

# Human behaviour – an underappreciated variable in real estate transaction analysis

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## **Abstract**

*Most valuation approaches examine the up and downturns of real estate prices mainly focusing on the variables of lot size, living space, dwelling age and furniture. These approaches disregard that the individual behaviour of private sellers and buyers is an important variable as well. As their decisions are often influenced by uncertainty due to poor market transparency, it can be assumed that these decisions are – to some extent - not congruent with rational behaviour. The empirical study (N=413) analyses the behaviour of brokers and sellers which offer their dwellings via the brokerage website ImmobilienScout24. They are surveyed firstly after listing the dwelling and secondly 5 months later. Results indicate that selling of residential properties are influenced by human behaviour.*

## **Keywords:**

behaviour, selling price, listing price, residential property , broker, expectations

## **1. Introduction**

Real estate analysis is reliant on the availability of data. In most cases data are limited to property characteristics, infrastructure or macroeconomic variables. The regression approach ascertains the price of each unique characteristic and is based on the axiom that selling prices could be described by the sum of property characteristics, infrastructure or macroeconomic variables. The human behaviour is not included in the majority of cases.

The Federal Statistical Office (Germany) published data about homeowners. Residential property is the lion's share in the balance of private households. To buy or to sell residential property is for most people the biggest single transaction in their lifetime. In consequence, private sellers or buyers have little experience with that situation. Therefore it could be assumed that the behaviour of sellers and buyers is influenced more by emotions than by knowledge or experience (PlanetHome 16.05.2012). The disregard of emotions, e.g. fears, hopes or expectations, in most real estate analysis leads to explanations in the tradition of the 'homo economicus'.

Black et al (2003) conclude that real estate research is intimately connected with finance. Related fields of research (e.g. architecture, planning law) are not included. Black et al (2003, p. 85) use the old

saying “If the only tool you have is a hammer, then every problem is a nail” for describing the current situation and prompt researchers to look beyond the boundaries of economic and finance sciences to explain the real estate market.

This study analyses the selling process of residential properties from private homeowners. The selling process is organized by real estate brokers or by homeowners (for sale by owner – FSBO). The participants of this study are randomly chosen from the largest brokerage website in Germany, ImmobilienScout24. In the first survey the prospective sellers are interviewed regarding their expectations, marketing activities, reason for sale and how they rate their personal knowledge of the real estate market after listing the properties. Four months later the participants are surveyed again whether they have been able to sell the property.

In section 2, the literature review provides some insights about methods and knowledge from other disciplines. The data and descriptive statistics are presented in section 3 and 4. The main empirical results are discussed in section 5. Section 6 ends up with the conclusion and provides an outlook.

## **2. Literature review**

In Germany almost half of residential properties are FSBO (Faller et al. 2006, p. 33). In other European countries broker services are more common, for example in Sweden almost 100% and in the Netherlands about 75-95% of residential properties are sold by brokers (Faller et al. 2006, p. 36). The behaviour of brokers and private sellers is still nebulous, although some empirical results indicate that the behaviour influences the outcome of negotiations.<sup>1</sup> The following literature review describes four different topics and highlights the impact of human behaviour.

### **Research field: Market knowledge and broker**

The lack of transparency and the heterogeneity of properties lead to several problems. It is difficult to estimate the market value of properties and to set an appropriate listing price because it is a complex process under uncertainty. Sellers have to compare their own property with other properties and must apply increases and reductions of prices for deviations. Today, this task is easier due to the sprouting of brokerage websites (Enderle 2009, p. 369). Various experiments show that the valuation of properties is influenced by the starting point (Tversky & Kahneman 1974, p. 1128), whereas property characteristics are often neglected (Shafir et al. 1997, pp. 347–348). Kiel & Zabel (1999, p. 264) indicate that homeowners overestimate the value by 5.1% and “ERRORS ARE NOT RELATED TO CHARACTERISTICS OF THE OWNERS (EXCEPT LENGTH OF TENURE), THE HOUSE OR THE NEIGHBORHOOD.” In contrast brokers should choose an appropriate listing price due to high market knowledge.

