More promotion-focused, more happy? Regulatory focus, postpurchase evaluations and regret in the real estate market

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Abstract

This research examines how regulatory focus, in terms of promotion-prevention discrepancy (promotion level minus prevention level), influences homebuyers' post-purchase evaluations and experiences. Field study data is collected by questionnaire and structural equation modelling (SEM) is used for data analysis. In China's urban real estate market, when the level of promotion focus exceeds that of prevention focus, homebuyers have better evaluation of their acquisition, less regret and higher satisfaction. Besides product and service attributes, a house's investment performance and financial burden are important in shaping purchasers' regret and satisfaction. The findings also show that some individual and purchase traits influence post-purchase evaluations and experiences.

Keywords
Housing, post-purchase evaluation, regret, regulatory focus, satisfaction

Introduction

Let us consider two friends, Paul and George. They are both searching for a house in the market. Paul has a wife and a 6-yearold daughter, while George lives with his wife and has no children. Paul is concerned with safety and responsibility, and is highly sensitive to unfavourable results associated with home purchase. For instance, flaws in

acquisition and construction safety, losses resulting from property price decreases, etc. Meanwhile, George is concerned with advancement and accomplishment, and seeks a pleasant home for better enjoyment of life, access to recreation facilities and more wonderful views. Assume that Paul and George eventually buy similar houses, though with different intentions (e.g. safety versus advancement) and concerns (e.g. flaws versus merits). Will Paul's experiences be different from those of George?

The story above is the motivation for this research. It relates to regulatory focus and regret in home buying. The regulatory focus theory proposes two distinct motivational orientations: promotion focus and prevention focus (Higgins, 1997). When pursuing goals or making decisions, a promotion-focused individual, such as George, is concerned with hopes, aspirations and accomplishments, with the presence or absence of positive outcomes; whereas a prevention-focused individual, such as Paul, is concerned with responsibilities, obligations and security, with the presence or absence of negative outcomes.

To consumers in the property market, such as Paul and George, home buying involves difficult and largely irreversible decision-making, and has very long-lasting and important consequences. It often associates with the feeling of regret (e.g. Bell, 1982; Schwartz, 2004), which has been demonstrated to greatly influence post-home purchase satisfaction (Chen et al., 2011). Characterised as a counterfactual emotion (Kahneman and Miller, 1986), regret is a negative, cognitively based emotion that humans experience when realising or imagining that their present situation could have been better, had they decided differently (Zeelenberg, 1999). Because regret has a profound impact on human behaviours, it attracts a great deal of interest among researchers in different disciplines, including marketing and consumer behaviours. Customer regret not only greatly affects (dis)satisfaction (Inman et al., 1997; Taylor, 1997; Tsiros and Mittal, 2000), but also reduces repurchase intentions (e.g. Tsiros and Mittal, 2000), and raises intentions of complaint via satisfaction (Chen et al., 2008; Tsiros and Mittal, 2000).

Previous studies on housing satisfaction have largely overlooked the effects of personality traits. Research has indicated that regulatory focus is closely associated with customer satisfaction (e.g. Trudel et al., 2012) and regret (e.g. Pham and Higgins, 2005). However, the difference in the extent of regret amongst promotion-oriented and prevention oriented people remains unknown, and the relationship between homebuyer's regulatory focus and satisfaction needs to be examined. Back to the aforementioned scenario, would it be George or Paul who suffers less dissatisfaction and regret?

This study attempts to resolve these myths, and explore the relationship between homebuyers' regulatory focuses and their post-purchase experiences, and how the former influence the latter if such a relationship exists. In this research, housing satisfaction is discussed not only from a user's perspective, akin to most previous studies, but also from a buyer's perspective. As a personality trait, would regulatory orientation affect one's post-home purchase evaluation? And what housing attributes should be taken into consideration to capture a homebuyer's evaluation of acquisition associated with regulatory focus, regret and satisfaction? Moreover, people may pursue both

promotion and prevention goals simultaneously in a housing decision. How to represent and analyse the regulatory focus effect on these homebuyers? This paper aims to answer these questions.

Literature review Regulatory focus theory

According to Higgins' (1997) regulatory theory, there are two different self-regulatory systems involved in decision-making: prevention-focused people are concerned with safety, responsibilities and obligations. They are sensitive to the presence and absence of negative outcomes, and concentrate mainly on avoiding pain. By contrast, promotion-focused people are concerned with growth, accomplishment and aspirations. They are sensitive to the presence and absence of positive outcomes, and concentrate mainly on approaching pleasure. Higgins (2000) further proposes the notion of regulatory fit. People experience fit when their strategies in pursuing goals sustain their regulatory focus. Such fit also occurs when the outcomes are leveraged to which people with distinct regulatory goals are sensitive (e.g. positive outcomes to promotionfocused people versus negative outcomes to prevention-focused people).

Regulatory focus has usually been treated as a one-dimensional categorical variable in many previous studies, which often involve comparatively minor decision tasks such as buying a book (e.g. Idson et al., 2004). However, prevention and promotion focuses are conceptually (cf. Higgins, 1997) orthogonal. Cunningham et al. (2005) find a positive correlation between them ($r = 0.21$), indicating that they are not simply reciprocals of each other.

Hence, it might be not always realistic to categorise people into solely promotionoriented or prevention-oriented persons, especially when major decisions are to be made. To include all kinds of regulatory orientations and to simplify the study, we propose a new variable named 'promotionprevention discrepancy' (promotion level minus prevention level) to represent an individual's self-regulatory orientation in subsequent discussion. This variable is supposed to be a one-dimensional continuous variable instead of a categorical one. Hence, promotion and prevention focus may also mean relative promotion (positive promotionprevention discrepancy) and relative prevention focus (negative promotion-prevention discrepancy) hereinafter.

