



DYNAMIC MODELING FOR APARTMENT BRAND MANAGEMENT IN THE HOUSING MARKET

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ABSTRACT. A company's brand can be considered its most valuable asset. The known impact of branding has inspired a number of Korean construction companies to initiate a new marketing strategy, apartment branding, in the competitive market since the 1990s. As a result, the market-leading brands had stronger sales performances over non-branded apartments in the same residential district. However, major companies with well-known apartment brands still face challenges in managing brand equity constructs, particularly brand loyalty, due to the distinctive characteristics of constructed products (i.e., durability and costliness). To address this issue, this research develops qualitative system dynamics models to analyze the core mechanisms and problems of apartment brand equity building process and proposes long-term managerial strategies to overcome the problem of obtaining apartment brand loyalty. The research outcome is expected to support the strategic decision-making processes of apartment brand managers and to provide implications for further branding applications in other metropolitan areas anticipating a sharp increase in apartments.

KEYWORDS: Apartment; Brand; Brand equity; Construction industry; Housing market

1. INTRODUCTION

As we can see from the world's most well-known companies including Coca-Cola and Apple Inc., branding can be considered a company's most valuable asset (Baalbaki 2012; Otto, Bois 2001; Keller 2002). Construction industries within the United States, the United Kingdom, and around the globe acknowledge the importance of branding in establishing a unique corporate identity that differentiates their companies from other competitors (Sturley 2014; Construction Marketing UK 2016). In this regard, construction companies in Korea also introduced similar marketing strategies in the housing market by branding constructed products (e.g., apartments) to potential buyers of houses. The successful sales performance demonstrated the possibility of adopting product branding method – one of the most universal marketing strategies – to the construction industry, where unique product attributes exist.

The major construction companies in Korea, performing as both developers and builders of apartments, have experienced fierce competition since the early 2000s as a result of a massive increase in housing demand. Followed by the economic prosperity of the 1990s, the market soon became oversupplied with newly built apartments. The severe competition among construction companies caused by a sudden increase in available housing units that eventually led to the introduction of apartment branding for market survival. As a result of adopting this new marketing strategy, the market-leading brands had stronger sales numbers and selling prices twice as high as non-branded apartments in the same residential district (Kim 2007; Choi 2012).

However, despite these successful sales performances, major construction companies still face the obstacles of establishing brand loyalty regardless of their well-established brand images. For example, a customer survey reported significant differences in brand preference rates before and

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after purchasing apartments. The survey results from the National Brand Competitiveness Index Organization in Korea announced that the public's brand preference in the apartment market for "R" brand and "L" brand before purchase showed 76 and 71 points out of 100 points respectively; however, the brand preferences from the actual residents of both apartments were announced as 81 and 86 points (NBCI 2015). The importance of managing brand loyalty, often measured by the intention to repurchase the same branded product, can be easily overlooked due to the limited number of repetitive purchase of houses. Considering loyal customer's commitment towards the brand and the possible benefits, the necessity of and potential obstacles for increasing brand loyalty for apartment brand management also need to be highlighted (Jacoby, Kyner 1973; Aaker 2009; Keller 2002).

To address such issues, this research develops qualitative system dynamics models to analyze the core mechanisms of apartment brand equity building process with consideration of the unique characteristics of construction market and product. System dynamics modeling can be an effective tool when the system variables regarding the housing market, apartments, construction companies, and customers have strong interdependencies and causal relationships (Elg, Exelby 2000). Based on the dynamics and interactions between the brand equity constructs (i.e., brand image and brand loyalty) and other model variables, we analyze the problems in apartment brand management focusing on the challenges of increasing loyal consumers as aforementioned. Finally, managerial implications are suggested to support a long-term strategic management of apartment brand equity building for construction companies.

2. LITERATURE REVIEW

2.1. Attributes of construction product

The unique attributes of construction projects and their products can be clearly distinguished when compared with general manufactured goods. Focused on the end products, Nam and Tatum (1988) identified the major characteristics of constructed products as immobility, durability, and costliness. These attributes differentiate constructed products from manufactured goods and also greatly influence customers' decision-making processes for purchases.

In the manufacturing industry, production is mostly completed in a particular location and transported to marketplaces, whereas the con-

struction process takes place at the point of consumption and the final product is generally immobile (Nam, Tatum 1988). The product's immobility reflects the value of the location to the building, as the surrounding atmosphere (e.g., schools, transportations, markets, and parks) affects the quality of the building residents' daily lives. Therefore, the location of constructed products is considered to be one of the most important criteria for production and purchasing decisions (Kim 2011). Additionally, both durability (i.e., the resisting forces of nature over an extended period of time) and costliness (i.e., the largest single expenditure of an urban family) distinguish constructed products from manufactured ones (Nam, Tatum 1988). The durability of constructed products determines the possible service life of purchased houses, which limits the number of repurchases and changes of the products with the consideration of very expensive cost. In terms of purchasing cost, previous research supports that the law of supply and demand explains changes in apartment prices with consideration of consumer expectations for future price increases (Baumol, Blinder 2003; Park *et al.* 2010). However, the housing prices are also affected by additional considerations such as location, surrounding atmosphere, and physical characteristics (Ko 2000). Furthermore the housing prices are market-sensitive as they can vary according to the market condition (Malpezzi 1996). Such changes can cause fluctuations in the monetary value – possible financial gains from reselling the house in the future – of an apartment which is one of the most important criteria for owning houses for investment purposes (Park *et al.* 2010).

