The Education of Real Estate Salespeople and the Value of

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Abstract

In order to protect the public, most states require salespeople and brokers to meet specific licensing requirements, typically in the form of classroom instruction and/or successful completion of an examination. Frequently, however, many real estate brokers require their sales staff to undertake education that exceeds these minimum requirements. In this study, we provide a theoretical framework that shows how optimally-timed, firm provided education that exceeds legal minimums can increase staff productivity, reduce litigation risks and perhaps raise and/or maximize the expected value of the firm.

Introduction

In order to engage in residential or commercial real estate transactions as a broker or a salesperson, licensing requirements must be met in most states.[1] "These requirements were put in place in order to protect the publics who are generally "uniformed" in real estate dealings," (Dasso and Ring, 1995). Classroom instruction and successful completion of an examination are generally the main requirements for licensing. After obtaining an initial license, continuing education is also usually required in order to maintain an active license in many states.

"According to human capital theory, a salesperson should be able to realize greater earnings through occupational licensing and continuing education requirements," (Ehrenburg and Smith, 1982). In real estate, a large literature exists on the relationship between educational requirements and earnings. Follain, Lutes and Meier (1987), Glower and Hendershott (1988), Crellin, Frew and Jud (1988) and Jud and Winkler (1998) examine how licensing, schooling, experience and professional training impact Realtor earnings. In general, these studies find a positive and statistically significant relationship between these educational variables and earnings.

Other studies (Johnson and Loucks, 1986; Gunterman and Smith, 1988; and Shilling and Sirmans, 1988) examine the impact of education and licensing requirements on service quality. The number of complaints filed against a

salesperson measured service quality. In other words, the fewer the complaints, the higher is the assumed service quality. Shilling and Sirmans find that licensing increases the quality of service, but produces anti-competitive side effects. Gunterman and Smith find that minimal levels of education and training reduce complaints, but additional education provides decreasing returns. The authors suggest allocating resources away from education and into compliance and enforcement. Johnson and Loucks find that licensing requirements increase service and improves the competitiveness of the real estate brokerage industry.

The aforementioned studies focus on the implications of educational requirements and licensing from either the salesperson's or the consumer's point of view. While informative, little research exists that examines the implications and incentives of education and training from the brokerage firm's perspective.

Many residential real estate firms require or encourage education that goes well beyond the minimum legal requirements. For example, Century 21 has their affiliates attend a training seminar called 21Plus before they are allowed to have floor time. This additional training is done to increase the value of the firm, either by increasing cash flows that accrue to the owner-manager, or by limiting the broker's liability to the actions of a poorly trained real estate salesperson.[2]

Madsen (1992) noted that investing in education and professional development has the potential to yield great benefits to individuals, firms and the real estate sector as a whole. The real estate workplace is also evolving rapidly. Firms are relying on interactive multimedia programs and the Internet, in addition to the traditional use of the multiple listing service. Takagowa (1996) suggests that additional education will be required in this setting. Additionally, Nass (1995) suggests that successful real estate executives need to be highly educated due to the advances in technology and the emerging global marketplace.

These studies make certain issues clear. First, educating salespeople does more than just protect the public. Firms often require their salespeople to take educational instruction far beyond that required by law. This is done to promote the maximization of firm value. Secondly, in the rapidly evolving marketplace, education is needed for firms to operate efficiently and successfully. While all of these studies point to the value of education, no study has provided a model that shows the optimal timing and quantity of education that is needed for firm value-maximization. The next sections present such a model and provide the managerial implications and conclusions.