Studies have demonstrated that regulatory focus affects people's experiences effectively. It is associated with certain counterfactual thinking and regret. Eager promotionoriented people are more concerned with errors of omission (i.e. inaction), whereas vigilant prevention-focused people are more concerned with errors of commission (i.e. action). When individuals' decisions go awry, promotion and prevention focus may evoke additive and subtractive counterfactual thinking (Roese et al., 1999), as well as inaction and action regret, respectively (e.g. Pham and Higgins, 2005). Trudel et al. (2012) also find that, compared with promotion-focused consumers, prevention-focused consumers are less satisfied with positive outcomes and more satisfied with negative outcomes.

Dimensions of housing performance evaluation

In most studies involving determinants of residential satisfaction, housing characteristics in three basic categories have been generally considered (e.g. Clark, 1986; Hempel and Tucker, 1979; Lindberg et al., 1989): intrinsic attributes of the dwelling unit itself (e.g. structure, size), neighbourhood attributes (e.g. noise level, public transportation, facilities) and location attributes (e.g. distance to work, schools).

Moreover, service (including sale service and property management service) quality would greatly affect a buyer's housing experience (Chen et al., 2008). For instance, in urban China, property management service is closely related to homeowners' daily lives because they commonly live in multistorey or high-rise apartment buildings. Therefore, the service aspect of housing should be taken into account in the evaluation of housing performance.

Some studies have also demonstrated that the perceived economic value of house is important in shaping residential satisfaction. For example, Lu (1999) finds that property value positively influences housing satisfaction. Housing is not only a consumption item, but also an investment (e.g. Ioannides and Rosenthal, 1994), which can yield financial and psychic returns. In this sense, a house could be evaluated from the perspective of investment performance.

Theoretical model and hypotheses development A model of regulatory focus, post-purchase evaluations and regret

Figure 1 shows the conceptual framework and propositions on the relationships among regulatory focus, post-purchase evaluations and regret. Briefly, regulatory focus would affect regret both directly and indirectly via post-purchase evaluations, as discussed below.

Hypotheses development

Compared with promotion-focused people, prevention-focused people are more sensitive to negative outcomes and more concerned with responsibilities (Higgins, 1997). Both negative outcomes and responsibility are closely related to one's feeling of regret. Previous literature has shown that negative outcomes engender more counterfactual thinking than positive outcomes do (e.g. Roese, 1997), and counterfactual thinking effectively triggers regret (Kahneman and Miller, 1986; Roese, 1997). Empirical studies also demonstrate that the more a person perceives himself to be responsible for a negative outcome, the more regret he experiences (e.g. Gilovich and Medvec, 1995). Thus, prevention-focused people might be more prone to regret than are promotion-focused people with identical outcome responsibility.

In addition, prevention-oriented people tend to view outcomes in a non-loss/loss framework, whereas promotion-oriented people tend to view outcomes in a gain/non-gain framework (Higgins, 1997). Idson et al. (2004) reveal that promotion-oriented people in a positive gain framework feel better than prevention-oriented people do in a positive non-loss framework. In contrast, preventionoriented people in a negative loss framework feel worse than promotion-oriented people do in a negative non-gain framework.

Furthermore, regret can be conceptualised as having a tendency to spontaneously ruminate and to be uncertain about one's decision result (Schwartz, 2004). A recent study by Leder et al. (2013) finds that the tendency to question the quality of an outcome, which is likely to elicit regret, seems to be more pronounced in prevention-oriented than in promotion-oriented individuals. It means that people with prevention focus would be more apt to feel regret than people with promotion focus. Hence, higher promotion focus (compared with prevention focus) would lead to fewer negative emotions (e.g. regret) and more positive emotions (e.g. satisfaction) on the whole. The discussion leads to two hypotheses:

H1(a,b): Promotion-prevention discrepancy negatively affects regret (H1a) and positively affects satisfaction (H1b).

Normally, compared with a forgone alternative, the comparative feedback of the chosen product is often mixed: the chosen option performs better than the alternative for some aspects but not for others. However, with the purpose to improve future decisions, homebuyers could focus on unfavourable comparison, leading to an overly negative perception of their choices and less satisfaction (Chen et al., 2011).

Similarly, prevention-focused people are more sensitive to negative outcomes than promotion-

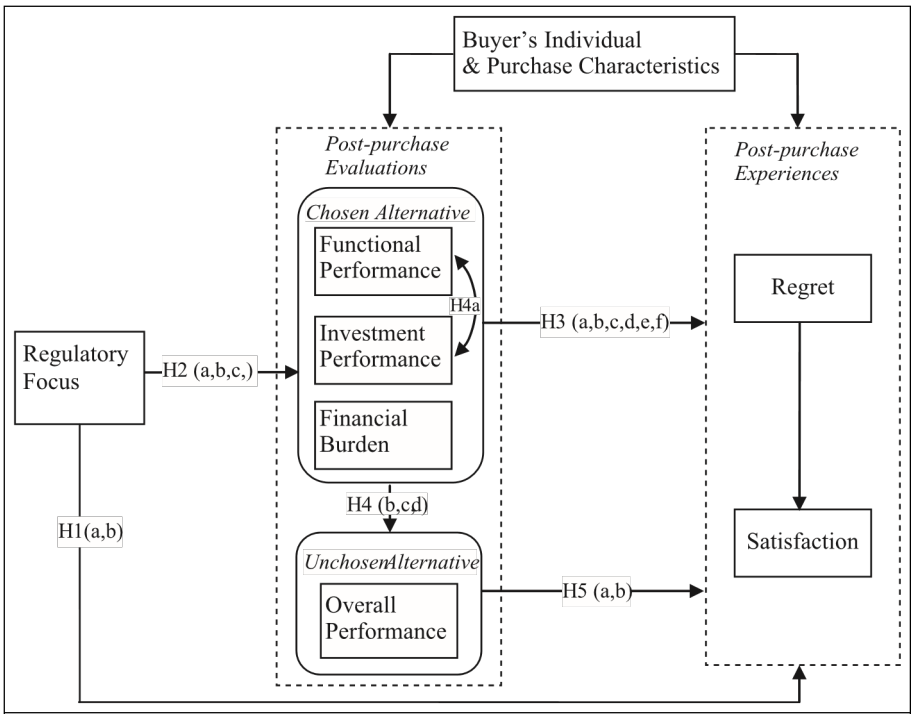

Figure 1. A conceptual model of regulatory focus, post-purchase evaluations and regret.

