

**Executive summary of the Brakke management and behavior study**

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The biennial AVMA Economic Report on Veterinarians and Veterinary Practices demonstrated that there was little real growth in veterinarians' incomes from 1985 to 1995 (1), and they have not improved significantly since. Average income hovers just above \$20 per hour worked, falling further and further behind incomes of other professionals, including some requiring much less education (Table 1).

**Table 1. Mean annual incomes of selected professions, 1998**

Profession	Mean income
Physicians and surgeons	\$102,000
Dentists	\$92,350
Lawyers	\$75,890
Chiropractors	\$67,420
Optometrists	\$65,470
Pharmacists	\$60,090
Physical therapists	\$57,190
Veterinarians	\$57,130

Source: US Bureau of Labor Statistics (2)

To help identify some of the factors underlying this income stagnation, the American Veterinary Medical Association commissioned Brakke Consulting to conduct a study of the business behaviors of small animal practitioners, both clinic owners and associates. The study was funded by Bayer Animal Health.

The goal of the study was to identify practices or behaviors that, if recognized by veterinarians, could help them increase their incomes either by changing the behaviors, or by finding ways to minimize their effect.

The Brakke Study, initiated in late 1998 and completed in 1999, found that veterinarians' incomes are negatively impacted by several things—failure to use standard management practices, poor service environment at the clinic, low financial acumen of clinic owners, and other business-related factors. The study also found that incomes are negatively impacted by veterinarians' tendencies to offer and price veterinary services to clients on the basis of their perceptions of a client's economic status as well as on the diagnosis and value of the treatment rendered.

The study further demonstrated that optimizing the use of good business practices and value-based pricing can have a dramatic, positive impact on income.

## **Methodology**

In the fall of 1998, AVMA mailed 15,000 surveys to a random sample of member veterinarians who were identified as working in exclusively or predominantly small animal practices. Completed surveys were returned to AVMA, which forwarded them unopened to Brakke Consulting, Inc., for analysis. Responses to the 10-page

questionnaire were received from 4,392 veterinarians (29.3%). Statistical reliability of a study of this magnitude is quite high. The figures and tables used in this report all have *P* values equal to 0.01 or lower.

The questionnaire captured income and other demographic data for each respondent with questions identical to those used in the 1997 Biennial AVMA Economic surveys (3). In addition, the questionnaire included questions designed to measure use of certain standard business practices, marketing and service environment of the clinic, and financial acumen of clinic owners.

A special case study was prepared to measure veterinarians' approaches to providing and pricing clinical services. There were 2 versions of the questionnaire, identical in every respect except for the words used to describe the client in the case study. Returns for the 2 versions of the questionnaire were almost identical: 30.4% versus 28.1%.

In addition to demographics and business practices, the survey also measured certain personal characteristics. The purpose was to identify characteristics in the veterinary population that might be identified with financial success or failure (as measured by total personal income from veterinary practice).

A companion survey was distributed to 4,000 students in veterinary schools to similarly measure personal characteristics. There were 1,299 (32.5%) completed questionnaires returned from students at 27 US veterinary schools.

Data for all surveys were extensively analyzed using univariate, bivariate, and multi-regression analyses.

Average incomes and demographic profiles of respondents were consistent with the AVMA Economic Report on Veterinarians & Veterinary Practices for 1997. (3)

## **Key Findings**

- Higher incomes were generally associated with practice ownership, years in practice, and number of hours and weeks worked.
- Veterinarians who scored higher in financial acumen, and who owned or worked in clinics applying a larger number of standard business and service practices, had higher average incomes than those who did not.
- On the average, veterinarians in the study quoted lower prices for the same treatment to a client who they perceived as having limited financial resources than they did to a client with greater financial resources. In some cases, less aggressive, less expensive treatment options for the same diagnosis were recommended to the financially limited client.

