Office for Institutional Effectiveness
University of Hawai'i Kapi'olani Community College

Research Brief

Issue 2016 – 04

# Faculty Quality of Worklife Analysis

## Executive Summary

In November 2015, the Kapi'olani CC Faculty Senate requested OFIE's assistance in interpreting a UH system survey on the "Quality of Faculty Worklife" with a specific focus on faculty worklife at Kapi'olani CC (hereafter, the College). The 10 campus survey was conducted in 2014 by the Office of the Executive Vice President for Academic Affairs at the request of the All Campus Council of Faculty Senate. This survey and summary are available online at http://www.hawaii.edu/offices/aa/faculty/faculty14.pdf, and readers are referred to the original document for study context. This report provides a more detailed look at survey responses and attempts to build an explanatory model for why the College's faculty feel the way they do about their work lives.

Methodologically, the survey was conducted entirely online. All faculty were invited to participate – this survey is "sample-free." The all campuses response rate was about 33 percent, with 1326 members completing the survey from a population of 4028. Hawai'i CC and Kaua'i CC had much better response rate than other campuses. Thirty-six percent of Kapi'olani faculty (121 of 336) responded to the survey. The 121 responses are sufficient to represent the faculty population as a whole.

Although the UH system survey requested information on faculty demographic and academic affiliation, this information could not be provided to OFIE due to anonymity concerns. We are therefore unable to consider potential associations between faculty ethnicity, departmental affiliation, and quality of worklife.

Main positive findings are: Colleagues at the campus are morale boosters, service to the campus and community are rewarding for faculty, the physical work environment is positive, and undergraduate students are enthusiastic. Main negative factors are: teaching and committee load, salaries and quality of life, opportunities for professional travel and development, student preparation, facilities maintenance, and faculty voice in budget decisions and ability to speak out regarding diversity issues.

The overall message from the study of faculty morale is ultimately positive, even despite some very strong negative attitudes. Faculty enjoy their core functions, appreciate their colleagues, and are proud to provide service to the campus and to the community. They do get extremely frustrated by perceived impediments to those core functions. Improved communication can potentially eliminate a large source of professional unhappiness and dysfunction. If OFIE were to suggest a line of future research, it would be into the inclusivity of faculty governance and the communication structures that exist between faculty and administration.

An OFIE disclaimer: workplace morale can be an extremely emotionally charged issue in which some individuals find themselves personally at odds with other individuals beyond some specific professional disagreement. OFIE takes no stance on the status, validity, or resolution of such disputes and should be considered only a neutral observer of these social phenomena.

## Methodology

The analysis was primarily conducted on the questions groups in the original survey using Likert scales. All survey question groups are reproduced in Table 1.

We fit a regression model to the data based on a single outcome variable comprising the sum of the three 10-point Likert scale questions in the original survey – groups 14, 16, and 17. Potential predictors were drawn from individuals' average responses to question groups 1-7 and 10-12.

Table 1: Survey Question Groups

| Question Group | Title |
|---|---|
| 1 | Professional Worklife |
| 2 | Reward/Evaluation System |
| 3 | Collegial Relations |
| 4 | Students |
| 5 | Faculty Governance |
| 6 | Personal Factors |
| 7 | Support Services |
| 8 | Negative Factors |
| 9 | Positive Factors |
| 10 | Advocacy for Faculty |
| 11 | Confidence in Leadership |
| 12 | Future Plan |
| 13 | Worklife |
| 14 | Job Satisfaction |
| 15 | Campus |
| 16 | Morale |
| 17 | Morale Change |
| 18 | Percent of Worktime Spent |
| 19 | Percent of Worktime Preferred |

The fit model is very strong, highly significant, and is able to account for about 70% of the variance in the outcome variable. Five question groups were included in the model:

- **Professional Worklife**
- **Reward/Evaluation System**
- **Support Services**
- **Confidence in Leadership**
- **Future Plans**

## Validation and Norming

No details on the validation process are provided in the survey summary. This is not necessarily a negative, as the survey has been in long-standing use by UH faculty. Any validation process might indeed be difficult to reconstruct from the several generations of research staff who have constructed, revised, and administered the questionnaire. Our presumption is that the survey adequately measures the quality of faculty worklife in the UH system, but it must be noted that this presumption is untested and therefore qualified. Equivalent qualified assumptions will be made about additional aspects of survey construction and design, e.g., handling of duplicate responses.

