

University of Hawai'i Faculty Pay Equity Study

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Executive Summary

In April 2006, the University of Hawai'i President's Office and the University of Hawai'i Professional Assembly jointly funded a system-wide Pay Equity Study of faculty salaries in regards to gender and ethnicity. The guiding principle of the study is a commitment to affirmative action and to preventing and correcting sex and ethnic disparities in compensation.

This study examines whether there are disparities in faculty pay associated with a faculty member's sex or ethnicity, after controlling for job related factors such as campus, college, rank, tenure status, degree, classification, and date of hire. "Productivity" and job-market forces must be analyzed and considered after this initial statistical analysis identifies groups who should be further reviewed.

The data used in the study are taken from a "snapshot" of personnel records of the UH system as of August 2006. These data include 2,318 faculty members at UH Mānoa (1,462 of whom are eligible for tenure or are tenured and 856 who are not eligible for tenure); 916 faculty at the Community Colleges; and 254 faculty at UH Hilo and UH West O'ahu.

The statistical methodology used in this study is multiple regression analysis, which allows us to analyze the effects of multiple predictor variables on faculty pay. Thus, we can assess whether the variables of sex or ethnicity are related to compensation, independent of job related variables, such as faculty rank or date of hire.

The objective of this statistical analysis is to "flag" groups of faculty who show statistically significant sex or ethnic differences in pay and who should be further reviewed for a possible equity adjustment.

The study's key findings are:

- Multivariate regressions show no gender disparities in faculty salary at UH Mānoa when college, tenure status, education, job classification, date hired, years of experience at UH current rank, and ethnicity are held constant.
- These results are in stark contrast to a similar study conducted in 1993 in which female faculty were found to be substantially underpaid. This new result might suggest that the problem of pay disparity by sex has improved substantially since the last study.
- When UH Mānoa faculty are analyzed by job classification, the data indicate that tenure line female Researchers average 7.3 percent lower pay than their male counterparts.
- The analysis for UH Hilo and UH West O'ahu indicates a significant gender pay gap (13.4 percent) among non-instructional faculty at UH Hilo and West O'ahu. No such gap is found for instructional faculty.
- For Community Colleges, no systematic difference in pay by sex is found.

- Among UH Mānoa temporary faculty, the data for the combined category of “Other Asian/Pacific Islanders/Samoan” faculty indicates that, on average, these faculty earn 7.3 percent less than their White counterparts. This initial finding requires additional review because the data only distinguishes between instructional and non-instructional temporary faculty, which does not address the market-based pay differences for researchers, and other non-instructional job classifications.
- There is no evidence of pay disparities by ethnicity at UH Hilo or UH West O‘ahu.
- For the Community Colleges, the earnings of Korean and Hawaiian/Part Hawaiian faculty average 5.8 percent lower than their White counterparts.
- There are several important caveats to the study. The study was limited to a statistical review and therefore yielded general observations (“averages”) based on large groupings of faculty by campus, related disciplines, or professional schools (e.g., “UH Hilo/UH West O‘ahu,” “UHM Medical/Law,” and “UHM Other Research”). The need for statistically relevant groups of faculty meant that the analysis could not control for *departmental* differences in pay.
- It was also not feasible to incorporate individual merit and productivity into the data. It was assumed that on average, men and women and members of different ethnic groups are equally productive. Individual differences may exist at the department level and these would have to be analyzed using a case-by-case review of relevant peers or “similarly situated” comparators.
- The data does not control for “outliers” or faculty members who have substantially higher or lower salaries than their relevant peers. These statistically influential individuals would have to be reviewed on a case-by-case basis to determine if the differences in pay are due to legitimate factors such as high demand specialties or exceptional merit.
- The Faculty Pay Equity Study focuses on potential sex or ethnic disparities covered by the University’s equal opportunity and affirmative action policies. These are compliance issues and have a higher institutional priority than other equity issues that may also be evident in the data. The study was not designed to address equity issues such as “compression,” which refers to a tendency for new hires to negotiate more favorable starting salaries than their established colleagues, thus “compressing” the salary differential between new and senior faculty.

Recommendations

It is recommended that the President charge the Vice President for Community Colleges and the Chancellors of UH Mānoa and UH Hilo with taking the following actions:

- Review the list of tenure-track and temporary faculty members who have been identified by the Pay Equity Study as falling below the statistical benchmark. The reviews will be conducted by the Office of the Vice President for Community Colleges, the Office of the UH Mānoa Chancellor, and the UH Hilo Office of Human Resources, in consultation with their respective EEO/AA Directors.

These offices will update the August 2006 data with current information (e.g., individuals who are no longer employed by the University). They will also screen out statistical errors that may have resulted due to the study's caveats noted above.

The updated cases will be assessed to determine if comparative data and other information support a pay adjustment based on sex or ethnic equity. The estimated number of cases for review is: 20 individuals for UH Mānoa, 5 for UH Hilo, 1 for UH West O'ahu and 54 for the Community Colleges. If there is a basis for a gender or minority adjustment, a pay adjustment will be implemented in consultation with UHPA.

- The Vice President for Community Colleges and the Chancellors of UH Mānoa and UH Hilo should seek to process equity adjustments by July 1, 2009. Campuses should report the aggregate results of their review process to the President by August 2009. After his review, a summary of the results will be prepared and shared with the UH Commission on the Status of Women and campus Diversity Commissions (UH Hilo and UH Mānoa).
- Each campus is advised to comply with Office for Federal Contract Compliance guidelines regarding annual compensation analysis. The guidelines allow for various methodologies and do not require extensive expense, such as multiple regression studies.
- Campus EEO/AA Officers should work with academic administrators to encourage equitable compensation upon initial hire.
- The UH Commission on the Status of Women, campus Diversity Commissions, and UHPA are encouraged to conduct educational outreach to faculty regarding the availability of special salary adjustments under the category of "equity."
- Campus EEO/AA Offices should publicize their availability to address salary equity complaints and the University's non-retaliation policy.

1. INTRODUCTION

1.1 Background

This study seeks to determine whether there are significant wage differentials between the sexes and ethnic groups in the UH faculty that cannot be accounted for by differentials in qualifications, field or experience, i.e., that might result from some form of discrimination, conscious or otherwise. Previous studies have assessed UH faculty pay equity: one in 1993 for UH Mānoa, UH Hilo and UH West O‘ahu, and the Community Colleges, and an update in 1998 for UH Mānoa.

A new study on UH faculty pay equity is warranted for at least three reasons. First, on most campuses, it has been over a decade since the last overall study was conducted and about one-half of our faculty have been hired since 1997. The previous studies do not include any of these new faculty members.

Second, previous studies did not encompass all faculty members. For example, they did not include temporary faculty and they focused on instructional faculty, although “manual” analyses of Specialists, Researchers and Extension Agents were conducted and adjustments implemented.

Third, there is need for a systematic and integrated approach to the study of pay equity within the UH system. Although all previous studies employed similar methods, ethnic groups were categorized differently, and different measures and specification were used to control for compensable factors. This new study differs from these studies in terms of data used, how ethnic groups are categorized, and how control variables are measured. And it also uses an integrated approach to allow direct cross-campus comparisons. Table 1 summarizes previous studies on pay equity at UH.