- Environmental factors such as size of the community and the socioeconomic level of the neighborhood in which the clinic is located directly affect veterinarians' incomes.
- Practice owners who optimize business practices and pricing, and practice in communities with higher socioeconomic levels, have higher incomes than average.
- Some personal characteristics, notably high self-esteem and low fear of negative evaluation, are associated with higher incomes. In both cases, older, more experienced veterinarians are more likely to exhibit these characteristics than younger, less experienced veterinarians.
- Despite the generally low level of income in the profession, income and job satisfaction scores of the veterinarians studied were within expected ranges. Female veterinarians were highly satisfied with incomes at levels with which male veterinarians were much less satisfied.
- Even after extensive analysis, there were income differences between male veterinarians and female veterinarians that could not be explained by practice ownership, employment, business practices, years in practice, hours worked, personal characteristics, or other factors measured in this study.

## Summary of Findings

**Business Practices**—The Brakke study examined veterinarians' use of 19 standard business practices associated with well-managed companies (4). The hypothesis was that veterinarians often do not take advantage of good management practices, and thereby sacrifice potential income. The research proved this hypothesis.

Of the 19 business practices, 42% of veterinarians surveyed worked in clinics in which 4 or fewer of the practices are used. Thirty-six percent worked in clinics that used 5 to 10 of the business practices; and only 22% of veterinarians worked in clinics that applied 11 or more of the 19 standard practices. There is a direct relationship between using more of the practices and higher income. The study found significant differences between heavy users and light users of the business practices for associates as well as for owners (Table 2).

**Table 2—Number of business practices used and mean incomes by practitioner category**

Practices Used	Owners		Associates	
	Male	Female	Male	Female
11-19	\$85,888	\$58,875	\$62,222	\$46,987
5-10	\$74,206	\$57,023	\$56,187	\$43,544
0-4	\$71,809	\$51,290	\$52,363	\$42,534

For all 19 of the individual business practices, those respondents who worked in clinics in which each practice was used earned higher average incomes than did those who worked

in clinics in which the practice was not used. Income differences ranged from 0.02% to 22.5%. Differences of less than 5% on any individual practice may not be significant. Nevertheless, the relationship was positive for every one.

The 3 business practices demonstrating the largest average income differential between users and non-users were human-resource oriented (Table 3):

- Does the practice actively pursue strategies to promote employee longevity?
- Is employee satisfaction measured?
- Are employee reward programs tied to client satisfaction or client loyalty?

**Table 3—Use of human resource practices and mean incomes**

Business practice	Use	% of Sample	Don't use	% of sample
Promotes employee longevity	\$64,115	58	\$52,349	42
Employee satisfaction measured	\$64,084	35	\$55,872	65
Rewards tied to client satisfaction	\$64,631	14	\$57,678	86

**Financial Acumen**—A related issue is financial acumen. Study designers hypothesized that practice owners with higher financial acumen would earn greater incomes than those with lower financial acumen. Financial acumen was measured by the ability to select the correct definitions of 5 financial terms from multiple choices: revenue performance, pre-tax profits, cash flow, return on assets, and return on equity. (a)

Practice owners were the only ones asked questions on this topic. Study designers reasoned that associate veterinarians have no direct influence on the financial management of the practice, and may or may not choose to become practice owners in the future. The hypothesis proved correct. Practice owners who answered 3 or more of the questions correctly had higher mean incomes than did those who answered less than 3 correctly (Table 4).

**Table 4—Mean incomes of male and female owners based on financial acumen**

No. Correct answers	Male	Female
3 or more	\$76,731	\$61,196
2	\$76,298	\$54,125
1	\$74,327	\$56,742
None	\$71,438	\$51,371

Remarkably, only 13% of respondents answered 3 or more correctly—14% of male owners, and 9% of female owners. More than a fourth (28%) of male respondents and more than a third (38%) of female respondents answered all 5 questions incorrectly.

For comparison purposes, the same 5 questions were asked of first- and fourth-year veterinary students. In that study, 48% of fourth-year students answered one or more questions correctly. Only 40% of first-year students could answer one or more correctly.

Less than 10% of first- and fourth-year students could answer 3 or more questions correctly.

