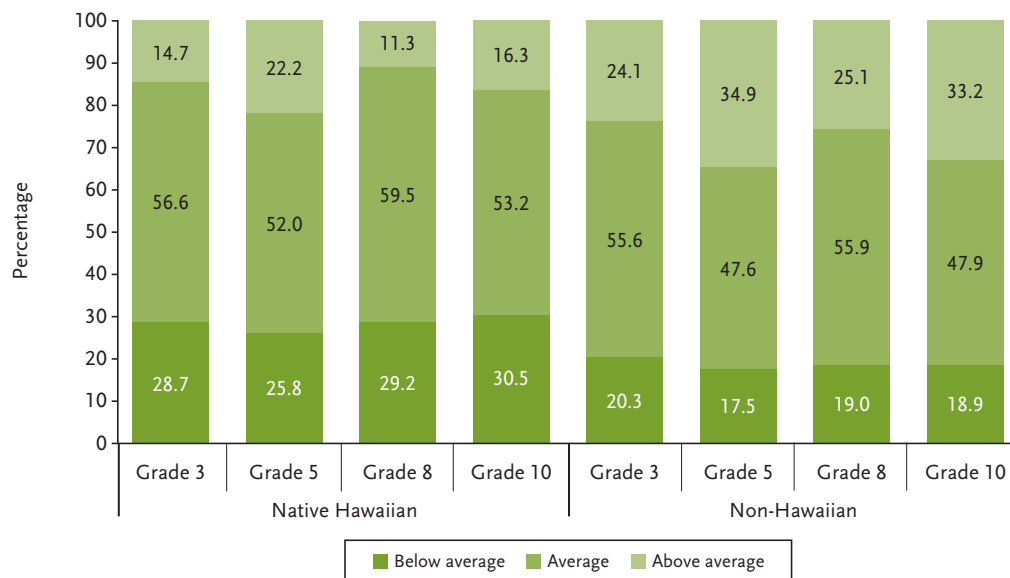


Source: Hawai'i Department of Education SY 2006–07 to SY 2010–11.

- Native Hawaiians were more likely to perform in the below-average range for reading than were their non-Hawaiian peers.
- The gap between the proportion of Native Hawaiians and non-Hawaiians with below-average scores was greater among students in higher grades, increasing from 8.4 percentage points for third-graders to 11.1 percentage points for tenth-graders.
- The percentage of Native Hawaiian students scoring in the above-average range was lower at higher grades, accounting for 14.5 percent of third-graders compared with 8.7 percent of tenth-graders.

Even greater disparities in achievement are seen for mathematics (see Figure 5.29.)

**FIGURE 5.29** Distribution of mathematics achievement scores by grade  
[as a percentage of all TerraNova mathematics scores, by Native Hawaiian and non-Hawaiian, SY 2006–07 to SY 2010–11 (combined), Hawai‘i]

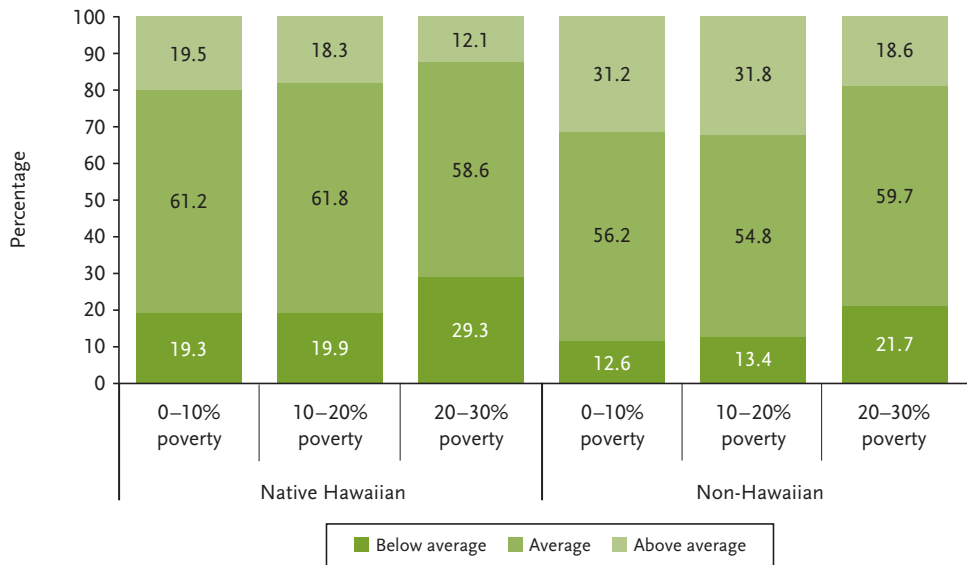


Source: Hawai‘i Department of Education SY 2006–07 to SY 2010–11.

- The percentage of Native Hawaiian students scoring in the above-average range for mathematics trailed that of non-Hawaiians by 9.4 points in Grade 3 and 16.9 points in Grade 10.
- Similarly, the percentage of Native Hawaiian students scoring in the below-average range was higher than for non-Hawaiians, ranging from 8.4 points in Grade 3 to 11.6 points in Grade 10.

The next two figures depict the relationship between Native Hawaiian ethnicity, achievement outcomes, and community poverty. As with the HSA results, when we compare achievement for students in schools with similar levels of poverty, there is still a residual difference between the achievement of Native Hawaiian and non-Hawaiian students.

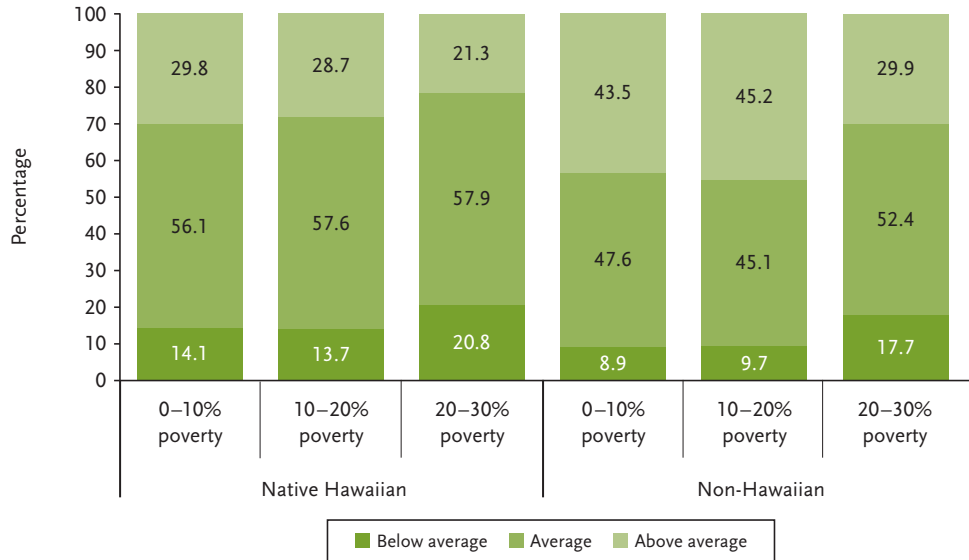
**FIGURE 5.30** Distribution of reading achievement scores by community poverty level  
[as a percentage of all TerraNova reading scores for students tested in Grades 3, 5, 8, and 10 (combined), by Native Hawaiian and non-Hawaiian, by poverty level in complex area, SY 2010–11, Hawai‘i]



Source: Hawai‘i Department of Education SY 2010–11.

- TerraNova reading scores of students attending schools in high-poverty communities—regardless of ethnicity—were less likely to be above average and more likely to be below average compared with the test scores of their less-impovertished peers.
- At each poverty level, Native Hawaiians were less likely than their non-Hawaiian counterparts to score in the above-average range for reading.

**FIGURE 5.31** Distribution of mathematics achievement scores by community poverty level  
[as a percentage of all TerraNova mathematics scores for students tested in Grades 3, 5, 8, and 10 (combined), by Native Hawaiian and non-Hawaiian, by poverty level in complex area, SY 2010–11, Hawai‘i]



Source: Hawai‘i Department of Education SY 2010–11.

- TerraNova mathematics scores of students living in high-poverty communities were less likely to be above average and more likely to be below average compared with their peers in less-impooverished communities.
- Regardless of the level of poverty, Native Hawaiians were less likely to score in the above-average range for mathematics than were non-Hawaiian students.

Poverty and other factors that influence student achievement are not distributed evenly across the state. The tables presented below look at percentile rankings of mean scores for Native Hawaiians in reading and mathematics by region.

**TABLE 5.4** Reading achievement among Native Hawaiian students by region  
[percentile rank of mean TerraNova reading scores, for selected grades, SY 2006–07 to  
SY 2010–11 (combined), Hawai‘i]

Region	Grade 3	Grade 5	Grade 8	Grade 10
<b>Hawai‘i Island</b>				
Hilo–Puna–Ka‘ū	34	37	40	31
Kona–Kohala–Hāmākua	39	41	46	39
Maui	40	39	40	36
Lāna‘i	n/a	n/a	n/a	n/a
Moloka‘i	37	37	31	34
<b>O‘ahu</b>				
Kona O‘ahu	43	47	47	39
Ko‘olaupoko–Ko‘olaupoko	45	45	43	36
‘Ewa–Waialua	41	44	45	39
Wai‘anae	24	29	33	30
Kaua‘i	40	39	44	35
Ni‘ihau	n/a	n/a	n/a	n/a
<b>Hawai‘i Total</b>	<b>38</b>	<b>40</b>	<b>42</b>	<b>36</b>

Source: Hawai‘i Department of Education SY 2006–07 to SY 2010–11.

Note: Data for Lāna‘i and Ni‘ihau are either unavailable or too limited to yield reliable results.

- Mean TerraNova reading scores among Native Hawaiian public school students were below the national norm (i.e., the 50th percentile) across all regions and grades shown.
- With the exception of Wai‘anae and Moloka‘i, the lowest reading scores in each region shown occurred at Grade 10.
- Although Wai‘anae had the lowest regional reading scores in Grades 3, 5, and 10, Wai‘anae’s Grade 10 average was 6 percentile points higher than its Grade 3 average.

**TABLE 5.5** Mathematics achievement among Native Hawaiian students by region  
[percentile rank of mean TerraNova mathematics scores, for selected grades, SY 2006–07 to SY 2010–11 (combined), Hawai‘i]

Region	Grade 3	Grade 5	Grade 8	Grade 10
Hawai‘i Island				
Hilo–Puna–Ka‘ū	37	44	36	32
Kona–Kohala–Hāmākua	42	47	41	40
Maui	46	51	35	39
Lāna‘i	n/a	n/a	n/a	n/a
Moloka‘i	47	55	39	41
O‘ahu				
Kona O‘ahu	48	55	43	46
Ko‘olaupoko–Ko‘olaupoko	50	55	43	44
‘Ewa–Waialua	48	54	42	45
Wai‘anae	30	40	32	32
Kaua‘i	47	49	39	41
Ni‘ihau	n/a	n/a	n/a	n/a
<b>Hawai‘i Total</b>	<b>44</b>	<b>50</b>	<b>39</b>	<b>40</b>

Source: Hawai‘i Department of Education SY 2006–07 to SY 2010–11.

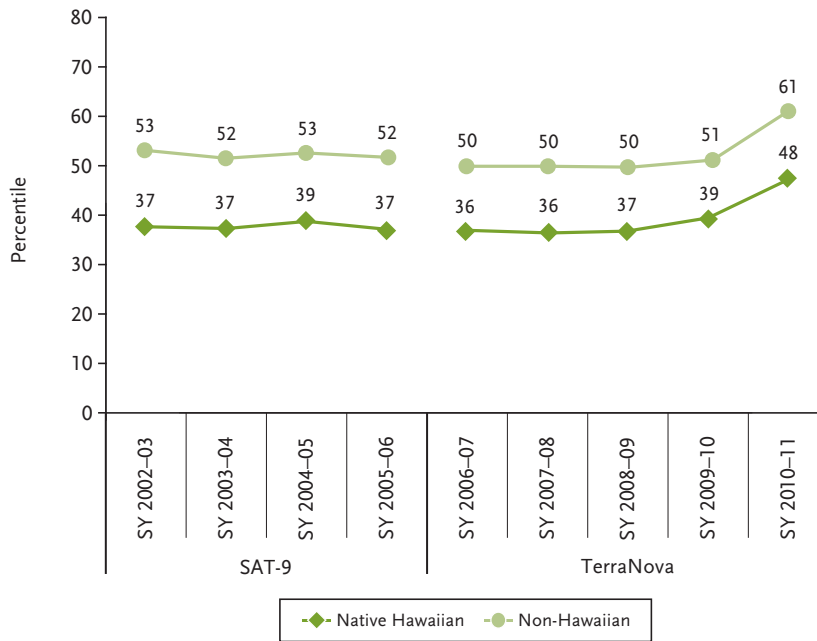
Note: Data for Lāna‘i and Ni‘ihau are either unavailable or too limited to yield reliable results.

- Mean TerraNova mathematics scores among Native Hawaiian public school students were highest at Grade 5 across all areas shown.
- Native Hawaiian mathematics scores at Grade 5 ranged from the 40th percentile in Wai‘anae to the 55th percentile in Kona O‘ahu, Ko‘olaupoko–Ko‘olaupoko, and Moloka‘i.
- Wai‘anae exhibited the lowest average mathematics score among all regions shown, except at Grade 10, where both Hilo–Puna–Ka‘ū and Wai‘anae averaged at the 32nd percentile.
- For all areas shown except Wai‘anae, the average mathematics scores among Native Hawaiian students in Grade 10 were 2 to 7 percentile points lower than the averages in Grade 3. In Wai‘anae, the Grade 10 average was 2 percentile points higher than the Grade 3 average.

Just as we previously examined gaps in the proficiency rates of Native Hawaiian and non-Hawaiian students, we turn now to the achievement gap in norm-referenced scores—and find trends that tend to be more stable over time compared with standards-based proficiency measures.



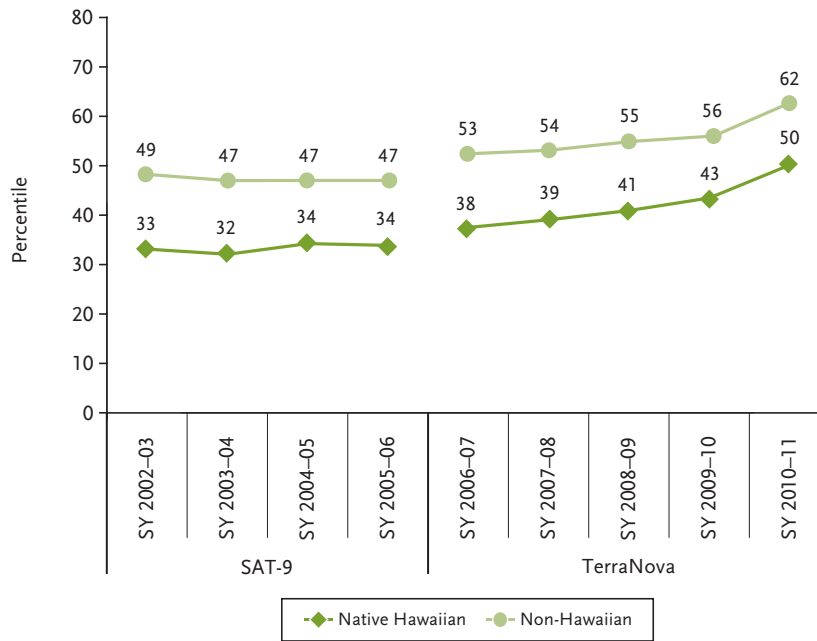
**FIGURE 5.32** Trends in reading achievement among public elementary school students  
[percentile rank of mean SAT-9 and TerraNova reading scores of students tested in Grades 3 and 5 (combined), by Native Hawaiian and non-Hawaiian, SY 2002–03 to SY 2010–11, Hawai'i]



Source: Hawai'i Department of Education SY 2002–03 to SY 2010–11.

- In Hawai'i elementary schools, the mean reading scores of Native Hawaiian and non-Hawaiian students increased significantly in school year 2010–11 after years of relatively flat trends.
- Between school years 2002–03 and 2010–11, Native Hawaiian elementary school students made progress toward closing the reading achievement gap with their non-Hawaiian peers. The gap was 16 percentile points in 2002–03 and 13 percentile points in 2010–11.

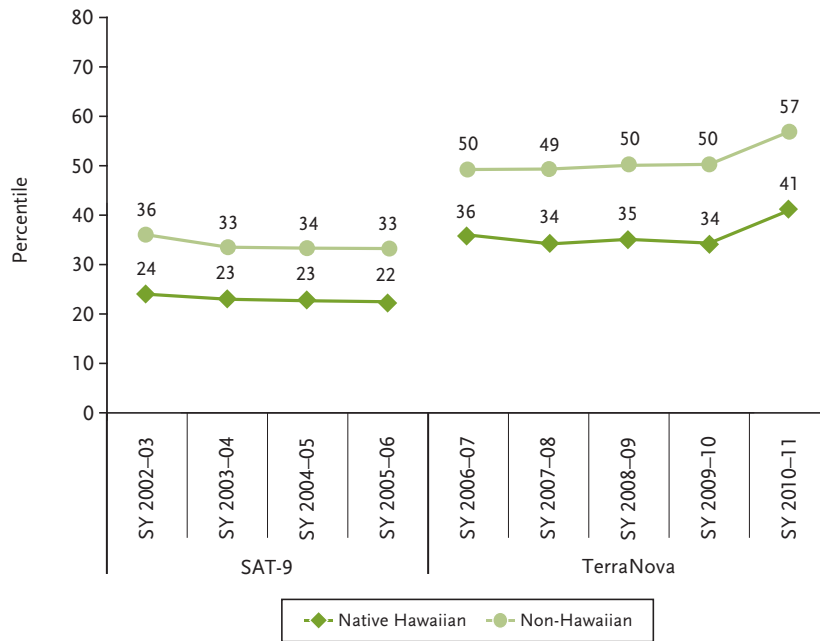
**FIGURE 5.33** Trends in reading achievement among public middle school students  
[percentile rank of mean SAT-9 and TerraNova reading scores of students tested in Grade 8, by Native Hawaiian and non-Hawaiian, SY 2002–03 to SY 2010–11, Hawai‘i]



Source: Hawai‘i Department of Education SY 2002–03 to SY 2010–11.

- In Hawai‘i middle schools, Native Hawaiian and non-Hawaiian students demonstrated an increase in mean reading scores between school years 2002–03 and 2010–11 (17 percentile points and 13 percentile points, respectively).
- The reading achievement gap between Native Hawaiian and non-Hawaiian middle school students decreased from 16 percentile points in school year 2002–03 to 12 percentile points in 2010–11.

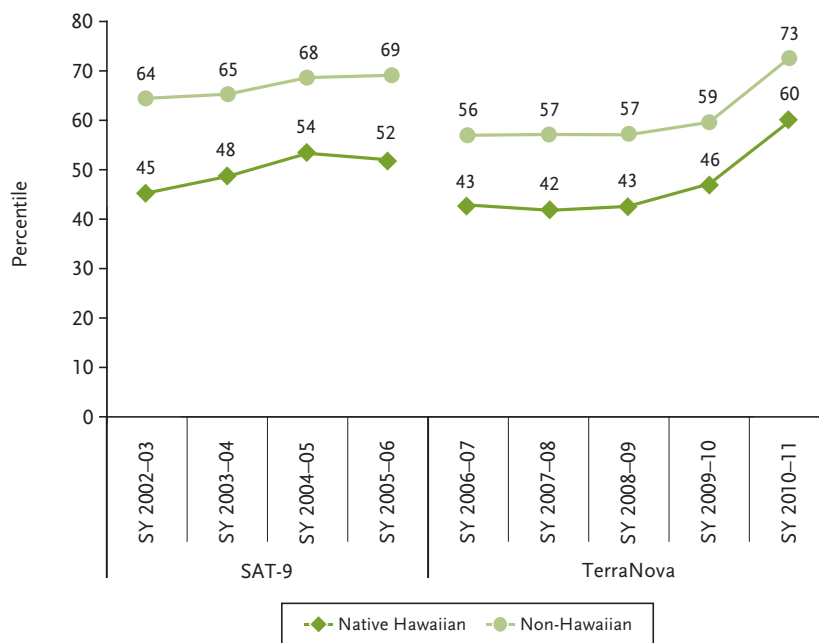
**FIGURE 5.34** Trends in reading achievement among public high school students  
[percentile rank of mean SAT-9 and TerraNova reading scores of students tested in Grade 10, by Native Hawaiian and non-Hawaiian, SY 2002–03 to SY 2010–11, Hawai'i]



Source: Hawai'i Department of Education SY 2002–03 to SY 2010–11.

- In Hawai'i high schools, mean reading scores for Native Hawaiian high school students increased 17 percentile points between school years 2002–03 and 2010–11, while the scores of their non-Hawaiian peers increased 21 percentile points over the same period. Some of these gains are likely attributable to the shift from the SAT-9 assessment to TerraNova in school year 2006–07; however, reading scores also increased during the course of TerraNova's use, between 2006–07 and 2010–11.
- The reading achievement gap between Native Hawaiian and non-Hawaiian high school students held steady at 10 to 12 percentile points between 2002–03 and 2005–06 but increased slightly since the switch to the TerraNova assessment.

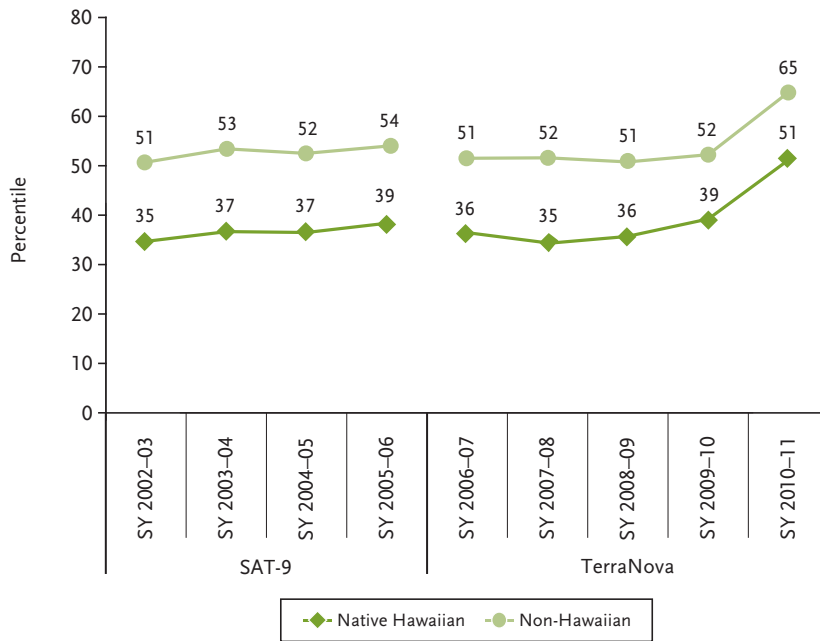
**FIGURE 5.35** Trends in mathematics achievement among public elementary school students [percentile rank of mean SAT-9 and TerraNova mathematics scores of students tested in Grades 3 and 5 (combined), by Native Hawaiian and non-Hawaiian, SY 2002–03 to SY 2010–11, Hawai‘i]



Source: Hawai‘i Department of Education SY 2002–03 to SY 2010–11.

- In Hawai‘i elementary schools, the mean mathematics scores of Native Hawaiian students generally followed the same trend as that of their non-Hawaiian peers.
- Since 2006–07, the mathematics scores of Native Hawaiian and non-Hawaiian elementary school students increased by 17 percentile points.
- The mathematics achievement gap between Native Hawaiian and non-Hawaiian elementary school students remained at roughly 13 percentile points from school year 2006–07 through 2010–11.

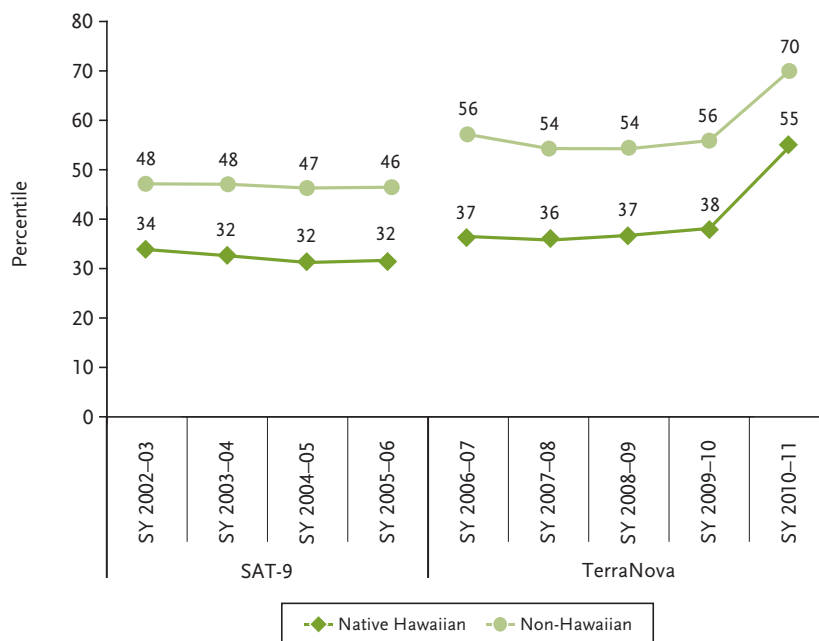
**FIGURE 5.36** Trends in mathematics achievement among public middle school students  
[percentile rank of mean SAT-9 and TerraNova mathematics scores of students tested in Grade 8, by Native Hawaiian and non-Hawaiian, SY 2002–03 to SY 2010–11, Hawai‘i]



Source: Hawai‘i Department of Education SY 2002–03 to SY 2010–11.