The main results of the current study suggest that, for UH Mānoa, female researchers who are tenured or eligible for tenure are found to receive lower wages than their male counterparts. Other Asian/Pacific Islanders/Samoan faculty who are not eligible for tenure also receive lower earnings than White faculty at UH Mānoa. For UH Hilo and UH West O‘ahu, a significant gender pay gap is found only among non-instructional faculty. In the Community Colleges, Korean and Hawaiian/Part Hawaiian faculty are found to receive lower pay than White faculty.

Finally, the findings are reviewed by the Faculty Pay Equity Study Advisory Committee, which serves in an advisory capacity regarding the design of the study and implementation of the results to reduce inequities in pay related to sex and ethnicity. Those results indicating an average salary differential exceeding 4% have been identified as areas of concern and are recommended for further investigation and review.

1.2 Structure and Process of Consultation in Completing the Report

All technical work is directed and written by Dr. Sang-Hyop Lee. Dr. Karen O. Mason reviewed the statistical analyses and report. The Faculty Pay Equity Study Advisory Committee consulted with Dr. Lee throughout the process and provided some editorial assistance for the Executive Summary and Chapter 1.

1.3 Concepts of Pay Equity

Equitable pay is defined as equal pay for individuals who are members of certain groupings, taking into account their legitimate job-related or compensable qualifications and experience, plus the field in which they work. The analysis relies on factors available in the

human resources database, such as date of hire, educational level, college, campus, job classification, tenure status, and faculty rank. Thus, the study seeks to determine whether significant differences in salary between male and female and among ethnicities remain after taking into account the compensable factors available.

2. METHODOLOGY

2.1 Multiple Regression Analysis

The statistical analysis employed in this study is a multiple regression analysis, which allows us to use multiple control variables (predictors/covariates) to predict an outcome with the estimated effects of each control on the outcome adjusted for the estimated effects of the other controls. For this study, faculty salary is the outcome variable, and the controls are variables that potentially affect the outcome, including sex and ethnic group. The use of multiple regression allows us to examine whether a wage differential exists that might be attributed to discrimination but needs further review. Because other compensable factors such as experience, job classification, tenure status, employment unit, rank, and education are controlled, significant gender or ethnic differences in compensation suggest earnings differentials reflecting the non-compensable aspects of being female or belonging to a particular ethnic group. However, the statistical analysis is only the beginning and identifies areas of concern that need to be examined on a case-by-case basis with “similarly situated employees.”

The estimation technique adopted here has its own limitations. Most of all, while the methodology employed here and the reference groups are most common in the literature, the methodology cannot take into account all factors, such as unobserved scholarly productivity that affects wages. If the omitted scholarly productivity measure is systematically different by sex or by ethnic groups, then the estimated pay differential will be biased. Thus, the results only

indicate that there is an unexplained source of compensation differences among the groups under study controlling for “observed (included)” explanatory variables. Some people may believe that faculty productivity is different by ethnicity or sex, and therefore that the estimated coefficients are biased if we do not entirely control for productivity. Unfortunately, there is no feasible way of handling this issue given the data sets, and thus this potential issue is not addressed in the statistical analysis. Without having direct evidence to contrary, however, it is also far more reasonable to assume that there is no “on average” difference in productivity between male and female faculty and between White and other ethnic groups.

2.2 Data

The analysis in this study uses data from the Office of Human Resources (OHR) at the University of Hawai‘i. The data are taken from a “snapshot” of personnel records of the entire UH system as of August 2006—the most recent available when this study began. The August records were deemed to be the best choice because they reflect any change in faculty status and salary due to promotion or collective bargaining agreements, which usually are effective on August 1.

Pay for different job groups, for example, temporary faculty or non-instructional faculty, is often based on different qualifications or applicant pools and thus requires separate analysis. At least for UHM, it is possible to run separate regressions by tenure track status (i.e., faculty who are eligible for tenure or already tenured vs. faculty who are not eligible for tenure). Unfortunately, running separate regressions for different job classifications (researcher, specialist etc) is not feasible for non-instructional faculty because of the small number of observations. It is still possible to consider different effects of sex on earnings for them, however, by using a statistical technique, known as interaction terms. Such terms allow one to examine the

simultaneous impact on the outcome --faculty pay -- of more than one variable. Some technical issues involved in using interaction terms are discussed in Section 3. The data set was updated and cleaned, and constructed variables have been checked for errors and outliers using a standard statistical method. The final data set includes 2,318 faculty members at UH Mānoa, 254 at UH Hilo and UH West O‘ahu, and 916 at the Community Colleges.

2.3 Variables

The following variables are used in the analysis: (a) salary; (b) sex; (c) ethnicity; (d) employment unit/college/department; (e) rank; (f) tenure track status; (g) job classification; (h) education; (i) appointment (9 months vs. 11 months; 100% FTE or not); (j) year of hire; and (k) experience.

These are explained in turn.

Salary

The measure of compensation is the natural logarithm of faculty member’s full-time equivalent (FTE) monthly paycheck. This is the standard way to treat earnings in econometric analyses and produces statistically more robust results than using the raw figures.¹ Temporary additions to salary such as administrative and summer overloads are omitted. Salaries for 11-month appointments are converted to the 9-month equivalent annual salary based on a predetermined formula, and are also divided by 12 to arrive at the monthly figure.

Sex

The sex variable takes a value of one if the faculty member is female and is zero otherwise. Regression coefficients for this variable thus indicate the difference between females and males, with a negative coefficient indicating that females earn less than their male counterparts while a positive coefficient indicates that they earn more.

¹ There are two reasons to examine the natural logarithm on salary rather than the raw figures. First, the use of the logarithm introduces non-linearity in the functions used, which is proved to be appropriate in estimating the wage equation. The rationale is that wage or salary distribution is skewed to the right, and the distribution of error terms is far from normal. By taking the logarithm, the distribution becomes more close to normal (i.e., log-normal), making the estimation more reliable. Second, the estimated coefficients do not depend on the level of outcome when we take the logarithm. Instead, they are interpreted as the magnitude in percentage terms (i.e., 0.023 means approximately 2.3 percent higher when the variable takes the value of one).

Ethnicity

Ethnicity is measured through a series of zero-one variables that take the value of one if the individual belongs to a particular ethnic group and that are otherwise zero. The White ethnic group is the reference group, i.e., all coefficients associated with other groups compare those groups' average pay with that of the White group. The original data identified 15 ethnic groups (Chinese, Japanese, Asian Indian, Hawaiian, Part-Hawaiian, Samoan, Black, Filipino, Korean, Mexican, Cuban, Puerto Rican, American Indian, Alaskan Native, Other Asian/Pacific Islander). Including variables for all of these groups in the analysis produced unreliable results, however, because of the small number of observations in some groups. Our exploratory regressions confirmed this problem.