**Veterinary Practice as Service Business**—Another section of the study dealt with management practices commonly associated with successful service businesses. (b) For the most part, veterinarians scored higher in this section than on the standard business practices questions.

Two areas were of particular interest in the findings. One was perceived client-waiting time. The other was office atmospherics, or business environment.

In multiregression analysis, perceived client waiting time, a key component of client service, was one of the factors most closely associated with higher income levels. The questionnaire measured this issue with 2 statements:

- For the most part, clients have a shorter wait to see me at this practice than they expect to have.
- After the pet has been serviced, the client does not have to wait at all to pay their bill and conclude the visit.

Respondents could agree or disagree with each of these statements using a 6-point Likert-type scale. The sample was divided into 3 categories: Those showing the most agreement, those showing the least, and those in between. Then mean incomes were computed for each group. Veterinarians indicating the most agreement averaged 12% higher incomes than did those with least agreement (Table 5).

**Table 5—Mean incomes and perceived client waiting time**

Low waiting time	Mean income	% of sample
Most agreement	\$61,405	28
Middle	\$58,705	30
Least Agreement	\$54,818	42

The other service category that demonstrated a significant relationship to income was atmospherics – those elements that relate to the physical presentation of the practice. The survey included 4 statements related to this issue:

- This practice’s external facilities (eg, building, signage, landscaping , and parking) convey a positive image consistent with this practice’s objectives.
- This practice’s physical environment is designed to provide the client with information to enhance their satisfaction with the service experience.
- This practice’s interior décor reinforces the beliefs and positive emotional reactions that the pet owners seek for their pets.

- Clients are given the opportunity to occupy their time (eg, reading material) while waiting for their pets to be seen.

Again, respondents could agree or disagree with each of these statements using a 6-point scale. As before, the sample was divided into 3 categories. Then mean incomes were computed for each group. Respondents with the highest level of agreement to these statements averaged 17% higher incomes than did those with the lowest level of agreement (Table 6).

**Table 6—Mean incomes and clinic atmospherics**

Atmospherics rating	Mean income	% of sample
Highest	\$62,958	36
Middle	\$59,840	28
Lowest	\$53,729	36

**Pricing**—The study clearly demonstrated that pricing of veterinary services can be highly judgmental. Pricing decisions directly affect veterinarians’ incomes.

The questionnaire included a case study in which veterinarians were asked to choose among various treatments, and then quote a price for the treatment recommended. The diagnosis was described as renal failure with an unpredictable response to treatment. The pet was described as highly valued by the client, indicating a strong human-animal bond. In half the questionnaires, the client was described as a “successful young professional.” In the other half, the client was described as “an elderly widow of modest means.”

The treatment choices, described in specific therapeutic terms, were:

- Referral to a specialist
- A more aggressive in-hospital treatment
- A less aggressive in-hospital treatment
- Outpatient treatment

The highest level of in-hospital treatment was described as:

Hospitalization of the pet, with IV catheter placement, fluid therapy, and more involved diagnostics. Close monitoring of blood parameters and critical care is indicated. The pet spent a minimum of 3 days in the hospital, depending on response to treatment. Long-term maintenance would be discussed with the client to include dietary management.

For the entire study, 80% of respondents recommended the highest level of in-hospital treatment. Four percent of respondents recommended referral to a specialist; 16% recommended lower levels of treatment. However, there were measurable differences in treatment recommendations for the 2 clients (Table 7). Of those respondents who received the young professional version of the questionnaire, 85% recommended the highest level of in-clinic treatment; 10% recommended lower levels of treatment. But of those respondents who received the elderly widow version of the questionnaire, 76% recommended the higher-level in-clinic treatment and 21% recommended a lower level of treatment.

In other words, more than twice as many veterinarians in the study recommended a lower level of treatment to the elderly widow than to the young professional (Table 7).