- In Hawai‘i middle schools, the mean mathematics scores of Native Hawaiian and non-Hawaiian students followed the same general trend, increasing between school years 2002–03 and 2005–06, holding steady between 2006–07 and 2008–09, and then making substantial gains between 2008–09 and 2010–11.
- Since 2006–07, mathematics scores for Native Hawaiian middle school students increased by 15 percentile points, compared with 14 percentile points among non-Hawaiian students.
- The mathematics achievement gap between Native Hawaiian and non-Hawaiian middle school students decreased by 1 percentile point from 2006–07 to 2010–11 (compared with a decrease of 3 percentile points in reading achievement over the same period).

**FIGURE 5.37** Trends in mathematics achievement among public high school students  
[percentile rank of mean SAT-9 and TerraNova mathematics scores of students tested in Grade 10, by Native Hawaiian and non-Hawaiian, SY 2002–03 to SY 2010–11, Hawai‘i]



Source: Hawai‘i Department of Education SY 2002–03 to SY 2010–11.

- Since 2006–07, the mean mathematics scores of Native Hawaiian high school students increased 18 percentile points, from the 37th percentile in 2006–07 to the 55th percentile in 2010–11. The scores of non-Hawaiian students increased by 14 percentile points over the same period.
- The mathematics achievement gap between Native Hawaiian high school students and their non-Hawaiian peers decreased after the shift to TerraNova, from a high of 19 percentile points in 2006–07 to 15 percentile points in 2010–11.

### *Timely Graduation*

Research shows that dropping out of high school often leads to “social and economic tragedy,” with an increased likelihood of unemployment, incarceration, and poverty. Further, the situation has grown worse over time as jobs that allow workers without an education to earn a living wage are increasingly rare (Orfield 2004, 1). These consequences reach beyond the individuals involved and their immediate families. Orfield notes that “When an entire racial or ethnic group experiences consistently high dropout rates, these problems can damage the community, its families, its social structure, and its institutions” (2004, 2).

The economic value of a high school education is starkly evident in employment and earnings data from the 2007–09 recession. Recent statistics from the Bureau of Labor Statistics indicate that adults without a high school degree are at great disadvantage in their prospects for employment and earnings. Among adults ages twenty-five and older, the unemployment rate of those with less than a high school diploma was nearly 50 percent higher than the rate for those with a high school diploma, more than double the rate of those with an associate’s degree, and almost triple the rate of those with a bachelor’s degree or higher (see Table 5.6). Those without a high school diploma who are employed, on average,

earn far less than their peers with more education. The median earnings for workers who did not complete high school was just over two-thirds of the earnings of their peers with a high school diploma or equivalent.

**TABLE 5.6** Unemployment and earnings by educational attainment  
[adults 25 years and older, 2011, United States]

Education level	Unemployment rate	Median weekly earnings (\$)
Less than high school	14.1	451
High school (including equivalent)	9.4	638
Some college, no degree	8.7	719
Associate's degree	6.8	768
Bachelor's degree	4.9	1,053
Master's degree	3.6	1,263
Professional degree	2.4	1,665
Doctoral degree	2.5	1,551

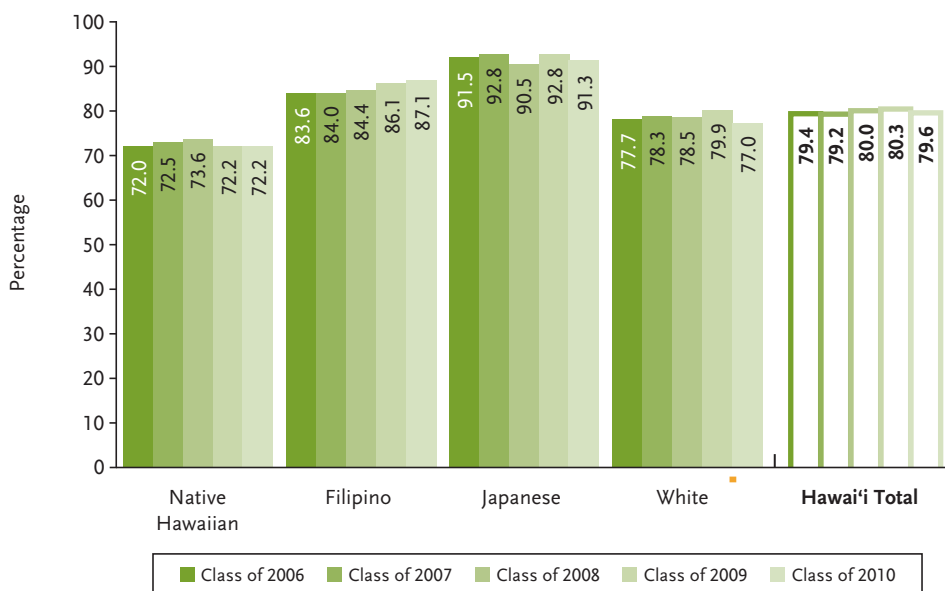
Source: US Department of Labor, Bureau of Labor Statistics 2012.

Note: Earnings are for full-time wage and salary workers.

Figure 5.38 depicts trends in high school completion within four years of first entering Grade 9 (often referred to as “timely graduation”). High school graduation is increasingly critical to one’s chances for success in postsecondary education and career.

**FIGURE 5.38** Trends in timely high school graduation

[students who graduated within 4 years of first entry to Grade 9, as a percentage of all public high school students enrolled at Grade 9, by race/ethnicity, SY 2005–06 to SY 2009–10, Hawai‘i]



Source: Hawai‘i Department of Education SY 2005–06 to SY 2009–10.

Note: Data for Chinese students are not reported here because their numbers are too limited to yield reliable results.

- High school completion rates among Native Hawaiian students have been consistent across recent graduating classes, with slightly less than three in four completing high school within four years, compared with four in five public school students statewide.
- On the whole, Native Hawaiians in the public school system have had the lowest rates of timely graduation of all major ethnic groups in the state.
- Although Native Hawaiian graduation rates increased slightly between 2006 and 2008, the overall trend has remained relatively consistent at around 72 to 73 percent.

## Risk Factors

A number of individual, family, school, and community factors can place children at risk for educational underachievement. Examples of individual factors include low birthweight, learning difficulties, low levels of cognitive engagement, low expectations, and prior history of low achievement. Family factors include low income, low levels of parent education, teenage parents, high levels of mobility, low expectations, and low levels of parental engagement or support for education. School and community factors include concentrated economic disadvantage, high levels of low achievement, low support for family and community engagement, and again, low expectations.

This section presents statistics on the prevalence of risk factors for Native Hawaiian and non-Hawaiian children in the public school system. The available data on risk factors are identified in Table 5.7.

**TABLE 5.7** Educational risk data available for Hawai'i public school students

Factor	Proxy/measure
Learning difficulties	Special education placement
Low engagement/support	Attendance
Economic disadvantage	Community poverty level



### *Learning Difficulties and Special Education Placement*

Special education services can be critical to the success of children with learning difficulties. However, when overapplied or misapplied, these services—and the labels attached to them—can limit opportunities to learn. Nationwide, there has been a trend toward overidentification of minority and indigenous children as requiring special education services. In *Racial Inequality in Special Education*, the authors note that:

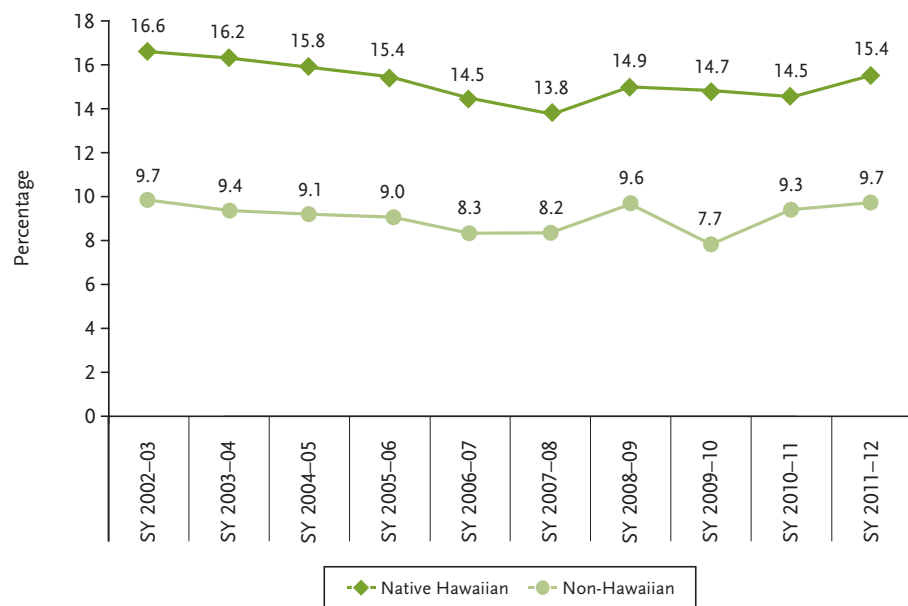
Both the statistical and qualitative analyses in this book suggest that the racial, ethnic, and gender differences are due to many complex and interacting factors, including unconscious racial bias on the part of school authorities, large resource inequalities that run along lines of race and class, unjustifiable reliance on IQ and other evaluation tools, educators' inappropriate responses to the pressures of high stakes testing, and power differentials between minority parents and school officials. (Losen, Orfield, and Civil Rights Project [Harvard University] 2002, xviii)

In Hawai'i, Native Hawaiians represented 27.9 percent of the kindergarten to Grade 12 public school population and 38.1 percent of all special education students in the 2011–12 school year (see Figure 5.40). The increased presence of risk factors associated with low economic and social capital likely contributes in part to the increased rate of identification. However, this disproportionality in special education enrollment raises concerns. An analysis of the Hawai'i DOE's special education data revealed that the likelihood of being identified as requiring special education services is 86 percent higher for Native Hawaiians than for non-Hawaiians when using only Hawaiian ancestry to predict classification. After statistically controlling for economic disadvantage and sex, the likelihood of being identified for special education is 69 percent higher for Native Hawaiians than for non-Hawaiians (Tibbetts 2013).

The percentage of Native Hawaiians and non-Hawaiians enrolled in special education programs in recent years is shown in Figure 5.39.

**FIGURE 5.39** Trends in special education enrollment

[as a percentage of all public school students, by Native Hawaiian and non-Hawaiian, SY 2002–03 to SY 2011–12, Hawai‘i]



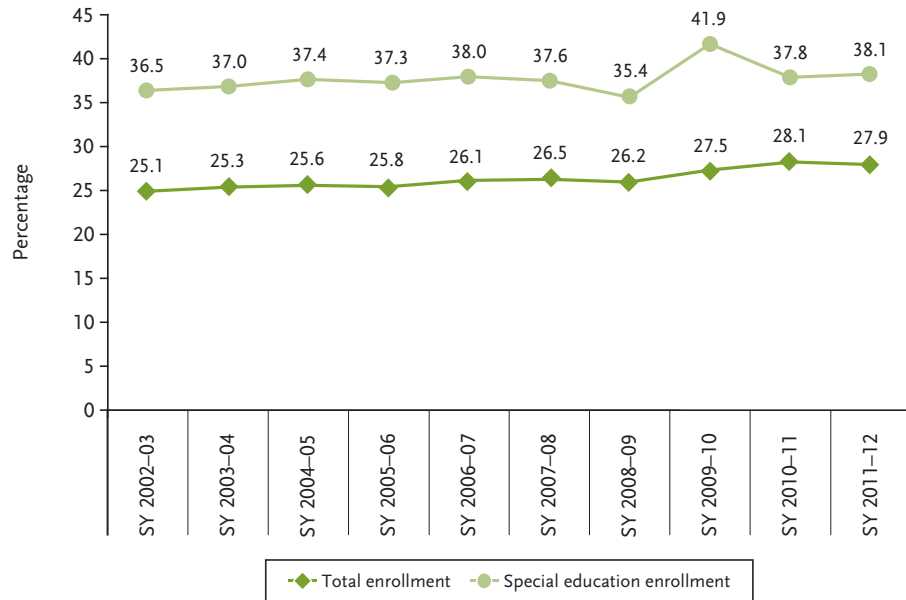
Source: Hawai‘i Department of Education SY 2002–03 to SY 2011–12.

- Special education enrollment among Native Hawaiian public school students was 15.4 percent during school year 2011–12, compared with 9.7 percent among non-Hawaiian students.
- The proportion of Native Hawaiian students participating in special education programs decreased by 1.2 percentage points between 2002–03 and 2011–12.
- A gradual but steady decline in Native Hawaiian enrollment in special education occurred between the 2002–03 and 2007–08 school years (an average of 0.6 percentage points per year, compared with only 0.3 per year for non-Hawaiians). But this was followed by a subsequent increase of 1.6 percentage points.

Figure 5.40 shows the gap between Native Hawaiian students as a percentage of all students and as a percentage of special education students.

**FIGURE 5.40** Trends in Native Hawaiian special education enrollment

[Native Hawaiian students as a percentage of all special education students, and Native Hawaiian students as a percentage of all public school students, SY 2002–03 to SY 2011–12, Hawai‘i]



Source: Hawai‘i Department of Education SY 2002–03 to SY 2011–12.

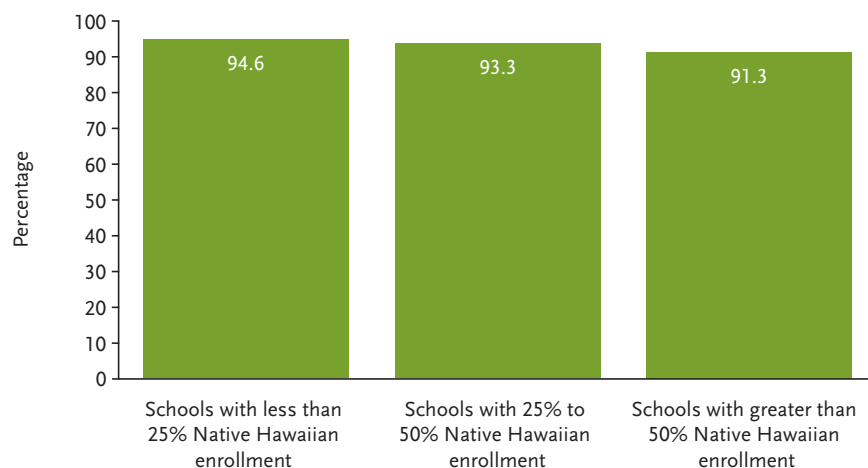
- Native Hawaiians were overrepresented in special education programs by an average of 11.3 percentage points from 2002–03 to 2011–12.

### *School Engagement*

School engagement is typically described as having three dimensions: cognitive, behavioral, and affective (Wang and Holcombe 2010). The data available for this report include one indicator of the behavioral dimension: attendance.<sup>11</sup> Regular attendance is critical to educational success, as each missed school day is a missed opportunity to learn (e.g., Gottfried 2010, Moyer 2013). Figure 5.41 suggests that absences are more common in schools with high levels of Native Hawaiian enrollment.

11. Earlier versions of the Native Hawaiian Educational Assessment, *Ka Huaka‘i* 2005, and the 2009 update to *Ka Huaka‘i* included statistics on the proportion of students with excessive absences. However, in more recent years this statistic has become less reliable—probably as a result of changing definitions—and is therefore intentionally omitted from this report.

**FIGURE 5.41** Average daily attendance in public schools by level of Native Hawaiian enrollment  
[weighted average of school-level average daily attendance rates, SY 2011–12, Hawai‘i]



Source: Hawai‘i Department of Education SY 2011–12.

- The average daily attendance rate among predominantly Native Hawaiian public schools was 91.3 percent. This means that on an average school day, almost one out of every ten students (8.7 percent) was absent from school. This average daily attendance rate represents an increase of 1.2 percentage points since the 2000–01 school year (not shown).
- Schools with less than 25 percent Native Hawaiian enrollment had a higher average daily attendance rate (94.6 percent), compared with schools with higher Native Hawaiian enrollment.

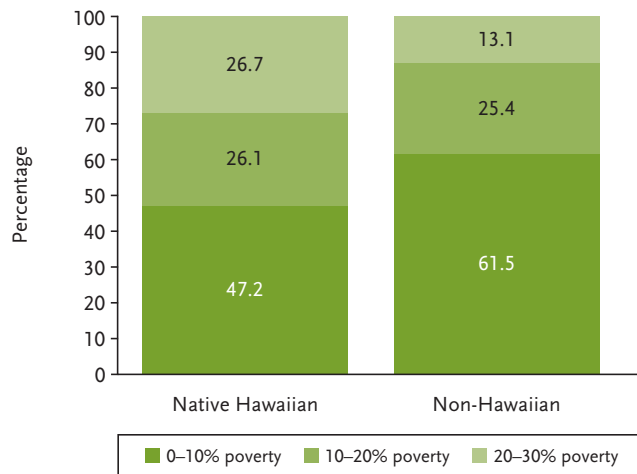
### *Low Socioeconomic Status*

Socioeconomic status (SES) is often measured as a combination of education, income, and occupation. Low socioeconomic status is educationally significant because it often represents limited financial, social, and cultural capital for children and their families and is highly correlated with lower levels of achievement. At the school and community levels, high concentrations of individuals with low SES often signify limited access to resources, which can affect the quality of schooling, the availability of educational opportunities, and access to peer and adult role models who have been successful in school and career—all of which affect social mobility and equity (Sirin 2005).

Changes in federal policies have made it difficult to obtain student-level data regarding participation in the subsidized (free/reduced price) meals program—an indicator researchers have often used as a proxy for SES in public school students. Given this limitation, we focus instead on community-level poverty, which may have as much influence on educational outcomes as the family SES of an individual student (Sirin 2005).

Figure 5.42 shows the distribution of Native Hawaiian and non-Hawaiian public school students across communities with varying levels of poverty.

**FIGURE 5.42** Distribution of public school students by community poverty level  
[as a percentage of all public school students, by Native Hawaiian and non-Hawaiian, by poverty level in the community served by the high school complex, SY 2011–12, Hawai‘i]



Source: Hawai‘i Department of Education SY 2011–12.

- Native Hawaiian public school students were twice as likely as were non-Hawaiians to attend school in communities with the highest levels of poverty (26.7 percent versus 13.1 percent, respectively).
- Less than half of all Native Hawaiian public school students (47.2 percent) attend school in communities with the lowest levels of poverty, compared with about three in five non-Hawaiian students (61.5 percent).

## School-Level Resources and Outcomes

One of the key issues in educational reform over the last quarter century has been the equality of access to high-quality education. Quality can be measured on many dimensions. Here we focus on proxies for school quality, such as the distribution of high-caliber human resources and high-quality infrastructure (e.g., teacher certification, teacher experience, principal turnover, and facility ratings), as well as results from the annual Hawai‘i DOE’s School Quality Survey.

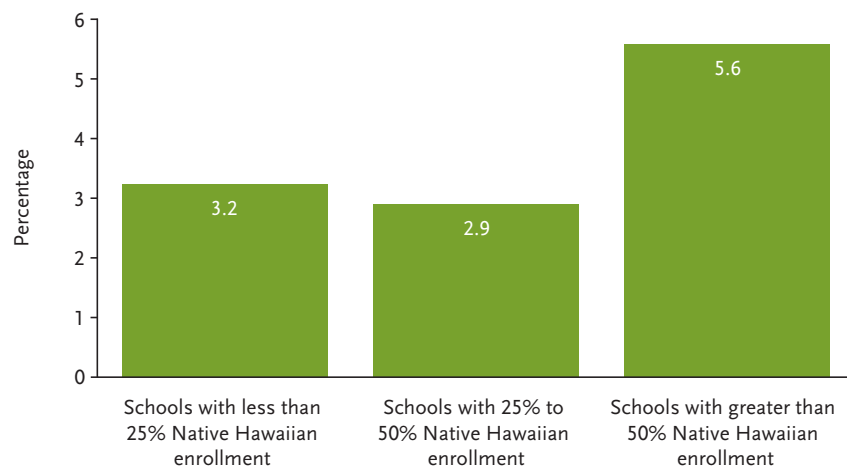
### *Teacher Certification*

Among the factors controlled by the educational system, teacher quality arguably has the most significant impact on student achievement. A review of research on major contributors to academic outcomes revealed that, after the characteristics of students themselves, teachers had the largest single influence on achievement (Hattie 2003).

While teacher quality, certification, and experience are not the same, they are related constructs. Teachers who are certified and more experienced tend to have greater impacts on student learning than do novice or uncertified teachers (Kane, Rockoff, and Staiger 2006). Research has shown that measures of teacher preparation and certification are strong correlates of student achievement in reading and mathematics (Darling-Hammond 2000).

Teachers with emergency or provisional credentials are sometimes utilized instead of certified teachers. The proportion of teachers with emergency or provisional credentials is shown in Figure 5.43 and Figure 5.44. Schools are sorted into three groups based on the proportion of Native Hawaiians in the total student enrollment: less than 25 percent, 25 to 50 percent, and more than 50 percent.

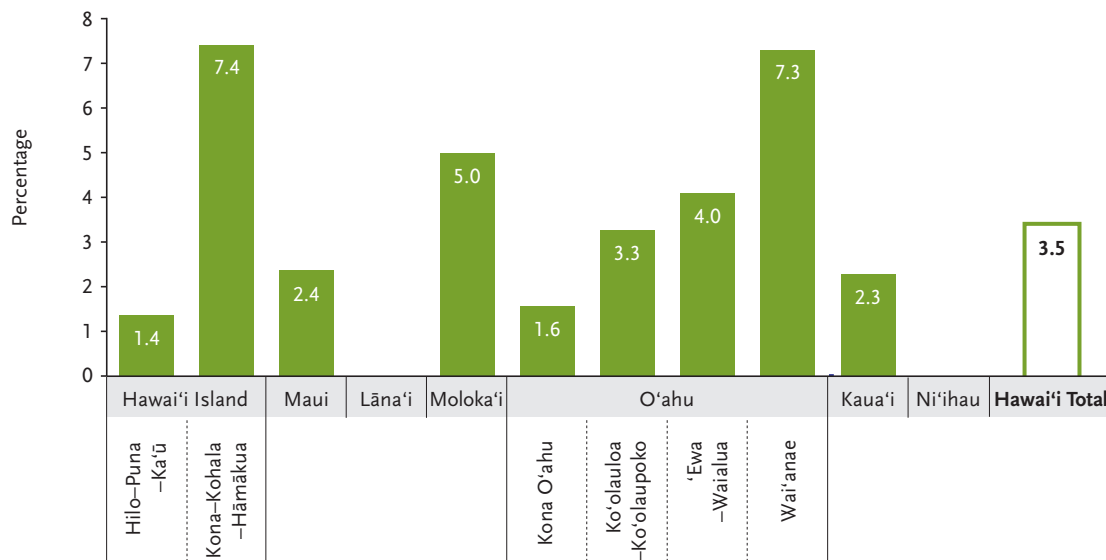
**FIGURE 5.43** Teachers with emergency or provisional credentials by level of Native Hawaiian enrollment  
[as a percentage of all public school teachers, SY 2011–12, Hawai‘i]



Source: Hawai‘i Department of Education SY 2011–12.

- Teachers at predominantly Native Hawaiian public schools were almost twice as likely to have provisional or emergency credentials as were teachers at schools where Native Hawaiians constituted 25 to 50 percent of the student body (5.6 percent versus 2.9 percent, respectively).

**FIGURE 5.44** Teachers with emergency or provisional credentials by region  
[as a percentage of all public school teachers, SY 2011–12, Hawai‘i]



Source: Hawai‘i Department of Education SY 2011–12.

Note: Data for Lāna‘i and Ni‘ihau are either unavailable or too limited to yield reliable results.

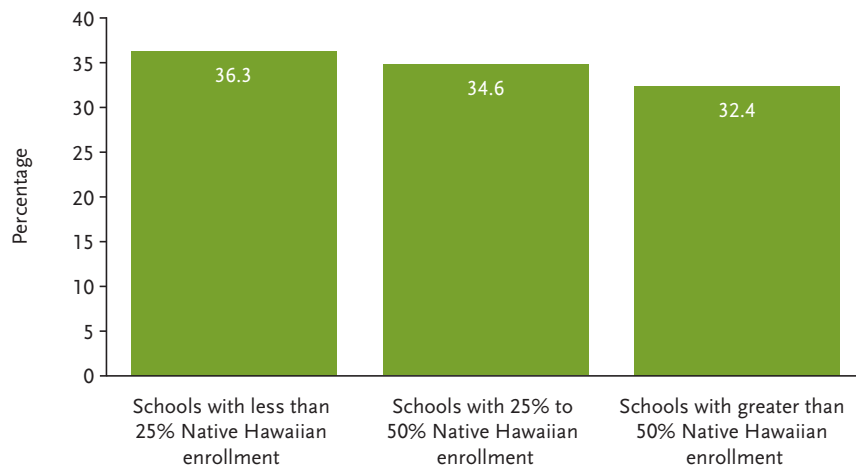
- Public school teachers with provisional or emergency credentials were more prevalent in Kona–Kohala–Hāmākua and Wai‘anae than in other areas.<sup>12</sup>
- Teachers in Kona O‘ahu and Hilo–Puna–Ka‘ū were most likely to be fully licensed, with only 1.6 percent and 1.4 percent holding provisional or emergency credentials, respectively.

Teachers with graduate degrees in teaching and/or their subject area are another part of overall school quality. While research findings are mixed on the impact that teachers with graduate degrees have on test scores, some literature suggests that secondary school students may benefit from teachers with graduate degrees in the subject matter taught (Clotfelter, Ladd, and Vigdor 2007, Darling-Hammond et al. 2005). In addition, some educational researchers theorize that the beneficial effects of teachers with graduate degrees or advanced certification may be most evident in the dimensions of student growth and engagement that are not measured by standardized achievement tests (Hattie 2009).

12. Lāna‘i and Ni‘ihau were excluded from school-level regional analyses because each island has a single school.

The next two figures depict the percentage of teachers with graduate degrees in relation to school characteristics such as the proportion of Native Hawaiian enrollment (Figure 5.45) and geography (Figure 5.46).

