The Role of Online Ratings in the Agent Selection Process*

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Abstract

Conflicts of interests between principals and agents coupled with information inefficiencies inherent in the real estate industry create challenges in the agent selection process. Results from a survey study demonstrate that principals resort to traditional and electronic "Word-of-Mouth" (WOM / eWOM) strategies to overcome these informational inefficiencies to facilitate the agent selection process. WOM strategies used in the agent selection process are important because successful selection of a "good" agent reduces any subsequent contractual risk. However, reliance on WOM guidance, whether traditional or electronic, reinforces specific cognitive biases towards "salient" features in the subjective information that is shared. These features form the basis of a salient bias within principals towards the agent selection process.

Keywords: property agent review system, agent review scores, Word-of-Mouth (WOM), salience bias, online review

Subject: Behavioural research in property

Introduction

Property agents are an important part of the purchase, sale or rental process for any real estate brokerage transaction. With their superior market knowledge and insights into current trends, property agents are able to provide useful advice that help prospective clients make an informed decision. However, current market and regulatory practice do not require brokerages to maintain a performance record of past engagements for review by potential clients. Without a reference point for the ability of a property agent, the agent selection process for the client often becomes a subjective matter of personal referrals or chance.
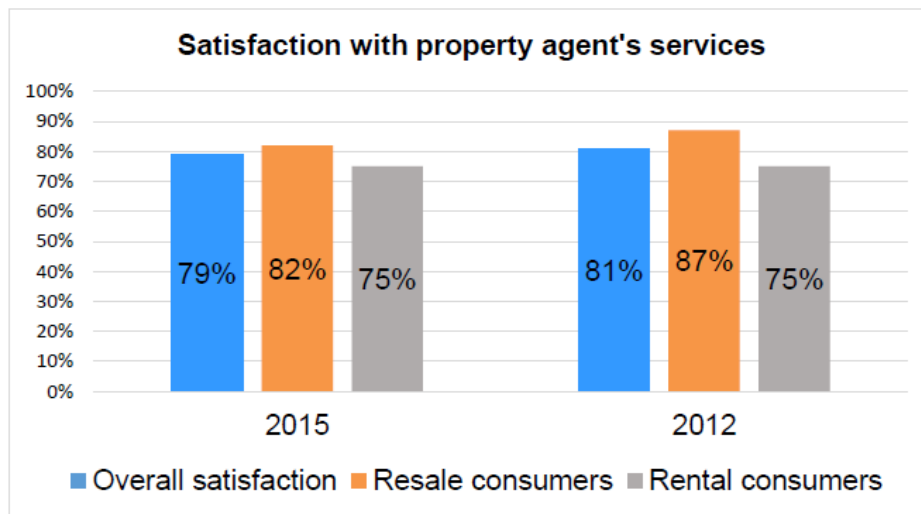
The presence of principal-agent conflicts has also received much attention in the literature. Prior studies have examined principal-agent conflicts inherent in real estate brokerage transactions from a variety of perspectives including agent effort, compensation, and dual agency (Anglin & Arnott, 1991; Arnold, 1992; Gardiner, Heisler, Kallberg, & Liu, 2007; Geltner, Kluger, & Miller, 1991; Hendel, Nevo, & Ortalo-Magne, 2009; Levitt & Syverson, 2008; Miceli, 1989; Munneke & Yavas, 2001; Rutherford, Springer, & Yavas, 2005; Waller, Brastow, & Johnson, 2010). Separately, scholars have also argued that asymmetric information may create an incentive for agents to misrepresent market information to the principal (Arnold, 1992), or that commission-based contracts do not allocate risk efficiently or provide appropriate incentives for agents (Anglin & Arnott, 1991).

In recognition of the need to improve industry standards among licensed agents, the Singapore government set up the Council for Estate Agencies (CEA), the industry's first incumbent regulator for real estate agencies in 2010.[1] However, despite multiple initiatives to raise professional standards among agents since its inception, results from its recent annual "Public Perception Survey" on the real estate agency industry in 2016 indicate a continued albeit gradual decline in overall consumer satisfaction with agent services (see Figure 1).[2]

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[1] The Council for Estate Agencies (CEA) was formed as a statutory board under the Ministry of National Development. Established under the Estate Agents Act, CEA is empowered to administer the regulatory framework aimed raising the professionalism of the real estate agency industry while protecting the interests of consumers.
[2] CEA conducted the Public Perception Survey over a four-month period from November 2015 to February 2016 where 2,113 consumers and potential consumers were interviewed.

Figure 1: Consumer satisfaction with service provided by property agents.

Specifically, 79 per cent of respondents indicated that they were satisfied with the services provided by their property agents compared to 81 per cent in 2012. This decrease can be attributed to the lower satisfaction levels resale consumers gave in 2015 (82 per cent) compared to 2012 (87 per cent).