The principal agent theory addresses the question if brokers and sellers share the same goals. It is obvious that brokers want to maximize the commission and homeowners the selling price (Levitt & Syverson 2008). Bernheim & Meer (2010) analysed the small real estate market on the campus of the Stanford University and showed that brokers reduce the selling price. After an empirical result with students Vally et al. (1992, p. 233) added “IN CASES WHERE AN AGENT IS NEEDED TO MATCH BUYERS WITH SELLERS WHO WOULD OTHERWISE HAVE NO KNOWLEDGE OF ONE ANOTHER, OR WHERE THE AGENT ADDS VALUE TO THE NEGOTIATION THROUGH HIS OR HER SPECIALIZED KNOWLEDGE OF THE MARKET, THE LARGE PROPORTION OF SURPLUS RECEIVED BY THE AGENT MAY BE JUSTIFIED.” This explains the results from Bernheim & Meer (2010) because brokers could not add any significant knowledge. In contrast Bazerman et al. (1992, p. 62)

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<sup>1</sup> Definition in this study: 1) „Private seller“: homeowner who sell the property by himself; 2) „broker“: homeowner commissioned broker services to sell his property.

demonstrated with students that brokers slightly raise the mean selling price. Zumpano et al. (1996, p. 180) analysed buyer brokers and conclude that “THOSE WHO USE A BROKER DO NOT PAY MORE FOR THEIR HOME THAN THOSE WHO BUY A HOME DIRECTLY FROM THE OWNER. (...) IT SUGGESTS THAT REAL ESTATE AGENTS MAY BE EXTREMELY EFFECTIVE MARKET INTERMEDIARIES, REDUCING SEARCH TIME.” To sum up, brokers neither raise nor reduce the selling price but they speed up the selling process when specialized knowledge is needed.

#### **Research field: Marketing Activities**

Marketing activities from brokers are well known (Enderle 2009). They use brokerage websites, own websites, newspapers, promotional signs, multiple listing services (Hess & Mann 2009, p. 2) and send newsletters to their own customers. Brokerage websites are the most important marketing channels (95%). Own websites (70%) and promotional signs (70%) are also important whereas newspapers (49%) become increasingly irrelevant in Germany (Hess & Mann 2009). In contrast marketing activities from private sellers are still unknown.

The internet has changed marketing activities because traditional broker services (e.g. search) can be done by sellers and buyers themselves. It is easy for private sellers to use brokerage websites (Beck et al., p. 6) but the ease of use does not conceal the fact that marketing knowledge is still needed. Levitt & Syverson (2008, p. 606) reported that some words in the written description are related to higher (“granite”, “maple”, “gourmet”) or lower (“handyman special”, “foreclosure”) sale prices. Benefield et al. (2009) analysed the use of photographic depictions of the property and conclude that “THE USE OF PHOTOS SIGNIFICANTLY INCREASES PROPERTY PRICE”. The question if the quantity or quality of marketing activities influences the selling process is still unknown because quality is difficult to measure and information about quantity is hardly available.

#### **Research field: Reason for sale**

Almost all studies assume that buyers and sellers are homogenous but Glower et al. (1998, p. 736) conclude that sellers are “QUITE HETEROGENEOUS IN THEIR MOTIVATION TO SELL (...) [AND] SOME OF THE VARIATION IN TIME ON MARKET FOR RESIDENTIAL HOUSING IS SYSTEMATICALLY RELATED” to the reason for sale. This assumption is shared by Turnbull & Zahirovic-Herbert (2011), Peto (1997) or RICS (2009, p. 41). Further it could be assumed that buyers also show different motivations to buy. Information about the motivation to sell or buy is hardly available because every buyer or seller must be asked.

