Why Do Some Real Estate Salespeople Earn More Than Others?

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Abstract. This paper explores the reasons why some real estate salespeople earn more than others. Data from a survey of members of the Illinois Association of REALTORS conducted in the spring of 1985 are the basis of the analysis. The central part of the paper analyzes via multivariate regression analysis over twenty factors thought to determine real estate sales success as measured by income from real estate brokerage. The most important findings include: (1) number of hours worked is closely linked to income; (2) income increases substantially with years of experience in the early years of a career (over 20% per year for the first five years), but these increases flatten out for the veteran with more than ten years of experience; (3) no significant differential in earnings is detected between men and women of the same age and with the same education.

Introduction

The characteristics that distinguish high-income real estate salespeople from low-income real estate salespeople are of interest to virtually all individuals involved in the real estate brokerage business. While it may be clear that several basic factors influence sales success, the degree to which income from real estate sales is influenced by these factors is less clear. Furthermore, an intuitive "feel" may be insufficient to understand fully all of the significant factors that contribute to variation in such income. Alternatively, characteristics logically assumed to be of importance may, in fact, play little part. This study attempts to quantify the role several factors play in real estate success as measured by income from real estate sales.

The study uses multiple regression analysis to achieve two objectives: to determine the factors that explain the variation in sales income and their quantitative impacts; and, to develop a model of sufficient explanatory power to predict income for a given set of criteria. Some of the factors studied include: the number of hours worked; the size of the firm; and the age, sex, education, and experience of the salesperson.

This study can be viewed as an extension of a previous study by Stribbling, 1985.[1] The previous study utilized Chi-square hypothesis testing to determine significant differences in sales income between various groups such as males and females. Stribbling's approach examines each factor on a univariate (versus multivariate) basis. Therefore, some interrelationships and interactions are not revealed. Regression analysis, on the other hand, provides a method to examine simultaneously the effects of a series of factors that are hypothesized to influence income. Because of this multivariate approach the results should be more precise and helpful.

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The remainder of this paper is divided into three parts. The next section presents some statistics concerning the data used in the analyses. These include descriptive statistics on all of the variables used and the frequency distribution for sales income. The third section examines results of the regression analysis. The discussion indicates the criteria used to choose the variables, the significance of each variable, the interpretation of the coefficients, and the explanatory power of the model. The final section summarizes the major conclusions of the paper.

Statistical Profile of the Real Estate Salesperson in Illinois

The data underlying this study are based upon a survey conducted in the spring of 1985 by the Illinois Association of REALTORS of its members. The statistics that follow are based upon a subsample of the full survey that includes 674 observations. Observations without complete information are omitted.

Exhibit 1A indicates the distribution of the people actually surveyed. Some of the important features include the fact that 78.2% of the people are married and over 50% are women. Over two-thirds of the people have at least completed junior college and 14.7% have completed some graduate school. The sample is comprised primarily of residential salespeople from urban areas because only 16.9% indicate they operate in primarily rural areas and only 4.7% operate primarily in the commercial market. Finally, note that 93.6% of those surveyed participate in a multiple listing service (MLS).

Exhibit 1B also contains some statistics that help complete the profile of the Illinois real estate salesperson. The average age is 47 years old. This person has, on average, 7.9 years of experience, an income of $24,515 and works for a firm with a work force of about 17

Exhibit 1A
Characteristics of the Sample

	Percent of the Sample
Married	78.2
Female	51.9
Junior College	25.8
College Graduate	29.2
Graduate School	14.7
Those Who Rarely Attend Seminars	14.5
Primarily Rural Board	16.9
Associated with a Financial Conglomerate	8.6
Associated with a Brokerage Franchise	32.2
Associated with a Relocation Service	33.1
Firm Participants in MLS	93.6
Firm Associated with a Title Company	5.2
Real Estate Activity Primarily Residential	87.7
Real Estate Activity Primarily Commercial	4.7
Firm Associated with a Financial Institution	8.8
Holds a Broker License	31.2