Similarly, although the survey offers comparisons to both historical data and to other UH campuses, we can't consider this survey to be nationally normed. It can't answer the question, 'Relative to other universities, how satisfied are UH faculty?' Ultimately, we cannot provide an answer to this question, and recommend using an external product if norming is a goal.

## Analytical Method

Raw survey responses were provided to OFIE by the UH System Data Governance office in an excel file. As noted above, any potentially de-anonymizing responses were scrubbed across the board for all respondents. The data file was imported into SAS version 9.4 for quantitative analysis. Qualitative responses were so few in number that no specialized software was used; manual tabulations were conducted when necessary. Additionally, because there were so few qualitative responses, we will reproduce them only sparingly here so to avoid the appearance that a single voice is much more analytically important than is actually the case.

We note that question group 3, which deals with peer relationships between faculty, was not a significant factor in the regression model, but that 5 of the top ten most-frequently cited positive morale factors dealt with the quality of these peer relationships. We conclude that both high- and low-morale individuals have meaningful relationships with peers and with campus leaders with whom they more frequently interact, such as department chairs. This contrasts with the associated category for "Confidence in Leadership," which predicts whether an individual has high or low morale. We suspect that formal and informal communication structures may play a role in the difference between these two categories, and suggest that this may be an area for further inquiry into campus morale.

### Associative Models

The goal of this analysis is exploratory in nature: what survey variables are associated with faculty who report higher or lower quality of worklife at the College? Or more succinctly, given the data contained in the survey, why do faculty members report high or low morale on campus? The first task then is to identify survey items that accurately gauge morale, and that can serve as correlation reference points or regression outcomes.

Question groups 13-17 are all good candidates for selection. Groups 13 and 15 ask broadly about faculty's work experience, relationship with colleagues, and loyalty to their campus. However, there are three questions that ask faculty to rate job satisfaction, morale, and morale change on 10 point scales. These have the advantage of being very direct measures, and also, given the 10-point response levels, of lowering the margin of error.

Table 2. Summary Statistics for Outcome Variables

| Variable | N | Mean | Std Dev | Median | Minimum | Maximum |
|---|---|---|---|---|---|---|
| Job Satisfaction (Item 14a) | 119 | 6.4 | 2.3 | 7.0 | 1.0 | 10.0 |
| Morale (Item 16a) | 120 | 5.5 | 2.6 | 6.0 | 1.0 | 10.0 |
| Morale Change (item 17a) | 119 | 4.7 | 2.8 | 4.0 | 1.0 | 10.0 |

Each of the selected outcomes above has the maximum possible range from 1 to 10, from extremely low satisfaction to morale to extremely high. For example, for morale change, a "1" indicates an extreme decline in morale and a 10 represents the corresponding extreme improvement. Respondents are overall more likely to indicate higher job satisfaction than morale, and are, on average, reporting a decrease in morale since 2006, the last survey year.

Despite the average response differences, the three variables are highly correlated, with Pearson correlation coefficients as indicated in table 3 below.