HARDING et al (2003, p. 186) conclude that the bargaining power of families is low when they want to sell their home during the summer vacation and the additional discount is up to 4.7 percentage points compared to other periods during the year. Likewise it can be assumed that other reasons for sale also influence the negotiation power from other groups of sellers. Negotiation power has great impact on the selling price especially in markets with high information asymmetries (Harding et al. 2003, p. 178) and could be analyzed by the game theory (Yavas 2007, Yavas 1992). In practice most studies include only variables like “HOUSEHOLD WEALTH, GENDER, AND OTHER DEMOGRAPHIC TRAITS” (Harding et al. 2003, p. 178), whereas the reason for sale, negotiation experience, risk aversion or time preferences are not taken into account because in-depth information is needed. So the “NEGOTIATION PROCESS ITSELF REMAINS POORLY UNDERSTOOD” (Black & Diaz 1996, p. 287) because “THE MATCHING GAME IN HOUSING MARKETS INVOLVES MORE THAN SIMPLY PAIRING A BUYER WITH A SELLER. THERE ALSO NEEDS TO BE A MATCH BETWEEN THE BUYER’S PREFERENCES AND THE CHARACTERISTICS OF THE SELLER’S PROPERTY” (Ford et al. 2005, S. 94). Further literature about reasons for sale is not known to the author. So prior to the survey five brokers are surveyed to get a feel for the seller’s most prevailing reasons to sell. The buyer’s motivation to buy could not be analyzed due to data law restrictions.

### **Research field: Gender, race and job-related experience**

Overall, literature about gender and real estate is limited (Kupke et al. 2011, p. 2). Harding et al. (2003, p. 185) analyzed buyers and sellers and conclude that women have “LESS BARGAINING POWER THAN MEN” which is consistent with other findings about the bargaining power of women. So women pay more or receive less money. In addition Ihlanfeldt & Martinez-Vazquez (1986) or Goodman & Ittner (1992) do not find any evidence that the seller’s gender influence the listing price discount. The buyer’s gender was not taken into account. This study faces the same problem as we do due to data law restrictions.

Further, race is also an important variable in real estate analysis. Ihlanfeldt & Mayock (2009, p. 136) highlight that race influence the selling price and “PRICE DISCRIMINATION RESULTS WHEN ONE RACIAL GROUP SEARCHES LESS FOR A HOME THAN THE OTHER RACIAL GROUP WITH WHOM IT IS TRADING. THIS SUGGESTS THAT SUBSIDIZING THE SEARCH OF THOSE GROUPS CURRENTLY DISCRIMINATED AGAINST WOULD SPEED UP DECLINES IN PRICE DISCRIMINATION.” These results indicate that race is a proxy for searching behaviour. Other literature about the influence of race on selling processes is not known to the author. Additionally, it must be mentioned that it is difficult to raise the question of nationality (legal bond between an individual and a state) or race (belonging to an ethnic group) in Germany. It is assumed that race is the appropriate variable because nationality is not visible and noticeable for other people.

It is assumed that job-related experience from brokers influence the transaction process. Job-related experience is related to the negotiation process between seller and buyer (Valley et al. 1992, p. 221). An experienced broker can influence both the seller (e.g. list price setting) and the buyer (e.g. acceptance of higher sale price). For that reason job-related experience leads to a higher likelihood for sale and a smaller listing price discount. Ford et al. (2005, p. 103) show that job-related experience influences the behaviour of brokers. However the influence on the selling price and the selling price discount is has not been analyzed yet. Sale experience could be measured by various indicators, e.g. amount of sold properties, frequency of sales or working experience (in years). For this study the working experience was chosen and raises the question how many years are needed to be an “experienced” broker. Ford et al. (2005) answer this question with 3 and 5 years of job-experience but other measures may also be used.