focused people are, and they may concentrate more on the dark sides of products. This phenomenon can result in overly unfavourable evaluations of acquisition. Hence, buyer's regulatory orientation would likely influence evaluations of a product they have bought. As in subsequent paragraphs, evaluation on a purchased house has a three-dimensional structure, namely functional performance, investment performance and financial burden. Based on these arguments, the following three hypotheses are thus proposed:

H2(a,b,c): Promotion-prevention discrepancy affects the evaluation of chosen alternative's functional performance (H2a) and investment performance positively (H2b), and financial burden negatively (H2c).

A customer's experience upon a housing purchase involves not only product quality, but also service quality assessment, especially for those living in multistorey or highrise apartment buildings (Chen et al., 2008). For instance, Ukoha and Beamish (1997) demonstrate that housing management (e.g. handling of complaints, garbage collection system) is important in shaping public housing satisfaction. Evaluations of a home bought from a perspective of residential function are labelled as 'functional performance' in this paper. This performance includes product-attribute and serviceattribute assessments. The aforementioned discussion leads to the following hypotheses:

H3(a,b): Functional performance negatively affects regret (H3a) and positively affects satisfaction (H3b).

Property purchase is a preferred approach to investment for many individuals. Even for owner-occupiers, consumption demand is mixed with investment demand in their house purchases (Ioannides and Rosenthal, 1994). The perceived economic value of a house plays an important role in shaping residential satisfaction (Francescato et al., 1979; Lu, 1999). The evaluation of a house from a perspective of investment is labelled as 'investment performance' in this paper. Homebuyers' satisfaction depends not only on the house's functional performance, but also on its investment performance.

H3(c, d): Investment performance negatively affects regret (H3c) and positively affects satisfaction (H3d).

For most people, house purchase is the largest consumption item, which usually causes economic pressure more or less. The financial burden aspect should not be ignored in housing evaluation. In China, a new term 'housing slave' has appeared to describe risk-taking homebuyers bearing the heavy burdens of mortgage repayments. A survey indicates that 30% of Chinese house purchasers feel regret to a certain extent because of excessive financial pressure (Sun, 2006).

Thus, financial burden would influence homebuyers' regret and satisfaction, heavier burden associates with worse experiences.

H3(e,f): Financial burden positively affects regret (H3e) and negatively affects satisfaction (H3f).

According to hedonic house price models, property value is basically a function of structural, neighbourhood and location attributes, which constitute important features of functional performance. So the value of a house is closely associated with functional performance. In the long run, property value forms the basis of investment performance.

H4 (a): Chosen alternative's functional performance is correlated with investment performance.

Taking both chosen and forgone alternatives into account is important to obtain a better insight into buyers' experiences (Inman et al., 1997). To simplify the model in this paper, unchosen alternative's performance is expressed in terms of comprehensive evaluation and labelled as 'overall performance'. However, unchosen house's knowledge is not easily available, and homebuyers often perceive gaps in information (e.g. fair value, structural condition) (Burke et al.,

1979). Information on housing attributes, such as friendliness of neighbours, is hardly available without one actually living in it, especially for a pre-sale house. Thus, to conduct a comprehensive evaluation for an unchosen option is somewhat difficult.

Nevertheless, absent or inadequate information on unchosen outcomes cannot shelter buyers from regret. People can still make comparisons between the chosen and the forgone outcomes through counterfactual thinking (Kahneman and Miller, 1986). Under this circumstance, the evaluation of a forgone alternative is mainly based on imagination or belief instead of reality. People mostly construct a hypothetical scenario in which the forgone outcome is better than the chosen one, especially when the chosen outcome turns out to be negative (Tsiros and Mittal, 2000).

Thus high versus low evaluation of chosen outcome leads to less counterfactual thinking concerning a better forgone outcome, resulting in weaker beliefs that forgone alternative is better.

H4 (b,c,d): Unchosen alternative's overall performance evaluation is affected by chosen alternative's functional performance (H4b) and investment performance negatively (H4c), and financial burden positively (H4d) .

In turn, buyers with a higher evaluation of the unchosen option likely suffer more from the thoughts that their present situation would have been better had they decided differently, resulting in more regret (Zeelenberg, 1999).

H5 (a,b): Unchosen alternative's overall performance positively affects regret (H5a) and negatively affects satisfaction (H5b).

Individual and purchase characteristics: Control variables

Studies have demonstrated that some individual and housing characteristics can partly explain housing experiences. For example, Lu (1999) finds that age, gender and income affect residential satisfaction significantly, and education positively impacts neighbourhood satisfaction. However, evidence on the effect of one's duration of residence on neighbourhood satisfaction is mixed. Some studies find that longer stays are associated with higher neighbourhood satisfaction (e.g. Kasarda and Janowitz, 1974), but other studies conclude that duration of residence negatively influences neighbourhood satisfaction (e.g. Lu, 1999; Onibokun, 1976). Recent research has also revealed that pre-sale houses lead to more regret and dissatisfaction for homebuyers than completed ones do, because (negative) unexpected outcomes are more likely to happen with pre-sale houses than completed houses (Chen et al., 2011).