**FIGURE 5.45** Teachers with graduate degrees by level of Native Hawaiian enrollment  
[as a percentage of all public school teachers, SY 2011–12, Hawai'i]

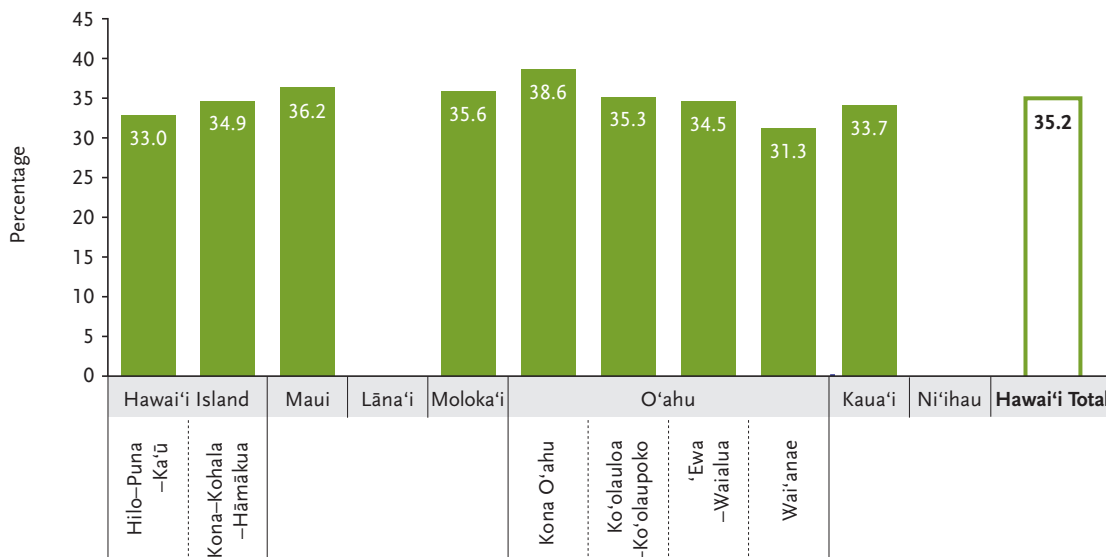


Source: Hawai'i Department of Education SY 2011–12.

- In public schools with less than 50 percent Native Hawaiian enrollment, more than one-third of the teachers (36.3 percent) had earned a graduate degree.
- In predominantly Native Hawaiian schools, less than one in three teachers (32.4 percent) had obtained a master's or doctoral degree.
- Since school year 2001–02 (not shown), the percentage of teachers with graduate degrees has increased in schools across all levels of Native Hawaiian enrollment.



**FIGURE 5.46** Teachers with graduate degrees by region  
[as a percentage of all public school teachers, SY 2011–12, Hawai‘i]



Source: Hawai‘i Department of Education SY 2011–12.

Note: Data for Lāna‘i and Ni‘ihau are either unavailable or too limited to yield reliable results.

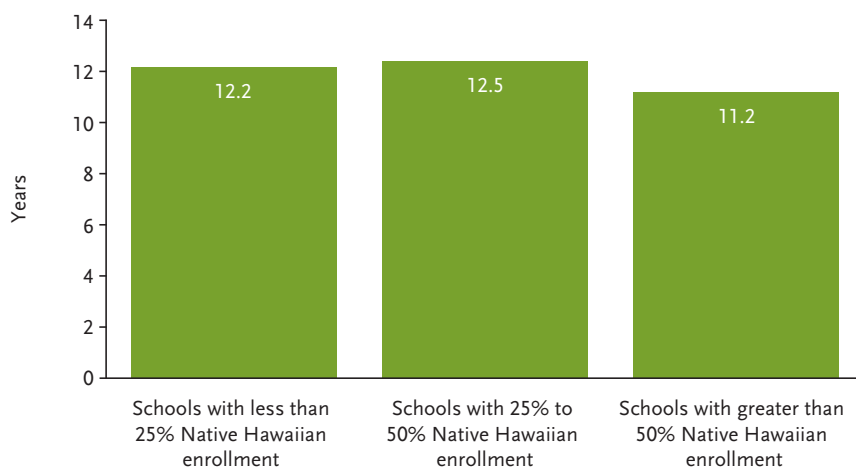
- Public school teachers with graduate degrees were represented fairly consistently across regions.
- The percentage of teachers with graduate degrees was highest in Kona O‘ahu (38.6 percent).
- Areas where the percentage of teachers with graduate degrees was lowest include Wai‘anae (31.3 percent), Hilo–Puna–Ka‘ū (33.0 percent), and Kaua‘i (33.7 percent).

### *Teacher Experience and Retention*

Research demonstrates that there is a steep learning curve for new teachers, with teacher efficacy improving dramatically in the first three to four years of teaching (Center for Education Policy Research at Harvard University 2010). Therefore, years of teaching experience is another key proxy for school quality and educational equity.

Figure 5.47 shows teachers’ average years of experience in the public school system. Slight disparities are apparent in the levels of experience among teaching staff, with the typical teacher in predominantly Native Hawaiian schools having about one less year of experience than his or her colleagues in schools with lower levels of Native Hawaiian enrollment. Note, there have been gains in teachers’ average years of experience in charter schools. This is largely a result of the fact that the majority of charter schools first opened in school years 1999–00 or 2000–01.

**FIGURE 5.47** Teacher experience by level of Native Hawaiian enrollment  
[average years of experience among public school teachers, SY 2011–12, Hawai‘i]

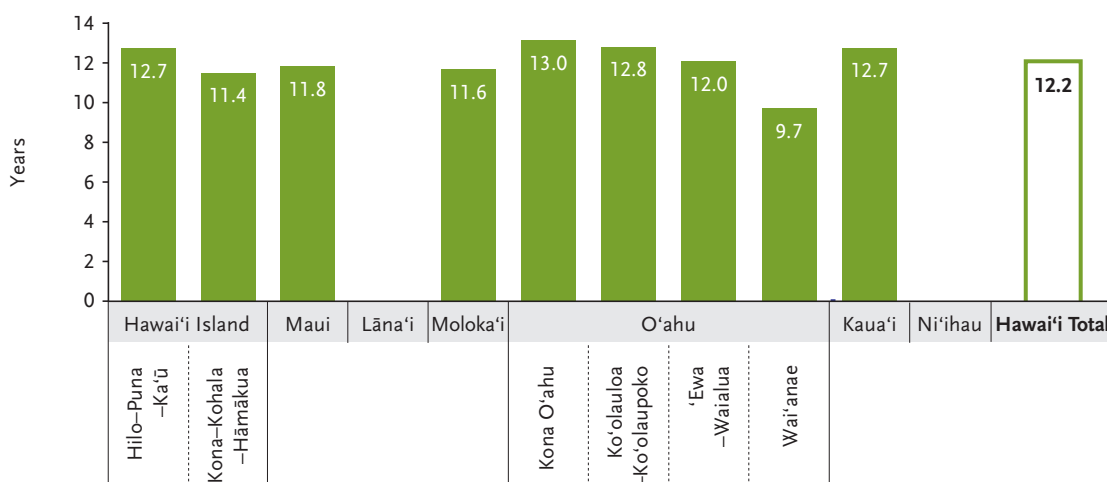


Source: Hawai‘i Department of Education SY 2011–12.

- The average years of experience of public school teachers in predominantly Native Hawaiian schools was 11.2 years.
- The difference in teacher experience between predominantly Native Hawaiian schools and those where less than 25 percent of the students are Hawaiian declined from 3.1 years in 2001–02 (not shown) to 1.0 years 2011–12.

Differences in average years of teacher experience are apparent across regions.

**FIGURE 5.48** Teacher experience by region  
[average years of experience among public school teachers, SY 2011–12, Hawai‘i]



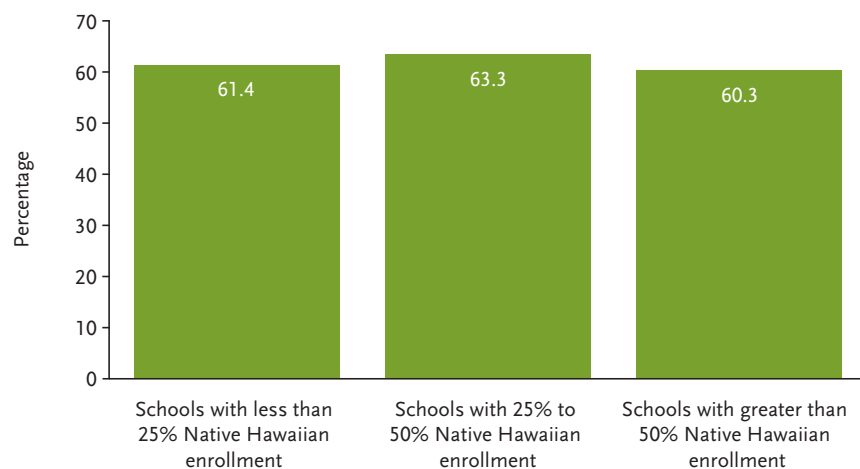
Source: Hawai‘i Department of Education SY 2011–12.

Note: Data for Lāna‘i and Ni‘ihau are either unavailable or too limited to yield reliable results.

- Public school teachers in Kona O‘ahu had the highest average years of experience (13.0 years) compared with their peers in other areas.
- Teachers in Wai‘anae had, on average, 2.5 fewer years of experience than did the average teacher statewide.

In a similar vein, research has shown that teacher turnover is related to overall achievement levels at schools. The effects of faculty turnover are not restricted to students who are assigned to new teachers; high rates of turnover can have a small but significant effect on test scores schoolwide (Ronfeldt, Loeb, and Wyckoff 2013).

**FIGURE 5.49** Teacher retention by level of Native Hawaiian enrollment  
[teachers with at least 5 years of service at current school, as a percentage of all public school teachers, SY 2011–12, Hawai‘i]



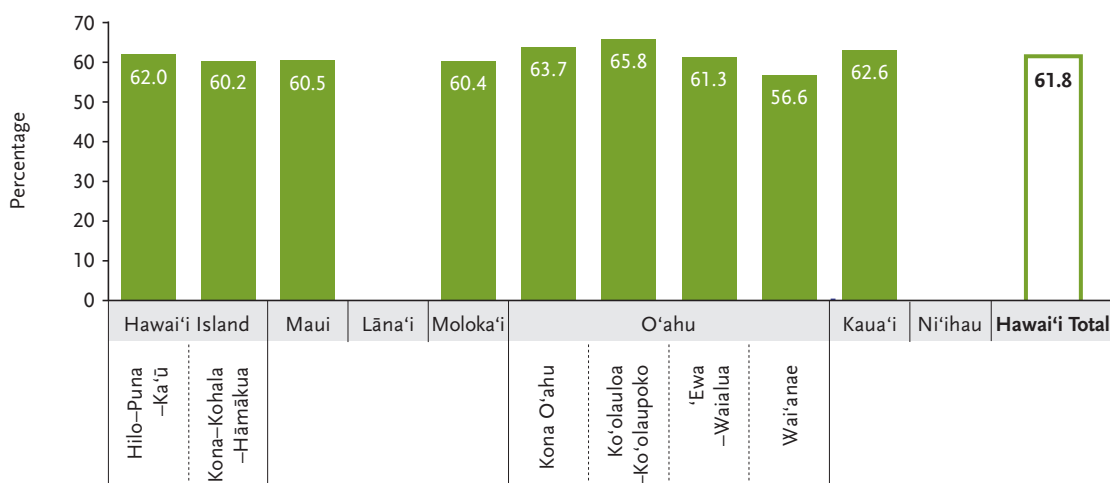
Source: Hawai‘i Department of Education SY 2011–12.

- Three out of every five teachers in predominantly Native Hawaiian public schools (60.3 percent) had at least five years of service at their current school.
- In schools where a majority of students are not Native Hawaiian, the percentage of teachers with five or more years at their current school was only slightly higher than that of predominantly Native Hawaiian schools (63.3 percent for schools with 25 to 50 percent Native Hawaiian enrollment and 61.4 percent for schools with less than 25 percent Native Hawaiian enrollment).
- Since school year 2001–02 (not shown), the percentage of teachers with at least five years of service at their current school remained constant for predominantly Native Hawaiian schools and decreased for schools with less than 50 percent Native Hawaiian enrollment.

In contrast to the relative equity in teachers’ years of service across school types, teacher turnover rates by region are more pronounced, as shown in Figure 5.50.

**FIGURE 5.50** Teacher retention by region

[teachers with at least 5 years of service at current school, as a percentage of all public school teachers, SY 2011–12, Hawai‘i]



Source: Hawai'i Department of Education SY 2011–12.

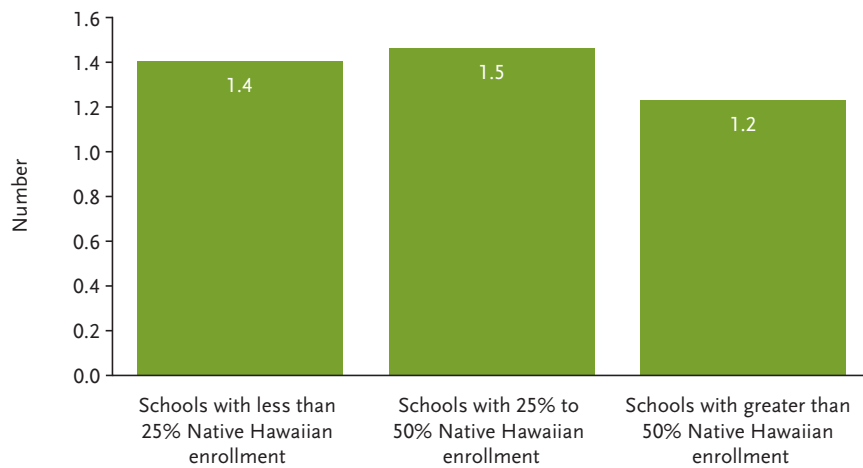
Note: Data for Lāna'i and Ni'ihau are either unavailable or too limited to yield reliable results.

- The percentage of teachers with five or more years of service at their current school was the highest in Ko'olaupoko (65.8 percent), compared with the statewide average of 61.8 percent.
- Not only did Wai'anae have the lowest percentage of teachers with five or more years at their current schools (56.6 percent), but the percentage of Wai'anae teachers with five or more years of service has decreased by 5.9 percentage points since school year 2001–02 (not shown).

### Principal Turnover

The role of the principal in school effectiveness is of growing interest in the school reform literature. Miller (2009) found that schools experiencing a transition in principals had low test scores compared with the historical and future performance of the school. (Scores typically return to pretransition levels within four years of the transition.) Thus, assuming the principal is an effective educational leader, frequent changes in principals would likely lead to lower performance. Principal turnover at Hawai'i public schools is presented in Figure 5.51 and Figure 5.52.

**FIGURE 5.51** Principal turnover by level of Native Hawaiian enrollment  
[average number of principals during the previous 5 years, all public schools, SY 2011–12, Hawai'i]

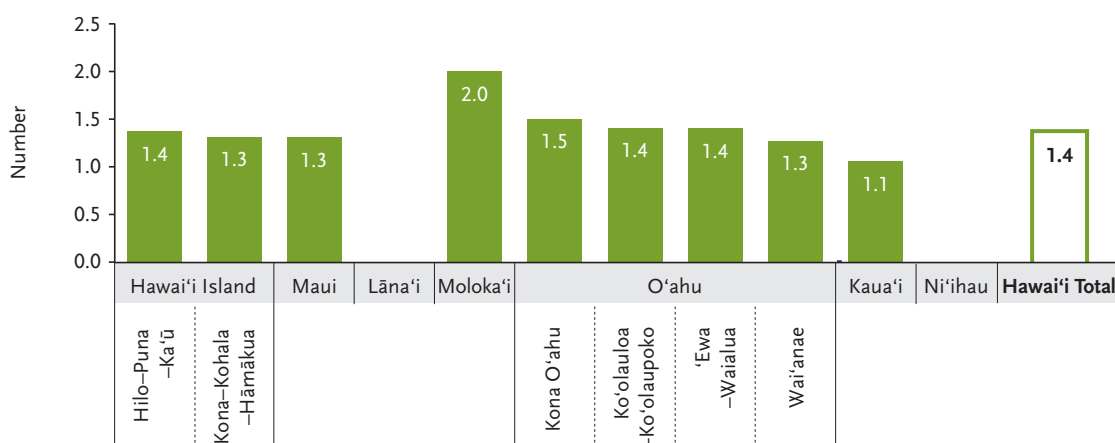


Source: Hawai'i Department of Education SY 2011–12.

- In predominantly Native Hawaiian schools, principal turnover is slightly lower than in other schools, with an average of 1.2 principals during a five-year span.
- Principal turnover in predominantly Native Hawaiian schools has improved since 2002 (not shown), when there was an average of 2.0 principals during a five-year span.

As shown in Figure 5.52, principal turnover varies widely by region.

**FIGURE 5.52** Principal turnover by region  
[average number of principals during the previous 5 years, all public schools, SY 2011–12, Hawai'i]



Source: Hawai'i Department of Education SY 2011–12.

Note: Data for Lāna'i and Ni'ihau are either unavailable or too limited to yield reliable results.

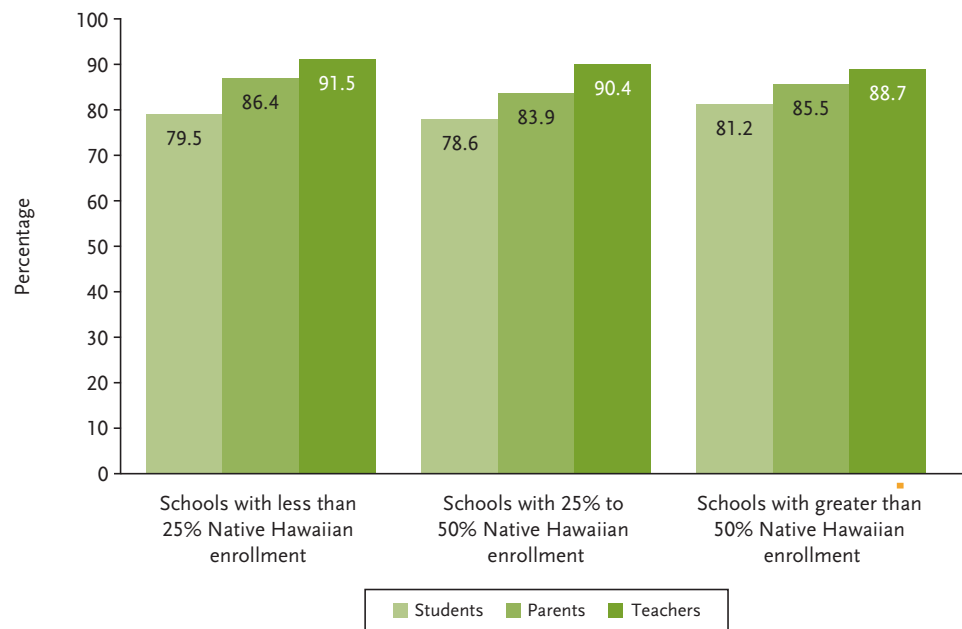
- Principal turnover was lowest on Kaua‘i, with an average of 1.1 principals during a five-year span.
- The highest rate of principal turnover was on Moloka‘i, where schools averaged 2.0 principals over the previous five years.

### *School Quality Survey*

Data from the Hawai‘i DOE’s School Quality Survey (SQS) offer another perspective on education quality. The SQS solicits direct feedback from teachers, parents, and students.<sup>13</sup> Data for Ni‘ihau and Lāna‘i are not included in this section as the number of surveys or return rate is too low to ensure the data are valid representations of the schools on those islands. More information about the SQS, including the definition of the scales, is available on the Hawai‘i DOE’s website (Hawai‘i Department of Education 2012).

Figure 5.53 shows the percentages of teachers, parents, and students who responded positively when asked about “support for students” at their school. The SQS defines this support measure as a schoolwide focus on high expectations for all students and the provision of an array of support services for students in and outside of school.

**FIGURE 5.53** Positive ratings of “school support for students” by level of Native Hawaiian enrollment  
[as a percentage of all survey responses, by stakeholder type, SY 2011–12, Hawai‘i]



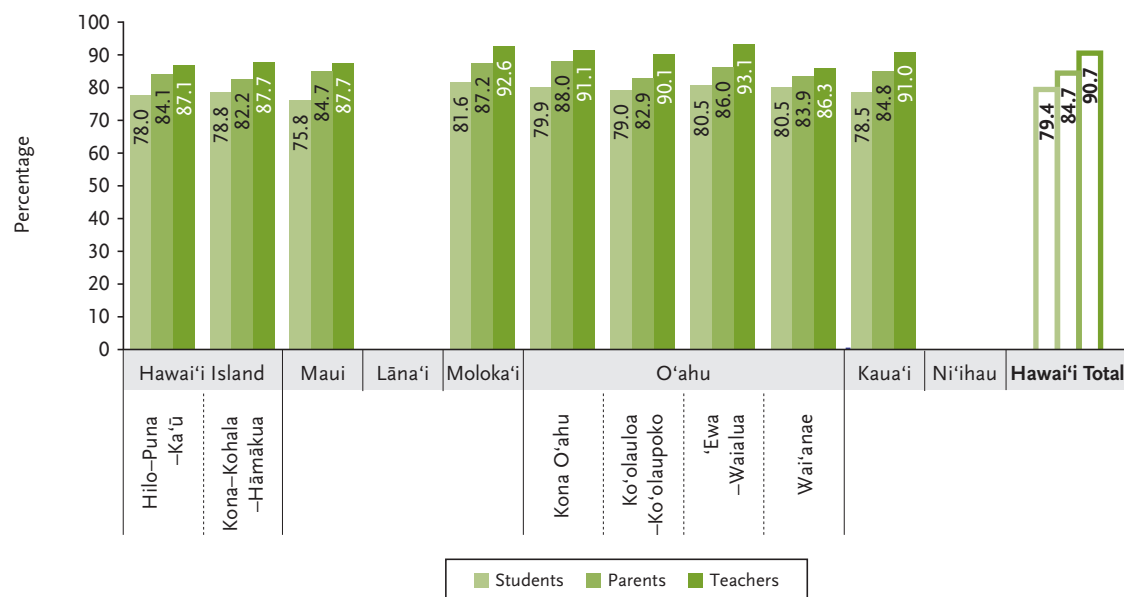
Source: Hawai‘i Department of Education School Quality Survey, SY 2011–12.

13. The SQS was revised for use in the SY 2011–12, and the results are not directly comparable to those from previous years.

- Teacher ratings of school support were the least positive in predominantly Native Hawaiian schools (88.7 percent), compared with slightly higher ratings among schools with a greater proportion of non-Hawaiian students (90.4 percent and 91.5 percent).
- Conversely, students' positive ratings of school support were the highest in predominantly Native Hawaiian schools (81.2 percent), compared with slightly lower ratings among schools with lower proportions of Native Hawaiian students (78.6 percent and 79.5 percent)
- Parents' positive ratings of school support were highest in schools with the lowest levels of Native Hawaiian enrollment (86.4 percent) but only slightly lower in predominantly Native Hawaiian schools (85.5 percent).

Average ratings for student support by region are shown in Figure 5.54.

**FIGURE 5.54** Positive ratings of “school support for students” by region  
[as a percentage of all survey responses, by stakeholder type, SY 2011–12, Hawai‘i]



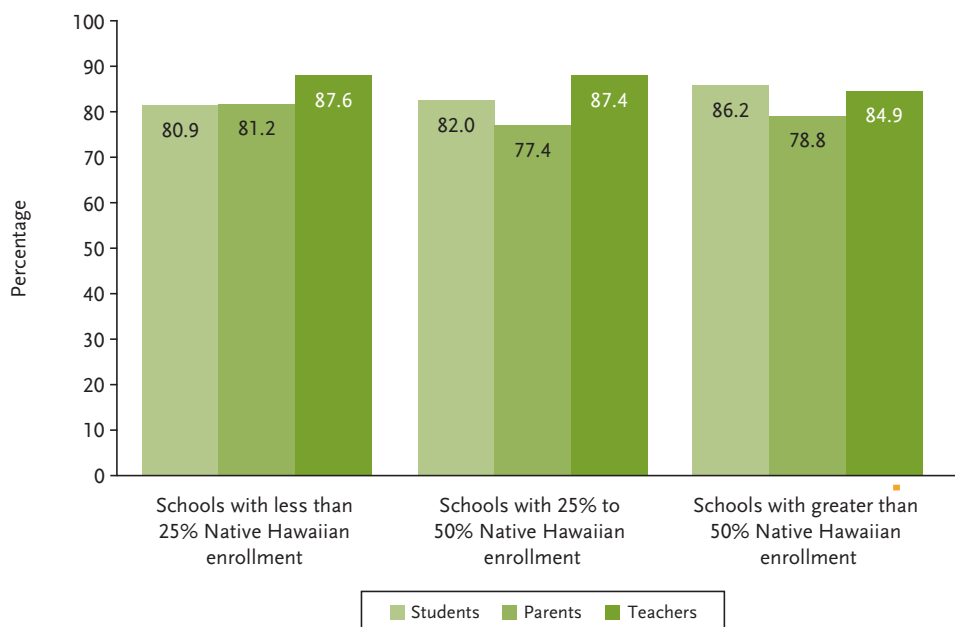
Source: Hawai'i Department of Education School Quality Survey, SY 2011–12.

Note: Data for Lāna'i and Ni'ihau are either unavailable or too limited to yield reliable results.

- Overall, teachers' ratings for school support were highly positive. Between 86 and 93 percent of teachers agreed that their school promotes high expectations for all students and provides the prescribed array of support services.
- Teachers' positive ratings of school support were highest in 'Ewa–Waialua (93.1 percent) and Moloka'i (92.6 percent).
- 'Ewa–Waialua and Moloka'i also had relatively high ratings of school support among parents, with 86.0 percent and 87.2 percent of parents providing positive responses, respectively. Only Kona O'ahu had a higher positive rating among parents (88.0 percent).
- Students' positive ratings of school support were lowest on Maui (75.8 percent), compared with 79.4 percent statewide.

Figure 5.55 shows the percentages of teachers, parents, and students who responded positively when asked about “teamwork” at their school. The SQS defines teamwork as a schoolwide focus on student achievement and outcomes. It also includes perceptions about the adequacy of resources available to achieve intended learning outcomes for students.