Table 3. Correlation Matrix for Outcome Variables

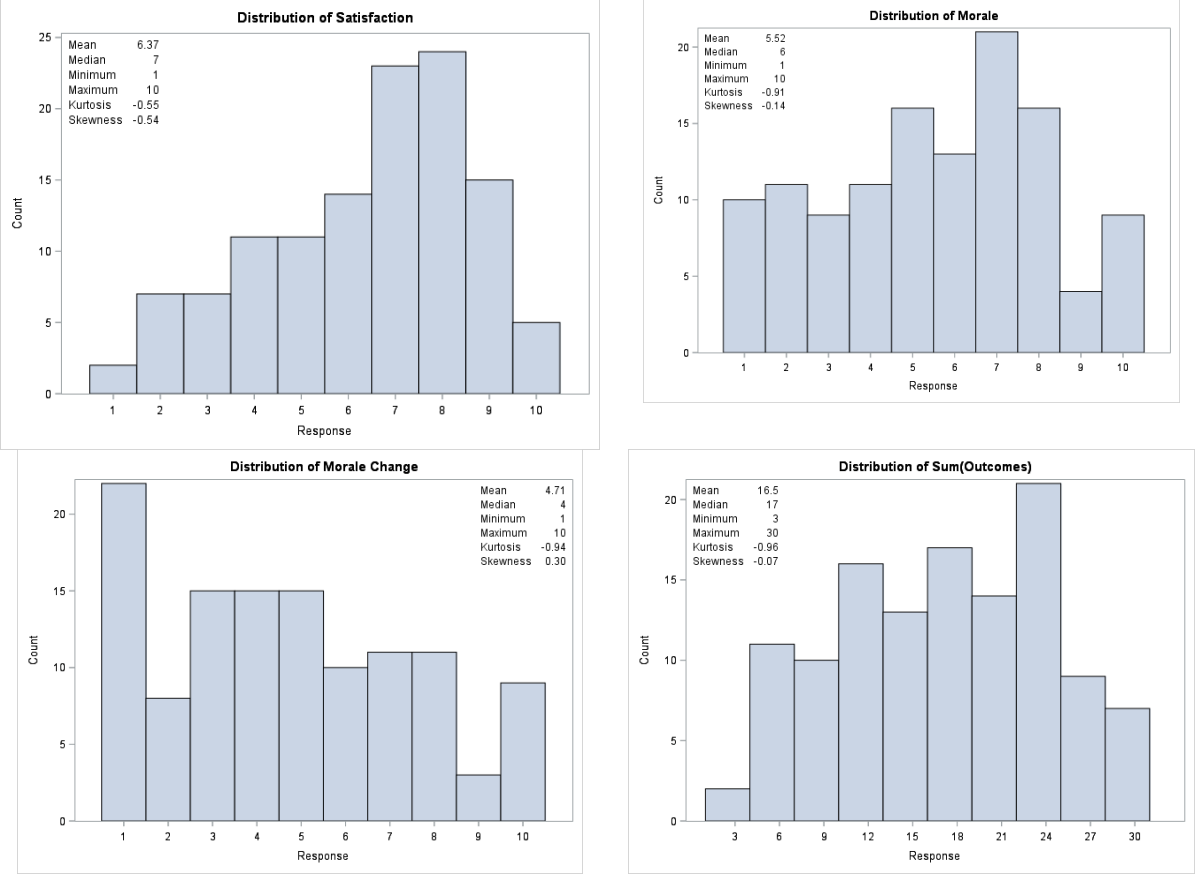
| Spearman Correlation Coefficients<br>Prob > \|r\| under H0: Rho=0<br>Number of Observations | | | |
|---|---|---|---|
| **_14a**<br>@14a | _14a<br>1.00000<br><br>119 | _16a<br>0.87127<br><.0001<br>119 | _17a<br>0.76519<br><.0001<br>118 |
| **_16a**<br>@16a | _16a<br>1.00000<br><br>120 | _14a<br>0.87127<br><.0001<br>119 | _17a<br>0.85812<br><.0001<br>119 |
| **_17a**<br>@17a | _17a<br>1.00000<br><br>119 | _16a<br>0.85812<br><.0001<br>119 | _14a<br>0.76519<br><.0001<br>118 |

Variable 16a ("Morale") is highly correlated with both job satisfaction and morale change (ρ=.87 and .86), while job satisfaction and morale change still have a very strong (ρ=.77) relationship. Each pair is significant at the p = .0001 level.

Because these three variables are so highly correlated, conducting further analysis on each variable individually is largely a redundant exercise. The two best remaining choices are to use only variable 16a, since it has the highest correlation values, or to combine the three in some way. The latter case has a particular advantage: considering the sum of 14a, 16a, and 17a as a single

outcome provides a data range of possible values from 3-30. The outcomes are not perfectly correlated, so using a sum has the effect of smoothing the density curve somewhat, so that the distribution is more normal and less skewed. The data do still show a strong multimodal tendency and exhibit a relatively high, non-normal kurtosis statistic. Histograms of the three outcomes along with the new predictor variable are shown in Figure 1 below.

Figure 1. Histograms of Outcome Variables




We note here that overall morale for the overall faculty is overall neutral, with a small inclination towards low morale. High kurtosis values indicate that faculty feel strongly about their worklife, with more values concentrated at the edges of the scale than in a normal distribution, although again, the distribution is slightly more smoothed in the summed model.

We proceed by running linear regression models on the data set with this single sum as the outcome variable.