To isolate possible impacts of the abovementioned characteristics on post-purchase evaluations and experiences, they are incorporated in the model as control variables, including age, gender, income, education, duration of residence and housing market type (i.e. pre-sale or completed house).

Method

According to the proposed theoretical model, the experimental method is not suitable for this study, because there are too many variables to be manipulated in experiment design. Furthermore, characterised by high difficulty, long and complicated process and importance consequences, home

purchase is also difficult to simulate experimentally. As a usual method for massive variables measurement and field study data collection, a questionnaire survey is chosen for this research.

There are two stages in this study, including an online unobtrusive investigation as a pilot study for the measurement of house attributes, and a questionnaire research to test the proposed model and hypotheses via structural equation modelling (SEM). Content analysis is employed in the pilot study. A two-step approach to SEM is adopted for the second stage (Anderson and Gerbing, 1988). The first step is to analyse the measurement model through confirmation factor analysis (CFA), and the second step is to analyse the structural model through path analysis. LISREL 8.70 is then used for model estimation and the maximumlikelihood method is adopted in this paper.

Study area

To obtain a representative sample of urban homebuyers, the most influential metropolises dispersedly located in mainland China are chosen for the investigation. In the pilot study stage, 23 important cities are covered (Beijing, Shanghai, Guangzhou, Shenzhen, Hangzhou, Nanjing, Chengdu, Chongqing, Changsha, Wuhan, Nanchang, Guiyang, Hefei, Lanzhou, Xi'an, Jinan, Qingdao, Tianjin, Dalian, Changchun, Harbin, Xiamen and Kunming), including all first-tier cities and all directly governed cities, most important provincial capitals and economically developed cities. In the questionnaire survey stage, the first-tier cities (Beijing, Shanghai, Guangzhou and Shenzhen) and four other key provincial capitals or directly governed cities (Hangzhou, Nanjing, Chengdu and Chongqing) are selected from these 23 metropolises. These eight cities are national or regional hub cities, with developed housing markets in which a high level of housing transactions take place.

Data

Online unobtrusive investigation. Nowadays nearly each estate in urban China has an online forum even before it is on sale. Such e-communities become important platforms for homebuyers to share their experiences, especially negative experiences such as regret and dissatisfaction. In fact, they provide valuable clues as to the housing evaluations relating to regret, which is one of the key issues in this paper. For the investigation of purchasers' negative experiences, such information could be more reliable than those obtained from other approaches (e.g. interview). In China, people cherish face very much. Telling others about your homebuying failures means the acknowledgement of one's inability, carelessness or misfortune, which damages social image (Chen et al., 2008). Homebuyers prefer complaining in e-communities to talking with friends or acquaintances when encountering purchase outcome failures, for they can express their dissatisfaction or regret on the internet without being identified.

As discussed previously, housing evaluations involve sales service and property management service, as well as intrinsic, neighbourhood and location attributes. Therefore, housing attributes have a fivedimensional structure from the perspective of functional performance. To develop multiple measurement indicators for these attributes in a questionnaire research, subcategories for each are further identified through an online unobtrusive investigation.

For each of the attributes mentioned above, analysing messages from these e-forums enables the identification of specific sub-attributes which lead to regret. As one of the most famous real estate

websites in China, www.soufun.com is chosen for investigation. It provides an e-community for every estate in most cities. A total of 6900 messages about regret are collected from 623 e-communities in 23 cities (see section 'Study area'), averaging 300 messages per city. Only cases that specify the unfavourable attributes which evoke regret are selected. For example, a purchaser of an estate called Haoyue Garden in Shenzhen posted a message on the estate forum as follows: 'Have bought Haoyue Garden at an exceedingly high price, very regretful!!! First, inconvenient transportation, no bus stop. Second, poor tap-water quality, and water supply frequently cut off!! Third, a railway behind the estate, and a logistics base in the front, awfully noisy'. The total number of valid messages is 1106.

Questionnaire survey. A survey questionnaire was used for data collection. Questionnaires were sent out and returned through property management companies on a scale of three estates per city and 100 questionnaires per estate. To avoid participants' memory errors, only estates completed within three years of the survey time were selected. Dwellers to which questionnaires were sent are restricted to homebuyers, as other types of dwellers such as renters are not the subject of this study.

A total of 1029 valid respondents participated in the survey (number of respondents ranging from 98 to 143 per city), with 541 males and 488 females. About 34.8% of the participants were under 30 years old, and 45.8% were aged from 31 to 40 years. 91.6% of the respondents have household monthly income between 3000 and 20,000 Yuan.
Participants' average duration of residence is
1.93 years; 92.7% have a college degree or higher; and 47.1% of the participants purchase pre-sale houses.

The above results are consistent with those of the 'China homebuyer survey report (2009)', published by China Index Academic (a famous institute of real estate in China) in March 2010. The report shows that about 52.8% of buyers are males and 47.2% are females; the average age is 37.2 (mostly between 22 and 42) years old; 88.6% of the respondents have monthly household income under 20,000 Yuan. It is a nationwide survey, which is one of the comparatively large-scale investigations in recent years. Hence, the sample of this study could reflect the characteristics of the population well.

Pilot study results

There were three coders in this study, including two experts and one author of this paper. When disagreement occurred, majority rule was employed to determine the coding. The content analysis of e-community messages is comparatively simple, and the inter-rater reliability was good (coefficients ranging from 0.92 to 0.98).