**FIGURE 5.55** Positive ratings of “teamwork in schools” by level of Native Hawaiian enrollment  
[as a percentage of all survey responses, by stakeholder type, SY 2011–12, Hawai‘i]



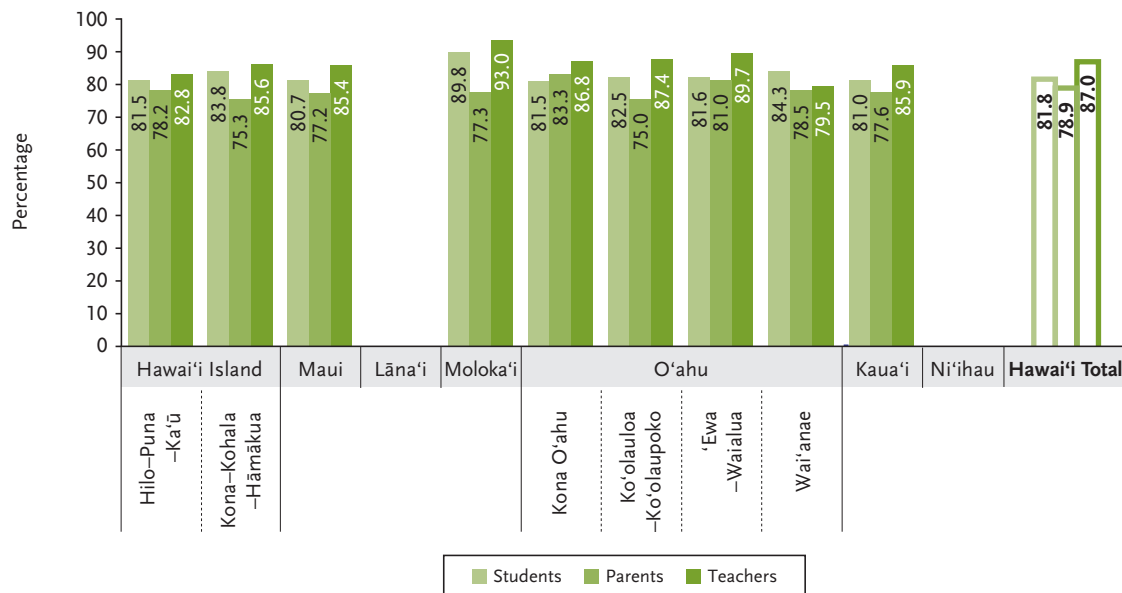
Source: Hawai‘i Department of Education School Quality Survey, SY 2011–12.

- Teachers’ positive ratings of teamwork were comparable across schools (84.9 percent and higher), regardless of Native Hawaiian enrollment levels.
- Parents’ positive ratings of teamwork ranged from 77.4 percent to 81.2 percent.
- However, student responses differ substantially by level of Native Hawaiian enrollment. About nine out of every ten students (86.2 percent) at predominantly Native Hawaiian schools gave positive ratings for teamwork at their school, compared with eight of ten students (80.9 percent) at schools with the lowest concentration of Native Hawaiians.

A look at SQS teamwork ratings by region shows more differentiation.



**FIGURE 5.56** Positive ratings of “teamwork in schools” by region  
[as a percentage of all survey responses, by stakeholder type, SY 2011–12, Hawai‘i]



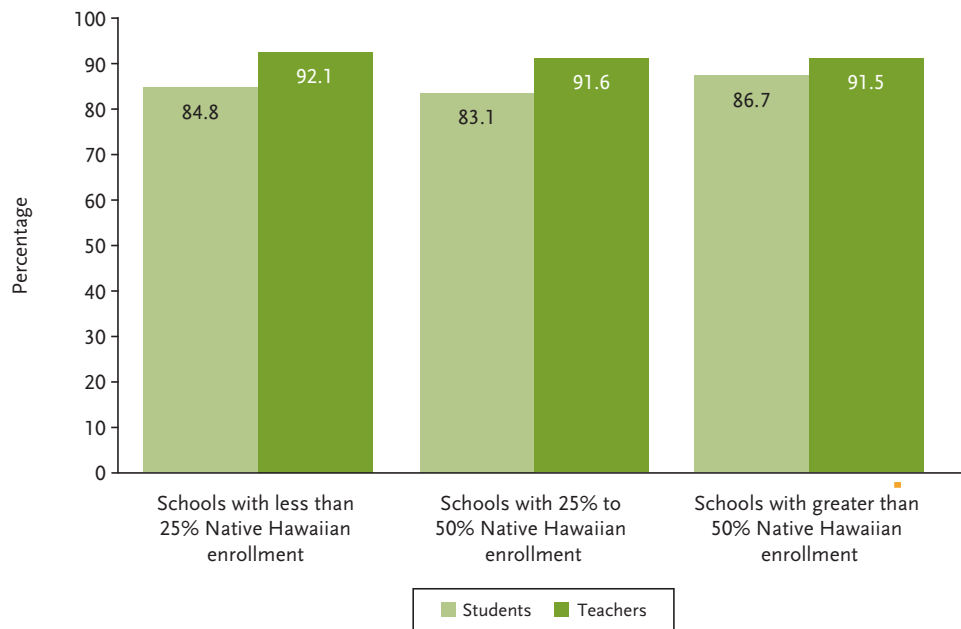
Source: Hawai'i Department of Education School Quality Survey, SY 2011–12.

Note: Data for Lāna'i and Ni'ihau are either unavailable or too limited to yield reliable results.

- The highest proportions of positive responses were found on Moloka'i, with 89.8 percent of students and 93.0 percent of teachers giving positive ratings for teamwork; the positive ratings among Moloka'i parents (77.3 percent) were similar to those observed in other areas.
- Among parents, the least positive ratings of school teamwork came from Ko'olaupoko (75.0 percent) and Kona–Kohala–Hāmākua (75.3 percent).

SQS respondents also were asked to rate the professionalism and capacity of their schools. Teachers were asked about support for their professional development and the extent to which these activities are focused on improving student outcomes. High school students were asked how knowledgeable their teachers are in the subjects they teach. These questions were not asked of parents nor of elementary and middle school students.

**FIGURE 5.57** Positive ratings of “professionalism and capacity” in schools by level of Native Hawaiian enrollment [as a percentage of all survey responses, by stakeholder type, SY 2011–12, Hawai‘i]

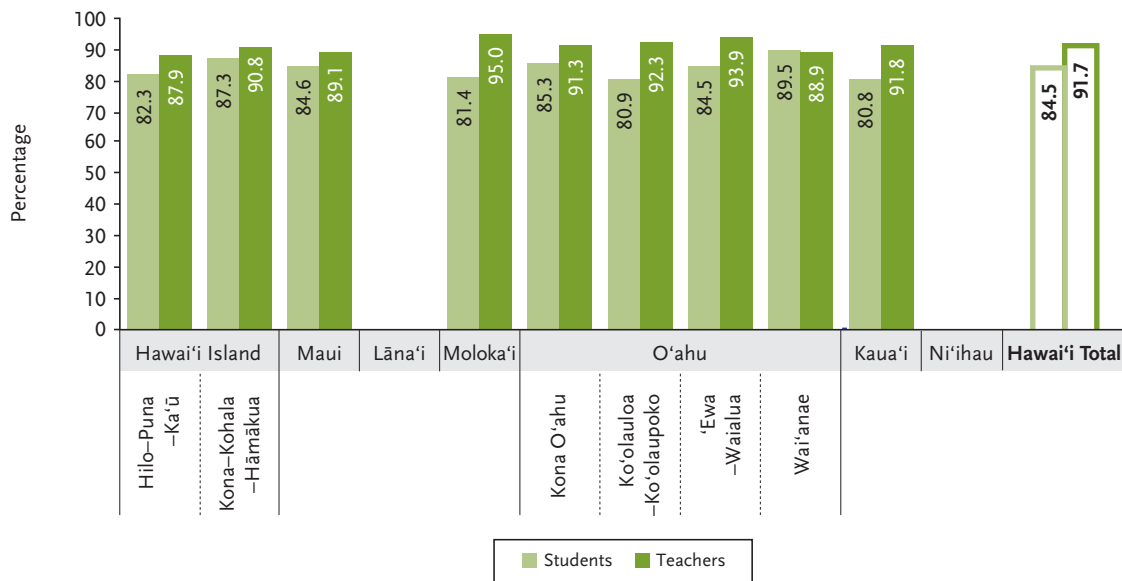


Source: Hawai‘i Department of Education School Quality Survey, SY 2011–12.

- School professionalism and capacity were given high ratings by approximately nine out of every ten public school teachers (between 91.5 percent and 92.1 percent) across schools with varying levels of Native Hawaiian enrollment.
- Students in predominantly Native Hawaiian schools were slightly more likely to report a positive rating of their school’s professionalism and capacity (86.7 percent) than were students in schools with lower Native Hawaiian enrollment (83.1 percent and 84.8 percent).

An analysis of professionalism and capacity ratings by region shows little variation.

**FIGURE 5.58** Positive ratings of “professionalism and capacity” in schools by region  
[as a percentage of all survey responses, by stakeholder type, SY 2011–12, Hawai‘i]



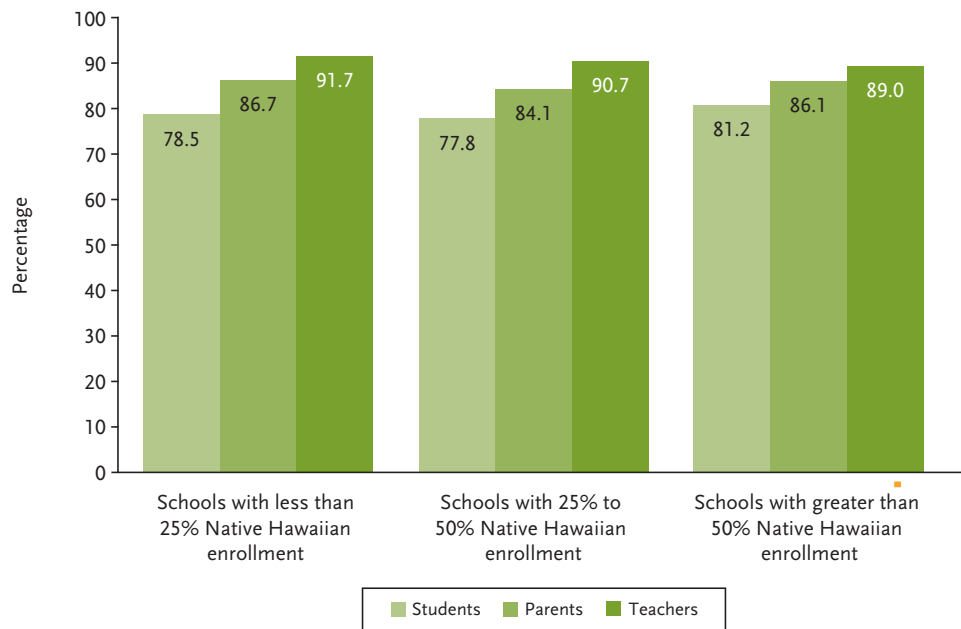
Source: Hawai'i Department of Education School Quality Survey, SY 2011–12.

Note: Data for Lāna'i and Ni'ihau are either unavailable or too limited to yield reliable results.

- Professionalism and capacity were given positive ratings by approximately nine out of every ten public school teachers. The highest ratings (95.0 percent) came from teachers in Moloka'i's schools.
- Student responses for the professionalism and capacity of schools were more variable, with positive ratings ranging from 80.8 percent on Kaua'i to a high of 89.5 percent in the Wai'anae area.

Another important dimension of the school environment is safety. Figure 5.59 shows the proportion of respondents who gave positive ratings when asked about student behavior, feeling safe at school, and whether the environment is conducive to learning.

**FIGURE 5.59** Positive ratings of “school safety” by level of Native Hawaiian enrollment  
[as a percentage of all survey responses, by stakeholder type, SY 2011–2012, Hawai‘i]

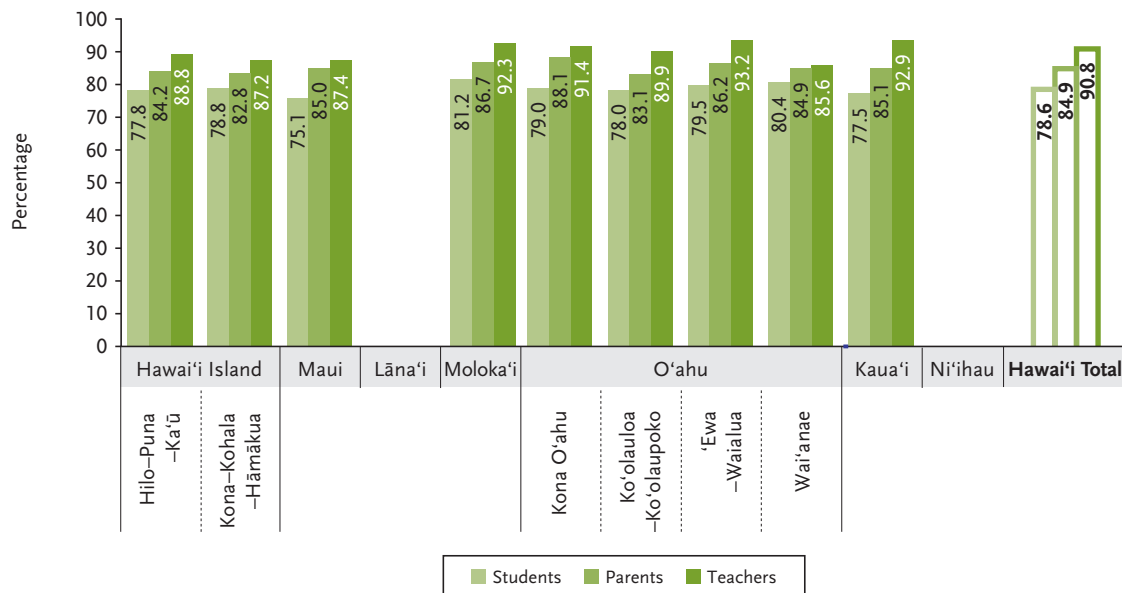


Source: Hawai‘i Department of Education School Quality Survey, SY 2011–12.

- Teachers’ positive ratings of school safety in predominantly Native Hawaiian schools were slightly lower than those at schools with a greater proportion of non-Native Hawaiian students (89.0 percent versus 90.7 percent and 91.7 percent).
- Parents’ ratings of school safety were the least positive (84.1 percent) at schools with 25 to 50 percent Native Hawaiian enrollment.
- Students’ positive ratings of school safety were the highest (81.2 percent) at predominantly Native Hawaiian schools.

Overall, perceptions of school safety were consistent across the islands. Generally, a high proportion of teachers, parents, and students gave their schools positive safety ratings regardless of region.

**FIGURE 5.6o** Positive ratings of “school safety” by region  
[as a percentage of all survey responses, by stakeholder type, SY 2011–12, Hawai‘i]



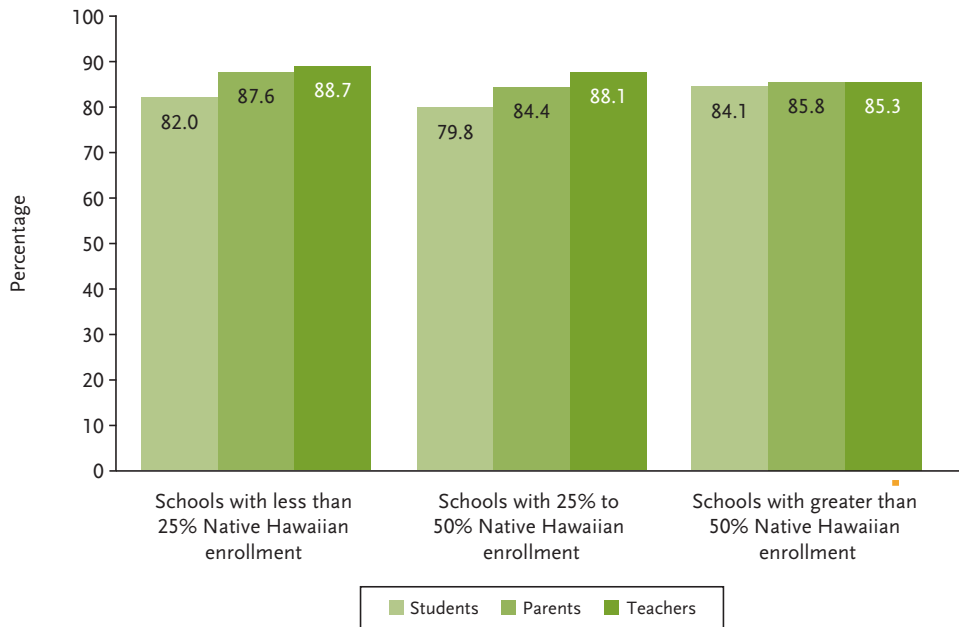
Source: Hawai'i Department of Education School Quality Survey, SY 2011–12.

Note: Data for Lāna'i and Ni'ihau are either unavailable or too limited to yield reliable results.

- Teachers' positive ratings of school safety were highest in the 'Ewa–Wailua, Kaua'i, and Moloka'i areas.
- 'Ewa–Wailua and Moloka'i also had relatively high ratings of school safety among parents, with 86.2 percent and 86.7 percent of parents providing positive responses, respectively. Only Kona O'ahu earned more positive parental ratings on safety (88.1 percent).
- Students' positive ratings of school safety were somewhat lower than those of their teachers and parents, with roughly two out of ten students responding negatively when asked about school safety. (This includes 6 to 7 percent who responded “don't know.”)

Perceptions of teamwork, professionalism, safety, and other dimensions surveyed but not included in this report contribute to overall satisfaction with the public schools. When reporting on overall satisfaction with their schools, respondents were asked to think about the extent to which the school is providing students with a quality education; instruction is challenging, interesting, and relevant to the world outside the classroom; and students are learning “a lot” and enjoy coming to school.

**FIGURE 5.61** Positive ratings of “satisfaction with school” by level of Native Hawaiian enrollment  
[as a percentage of all survey responses, by stakeholder type, SY 2011–12, Hawai‘i]

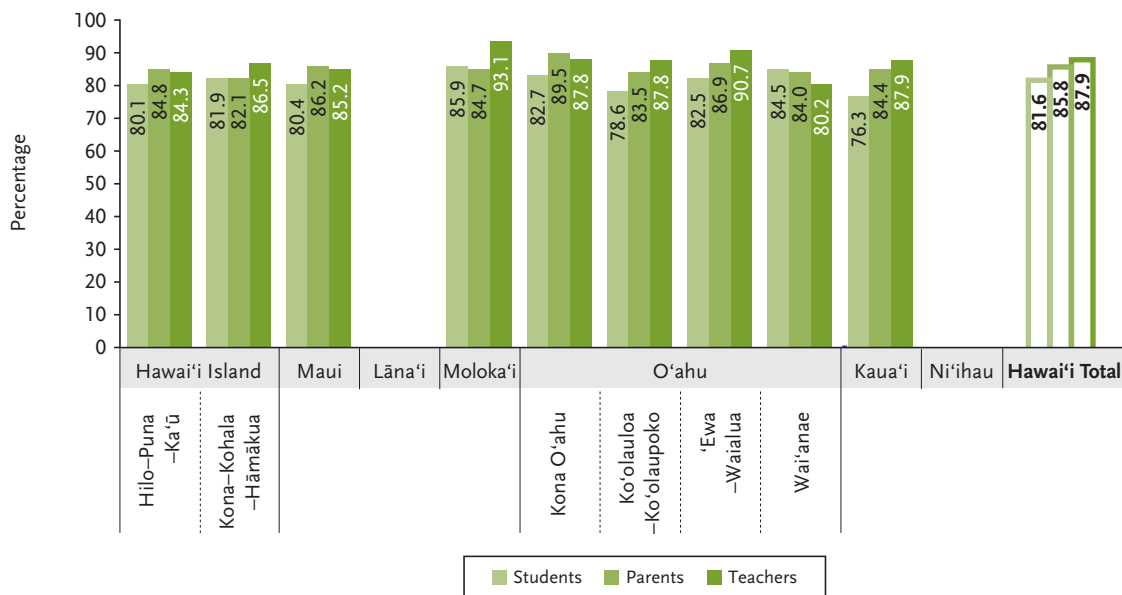


Source: Hawai‘i Department of Education School Quality Survey, SY 2011–12.

- Teachers’ satisfaction ratings were the least positive in predominantly Native Hawaiian schools (85.3 percent), compared with slightly higher ratings among schools with a greater proportion of non-Hawaiian students (88.1 percent and 88.7 percent).
- Students in predominantly Native Hawaiian schools were more likely to report being satisfied with their schools (84.1 percent compared to 82.0 and 79.8 percent of students in schools with lower proportions of Native Hawaiians).

As with the other SQS dimensions, overall satisfaction ratings are relatively consistent across the islands. Generally, a high proportion of teachers, parents, and students gave positive ratings for their schools, regardless of region.

**FIGURE 5.62** Positive ratings of “satisfaction with school” by region  
[as a percentage of all survey responses, by stakeholder type, SY 2011–12, Hawai‘i]



Source: Hawai‘i Department of Education School Quality Survey, SY 2011–12.

Note: Data for Lāna‘i and Ni‘ihau are either unavailable or too limited to yield reliable results.

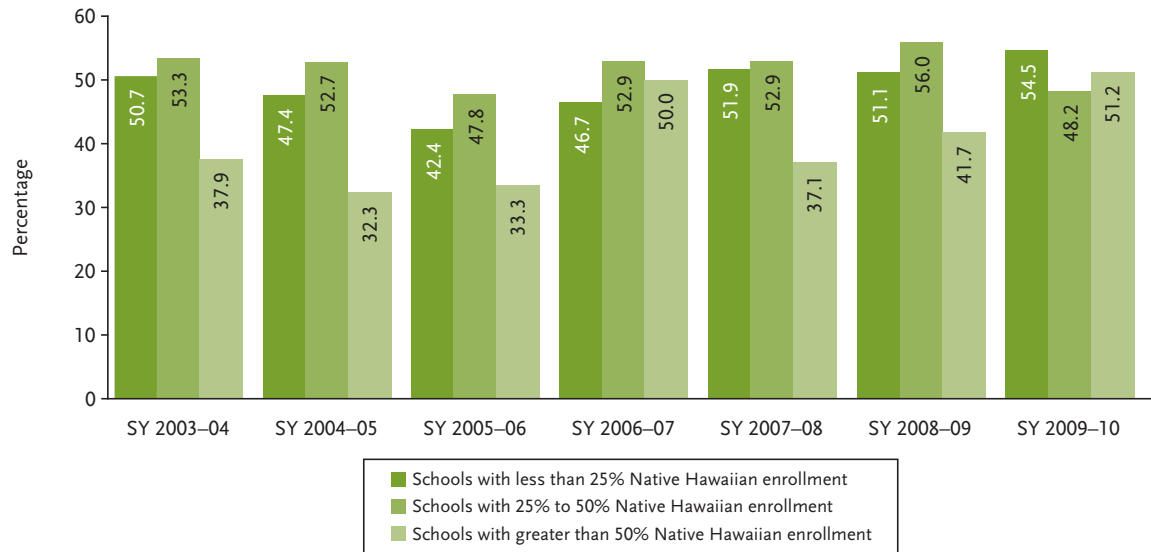
- Teachers’ satisfaction ratings were highest on Moloka‘i and in ‘Ewa–Waialua.
- Parents’ reported satisfaction levels were highest in Kona O‘ahu, although the range in satisfaction ratings is relatively small (a high of 89.5 percent in Honolulu and a low of 82.1 percent for the Kona–Kohala–Hāmākua area).
- Students’ satisfaction ratings were somewhat lower than those of their teachers and parents, with roughly two out of ten students reporting negative ratings across the islands. (This includes 6 to 7 percent who responded “don’t know.”)

### Facilities

The quality of school facilities can affect students’ perceptions of the quality and value of their education. School facilities are also a civil rights issue. Several federal court cases have resulted in mandates to ensure that minority and economically disadvantaged students are not subjected to facilities of lower quality than those of their nonminority or wealthier peers (Johnson 1997).

The Hawai‘i public school system conducts regular reviews of school facilities.<sup>14</sup> The percentage of schools with “very good” infrastructure is shown below. Figure 5.63 presents this data by the proportion of students in the schools who are of Hawaiian ancestry. Figure 5.64 presents this data by region.

**FIGURE 5.63** Trends in schools with “very good” facilities by level of Native Hawaiian enrollment  
[as a percentage of all public schools, ratings per annual assessment of public school facilities, SY 2003–04 to SY 2009–10, Hawai‘i]



Source: Hawai‘i Department of Education SY 2003–04 to SY 2009–10.

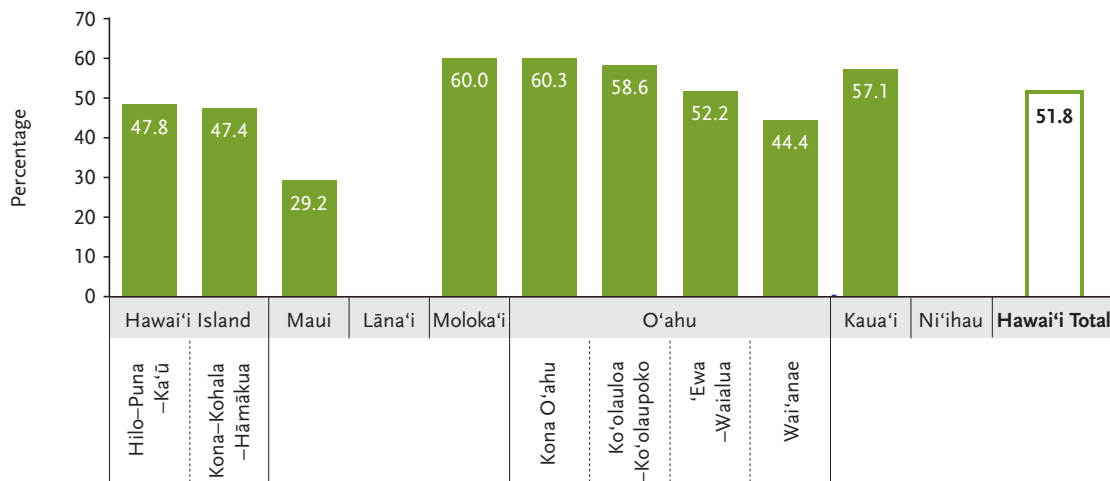
- “Very good” infrastructure ratings for predominantly Native Hawaiian schools increased from 37.9 percent in school year 2003–04 to 51.2 percent in 2009–10.
- However, predominantly Native Hawaiian schools have generally lagged behind other schools in achieving “very good” infrastructure ratings (except in the 2006–07 and 2009–10 school years).
- Among schools with Native Hawaiian enrollment between 25 and 50 percent, the proportion with “very good” infrastructure ratings decreased by 5.1 percentage points between school year 2003–04 and 2009–10.
- Schools with Native Hawaiian enrollment of less than 25 percent or more than 50 percent have followed an upward trend in achieving “very good” infrastructure ratings since school year 2005–06.