### **3. Data and methodology**

In Germany ImmobilienScout24 is the largest brokerage website (Sorensen 2009) and the website is rated highest for buying or selling residential properties by brokers (Hess & Mann 2009) and buyers (Fittkau & Maaß Consulting GmbH 2011). ImmobilienScout24 selected 1,724 properties randomly, 1,167 from brokers and 557 from private sellers for the purpose of this study. This ratio is representative for prospective sellers on ImmobilienScout24. The properties were listed between 1<sup>st</sup> and 8<sup>th</sup> November. Due to data law requirements every seller had to be called beforehand to receive the permission for sending an email survey, which took about one month during the course of this study.

The non-response shows differences between brokers and private sellers. About 5% from the broker’s listed properties do not exist and were for instance only offered to test the marketability of prospective developments. One quarter of private sellers (25.4%) could not be called because the property was enlisted during the survey. About 15-20% sellers rejected to be surveyed.

**First Survey (16<sup>th</sup> November to 16<sup>th</sup> December 2011)**

Brokers			Private sellers		
sample size survey 1	1,167	(100%)	sample size survey 1	557	(100%)
- Not interested	238	(20.4%)	- Not interested	90	(16.1%)
- Teaser / not existing	66	(5.4%)	- Listing offline	142	(25.4%)
- Others	42	(3.6%)	- Others	52	(9.3%)
email survey	821	(70.4%)	email survey	273	(49.0%)
response rate	39%		response rate	32%	
valid Responses	321	(27.8%)	valid Responses	88	(15.8%)

With their consent 298 participants were surveyed again after four months. The response rate in both groups was about 59%. 107 properties have been sold in that period and 67 properties are still unsold. All in all listing prices and selling prices are known for 97 properties because ten participants did not provide any information about the latter. The subsamples have 20 respectively 77 properties.

**Second Survey (18th - 27th April 2012)**

Brokers			Private sellers		
Participants survey 1	321	(100%)	Participants survey 1	88	(100%)
- no participation in second survey	79	(24.6%).	- no participation in second survey	25	(28.4%)
- wrong email address	5	(1.5%)	- wrong email address	2	(2.3%)
sample size survey 2	237	(73.8%)	sample size survey 2	61	(69.3%)
response rate	59%		response rate	59%	
valid responses	140	(43.6%)	valid responses	36	(40.9%)
Property sold	85		Property sold	22	

Multivariate analysis, especially for each subsample, is not possible with the given sample size. So univariate analyses are used to identify differences between both groups. Thus, results only indicate that a relationship could be assumed between some variables. Further research with more data is needed to test the derived propositions.

#### 4. Descriptive Statistics<sup>2</sup>

The sample is randomly selected from ImmobilienScout24. The mean property has a lot size of 758 sqm (Germany: average 830 sqm), a living space of 150 sqm (Germany: 142 sqm) and an average selling price of 240,500 Euro (Germany: 177,000 Euro). The data for sold properties in cities (lot size: 750 sqm; living space: 150 sqm; selling price: 248,000 Euro) fit the sample a little bit better (Bundesinstitut für Bau, Stadt-und Raumforschung 2011, p. 154). To sum up the sample overall shows similar property characteristics to the German average and is thus suitable for further analysis.

Property characteristics		All	Brokers	FSBO	Difference between the groups (t-test)
Mean "Living space"	sqm	150.5	148.7	158.2	1.60
Mean "Lot size"	sqm	758	760	752	0.12
Mean "year"		1967	1967	1967	0.07
Mean "balcony"	0 = no; 1 = yes	0.40	0.41	0.38	0.65
Mean "terrace"	0 = no; 1 = yes	0.83	0.82	0.86	1.07
Mean "garden"	0 = no; 1 = yes	0.96	0.96	0.95	0.03
Mean "garage / carport"	0 = no; 1 = yes	0.82	0.82	0.82	0.13
Mean "Property condition"	1 (very good) - 5 (very poor)	2.42	2.50	2.14	<b>3.23***</b>
Mean "Listing price"	Euro	255,453	251,244	266,232	0.86
(sample size: broker (n=77), private seller (n=20))					
Mean "selling price"	Euro	240,500	242,262	233,450	0.27
Mean "listing price discount "		5.9%	5.2%	8.7%	1.67

Property characteristics (balcony, terrace, garden and garage) show no differences between properties offered by brokers and private sellers. Private sellers report a better property condition (2.1) than brokers (2.5). This indicates that properties FSBO are predominantly in a (very) good condition – or the assessment of private sellers is biased by an overoptimistic view.