The results of online unobtrusive investigation indicate five most frequently cited sub-attributes of each house attribute as follows: (1) Sales service attributes: trustworthiness, responsiveness, problem-solving, expertise, courtesy (frequencies ranging from 353 to 36); (2) property management service attribute: trustworthiness, attitude, complaint-handling efficiency, facility management, security (frequencies ranging from 39 to 20); (3) intrinsic attribute: construction quality, layout, style, efficiency rate, size (frequencies ranging from 188 to 23); (4) neighbourhood attribute: environmental design, noise, pollution (e.g. waste air, dust), supporting facilities (e.g.

sports facilities, community clubhouse), building density (frequencies ranging from 73 to 19); (5) location attribute: unfavourable facilities (e.g. microwave station, transformer substation), distance to work place, distance to downtown, shopping distance, distance to school (frequencies ranging from 41 to 11).

Questionnaire scales

Based on the pilot study, a seven-point scale, with endpoints labelled 'strongly disagree' (1) and 'strongly agree' (7), was developed to measure constructs except for promotionprevention discrepancy. Items (indicators) and statistical parameters of constructs (latent variables), apart from individual and purchase characteristics variables, are shown in Table 1.

The scale to measure promotionprevention discrepancy is based on Cunningham et al.'s (2005) four-item questionnaire: (1) I focus on opportunities that will enhance my life; (2) I focus on ensuring that I will avoid potential mishaps or negative events; (3) I am primarily motivated by seeking potential successes; (4) I am primarily motivated by avoiding failure. This questionnaire has been proven to be at least as valid as other available measures by the multitrait-multimethod examination. This six-point scale (anchored by strongly disagree [1] and strongly agree [6]) is properly modified to fit the housing context. Promotion score is measured by the first and third items, whereas prevention score is measured by the second and fourth items. Promotion-prevention discrepancy is represented by the score differences between the first and second items, and between the third and fourth items.

A house's functional performance is related to sales service, property management service, intrinsic, neighbourhood and location attributes. Each of these attributes is measured by five sub-attributes (see section 'Pilot study results'). Cronbach's a coefficients of these scales range from 0.71 to

Table 1. Latent variables, indicators, descriptive statistics, reliability and validity of measures (n = 1029).

Latent variable/indicator	Mean (std.dev.)	Std. loading	Alpha reliability	Composite reliability values	Average varianceextracted value
Promotion-prevention discrepancy			0.73	0.74	0.59
I focus on opportunities that will enhance the results of my home purchase	0.24(1.09)	0.75***			
I focus on ensuring that I will avoid potential mishaps or negative events in home purchase					
I am primarily motivated by seeking successes in home purchase I am primarily motivated by avoiding failure in home purchase	0.42(1.25)	0.78***			
Chosen alternative's functional performance			0.83	0.82	0.48

Sales service-attribute evaluation	4.51(1.09)	0.61***	(0.81)[a]		
Property management serviceattribute evaluation	4.43(1.14)	0.67***	(0.75)		
Intrinsic attribute evaluation	4.58(1.13)	0.74***	(0.76)		
Neighbourhood attribute evaluation	4.24(1.36)	0.79***	(0.71)		
Location attribute evaluation	4.30(1.37)	0.64***	(0.73)		
Chosen alternative's investment performance			0.84	0.86	0.67
I am not satisfied with the appreciation of the bought house (reverse code)	5.49(1.33)	0.56***			
I am happy with the increase in value of the bought house	4.64(1.35)	0.92***			
I am satisfied with the rise in price of the bought house	4.47(1.40)	0.93***			
Chosen alternative's financial burden			0.93	0.93	0.82
I feel great burden because of my home purchase	4.27(1.46)	0.89***			
I feel great economic pressure because of my home purchase	4.50(1.50)	0.92***			
I regard the mortgage payment as a great burden	4.44(1.50)	0.91***			
Unchosen alternative's overall performance			0.85	0.86	0.69
I believe that an unchosen alternative is better than the bought house	4.40(1.51)	0.63***			
I think this house is not the best choice among alternatives	4.38(1.57)	0.95***			
I suppose that I missed a house which is better than the bought one	4.34(1.59)	0.87***			

(continued)

Table 1. (Continued)

Latent variable/indicator	Mean (std.dev.)	Std. loading	Alpha reliability	Composite reliability values	Average varianceextracted value
Regret			0.90	0.91	0.77

I feel sorry for choosing this house	3.76(1.62)	0.88***			
I should have chosen another house	3.98(1.57)	0.93***			
I would make a different decision if I have one more chance	4.32(1.55)	0.81***			
Satisfaction			0.85	0.79	0.56
I am satisfied with my house	4.89(1.29)	0.76***			
I am disappointed with this house (reverse code)	4.98(1.26)	0.74***			
I am unhappy with my house (reverse code)	4.32(1.34)	0.75***			

Notes: *p\ 0.05, **p\ 0.01,***p\ 0.001.

[a] Italics in parentheses present Cronbach's a coefficients of five items for corresponding attribute.

0.81, indicating high internal consistency. To simplify the model, each attribute is assigned to the average score of its corresponding sub-attributes, respectively, and is served directly as measurement indicator for functional performance. Investment performance and financial burden are measured by three items as listed in Table 1. Three items are developed to measure the unchosen alternatives' overall performance. Homebuyers' regret and satisfaction are measured respectively with the items based on Chen et al.
(2011).

Individual and purchase characteristics are coded as follows: age is coded as 1 (under 25), 2 (25–30), 3 (31–40), 4 (41–55) and 5 (56 or above). Gender is coded as male = 0 and female = 1. Income is coded as 1 (under 3000 Yuan), 2 (3000–5000 Yuan), 3 (5001–10,000 Yuan), 4 (10,001–20,000 Yuan) and 5 (above 20,000 Yuan). Education is coded as 1 (high school or below), 2 (college), 3 (undergraduate) and 4 (postgraduate or above). Duration of residence is coded as 1 (1 year), 2 (2 years) and 3 (3 years). Housing market type is coded as 0 (purchased pre-sale house) and 1 (purchased completed house).