14. Although the school facilities ratings reported in Figure 5.63 and Figure 5.64 were discontinued in school year 2010–11, Hawai‘i DOE schools are still required to do an annual assessment of their facilities in the following areas: grounds, building exterior, building interior, equipment/furnishings, and health/safety and sanitation (Hawaii 2012). Findings from annual inspections are no longer available at the state level for reporting.



**FIGURE 5.64** Schools with “very good” facilities by region

[as a percentage of all public schools, ratings per annual assessment of public school facilities, SY 2009–10, Hawai‘i]



Source: Hawai'i Department of Education SY 2009–10.

Note: Data for Lana'i and Ni'ihau are either unavailable or too limited to yield reliable results.

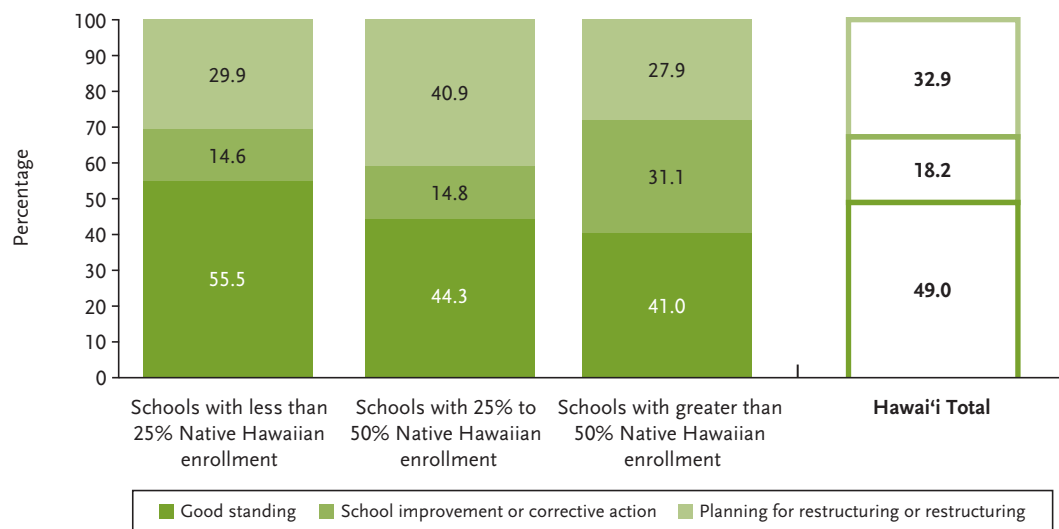
- Kona O'ahu and Moloka'i had the highest percentage of schools with “very good” infrastructure ratings (60.3 percent and 60.0 percent, respectively).
- Positive facilities ratings among O'ahu schools exceeded the statewide average (51.8 percent) in all areas except Wai'anae (44.4 percent).
- Across the islands, a “very good” infrastructure rating was least likely at public schools on Maui (29.2 percent).

### *Adequate Yearly Progress*

When public schools meet all their annual No Child Left Behind (NCLB) benchmarks, they are deemed to have made “adequate yearly progress (AYP)” (Hawai‘i Department of Education 2013a,b). Patterns and trends in a school’s AYP outcomes translate into the school’s NCLB status, which ranges from “in good standing” to “restructuring.” Although problems with the leap from AYP to inferences about school quality are legion (Popham 2004), these statistics can provide a gross indicator of student achievement and other outcomes such as promotion to the next grade and timely graduation from high school. They can also provide a limited but helpful starting place for thinking about support for learners.

Figure 5.65 presents NCLB status in Hawai‘i public schools by the proportion of students who are Native Hawaiian. Schools with high concentrations of Native Hawaiian students struggle to meet NCLB benchmarks more than other public schools.

**FIGURE 5.65** Distribution of NCLB status among public schools by level of Native Hawaiian enrollment  
[as a percentage of all public schools, SY 2011–12, Hawai‘i]



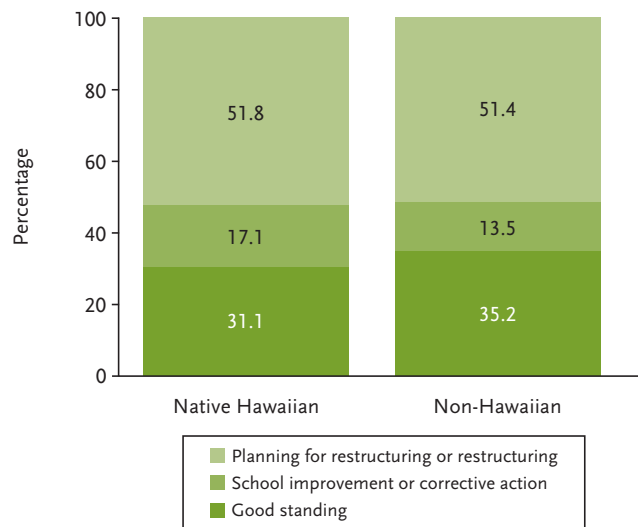
Source: Hawai‘i Department of Education SY 2011–12.

- Schools that serve a smaller proportion of Native Hawaiian students were most likely to be in good standing (55.5 percent), while predominantly Native Hawaiian schools were least likely to be in good standing (41.0 percent).

- The likelihood of a school to be restructuring or planning for restructuring was approximately the same for schools with very small and very large Native Hawaiian populations (29.9 percent and 27.9 percent, respectively). Schools with 25 to 50 percent Native Hawaiian enrollment were most likely to be restructuring or planning for restructuring (40.9 percent, compared with the state average of 32.9 percent).
- Predominantly Native Hawaiian schools were more than twice as likely as other schools to be under school improvement or corrective action status (31.1 percent versus 14.6 percent and 14.8 percent). This is a concern because schools with either of these status classifications may be restructuring or planning for restructuring in the next one to four years.
- Two in five predominantly Native Hawaiian schools (41.0 percent) were in good standing—a decrease from one in two (55.9 percent) in school year 2002–03 (not shown).

Another way to look at the impact of AYP and NCLB on Native Hawaiian students is to compare the distribution of Native Hawaiian and non-Hawaiian students across schools with varying NCLB classifications. This view of the data is shown in Figure 5.66.

**FIGURE 5.66** Distribution of public school students by school NCLB status  
[as a percentage of all public schools, by Native Hawaiian and non-Hawaiian, SY 2011–12, Hawai‘i]

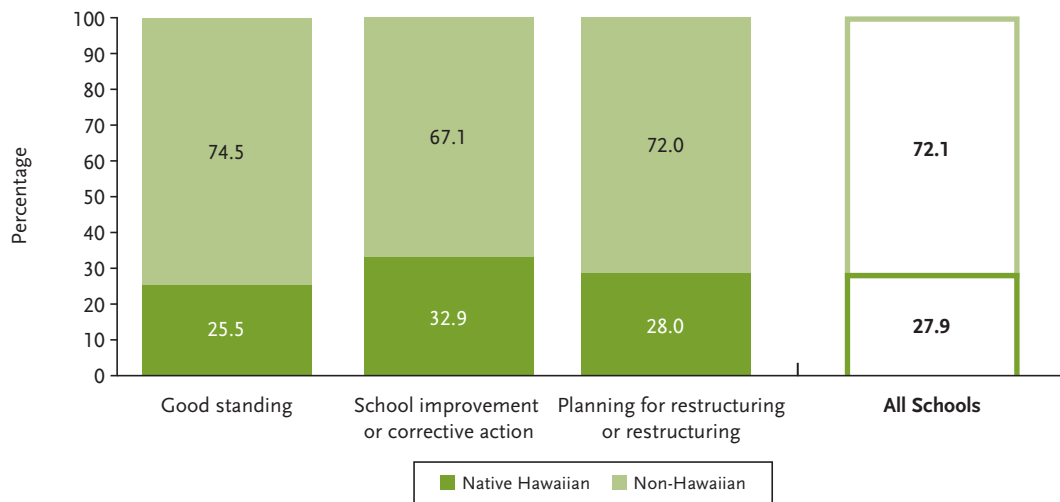


Source: Hawai‘i Department of Education SY 2011–12.

- Attendance at a school in good standing was less likely for Native Hawaiian students (31.1 percent) than it was for their non-Hawaiian peers (35.2 percent).
- Native Hawaiian students were more likely than were non-Hawaiians to attend a school facing corrective action or restructuring (68.9 percent versus 64.9 percent, respectively).

An additional student-level perspective looks at the concentration of Native Hawaiian students in schools grouped by NCLB status, as shown in Figure 5.67.

**FIGURE 5.67** Concentration of Native Hawaiian public school students by school NCLB status  
[as a percentage of all public school students, by Native Hawaiian and non-Hawaiian, SY 2011–12, Hawai‘i]



Source: Hawai‘i Department of Education SY 2011–12.

- Although Native Hawaiian students accounted for 27.9 percent of Hawai‘i’s public school enrollment, they constituted 25.5 percent of enrollment in schools in good standing and 32.9 percent of enrollment in schools undergoing school improvement or corrective action.
- Looking across all schools, the percentage of Native Hawaiians in schools undergoing or planning for restructuring (28.0 percent) was proportionate to Native Hawaiian student enrollment.

## HAWAIIAN CULTURE-BASED EDUCATION AND HAWAIIAN-FOCUSED CHARTER SCHOOLS

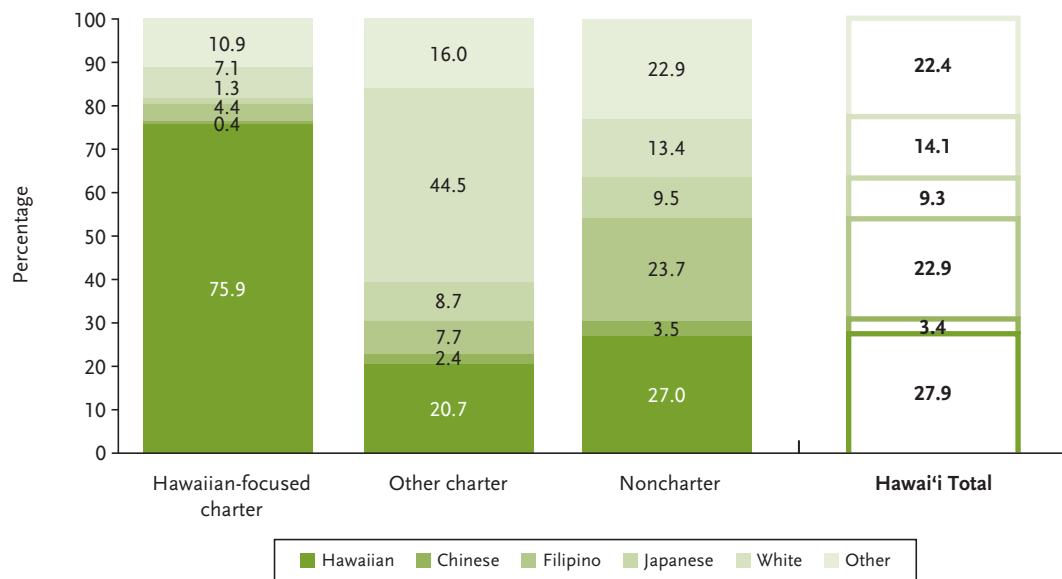
There is substantial evidence that the lower level of achievement seen among minority and indigenous students may be attributable, in part, to differences between home and school cultures. Kana'iaupuni, Ledward, and Jenson (2010) synthesized a substantial body of literature—on cultural difference (Erickson 1993), cultural compatibility (Vogt, Jordan, and Tharp 1987), cultural congruence (Mohatt and Erickson 1981), oppositional theory (Ogbu 1987), cognitive theory (Demmert and Towner 2003), and cultural-historical-activity (Roth and Lee 2007)—to explain why indigenous and minority students may feel disconnected from a traditional public education system built around the predominant Western worldview and how that alienation may manifest in lower achievement levels and disengagement from the school environment. They argue that the academic outcomes of Native Hawaiians and other indigenous students may be enhanced by integration of learners' home culture and community within the educational process, and they highlight a substantial body of literature evidencing the benefits of culturally appropriate and culturally relevant instruction.

Kawakami and Aton (2001) found that the most effective teachers of Native Hawaiian students incorporate experiential, authentic activities into their instruction. Yamauchi (2003) concluded that Native Hawaiian students are more engaged in traditional public schools that integrate hands-on learning grounded in significant places within the local community. The work of Lipka, Sharp, Adams, and Sharp (2007) lays the foundations for a claim of a causal link between culture-based education and academic performance. Kana'iaupuni, Ledward, and Jensen (2010) further detailed the underlying, causal mechanisms, finding that culture-based education increases social-emotional well-being and that social-emotional well-being, in turn, positively impacts students' mathematics and reading scores.

The Hawaiian culture-based educational movement seeks to mobilize this growing body of knowledge to improve the educational outcomes and well-being of individuals, families, and communities. Hawaiian-focused charter schools have been innovators in the development of experiential, place-based learning, and have been leaders in focusing on cultural identity as a foundation for social-emotional well-being.

This section briefly reports information on racial/ethnic composition of enrollment in Hawaiian-focused charter schools and on measures of proficiency among charter school students.

**FIGURE 5.68** Distribution of public school students by race/ethnicity and by charter school type  
[as a percentage of all public school students, SY 2011–12, Hawai‘i]



Source: Hawai‘i Department of Education SY 2011–12.

- Native Hawaiians accounted for more than three out of four students in Hawaiian-focused charter schools (75.9 percent)—almost three times the concentration of Native Hawaiians in noncharter schools.
- White students were the second-largest ethnic group in Hawaiian-focused charters (7.1 percent) but accounted for almost half of all students in other charters (44.5 percent).
- Filipino students made up the second-largest ethnic group in the public school system (22.9 percent) but constituted just 4.4 percent of enrollment in Hawaiian-focused charter schools and 7.7 percent of enrollment in other charters.

The Hawaiian-focused charter school typically serves a distinct and relatively disadvantaged population of students, making it a challenge to accurately and fairly evaluate outcomes.<sup>15</sup> Students at Hawaiian-focused charter schools often include keiki who have struggled in the traditional public schools and are several grades behind their peers. Furthermore, as a group, Hawaiian-focused charter schools have been faced with higher-than-average proportions of students eligible for meal subsidies.<sup>16</sup>

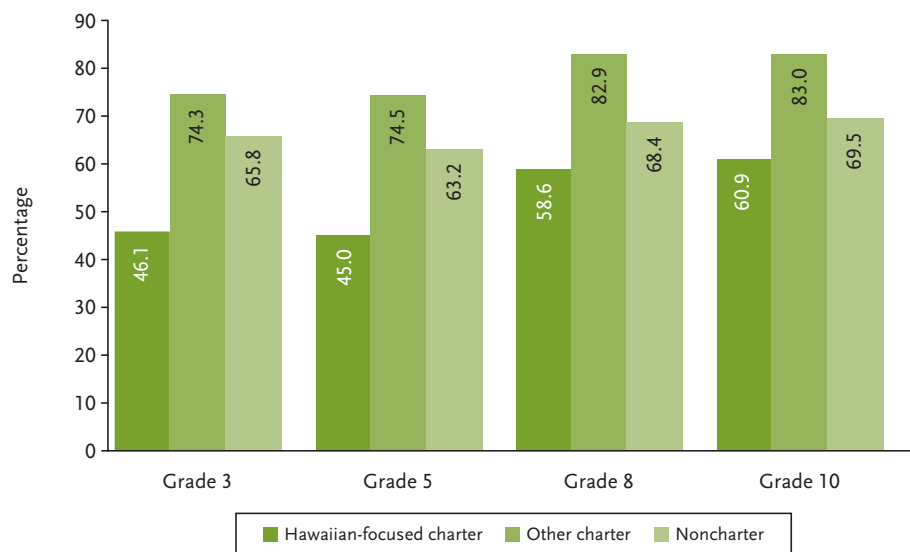
The proficiency rates reported below highlight the achievement gaps between students enrolled in Hawaiian-focused charter schools and those in other types of public schools. However, these data fail to adequately address questions of student growth and school impact in a way that reflects differences in the students’ backgrounds. Given these factors, the following figures should be viewed as snapshots of divergent student populations, rather than indicators of school quality.

15. For example, due to changes in federal laws noted earlier in this chapter, we no longer have access to individual student data on eligibility for meal subsidies. And, because charter schools do not draw students from discrete geographic boundaries, we are unable to estimate community levels of poverty.

16. This is based on school profiles as part of annual reports submitted to Kamehameha Schools.

Assessment data in this section are organized by a cross-sectional look at proficiency by grade followed by a longitudinal look at growth from Grade 3 to Grade 8.<sup>17</sup> Within the cross-sectional and longitudinal sets of figures, the data are presented from two perspectives. The first perspective (in Figure 5.69 and Figure 5.70) reports data for all students by school type (Hawaiian-focused charter schools, all other charter schools, and noncharter public schools). The second perspective specifically focuses on Native Hawaiian students by type of school.

**FIGURE 5.69** Reading proficiency among public school students by charter school type  
[HSA reading scores at or above proficient level, as a percentage of all public school students tested, for selected grades, SY 2006–07 to SY 2010–11, Hawai‘i]



Source: Hawai‘i Department of Education SY 2006–07 to SY 2010–11.

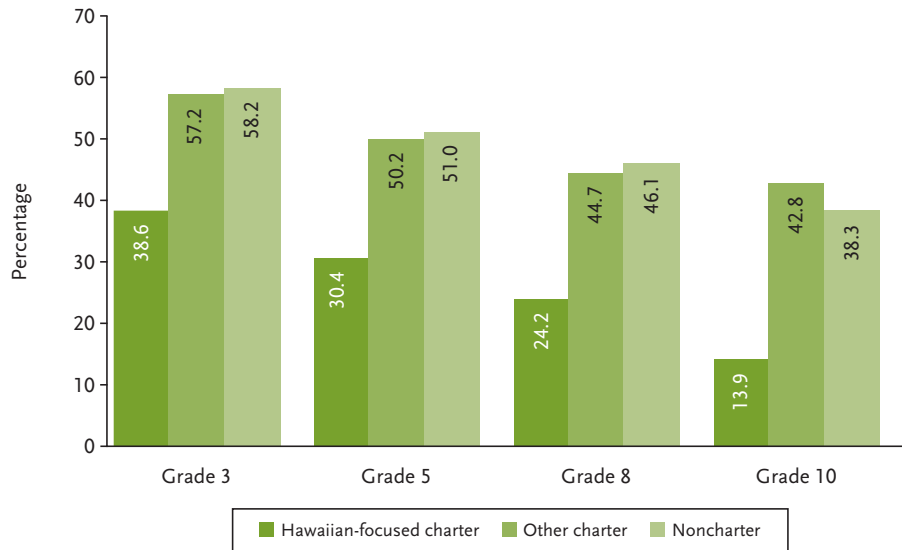
- HSA reading scores in Hawaiian-focused charters were consistently lower than those of other charter schools by an average of 26.0 percentage points.
- The reading achievement gap between students in Hawaiian-focused charter schools and those in noncharter public schools was greatest at Grade 3 (19.7 percentage points).
- The gap was smallest at the higher grades, with a difference in reading proficiency of 9.8 percentage points at Grade 8 and 8.6 percentage points at Grade 10.<sup>18</sup>

17. Currently, there are not enough data on comparable versions of the HSA or on TerraNova to report longitudinal results for a cohort through Grade 10.

18. The impact of Hawaiian language immersion students was not a factor in the Grade 3 data, as students in this grade would have been assessed with a different test. Immersion students are not tested in English until Grade 5.



**FIGURE 5.70** Mathematics proficiency among public school students by charter school type  
 [HSA mathematics scores at or above proficient level, as a percentage of all public school students tested, for selected grades, SY 2006–07 to SY 2010–11, Hawai'i]

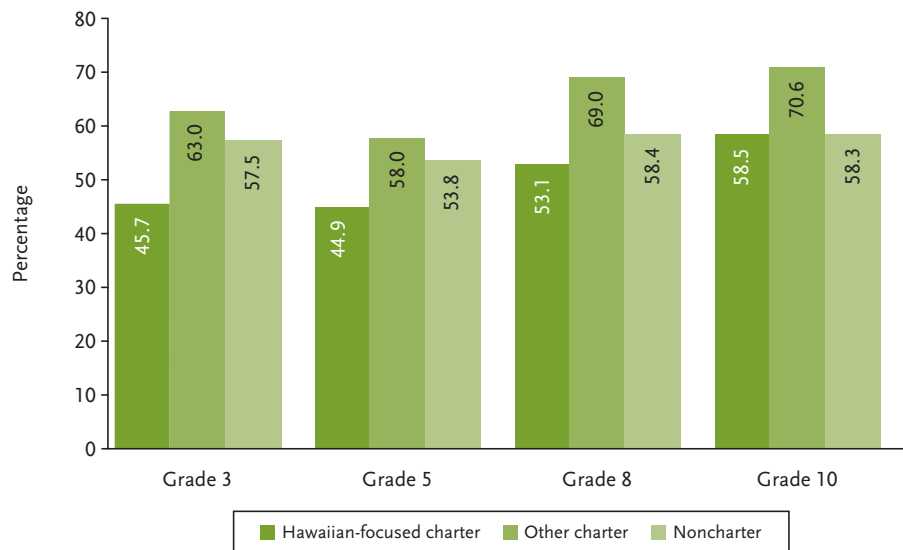


Source: Hawai'i Department of Education SY 2006–07 to SY 2010–11.

- HSA mathematics scores in Hawaiian-focused charter schools lagged behind the rates of other charter schools by roughly 20 to 24 percentage points.
- The mathematics achievement gap between students in Hawaiian-focused charter schools and those in noncharter public schools was smallest at Grade 3 (19.6 percentage points) and greatest at Grade 10 (24.4 percentage points).

The previous figures reported proficiency for *all* students by type of school. The next two figures focus on the proficiency of Native Hawaiian students only.

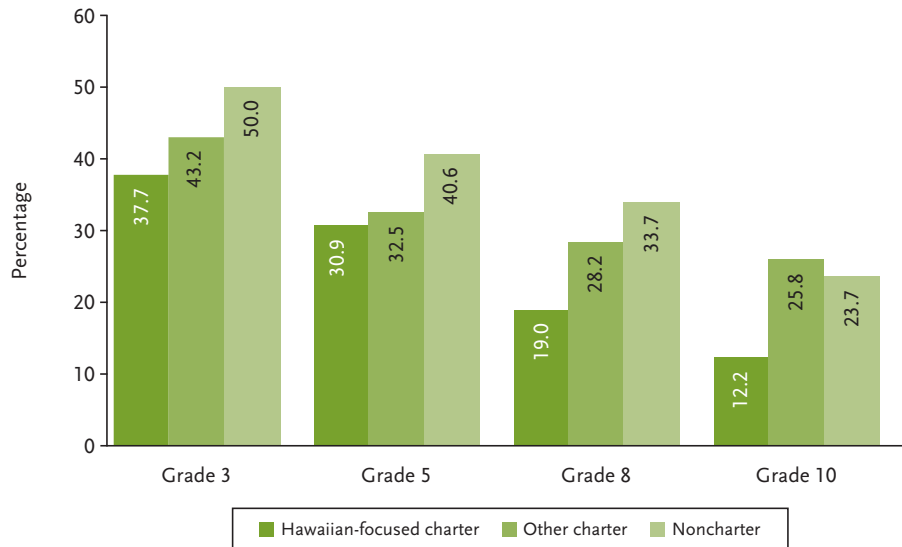
**FIGURE 5.71** Reading proficiency among Native Hawaiian public school students by charter school type  
[HSA reading scores at or above proficient level, as a percentage of all Native Hawaiian public school students tested, for selected grades, SY 2007–08 to 2011–12, Hawai‘i]



Source: Hawai‘i Department of Education SY 2007–08 to SY 2011–12.

- Even among just Native Hawaiian students, the contrasting populations served by different types of charter schools are reflected in disparate reading scores, with proficiency rates among Hawaiian-focused charter schools consistently lagging behind the rates of other charter schools by more than 12 percentage points.
- Native Hawaiian students in Hawaiian-focused charter schools were less likely to score at the proficient level in reading than were their Native Hawaiian peers in other types of public schools, except at Grade 10.
- The gap between the reading proficiency rates of Native Hawaiians in Hawaiian-focused charter schools and noncharter public schools is greatest at Grade 3 (11.8 percentage points) but is smaller at higher grades, with the scores of the two groups essentially the same at Grade 10.

**FIGURE 5.72** Mathematics proficiency among Native Hawaiian public school students by charter school type  
[HSA mathematics scores at or above proficient level, as a percentage of all Native Hawaiian public school students tested, for selected grades, SY 2007–08 to 2011–12, Hawai‘i]



Source: Hawai‘i Department of Education SY 2007–08 to SY 2011–12.

- In mathematics, Native Hawaiians in traditional public schools have higher proficiency rates than their counterparts in either Hawaiian-focused charter schools or other charter schools, except in Grade 10.
- The mathematics proficiency gap between Native Hawaiians in Hawaiian-focused charter schools and noncharter schools was greatest in Grade 8 (14.7 percentage points).