**Table 7—Treatment recommendation differences by client description**

Treatment alternatives	% recommended to		
	Professional	Widow	Total
Referral	5	3	4
More aggressive, in-hospital	85	76	80
Less aggressive, in-hospital	4	9	7
Out-patient	6	12	9

There were differences in treatment recommendations between owners and associates. Associates were more likely to recommend a higher level of treatment, especially to the young professional.

In pricing the treatment, there also were differences between the young professional and elderly widow responses. For the same clinical treatment, respondents who answered the young professional questionnaire quoted a higher average price than did those who answered the elderly widow questionnaire (Table 8).

**Table 8—Mean treatment price by practitioner category and client description**

Practitioner category	Professional	Widow
Men Owners	\$400	\$365
Women Owners	\$401	\$370
Men Associates	\$479	\$438
Women Associates	\$461	\$433

Interestingly, associate veterinarians quoted significantly higher prices to both clients than did clinic owners. As one would expect, within any given practitioner category, the higher the price quoted, the higher the average income (Table 9).

**Table 9—Mean income by practitioner category based on treatment price quoted**

Average price quoted	Male owners	Female owners	Male associates	Female associates
>\$400	\$80,695	\$59,344	\$59,418	\$47,058
\$300-\$400	\$74,141	\$55,984	\$53,766	\$42,344
< \$300	\$71,144	\$49,688	\$49,947	\$39,288

Pricing was addressed in another section of the questionnaire as well. Respondents were asked to rate the importance of various factors in pricing veterinary services. Those who placed a low level of importance on competitive prices and availability of alternatives to the client had higher mean incomes than did those who placed a higher level of importance on competitive issues. These results imply that those veterinarians who set prices on the basis of intrinsic value of the services earn higher mean incomes than those who are concerned about the availability of cheaper prices at nearby clinics.

**Treatment Versus Euthanasia**—One of the most interesting findings from the renal failure case study, in addition to pricing variations, was the degree to which euthanasia was recommended. The survey asked:

“Would you bring up euthanasia as an alternative to treatment, or would you wait for the owner to suggest it before discussing it as an alternative to treatment?”

Of all respondents, 42% said they would bring it up first. Once brought up, only 21% of respondents indicated they would recommend treatment over euthanasia; 75% indicated they would present treatment and euthanasia as equal alternatives (Table 10). Yet the human-animal bond was described as follows: “The client is obviously grieved at your findings and the prospect of losing the pet, a valued companion.”

More experienced veterinarians (> 22 years in practice) were far less likely to recommend euthanasia than less experienced veterinarians. The study did not find a significant difference in mean incomes between those who recommended euthanasia and those who recommended treatment.

**Life Choices**—The study measured the potential impact of several issues over which veterinarians have a high degree of control, even though they are not business practices *per se*. These include the size of the community in which the practice is located, the socioeconomic level of the community, number of hours worked per week, and the number of weeks worked per year.

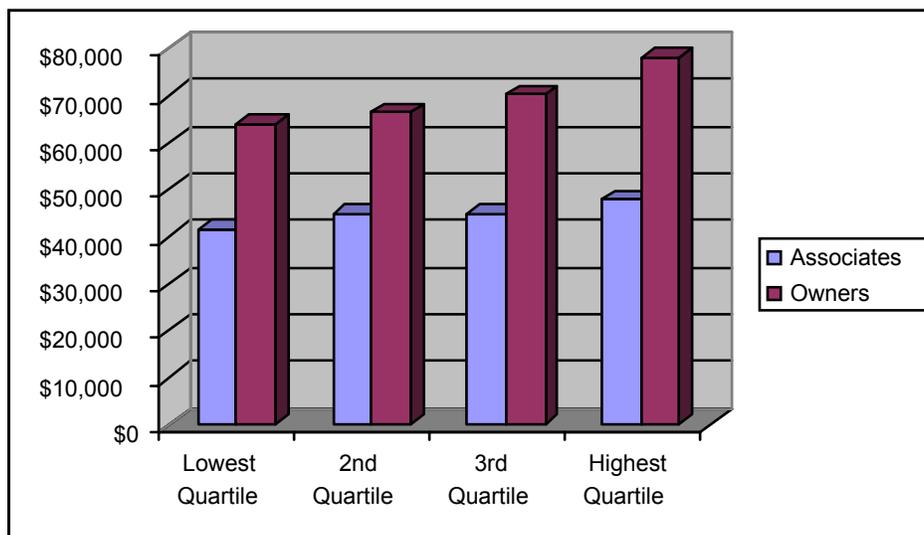
Obviously, veterinarians can choose whether to work in a large community or small community, or whether to start or to buy a practice in an affluent neighborhood or a blue-