## Predictor Variables

We begin by looking at mean values for each respondent within each question thematic group, creating a multiple regression model with 10 potential predictor variables. Question groups 13 ('Worklife') and 15 ('Campus') are strongly tied to measuring morale itself and are thus excluded from the model. We use a stepwise regression technique that adds or subtracts variables from the model based on a .05 significance threshold, e.g., a variable is added one at a time if it is the most-significant variable at $p < .05$, and a variable is deleted if it is the least significant

variable with $p > .05$. The model stops computations when no significant variables remain to be added. Results from the stepwise regression are presented below.

The model is strong with an Adjusted $R^2$ of over .78, all variables significant at the .01 level, the model significant at the .0001 level, and no VIF showing no troubling collinearities. Only 7 respondents were excluded due to missing values.

Table 4. Regression Model for Reduced Predictor Set, Mean Scores

| Variable | Parameter Estimate | Standard Error | Type II SS | F Value | Pr > F |
|---|---|---|---|---|---|
| Intercept | -4.47882 | 2.22078 | 60.71217 | 4.07 | 0.0462 |
| _1_Overall | 4.53073 | 0.96576 | 328.51464 | 22.01 | <.0001 |
| _2_Overall | 2.19119 | 0.63112 | 179.92617 | 12.05 | 0.0007 |
| _7_Overall | -1.58018 | 0.61696 | 97.91724 | 6.56 | 0.0118 |
| _11_Overall | 2.60515 | 0.57357 | 307.93158 | 20.63 | <.0001 |
| _12_Overall | -1.66124 | 0.35560 | 325.76776 | 21.82 | <.0001 |

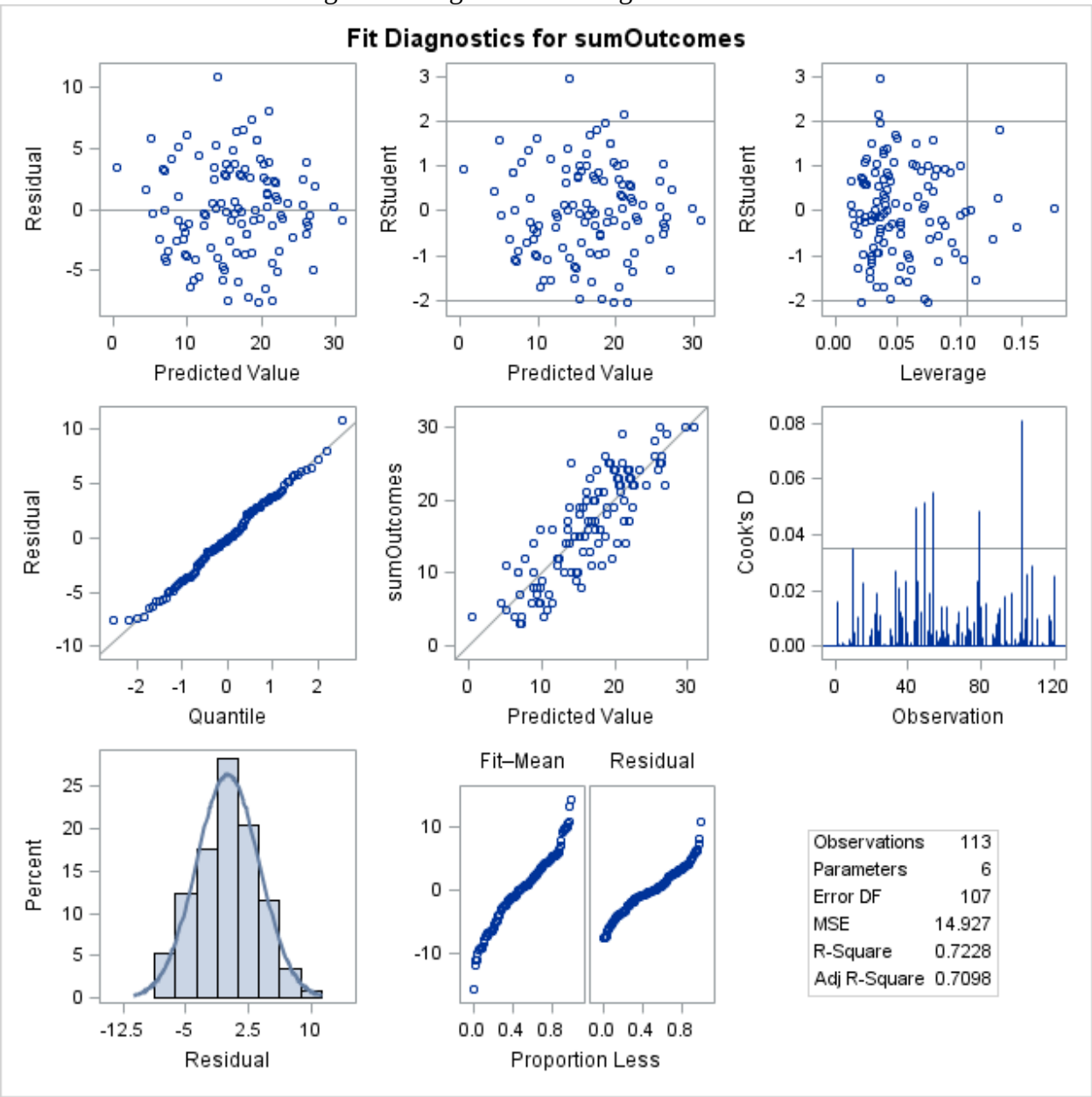
*N=113, F Value=55.79, $p < .0001$, $R^2$ 0.7228, Adjusted $R^2$=0.7098*