For this reason, we combined the 15 ethnic groups into several larger groups. We paid careful attention to the grouping, because the results are sensitive to the grouping. We grouped some ethnicities together based on the number of observations—we tried to combine several small groups to form a larger one in order to increase the reliability of the statistical results—and according to the results of the exploratory regression analysis (the goal was to combine groups with similar results). Because they are relatively large groups, Japanese and Chinese were included as separately group in all regressions. Hawaiian and Part-Hawaiian were grouped together because their estimated results were similar in many of the exploratory regressions. Asian Indian and Pacific Islanders were added to the UHM regressions, because each group had significant results in the initial regressions. Similarly, Koreans were added to the regressions for the Community Colleges.

Employment Unit

Different fields are compensated differently in the private sector, and the university has to match these differences in compensation if they want to hire people from those fields. Thus employment unit is an important determinant of salary. We identified 13 employment units for UHM: Language and Literature, Humanities, Natural Sciences, Social Sciences, Education, School of Ocean and Earth Science and Technology (SOEST), College of Tropical Agriculture and Human Resources (CTAHR), Professional Schools (Medicine and Law), Business (including Travel Industry Management), Architecture and Engineering, Nursing and Social Work, Organized Research, and Other colleges.

This categorization is based on several criteria that are commonly used in analysis. Each unit should be representative (i.e., a sufficient number of faculty), have similar characteristics (e.g., professional schools such as med and law school), and share similar academic disciplines (e.g., same division and/or branch code). Language and Literature has the largest number of faculty members, and therefore we chose it as the reference group. The estimated coefficients of all the remaining colleges/departments in the regression are interpreted in reference to this base category.

All college units in UH Hilo and UH West O'ahu are grouped together, and we divide them into two groups only - UH at Hilo and UH West O'ahu. UH Hilo has a larger faculty than UH West O'ahu and thus it is selected as the base category.

Seven Community Colleges (CC) are included in the study: Honolulu CC, Kapi‘olani CC, Leeward CC, Windward CC (including the Employment Training Center), Kaua‘i CC, Maui CC, and Hawai‘i CC. Kapi‘olani CC is the base reference because it has the largest number of faculty members.

Rank

There are four ranks considered as explanatory variables: rank 2 through 5. Rank 2 was chosen as the reference group.²

Tenure Status

We include one dummy variable, taking the value of one if the person is not tenured, assuming that tenure status has an independent effect on earnings, net of the effect of rank on earnings.

Education

Ph.D. is the base category in the multivariate regression analysis. We include two dummy variables, professional degrees (M.D. and J.D) and the other degrees, which include the rest of the degrees such as M.A., B.S., and B.A.

Classification

Categories are important determinants of salary because different jobs within universities require different job qualifications. Both for UH Mānoa and UH Hilo/UH West O‘ahu, instructional faculty are the reference category used in the regression analysis. No categories are analyzed for Community Colleges, due to data insufficiency. For UH Mānoa, four dummy variables are included for faculty who are tenured or eligible for tenure: Researcher, Librarian, Specialist, and County Agent. Because all county agents are either with SOEST or CTAHR, including all three dummy variables (SOEST, CTAHR, and County Agent) creates a statistical problem. To avoid this problem, we create the SOEST and CTAHR dummies in a way that does not include County Agents. For a similar reason, we do not create dummies for professional faculty (Law and Clinical). For UH Hilo/UH West O‘ahu and temporary faculty at UH Mānoa, we only include one dummy variable, non-instructional faculty, mainly due to data insufficiency.

Appointment

While we convert salaries for 11-month appointments to the 9-month equivalent annual salary based on a predetermined formula, the employment period (9 months vs. 11 months) is a part of current contract and/or individual characteristics that might affect annual salary. Thus, we

² If some portion of current rank is a result of selective or inequitable treatment due to institutional practice, then the estimated pay differential by sex or ethnicity is likely to be biased downward. The estimated measure excluding the rank variable could bias the true pay disparity as well, because it may not consider any legitimate factors originating from rank. Any uneven distribution of individual characteristics by rank could yield a significant but spurious result without the rank variable. Unfortunately, there is no way to ascertain precisely where the true earnings disparity lies. Because rank variables are strongly significant in all models, we decide to include the rank variable as a control.

include a dummy variable that takes the value of one if the faculty member has an 11-month contract.

For similar reasons, we also include a dummy variable if the person's total FTE is not 100% with UH.

Year of Hire

This variable is represented by a series of dummy variables that take a value of one according to the year the faculty member was first hired. Those who were hired during the period 2001-2006 are the omitted category. This variable differs from the years at UH (experience) because the former controls the time effect on pay, while the latter measures the effect of work experience on earnings. Time effect could happen because economy, time trend, or other market forces are year specific, which in turn affect the pay determination process. For example, many people argue that recent hires receive much higher salaries than less recent hires. The year of hire variable will capture this effect on salaries.

Experience

Experience is one of the most important factors affecting individual earnings. We consider several types of experience variables in the multivariate regression analysis: years of experience after hire (as of 2006), a dummy variable which takes the value of one if the faculty member was hired before finishing the final degree, and a dummy for missing variable. The variable "years of experience after hire" accounts for the number of years spent as faculty of UH as of 2006. This variable is dependent upon the assumption that the faculty member, upon being hired, had already completed the degree and thus met the original job qualifications. However, a problem arises if the faculty member was hired first and earned the degree later. Thus, a dummy variable is included, which takes the value of one if the faculty was hired before finishing the final degree. A dummy for missing variable is also included to keep all observations, which is a common econometric method in the literature. Because information on the date of hire is not available for all faculty, we fill the missing variables with zeros and add this variable that takes the value one for missing observations and zero for complete ones.

2.4. Models and Specification

We estimate a range of models incorporating alternative form/grouping of variables. If the results do not vary significantly across different specifications, then they are considered to be robust, and we can reach relatively strong conclusions. As we mentioned in the previous section, estimated results may be dependent upon grouping of college units and ethnicities. The two major criteria for grouping were the statistical significance from initial run and the number of observations in each group.

There are some important issues for model specification. Although rank is a very important control variable affecting earnings, there are several issues about the variable. First of all, unfair institutional practices can indirectly disadvantage certain groups. For equal service, performance, and qualification, the length of time to be promoted to higher ranks or the probability of getting tenure could be different if a certain group is disadvantaged in promotion and tenure. Thus, even though the direct compensation of groups in the “same rank” appears equitable, this does not necessarily mean that the rewards for equal service and performance is equitable.

There are other institutional factors too. Until 2007, a faculty member could not apply for tenure at UH without having permanent resident status in the U.S. Although it was still possible to apply for promotion without the permanent resident status, the common practice for a faculty is to apply for both promotion and tenure at the same time, making them wait until they achieve permanent resident status. That is, a certain group of faculty, mostly non-White, could be staying in a lower rank, compared with their performance and qualifications, due to the university policy on tenure and permanent resident status. Thus, rank might be related with faculty’s ethnicity, which in turn affects earnings.³

Another potentially important issue is the extent of allowing interaction between variables. Since some variables may not have the same effect on the salary by sex or ethnic group, we consider several terms, interacted by sex or ethnic groups. Including these terms enables us to check whether the sex/ethnicity pay disparity is more/less significant by other

³ It is theoretically possible to correct this potential problem using a statistical technique, known as an instrument variable approach. We decide not to pursue this type of method because it is known to be quite unreliable. Thus, our estimated coefficient is likely to be biased downward if current rank is partly a result of selective or inequitable treatment due to institutional practice.

category such as by classification, or by colleges. Thus use of these terms is approximately comparable to doing the analysis separately for the different groups involved in the interaction.⁴

Given these potential issues, we estimate several models to check the significance of variables in different models. The implications of results from different specification will be compared and explained in Section 4.