Given the persistent downtrend in consumer satisfaction with property agents in general, it is no surprise that principals actively seek to reduce risk when entering a contractual agreement with an agent to execute a property transaction. Risks in the contractual state are further compounded by standardized commission structures that do not distinguish between agents with good or bad performance, thus allowing poorly performing agents to benefit from free rents.[3]

While much of the literature focuses on risks inherent within contractual principal-agent arrangements, little work has been done on how principals minimize risk in the agent selection process before contractual arrangements are formally entered into. This agent selection process is important because successful selection of a good agent reduces upfront any subsequent contractual risk.

However, the process of acquiring information to facilitate the agent selection process is far from trivial. This is because (i) principals do not typically actively trade in properties and thus have few industry resources on which they can tap for information; (ii) there is no regulatory requirement for information about past agent

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[3] Current market commission structures indicate that real estate agents are compensated one percent of the purchase price for their services on the successful completion of a property transaction. Regulatory requirements prohibit agents from dual representation of both buyer and seller in a bid to reduce conflicts of interest in relation to total compensation.

performance to be publicly shared or stored. As such, principals have limited information resources that can be leveraged to achieve optimal agent selection outcomes.

Consequently, when confronted with a lack of informational resources or suitable performance benchmarks for specific products or services, traditional (offline) word-of-mouth (WOM) has been shown to play a major role for customers' buying decisions (Richins & Root-Shaffer, 1987). This is particularly true for property transactions where one's immediate social network of friends and family members provide a convenient, and in some cases, preferred reference for the initial step of agent selection. The preference to rely on immediate social networks is logical since property transactions typically involve a great amount of capital, personal commitment and risk. In this sense, "trusted" members in one's social network are likely to offer guidance that is tailored to benefit and protect the principal's interests.

Despite good intentions from friends and family, however, there is little assurance that quality of guidance is superior since they are also susceptible to information constraints in relation to agent selection. The advent of the Internet has helped to bridge this gap by extending consumers' options for gathering unbiased product information from other consumers and also providing the opportunity for consumers to offer their own consumption-related advice by engaging in electronic word-of-mouth (eWOM).[4] In the context of Singapore's real estate industry, the reliance on eWOM has grown in recent years given the proliferation of property portals, discussion forums, commercial information providers and more recently, the start of Singapore's first property agent review portal by OrangeTee, a local property brokerage that provides direct inputs to the agent selection process.

However, the use of WOM guidance, whether traditional or electronic, reinforces specific cognitive biases towards "salient" features in the information that is shared. Salience bias can pose disruptive challenges to the agent selection process. Psychologists Taylor and Thompson (1982) suggest that "salience refers to the phenomenon that when one's attention is differentially directed to one portion on the environment rather than to others, the information contained in that portion will

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[4] Electronic word-of-mouth (eWOM) communication may take place on platforms such as web-based opinion platforms, social networks such as Facebook, discussion forums, commercial web sites such as Amazon and news groups.

receive disproportionate weighing in subsequent judgments."[5] In other words, the consumer's attention is drawn to the salient attributes, which are then over-weighted in his choice, thereby creating a bias in the decision making process (Bordalo, Gennaioli, & Shleifer, 2013).[6]

The propagation of such biases can further complicate the agent selection process if such biases do not consistently reflect the needs of the principal or the characteristics of "good" agents in general. Conversely, it is also unclear if the existence of such biases further reinforces differing professional standards among agents themselves. Regarding specific agent characteristics, salience bias in the agent selection process is further exacerbated by the considerable heterogeneity in the profiles of agents themselves, an outcome often attributed to the low entry barriers into the profession. For example, educational backgrounds of agents within the same agency often range from those with basic secondary education or equivalent, to postgraduate degree qualifications. Age profiles can be equally extreme, spanning from the early 20's to late 70's.

The purpose of this study is twofold. First, it seeks to substantiate whether eWOM has overtaken traditional WOM as a preferred source of guidance to overcome information inefficiencies in the agent selection process. Second, this study attempts to identify salient agent characteristics that form the basis of principal biases towards the agent selection process.

Literature Review

Word-of-Mouth (WOM) and electronic Word-of-Mouth (eWOM)

To reduce the risk of suboptimal outcomes, consumers frequently seek referrals in relation to a specific product or service before they make the decision. The relay of information though "word-of-mouth" (WOM) exchanges refers to the informal sharing of information between private parties in relation to the evaluation of goods and services. Sharing of views can be diverse and range from positive or

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[5] In the context of this study, the "environment" refers to the information found in WOM or eWOM content.

[6] For example, salience can induce consumers to focus on the relative advantage of goods having a high quality to price ratio, whether expressed in high quality (relative to price) or low prices (relative to quality). In this context, consumers who develop salience bias towards "bargains" display higher price sensitivity, meaning a steeper trade-off between quality and price, at low price levels.

negative evaluation for a product or services (Buttle, 1998) to expressing consumer enthusiasm or dismay (Fehr & Falk, 2002; Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004).

Separately, the motivation to share feedback, either through WOM or eWOM, is not necessarily linked to economic incentives. This is important so that the independence and integrity of such feedback is maintained. For example, individuals may be altruistically motivated to share with others their expertise gained through a positive or negative purchase decision by spreading positive or negative WOM (Fehr & Falk, 2002). Complementing this view, Hennig-Thurau et al. (2004) suggest that online reviews allow consumers to share their expertise or social status.