collar area. Likewise, veterinarians, especially practice owners, have substantial influence over the number of hours a week and the number of weeks per year they work.

The study found a high correlation between income and the size and socioeconomic level of the community. For associate veterinarians, there was also a relationship between income and amount of time worked per year. This was less true of practice owners.

To determine the socioeconomic level of the community, respondents were asked the zip code in which their practices were located. Using government data, zip codes were then ranked by mean household incomes and divided into quartiles. There were significant differences in mean incomes for both owners and associates, especially between quartiles with the highest and lowest socioeconomic levels (Fig 1).

**Figure 1—Mean income based on socioeconomic level of clinic community**



In the multiregression analysis, the socioeconomic level of the community ranked as one of the more influential factors in veterinarians' incomes. In the case study, the mean price quoted for treatment was higher in the high-income quartile than in the lower income quartiles.

Community size plays a role as well. In general, the larger the community, the higher the mean incomes of veterinarians (Table 11). The exception is in the largest communities, those with populations greater than 250,000. In those communities, mean incomes of associate veterinarians are higher, but those of owners, and, consequently, the mean for all veterinarians, are somewhat lower than in the next 2 smaller categories.

**Table 11—Mean income by community size**

Community size	Mean income	% of sample
250,000 +	\$58,986	10
50,000-249,000	\$60,760	33
25,000-49,999	\$59,270	31
2,500-24,999	\$56,270	32
<2,500	\$46,663	4

The study found that the more hours per week and the more weeks per year an associate veterinarian worked, the more money he or she made. Interestingly, the mean incomes of practice owners in the study did not vary significantly on the basis of hours worked per week. Those who worked less than 40 hours per week had average incomes nearly as high as did those who worked more than 50 hours per week. This was especially true of male practice owners (Table 12).

**Table 12. Mean income by hours worked and practitioner category and gender.**

Hours worked	Male owners	Female owners	Male associates	Female associates
< 40	\$73,433	\$49,966	\$48,723	\$39,689
40-50	\$74,740	\$56,587	\$55,781	\$46,652
> 50	\$74,354	\$53,888	\$57,534	\$45,816

The study also found that female associates are twice as likely to work less than 40 hours per week as male associates or practice owners. Fully 27% of female associates work less than 40 hours per week, compared with 14% of male associates, 6% of female owners, and 3% of male owners. For those veterinarians working less than 40 hours per week, the mean numbers of hours worked is nearly identical for men and women, associates and owners.

Female associates in the study worked an average of only 47 weeks per year, compared with an average of 48 weeks per year for men associates, and 49 weeks per year for men and women owners.

The Biennial AVMA Economic studies reflect only full-time veterinarians, defined as those who work at least 30 hours per week and 48 weeks per year. (3) It appears from the results of the Brakke Study that many practicing veterinarians, mostly lower-income women associates, are not represented in the AVMA data.

**Personal Characteristics**—The study evaluated several personal characteristics of veterinarians to determine whether those characteristics affected income. (5) The purpose was to identify any characteristics in the veterinary population that might be identified with financial success or failure as measured by annual income.