The proficiency rates illustrated in Figure 5.71 and Figure 5.72 underscore the significant challenges facing Hawaiian-focused charter schools. To better understand how Hawaiian-focused charter schools are responding to such challenges and impacting student outcomes, we look to longitudinal analyses that track gains in the test scores of a single cohort of students followed across five years.

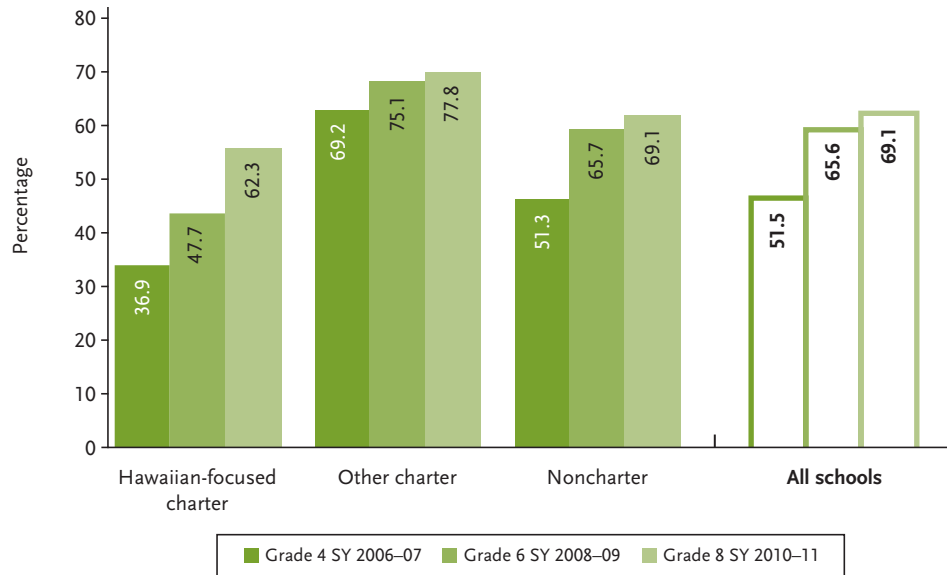
Interpretation of the following figures should be tempered with caveats due to the small sample sizes in Hawaiian-focused charter schools and the occurrence of transfers between different school types. However, the results of this longitudinal perspective remain compelling, suggesting that students in Hawaiian-focused charter schools achieve gains over time that are comparable to or greater than those of their peers in other types of public schools.

In these analyses, students are grouped by the type of school they were enrolled in at Grade 8, regardless of the type of school they attended in Grades 4 and 6. Implicit here is the fact that some students move in and out of different types of schools over the course of their formal education.<sup>19</sup>

19. However, to mitigate the impact of transfers, students who switched from one school type to another between Grade 7 and Grade 8 were excluded from this analysis. In other words, to be included in the Hawaiian-focused charter school grouping in this analysis, a student must have been enrolled in a Hawaiian-focused charter school for at least the past year.

**FIGURE 5.73** Longitudinal trends in reading proficiency within a single cohort of public school students by charter school type

[HSA reading scores at or above proficient level, as a percentage of all public school students tested, for selected grades, selected years, Hawai‘i]



Source: Hawai‘i Department of Education SY 2007–08 to SY 2011–12.

- Despite having the lowest HSA reading proficiency rates across all three grades shown, students in Hawaiian-focused charter schools made the greatest gains over time. Over five years, the proportion of students who were proficient in reading increased by 25.4 percentage points, from 36.9 percent in Grade 4 to 62.3 percent in Grade 8.
- The reading achievement gap between students in Hawaiian-focused charter schools and those in other types of public schools decreased by half.
- The gap between Hawaiian-focused charters and other charters decreased from 32.3 percentage points in Grade 4 to 15.5 points in Grade 8. Similarly, the reading achievement gap between Hawaiian-focused charters and noncharters decreased from 14.4 percentage points in Grade 4 to 6.8 points in Grade 8.

Similar progress is apparent in mathematics proficiency rates at Hawaiian-focused charter schools.

**FIGURE 5.74** Longitudinal trends in mathematics proficiency within a single cohort of public school students by charter school type

[HSA mathematics scores at or above proficient level, as a percentage of all public school students tested, for selected grades, selected years, Hawai'i]



Source: Hawai'i Department of Education SY 2006–07 to SY 2010–11.

- The HSA mathematics scores of Hawaiian-focused charter schools were the lowest across all three grades shown; however, Hawaiian-focused charters achieved the greatest gains over four years, with mathematics proficiency increasing by 15.3 percentage points, from 22.9 percent in Grade 4 to 38.2 percent in Grade 8.
- Over the same period, proficiency rates decreased by 2.7 percentage points at other charter schools and increased by 11.5 percentage points at noncharter schools.
- Over four years, the mathematics achievement gap between students in Hawaiian-focused charters and those in noncharter public schools decreased from 22.7 percentage points in Grade 4 to 18.9 points in Grade 8.
- The gap between Hawaiian-focused charters and other charters decreased from 32.3 percentage points in Grade 4 to 14.3 points in Grade 8.

The previous figures presented longitudinal trends for all students by charter school type. The following figures present longitudinal trends for Native Hawaiian students alone. Because the number of Hawaiian students in other charters is small, we have excluded those statistics from these figures.

**FIGURE 5.75** Longitudinal trends in reading proficiency within a single cohort of Native Hawaiian public school students by charter school type  
 [HSA reading scores at or above proficient level, as a percentage of all Native Hawaiian public school students tested, for selected grades, selected years, Hawai‘i]

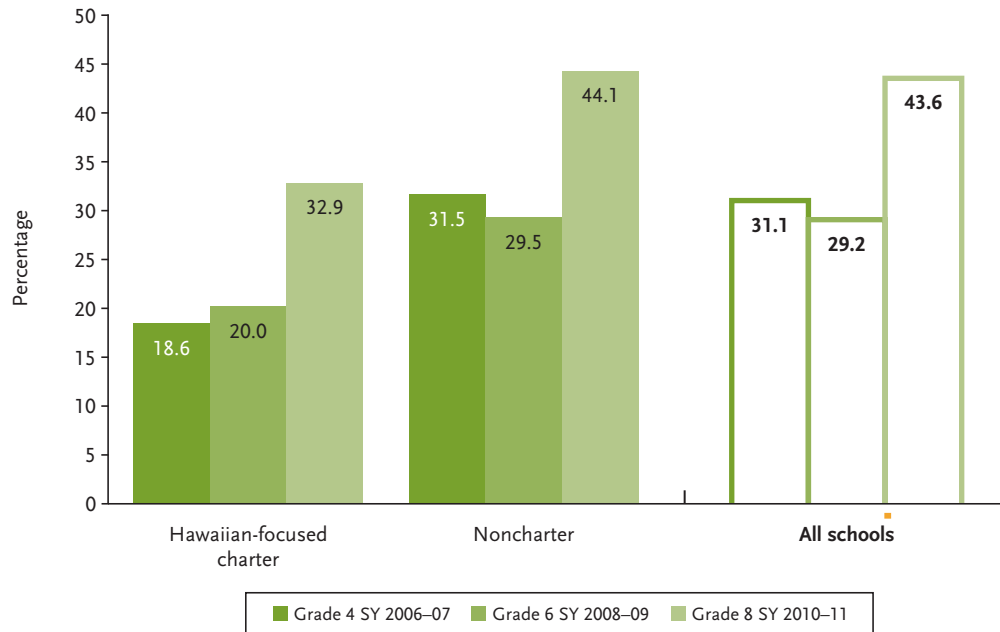


Source: Hawai‘i Department of Education SY 2006–07 to SY 2010–11.

- Trends in reading test scores for Native Hawaiian students in Hawaiian-focused charter schools and in noncharter public schools were very similar, although a smaller proportion of students in the Hawaiian-focused charter schools were proficient in Grade 3 (32.4 percent compared with 37.3 percent, respectively).
- The gap in reading proficiency rates between Native Hawaiian students in Hawaiian-focused charters and Native Hawaiian students in other public schools had been eliminated at Grade 8. This is unlike the gap between *all students* in Hawaiian-focused charter schools and noncharter public school students, which narrowed but was still evident in Grade 8 (see Figure 5.73).

**FIGURE 5.76** Longitudinal trends in mathematics proficiency within a single cohort of Native Hawaiian public school students by charter school type

[HSA mathematics scores at or above proficient level, as a percentage of all Native Hawaiian public school students tested, for selected grades, selected years, Hawai'i]



Source: Hawai'i Department of Education SY 2006-07 to SY 2010-11.

- As with reading, the overall trend in mathematics test scores for Native Hawaiian students in Hawaiian-focused charter schools and in noncharter public schools was similar.
- Across school types, Native Hawaiian students showed substantial increases in the percent proficient in mathematics from Grade 4 to Grade 8. The percent proficient increased from 18.6 in Grade 4 to 32.9 in Grade 8 at Hawaiian-focused charters and from 31.5 to 44.1 at noncharter schools.
- Unlike reading, the increase in mathematics proficiency was comparable across school types with the result that the gap in proficiency by school type changed little between Grade 4 and Grade 8 (a gap of 12.9 and 11.2 percentage points, respectively).

## OPPORTUNITY YOUTH

Opportunity youth, sometimes referred to as idle youth or disconnected youth and typically characterized by being neither employed nor in school, represent a serious challenge to the well-being of themselves, their families, and their communities. Conversely, successful strategies to connect opportunity youth to education and work may improve well-being at all these levels.

An information brief prepared for the Annie E. Casey Foundation reported that opportunity youth made up 8 percent of the population of sixteen- to nineteen-year-olds in 2007. However, the statistics were much higher for indigenous and minority youth, with 15 percent of American Indian youth, 13 percent of African American youth, and 12 percent of Hispanic youth neither in school nor employed (Shore and Shore 2009).

In 2009, the American Community Survey estimated that 9 percent of youth ages sixteen to twenty-four were opportunity youth. However, based on a comparison of multiple sources, the authors of an analysis of the economic value of opportunity youth believed this was too low and reported that “for the 16–24 age group, we estimate that at least 6.7 million (17 percent) are currently ‘opportunity youth’”<sup>20</sup> (Belfield, Levin, and Rosen 2012, 1 and 7).

Belfield, Levin, and Rosen describe the “social burden” and the “tax payer burden” related to opportunity youth. The social burden comprises lost earnings, additional health expenditures, and all crime-related costs. The authors estimate the lifetime social burden to be in excess of an average of \$700,000 per opportunity youth. The tax burden comprises lost tax revenues, additional healthcare paid by tax payers, expenditures for criminal justice and corrections systems, and welfare and social service payments. They estimate this cost to be in excess of \$230,000 over the lifetime of each opportunity youth. These figures do not include costs to families for providing for their family members, resources provided by nongovernmental agencies, or costs derived from intergenerational transfers of economic and health-related disadvantage.

The weight of the social and tax burdens of opportunity youth and the numbers of youth who are disengaged suggest that investments in helping these youth engage successfully in school and work may yield substantial returns to individual and community well-being. Belfield, Levin, and Rosen conclude:

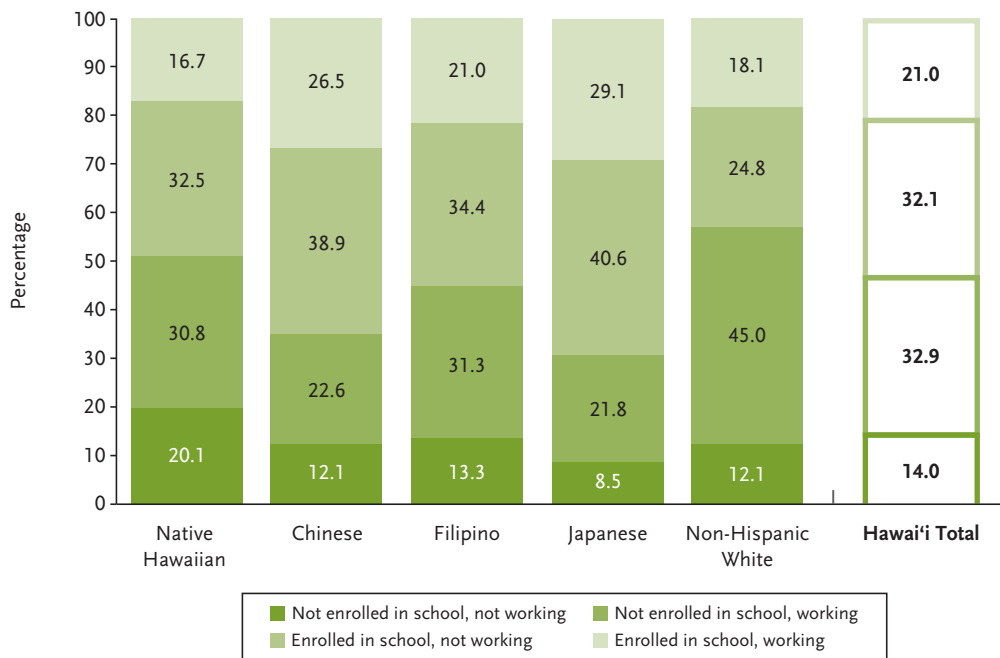
In these analyses we do not make any commitments about how the potential of opportunity youth can be realized. There are many options—improved schools, safer neighborhoods, enhanced family and community supports, or tax incentives for employers. We also do not predict how many opportunity youth would respond to these commitments or what they would cost to implement. Indeed, there are many challenges to implementing effective programs for those who are most disadvantaged, poorest educated or least connected to the workplace (Bloom, Thompson, and Ivry 2010). Nevertheless, the personal, economic and social cost of failure is such that many such commitments might be attempted. (2012, 26)

As shown in Figure 5.77, data from the 2006–10 ACS suggest that a substantial number of Hawai‘i youth are neither employed nor in school and that Native Hawaiian youth are overrepresented in this group.

20. This estimate includes 3.3 million underengaged youth who are intermittently employed or in school between the ages of sixteen and twenty-four.



**FIGURE 5.77** Distribution of youth and young adults by school enrollment and employment status  
[as a percentage of all youth and young adults ages 16–24, by race/ethnicity, 2006–10, Hawai‘i]



Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- About one in five Native Hawaiians between the ages of sixteen and twenty-four (20.1 percent) was neither in school nor in the workforce, compared with roughly one in seven youth (14.0 percent) statewide.

Of the major ethnic groups, Native Hawaiians have the most to gain from programs to help disengaged and underengaged youth develop their human capital through productive educational and employment opportunities.

## POSTSECONDARY EDUCATION

In 2005, well before gaps in employment and earning statistics were exacerbated by the global economic recession, Orfield introduced *Higher Education and the Color Line* with the following statement:

For many families, however, the human capital gained through higher education has become the most important source of wealth and security that families can give their children. With the loss of industrial jobs and union wages, and with international corporations imposing global competition and driving down the real wages of relatively unskilled work that could be transferred to other countries, educational credentials and skills are increasingly important determinants of life chances. (Orfield, Marin, and Horn 2005, 3)

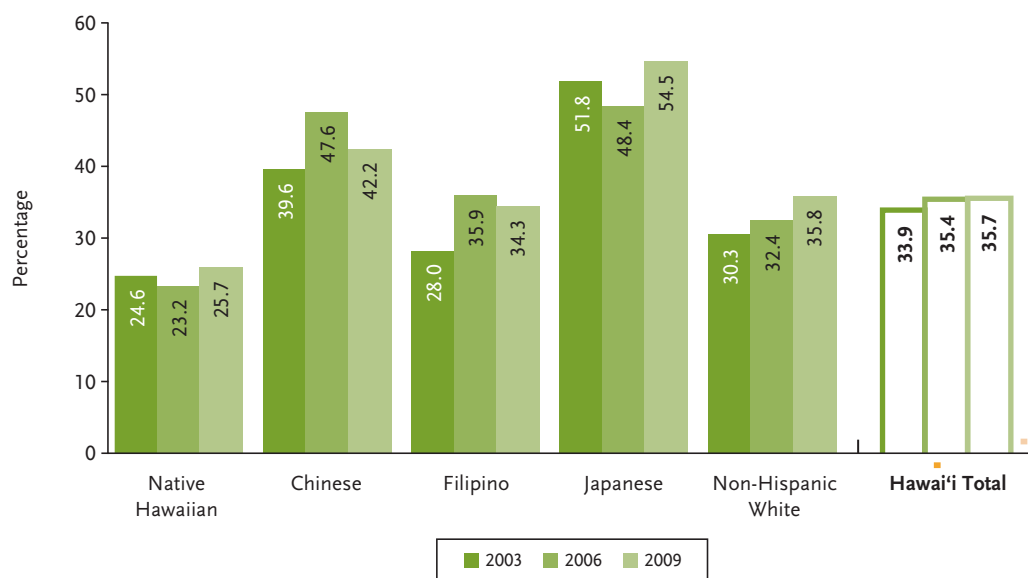
This section examines available data about Native Hawaiian enrollment in postsecondary education and degree attainment.

### Enrollment

Figure 5.78 draws on ACS data to present estimates for enrollment in postsecondary education by eighteen- to twenty-four-year-old Native Hawaiians living in Hawai‘i. After dramatic gains in postsecondary enrollment—as evidenced by UH system numbers reported in the 1983 and 1993 editions of the Native Hawaiian Educational Assessment (Kamehameha Schools/Bernice Pauahi Bishop Estate 1983)—enrollment rates for Native Hawaiians appear to have reached a plateau.

**FIGURE 5.78** Trends in college enrollment

[as a percentage of all young adults ages 18–24, by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]

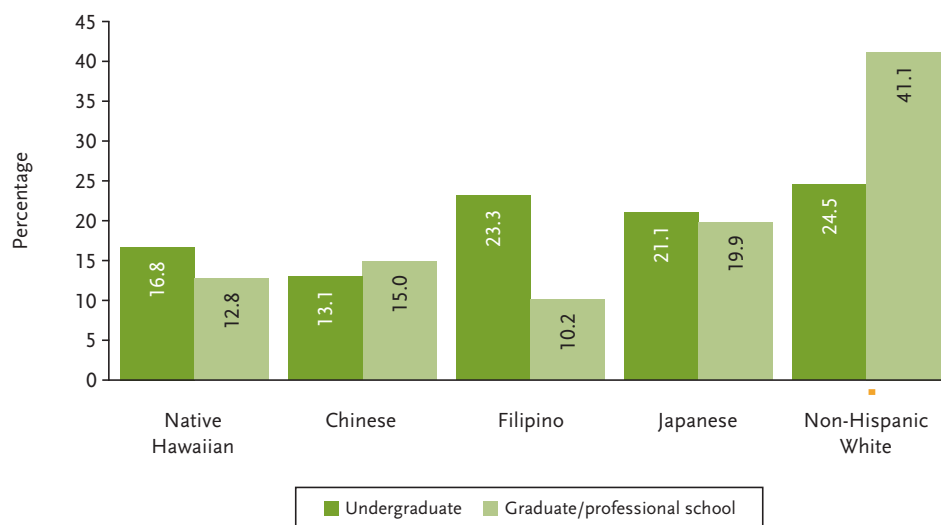


Source: US Census Bureau 2002–10, American Community Survey Public Use Microdata (1-year files).

- Native Hawaiian young adults had the lowest college enrollment rates among Hawai'i's major ethnic groups.
- In 2009, one in four Native Hawaiians between the ages of eighteen and twenty-four (25.7 percent) was enrolled in college, compared with one in three young adults (35.7 percent) statewide.
- Between 2003 and 2009, the rate of young adults enrolled in college increased at least 2 percentage points for every major ethnic group except Native Hawaiians, whose rates increased by 1.1 percentage points.

The greatest returns on education are seen for adults with graduate and professional degrees. Figure 5.79 presents data on the distribution of undergraduate and graduate/professional students by the major ethnic groups in Hawai'i.

**FIGURE 5.79** Distribution of undergraduate and graduate or professional students by race/ethnicity [as a percentage of all undergraduate and graduate or professional students, 2006–10, Hawai'i]

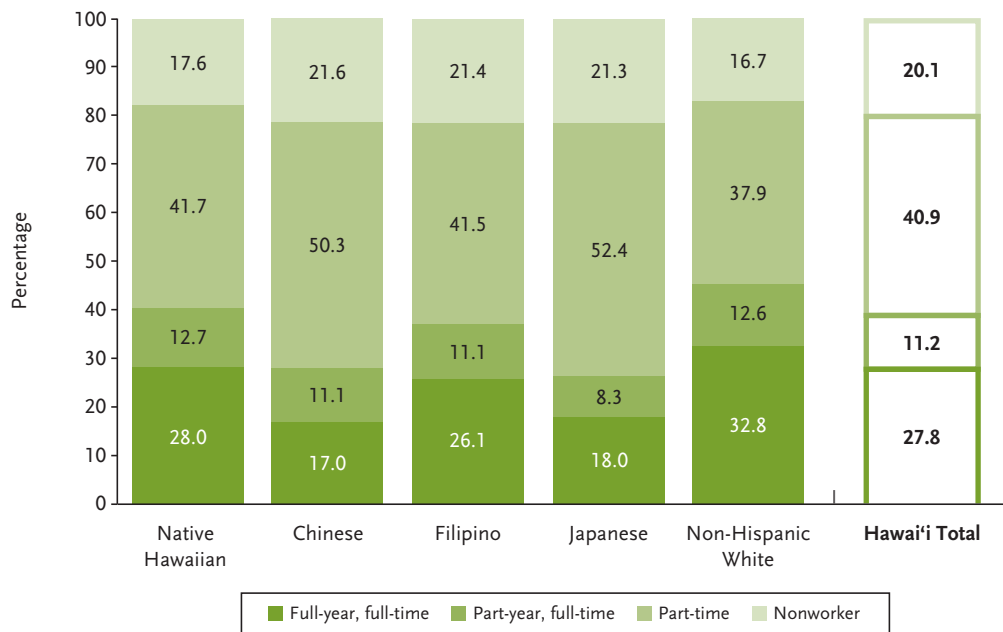


Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- Native Hawaiians made up 16.8 percent of the undergraduate college population in Hawai'i despite constituting nearly a quarter (23.5 percent) of the state's population of eighteen- to twenty-four-year-olds (not shown).
- Native Hawaiians were even more underrepresented among graduate or professional students at 12.8 percent of this group.

The need to work can be a major challenge to degree completion (Bound, Lovenheim, and Turner 2007). Figure 5.8o shows the employment status of college students by race/ethnicity. The relatively high rate of employment among Native Hawaiian college students may partially explain lower postsecondary enrollment and completion rates within the Native Hawaiian population.

**FIGURE 5.8o** Distribution of undergraduate and graduate or professional students by employment status [as a percentage of all undergraduate and graduate or professional students, by race/ethnicity, 2006–10, Hawai‘i]



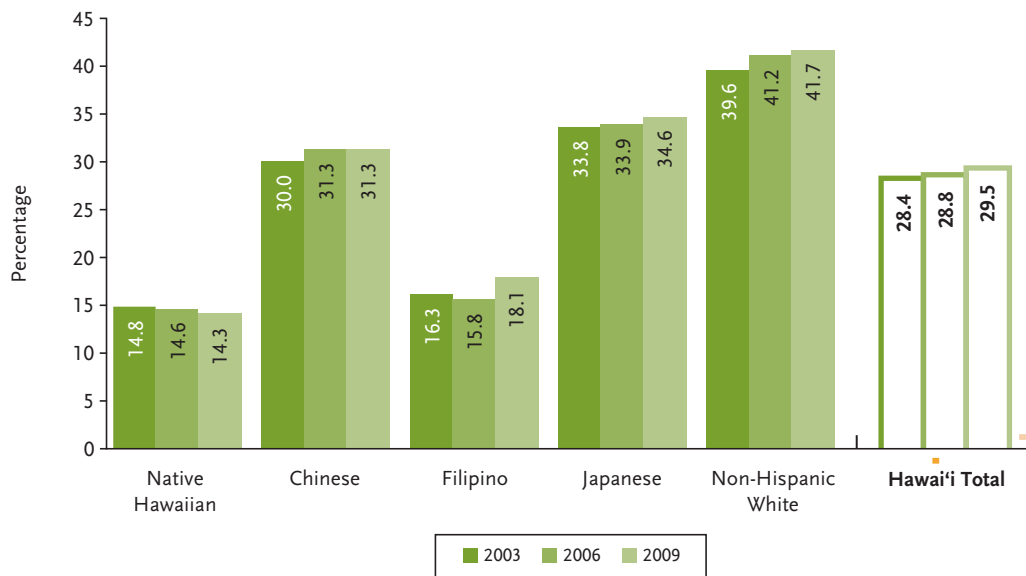
Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (5-year files).

- More than one in four Native Hawaiian college students (28.0 percent) worked full-time throughout the year while attending school.
- The rate at which Native Hawaiian students worked a full-year, full-time job was about 10 percentage points higher than that of Chinese and Japanese students (17.0 percent and 18.0 percent, respectively).
- The percentage of Native Hawaiian college students who held part-year, full-time employment was 12.7 percent, compared with 11.2 percent statewide.

## Educational Attainment

The lower rates of postsecondary enrollment among Native Hawaiians are reflected in the statistics on educational attainment of adults ages twenty-five and older. Figure 5.81 shows the percentage of adults who have obtained a bachelor's degree or higher.