The reliance on third-party opinions is a common practice for principals engaging in a real estate transaction given the large capital outlay and personal risks assumed. In regard to agent selection, this has often been the traditional method by which parties solicit ad-hoc information about agent performance. This naïve sharing of information often takes place within the confines of social networks by leveraging personal relationships which are often limited in size.

Where traditional word of mouth is limited by the size of one's social network, electronic word of mouth (eWOM) in the form of online ratings or reviews by a large group of actual, potential or former customers made available via the internet help to provide useful guidance in the agent selection process.[7] The reliance on the reviews of others makes sense as ratings provide the consumer with the opportunity to infer the quality of a good or service, based on the experiences of other consumers (Hu, Liu, & Zhang, 2008). Consequently, ratings and reviews are important elements that act to reduce the uncertainty of the product selection process (Koehn, 2003).

Indeed, the relevance of eWOM in regards to agent performance has not gone unnoticed by market participants in Singapore's real estate industry. Local property brokerage OrangeTee set up the "Property Agents Bank", the first property agent review portal of its kind by a property agency in Singapore that allows customers to review and rate its property agents upon the completion of a successful property transaction (see Figure 2). The online agent rating platform enables

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[7] Comparatively, online marketplaces such as Amazon and eBay offer customers the chance to leave reviews about the products they purchase, which are made freely available to potential customers, the retailer, as well as competing merchants.

prospective customers to assess the agents' specialty areas, track record, and customer ratings before choosing their preferred agents.

Figure 2: OrangeTee's "Property Agents Bank" sample agent review

There is reason to believe that the advent of an online agent rating platform is likely to have an impact on the agent selection process. For example, consumer reviews and ratings have been shown to predict purchasing decisions (Y. Chen & Xie, 2008; Dellarocas, Zhang, & Awad, 2007; Floyd, Freling, Alhoqail, Cho, & Freling, 2014), to drive future consumer ratings (Moe & Trusov, 2011), and to have more influence than expert reviews on purchasing decisions (Y.-F. Chen, 2008; Senecal & Nantel, 2004). While the literature suggests that consumer ratings are likely to have a large impact on consumer decision making, details of the underlying cognitive processes that influence the agent selection process remains unexplored in the literature.

Salience bias, agent characteristics and the selection process

Cognitive processes such as "salience bias" are important to understanding the process of agent selection as it provides insight on what conceptual benchmarks are being used to assess a potential agent. While "salience" refers to how noticeable a feature or item is, "bias" refers to the way perception or attitudes are corresponding altered. Hence, "salience bias" refers to individual decision making based on the most obvious elements attributable to a specific situation. (Table 1 provides a brief survey of related literature.)

For example, in the context of a "bandwagon heuristic", information received by consumers about a product or service can influence their views and create a bias even if they have not consumed the product before. For online review sites, bandwagon

Table 1: Survey of related literature

Synopsis	Past Findings	Authors
Customer reviews provide important references (bias) for consumer decision making	Evaluation of a product is affected by bandwagon heuristic such as star ratings in the case of online review	Metzger, Flanagin, and Medders (2010); Fu and Sim (2011)
Consumer (salience) bias can lead to suboptimal decision making	Daily decision making is often affected by salience bias that leads to suboptimal decisions	Sénécal & Nantel (2004); Bordalo et al. (2012)
The degree of consumer bias is dependent on the level of direct interaction with the underlying topic being reviewed	Salience bias is more moderated if the individual participated in the activity before reading the review	Petty & Cacioppo (1979);
	Salience bias is heavily influenced by the visually salient cues such as star ratings	Borgida & Howard-Pitney (1983)
Feedback mechanisms are dominated by consumers with extreme experiences	Extremely dissatisfied or satisfied customers are more likely to initiate consumer review than consumers with moderate experiences	Anderson (1998)
Moderate reviews have limited impact on consumer bias	Moderate ratings are perceived to be less useful as compared to extreme review (i.e. one or five-star rating are perceived to be most useful)	Forman et al. (2008)
Positive reviews have a strong impact on consumer bias	High volume of positive consumer ratings supporting an unfamiliar product or service can overcome an individual's initial skepticism toward it.	Metzger, Flanagin, and Medders (2010)
	Consumers favored a higher rated book with more stars which indicates the effect of the bandwagon heuristic on consumer evaluations.	Chen (2008)
Negative reviews have a strong impact on consumer bias	Negative information is more salient than positive information	Mizerski (1982)
	Perceptual bias that a negative information brings about greater impact on impression and carries more weight	Rozin & Royzman (2001)
	People normally pay more attention to bad news such as criticism as compared to good news	Ito, Larsen, Smith, & Cacioppo (1998); Rozin & Royzman (2001)

heuristics can be triggered by the number of star ratings. Fu and Sim (2011) find that online videos with higher consumer ratings attract more potential viewers as compared to videos with lower ratings. Metzger, Flanagin, and Medders (2010) state

that high volume of positive consumer ratings supporting an unfamiliar product or service can overcome an individual's initial scepticism toward it. In other words, customer reviews in the form of ratings or reviews encourage the formation of biases that influence decision making (Bordalo et al., 2013). Complementing this line of reasoning, Senecal and Nantel (2004) show that the sale figures of a product increase due to the product review rating rather than the quality of the product. The extent to which salience bias affects an individual is also dependent on prior experience with the subject or activity in question (Petty & Cacioppo, 1979) as well the level of interaction with consumer reviews (Borgida & Howard-Pitney, 1983).