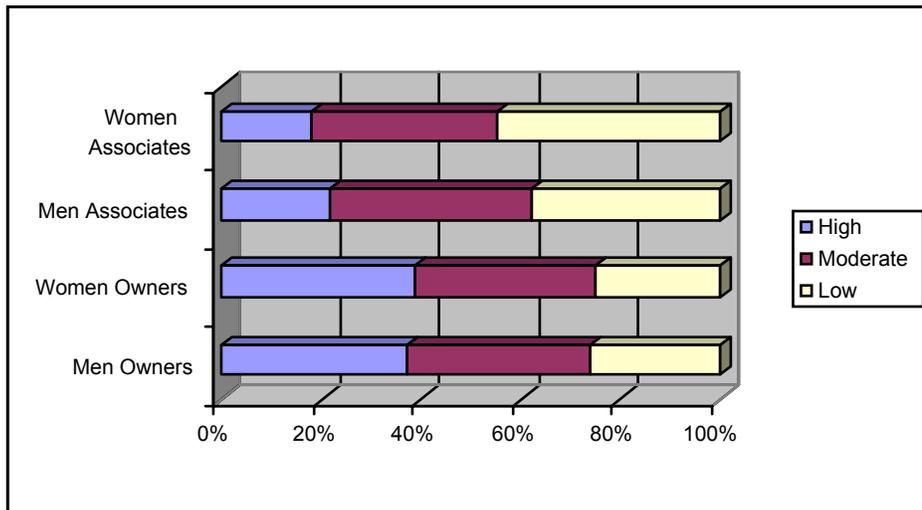
Personal characteristics measured, using standardized instruments drawn from the social sciences, included:

- Self-esteem
- Cognitive orientation (thinking/logical versus feeling/emotional)
- Fear of negative evaluation
- Empathy
- Need for interpersonal control
- Judging versus perceiving personality

Only 2 characteristics were consistently correlated positively with income—high self-esteem and low fear of negative evaluation. Although there were average income differences for some of the other characteristics, they were minor or results were inconsistent.

According to the study, among veterinarians, male practice owners exhibited the highest levels of self-esteem and female associates the lowest (Fig 2).

**Figure 2—Percentage self-esteem level by practitioner category**

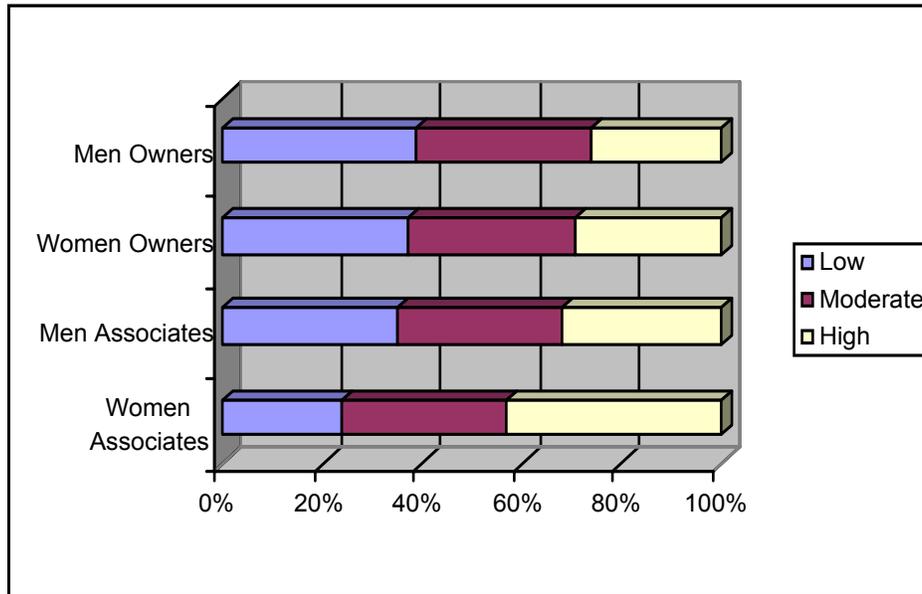


As one might expect, those veterinarians in the study with the highest level of self-esteem also earned the most money. For all categories of veterinarians (men and women, owners and associates) average self-esteem scores increased with years in practice. In other words, more experienced veterinarians, on average, score higher in self-esteem than less experienced veterinarians.