**FIGURE 5.81** Trends in attainment of bachelor's degrees or higher  
[as a percentage of all adults 25 years and older, by race/ethnicity, 3-year weighted averages, selected years, Hawai'i]



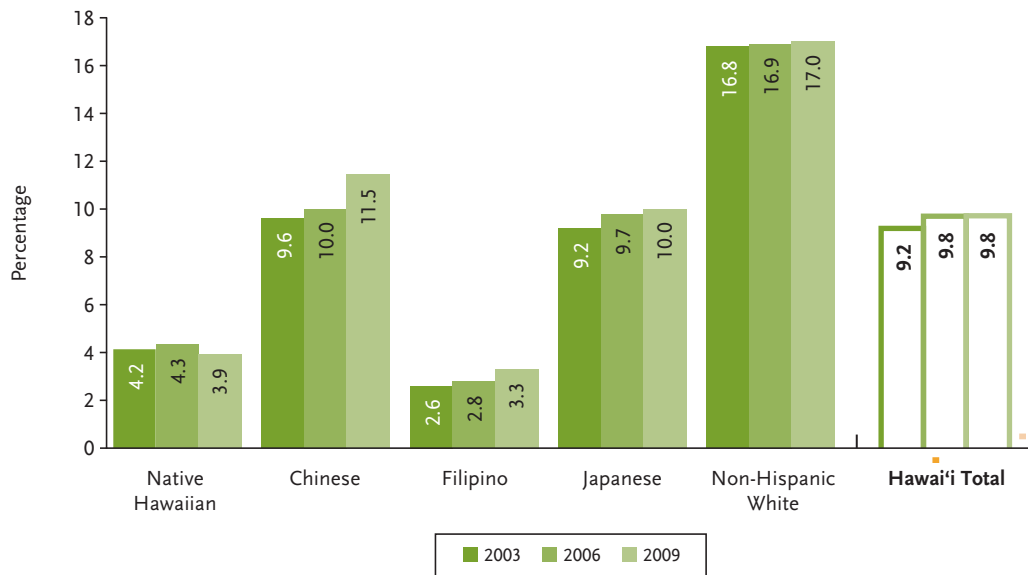
Source: US Census Bureau 2006–10, American Community Survey Public Use Microdata (1-year files).

- In 2009, approximately one in seven Native Hawaiian adults (14.3 percent) had obtained a college degree.
- The rate of bachelor's degree attainment among Native Hawaiians was the lowest among the state's major ethnic groups, which was less than half the statewide average (29.5 percent) and one-third that of non-Hispanic Whites (41.7 percent).
- The percentage of Native Hawaiian adults with a bachelor's degree or higher increased by 5.7 percentage points between 1990 (not shown) and 2003, then plateaued between 2003 and 2009.

Data on graduate degree attainment depict similar racial/ethnic disparities but also highlight significant signs of progress in trends over time.

**FIGURE 5.82** Trends in attainment of graduate or professional degrees

[as a percentage of all adults 25 years and older, by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]

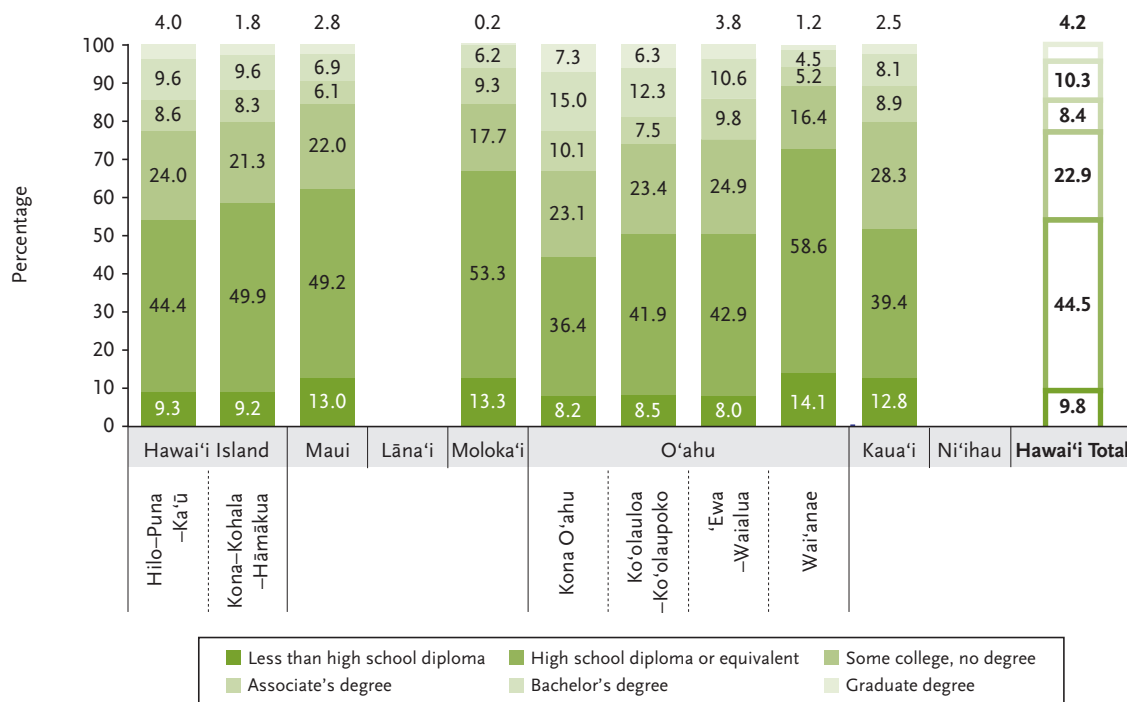


Source: US Census Bureau 2002–10, American Community Survey Public Use Microdata (1-year files).

- In 2009, the rate of graduate degree attainment among Native Hawaiians (3.9 percent) was less than half the statewide average (9.8 percent) and less than one-quarter the rate of non-Hispanic Whites (17.0 percent).
- During the past two decades, the rate of graduate degree attainment among Native Hawaiians nearly doubled, from 2.2 percent in 1990 (not shown) to 3.9 percent in 2009.

We end this section with a look at educational attainment by region. Adults who have completed more formal education may contribute to intergenerational change. The mechanisms that drive such intergenerational improvements are complex and likely reflect both the increased social and economic capital in the community along with increased access to role models and higher expectations for the future educational pursuits of youth in the community.

**FIGURE 5.83** Distribution of educational attainment among Native Hawaiians by region  
[as a percentage of all Native Hawaiian adults 25 years and older, 2006–10, Hawai‘i]



Source: US Census Bureau 2006–10, American Community Survey Selected Population Tables Summary File.

Note: Data for Lāna'i and Ni'ihau are either unavailable or too limited to yield reliable results.

- The Kona O'ahu area had the highest rates of college degree completion (associate's degree or higher), where nearly one in three Native Hawaiian adults (32.4 percent) had a postsecondary degree.
- In Ko'olaupoko and 'Ewa-Waialua, about one in four Native Hawaiian adults (26.1 percent and 24.2 percent, respectively) had an associate's degree or higher.
- The lowest rate of college degree completion was in Wai'anae, where roughly one in ten adults (10.9 percent) had a college degree.

## CONCLUSION

Over the last decade Native Hawaiians have made significant progress in cognitive well-being. Positive changes are apparent at multiple levels, from students to schools to whole communities. Among Native Hawaiian keiki we see growing preschool enrollment, higher test scores and proficiency rates, reduced special education referrals, and a shrinking achievement gap between Native Hawaiians and their non-Hawaiian peers. Predominantly Native Hawaiian schools have an increasingly equitable distribution of high-quality resources and infrastructure, with encouraging indicators of stakeholder satisfaction and school quality. At the community level, stakeholder feedback about school quality is largely the most positive in areas where Native Hawaiians are most highly concentrated (Moloka‘i) and most numerous (‘Ewa–Waialua).

However, significant challenges remain. Although the gap is narrowing in many areas, Native Hawaiian students continue to lag behind their non-Hawaiian peers in key areas of cognitive well-being, including reading and mathematics achievement, special education, high school graduation, and postsecondary outcomes. Native Hawaiian young adults are disproportionately absent from both school and the workforce.

Because early disparities in achievement typically grow into larger disparities over the course of formal education, high-quality learning opportunities are needed to help ensure that young Native Hawaiian keiki do not start their educational careers lagging behind their peers (Heckman 2008). At the same time, it is important to provide a system of supports and, where needed, remediation to achieve equitable educational outcomes (Tibbetts, Silverstein, and Ishibashi 2007). Current research (e.g., Pacific Policy Research Center 2011) suggests that collaborative approaches can substantially amplify the impact of individual programs and offer promise for creating broad, positive change.

Hawaiian-focused charter schools represent an important opportunity in Native Hawaiian education, striving to mitigate disconnects between home and school culture while fostering the development of strong cultural identities and community ties. The results of standardized tests suggest the impact of such strategies is not limited to the social-emotional development of keiki. For example, Native Hawaiian students in Hawaiian-focused charter schools start out at lower achievement levels than do their peers in noncharter public schools but make greater gains, closing the gap in reading proficiency by Grade 8. Students in Hawaiian-focused charters also make substantial improvements in mathematics proficiency, although the gap in proficiency remains essentially unchanged.

Clearly, the roots of the disparities in educational outcomes for Native Hawaiians are deep and complex. The solutions may be equally complex. Greater understanding of the personal, family, school, social-cultural, and political factors that promote or impede school success for Native Hawaiians is needed to develop programs and initiatives that eliminate disparities in educational outcomes. The identification and dissemination of successful methods used in Hawaiian culture-based education may help pave the way forward.







## APPENDIX A

### Methodology

*Ka Huaka'i* draws on a broad base of literature and data sources that represent many different methodologies and perspectives. This appendix describes the methods, considerations, nuances, constraints, and decisions relevant to how we interpret the data in this volume. It also points out in-house methodology changes that have been implemented since *Ka Huaka'i* 2005. The topics are arranged alphabetically.

#### Crime

Crime data are inherently difficult to analyze and can easily be misinterpreted. The data presented in this volume of *Ka Huaka'i* were derived from the Uniform Crime Reporting (UCR) program, which collects crime statistics that are comparable throughout the United States. At the national level, the program is administered by the Federal Bureau of Investigation. Hawai'i's UCR program is housed in the Crime Prevention and Justice Assistance division, which collects, reviews, and reports data obtained from Hawai'i's four county police departments.

The UCR program reports the number of offenses and arrests categorized as “index” or “part II” offenses. Index offenses are considered to be more serious and are used as a national indicator of crime. They include murder and nonnegligent manslaughter, forcible rape, robbery, aggravated assault, burglary, larceny-theft, motor vehicle theft, and arson. These eight index crimes and negligent manslaughter are also referred to as part I offenses. Part II offenses include all other offenses. In Hawai'i, total negligent manslaughter arrests are included with part II arrests. For more information on offense classification and definitions, see the Crime in Hawai'i Uniform Crime Reports at <http://ag.hawaii.gov/cpja/rs/cih/>.

Offenses and/or arrests for crimes may be counted by the number of victims of the crime or the number of incidents. For example, violent crimes are generally reported by the total number of victims. Robberies, however, are reported by the number of incidents. In addition, a hierarchy rule is used when compiling the statistical reports. This rule limits crime and arrest counts to the most serious offense, or charge, committed within a single incident defined as the same time and place. As a result, some crimes are underrepresented in the reports. Furthermore, it is widely acknowledged that offenses known to police are an underrepresentation of the total number of crimes committed. Thus, a truly reliable measure of total crimes committed is difficult to obtain.

The crime figures and tables in *Ka Huaka'i* are presented as rates per 10,000 residents. This calculation is simplified as the total number of crimes (i.e., arrests) divided by the total population, multiplied by 10,000. While the issues with obtaining an accurate numerator (i.e., total number of crimes/arrests) have been addressed above, issues related to determining the denominator (i.e., total population) remain. The crime data include statistics for arrests of individuals present in the state and do not distinguish between military, resident, or visitor status. This is different from the approach to determine the total population, in which the visiting population is not enumerated. If a reliable estimation of the de facto population (all persons present in the state) were available, this number would yield a more reliable and comparatively smaller rate of crime. Furthermore, because the crime data in *Ka Huaka'i* show trends

over time, estimates of the population between census years are necessary. While numerous methods exist for estimating the size of populations between census years, we use a linear interpolation method that offers a smooth base upon which crime data may be trended.<sup>1</sup>

Arrest rates in this volume may differ significantly from those reported in *Ka Huaka'i* 2005 because of changes in the scaling methodology. Specifically, in 2005, arrest numbers were scaled against the single-race population counts from the Hawai'i Department of Business, Economic Development and Tourism, whereas the current figures use "alone or in combination" data from the US Census Bureau to derive estimates of all major ethnic groups, including Whites. Census data were used in this edition of *Ka Huaka'i* because the data are more reliable and may better reflect the multiracial and multiethnic nature of Hawai'i's population. However, the use of a single-race numerator and a multirace denominator may, in some cases, artificially inflate or deflate rates, especially given the fluid and context-specific nature of racial/ethnic identification. Our use of an "alone or in combination" definition for the White population for crime-related data differs from the White alone comparison group employed throughout most of this volume. We chose to use the White "alone or in combination" denominator for crime calculations because the numerators for all of the ethnic groups are defined by a consistent methodology, and using the White "alone" denominator inflates the White rates; therefore, we opted for a consistent methodology to define all denominators.

Given the variables involved in tabulating crime rates, the reader is urged to use care and thoroughness when interpreting the crime statistics.

## Data Aggregation

*Ka Huaka'i* 2014 data are often aggregated over three to five years to provide more reliable estimates or smoother trends. In such cases, figure subtitles indicate aggregated data with the term "combined" or "weighted average." The basic formula for calculating proportions or means of these data is expressed as follows:

$$(\text{Total of Year}_1 \text{ through Year}_n \text{ numerator}) / (\text{Total of Year}_1 \text{ through Year}_n \text{ denominator})$$

For the formula, the numerator and denominator may be a count or a summary statistic such as a mean. We use the middle year of the aggregated years for labeling purposes. For example, a three-year weighted average of years 2008, 2009, and 2010 is labeled 2009 within the respective figure or table and is referred to as 2009 in the respective bullets or narrative. Data that are published as aggregated datasets are referred to by their end year. For example, the ACS 2010 five-year dataset includes data from years 2006 to 2010.

While this method helps increase estimate reliability for small sample sizes in regional and sociodemographic subpopulations, it also reduces sensitivity to change over time.

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1. This method relates to crime data only; data in other sections use methodologies more appropriate for their respective data type.

## Definitions of Race/Ethnicity

Race/ethnicity categories differ slightly depending on the data source. In general, race/ethnicity categories used in our analyses are Native Hawaiian, Chinese, Filipino, Japanese, and non-Hispanic White. These categories are used because they are representative of the major races/ethnicities in the state and are commonly used in statistical reports produced by other state institutions. Combined, these five race/ethnicity<sup>2</sup> categories make up 85 percent of Hawai'i's total population.<sup>3</sup> The following explanation details race/ethnicity categories used or created from the various data sources in *Ka Huaka'i 2014*.

### *Census*

Beginning in 2000, the US Census Bureau allowed for multiple race/ethnicity reporting, which permitted a more inclusive definition of race/ethnicity. Two main census conventions are relevant to our analysis for reporting the various combinations of race/ethnicity: “alone” and “alone or in combination.” The “alone” population includes individuals who reported one race/ethnicity only. The “alone or in combination” population includes those who reported one race/ethnicity and those who reported two or more races/ethnicities. *Ka Huaka'i* uses the “alone or in combination” categories for Native Hawaiian, Chinese, Filipino, and Japanese races/ethnicities and the “alone” category for non-Hispanic Whites.

### *American Community Survey—Public Use Microdata Sample (PUMS)*

The American Community Survey's PUMS was used to create a proxy variable for race/ethnicity to approximate counts in the 2000 and 2010 censuses. The proxy was created using the same logic used for selecting race/ethnicity categories from the census data. In our analyses, Native Hawaiian, Chinese, Filipino, and Japanese races/ethnicities include all individuals who reported being of each respective race or ancestry, regardless of the combination of races or ancestries the individual reported. However, the White category—similar to our enumeration of non-Hispanic Whites from the census data—includes only those individuals who reported being of the White race alone and were not Hispanic.

### *American Community Survey—Selected Population Tables Summary File*

When comparing regional differences using American Community Survey data, the Selected Population Tables Summary File is used. The summary file contains race/ethnicity options similar to those utilized in the census. In such cases, our comparisons look only at Native Hawaiians in the state and include all those who reported being Native Hawaiian alone or in combination with any other race/ethnicity.

2. Other races/ethnicities with sizable populations in Hawai'i that are part of the Hawai'i total but not specifically called out include Other Pacific Islander, Korean, Black or African American, and Hispanic-White.

3. Based on ACS 2010 five-year PUMS.

### *Hawai‘i Department of Education*

Race/ethnicity reporting in the Hawai‘i Department of Education differs from census and ACS reporting in that it relies on parent-reported identification of a student’s “primary” race/ethnicity.<sup>4</sup> This means that categories for Native Hawaiian, Chinese, Filipino, Japanese, and White are mutually exclusive and should be taken as a lower-bound estimate of these populations. The Native Hawaiian figures combine both Native Hawaiian and part-Hawaiian designations.

### *Hawai‘i Department of Health*

#### Behavioral Risk Factor Surveillance System (BRFSS)

The BRFSS is a nationwide Centers for Disease Control and Prevention (CDC) survey that collects data on public health. Individual states are able to add to the survey to meet state needs. Race/ethnicity data collection and reporting have changed over the years in the BRFSS that is administered in Hawai‘i. For more information on these changes and race/ethnicity categorization, see <http://www.hhdw.org/cms/uploads/Resources/HHDW%20Race-Ethnicity%20Documentation%20Report.pdf>.

*Note:* Two recent changes that have been made to the BRFSS sampling methodology are of particular importance. These changes signify that data prior to 2011 cannot be compared with data from 2011 forward. More specifically, the sampling methodology has been modified to include use of cell phone numbers as part of survey calls. The methodology also has adopted a more advanced weighting method known as raking. These changes may yield survey results that are more accurate and meaningful by better representing lower-income and minority populations as well as populations with less formal education.

#### Hawai‘i Health Survey (HHS)

HHS race/ethnicities are taken from self-reported information. Race/ethnicity in the HHS follows the method of the Office of Health Status Monitoring, where individuals are categorized as Hawaiian if their father or mother is coded as Hawaiian. Otherwise, the individual is categorized as the first non-White race/ethnicity of the father. If the father’s race/ethnicity is White or unknown, then the individual’s race/ethnicity is coded as the first non-White race/ethnicity of the mother. If there are no other responses besides White, then the individual is categorized as White, unless the race/ethnicity is otherwise unknown.

#### Vital Statistics

The Hawai‘i Department of Health uses a classification hierarchy when reporting vital statistics by race/ethnicity. In any case where Native Hawaiian is reported as a race/ethnicity—whether alone or in combination with another race/ethnicity—the race/ethnicity of that individual is reported exclusively as Native Hawaiian. If a non-White race/ethnicity is reported with White, then that individual is reported exclusively as the non-White race/ethnicity. If there is more than one non-White race/ethnicity reported, then the first non-White race/ethnicity indicated is the reported race/ethnicity. As a result, the race/ethnicity categories are mutually exclusive. Estimations for Chinese, Filipino, Japanese, and White races/ethnicities should be viewed as lower-bound estimates. The race/ethnicity of children is based on that of the father or on the race/ethnicity of the mother if the father’s race/ethnicity is unknown.

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4. Starting in 2011, two-part race/ethnicity reporting was required, allowing multiple-race reporting. However, all data in *Ka Huaka‘i 2014* are based on the students’ primary race.

### Youth Risk Behavior Survey (YRBS)

The YRBS is a national survey that uses respondents' self-reported information as a basis for its race/ethnicity data. Similar to the BRFSS, individual states using the YRBS may add to the survey questionnaire. For Hawai'i, this means allowing options for the major race/ethnicities within the state. Our calculations are based on special tabulations obtained from the Hawai'i Department of Health that identify all students who self-identified as Native Hawaiian, including students who reported being part-Hawaiian. YRBS data posted on the Hawai'i Department of Health website are not comparable with the special tabulations used in *Ka Huaka'i* because they are based on conventions of the Centers for Disease Control, which use the "Native Hawaiian alone" classification to report data for Native Hawaiians.

## Family, Household, and Family Household

"Family," "household," and "family household" are similar but distinct terms used throughout *Ka Huaka'i* 2014. The distinctions are as follows:

### *Family*

A family refers to two or more people who share a relationship through marriage, birth, or adoption.

### *Household*

A household refers to the physical structure of the housing unit and all persons residing within that structure.

### *Family Household*

A family household is any household in which a family resides. In addition to the family itself, family households sometimes include other residents who are not members of the family (related by blood or marriage). In our analyses, family households are further distinguished as follows:

- Married-couple families (with or without children)
- Single-father families (where a child resides as a part of the family unit)
- Single-mother families (where a child resides as a part of the family unit)

Households in which a family does not reside (e.g., unrelated roommates) are considered nonfamily households.

### *Household Race/Ethnicity in the American Community Survey PUMS*

In *Ka Huaka'i* 2005, the race/ethnicity of households was determined by the race/ethnicity of the head of household. In an effort to be more inclusive and accurate in describing the household characteristics of the populations residing within these households, we now determine the race/ethnicity of households by the race/ethnicity of all members of the household. For the purposes of identifying Native Hawaiian households, any household where a Native Hawaiian resides is considered a Native Hawaiian household.

By applying this methodology to the 2010 ACS five-year PUMS data, about 25 percent of the Native Hawaiian population, who would have otherwise been left out, are now counted in the household analyses. This more inclusive method counts a total of 97,750 Native Hawaiian households, while the old method based on the race/ethnicity of the head of household would have identified just 66,911 Native Hawaiian households. Appendix B shows the effect of making this change on various statistics (e.g., educational attainment, employment status, family/household income, and prevalence of family household types).

This change in methodology from *Ka Huaka'i 2005* affects all the race/ethnicity categories used in the analyses. Because each household can potentially be identified with multiple races/ethnicities, these groups are not mutually exclusive. For instance, a household with a Chinese head of household, a Hawaiian spouse, and Chinese/Hawaiian children is counted as a Native Hawaiian household *and* a Chinese household.

## Income Designations

### *Livable Income*

To determine a suitable unit of measurement for economic well-being, the Economic Policy Institute (EPI) developed a calculator for estimating livable income. The livable income formulas used in *Ka Huaka'i 2014* are a modified version of the methods used by EPI's 2013 Family Budget Calculator (Economic Policy Institute 2013b). In accordance with EPI's process, we incorporated multiple sources of information about the costs of housing, food, child care, transportation, healthcare, other necessities, and taxes to create livable income estimates. Data used to determine livable income standards were collected from the US Department of Housing and Urban Development, US Department of Agriculture's Center for Nutrition Policy and Promotion, Child Care Aware of America, Internal Revenue Service, US Department of Health and Human Services, Bureau of Labor Statistics, and the Tax Foundation. ACS one-year PUMS data were used in the final analysis to determine the proportion of the population that met the livable income standard.

In addition to the EPI's adjustments for family structure and region of residence, we further customized livable income estimates for each household based on household size, number and age of children, travel time to work, and family type. As a result, households of the same size can have different thresholds for livable income based on their unique attributes.

### *Poverty*

Poverty levels were determined by the poverty guidelines set forth by the US Department of Health and Human Services for Hawai'i. *Ka Huaka'i 2005* and many national reports based on Census data use the national poverty threshold which does *not* include an adjustment for the cost of living in Hawai'i (see below).

### *Low Income*

Low-income levels were determined using the poverty guidelines set forth by the US Department of Health and Human Services for Hawai'i. Low income is defined as income between 101 and 185 percent of the poverty guideline. The Hawai'i Department of Human Services uses 185 percent of the poverty guideline as the cutoff for eligibility for many of its income subsidy programs.



### *Gap Group*

The gap group includes households whose income was less than the livable income standard but more than 185 percent of the poverty guideline (i.e., “Low Income”). “Gap” suggests that these households fall into a category of having too much money to receive public assistance but not enough money to live comfortably.

### *Poverty Guidelines versus Poverty Threshold*

*Ka Huaka'i 2014* utilizes poverty guideline to determine poverty level. Poverty guidelines are produced by the US Department of Health and Human Services and are used to determine financial eligibility for certain federal programs. The guidelines are adjusted for different family sizes and for the cost of living in Hawai'i.<sup>5</sup>

A different measure—the poverty threshold—was used to determine poverty levels in *Ka Huaka'i 2005*. The poverty threshold is updated by the US Census Bureau and is used for statistical purposes to determine the number of individuals living in poverty. The measure is adjusted for different family sizes.

### *Poverty Levels in the Education Data*

In our analyses of cognitive well-being, certain data points are categorized by the poverty level of high school complexes. The three designations are 0–10 percent in poverty, 10–20 percent in poverty, and 20–30 percent in poverty. For these figures, the poverty level was determined differently than the methodology described above. We use the poverty levels for high school complexes as they are reported in the Hawai'i Department of Education's 2010 *School Status and Improvement Report*. To simplify the labeling of these categories, we round each category's top end to the nearest whole number (e.g., 9.99 percent is rounded to 10 percent). These categories are mutually exclusive.

## **Nonparental Caregivers**

Nonparental caregivers are defined as a head of household with a minor child who does not reside with his/her own parent and whose relationship to the head of household is that of a grandchild, in-law, other relative, foster child, nonrelative, or sibling.

## **Population Projections**

The population projections utilize US census data and vital statistics from the Hawai'i Department of Health to develop the components of the projection model: fertility, mortality, and migration. The final model was compared with earlier projection models and historical trends for validation. In particular, comparison with the historical trend of the Native Hawaiian population was used to validate the overall robustness of the model based on observed changes in the population. Due to changes in data collection and reporting in the US census, the historical data were adjusted to better fit a regression line most

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5. For more information about poverty guidelines and poverty thresholds, see <http://aspe.hhs.gov/POVERTY/faq.cfm#differences>.

commonly observed among growing populations. This process included removing apparent outliers from the data (census years 1970, 1980, and 1990) and fitting an exponential trend line to the remaining data points from years 1910 to 2010. The Native Hawaiian population was then re-estimated using the trend line. The r-squared value of the regression fit to historical data was .91 before adjustment and .99 after adjustment.