Extreme positive or negative ratings (one or five star) are also deemed more useful than moderate rating (3 stars). Anderson (1998) finds that extremely dissatisfied or satisfied customers are more likely to initiate consumer review than consumers with moderate experiences. The author suggests that this explains the prevalence of one- and five-star ratings as compared to three-star ratings (moderate experiences). In agreement with this view, Forman, Ghose, and Wiesenfeld (2008) report that customer reviews on Amazon with moderate ratings (3-star ratings) were perceived by consumers as less helpful than extreme reviews (one or five-star ratings) as it does not provide enough actionable insight regarding the quality of a product or service.

Lastly, the literature is less clear on whether positive or negative reviews have a larger impact on salience bias. Interestingly, Mizerski (1982) argues that negative information is likely to be more salient than positive information if consumers are in neutral position about the product. Specifically, in the presence of large number of positive reviews, consumers will seek out negative reviews for alternative views concerning the product or service. There is also evidence to suggest that consumers pay more attention to criticism as opposed to praise (Ito, Larsen, Smith, & Cacioppo, 1998; Rozin & Royzman, 2001).

Survey methodology and data

Survey methodology

A randomized nation-wide survey study was conducted to collect primary data through two main methods of data collection, namely online surveys and face-to-face interviews. To ensure that feedback was provided by individuals who were familiar with Singapore's local housing market practices, a condition of survey participation was that the participant must be either a Singaporean citizen or permanent resident with current residence in Singapore. Surveys comprised of questionnaires that employed Likert scales for respondents to input their level of agreement with a statement.[8]

Survey's method employed either online formats or face-to-face interviews. Online surveys were carried out to gather feedback from respondents who were not easily accessible due to mobility or scheduling constraints and were instrumental in extending the reach of the survey research to a wider and more diverse group of respondents.[9] Randomized face-to-face interviews were also conducted in major town centres in the North, South, East, West, and Central districts to ensure nationwide geographical coverage.

Participants

Emphasis was taken to ensure a higher participation rate from individuals in the 30 to 60 age brackets (approximately 80% of total sample). This is because individuals in these age groups are most likely to have pending, current or prior interactions with an agent due to reasons of family formation and/or higher working income. Participants in the 21 to 29 age group may have just completed their education or have just started their careers. Consequently, their independent interactions that require the services of a property agent are typically less.

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[8] Likert scales are applied in many areas of social science including psychology, sociology, political science and marketing to measuring attitudes, opinions and preferences.

[9] According to statistics from the "Annual Survey on Infocomm Usage in Households (2015)" published by the Infocomm Media Development Authority (IMDA), the proportion of Internet users in Singapore has increased from 69% in 2010 to 79% in 2015. The high internet penetration rate among the citizenry has facilitated access to a broad demographic of respondents, including access to senior citizens of which 75% of senior citizens in their 50's are considered to be users of the Internet.

Survey responses were also recruited from a wide cross section of the community with diverse education and income profiles which are broadly reflective of Singapore's current demographic diversity. This includes a large middle class (approximately 58% of respondents had annual incomes of between S$30,000 to $100,000) and a high penetration rate for education qualification (approximately 85.2% of respondents have attained a minimum secondary education level). A total of 2,857 unique survey responses were collected. Table 2 provides an overview of socio-demographic statistics for respondent profiles.

Table 2: Demographics of Survey Respondents (*N* = 2857)

	N	Percentage
Gender		
Male	1279	44.8%
Female	1578	55.2%
Age		
21-29	330	11.6%
30-39	572	20.0%
40-49	1000	35.0%
50-59	712	24.9%
60 or older	243	8.5%
Education		
N Level or below	220	7.7%
O Level	454	15.9%
A Level	165	5.8%
Diploma or Advanced Diploma	665	23.3%
Bachelor Degree	929	32.5%
Graduate Diploma	99	3.5%
Master Degree and Above	325	11.4%
Annual Income		
$30,000 and below	491	17.2%
$30,001 to $50,000	631	22.1%
$50,001to $80,000	540	18.9%
$80,001 to $100,000	298	10.4%
$100,001 to $120,000	181	6.3%
$120,001 to $150,000	127	4.4%
$150,001 and above	220	7.7%

Retired or Did Not Work	369	12.9%
Home Ownership		
Own	2268	79.4%
Rent	194	6.8%
Neither (staying with family)	395	13.8%
Residence Type		
HDB - 3-rooms and below	310	10.9%
HDB - 4-rooms	803	28.1%
HDB - 5-rooms	631	22.1%
HDB - Executive Apartment/Mansionette	229	8.0%
HDB - Executive Condominium	86	3.0%
Private Condominium/Apartment	534	18.7%
Private Landed	264	9.2%

Home ownership characteristics

Survey data collected also reflects the broad characteristics of Singapore's housing market where approximately 82% of the housing stock is made up of public housing that is regulated by the Housing Development Board (HDB)[10]. Similarly, 72.1% of survey participants interviewed live in public housing flats. Participants living in private non-landed and landed properties conversely account for 27.9% of the total sample. Home ownership among respondents was high at 79.4% of the total sample.