Structural equation modelling and estimation

In structural equation modelling, a CFA is required first to verify the measurement model (Kline, 1998). It is commonly used to deal with the relationships between indicators (observed measures) and latent variables (factors). In this study, a structural model is built mainly for model verification instead of model exploration, so only the part concerning control variables is considered to be revised in the model, for the control variable which has no effect on the endogenous
(dependent) variables should be removed.

In the theoretical model of this study, all latent variables have two or more indicators, except for control variables (e.g. gender). To make the model identifiable (Kline, 1998), standardised loading and measurement error of each control variable's indicator are set to 1.0 and 0, respectively. Hence the measurement validity is not subject to control variables, and the latter are not discussed subsequently in section 'The measurement model'.

The measurement model

Unlike exploratory factor analysis (EFA), which is a data-driven and variable reduction technique to identify the number and nature of latent constructs, CFA requires a strong empirical or conceptual basis to guide the specification and evaluation of the factor model. The requirements of CFA are met in this study.

The measurement model includes 13 latent variables (promotion-prevention discrepancy; functional performance investment performance, and financial burden of the chosen alternative; overall performance of the unchosen alternative; regret; satisfaction; gender; age; income; education; duration of residence and housing market type) and 28 indicators.

The results of a cross-validation test based on Diamantopoulos and Siguaw (2000) suggest a reasonable stability between calibration (n = 514) and validation samples (n = 515) for this model, and estimates of these sets are consistent with those of the overall sample. The measurement model has adequate statistical properties (x^2 =1013.06, df = 276, NNFI = 0.96, CFI = 0.97, GFI = 0.93, AGFI = 0.90, RMSEA = 0.05, SRMR = 0.04). Considering the large sample size (1029), the model's x^2/df (= 3.67, under 5) is acceptable (Jo¨ reskog and So¨ rbom, 1993), though under 3 is preferable. Completely standardised solution is estimated and all 22 indicators (except for those of control variables) have high loadings (ranging from 0.56 to 0.95, p \ 0.001 for all) on their corresponding latent variables, revealing satisfactory construct validity.

In addition, discriminant and convergent validity of measures are assessed by the average variance-extracted value (AVE). Discriminant validity is demonstrated if each variable's AVE is greater than the squared correlation between variables, and convergent validity is demonstrated if AVEs are all above 0.5 (Fornell and Larcker, 1981). In this study, AVEs (ranging from 0.48 to 0.82) are all greater than the corresponding squared correlations between latent variables (ranging from 0.00 to 0.53), and are all above 0.5 except for that of the chosen alternative's functional performance (AVE = 0.48, considered marginally acceptable). Hence the discriminant and convergent validity of the measures are demonstrated. The Cronbach's a coefficients (ranging from 0.71 to 0.93) and composite reliability values (ranging from 0.74 to 0.93) of all latent variables also exceed the guideline of 0.60 suggested by Fornell and Larcker (1981). As such, the results demonstrate validity and reliability of the measures.

The structural model

From Table 1, 10 latent variables appear in the structural model. As discussed in section 'Hypotheses development', all paths involved in H1 to H5 and between control variables and endogenous variables are allowed to be freely estimated. Statistical analysis shows that this model fits the data well (e.g. x^2 =1108.60, df = 280, NNFI = 0.96, CFI = 0.97, AGFI = 0.90, RMSEA = 0.05).

However, the results indicate that many path coefficients from the control variables to the endogenous variables are insignificant at 0.05 level, and gender, age and education do not have any significant effect on the endogenous variables (p . 0.05). Hence, these three variables are removed from the original model, and the insignificant paths of control variables are deleted. Such model

revision would not alter the validity and reliability of the measures. Statistical analysis shows that the revised model still fits the

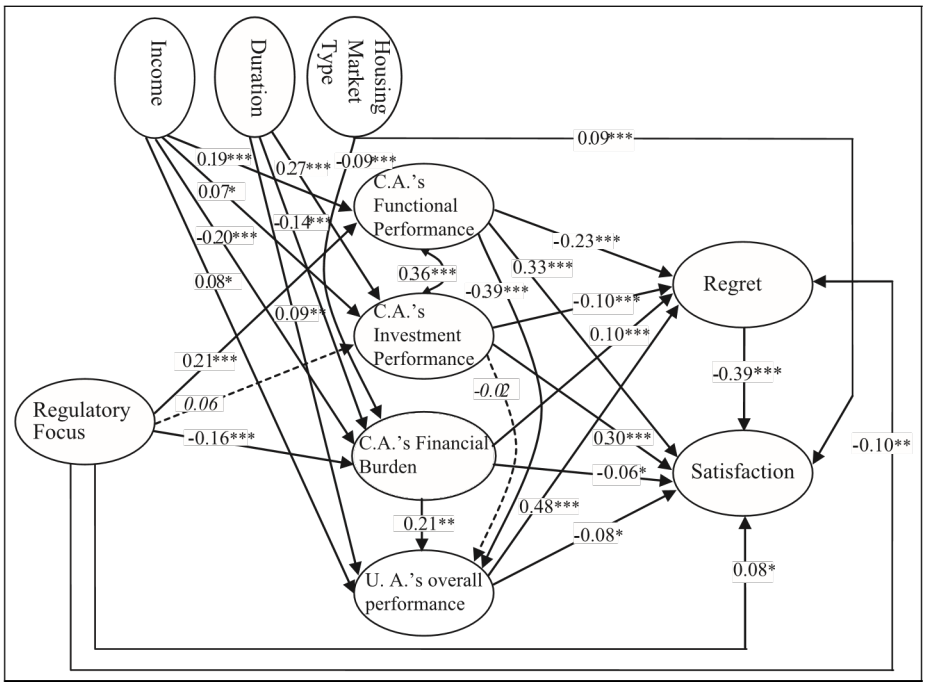

Figure 2. Finalised structural model of regulatory focus, post-purchase evaluations and regret.