Private sellers on average are younger (48 years) than homeowners who commissioned broker services (56 years). Brokers and private sellers also show different expectations about the time-on-market before sale. But most brokers reported that a reliable prediction about the time-on-market is not possible. Thus, a high uncertainty is incorporated in this variable.

#### 5. Empirical results

The analysis is limited because only 97 participants took part in both surveys. The following chapter contains four research fields. Empirical results are presented for each research field which lead to propositions about selling processes in real estate markets.

##### Research field – Market knowledge and brokers

###### Research questions

Is the real estate market knowledge of brokers and private sellers different? Does the different knowledge influence the likelihood for sale and the selling price discount?

<sup>2</sup> The mean and the median are for almost all variables similar.

## Empirical results

Expectations (Mean)		All	Brokers	FSBO	
Knowledge of the real estate market	1 (very poor) - 7 (very good)	5.85	6.2	4.5	9.64***
Expected time-on-market	Month	4	3.6	5.1	3.60***
Demand for your property	1 (very low) - 7 (very high)	3.9	3.9	3.8	0.49

Brokers and private sellers estimate the same demand for their properties. But it seems that brokers could estimate relatively accurately the demand for single properties ( $p < 0.019$ ) whereas private sellers fail ( $p < 0.310$ ). The selling price discount increases when the estimated demand is low ( $p < 0.012$ ). Significant differences between both groups could not be observed.

Question: Estimate the demand for your property.		Sale		All	Difference
		No	Yes		
Private seller	low demand (1/2/3/4)	9	6	18	(p < 0.310)
	high demand (5/6/7)	6	12	18	
	all	15	21	36	
Broker	low demand (1/2/3/4)	33	35	68	(p < 0.019)
	high demand (5/6/7)	21	51	72	
	all	54	86	140	
All	low demand (1/2/3/4)	42	44	86	(p < 0.011)
	high demand (5/6/7)	27	63	90	
	all	69	107	176	

Brokers assess their knowledge of the local property market as good or very good ( $\bar{x}$  6.2). In contrast private sellers admit moderate real estate knowledge ( $\bar{x}$  4.5). A minority (8%) of private homeowners also commit that they have no knowledge of the local real estate market at all. That is a remarkable answer in view of the fact that they are dealing with the presumably largest asset of their wealth.

Self-assessed market knowledge is correlated (0.484;  $p < 0.001$ ) with the dummy BROKER. The dummy does not influence the likelihood of sale ( $p < 0.734$ ). In addition, the mean percentage selling price discount shows no significant difference ( $p < 0.055$ ) between brokers (- 5.2%) and private sellers (- 8.7%). This indicates that brokers could estimate the market value of properties better than private sellers. These findings are also congruent with the homeowner's insufficient real estate knowledge and an overoptimistic valuation of their own property (Goodman & Ittner 1992, Kiel & Zabel 1997).

Additionally, many brokers reported that they have been forced to set an excessively high listing price and some brokers even admit that the listing price is far too high and no sale will occur. Most brokers accept the suggested exorbitant listing price but make no efforts to sell this property at the beginning. If no buyer has shown any interest for several weeks, brokers convince owners more easily to lower the listing price.