Number of People in the Sample = 674

Exhibit 1B
Statistics Associated with Several Key Variables

	Mean	Standard Deviation
Age in Years	47.0	11.5
Years of Experience	7.9	5.3
Hours Worked Per Week	42.0	16.9
Size of the Firm Work Force	16.7	12.7
Income from Sales and Brokerage ($)	24,515.0	27,355.0
Percent of Family Income from Real Estate Sales & Brokerage	47.9	35.1

people. The typical person works more than 40 hours a week and contributes about 50% of his or her family's income.

While the average values seem reasonable and are useful in profiling the typical real estate salesperson, it is important to note that there is substantial variation around these averages. This is clear by examining the ratios of the means to the standard deviations reported in Exhibit 1B. The smaller the ratio, the more variation that exists. Two particularly striking ratios relate to income and hours worked. As is shown below, the variation in hours worked is one powerful explanation for the wide variation in sales income.

To obtain a better picture of the variation in these two variables, Exhibit 2, 3 and 4 have been constructed. Exhibit 2 contains a distribution of the respondents by income class.[2] The principal message is one often heard in the real estate sales industry—a small percent of the people earn a large percent of the income. In particular, the top 4.3% of the people in the sample earn 20.3% of the total income earned by all of the people in the sample. Alternatively, the lowest income group—less than $10,000 per year—comprises almost 40% of all salespeople yet contributes only 6.7% to the total income of the sample. Clearly, the distribution of income is highly skewed toward the most successful people.

Exhibit 2
Frequency Distribution by Income Class

Brokerage Income Intervals	Number of People	Percent of Sample	Percent of Income	Cumulative Percent of Income
> $ 90,000	29	4.3%	20.2%	20.2%
80,001 - 90,000	9	1.3%	4.8%	25.0%
70,001 - 80,000	14	2.0%	6.5%	31.5%
60,001 - 70,000	16	2.4%	6.1%	45.8%
50,001 - 60,000	25	3.7%	8.2%	51.9%
40,001 - 50,000	22	3.3%	6.1%	67.2%
30,001 - 40,000	70	10.4%	15.3%	85.8%
20,001 - 30,000	129	19.1%	18.6%	93.5%
10,001 - 20,000	93	13.8%	7.7%	100.0%
< 10,000	267	39.6%	6.7%	100.0%
Totals	674	100.0%	100.0%	100.0%

Exhibit 3 sheds light on the causes of this variation. It indicates the average age, number of hours worked per week, and years of experience by income class. The strongest pattern exists with respect to hours worked. Those in the lowest income class work about 32 hours per week while those in the highest income class work almost twice as many hours. A strong pattern also exists with respect to years of experience. Age, on the other hand, appears to have little effect on income.

To complete this overview of the linkage between hours worked and income, Exhibit 4 indicates the distribution of the sample by length of work week. Ten percent of the sample works less than 20 hours per week and over one-third work less than 40 hours per week. On the other hand, 40% work more than 50 hours per week. Note that this effort pays off because the average income of the group that works more than 50 hours per week is by far the highest of the various groups. Even at the bottom end, however, the average wage rate indicates real estate sales can be a profitable part-time job. For example, if one assumes that the average person in the 10-20 hours per week group spends 15 hours per week on the job, then the average hourly wage for this person—assuming a two-week vacation—is about $8.00 per hour. This compares to the sample wide average of about $12.00 per hour.