3. DESCRIPTIVE ANALYSIS

An Appendix Table (pg 30) presents descriptive analysis for University of Hawai‘i at Mānoa (UHM), University of Hawai‘i at Hilo and University of Hawai‘i West O‘ahu (UH Hilo and UH West O‘ahu) and the Community Colleges. Of the 2,318 faculty members at UHM, 1,462 faculty (63%) received tenure or eligible for tenure, and 856 faculty (37%) are not eligible for tenure (temporary). Of the 1,462, 954 are females (41 percent). Female faculty are more likely to have temporary positions than are male faculty (43 vs. 33 percent).

Female faculty are also less likely to be White than are male faculty. Forty-eight percents of female faculty are White, while 64 percents of male are White. Japanese account for 11 percent for male faculty and 19 percent for female faculty, while Chinese account for 10 percent for male faculty and 9 percent for female faculty, suggesting that Japanese faculty are disproportionately more female. None of the other ethnic groups accounts for more than 4 percent of the faculty at UHM.

⁴ Including these terms requires enough variation in each group and thus large number of observations. In addition, the results from interaction terms should be interpreted with caution. First, when gender/ethnicity variables are interacted with other variables, the estimated coefficients of the interaction terms are interpreted in reference to the base category only. For example, if an interaction between SOEST and the female “dummy” variable is significant, that means the earnings differential by gender in SOEST is significantly different from that in the base category (Literature and Language), but it does not say anything about the statistically significant difference between SOEST and other academic units. Thus, the significance of the results could depend substantially on the choice of reference group.

While the majority of female faculty are assistant professors (35%), the majority of male faculty are full professors (43%) at UHM. The dominance of assistant professor rank among female faculty is complemented by other evidence; the percentage of current faculty who joined UHM before 1991 is 42 percent for male faculty and only 24 percent for female faculty. Thirty-four percent of current male faculty joined UHM after 2001, while 43 percent of current female faculty joined after 2001. Female faculty are much more likely to be specialists and librarians than male faculty, while there are disproportionately more male faculty in the researcher category.

There are 254 faculty members at both University of Hawai'i at Hilo and University of Hawai'i West O'ahu; 110 are females (43 percent) and 144 (57 percent) are males. White faculty account for 76 percent of male faculty and 64 percent of female faculty, both of which are substantially higher than UHM. Japanese and Chinese form the next majority ethnic groups. For UH Hilo and West O'ahu, only 9 percent of male faculty are non-instructional faculty, compared with 17 percent for female faculty. Like UHM the largest number of male faculty are professors (41 percent), while female faculty are more likely to be assistant professors (36 percent).

Among the UH Community Colleges (CC), Kapi'olani CC has the largest number of faculty (242), followed by Leeward CC (181), and Honolulu CC (145). While White faculty are still the majority ethnic group in the Community Colleges, Japanese faculty account for more than 25 percent of all faculty, which is much larger than that for UHM, UH Hilo or UH West O'ahu.

Average monthly earnings are about \$5,407 for female faculty and \$6,815 for male faculty at UHM. On average, Chinese, Whites, and Asian Indians belong to the highest earner groups (around \$6,500) while Hawaiians and Samoans receive less than \$5,000 per month. For

UH Hilo and UH West O‘ahu, female and male faculty respectively receive \$4,550 and \$5,180 per month on average. White and Korean faculty are the highest earners for UH Hilo and UH West O‘ahu. For the Community Colleges, female and male faculty respectively receive \$4,575 and \$4,674 per month on average. Interestingly, Asian Indians and Japanese faculty receive more than White faculty at the Community Colleges. Although these figures are informative, we cannot draw too many conclusions from the simple descriptive analysis. Thus we turn to regression results in the next section.

4. REGRESSION RESULTS

4.1. UH Mānoa

Table 2 presents the results of multivariate regression analysis for UHM. We run the model separately for faculty who are eligible for tenure/tenured (Table 2-1) and for those who are not eligible for tenure (Table 2-2). This distinction is mainly due to the fact that their hiring and pay are based on quite different applicant pools. To check the significance of variables in different specifications, we also ran several regressions. Model 1 shows the estimated coefficients and their significance of all the controlled variables of the base model, which do not include any interaction terms, as described in section 2. Since the dependent variable is in natural log terms, the estimated coefficients are interpreted as an approximate percentage term. Table 2-1 reports results for faculty who are eligible for tenure/tenured. The results show that salaries received by female faculty are not lower than male faculty at any significance level. No significant results were found amongst ethnic groups, either. A test shows that ethnicity is not jointly (globally) significant either.

These results are in stark contrast with the findings from the 1993 study in which female faculty and Japanese descent were found to be underpaid. This might suggest that the problem of pay disparity by sex or ethnicity has been substantially improved since the last study.

Almost all college unit variables have a positive sign and are significant, suggesting that they receive higher earnings than the reference college unit (Languages, Linguistics and Literature) - a reminder that pay disparity due to market, discipline, and research area are not covered under “equity.” The results also suggest that faculty with professional degrees earn almost 18 percent (0.162)⁵ more than those with doctorates. Specialists, librarians, and county agents receive earnings far less than instructional faculty, and the results are all highly significant.

Pay disparity due to “date of hire” is also not a protected category under “equity,” as it is also related to changes in the salary “market.” Unfortunately, “date of hire” appears to impose the most dramatic effect on wages, as earnings differentials decrease almost monotonically as we move back to previous dates of hire. This reflects the phenomenon of “salary compression” that faculty may experience as “inequitable” pay. Faculty who were hired during the period 1996-2000 earn 5 percent less relative to those who were hired after 2000. Faculty who were hired during the period 1981-85 receive 11 percent less than recent hires, holding other variables constant. For example, a full professor hired in 1985 would be expected to earn a minimum of 16% more than a newly hired assistant professor in the same department, simply due to promotion. However, the full professor’s actual earnings are only 5% more than the assistant professor resulting in an 11% net deficiency. The full professor earns more than the assistant professor, but the net effect of “date of hire” results in an earning differential of only 5%, not the

⁵ All percentage terms from the coefficients are calculated by a formula $e^{(b)}-1$ which is approximately the same as $b*100$ percent. For example, the estimated coefficient for the professional degree dummy is 0.162 and $e^{(0.162)}-1 = 0.176$ or 17.6 percent.

expected 16-25%. Additional findings indicate that faculty who achieved their final degree after being hired at UHM receive 2.7 percent lower earnings than their counterparts.