**Generally speaking, faculty morale is predicted by their satisfaction with professional factors like work environment and intellectual engagement, their sense of fairness in the reward system, the quality of support services, their confidence in various facets of college and university leadership, and their self-evaluated likeliness to seek alternate employment at different institutions.** The value of the parameter for question group 1 is very strong, still strong for 2 and 11, and relatively lower for 7 and 12. The sign of the parameter for both question groups 7 and 12 is negative. Question group 12 is naturally interpretable – higher scores there indicate a greater likelihood to leave. However, question group 7 asks about the quality of the college's support services, so the negative sign means that faculty who are more satisfied with college services have lower morale. We will return to this issue in more detail below.

Figure 2 below shows a variety of standard SAS outputs for evaluating regression models. The three plots in the left-most column indicate that the model residuals are normally distributed with mean 0 and equal variance around each predicted variable. The RStudent plot and Cook's D statistics show that while this data set does have influential observations, those observations are a small proportion of the whole and are not necessarily an area of concern. There are 8/115 influential observations by Cook's D, which is perhaps a little bit high. However, we note that SAS uses by default a very conservative threshold of 4/n to identify these values, where statisticians often recommend using a more lenient version involving the F-statistic or 4/(n-p-1), where *p* is the number of parameters in the model. We therefore do not think that there are a troublingly high number of problematic cases.

Of particular importance is the plot in the center of the matrix, which shows the scatter of predicted vs. actual values based. The model displays a strong fit at the both the upper and lower values for faculty morale. Both satisfied and dissatisfied faculty members are concerned with the same campus issues but have vastly different perspectives on these issues.

Figure 2. Diagnostics for Regression Model




## Important Factors

Faculty were asked to contribute the three most positive and negative factors that impact the quality of their worklife. Although these questions appear prior to – and thus do not include – question groups 11 and 12, they still may provide some insight into the issues faculty are most passionate about.

Tables 5 and 6 below show the top ten most positive and negative factors. It is unsurprising to see that items from question group 1 dominate both lists, as this was so strongly associated. Of note is that the same items in question group 1 do not appear in both lists. When survey

respondents list these factors as positives, they tend to have a focus related to personal choices, rewards, and other benefits. For example, "service," which faculty members are most likely to select for themselves rather than be assigned to, appears twice in the list of positive factors. Question group 1 items that appear in the negative list are more likely to be assigned or dictated to faculty from positions above.

Table 5: Top Ten Most Frequently Selected Positive Factors

| Question Item | COUNT | GROUP |
|---|---|---|
| Relations within my department/unit are collegial | 27 | 3 |
| My physical work environment is pleasant | 26 | 1 |
| Service to the community is rewarding for me | 22 | 1 |
| My access to parking is adequate | 20 | 1 |
| I have good relations with my chair | 19 | 3 |
| Service to my campus is rewarding for me | 18 | 1 |
| Undergraduate students are enthusiastic | 16 | 4 |
| I receive support for my career from my chair | 13 | 3 |
| My intellectual fit with my department/unit is good | 13 | 3 |
| Relations among faculty on my campus are collegial | 13 | 3 |