Consistent with local cultural preferences towards home ownership, respondents who rented their place of residence made up only 6.8% of the sample, or 194 individuals. In contrast, 13.8% of respondents are noted to be staying with family and are likely to be from the 20- 29 age groups of young working adults who have yet to form a family nucleus or seniors in the 60 or older age group who are living together with family members under assisted care arrangements.

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[10] The Housing & Development Board (HDB) is the statutory board of the Ministry of National Development responsible for public housing in Singapore that is also known as "HDB flats". While HDB flats were built with the intent of providing affordable housing for the masses, Singapore's affluence and growing household wealth have resulted in a greater variety of flat types and layouts which cater to various housing budgets.

Discussion

Word-of-Mouth preferences

Participants were asked to indicate the relative importance of different sources of information guidance (Table 3), with '1' being the least favourable, '3' as being indifferent and '5' being the most favourable. Consistent with research findings by Richins and Root-Shaffer (1987) that traditional word-of-mouth (WOM) play a major role for customers' buying decisions, survey data indicate that guidance about property transactions from family or friends are viewed most favourably and have the highest mean score of 4.281 with the lowest standard deviation of 1.02. The low standard deviation suggests that this view is shared consistently in the cross-section of the demographic, regardless of demographic segment. Interestingly, word-of-mouth exchanges via the internet (eWOM) likewise receive a positive albeit marginally favourable view. In contrast, references from bankers (mean of 2.836) or marketing collateral (mean of 2.774) are considered unfavourably on average.

Table 3: Relative importance of information sources for whole sample

Source	N	Minimum	Maximum	Mean	Standard deviation
Family or friend recommendations (WOM)	2857	1	5	4.281	1.020
Internet (eWOM)	2857	1	5	3.398	1.293
Banker recommendation	2857	1	5	2.836	1.434
Marketing collateral	2857	1	5	2.774	1.248

The general validation that exchanges by WOM are preferred over eWOM when seeking guidance for property transactions suggest that principals still do suffer from informational inefficiencies that are not easily addressed through more accessible information channels available through the Internet. The literature provides a plausible explanation for this observation. For example, Larson and Denton (2014) suggest that suspicion regarding dishonest electronic word-of-mouth is a growing concern for consumers online. When a consumer receives information through an online review (eWOM) posted by a stranger, they must draw conclusions about the integrity of that review and whether it is trustworthy. As individuals become more apprehensive about increased threats surrounding the act of online purchases

(Jiang, Jones, & Javie, 2008), the issue of trust on the internet can potentially overwhelm its viability as a platform for information exchange.[11] In the same vein, consumers may experience great apprehension and insecurity without the assurance of face-to-face (or even voice-to-voice) interactions (Yoon, Choi, & Sohn, 2008). These explanations offer potential insight as why WOM may be considered marginally more favourable than eWOM.

To better understand this issue, the importance of WOM preferences in relation to sub-groups of participants sorted by age groups and gender is also examined. Table 4 reports the percentage of responses within a subgroup that indicate positively on the Likert scale that a source is favourable ('4' or higher).

Table 4: Relative importance of information sources by age and gender

Source	21-29	30-39	40-49	51-59	Above 60	Male	Female
Family or friend recommendations (WOM)	88.2	89.5	88.7	88.9	89.7	89.1	88.8
Internet (eWOM)	70.9	66.8	58.5	58.6	46.9	59.9	61.2
Banker recommendation	43.3	36.9	39.6	42.6	33.3	41.4	38.3
Marketing collateral	24.5	25.3	32.2	34.9	34.6	28.3	32.9

In agreement with earlier results from Table 3, more than 88% of participants in all age groups, regardless of gender, agree that WOM are preferred sources of inputs for the agent selection process. The strong preference for traditional WOM sources is consistent the highest across all four information sources. The separation of participants into age groups reveal an interesting revelation. Participants in the youngest age group of 21 to 29 exhibit the strongest preference for eWOM exchanges, 50% more than participants in the senior age group of above 60 years of age (46.9%). This comes as no surprise as younger millennials are well known to be more adept at using the Internet as part of their daily lives.[12] Similar to results in Table 3, information sources such as banker recommendations and marketing collateral receive the lowest approvals from participants, across all age groups, regardless of gender.

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[11] Within online consumer review forums there is no definitive, absolute evidence that a product review has or has not been falsified.

[12] Millennials, at the time of this article's writing, are currently aged 20-35, or born between 1980 and the end of 1994. Some more generous definitions taking in those born up to 2000. Millennials are also called "Generation Y", because they follow on from Generation X (born 1965-1979).