Models 2 through 4 present estimation results allowing interactions between variables. Again, it should be noted that the results should be interpreted with care, because the significance of the results may depend on the choice of the reference category of the interacted variables. That is, if a variable “x” is interacted with sex, then the significance of the interacted variable could depend on the choice of reference group for the variable “x”. Interactions are only made between employment units and sex and between job classification and sex. Although allowing interactions with ethnicity, such as between employment units and ethnicity, between classification and ethnicity, or between sex and ethnicity, is a potentially interesting specification, the results were not significant at all. This might be in large part due to the small number of observation in each ethnic group.

Model 2 presents the results allowing interaction between employment unit and female “dummy variable.” No interaction terms are significant at 5% significance level, which is the normal standard of reliability. Three groups, female faculty in SOEST, Other Research, and CTAHR are significant at more generous significance level, say 10% level or a little higher than 10%, suggesting that female faculty in these specific employment units tend to receive less than male faculty. To check whether the results are robust regardless of the base category, we re-estimated the model using other employment unit as an alternative base category. The estimated coefficients of the interaction terms for SOEST, Other Research, and CTAHR are often significant and negative, suggesting that these results are robust.

Model 3 shows estimation results including interactions between job classification and female. The interaction between researchers and female faculty are significant, suggesting that

differential by gender varies by job classification. The adjusted R-square was also highest (0.7863) with this specification, implying that the interaction terms have high explanatory power.

Finally, we estimate a separate model including two sets of interaction terms: one between employment unit and “female dummy” and the other between job classification and “female dummy.” The result (Model 4) shows that “female dummy” is not significant and interactions are not necessary. Furthermore, the adjusted R-squared is lower than Model 3 and same as that in Model 2. These results strongly indicate that allowing additional interactions are redundant. That is, the results from Model 3 (i.e., the significance of interaction between female faculty and researcher category) could be due to the high percentage of researcher faculty in a certain employment units: SOEST, CTAHR, or Other Research. Indeed, they have the highest percentage of researchers, accounting for more than 50 percent of all researchers at UHM. Thus, we conclude that it is female researchers who are the lowest paid compared with their peers at UHM. Some sensitivity analysis provided similar results.

Table 2-2 shows results for faculty who are not eligible for tenure (temporary position). The specification is almost same with the exception of job classification. Due to the small number of observations in each category, we are forced to reclassify them to two categories, instructional vs. non-instructional faculty. We find no supporting evidence for pay disparity by sex for this faculty group. However, the result shows that Other Asian/Pacific Islanders/Samoan faculty receives 7.3 percent lower earnings than White faculty at UHM and the result is robust. This finding requires further review because the collapse of “non-instructional” faculty into a single category combines faculty that are compensated very differently.

Results for some variables for this faculty group contrast with the findings for faculty who are eligible for tenure/tenured. The most interesting finding is that the effect of date of hire on earnings is no longer significant for temporary faculty while their experience at UH becomes

highly significant, showing returns to experience of about 1 percent per year. This result suggests that time effects are not important for temporary workers. This might be related to the fact that market forces are more likely to be year-specific and a nationwide phenomenon. Paying faculty earnings comparable to other universities is important to recruit and hire regular faculty, but this is obviously not the case for hiring temporary faculty.

4.2. UH Hilo and UH West O'ahu

Table 3 presents the results of multivariate regressions for UH Hilo and UH West O'ahu. The models are similar to the case for UHM, in which Model 1 shows the estimated results for the baseline model, and Models 2 through 4 show results with interactions. Results for UH Hilo and UH West O'ahu are quite different from those for UHM. To summarize the results, while the female variable is not individually significant in all specifications, its interaction with the non-instructional variable is significant at the 5% level. Results generally indicate that non-instructional female faculty receive earnings that average 13 percent lower than their counterparts. However, there is no evidence that there is a gender pay differential among instructional faculty. There is also no evidence that UH Hilo is different from UH West O'ahu in terms of pay. Nor did we find evidence of pay disparity by ethnicity for the UH Hilo and UH West O'ahu sub-sample.

4.3. Community Colleges

We found an earnings differential between the sexes and ethnicity in the Community Colleges. These results can be gleaned from Table 4, which shows estimated coefficients of controlled variables and their significance. Again, the models are similar to the case of UHM, in which Model 1 shows the estimated results for the baseline model, and Model 2 shows results with

interactions. However, most faculty in community colleges are instructors, and thus neither job classification dummies nor the interaction terms are included in the model.

The results suggest that there is no significant pay disparity by sex for faculty at the Community Colleges. However, earnings of Korean and Hawaiian/Part Hawaiian faculty also average 5.8 percent less than their White counterparts at the Community Colleges.

5. SUMMARY

While the results took some time, the Pay Equity Study Advisory Committee is confident in this statistical analysis that identifies areas for further review and investigation. We are pleased to report that the University's previous pay equity studies and adjustments appear to have a continued effect resulting in a more equitable pay structure in terms of sex and ethnicity. However, pay disparities appear to continue for specific categories of employees: tenure-eligible female researchers at UHM; Other Asian/Pacific/Samoan temporary faculty at UHM; and Korean and Hawaiian/Part Hawaiian faculty at the Community Colleges. These are recommended for immediate review and action.

Unfortunately, "market" factors that are not considered under federal protection for "equity" continue to exert pressure resulting in differential salaries, particularly date of hire and area/discipline. While these may impact faculty assessment of a climate of "fair pay" these market factors are beyond the scope of this study. The Pay Equity Study Advisory Committee advises any faculty member who believes their pay to be inequitable because of sex or ethnicity (or any of the other protected categories) to contact their campus EEO/AA office for assistance.

Table 1. Previous Faculty Pay Equity Studies at UH

Study object (year of study)	Sample size	Main Findings	Additional Findings
UHM (1993)	1004	Female and Japanese descendants are underpaid.	Female and Japanese descendants take more years as assistant professors.
UH Hilo and West Oahu (1993)	139	Once rank and type of contract is controlled for, there is no systematic difference in pay by sex or ethnicity.	None.
UH Community Colleges (1993)	901	Once rank and type of contract is controlled for, there is no systematic difference in pay by sex or ethnicity.	No systematic difference in pay by campus either.
UHM (1998)	187 (new hire since 1994)	Even after rank and type of contract are controlled, female and minorities are underpaid.	There is evidence on disparities in hiring as well.

Methodology: Multiple regression method

Dependent variables: Current pay, years spent at I3 & rank at hire ('93 UHM)

Control Variables: Sex, ethnicity, education, labor market experience before hire, period hired, (period tenure track, '93 UHM; non-tenure track indicator, rank at hire ('93 UHM, other studies include current rank), discipline, monthly contract ('98 UHM), and interaction variables amongst sex, ethnicity, and rank, and so on.