Table 6: Top Ten Most Frequently Selected Negative Factors

| Question Item | COUNT | GROUP |
|---|---|---|
| My undergraduate teaching load is appropriate | 28 | 1 |
| I am satisfied with my current salary | 22 | 6 |
| Undergraduate students are prepared for my classes | 17 | 4 |
| Facilities are repaired & maintained | 14 | 7 |
| Support for my professional travel is adequate | 14 | 1 |
| Committee load is evenly distributed in my unit | 13 | 1 |
| Opportunities for professional development are supported | 11 | 1 |
| I feel free to stand up/speak out against prejudice, discrimination, racism, homophobia, etc | 10 | 1 |
| Faculty input at the college/unit level is adequate for budget decisions | 9 | 5 |
| My standard of living is adequate | 9 | 6 |

Faculty were additionally provided space to contribute their own positive and negative factors regarding their work lives, if those did not already appear in the survey. Relatively few responses were recorded: only 25 respondents submitted additional negative influences and 12 submitted additional positive influences. It is somewhat difficult to draw any specific conclusions from such a small subset of the original sample: qualitative sections of largely quantitative surveys often elicit the strongest emotions from the survey population, and such seems to be the case in this survey as well. Almost all of these responses are extremely emotionally charged. But if a single theme does jump from the provided responses, it's some faculty feel that they have poor communication and/or poor professional relationships with college administration. Fifteen of 24

negative responses referred either to "administration" in aggregate or to some specific administrator. These criticisms themselves range from mild to inflamed in emotional content. By contrast, 2 of 10 positive factors mention administration or administrators, with a third ('Non-traditional leadership is supported') running counter to some of the negative opinions expressed. Other negatives of note include disappointment in aspects of interpersonal relationships with other faculty members, who are variously described as belonging to cliques or of having a "sub-culture of bullying."

We might, however, compare the supplemental negative factors provided by faculty to the top ten most frequently occurring positive factors. For example, question group 3: ('Collegial Relations') appears several times as a strong positive factor. Different aspects of an individual's relationship with his/her departmental chair are listed twice. This might indicate that more frequent interpersonal contact between a department chair and a faculty member can soften the effects of hierarchical systems within the college.

## Conclusions

It is difficult to draw universal conclusions about the behavior of an aggregate body like a post-secondary faculty. To say that this or that body has "high morale" or "low morale" could only ever be valid in a statistical sense, and would involve a necessary whitewashing of those opinions contrary to the statistical average. And in practice, such definitions happen rarely: most average interpretations of group behavior show that the group is itself, well, average. The fact is that averages moderate extremes, present middling vagaries in the interpretation of behavior, and are therefore often useless for understanding group dynamics. OFIE does not therefore recommend interpreting morale along a binary high/low scale. Rather, some individuals have high morale and others low, and still more meet somewhere in the middle. It is our job as researchers to collect an entirely different set of behaviors and/or opinions that can better predict the whys and hows of gradient distinctions.