This observation leads to separate issues of why do millennials manage information exchanges over the internet better, and if so, will traditional WOM continue to dominate over eWOM in the foreseeable future? Research by Larson and Denton (2014) suggest that the power of community policing and censoring on eWOM platforms in filtering out good agents from bad agents will continue to drive the trend towards greater adoption of online reviews and ratings as information sources. This view is likewise supported by Dellarocas (2003) who suggest that the "social policing and censoring" feedback channel via eWOM platform help to build greater trust in e-marketplaces, and have been described as viable credibility mechanisms for "fostering cooperation among strangers".[13]

Agent characteristics as selection inputs

Table 5: Desirable agent characteristics of as selection inputs

Agent characteristics	N	Minimum	Maximum	Mean	Standard deviation
Total number of customer compliments	2857	1	5	4.137	0.817
Total number of repeat customers	2857	1	5	3.982	0.853
Years of experience as a property agent	2857	1	5	3.901	0.879
Number of property deals completed	2857	1	5	3.850	0.894
Average customer review score	2857	1	5	3.823	0.802
Number of property deals completed in the last 2 years	2857	1	5	3.734	0.912
Corporate awards received	2857	1	5	3.635	0.942
Total annual commission received	2857	1	5	3.306	0.953
Largest size (dollar value) of property deal completed	2857	1	5	3.094	0.996

Survey participants were asked to indicate the types of agent characteristics that were important when selecting an agent. Table 5 lists the results in descending order according to the categorical average. Consistent with the idea that consumers rely on the actions of others to make credibility assessments (Metzger et al., 2010), the total number of customer compliments (mean of 4.137) and the total number of repeat customers (mean of 3.982) were rated overall as the two most important

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[13] For example, in the context of eWOM on online marketplaces, Amazon.com allows consumers to publicly rate and review products so that others may benefit from this information.

criteria for agent selection. Industry experience as indicated by the total number of years of experience as a property agent or the number of property deals completed were also ranked highly.

Other characteristics such as the total number of years of experience as a property agent (mean of 3.901), number of property deals completed (mean of 3.850) and average customer review score (mean of 3.823) also received general approval. In contrast, agent characteristics linked to economic performance such as total annual commission earned (mean of 3.306) or the largest dollar value of property transaction completed (mean of 3.094) receive indifferent responses from participants.

Review scores as compensation inputs

Respondents asked to provide feedback as to how reviews scores would impact their own decision criteria on negotiating a commission rate. This question is interesting as there are no regulatory guidelines on commission rates for agents. Current industry practice suggests a price discovery process driven by negotiation between an agent and the client.

Table 6: Review scores as compensation inputs

Questions	N	Minimum	Maximum	Mean	Standard deviation
Property agents who have high review scores should be paid more commission	2857	1.00	5.00	2.586	0.0181
Property agents who achieve better transaction price than expected for their client should receive more commission than the industry average	2857	1.00	5.00	3.075	0.0188
All property agents, regardless of the customer review score, should be paid the same amount of commission	2857	1.00	5.00	3.465	0.977

Table 6 tabulates the results, with most respondents on average reporting that property agents on average, regardless of the property agent review score, should be paid the same amount of commission. Contrary to the view that higher performance might warrant higher compensation, respondents indicated that even

agents who are able to achieve better transaction prices for their clients should not be compensated for outperformance.

However, there is reason to believe that there are potentially variations in the attitudes towards agent compensation among respondents of different income brackets due to their more (or less) access to information and resources. For example, Huang et al. (2004) suggest that respondents in the lower income bracket are more willing to seek advice for their property transaction due to greater perceived disadvantages suffered due to asymmetric information. This is because consumers in the lower income bracket tend to have less resources and skills to obtain and analyse information required as inputs towards completing a property transaction.

Table 7: Review scores as compensation inputs (sorted by income range)

	$30,000 and below	$30,001 to $50,000	$50,001 to $80,000	$80,001 to $120,000	$120,001 and above	Retired or unemployed
Property agents who have high review scores should be paid more commission	23.2%	18.5%	16.9%	19.8%	18.7%	19.2%
Property agents who achieve better transaction price than expected for their client should receive more commission than the industry average	40.1%	41.7%	40.4%	39.5%	49.3%	43.1%
All property agents, regardless of the customer review score, should be paid the same amount of commission	55.8%	58.8%	59.4%	57.8%	55.6%	56.1%

Table 7 examines the percentage of respondents within an income bracket who agree with the survey statement (i.e. Liker score greater than 3). For example, only 23.2 percent of respondents in the income bracket of $30,000 and below indicated that agents who had higher review scores should receive higher compensation. This observation remains consistent across all income brackets. Furthermore, there is no indication that even agents who achieve better transaction results for their clients should receive higher compensation.

Exploratory Factor Loading Analysis

Exploratory factor loading analysis expresses the relationship of descriptive variables by establishing factor loadings from -1 to 1. The closer the loading of a variable to -1 or 1, the more the factor affects the variable. On the other hand, the closer a factor loading is to zero, the weaker an effect that factor has on the variable. The identification of these variables is based on salient themes identified in the survey data include "skills and knowledge", "customer service", "cost of service" and "years of experience". Table 6 reports standardised factor loadings and reliability estimates extracted.