Table 2-1. Estimation Results for UHM (Eligible for Tenure or Tenured)				
	Model 1	Model 2	Model 3	Model 4
	No Interaction between variables	Unit & Female	Classification & Female	Unit & Classification & Female
Sex				
Female	-0.013	0.004	-0.012	0.003
Ethnicity				
Chinese	0.007	0.005	0.006	0.005
Asian Indian	-0.038	-0.039	-0.040	-0.039
Japanese	-0.012	-0.014	-0.013	-0.014
All/Part Hawaiian	-0.030	-0.033	-0.031	-0.033
Pacific/Samoan	-0.021	-0.024	-0.026	-0.027
Other Ethnicities	0.017	0.016	0.016	0.016
Interacted				
Humanity*Female		-0.024		-0.024
Natural Science*Female		0.000		0.000
Social Science*Female		-0.012		-0.013
CTAHR*Female		-0.027		-0.044
Education*Female		0.014		0.006
Medical/Law*Female		-0.032		-0.032
Business/TIM*Female		0.044		0.045
Architecture/Engine*Female		-0.061		-0.063
Nursing et al.*Female		-0.024		-0.033
SOEST*Female		-0.088		-0.078
Other research*Female		-0.074		-0.067
Other UHM*Female		-0.006		-0.022
Librarian*Female			-0.020	-0.012
Researcher*Female			-0.070**	-0.023
Specialist*Female			0.039	0.051
County Agent*Female			0.008	0.037
Employment Unit				
Humanity	-0.011	-0.002	-0.011	-0.002
Natural Science	0.115***	0.118***	0.115***	0.118***
Social Science	0.101***	0.106***	0.100***	0.105***
CTAHR ¹⁾	0.041**	0.051**	0.043**	0.060**
Education	0.044**	0.033	0.044**	0.037
Medical/Law	0.255***	0.268***	0.256***	0.268***
Business/TIM	0.428***	0.421***	0.429***	0.421***
Architecture/Engine	0.241***	0.254***	0.242***	0.254***
Nursing et al.	0.019***	0.162***	0.149***	0.170***
SOEST ¹⁾	0.276***	0.290***	0.277***	0.291***
Other research	0.244***	0.266***	0.252***	0.270***
Other UHM	0.037	0.037	0.031	0.041

Appointment				
11-Month	0.015	0.014	0.015	0.013
Not 100% FTE	0.003	0.014	0.004	0.002
Not tenured	-0.022	0.001	-0.022	-0.020
Education				
Professional degree	0.162***	0.161***	0.160***	0.160***
Other than Ph.D.	-0.047***	0.047***	-0.049***	-0.049***
Job Classification				
Librarian	-0.159***	0.160***	-0.136***	-0.139***
Researcher	-0.018	-0.018	-0.010	-0.020
Specialist	-0.107***	0.106***	-0.127***	-0.131***
County Agent	-0.174***	0.160***	-0.176***	-0.168***
Date of Hire				
Before 1970	-0.078	-0.087	-0.101	-0.096
1971-75	-0.123	-0.130	-0.142**	-0.138
1976-80	-0.102	-0.110	-0.120**	-0.117
1981-85	-0.117**	-0.123**	-0.130***	-0.128***
1986-90	-0.096***	0.099***	-0.103***	-0.102***
1991-95	-0.082***	0.084***	-0.088***	-0.086***
1996-00	-0.051***	0.053***	-0.055***	-0.054***
Experience				
Experience at UH	0.003	0.003	0.004	0.004
Hired before degree	-0.027**	-0.027**	-0.025	-0.026
Experience missing	-0.011	-0.009	-0.008	-0.006
Rank				
Rank 3	0.138***	0.145***	0.143***	0.148***
Rank 4	0.285***	0.291***	0.288***	0.293***
Rank 5	0.516***	0.522***	0.519***	0.525***
Adjusted R-squared	0.7858	0.7856	0.7863	0.7856
Number of observation	1,462	1,462	1,462	1,462
1) Excluding County Agents				
** and *** denote significance at 5 and 1 percent level respectively.				

Table 2-2. Estimation Results for UHM (Not Eligible for Tenure)				
	Model 1	Model 2	Model 3	Model 4
	No Interaction between variables	Unit & Female	Classification & Female	Unit & Classification & Female
Sex				
Female	-0.014	0.010	-0.030	-0.014
Ethnicity				
Chinese	0.006	0.006	0.007	0.007
Asian Indian	-0.036	-0.035	-0.036	-0.035
Japanese	-0.022	-0.023	-0.022	-0.023
All/Part Hawaiian	0.027	0.024	0.026	0.024
Pacific/Samoan	-0.070**	-0.066**	-0.070**	-0.067**
Other Ethnicities	-0.003	-0.003	-0.002	0.001
Interactions				
Humanity*Female		-0.005		0.006
Natural Science*Female		-0.011		-0.014
Social Science*Female		-0.087		-0.080
CTAHR*Female		-0.041		-0.075
Education*Female		0.046		0.034
Medical/Law*Female		-0.038		-0.075
Business/TIM*Female		0.015		-0.000
Architecture/Engine*Female		0.019		0.011
Nursing et al.*Female		0.111		0.101
SOEST*Female		-0.073		-0.118
Other research*Female		0.015		-0.030
Other UHM*Female		-0.074		-0.113
Non-Instructional*Female			0.020	0.068
Employment Unit				
Humanity	0.103	0.103	0.100	0.084
Natural Science	0.046	0.054	0.041	0.052
Social Science	0.228***	0.265***	0.223***	0.253***
CTAHR ¹⁾	0.025	0.042	0.024	0.058
Education	0.123***	0.077	0.123***	0.079
Medical/Law	0.252***	0.268***	0.251***	0.287***
Business/TIM	0.289***	0.287***	0.285***	0.285***
Architecture/Engine	0.118**	0.122	0.114**	0.124
Nursing et al.	0.305***	0.216***	0.306***	0.221***
SOEST ¹⁾	0.210***	0.231***	0.210***	0.252***
Other research	0.159***	0.152***	0.158***	0.171***
Other UHM	0.102***	0.144***	0.100***	0.162***

Appointment				
11-Month	-0.182***	0.181***	-0.182***	-0.180***
Not 100% FTE	0.005	0.005	0.006	0.004
Education				
Professional degree	0.281***	0.280***	0.281***	0.278***
Other than Ph.D.	-0.006	-0.010	-0.006	-0.010
Job Classification				
Non-instructional	0.052**	0.054**	0.041	0.014
Date of Hire				
Before 1970	-0.276	-0.270	-0.272	-0.253
1971-75	-0.142	-0.133	-0.141	-0.125
1976-80	-0.216	-0.214	-0.213	-0.202
1981-85	-0.171	-0.169	-0.170	-0.165
1986-90	-0.074	-0.072	-0.074	-0.069
1991-95	-0.043	-0.041	-0.042	-0.038
1996-00	-0.047	-0.047	-0.047	-0.048
Experience				
Experience at UH	0.011***	0.011***	0.011***	0.011***
Hired before degree	-0.091**	-0.087**	-0.091**	-0.088***
Experience missing	-0.086**	-0.082**	-0.088***	-0.088**
Rank				
Rank 3	0.235***	0.237***	0.235***	0.238***
Rank 4	0.422***	0.419***	0.423***	0.420***
Rank 5	0.633***	0.661***	0.662***	0.658***
Adjusted R-squared	0.7808	0.7806	0.7807	0.7814
Number of observation	856	856	856	856
1) Excluding County Agents				
** and *** denote significance at 5 and 1 percent level respectively.				