The Most Rapid Approach Model (MRAPM)

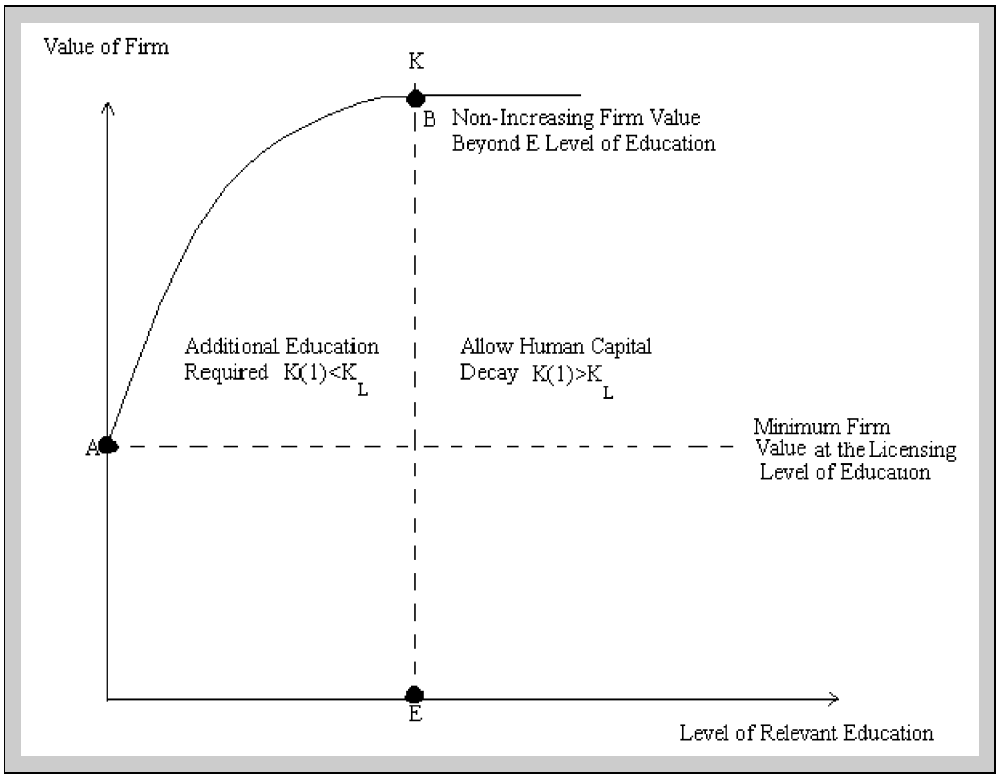
Overview and Intuition

In determining a solution for the optimal quantity and timing of education that a salesperson requires, the model assumes that there exists a necessary knowledge

set, or base, that real estate salespeople must possess in order to effectively generate sales and listings.[3] This level of education should maximize firm value. Hence, the manager's problem requires selecting the correct amount and type of education needed to maximize the present value of the cash flows generated by the salespeople. The actual solution is mathematically rigorous, but a simple graphical analysis will explain the intuition of the solution.

In Exhibit 1, K_L represents the required knowledge base that the salesperson must possess in order to produce transactions most efficiently (efficient in the sense of firm value maximization) and point A represents the minimum value of the firm at the licensing level of education. Suppose a salesperson is at $K(1)$, where $K(1) < K_L$ (all points to the left of point B in Exhibit 1). Intuitively, a manager would want to get the salesperson up to the required level as soon as possible.[4] Hence, the salesperson should receive additional relevant education and training quickly, bounded by the educational cost restrictions of the firm.[5] If the salesperson did not receive the education, he/she would probably fall further below the required level for firm maximization as new relevant information emerges and a decay of current knowledge occurs.[6] The further away a salesperson falls from the optimal

Exhibit 1 | Maximizing Real Estate Brokerage Firm Value



level, the further the firm deviates from value-maximization. Once a salesperson reaches the necessary level (point B on Exhibit 1), periodic education should occur in order to compensate for the decay in human capital and the new information in the marketplace. To keep a salesperson at point B, human capital should be acquired at the rate of decay. However, this may be difficult as the acquisition of human capital is lumpy, which may force the salesperson to temporarily deviate from point B. If a salesperson is above the necessary level for reasons other than lumpy human capital acquisition (anywhere to the right of point E on Exhibit 1), his/her knowledge base may be allowed to decay until K_L is reached. In essence, allowing a salesperson to leave his/her selling and listing duties to undertake further education may decrease firm value.[7] If a salesperson receives no education beyond licensing, then the value of the firm will decline from point A (on Exhibit 1) as knowledge decay occurs. However, most states now require some continuing education in an attempt to prevent this.