Table 8: Factor loadings and reliability estimates for factors in agent selection

Cronbach's Alpha (α)	Variable	*Property agents with high review scores…*	Standardized factor loadings	
			Factor 1	Factor 2
0.629	Skill and Knowledge	… are able to market and sell properties more effectively.	0.77	0.08
0.629		… are more knowledgeable and can provide better advice.	0.74	0.123
0.627		… are able to achieve better transaction prices	0.704	0.143
0.636	Customer service	… are more ethical and honest.	0.642	0.149
0.663		… from existing or past customers provide better service.	0.544	-0.101
0.652		… have more repeat customers due to better service.	0.539	0.125
0.649	Cost of service	… should be paid more commission than agents with lower review scores.	0.349	0.166
0.692		… should not be chosen over an agent willing to accept less commission.	-0.086	0.246
0.649	Years of experience	… have more years of experience.	0.17	0.82
0.656		... are older in age.	0.066	0.837

All factor loadings are significant at $p<0.001$

Table 8 represents agent characteristics grouped as descriptive variables that are most likely to be salient in information exchanges, and by association, also most

likely to create a bias in principals in the agent selection process. Component 1 analysis indicate that "skill and knowledge" attributes (highest factor loading of 0.77) relate well to optimal property transaction outcomes. Separately, component 2 analysis identify "years of experience" as another important factor related to optimal property transaction outcomes.

Factor 1 analysis suggests that the identification of "skills and knowledge" as being a key attribute that consumers seek in agent reviews. This is logical as it reflects market recognition that property transactions require a great amount of specific expertise and market knowledge to achieve successful outcomes. These include marketing properties more effectively and achieving a higher transacted pricing for the principal.

The identification of 'years of experience" as being related to optimal outcomes is similarly reasonable as market participants with longer exposure to property market cycles are likely better informed and well positioned to identify opportunities and risks to the benefit of the principal.

Factor 2 analysis suggests that 'years of experience" is another key attribute that attracts consumers when examining past reviews. This variable correlates well with the Factor 1 analysis since agents with more years of experience are also likely to have greater amount of market knowledge and skills due to longer exposure to property market cycles.

Conclusion

This study preliminarily examines the role of online ratings in the agent selection process. Direct marketing methods used in industry are perceived by consumers as less credible than traditional or electronic Word-of-Mouth reviews (WOM/eWOM). The advent of online review sites to aid the agent selection process is particularly useful for consumers seeking to minimize risk in the agent selection process before contractual arrangements are formally entered into. This agent selection process is important because successful selection of a good agent reduces upfront any subsequent contractual risk. Results from this study suggest that consumers do use online review scores to aid in the selection of real estate agents who may help them overcome informational disadvantages that may limit their ability

to optimize transaction outcomes. In this perspective, an explorative factor loading analysis suggests that reviews that demonstrate a property agent to have higher levels of skills and knowledge are more likely to be received favourably. This finding is further supported by factor loading analysis that indicate agents who have been in the industry are also more likely to have their online reviews receive greater attention. Another important finding is that better reviews do not necessarily translate towards a positive impact on agent compensation. On the contrary, the evidence suggests that respondents expect all agents to receive compensation based on similar commission structures. Rather, the advantage comes from being given a stronger preference in the agent selection process.

While the large sample size of this survey study produced interesting insights into the role of online ratings in the agent selection process, more work can be done in developing a deeper understanding in the role of ratings. For example, ratings should take into account the time period in which it was recorded, with ratings that were achieved recently awarded a greater weight than ratings received from a longer time ago. This is important as agent performance is expectedly time varying, and rating that account an accretive effect are more likely to provide greater objectivity than an accumulative record of past customer reviews that are not time sensitive.

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Appendix A: Survey

Property agents provide useful advice to help their clients make an informed decision in the purchase, sale or rental process of any real estate transaction. Selecting the appropriate property agent can be an arduous task due to the lack of consumer reviews available for comparison. Many services and products (e.g. Yelp and Amazon.com) have past customer reviews to provide guidance, with a high review score being more favourable than a low review score. This survey investigates how a property agent review system may influence a client's choice of agent selection. All personal information gathered in this survey is conducted in compliance with the Personal Data Protection Act (PDPA) for research purposes.

Section A

1. A property agent review system that has review scores from existing or past customers is useful for the selection of a property agent. Do you agree?

(1) Strongly Disagree	(2) Disagree	(3) Neither Agree nor Disagree	(4) Agree	(5) Strongly Agree
◯	◯	◯	◯	◯

2. A property agent that is personally referred to you by a friend or family member is better choice than a property agent with a high review score. Do you agree?