Fear of negative evaluation focuses on one’s interpersonal competency. It evaluates how much importance an individual places on others’ (eg, clients’) perceptions of his or her professional competencies. Almost all people feel some fear of negative evaluation. But veterinarians who are extremely fearful of being negatively evaluated by a client tend to behave less effectively (ie, earn less money) than those with a lower level of fear.

Among respondents in the study, owners found less fear of negative evaluation than did associates. Men showed less fear of negative evaluation than did women (Fig 3).

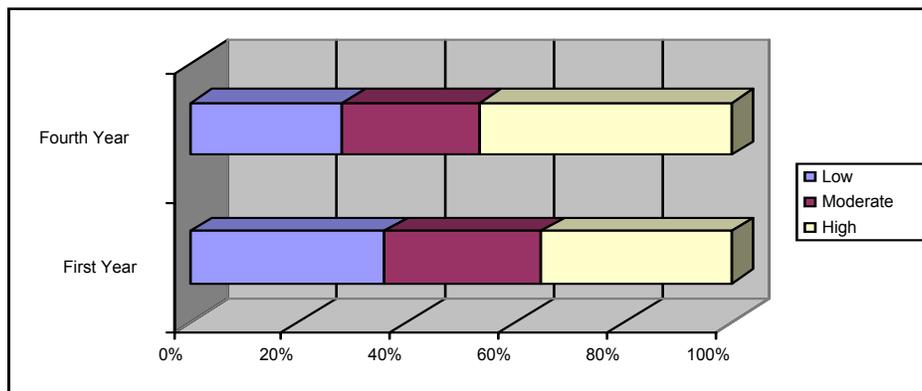
**Figure 3. Percent Fear of Negative Evaluation by Practitioner Category**



There was a positive relationship between low fear of negative evaluation and mean income only among associate veterinarians.

Contrary to what one might expect, in the student study, first-year veterinary students exhibited higher levels of self-esteem and less fear of negative evaluation than did fourth-year students (Fig 4). Because these traits correlate with income, it would be worthwhile to further study whether there is an erosion of self-esteem and an increase in fear of negative evaluation during veterinary school, and if so, what could be done to reverse this trend.

**Figure 4—Percentage of fear of negative evaluation in veterinary students by class**



**Satisfaction**—The study measured job satisfaction and pay satisfaction. (c) It found no significant difference in mean incomes between those who are most satisfied with their jobs and those who are least satisfied.

There were differences in pay satisfaction, however. In almost all categories (men and women, owners and associates), those veterinarians with the highest mean incomes were only moderately satisfied with their income whereas others with lower mean incomes were highly satisfied (Table 13).

**Table 13—Pay satisfaction compared with mean income**

Satisfaction level	Mean income	% of sample
Moderate	\$62,941	42
High	\$58,272	28
Low	\$49,100	30

These results indicate that there is a sizable population of veterinarians who are satisfied with a modest salary—in all, 28% of those studied. However, there is a significant contingent that is less than fully satisfied.

The study found that the majority of female veterinarians, including practice owners, are moderately to highly satisfied with incomes much lower than male veterinarians. For example, the male practice owners who are least satisfied with their pay earn an average of \$61,811. The female practice owners most satisfied with their pay earn an average of \$58,911. A similar relationship holds true for male and female associate veterinarians.

**Why Do Women Earn Less?**—With the wealth of data available in the study, an effort was made to identify reasons for differences between average incomes of male and female veterinarians.

The differences are dramatic. For example, the average female practice owner makes about 30% less than her male counterpart, regardless of years of experience (Table 14).

**Table 14—Mean income of male and female practice owners by years in practice**

Years in practice	Men	Women	% Difference
> 22	\$76,217	\$60,017	27
15-22	\$77,748	\$59,804	30
8-14	\$70,718	\$54,615	30
< 8	\$55,620	\$42,455	31

A few reasons for differences were obvious. Female veterinarians have less average experience than men do because as a group they have entered the profession more recently. A higher percentage of women than men work less than 40 hours a week.