<b>Reasons why no sale occurs so far (Mean)</b>					
	multiple answers	All	Brokers	FSBO	
short time-on-market	0 = no; 1 = yes	0.55	0.53	0.64	1.82
no demand	0 = no; 1 = yes	0.11	0.11	0.11	0.20
owner's price demand is to high	0 = no; 1 = yes	0.26	0.26	xx	
prospective buyers' small willingness to pay	0 = no; 1 = yes	0.22	xx	0.22	

The results shed a new light on the principal-agent-theory in real estate markets and the main question if brokers raise or reduce selling prices. Brokers neither raise nor reduce the selling price but the selling price discount is lower if brokers are involved. Also brokers do not reduce the surplus of sellers because buyers almost always have to pay the commission fee (about 3 to 7 percent of transaction prices) in Germany. To sum up sellers do not lose money but buyers have to pay more if brokers are involved. This explains why sellers can commission brokers in good conscience but buyers prefer to buy from private sellers. Additionally, it seems that brokers do not reduce the likelihood for sale.

#### Propositions

H1: Broker and private sellers have the same likelihood for sale although the self-assessed market knowledge differs.

H2: The selling price discount of private sellers is higher than the broker's one because homeowners have difficulties to estimate the market value.

H3: The selling price does not differ between private sellers and brokers.

#### **Research field – Marketing activities**

##### Research questions

Do broker and private sellers show a different marketing behaviour? Do the marketing activities influence the likelihood of sale?

##### Empirical results

Most brokers pursue a multi-channel sale approach. They offer the property on two or more brokerage websites (86%), on their own website (90%) and send mails to prospective buyers from the own customer database (83%). Newspapers are still used but they are not as important as in recent days (65%). Other channels are less used. These findings are similar to comparable research results. In contrast private sellers pursue a completely different sales approach. Only one third uses one more brokerage website and hardly anyone uses an own website (1%). Even newspapers are only used by one third. Private sellers often use relatives and friends as a sales channel (51%). These people could be prospective buyers but they are likely more the seller's 'ears and eyes'. They spread the word about the sale and find out who is looking for a property and hand this information to the private seller. Thus, relatives and friends are the counterpart to the broker's customer database.



<b>Marketing channels (Mean)</b>	multiple answers	<b>All</b>	<b>Brokers</b>	<b>FSBO</b>	
two or more brokerage websites	0 = no; 1 = yes	0.73	0.86	0.30	<b>10.62***</b>
own website	0 = no; 1 = yes	0.71	0.90	0.01	<b>44.26***</b>
Newspapers	0 = no; 1 = yes	0.58	0.65	0.34	<b>5.35***</b>
Banks	0 = no; 1 = yes	0.22	0.26	0.08	<b>4.70***</b>
broker / broker network	0 = no; 1 = yes	0.28	0.30	0.23	1.41
prospective buyers from the customer database	0 = no; 1 = yes	0.83	0.83	xx	
newsletter to all prospective buyers from the customer database	0 = no; 1 = yes	0.24	0.24	xx	
relatives / friends	0 = no; 1 = yes	0.51	xx	0.51	

In addition to the brokerage website ImmobilienScout24, brokers use on average 3.94 additional channels, whereas private sellers use only 1.47 channels ( $p < 0.001$ ). It seems that the amount of marketing channels does not influence the likelihood for sale for brokers ( $p < 0.137$ ) and private sellers ( $p < 0.344$ ). Some brokers commented that marketing intensity increases if the expected demand is low. This statement seems plausible but could not be testified. The results also indicate that the intensity of marketing activities does not influence the listing price discount ( $p < 0.601$ ).

Further, the type of marketing channel does not influence the likelihood for sale. Hess & Mann (2009, p. 3) surveyed 1,308 German brokers and concluded that brokerage websites are the most effective marketing channel. This statement could not be reviewed because brokers use a bundle of marketing channels and the participants have not been asked through which channel the sale took place.

To sum up brokers and private sellers show different sales approaches but marketing activities neither influence the likelihood for sale nor the listing price discount. In the course of the survey more than 1,500 listings were reviewed and large differences in quality (pictures, text) could be perceived. Thus, further research should focus on the quality of marketing activities.

#### Propositions

H1: The amount of marketing channels does neither influence the likelihood for sale nor the listing price discount.

H2: The type of marketing channel does neither influence the likelihood for sale nor the listing price discount.

H3: The quality of marketing does influence the likelihood for sale and the listing price discount.