Table 3. Estimation Results for UH Hilo and West Oahu				
	Model 1	Model 2	Model 3	Model 4
	No Interaction between variables	Unit & Female	Classification & Female	Unit & Classification & Female
Sex				
Female	-0.006	-0.010	0.008	0.003
Ethnicity				
Chinese	0.032	0.031	0.035	0.035
Japanese	-0.049	-0.051	-0.049	-0.051
All/Part Hawaiian	-0.022	-0.022	-0.013	-0.012
Other Ethnicities	-0.016	-0.018	-0.018	-0.021
Interactions				
West Oahu*Female		0.026		0.038
Non-instructional*Female		-0.126**	-0.130**	
Employment Unit				
West Oahu	-0.042	-0.051	-0.045	-0.059
Appointment				
11-Month	0.029	0.028	0.031	0.030
Not 100% FTE	0.030	0.027	0.034	0.030
Not tenured	0.032	0.031	0.026	0.024
Education				
Professional degree	-0.017	-0.015	-0.019	-0.016
Other than Ph.D.	0.029	0.030	0.023	0.024
Job Classification				
Non-instructional faculty	-0.112***	-0.112***	-0.042	-0.040
Date of Hire				
Before 1970	0.068	0.068	0.050	0.050
1971-75	0.106	0.103	0.076	0.072
1976-80	0.032	0.031	0.019	0.017
1981-85	-0.014	-0.013	-0.022	-0.022
1986-90	0.012	0.011	0.007	0.005
1991-95	0.003	0.003	-0.006	-0.007
1996-00	-0.016	-0.017	-0.014	-0.016
Experience				
Experience at UH	0.000	0.000	0.001	0.001
Hired before degree	-0.004	-0.002	-0.015	-0.013
Experience missing	0.104	0.097	0.112	0.102
Rank				
Rank 3	0.298***	0.298***	0.294***	0.292***
Rank 4	0.441***	0.440***	0.424***	0.421***
Rank 5	0.626***	0.623***	0.606***	0.602***
Adjusted R-squared	0.6891	0.6880	0.6942	0.6934
Number of observation	254	254	254	254

*, **, and *** denote significance at 10, 5, and 1 percent level, respectively.

Table 4. Estimation Results for Community Colleges		
	Model 1	Model 2
	No Interaction	Interaction
Sex		
Female	-0.011	-0.009
Ethnicity		
Chinese	-0.003	-0.002
Japanese	-0.029***	-0.027***
Korean	-0.056**	-0.056**
Hawaiian/Part Hawaiian	-0.058***	-0.057***
Other Ethnicities	-0.016	-0.013
Interactions		
Honolulu CC*Female		-0.035
Leeward CC*Female		-0.014
Windward CC*Female		-0.002
Kauai CC*Female		0.067***
Maui CC*Female		0.011
Hawaii CC*Female		-0.005
Employment Unit		
Honolulu CC	-0.021**	-0.006
Leeward CC	-0.022**	-0.015
Windward CC	-0.033***	-0.032
Kauai CC	0.006	-0.025
Maui CC	0.001	-0.006
Hawaii CC	-0.014	-0.011
Appointment		
11-Month	-0.010	-0.011
Not 100% FTE	-0.008	-0.008
No tenure status	-0.050***	-0.046***
Education		
Professional degree	-0.018	-0.018
Other than Ph.D.	-0.034***	-0.034***
Date of Hire		
Before 1970	0.116	0.109
1971-75	0.042	0.038
1976-80	0.071	0.065
1981-85	0.025	0.022
1986-90	0.026	0.023
1991-95	0.033	0.031
1996-00	-0.015	-0.015
Experience		
Experience at UH	0.003	0.003
Hired before degree	-0.015	-0.014
Experience missing	0.040***	0.037***

Rank		
Rank 3	0.080***	0.080***
Rank 4	0.152***	0.154***
Rank 5	0.257***	0.258***
Adjusted R-squared	0.7668	0.7692
Number of observation	916	916
** and *** denote significance at 5 and 1 percent level, respectively.		

Appendix Table: Descriptive Analysis			
A. UHM			
	Male	Female	Total
Not eligible for tenure	446	410	856
(%)	(32.70)	(42.98)	(36.93)
Tenured/eligible	918	544	1462
(%)	(67.30)	(57.02)	(63.07)
Total	1,364	954	2,318
	(100)	(100)	(100)
Rank	Male	Female	Total
2	111	230	341
	(8.14)	(24.11)	(14.71)
3	339	336	675
	(24.85)	(35.22)	(29.12)
4	324	204	528
	(23.75)	(21.38)	(22.78)
5	590	184	774
	(43.26)	(19.29)	(33.39)
Total	1,364	954	2,318
	(100)	(100)	(100)
Ethnicity	Male	Female	Total
American Indian/Alaskan	4	4	8
	(0.29)	(0.42)	(0.35)
Black	10	6	16
	(0.73)	(0.63)	(0.69)
Chinese	142	83	225
	(10.41)	(8.7)	(9.71)
Filipino	20	33	53
	(1.47)	(3.46)	(2.29)
Portuguese	4	2	6
	(0.29)	(0.21)	(0.26)
Hawaiian	6	9	15
	(0.44)	(0.94)	(0.65)
Asian Indian	38	17	55
	(2.79)	(1.78)	(2.37)
Japanese	151	180	331
	(11.07)	(18.87)	(14.28)
Korean	29	21	50
	(2.13)	(2.2)	(2.16)
Mexican/Cuban	23	19	42
	(1.69)	(1.99)	(1.81)
Part Hawaiian	26	62	88
	(1.91)	(6.5)	(3.8)
Puerto Rican	3	2	5

	(0.22)	(0.21)	(0.22)
Samoan	3	5	8
	(0.22)	(0.52)	(0.35)
Unknown	11	10	21
	(0.8)	(1.04)	(0.91)
White	875	459	1,334
	(64.15)	(48.11)	(57.55)
Other Asian/Pacific Islander	19	42	61
	(1.39)	(4.4)	(2.63)
Total	1,364	954	2,318
	(100)	(100)	(100)
Job Classification	Male	Female	Total
Instructor	730	477	1,207
	(53.5)	(50.0)	(52.1)
Researcher	244	93	337
	(17.9)	(9.8)	(14.5)
Librarian	14	40	54
	(1.0)	(4.2)	(2.3)
Specialist	155	205	360
	(11.4)	(21.5)	(15.5)
County Agent	25	23	48
	(1.8)	(2.4)	(2.1)
Total	1,364	954	2,318
	(100)	(100)	(100)
Date of Hire	Male	Female	Total
1970 or before	103	24	127
	(7.55)	(2.52)	(5.48)
1971-75	76	25	101
	(5.57)	(2.62)	(4.36)
1976-80	104	29	133
	(7.62)	(3.04)	(5.74)
1981-85	107	55	162
	(7.84)	(5.77)	(6.99)
1986-90	183	97	280
	(13.42)	(10.17)	(12.08)
1991-95	169	149	318
	(12.39)	(15.62)	(13.72)
1996-2000	160	166	326
	(11.73)	(17.4)	(14.06)
2001-06	462	409	871
	(33.87)	(42.87)	(37.58)
Total	1,364	954	2,318
	(100)	(100)	(100)