Formal Model

As noted, the managerial problem is to maximize the present value of the revenue that a salesperson produces, net of explicit and implicit educational costs, as shown below:

$$\max \int e^{-rt}\{R(K) - K'(t) - DK(t)\}dt, \tag{1}$$

$$\text{subject to: } K(0) = K_0 > 0. \tag{2}$$

$$-DK < K' < E\max - DK. \tag{3}$$

Where $R(K)$ is defined as the maximum revenues generated from revenue transactions that a salesperson can earn with educational level K, D[8] is the decay rate of a salesperson's knowledge set, and Emax is the maximum amount of funds and/or time that a firm can allocate to education. Notice that the change in K' is bounded on the lower side when no funds or time are allocated to education and the upper bound occurs when the maximum available dollars and time are allocated to education. Assume that $R' > 0$, $R'' < 0$, and knowledge level changes can be expressed as follows:

$$K'(t) = E(t) - DK(t). \tag{4}$$

Let K_L equal the level of knowledge that a salesperson must possess in order to

effectively produce transactions. By Euler theorem (see Kamien and Swartz, 1981) and noting that the rate of change of E is bounded and the definition of K_L, then:

$$R'(K_1) = r + D. \quad (5)$$

Since $R'' < 0$, has only one solution and it satisfies the properties of a Most Rapid Approach Path solution because if $K < K_L$, then the solution to Equation (5) is greater than zero. In other words, if the salesperson's knowledge falls below the required level, the change in the knowledge base is positive, and if $K > K_L$ then the solution to Equation (5) is less than zero and the knowledge base is allowed to decay. As such, the solutions to Equations (1)–(3) is a MRAP[9] to K_L. Specifically, if:

$$K_0 < K_L, \text{ then } K' + DK = E\max, \text{ or equivalently,} \quad (6)$$

$$K(t) = E\max/D + (K_0 - E\max/D)e^{-rt}. \quad (7)$$

These equations simply state that education should occur as fast as possible, bounded by the implicit and explicit budget restrictions, until the required knowledge base is met (until $K(t) = K_L$). On the other hand, if:

$$K_0 > K_L \text{ then } K' + DK = 0. \quad (8)$$

This simply suggests that knowledge decay is permitted until $K(t) = K_L$. Once K_L is reached, satisfying the problem requires maintaining the required level by keeping:[10]

$$E(t) = DK_L. \quad (9)$$

Managerial Implications

The results obtained from the MRAP model have several potentially important policy implications for managing a real estate brokerage firm. First, the results imply that managers may want to hire salespeople who are already at, or perhaps even above, the desired educational level. These salespeople need little training,

thus saving the firm educational and opportunity costs. Many potential salespeople who are at the desired educational level will already be licensed and working in an existing firm. Hence, managers should rationally attempt to hire licensed salespeople working for a rival firm. This type of hiring practice would increase competition for salespeople and may impact the current commission structure or at least commission split arrangements. Anecdotal evidence suggests that this type of hiring practice does exist in the real estate industry.

Secondly, the results have implications for educational quality. Every hour of education costs the brokerage firm both the opportunity cost of the salesperson being absent from duty and the direct cost of the instruction if the firm covers some or all of these costs. If management is going to allocate time and/or funds to education, it is necessary for managers to ensure that the quality of education is as high as possible. High quality education may allow the agents to learn more in a shorter period of time, which could reduce both the explicit and implicit costs of education, ceteris paribus.

Additionally, managers may want to better understand D, the decay rate, in order to ensure that their salespeople have the required knowledge base. Perhaps, periodic tests designed for assessing retention may aid in identifying the magnitude of D. Moreover, changing market conditions and changing real estate law will affect D. Managers need to keep the salespeople informed and up-to-date on these changes in order for the salespeople to remain at K_L.

The real estate brokerage business is relying more heavily on technology than ever before. Virtually all firms use personal computers for numerous tasks and many are starting to do marketing and some sales via the Internet. As the use of technology grows, many salespeople will fall behind, unless they undertake additional education to keep their skills current. Firms in other industries have often incorporated devices, such as employee computer purchase plans, in order to encourage their employees to work with technology and remain current. Perhaps, more creative compensation/benefit plans need to be considered in real estate brokerage firms.