#### **Research field – Reason for sale**

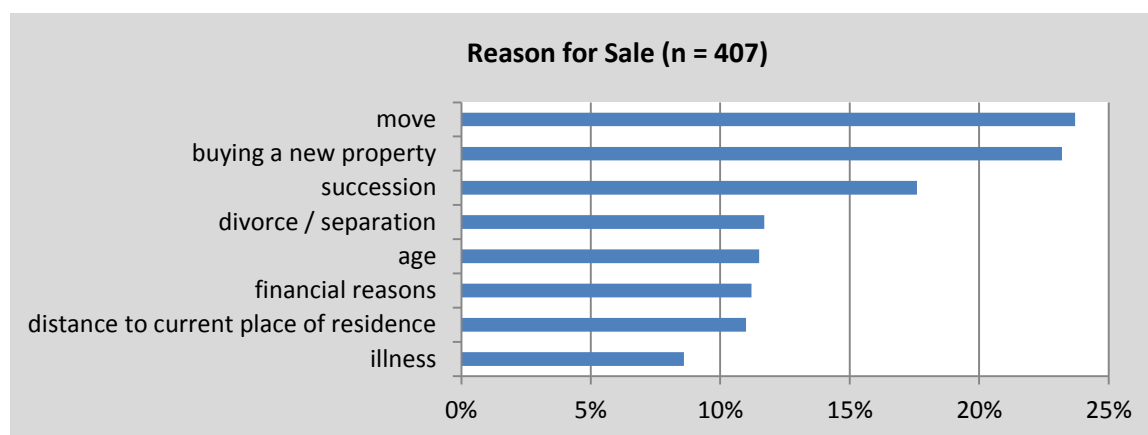
##### Research questions

Do brokers and private sellers have different reasons for sale? Do reasons for sale influence the likelihood for sale and the selling price discount?

Empirical results

Reason for sale (Mean)	multiple answers	All	Brokers	FSBO	
financial reasons	0 = no; 1 = yes	0.11	0.13	0.07	1.81
divorce / separation	0 = no; 1 = yes	0.12	0.12	0.13	0.17
move	0 = no; 1 = yes	0.23	0.22	0.25	0.51
illness	0 = no; 1 = yes	0.09	0.10	0.06	1.31
succession	0 = no; 1 = yes	0.18	0.17	0.23	1.13
buying of a new property	0 = no; 1 = yes	0.23	0.19	0.36	<b>3.00***</b>
interest in potential selling price	0 = no; 1 = yes	0.01	0.01	0.03	1.21
distance to current place of residence	0 = no; 1 = yes	0.11	0.12	0.09	0.76
age	0 = no; 1 = yes	0.11	0.12	0.10	0.65

The reasons for sale referred to by brokers and private sellers do not differ from each other, with exception of “Buying a new property”. But it is highly possibly that not every broker knows the owner’s plans for the future. The main reasons for selling a property are “Buying a new property” (23%), “Move” (23%) and “Succession” (18%). The reasons “Divorce / Separation”, “Financial reasons”, “Distance to current place of residence” and “Illness” are for about one out of ten the actual reason for sale. Only 1% are interested in the potential selling price hence nearly all properties are really for sale. It is obvious that some reasons put more pressure on owners to sell quickly. These results confirm the findings from Glower et al. (1998, p. 736) that sellers are “QUITE HETEROGENEOUS IN THEIR MOTIVATION TO SELL”. But the descriptive statistics indicate that the reason for sale does neither influence the likelihood for sale ( $p < 0.297$ ) nor the average listing price discount.



The results are contrary to the expectations that “HIGHLY MOTIVATED SELLERS SELL THEIR HOMES MORE QUICKLY” (Glower et al. 1998, p. 736). It was assumed that sellers who are forced to sell (e.g. financial reasons, divorced) have a higher likelihood for sale, but the empirical results do not confirm this expectation. Some participants added written answers and gave a plausible reason – they could not sell. These people had to achieve a very high price of sale due to financial constraints and there was almost no negotiation room left to lower the price. If they found no buyer at this price, a sale would not be possible. In some cases a foreclosure sale is the only solution in situations of that kind. It seems that sellers under pressure are tough negotiators. The data also indicate (but no significance) that the reason “move” leads to a higher likelihood for sale.