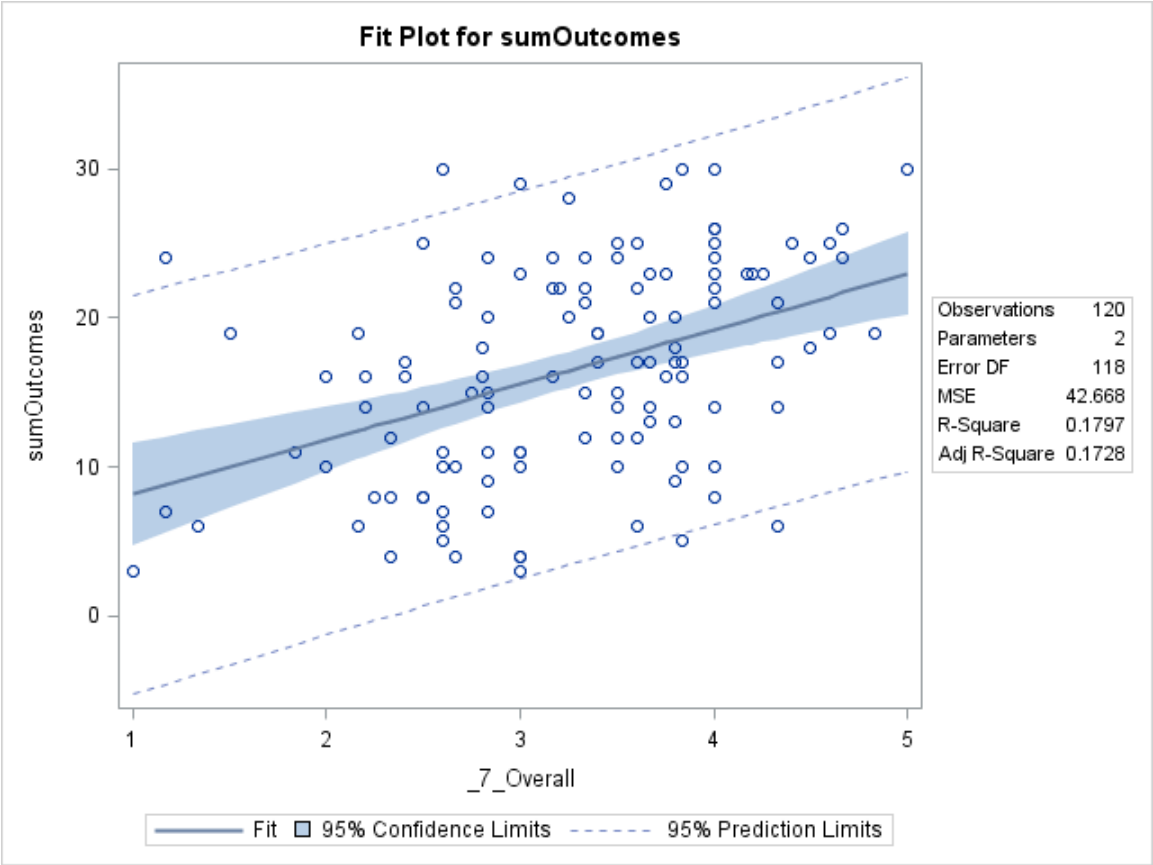
Various predictive models exist in statistical analysis to do just that: linear regression is one such model. Its goal is to provide a better estimate of an individual's behavior than could be provided by a group expectation. **The model provided above demonstrates that faculty morale at the College is strongly affected by responses to question groups involving professional worklife; the reward and evaluation system at the college; support services like libraries, technology, and facilities; and confidence in college and system leadership. Additionally, those with lower morale are more likely to report interest in seeking other employment. We have further seen evidence that although the groups as a whole are not statistically significant, faculty are concerned about their peer relationships on campus, about their current salaries, and about their potential for a good quality of life in Hawai'i.**

Such a statement may seem uncontroversial, but we can compare the above list of items to those that are not statistically significant predictors of morale: the quality of the student body, satisfaction with the pedagogical portion of their positions, advocacy for university faculty by various authorities, and faculty governance. The lack of statistical significance here indicates that patterns linking high scores on one variable either do not consistently predict high morale or do not improve an existing prediction in a multivariate model.

The sign of the statistics on support services is negative, indicating that higher morale is associated with lower scores for support satisfaction (and vice versa). This is perplexing at face