## Regions

The regions mentioned in *Ka Huaka'i 2014* are rendered with their traditional Hawaiian moku or moku-puni names. However, due to data restrictions, the boundaries for these regions differ slightly from the actual delineation of the moku on O'ahu and Hawai'i Island and are modified by boundaries specified by the US Census Bureau. More specifically, the 'Ewa-Waialua moku includes a small portion of Ko'olaupoko (uninhabited) and a portion of the Wai'anae moku (Schofield Barracks, Wheeler AFB, and Wahiawā). The moku of Kona on the island of O'ahu includes a portion of the Ko'olaupoko moku (from Kuli'ou'ou to the Makapu'u lighthouse). While the aggregated moku and census boundaries used in this volume vary slightly on Hawai'i Island, the boundaries align in the island's populated areas. Thus, the differences observed in the rural or uninhabited parts of the island constitute a negligible difference in terms of data analysis and results.

Region definitions in *Ka Huaka'i 2014* are based on census county subdivisions and differ from region definitions in *Ka Huaka'i 2005*, which were based on the school complex geographic divisions of the Hawai'i Department of Education. This change was made to better match US census/ACS data with data from the Hawai'i Department of Education. In particular, the Wai'anae region consists of Nānākuli and Wai'anae complexes and does not include Kapolei, Campbell, Waipahu, and Pearl City complexes as it did in *Ka Huaka'i 2005* (represented by the "Leeward" region). Kona O'ahu includes all school complexes defined by the "Honolulu" region in *Ka Huaka'i 2005*, but it also includes portions of the Moanalua and Radford school complexes. On Hawai'i Island, small differences between the two approaches exist in terms of the east-west border. However, school classifications such as East Hawai'i (Hilo-Puna-Ka'ū) and West Hawai'i (Kona-Kohala-Hāmākua) are not affected.

## Work Status

While there is not an official definition of full-time work, we employ a definition that is consistent with the Bureau of Labor Statistics definition of full-time and year-round employment. The work status definitions used for *Ka Huaka'i 2014* are as follows:

- Full time: 35 hours per week or more
- Part time: 34 hours per week or less
- Full year: 50 weeks or more out of the year
- Part year: 49 weeks or less out of the year

## APPENDIX B

### Household Tables

In previous editions of *Ka Huakaʻi*, households were identified by the race/ethnicity of the head of household. This approach was consistent with the definition employed by the US Census Bureau, but failed to account for the high rates of intermarriage in Hawaiʻi and, in particular, in the Native Hawaiian population.

In *Ka Huakaʻi 2014*, we changed the approach and identified the race/ethnicity of households by the race/ethnicity of all members of the household. For example, a household in which the head of household is Chinese, spouse is Hawaiian, and children are Chinese/Hawaiian, that household would be identified as a Native Hawaiian household and as a Chinese household. In the 2010 ACS 5-year PUMS data, this change means that 25 percent of the Native Hawaiian population, who would have otherwise been left out, are now included in household analyses. In addition, the head of household approach would have enumerated 66,911 Native Hawaiian households; the method used in this volume now counts a total 97,750 Native Hawaiian households. The same change affects the other race/ethnicity categories used in this volume. Because each household can be identified with multiple races/ethnicities, these groups are not mutually exclusive.

While this “containing” methodology is more inclusive and more accurately reflects the diversity of the Native Hawaiian population, the results are not directly comparable to *Ka Huakaʻi 2005*. Therefore, the comparison tables in this appendix show selected data points from *Ka Huakaʻi 2005* along with two versions of the *Ka Huakaʻi 2014* data: one based on the “containing” methodology, and the other based on the “head of household” methodology. This side-by-side comparison estimates the impact of the methodological change and illustrates how the data would differ if updated using the previous “head of household” methodology.

This appendix provides comparison tables for figures where: (1) households are the unit of analysis; (2) the integrity of direct comparisons to *Ka Huakaʻi 2005* and other publications is compromised due to differences in racial/ethnic categorization; and (3) the data points are otherwise directly comparable in terms of data source and methodology. The change in household methodology does not affect statewide totals or averages. These calculations count each household once, regardless of the number of racial/ethnic groups represented among its members.

Generally, disparities between ethnic groups persist—regardless of which approach is used—but are less pronounced with the “containing” methodology presumably because of the increased overlap between racial/ethnic categories. While the “containing” methodology moderates differences between groups, we believe it more accurately represents the conditions and experiences of Native Hawaiian families, many of which include individuals of diverse racial/ethnic backgrounds.

## Income of Family Households

The mean income among all family households with young children was \$62,104 in *Ka Huaka'i 2005* and \$81,354 in *Ka Huaka'i 2014*.<sup>1</sup> Disaggregation by the race/ethnicity of these households highlights the distinction between the two methodologies. The mean income of Native Hawaiian family households with young children was \$76,925 using the “containing” methodology and \$71,025 using the “head of household” methodology. The “containing” approach thus increases our estimate of Native Hawaiian income by \$5,900 relative to the “head of household” calculation.

Under the “containing” methodology, increases also occur for Chinese and non-Hispanic White households while mean income decreases by \$6,146 among Japanese households. Only Filipino household numbers remained nearly unchanged. The increased overlap between groups associated with the “containing” methodology causes shifts in mean income estimates, and the direction and magnitude of these shifts vary between racial/ethnic groups.

**TABLE B.1** Income of family households with young children  
[mean annual income, family households with children 4 years and younger, by race/ethnicity, 2006–10, Hawai'i]

Race/ethnicity	<i>Ka Huaka'i 2005</i>	<i>Ka Huaka'i 2014</i>	
	Head of Household <sup>[1]</sup>	Head of Household <sup>[2]</sup>	Containing <sup>[3]</sup>
Native Hawaiian	48,529	71,025	76,925
Chinese	64,759	88,034	94,039
Filipino	69,159	85,388	85,193
Japanese	80,637	106,002	99,856
Non-Hispanic White	65,958	82,151	84,576
<b>Hawai'i Total</b>	<b>62,104</b>	<b>81,354</b>	<b>81,354</b>

Note: Incomes are not inflation adjusted.

[1] Data from *Ka Huaka'i 2005*, Figure 3.10.

[2] Data calculated specifically for this appendix.

[3] Data from *Ka Huaka'i 2014*, Figure 2.9.

1. These mean income levels represent the nominal value of the dollar in each respective year and are not adjusted for inflation.

Similar patterns are apparent for family households with school-age children. The more inclusive “containing” methodology increases the income estimates for Native Hawaiian and Chinese family households but decreases that of Japanese family households.

**TABLE B.2** Income of family households with school-age children  
[mean annual income, family households with children ages 5–17, by race/ethnicity, 2006–10, Hawai‘i]

Race/ethnicity	<i>Ka Huaka‘i 2005</i>	<i>Ka Huaka‘i 2014</i>	
	Head of Household <sup>[1]</sup>	Head of Household <sup>[2]</sup>	Containing <sup>[3]</sup>
Native Hawaiian	58,388	75,241	79,468
Chinese	72,316	89,409	95,197
Filipino	64,229	86,065	86,315
Japanese	88,234	108,406	105,442
Non-Hispanic White	71,138	94,160	94,930
<b>Hawai‘i Total</b>	<b>67,146</b>	<b>87,712</b>	<b>87,712</b>

*Note:* Incomes are not inflation adjusted.

[1] Data from *Ka Huaka‘i 2005*, Figure 4.20.

[2] Data calculated specifically for this appendix.

[3] Data from *Ka Huaka‘i 2014*, Figure 2.10.

## Public Assistance Usage

Consistent with household income figures, estimates of public assistance usage among Native Hawaiian households are lower when calculated with the “containing” methodology than the “head of household” approach. However, public assistance usage is higher among Chinese, Filipino, Japanese, and non-Hispanic White households with the “containing” methodology.

**TABLE B.3** Trends in usage of public assistance  
[as a percentage of all households by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]

Race/ethnicity	<i>Ka Huaka‘i 2005</i>			<i>Ka Huaka‘i 2014</i>			
	1999	2003		2006		2009	
	Head of Household <sup>[1]</sup>	Head of Household <sup>[2]</sup>	Containing <sup>[3]</sup>	Head of Household <sup>[2]</sup>	Containing <sup>[3]</sup>	Head of Household <sup>[2]</sup>	Containing <sup>[3]</sup>
Native Hawaiian	14.7	9.9	9.7	7.6	6.9	7.3	6.9
Chinese	8.7	3.8	4.5	3.7	4.6	4.6	4.6
Filipino	10.6	6.8	7.0	4.4	4.6	4.4	5.1
Japanese	3.2	1.7	2.8	2.0	2.4	1.4	1.8
Non-Hispanic White	4.4	3.2	3.5	1.5	1.9	2.0	2.2
<b>Hawai‘i Total</b>	<b>7.2</b>	<b>4.6</b>	<b>4.6</b>	<b>3.2</b>	<b>3.2</b>	<b>3.3</b>	<b>3.3</b>

[1] Data from *Ka Huaka‘i 2005*, Figure 2.41.

[2] Data calculated specifically for this appendix.

[3] Data from *Ka Huaka‘i 2014*, Figure 2.12.

## Poverty

When we disaggregate the data by race/ethnicity, the direction of *trends* roughly mirror statewide patterns regardless of whether we use the “head of household” or “containing” methodology to categorize households.<sup>2</sup> However, the “containing” methodology results in lower poverty *rates* for Native Hawaiian, Chinese, and non-Hispanic White households and slightly higher poverty rates for Filipino and Japanese households.

**TABLE B.4** Trends in poverty among family households  
[as a percentage of all family households by race/ethnicity, 3-year weighted averages, selected years, Hawai‘i]

Race/ethnicity	<i>Ka Huaka‘i 2005</i>			<i>Ka Huaka‘i 2014</i>			
	1999	2003		2006		2009	
	Head of Household <sup>[1]</sup>	Head of Household <sup>[2]</sup>	Containing <sup>[3]</sup>	Head of Household <sup>[2]</sup>	Containing <sup>[3]</sup>	Head of Household <sup>[2]</sup>	Containing <sup>[3]</sup>
Native Hawaiian	14.1	14.2	12.3	13.3	11.1	12.4	10.6
Chinese	9.4	8.8	8.1	9.1	8.4	10.4	8.3
Filipino	8.1	8.1	8.7	6.2	6.7	6.7	6.9
Japanese	3.5	4.2	4.5	3.9	4.1	4.1	4.2
Non-Hispanic White	5.1	6.3	5.9	5.5	5.2	5.7	5.4
<b>Hawai‘i Total</b>	<b>7.6</b>	<b>8.8</b>	<b>8.8</b>	<b>7.3</b>	<b>7.3</b>	<b>7.9</b>	<b>7.9</b>

[1] Data from *Ka Huaka‘i 2005*, Figure 2.37.

[2] Data calculated specifically for this appendix.

[3] Data from *Ka Huaka‘i 2014*, Figure 2.14.

Similarly, poverty rates among family households with young children were generally lower based on the “containing” approach than the “head of household” methodology for Native Hawaiians, Chinese, and non-Hispanic Whites.<sup>3</sup> However, “containing” estimates of poverty in Filipino and Japanese family households were higher than “head of household” figures.

2. There was one exception: The trend in Chinese poverty rates showed a moderate shift in direction between 2006 and 2009 depending on whether we used the “containing” or “head of household” approach.

3. There was one exception: Poverty rates remained comparable among Non-Hispanic White married-couple family households with young children regardless of the methodology.

**TABLE B.5** Poverty among family households with young children

[as a percentage of all family households with children 4 years and younger, by race/ethnicity and family household type, 2006–10, Hawai'i]

Household type and race/ethnicity	<i>Ka Huaka'i 2005</i>		<i>Ka Huaka'i 2014</i>	
	Head of Household <sup>[1]</sup>	Head of Household <sup>[2]</sup>	Containing <sup>[3]</sup>	
<i>All family households</i>				
Native Hawaiian	22.8	22.2	18.7	
Chinese	16.5	14.9	12.3	
Filipino	12.2	10.0	11.0	
Japanese	8.5	5.3	6.9	
Non-Hispanic White	8.8	10.7	9.9	
<b>Hawai'i Total</b>	<b>13.9</b>	<b>15.0</b>	<b>15.0</b>	
<i>Married-couple households</i>				
Native Hawaiian	11.8	13.8	11.0	
Chinese	7.7	12.8	9.8	
Filipino	6.6	5.5	6.0	
Japanese	3.7	4.8	6.6	
Non-Hispanic White	4.8	6.2	6.2	
<b>Hawai'i Total</b>	<b>7.8</b>	<b>9.5</b>	<b>9.5</b>	
<i>Single-parent households</i>				
Native Hawaiian	41.5	33.7	31.1	
Chinese	38.5	20.0	18.5	
Filipino	26.6	19.1	21.1	
Japanese	25.9	7.6	8.2	
Non-Hispanic White	28.9	29.3	24.7	
<b>Hawai'i Total</b>	<b>33.2</b>	<b>29.4</b>	<b>29.4</b>	

*Note:* There is no comparable figure for *Poverty among households with school-age children* in *Ka Huaka'i 2005*. Therefore, a crosswalk table is not provided.

[1] Data from *Ka Huaka'i 2005*, Figure 3.11.

[2] Data calculated specifically for this appendix.

[3] Data from *Ka Huaka'i 2014*, Figure 2.15.

## Grandparent Involvement

In most cases, the “containing” methodology results in higher percentages of households where grandparents live with and are responsible for grandchildren. However, the extent and direction of the difference between “containing” and “head of household” estimates vary by race/ethnicity and the analysis variable (i.e., the “living with” versus “responsible for” categories).

**TABLE B.6** Households with grandparents and young grandchildren  
[as a percentage of all households with children 4 years and younger, by race/ethnicity and grandparent responsibility, 2006–10, Hawai‘i]

Grandparent responsibility and race/ethnicity	<i>Ka Huaka‘i 2005</i>	<i>Ka Huaka‘i 2014</i>	
	Head of Household <sup>[1]</sup>	Head of Household <sup>[2]</sup>	Containing <sup>[3]</sup>
<i>Grandparents living with grandchildren</i>			
Native Hawaiian	36.9	33.7	35.5
Chinese	36.9	23.6	33.1
Filipino	47.8	40.0	40.6
Japanese	21.5	26.0	28.4
Non-Hispanic White	6.7	12.3	17.9
<b>Hawai‘i Total</b>	<b>28.7</b>	<b>26.3</b>	<b>26.3</b>
<i>Grandparents responsible for grandchildren as a percentage of grandparents living with grandchildren <sup>[4]</sup></i>			
Native Hawaiian	31.1	27.6	30.2
Chinese	14.9	32.1	24.6
Filipino	17.4	28.2	26.1
Japanese	36.3	9.6	18.6
Non-Hispanic White	11.7	20.5	23.9
<b>Hawai‘i Total</b>	<b>26.4</b>	<b>26.0</b>	<b>26.0</b>

[1] Data from *Ka Huaka‘i 2005*, Figure 3.9.

[2] Data calculated specifically for this appendix.

[3] Data from *Ka Huaka‘i 2014*, Figure 3.9.

[4] The data points presented have been recalculated to be consistent with the *Ka Huaka‘i 2005* methodology for comparability purposes.



**TABLE B.7** Households with grandparents and school-age grandchildren

[as a percentage of all households with children ages 5–17, by race/ethnicity and grandparent responsibility, 2010, Hawai'i]

Grandparent responsibility and race/ethnicity	<i>Ka Huaka'i 2005</i>	<i>Ka Huaka'i 2014</i>	
	Head of Household <sup>[1]</sup>	Head of Household <sup>[2]</sup>	Containing <sup>[3]</sup>
<i>Grandparents living with grandchildren</i>			
Native Hawaiian	24.8	27.2	28.6
Chinese	24.9	21.6	26.2
Filipino	32.7	31.4	31.3
Japanese	16.0	22.0	23.6
Non-Hispanic White	7.2	11.1	13.1
<b>Hawai'i Total</b>	<b>21.7</b>	<b>21.8</b>	<b>21.8</b>
<i>Grandparents responsible for grandchildren as a percentage of grandparents living with grandchildren <sup>[4]</sup></i>			
Native Hawaiian	36.3	35.2	33.8
Chinese	35.0	32.5	25.8
Filipino	17.9	21.6	24.6
Japanese	20.3	16.2	22.1
Non-Hispanic White	15.4	30.4	27.6
<b>Hawai'i Total</b>	<b>23.7</b>	<b>26.1</b>	<b>26.1</b>

[1] Data from *Ka Huaka'i 2005*, Figure 4.9.

[2] Data calculated specifically for this appendix.

[3] Data from *Ka Huaka'i 2014*, Figure 3.10.[4] The data points presented have been recalculated to be consistent with the *Ka Huaka'i 2005* methodology for comparability purposes.

## Parents' Education

The “containing” methodology results in higher estimates of postsecondary-degree attainment<sup>4</sup> among Native Hawaiian parents with young and school-age children. The higher estimates suggest that Native Hawaiian parents who are not the head of household contribute important educational and socioeconomic resources to their families.

**TABLE B.8** Parent's educational attainment in families with young children  
[as a percentage of all families with own children 4 years and younger, by race/ethnicity and by highest degree attained by parents, 2006–10, Hawai'i]

		<i>Ka Huaka'i 2005</i>		<i>Ka Huaka'i 2014</i>	
Race/ethnicity	Educational attainment	Head of Household <sup>[1]</sup>	Head of Household <sup>[2]</sup>	Containing <sup>[3]</sup>	
Native Hawaiian	Bachelor's degree or higher	21.1	23.9	27.0	
	High school diploma/ associate's degree	67.2	73.6	71.0	
	Less than high school diploma	11.7	2.6	2.1	
Chinese	Bachelor's degree or higher	38.5	52.2	47.4	
	High school diploma/ associate's degree	54.1	43.5	49.9	
	Less than high school diploma	7.3	4.3	2.7	
Filipino	Bachelor's degree or higher	25.5	32.1	31.0	
	High school diploma/ associate's degree	58.1	66.2	66.6	
	Less than high school diploma	16.3	1.7	2.4	
Japanese	Bachelor's degree or higher	45.8	64.3	56.5	
	High school diploma/ associate's degree	52.3	35.2	42.9	
	Less than high school diploma	1.9	0.6	0.6	
Non-Hispanic White	Bachelor's degree or higher	40.6	47.4	47.7	
	High school diploma/ associate's degree	55.9	51.7	51.6	
	Less than high school diploma	3.5	0.9	0.8	
<b>Hawai'i Total</b>	<b>Bachelor's degree or higher</b>	<b>31.7</b>	<b>39.9</b>	<b>39.9</b>	
	<b>High school diploma/ associate's degree</b>	<b>59.4</b>	<b>57.5</b>	<b>57.5</b>	
	<b>Less than high school diploma</b>	<b>9.0</b>	<b>2.6</b>	<b>2.6</b>	

*Note:* *Ka Huaka'i 2005* combined the high school diploma/associate's degree category; however, the data were split for high school diploma and associate's degree in *Ka Huaka'i 2014*. This table shows the combined category to allow for comparison to the *Ka Huaka'i 2005* data.

[1] Data from *Ka Huaka'i 2005*, Figure 3.7.

[2] Data calculated specifically for this appendix.

[3] Data from *Ka Huaka'i 2014*, Figure 5.1.

4. Postsecondary degree attainment is defined here as completion of a bachelor's degree or higher.

**TABLE B.9** Parent's educational attainment in families with school-age children

[as a percentage of all families with own children ages 5–17, by race/ethnicity and by highest degree attained by parents, 2006–10, Hawai'i]

Race/ethnicity	Educational attainment	<i>Ka Huaka'i 2005</i>	<i>Ka Huaka'i 2014</i>	
		Head of Household <sup>[1]</sup>	Head of Household <sup>[2]</sup>	Containing <sup>[3]</sup>
Native Hawaiian	Bachelor's degree or higher	13.8	21.5	24.5
	High school diploma/ associate's degree	78.6	75.2	72.7
	Less than high school diploma	7.6	3.3	2.9
Chinese	Bachelor's degree or higher	27.6	40.7	39.4
	High school diploma/ associate's degree	61.9	52.5	56.3
	Less than high school diploma	10.4	6.7	4.3
Filipino	Bachelor's degree or higher	17.9	25.9	26.2
	High school diploma/ associate's degree	64.9	70.3	70.3
	Less than high school diploma	17.2	3.8	3.5
Japanese	Bachelor's degree or higher	46.9	55.1	49.9
	High school diploma/ associate's degree	49.4	43.9	48.9
	Less than high school diploma	3.7	1.0	1.2
Non-Hispanic White	Bachelor's degree or higher	40.2	52.1	49.5
	High school diploma/ associate's degree	56.5	46.5	49.1
	Less than high school diploma	3.3	1.4	1.4
<b>Hawai'i Total</b>	<b>Bachelor's degree or higher</b>	<b>29.7</b>	<b>37.5</b>	<b>37.5</b>
	<b>High school diploma/ associate's degree</b>	<b>60.9</b>	<b>58.9</b>	<b>58.9</b>
	<b>Less than high school diploma</b>	<b>9.3</b>	<b>3.6</b>	<b>3.6</b>

*Note:* *Ka Huaka'i 2005* combined the high school diploma/associate's degree category; however, the data were split for high school diploma and associate's degree in *Ka Huaka'i 2014*. This table shows the combined category to allow for comparison to the *Ka Huaka'i 2005* data.

[1] Data from *Ka Huaka'i 2005*, Figure 4.18.

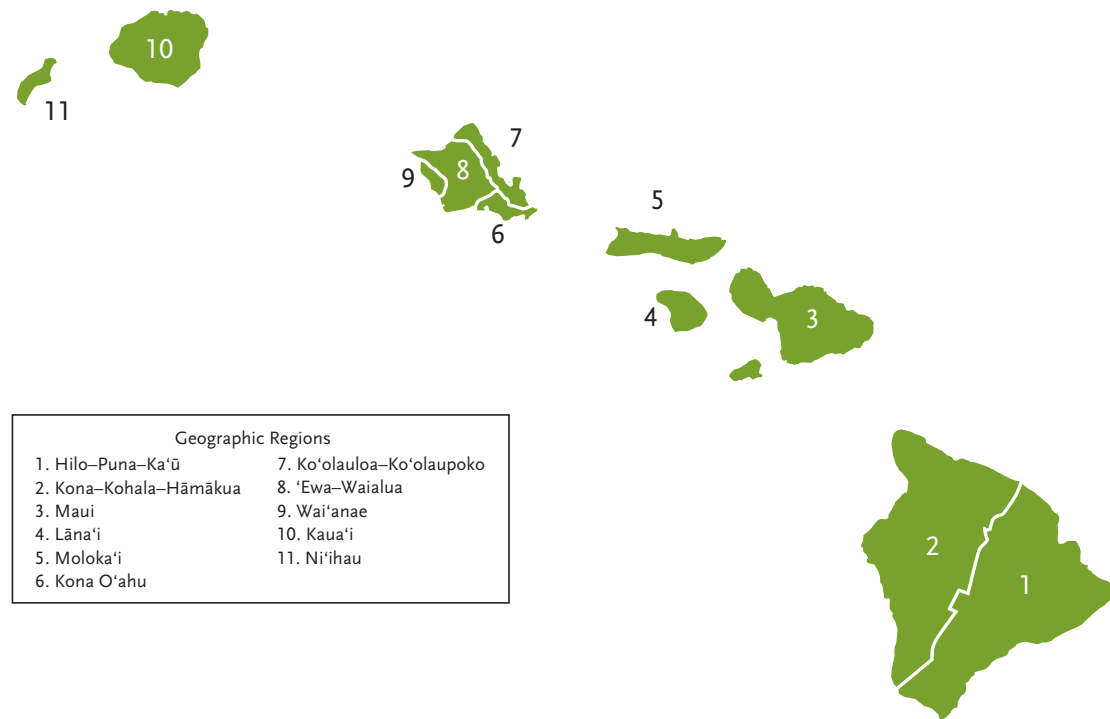
[2] Data calculated specifically for this appendix.

[3] Data from *Ka Huaka'i 2014*, Figure 5.2.

## APPENDIX C

### Geographic Regions and Naming Conventions

The regions mentioned in *Ka Huaka'i 2014* are rendered with their traditional Hawaiian moku or moku-puni names. However, due to data restrictions, the boundaries for these regions differ slightly from the actual delineation of the moku on O'ahu and Hawai'i Island. Region definitions in *Ka Huaka'i 2014* are based on census county subdivisions and differ from region definitions in *Ka Huaka'i 2005*, which were based on the school complex geographic divisions of the Hawai'i Department of Education. This change was made to better match US census/ACS data with data from the Hawai'i Department of Education. The map below depicts the geographic boundaries used in *Ka Huaka'i 2014* for geographic analyses.





## GLOSSARY OF HAWAIIAN TERMS

**‘āina** land (lit., that which feeds)

**e ho‘omau kākou** we continue, persevere

**haku** to compose, invent, put in order, arrange

**hānai** traditional system of fostering and adoption

**hō‘ike** to show, exhibit

**Hōkūle‘a** a modern replica of a double-hulled Polynesian canoe launched in 1975 to retrace the route of Hawai‘i’s first people

**honua** land, earth, world

**‘ike** knowledge, awareness, understanding, recognition

**kākou** we; inclusive, three or more

**kama‘āina** native-born, one born in a place, host

**kanaka maoli** (pl. **kānaka maoli**) Native Hawaiian

**ke akua** god, goddess, spirit

**keiki** child, descendant, offspring

**ko‘a** fishing grounds, usually identified by lining up with marks on shore; shrine, often consisting of circular piles of coral or stone

**kuleana** responsibility, area of responsibility; privilege

**kupuna** (pl. **kūpuna**) ancestor, grandparent

**lāhui** nation, race, people, nationality

**mālama** to care for, preserve **mālama ‘āina** to care for the land in the reciprocal human–land relationship

**malihini** stranger, foreigner, newcomer, tourist, guest

**moku** district, island, islet, section

**mokupuni** island

**mo‘olelo** story, history, report

**nohona** mode of life, existence, residence, dwelling, seat, relationship

**‘ohana** family

‘ōlelo no‘eau proverb, wise saying, traditional saying

‘ōpio (pl. nā ‘ōpio) youth, juvenile, school-age child

piko‘u identity

pilina association, relationship, union, connection, meeting, joining, adhering, fitting

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