## Propositions

H1: The reason for sale does neither influence the likelihood for sale nor the listing price discount.

H2: Sellers under pressure (especially financial reasons) have a low likelihood for sale because the negotiation room is small.

H3: The reason “succession” and “age” will become more important in older societies, whereas the reasons “move” and “buying a property” are more important in younger societies.

## **Research field – Gender, race and job-related experience**

### Research questions

Does gender, race or sale experience influence the likelihood for sale or the selling price discount?

### Empirical results

<b>Personal characteristics</b>		<b>All</b>	<b>Brokers</b>	<b>FSBO</b>	
Experience of buying or selling a property before	0 = no; 1 = yes	0.91	1.00	0.56	<b>5.50***</b>
	0 = female; 1 =				
Sex	male	0.82	0.84	0.75	1.56
Age of homeowner	years	54.4	56.3	48.8	<b>5.41***</b>
Work experience broker	years	12.7	12.7	xx	
Age of broker	years	46.9	46.9	xx	

The results indicate that gender influences the likelihood for sale only if brokers are involved. Female sellers who commissioned broker services have a higher likelihood for sale than male sellers ( $p < 0.046$ ). In contrast gender does not influence the likelihood for sale by private sellers ( $p < 0.332$ ). It seems that gender does only influence the likelihood for sale in some circumstances. In addition, gender does not affect the selling price discount ( $p < 0.235$ ) and both genders have the same negotiation power. Unfortunately, as aforementioned the buyer’s gender is unknown because it would gain insight if different buyer seller constellations (male-male / female-male / female-female/ male-female) influence the listing price discount.

The question as to whether race influences the likelihood for sale or the selling price discount could not be answered because the pre-test showed that sellers do not fill out this question. So research is still required on this subject for the German real estate market.

The third topic raises the question if the broker’s sales experience influences the listing price discount. For this study the working experience (in years) was chosen as an indicator. Different years of experience (2 to 5 years) were tested and it seems that experience is positively correlated with the likelihood for sale (10%-significance). In addition, the listing price discount is not influenced by job-related experience. The results indicate that job-related experience slightly increases the likelihood for sale but does not influence the listing price discount.

## Propositions

H1: The seller’s gender does neither influence the likelihood for sale nor the listing price discount.

H2: The race does influence the likelihood for sale and the listing price discount. Majorities receive more (pay less) for the same property than minorities. In addition, some minorities perform better than other ones.

H3: The broker's sale experience does increase the likelihood for sale but does not influence the selling price discount.

## **6. Concluding remarks**

The empirical results indicate that the behaviour of brokers and homeowners differ and that these differences could influence the likelihood for sale and the listing price discount. This must be taken into account and thus human behaviour should be integrated in real estate analysis. This is a challenge because in-depth data are needed but data collection is time-consuming and expensive. However, the study showed that the effort is justified because new and important insights in selling processes are possible. For example, the axiom that homeowners show a rational behaviour must be doubted because it is hardly explainable that properties are sold by homeowners even if they do not have any perceived knowledge of the real estate market. Another example is the intensity of marketing activities. It seems that the intensity neither influences the likelihood for sale nor the listing price discount and the quality of marketing makes the difference. With this insight brokers and private sellers could optimize marketing activities (e.g. commission home staging services) – presumably not a new insight for brokers. But it is fraught with problems for real estate research because quality is hardly measurable and the variable “quantity” at a first glance seems as an appropriate substitute. To sum up, it is worth to include the human behaviour in real estate research even if more effort is needed. It may help to understand the real estate market and selling processes, even if human behaviour will continue to be unpredictable to some extent.

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