data well: x^2 =1031.58, df = 244, NNFI =

0.97, CFI = 0.97, GFI = 0.93, AGFI = 0.90, RMSEA = 0.06, SRMR = 0.07, x^2/df = 4.23. The corresponding measurement model likewise has adequate statistical properties (x^2 = 965.98, df = 231, NNFI =

0.97, CFI = 0.97, GFI = 0.93, AGFI = 0.90, RMSEA = 0.06, SRMR = 0.05, x^2/df = 4.18). As expected, promotion-prevention discrepancy positively influences functional and investment performances, as well as satisfaction, while negatively influences financial burden evaluation and regret (Figure 2), but the effect on investment performance is not statistically significant (b = 0.06, p . 0.05). Functional and investment performance are highly correlated (c = 0.36, p \ 0.001), and both functional and investment performance have negative effects on regret and positive effects on satisfaction, whereas financial burden has opposite effects on regret and satisfaction.

Functional performance, measured by five dimensions (i.e. sales service, property management service, intrinsic, neighbourhood and location attributes), impacts regret significantly (g = 20.23, p \ 0.001). Factor loadings of this performance in all indicators are also high (ranging from 0.61 to 0.81, all p \ 0.001). The findings also demonstrate that both service (sales and property management service) and product (intrinsic, neighbourhood and location) attributes affect regret significantly.

In addition, the unchosen alternative's overall performance is lowered by the chosen house's functional performance (g = 20.39, p \ 0.001) but not by investment performance (g = 20.02, p . 0.05), and is increased by financial burden (g = 0.21, p\ 0.001). In turn, a better forgone alternative

effectively aggregates regret (g = 0.48, p \ 0.001), and slightly reduces satisfaction (g = 20.08, p \ 0.05). Consistent with most prior studies, regret strongly affects satisfaction (g = 20.39, p \ 0.001). As to the control variables, income positively influences functional and investment performances, and negatively influences financial burden. But surprisingly, income shows positive impact on the forgone alternative's overall performance (b = 0.08, p \ 0.05). No significant effects of income on either regret or satisfaction are found. Housing market type could not influence regret (b = 20.02, p . 0.05). However, compared with pre-sale houses, completed houses are related to lower financial burden (b = 20.09, p \ 0.001) and higher satisfaction (b = 0.09, p \ 0.001). Residence duration shows positive effects on the chosen alternative's investment performance and the forgone alternative's overall performance, and shows negative effect on financial burden.

To summarise, the results support all the hypotheses except for H2b and H4b. The standardised path coefficients are shown in Figure 2. The dotted lines in Figure 2 represent insignificant paths (p . 0.05) and unsupported hypotheses. The effect of regulatory focus on post-purchase experiences is further explored by a univariate analysis of variance (ANOVA), with income, duration of residence and housing market type acting as covariates to exclude their possible influences. Participants are divided into three groups according to their promotionprevention discrepancy value: promotion group (value . 0, n = 486), equilibrium group (value = 0, n = 315) and prevention group (value \ 0, n = 228). Each subject's regret and satisfaction are valued as the average of the three corresponding items, respectively, as listed in Table 1. The results of ANOVA demonstrate that the promotion group experiences significantly less regret

($M_{promotion}$ = 3.91 \ $M_{equilibrium}$= 4.13, p \ 0.05; $M_{promotion}$ = 3.91 \ $M_{prevention}$ = 4.30, p \ 0.001) and higher satisfaction ($M_{promotion}$ = 4.80 . $M_{equilibrium}$ = 4.55, p \ 0.01; $M_{promotion}$ = 4.80 . $M_{prevention}$ = 4.45, p \ 0.001) than the equilibrium and prevention groups. Compared with the prevention group, the equilibrium group has a lower mean regret ($M_{equilibrium}$ = 4.13 versus $M_{prevention}$ = 4.30) and a higher mean satisfaction ($M_{equilibrium}$ = 4.55 versus $M_{prevention}$ = 4.45), but the results are not significant at 0.05 level.

In addition, the correlation between participants' promotion and prevention focus is positive (r = 0.49, p \ 0.01), and both of the focuses scores seem high from the descriptive statistics (mean = 5.09 and 4.79, respectively, in a six-point scale).

Discussions and conclusions

This paper aims to examine how regulatory focus influences homebuyers' post-purchase evaluations and experiences, and to explore people's regulatory focus pattern in housing decisions. This study has shown several main findings.

First, a homebuyer's regulatory orientation influences post-purchase regret and satisfaction directly, though the effects are moderate. Taking such a personality trait into consideration could add to the knowledge about factors that shape housing satisfaction. House purchasers with a promotion focus are likely to be happier than those with a prevention focus, for this paper reveals that the former feel less regret and more satisfaction than the latter. This finding is consistent with previous studies which suggest that people with a prevention focus are more likely to regret their purchase action than those with a promotion focus, especially when the outcomes are negative (e.g. Pham and Higgins, 2005).

Second, a more promotion-focused attitude enhances housing evaluations. In all dimensions (i.e. functional performance, investment performance and financial burden), regulatory focus influences a house's evaluations, which in turn effectively affect one's level of regret and of satisfaction, though the regulatory focus effect on investment performance is statistically insignificant.