Finally, future research should empirically investigate the timing and quantity of education that real estate firms are requiring (or at least encouraging) their salespeople to take. The fact that firms like Century 21 provide their salespeople quick-start programs provides anecdotal support for the model used in this study. Quick start programs are designed to get the salesperson up to a certain knowledge level such that they can perform well. Future research should survey managers regarding their rationale for providing salespeople with the time and funds to undertake such programs and to determine what effects these programs have on firm profitability and value. Ultimately, future research should empirically investigate what types of educational arrangements are the most effective at enhancing firm value.

Appendix

State Educational Requirements

State	Pre-Licensing Hours	Continuing Education Hours
Alabama	45 w/in 2 years	12.5
Alaska	20	20.5
Arizona	90	24
Arkansas	60	6
California	45 + 90 w/in 18 months	45/4 years
Colorado	NA	24
Connecticut	30	12
Delaware	99	15
Florida	63 plus 45 prior to first renewal	14/2 years
Georgia	75	6
Hawaii	45 w/in past year	10/2 years
Idaho	90	12
Illinois	30	12
Indiana	54	16
Iowa	30	36/3 years
Kansas	30	30 new/12 thereafter
Kentucky	96	6
Louisiana	90	8
Maine	39 w/in 1 year	12
Maryland	No input	0
Massachusetts	24	12
Michigan	40	6
Minnesota	No input	no input
Mississippi	60 realtor or 90 college	8/ 2 years
Missouri	60	12/2 years
Montana	60	12
Nebraska	2, 30 hour courses	12/2 years
Nevada	90	30 1st then 15/2 years
New Hampshire	None	3
New Jersey	75	0
New Mexico	60	30
New York	45	22.5/2 years

State Educational Requirements (continued)

State	Pre-Licensing Hours	Continuing Education Hours
North Carolina	30 w/in 5 years	8
North Dakota	30	24/3 years
Ohio	120 w/in 10 years	30
Oklahoma	45 pre, 45 post	21
Oregon	90	30/2 years
Pennsylvania	60	14
Rhode Island	no input	no input
South Carolina	30 pre, 30 post	8/2 years
South Dakota	60	24/ 2 years
Tennessee	60	16
Texas	90 + 30 for 1st 3 years	15/2 years
Utah	90	12
Vermont	0	0
Virginia	60	8
Washington	60 w/in 5 years	30/2 years
West Virginia	90	7
Wisconsin	72	12
Wyoming	30	45

Source: NARELLO (1993–1997).

Endnotes

[1] See the Appendix for a summary of the state licensing requirements.

[2] For example, Coldwell Banker recently had to pay $700,000 to settle a claim for an alleged violation of RESPA. In particular, the salespersons were engaged in illegal kickback dealings with local bankers (*ABA Bank Compliance*, 1993). Education may help eliminate these costs, which adversely impact firm performance.

[3] This assumption is reasonable given the prior empirical evidence that links output to education as described earlier.

[4] If the salesperson did not receive additional training, he/she would not be able to produce real estate transactions as efficiently as required by firm value-maximization principles. Moreover, an inadequately trained salesperson may hinder the firm in other ways such as litigation fees.

[5] Note that many real estate salespersons pay some or all of their explicit education costs. However, even when this is true, firms assume the implicit opportunity costs of the salesperson's absence from work.

[6] Knowledge decay can come in the form of a salesperson simply forgetting information that he/she does not consistently use. Alternatively, effective knowledge decay occurs when new information enters the marketplace. While the salesperson has not forgotten any information, his/her knowledge base has decayed relative to its former state.

[7] This does not imply that ''extra'' education has other negative side-effects. In fact, having a very highly educated workforce may be beneficial to a client and/or the general population. However, the purpose here is to examine the profitability of the brokerage firm.

[8] Note that it may be possible for a manager to slow *D* by periodic salesperson assessment and/or interval training sessions.

[9] The optimality of a MRAP can be shown. For an example, refer to Kamien and Schwartz (1981).

[10] The formal model is an application of and closely follows the MRAP model developed in Kamien and Schwartz (1981).

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