Exhibit 3
Average Hours Worked, Age and Experience by Income Class

Income Class	Hours Worked	Age	Years of Experience
Less than 10,001	32.2	46	5.4
10,001 - 20,000	41.5	47	6.6
20,001 - 30,000	47.1	48	9.4
30,001 - 40,000	50.1	48	10.8
40,001 - 50,000	49.8	49	9.4
50,001 - 60,000	54.2	49	12.0
60,001 - 70,000	54.3	49	12.4
70,001 - 80,000	53.0	47	12.0
80,001 - 90,000	59.6	47	10.4
Greater than 90,000	58.4	45	10.9

Exhibit 4
Sample Distribution and Average Income by Length of Work Week

	Percent of Sample	Average Income ($)
Less than or equal to 10 Hours Per Week	3.9	4,416
11 - 20	6.4	6,021
21 - 30	9.1	11,047
31 - 40	13.2	12,252
41 - 50	27.0	22,968
Greater than 50	40.4	37,379
	100.0	

A Regression Model of Income Determination

The results of the regression analysis of the variation in the income of real estate salespeople is presented in this section. The specific measure of success used in the estimation is the natural logarithm of the income reported from real estate sales and brokerage. The natural logarithm is used instead of actual income because the regression estimates are more precisely estimated with the natural logarithm.[3] Furthermore, the regression coefficients from this model have a simple and intuitive interpretation. *A regression coefficient indicates the percentage change in salesperson income from a one-unit change in the variable associated with the coefficient.* This is elaborated upon below.

Twenty-two different variables are used to explain income. The full list of the variables is presented in Exhibit 5 and is divided into five groups: personal traits; work effort; firm traits; market traits; and, education. Personal traits include such variables as marital status, the sex of the person, whether the person holds a broker's license, and the age and years of experience of the person. Work effort is measured by hours worked per week. Note that the square of the number of hours worked is entered as well as the number of hours worked.

Exhibit 5
List of Variables

Factor	Variable Name	Variable Definition
Personal Traits		
	Marital status	Married = 1, Not married = 0
	Sex	Male = 0, Female = 1
	Respondent holds a broker's license	Broker = 1, else = 0
	Age	In years
	Years of Experience	Salesperson = 1, else = 0
Work Effort		
	Average hours a week devoted to sales	Number of hours
Firm Traits		
	Associated with a financial conglomerate	Yes = 1, No = 0
	Associated with a brokerage franchise	Same definition
	Associated with a relocation service	Same definition
	Associated with a title company	Same definition
	Associated with a financial institution	Same definition
	Firm participation in multiple listing service	Same definition
	Size of work force in individual office	Number of people
Market Traits		
	Commercial sales only	Commercial = 1, else = 0
	Local board is primarily rural	Primarily rural = 1, else = 0
Formal Education		
	Junior College	Only completed Junior College = 1, else = 0
	College	Only completed College = 1, else = 0
	Graduate School	Some Graduate School = 1, else = 0
	Respondent attends often educational seminars	Yes = 1, No = 0

This is done to determine whether the 50th or 60th hour of work adds as much to income as, say, the 40th. Similarly, the squared values of age and years of experience are included. The remainder of the variables measure various aspects of the firm—its size, the market in which the person operates, and the education of the person.

Many of these variables are continuous variables in that they are measured on a numeric scale. Hours worked is an example of this type of variable. Some, however, are categorical variables that equal either 1 or 0. Married is one of these. It equals 1 if the person is married and 0 for non-marrieds. Thus, the coefficient of a categorical variable indicates the percentage difference in income between a person with the trait versus one without it.

The fundamental criterion that underlies the inclusion of a variable in the model is the belief that the variable has a substantial influence on the income of the person. In other words, there is reason to believe that the variable is an important determinant of why some salespeople earn more than others. Simple economic reasoning and conversations with people in real estate brokerage have been used to compile the specific list of variables.

The regression results are contained in Exhibit 6. Column 1 indicates the list of variables used, column 2 contains the regression coefficients, and column 3 contains the t-statistics. The discussion is centered around the groups of variables identified in Exhibit 5.

Personal Traits

The results indicate that *the sex and the marital status of the individual have little to do with sales income* because neither of the t-statistics associated with the married variable and the sex variable are very large. The role of age is also not very important. Income increases until about age 36, then income actually declines with age, all else equal. Also, those with a broker's license earn substantially more than those without. The estimate indicates that, all else equal, brokers earn about 33.8% more than those without a license. It would be interesting to conduct a separate study of brokers, but such a study would require more information than is currently available in the survey used in this particular study.