It has been found that subjective evaluations of neighbourhood characteristics are much more important in explaining neighbourhood satisfaction than objective neighbourhood attributes (e.g. Campbell et al., 1976; Permentier et al., 2011). Our finding further reveals that subjective housing performance evaluations, which are measured via a self-rating questionnaire, are effectively influenced by promotion-prevention discrepancy. Therefore, regulatory focus shows an indirect, but non-neglectable, effect on housing experiences via subjective evaluations of housing characteristics. Furthermore, this study reveals a positive correlation ($r = 0.49$) between prevention and promotion focuses of home purchasers, which concurs with the finding of Cunningham et al. (2005). Regulatory focus appears as a continuous variable named 'promotion-prevention discrepancy' in this paper. Such a new construct is predictive of post-purchase evaluations and experiences.

Third, our model supports all hypotheses except for H2b and H4b. That is to say, a more promotion-focused orientation cannot increase the chosen house's investment performance significantly, and the latter cannot be proved to impose a negative impact on the unchosen one's evaluation. Other than that, the model predicts that evaluations of a chosen house's functional and investment performance relate positively to promotionprevention discrepancy and satisfaction, but negatively to financial burden, the unchosen alternative's evaluation and regret. In turn, the unchosen alternative's evaluation influences regret positively and satisfaction negatively.

Rather unexpectedly, regulatory focus cannot affect investment performance effectively, and a better investment performance cannot lower the evaluation of forgone alternative's performance, unlike a better functional performance and a lighter financial burden. Messages from homebuyers' e-communities provide clues for this phenomenon. Unlike the evaluations of functional performance and financial burden which are (1) based on buyers' own judgement and (2) subject to their self-regulation orientation, buyers' perceptions on investment performance depend on easily available information about home prices (e.g. from e-forums, agents' sales calls, window advertising). Similarly, people need information about the chosen houses' functional performance and financial burden, but not investment performance, to shape their imaginations about the forgone alternatives, because they are often exposed to lots of price information on both chosen and forgone houses in China.

It is suggested that models of residential satisfaction should include a housing choice variable, which however is seldom incorporated by others in models as an explanatory variable (Permentier et al., 2011). In this study, the unchosen alternative's performance which reflects the nature of housing choice, and regret which could be regarded as an emotional outcome of a (wrong) choice, have been included as explanatory variables in the model. Satisfaction is demonstrated to be negatively impacted by the unchosen alternative's performance and regret. This indicates that such choice variables are important in determining residential satisfaction. Such finding fills the gap of knowledge about how regret and satisfaction are formed in home purchases. Moreover, functional (i.e. service and product-attribute) performance, investment performance and financial burden significantly affect customers' post-purchase experiences. Hence, to a large extent, this paper's analytic framework is applicable to other luxury goods, such as artworks and top luxury watches.

Last but not least, this study finds that some individual and purchase traits influence post-purchase evaluations and experiences. Compared with pre-sale houses, completed houses represent a higher level of satisfaction and less financial burden, because pre-sale houses' performances are more likely to fall short of expectations than completed houses' performances because of uncertainties with regard to the unfinished houses' attributes (e.g. intrinsic and neighbourhood attributes). Moreover, the pre-sale houses as first-hand houses are normally more expensive than the completed houses which are mostly second-hand houses in
China, so the latter is related to less financial burden.

Duration of residence is associated positively with the chosen alternative's investment and the forgone alternative's overall performance, while negatively with financial burden. This phenomenon is explainable. Owing to an uptrend market in recent years, the earlier a home is bought, the higher price appreciation will be. A longer stay means an earlier purchase, possibly at a lower housing price at the time and now with a less financial burden. On the other hand, homebuyers are likely to be remorseful of the chances to choose those forgone alternatives which can yield higher economic returns, so a longer stay is also related to a better evaluation of the forgone alternative.

In addition, income is positively associated with functional and investment performance, for consumers with higher income can afford better houses than those with lower income. Unexpectedly, higher income leads to more favourable evaluation of a forgone alternative. One possible reason is that higher income is normally associated with more options. However, it should be noted that more options can also mean more chances to miss the best one (Schwartz, 2004).

This paper sheds light on managing home buying and benefits practitioners. Housing advertisements containing both promotion and prevention concerns may attract more customers. Since situational factors can determine people's regulatory focus (Pham and Higgins, 2005), marketers who activate promotion orientation may persuade consumers to evaluate acquisitions in a gain/ non-gain framework, other than in a loss/ non-loss framework. Such an orientation can help homebuyers properly shift their focus from unfavourable aspects to favourable ones, not only to avoid overly negative evaluations on the acquisitions, but also to reduce their regret and increase their satisfaction. Besides, practitioners should pay more attention to homebuyers' e-forums. Nowadays potential purchasers are increasingly concerned about the information available from the e-forums of estates.
Practitioners should cope with the problems found in e-communities, comfort the customers as promptly as possible, and maintain their reputation constantly via the internet, with a view to improving homebuyers' satisfaction.

There are a couple of suggestions for future studies. As a house is a complex good, trade-offs between attributes are often inevitable in making a housing choice. It is useful to explore how regret is affected by the trade-offs that homebuyers make. This aspect, however, is very difficult to address, because of its detailed nature and the research method limitations of this paper. This issue is worth investigating in future. The residence duration effect on postpurchase experiences, which may depend on context (McGirr et al., 2015), is not captured in this study, maybe because of the relatively short stays of respondents. But such effect has been found in some studies (e.g. Kasarda and Janowitz, 1974). This effect is worthy of further study. In addition, this research demonstrates that promotionprevention discrepancy positively affects satisfaction regardless the valence of consumption outcomes, which is not completely consistent with Trudel et al.'s (2012) findings. Further work on the regulatory focus effect on satisfaction in the negative outcome condition, and

promotionprevention discrepancy comparison between making major and minor decisions would be essential. Furthermore, states of promotion and prevention focus could be affected by situational factors (Pham and Higgins, 2005) such as housing market knowledge, which is not addressed in this paper because of length and method limitations. It is worthy of further investigation.

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