Other differences were less obvious. This study indicated that women veterinarians are more likely to own practices in small communities than men, for example.

However, even when the data were equalized for all those factors, there was still a significant income differential (Table 15).

**Table 15—Mean income of men and women working 40 to 49 hours per week by years in practice**

Years in practice	Male owners	Female owners	Male associates	Female associates
< 4	\$63,250	\$35,500	\$44,272	\$36,747
4-7	\$48,823	\$43,818	\$50,777	\$45,865
8-14	\$77,415	\$56,214	\$59,125	\$50,899
15-22	\$77,490	\$67,270	\$58,656	\$54,842
> 22	\$78,395	\$59,200	\$64,000	\$50,500

These findings are consistent with research conducted in 1987 (published in 1996) by Dr. Chloe Bird, then a PhD candidate at the University of Illinois. At the time of Bird’s study, there was a \$12,900 difference in mean annual income between male and female veterinarians. After controlling for age, experience level, type of practice, veterinary specialty, hours worked and other identifiable factors, she still found a gender gap of \$7,400. (6) Bird’s research showed that a similar situation occurred in other health professions.

As the percentage of women in the profession continues to increase, it will more and more be women who determine the overall income levels and expectations for the entire profession. Consequently, it is important to understand why differences between the mean incomes of men and women exist, and how women can share equally in the fruits of their labor.

**Relative Importance**--What the Brakke Study illustrates is that, for any individual veterinarian, one or more factors can have a material affect on income. To put it another way, most veterinarians likely could increase their incomes through more financial expertise, better business practices, more uniform pricing policies, practicing in a more upscale community, or a combination of these elements.

Some factors are more important than others. Multiregression analysis revealed the following 11 factors as having the greatest impact on income (Table 16). In fact, using regression analysis to optimize for these 11 factors, plus a quote of \$400 or more in the case study, projected a mean income of \$99,210, compared with \$68,188 for all owners — a difference of 45%.

**Table 16—Most important income influencers  
as determined by multivariate regression**

Factor	Importance index
Years in practice	100
Gender (Male)	92
Clinic ownership	58
High self-esteem	49
Hours worked in week	45
Low client waiting time	43
High socio-economic level area	41
Low use of advertising (d)	38
Weeks worked/year	31
Size of community	30
Uses standard business practices	20

$R^2 = .308$

The fact that gender is the second highest factor having an impact on income dramatizes the need to learn more about differences in economic motivation, expectation, and performance between male and female veterinarians.

### **Conclusions**

Several conclusions can be drawn from study findings.

- Many veterinarians are not earning up to their potential because of a lack of financial expertise and/or because of the failure to use management practices proven to improve business performance.
- Many veterinarians set lower prices for services or offer less aggressive treatment options to clients on the basis of their perception of client resources. This represents a highly questionable judgment that can negatively affect veterinarians' incomes.
- Many veterinarians represented in the study were quick to suggest euthanasia instead of treatment for a difficult-to-treat case, despite the suggestion of a strong human-animal bond between client and patient. Obviously, euthanasia eliminates any potential for future income from that particular patient.
- Veterinarians exert influence over their incomes in the number of hours and weeks per year they choose to work, and in the size and economic level of the communities in which they choose to practice.

- Although not all veterinarians are satisfied with their current incomes, there is a significant minority of veterinarians who are satisfied. Female veterinarians are satisfied with incomes that are much lower than the mean incomes with which male veterinarians are satisfied. Mean incomes are not likely to increase substantially unless veterinarians, especially female veterinarians, set their expectations higher.
- Much of the difference between the mean incomes of men and women cannot be explained by the factors addressed in this study. It is important for the profession to invest in further research to determine whether and how incomes can be equalized, as well as elevated, for women and men.

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- (d) Data anomaly. Low use of advertising to attract clients is believed to be related to older, well-established clinics versus newer, less well-established clinics, and not highly important to veterinary income.