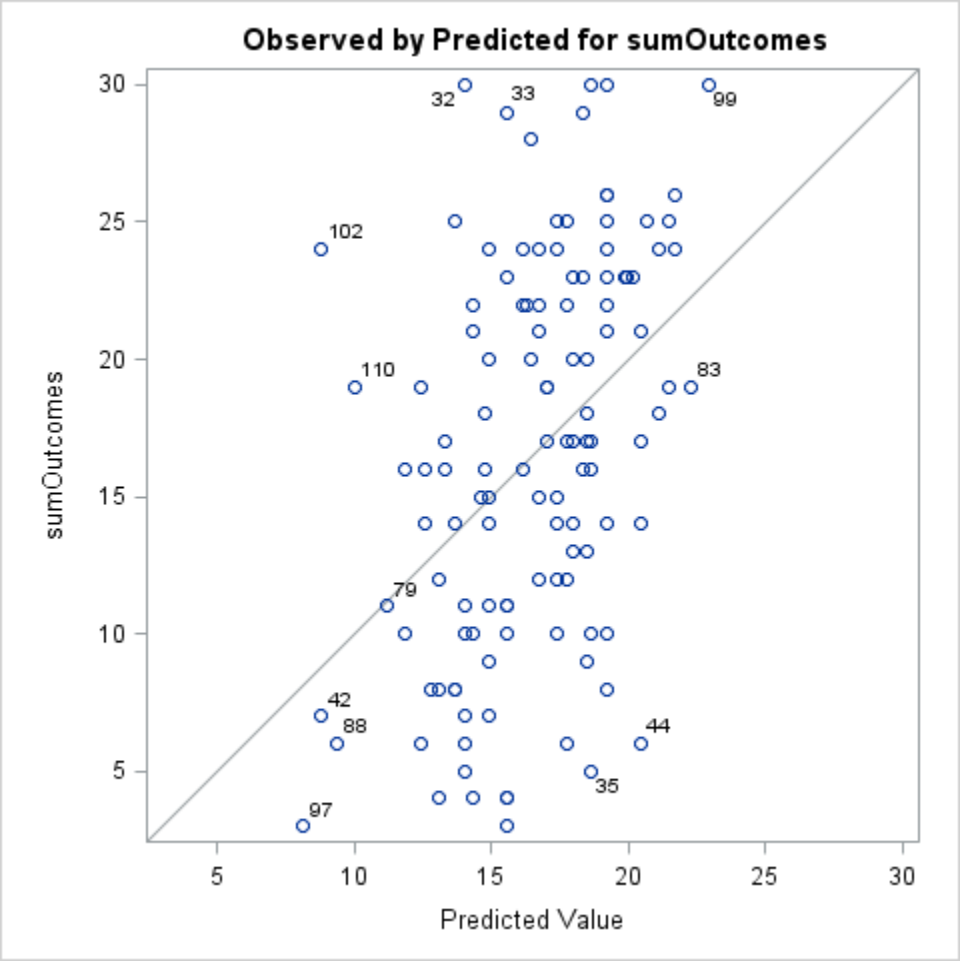
value, and even more so when we consider that a regression line drawn on support services alone has positive slope, as shown in Figure 3.

Figure 3: Regression Line for Faculty Morale vs. Satisfaction with Support Services




The answer is that although the fit is significantly positive, the actual linear relationship is not particularly strong. R-Square is under 0.18. Predicted values tend to clump around 15-20, while the observed values range from 1 – 30, as shown in Figure 4.

Figure 4: Observed by Predicted for Morale vs. Support Services Regression




Support services is an imperfect, weak single variable predictor of positive sign with a negative sign in the multivariate model. It therefore is acting as a moderating influence on overall faculty morale. Attitudes towards support services bring disparate perspectives in the faculty closer together.

What other factors might underlie the regression model? One imperfect line does exist demarcating significant from insignificant effects on faculty morale: personal interactions. We note that faculty as a whole, whether with high, low, or average morale, feel that they have good relationships with their peers and with departmental leaders. Teaching and interactions with students do not seem to affect morale, so at the very worst, those who are dissatisfied with teaching at least seem to believe they have some control over it. Only a small handful of faculty report planning to change careers, even if they do plan to pursue other employment possibilities. They do differ in the ways they perceive more distant relationships with college and system leadership, and with the decisions these leaders have made regarding the distribution of human, technological, and material resources.

However, if there is a significant difference in opinions about campus leadership, why does it not show in the section on Faculty governance? There is not enough evidence to support any firm conclusions here, but some of the comments provided in the qualitative input section of the survey do point to possible areas of further research. Several comments refer to faculty feeling

that administrators may accept faculty comments, but only at face value, and continue to make decisions without regard for those comments. Others indicate that faculty input is restricted to a select clique of power holders on campus and that governance discussions are not universal or inclusive. Finally, still others feel that important campus discussions are dominated by the loudest, most aggressive voices in the room. Considering that this series of questions is framed as "Faculty input at X level is adequate for…," we suspect that members of the faculty who feel powerless may not necessarily answer negatively for "faculty input," but only for "personal input." **If we would suggest a line of future research, it would be here, into the inclusivity of faculty governance and the communication structures that exist between faculty and administration for constructive comments and criticism.**

**The overall message from the study of faculty morale then is ultimately positive, even despite some very strong negative attitudes. Faculty enjoy their core functions, appreciate their colleagues, and are proud to provide service to the campus and to the community. They do get extremely frustrated by perceived impediments to those core functions, but this is positive evidence that better communication can eliminate a large source of professional unhappiness and dysfunction.**