Monthly earnings	Obs	Mean	Std. Dev.	Min	Max
Male	1,364	6,815	2,351	2,564	19,839
Female	954	5,407	1,837	2,513	16,079
American Indian/Alaskan	8	6,399	2,130	2,913	9,280
Black	16	5,387	1,717	2,802	8,976
Chinese	225	6,535	2,189	2,700	14,284
Filipino	53	5,176	1,947	2,997	13,880
Portuguese	6	6,063	1,471	3,291	7,376
Hawaiian	15	4,936	1,452	2,801	7,398
Asian Indian	55	6,490	2,220	2,801	10,267
Japanese	331	5,738	2,059	2,590	15,141
Korean	50	5,744	2,249	2,797	15,870
Mexican/Cuban	42	5,911	2,617	2,802	15,944
Part Hawaiian	88	5,432	2,373	2,513	16,824
Puerto Rican	5	5,814	1,263	5,045	7,997
Samoan	8	3,232	816	2,564	5,085
White	1334	6,516	2,280	2,615	19,839
Other Asian/Pacific Islander	61	5,374	1,969	2,641	14,560

B. Hilo & West Oahu			
Ethnicity	Male	Female	Total
American Indian/Alaskan	2	0	2
	(1.39)	(0)	(0.79)
Black	3	2	5
	(2.08)	(1.82)	(1.97)
Chinese	9	4	13
	(6.25)	(3.64)	(5.12)
Portuguese	2	1	3
	(1.39)	(0.91)	(1.18)
Hawaiian	1	0	1
	(0.69)	(0)	(0.39)
Asian Indian	0	1	1
	(0)	(0.91)	(0.39)
Japanese	13	18	31
	(9.03)	(16.36)	(12.2)
Korean	4	0	4
	(2.78)	(0)	(1.57)
Mexican/Cuban	5	1	6
	(3.47)	(0.91)	(2.36)
Part Hawaiian	4	13	17
	(2.78)	(11.82)	(6.69)
White	100	66	166
	(69.44)	(60.00)	(65.35)
Other Asian/Pacific Islander	1	4	5
	(0.69)	(3.64)	(1.97)
Total	144	110	254
	(100)	(100)	(100)
Rank	Male	Female	Total
2	19	29	48
	(13.19)	(26.36)	(18.90)
3	29	40	69
	(20.14)	(36.36)	(27.17)
4	37	22	59
	(25.69)	(20.00)	(23.23)
5	59	19	78
	(40.97)	(17.27)	(30.71)
Total	144	110	254
	(100)	(100)	(100)
	Male	Female	Total
Non-instructor	13	19	32
	(9.03)	(17.27)	(12.60)
Instructor	131	91	222
	(90.97)	(82.73)	(87.40)
Total	144	110	254
	(100)	(100)	(100)

Variable	Obs	Mean	Std. Dev.	Min	Max
Male	144	5,184	1,263	2,730	8,635
Female	110	4,548	1,199	2,491	8,622
American Indian/Alaskan	2	3,959	607	3,531	4,388
Black	5	4,594	1,178	3,158	6,224
Chinese	13	5,185	1,334	2,850	6,839
Portuguese	3	3,913	274	3,685	4,217
Japanese	31	4,659	1,268	2,590	6,913
Korean	4	5,201	845	4,146	5,932
Mexican/Cuban	6	4,636	771	3,325	5,342
Part Hawaiian	17	4,487	942	2,491	5,652
White	166	5,025	1,345	2,491	8,635
Other Asian/Pacific Islander	5	4,696	722	3,833	5,836

C. Community Colleges			
Rank	Male	Female	Total
2	117	180	297
	(27.66)	(36.51)	(32.42)
3	110	106	216
	(26.00)	(21.50)	(23.58)
4	65	78	143
	(15.37)	(15.82)	(15.61)
5	131	129	260
	(30.97)	(26.17)	(28.38)
Total	423	493	916
	(100)	(100)	(100)
CC Units	0	1	Total
Kapiolani CC	106	136	242
	(25.06)	(27.59)	(26.42)
Honolulu CC	83	62	145
	(19.62)	(12.58)	(15.83)
Leeward CC	82	99	181
	(19.39)	(20.08)	(19.76)
Windward CC	37	43	80
	(8.75)	(8.72)	(8.73)
Kauai CC	35	33	68
	(8.27)	(6.69)	(7.42)
Maui CC	43	69	112
	(10.17)	(14.00)	(12.23)
Hawaii CC	37	51	88
	(8.75)	(10.34)	(9.61)
Total	423	493	916
	(100)	(100)	(100)

Ethnicity	Male	Female	Total
American Indian/Alaskan	1	4	5
	(0.24)	(0.81)	(0.55)
Black	3	1	4
	(0.71)	(0.20)	(0.44)
Chinese	17	43	60
	(4.02)	(8.72)	(6.55)
Filipino	21	25	46
	(4.96)	(5.07)	(5.02)
Portuguese	3	1	4
	(0.71)	(0.20)	(0.44)
Hawaiian	6	10	16
	(1.42)	(2.03)	(1.75)
Asian Indian	5	2	7
	(1.18)	(0.41)	(0.76)
Japanese	108	129	237
	(25.53)	(26.17)	(25.87)
Korean	6	6	12
	(1.42)	(1.22)	(1.31)
Mexican/Cuban	2	5	7
	(0.47)	(1.01)	(0.76)
Part Hawaiian	37	39	76
	(8.75)	(7.91)	(8.3)
Puerto Rican	0	2	2
	(0)	(0.41)	(0.22)
Samoan	2	0	2
	(0.47)	(0)	(0.22)
Unknown	2	2	4
	(0.48)	(0.41)	(0.44)
White	207	212	419
	(48.94)	(43.00)	(45.74)
Other Asian/Pacific Islander	3	12	15
	(0.71)	(2.43)	(1.64)
Total	423	493	916
	(100)	(100)	(100)

Earnings	Obs	Mean	Std. Dev.	Min	Max
Male	423	4,790	919	3,035	7,719
Female	493	4,575	863	3,220	7,563
American Indian/Alaskan	5	4,574	803	4,016	5,914
Black	4	4,301	427	3,740	4,731
Chinese	60	4,813	828	3,439	6,835
Filipino	46	4,566	880	3,347	6,756
Portuguese	4	4,687	843	3,639	5,449
Hawaiian	16	3,771	411	3,347	4,542
Asian Indian	7	5,067	1,164	4,063	7,245
Japanese	237	4,818	890	3,220	7,719
Korean	12	4,714	963	3,506	6,333
Mexican/Cuban	7	3,796	551	3,314	4,726
Part Hawaiian	76	4,135	728	3,220	5,923
Puerto Rican	2	4,527	1,668	3,348	5,707
Samoan	2	4,156	742	3,631	4,680
White	419	4,749	882	3,035	7,436
Other Asian/Pacific Islander	15	4,520	1,110	3,507	7,563