Years of experience do matter. The coefficient of the two experience variables—years of experience and years of experience squared—are both statistically significant and indicate a strong quantitative linkage between income and experience. In particular, income grows at about 28.9% per year in the early years of a career. Although experience continues to matter as experience increases, the effect of an additional year of experience declines as experience increases until about 12 years of experience. Beyond this point, income tends to decline with additional years of experience, all else equal.

Work Effort

The amount of work effort has a substantial effect on the earnings of the salespeople in this sample. One hour of additional work increases income by about 3.3% for a person working a 40-hour week. [This is obtained as follows: .033 = .039 (41-40) - .00008 (41 squared-40 squared).] Given an average income of about $25,000, this means that one hour of additional work brings about $815 per year in additional income or about $16.25 per hour per week (50 weeks a year of work is assumed).

Note, too, the t-statistic for the squared term and its coefficient are very small. This indicates that the benefits of additional work do not decline substantially with work effort. For example, a person working 25 hours a week can expect to earn about 3.5% more per hour of additional work and a person working 50 hours a week can earn about 3.1% more.

Exhibit 6
Results of the Multiple Regression
Analysis of the Natural Logarithm of Income
from Real Estate Sales or Brokerage

Variable	Coefficient Estimate	t-Statistic
Intercept	6.35	10.64*
Married	.021	.23
Sex	-.021	-.25
Respondent Holds Broker License	.338	3.27*
Age	.022	.92
Age Squared	-.0003	-1.30
Years of Experience	.289	8.70*
Years of Experience Squared	-.012	-6.19*
Hours of Work Per Week	.039	4.59*
Hours of Work Squared	-.00008	-.81
Associated with a Financial Conglomerate	-.216	-1.54
Associated with a Brokerage Franchise	-.136	-1.59
Associated with a Relocation Service	-.003	-.04
Associated with a Title Company	.048	.26
Associated with a Financial Institution	-.074	-.51
Firm Participation in Multiple Listing Service	-.196	-1.17
Size of Firm Work Force	.009	2.70*
Commercial Sales Only	.187	.98
Local Board is Rural	-.189	-1.79*
Junior College	.13	1.27
College	.15	1.48
Graduate School	.24	1.94*
Respondent Rarely Attends Seminar	-.22	-2.00*
Number of Observations	= 674	
R^2	= .49	
$\bar{R}^2$	= .47	
Standard Error	= .98	

*Indicates statistically significant coefficient at the 95% level of significance.

Firm Traits

Seven firm traits are analyzed, but only one has a substantial effect—size of the work force of the firm. *Those associated with larger firms tend to earn more than those in smaller firms.* The quantitative effect of size is not very large; however, an increase in the work force by one person adds about 1% per year to sales income. This effect might be simply reflecting the income earned by brokers with large firms or it might reflect certain economies of scale that are associated with larger firms. Further analysis using more extensive data than are currently available might examine this in more detail.

The other firm traits studied do not appear to play an important role in salesperson income. Those with a financial conglomerate or a franchise tend to earn less, but the t-statistics associated with these variables are quite small, thus the relationships are not very precise or strong.

The fact that most of these variables are insignificant is of interest, nonetheless, because it suggests that any additional income generated due to an extra affiliation is probably captured by the firm rather than the individual salesperson.

Market Traits

Two market variables are examined: whether the person operates in the commercial market and whether the market is primarily rural. As expected, *commercial salespeople tend to earn more;* however, the *t*-statistic associated with this variable is quite small (.98), thus the relationship is not very strong. This is not the case with those who operate in the rural markets. *Those in rural markets tend to earn about 19% less than their urban counterparts* and, judging by the *t*-statistic, the relationship is quite strong.