(1) Strongly Disagree	(2) Disagree	(3) Neither Agree nor Disagree	(4) Agree	(5) Strongly Agree
◯	◯	◯	◯	◯

3. Which source of information do you find most helpful when choosing a real estate agent?

o Association or club recommendation
o Family or friend recommendation
o Internet
o Banker recommendation
o Open houses or through viewing that you organised
o Real estate advertisements
o Social networking websites
o Poster signs

4. On a scale of 1 (very unimportant) to 5 (very important) please pick the score for each of the following qualities for the purpose of selecting a real estate agent:

o Average customer review score
o Total number of repeat customers
o Total number of customer compliments lodged against the property agent
o Total commission expected for representation
o Total annual commission received (i.e. top performer in the brokerage in terms of total sales)
o Total number of awards received for customer service (based on customer review score)
o Total number of property deals completed in the last 2 years
o Total number of property deals completed in the property type of my interest (e.g. HDB flats/ condo/ landed property etc.)
o Largest size (dollar value) of property deal conducted
o Years of experience as a property agent

Section B

5. Property agents who have high review scores are more knowledgeable and can provide better advice about the real estate market than agents with lower review scores. Do you agree?

(1) Strongly Disagree	(2) Disagree	(3) Neither Agree nor Disagree	(4) Agree	(5) Strongly Agree
○	○	○	○	○

6. Property agents who have high review scores are able to market and sell properties more effectively (shorter time on market) than agents with lower review scores. Do you agree?

(1) Strongly Disagree	(2) Disagree	(3) Neither Agree nor Disagree	(4) Agree	(5) Strongly Agree
○	○	○	○	○

7. Property agents who have high review scores are able to achieve better transaction prices (in the client's favour) than agents with lower review scores. Do you agree?

(1) Strongly Disagree	(2) Disagree	(3) Neither Agree nor Disagree	(4) Agree	(5) Strongly Agree
○	○	○	○	○

8. Property agents who have high review scores are more ethical and honest (i.e. work towards the client's best interest) than agents with lower review scores. Do you agree?

(1) Strongly Disagree	(2) Disagree	(3) Neither Agree nor Disagree	(4) Agree	(5) Strongly Agree
◯	◯	◯	◯	◯

9. Property agents who have high review scores have more repeat customers than agents with lower review scores. Do you agree?

(1) Strongly Disagree	(2) Disagree	(3) Neither Agree nor Disagree	(4) Agree	(5) Strongly Agree
◯	◯	◯	◯	◯

10. Property agents who have high review scores are generally older in age than agents with lower review scores. Do you agree?

(1) Strongly Disagree	(2) Disagree	(3) Neither Agree nor Disagree	(4) Agree	(5) Strongly Agree
◯	◯	◯	◯	◯

11. Property agents who have high review scores generally have more years of experience in the real estate industry than agents with lower review scores. Do you agree?

(1) Strongly Disagree	(2) Disagree	(3) Neither Agree nor Disagree	(4) Agree	(5) Strongly Agree
◯	◯	◯	◯	◯

Section C

12. Property agents who have high review scores should be paid more commission than agents with lower review scores. Do you agree?

(1) Strongly Disagree	(2) Disagree	(3) Neither Agree nor Disagree	(4) Agree	(5) Strongly Agree
○	○	○	○	○

13. Property agents who have low review scores but charge lower commission should be allowed to represent you. Do you agree?

(1) Strongly Disagree	(2) Disagree	(3) Neither Agree nor Disagree	(4) Agree	(5) Strongly Agree
○	○	○	○	○

14. All property agents, regardless of the customer review score, should be paid the same amount of commission. Do you agree?

(1) Strongly Disagree	(2) Disagree	(3) Neither Agree nor Disagree	(4) Agree	(5) Strongly Agree
○	○	○	○	○

15. Property agents who achieve a higher transaction price than expected for their client should receive more commission than the industry average. Do you agree?

(1) Strongly Disagree	(2) Disagree	(3) Neither Agree nor Disagree	(4) Agree	(5) Strongly Agree
○	○	○	○	○

Section D

16. Please select your gender:

o Male
o Female

17. Please select your age group:

o 21 to 29 years old
o 30 to 39 years old
o 40 to 49 years old
o 51 to 59 years old
o Above 60 years old

18. Please select the highest level of education completed:

o N Level or Below
o O Level
o A Level
o Diploma or Advanced Diploma
o Bachelor Degree
o Master Degree and above

19. Please select your marital status:

o Single
o Married
o Divorced
o Widowed
o In a relationship
o Single

20. What is your race?

o Chinese
o Malay
o Indian
o Eurasian
o Others

21. Please select the income bracket that you belong to (annual basis):

o $30,000 and below
o $30,001 to $50,000
o $50,001 to $80,000
o $80,001 to $100,000
o $100,001 to $120,000
o $120,001 to $150,000
o $150,001 and above
o Not applicable

22. Please state your current residential property ownership status:

o Own
o Rent

o Neither (staying with family)

Consent Form

- In compliance with the PDPA, the student seeks your consent in the collection and the use of personal data (i.e. Name, NRIC and contact number) for the purpose of the research.
- Personal data from the survey will not be used for any other purposes other than for academic research.

Name   _____

NRIC/ FIN   _____

Email   _____

Contact Number   _____

Date   _____

Signature   _____