Education

An important issue throughout the real estate brokerage industry concerns the role of education. Some states are seeking to require a college education in order to receive a real estate salesperson's license and many are requiring various types of continuing forms of education. While this particular study does not directly test whether education makes someone a better and more reputable salesperson, it does shed some light on the effect of education on real estate sales success.

In fact, *formal education is found to have a strong and consistent effect on income.* Those with only a junior college degree earn about 13% more than those with less education; and those with a college degree earn 15% more than those with less than a junior college education. Those with a graduate education earn 24% more than those with less than a junior college education. Clearly, the people with the most *formal* education tend to do substantially better.

Continuing education, as measured by reading materials and seminar attendance, does not appear to have a large positive effect. It is true that *those who indicate they do not attend seminars regularly earn less than those who do* (22% less). Beyond this variable, all other measures of continuing education available in this study (including whether one attends seminars frequently) do not appear to be strongly related to real estate sales success. Future work might focus on better measures of continuing education and in-house training programs.

Overall Performance of the Estimated Equation

The final point to be made regarding the regression results concerns the ability of the entire equation to explain real estate sales income. The central measure of this ability is the coefficient of determination or R^2. This equals .49 for the equation and indicates that 49% of the variation in real estate salesperson income is explained by the equation, a reasonably good fit for a cross-section equation of this type.

What other variables might be included in a future study? There are a number of possibilities including better measurement of the variables already included—for example, income from sales. One particularly interesting possibility concerns the commission structure of the firm. Another might be the sales potential of a market place. Possible measures include average sales price, average turnover rate, and average time on the market. Also, better measures of continuing education and in-house training programs might help. Several real estate

professionals have also suggested the importance of the role of a mentor. Finally, it would be nice to know more about the ways in which salespeople allocate their time and the amount of referral business.

It would also be interesting to focus on various subgroups of the real estate salesperson population. For example, commercial salespeople might be studied separately. Unfortunately, the survey used in this paper does not contain many observations in some of the subgroups of interest, thus we choose not to examine them in this paper. Hopefully, future surveys can be done that will permit a more detailed breakdown.

Conclusion

This paper explores the reasons why some real estate people earn more than others. Data from a survey of members of the Illinois Association of REALTORS conducted in the spring of 1985 are the basis of the analysis. The study begins by profiling the "typical" real estate sales person in Illinois. Some of the interesting aspects of this person are that *she* is about 47 years of age, married, earns about 48% of the family income and earns almost $25,000 per year.

The central part of the paper analyzes via multivariate regression analysis over 20 factors thought to determine real estate sales success as measured by income from real estate brokerage. The most important findings include:

(1) *Hard work pays off*: A person who works 50 hours per week can expect to earn more than 30% more than a person who works only 40 hours per week.

(2) *Experience counts, up to a point*: Income increases substantially with years of experience in the early years of a career (over 20% per year for the first 5 years), but these increases flatten out for the veteran with more than 10 years of experience.

(3) *Men and women with similar traits who work the same amount of time earn the same*: No significant differential in earnings is detected between men and women of the same age and with the same education.

It is hoped that these results shed light on the important question addressed by this paper and lead to further research.

Notes

[1]James C. Stribbling, Characteristics of the High Performance Real Estate Salesperson, TRERC-785-1M-488. (Texas Real Estate Research Center, July 1985).

[2]It is useful at this point to indicate the precise definition of income. On the survey, people were asked two questions about their income. The first was, "What was your total family income in 1984?" The possible answers consisted of eight income ranges. The second question was, "What approximate percentage of your family's income is derived from real estate brokerage?" The answers consisted of six different percentage classes. The data in this study are computed from these two questions by first converting the range information to continuous variables and then multiplying the two transformed variables to obtain income from real estate sales.

[3]For those familiar with regression analysis, heteroscedasticity or non-constant variance is less likely to be a problem with the natural logarithm of income than with income.