To summarize, Figure 1 illustrates how product attributes and purchasing criteria are related and affect one other in terms of influencing a customer's apartment purchasing decision. The intrinsic attributes of construction products (i.e., immobility, durability, and costliness) can affect important factors for apartment purchase decisions such as location, surrounding environments, repurchase period, purchasing price, and monetary value. In this research, these factors that are influenced by product's attributes are defined as potential customers' purchasing criteria. Also, as mentioned above, internal relationships can exist among purchasing criteria since location and surrounding environments influence the purchasing price of an apartment, and purchasing price determines the monetary value of a house (Ko 2000; Kim 2011). With some of the most important factors for apartment purchase (e.g., location), the

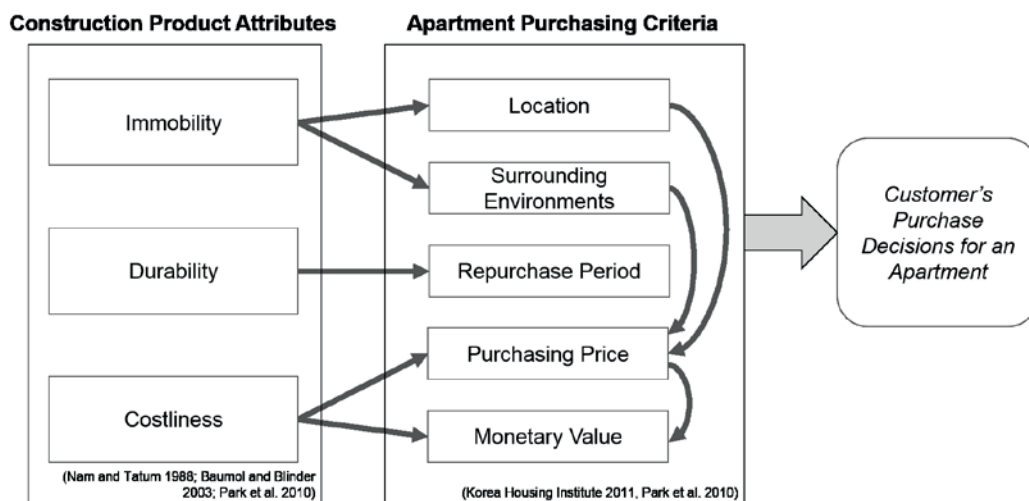


Fig. 1. Construction product attributes and apartment purchasing criteria

criteria will eventually affect decision making process for purchasing apartments (Kim 2011; Park *et al.* 2010).

2.2. Brand equity

Brand equity can be defined as a set of brand assets linked to a brand’s name and symbol that adds to (or subtracts from) the value provided by a product or service to a company and/or the company’s customers (Aaker 2009). Similar to how Aaker highlights the recipients of brand value as both the company and its customers, the views on brand equity can be distinguished by the company’s financial perspective and the customer based perspective (Farquhar *et al.* 1991; Aaker 2009; Keller 1993; Baalbaki 2012). The main difference between these two is that the financial perspective is considered only as the outcome of the consumer response to a brand name whereas the latter is considered the driving force of increased market shares and the profitability of the brand (Christodoulides, De Chernatony 2010). To better understand the process of building brand equity in the apartment market, this research focuses more on consumer based brand equity models and their findings. A number of researchers defined the main components of brand equity from the customer’s perspective as summarized in Table 1. This table clearly demonstrates that the majority of brand equity constructs are representations of consumers’ perceptions and reactions to the brand (Christodoulides, De Chernatony 2010).

Table 1. Main constructs of consumer based brand equity

Aaker (2009)	<ul style="list-style-type: none"> – Brand loyalty – Brand awareness – Perceived quality – Brand association
Keller (2002)	<ul style="list-style-type: none"> – Brand salience (knowledge) – Brand performance – Brand imagery – Consumer judgements – Consumer feelings – Brand resonance
Sharp (1996)	<ul style="list-style-type: none"> – Company/brand awareness – Brand image – Relationships with customers

Among many brand equity constructs, this research emphasizes the role and the importance of brand image and brand loyalty to understand the problems of inconsistent performance of brand equity measures before and after purchase. Brand image is defined as a representation of customers’ mental picture of a brand and a result of the company-manipulated communication of how the brand owner wants the customer to perceive the brand (Marty 2004). In apartment branding, brand image has been considered one of the most important factors in attracting customers and as a projection of an apartment’s values (Shin, Min 2011; Bae 2006). Specific brand image is formed by brand awareness with strong associations and the association will be stronger when it is based on many experiences or exposures on the brand (Aaker 2009; Yoo *et al.* 2000). Brand loyalty, another important brand equity construct, refers to

the tendency to be loyal to a focal brand, which is demonstrated by the intention to buy the brand as a primary choice (Oliver 1997). It is regarded as a behavioral reaction that is developed in a certain period of time after evaluation processes of the brand (Jacoby, Kyner 1973). Thus, brand loyalty is often linked with customers' frequent feelings of satisfaction as they are aggregated over the time (Oliver 1997). Although the importance of brand loyalty can be overlooked in the apartment market due to limited repurchase numbers, existing marketing studies strongly emphasize the role of loyal customers as a source of reliable information and profits (Jacoby, Kyner 1973; Aaker 2009; Keller 2002).

The benefits of having strong brand equity are addressed by a significant amount of marketing research and practices. First, high brand equity can provide brand values including financial and management benefits to a company (Riezebos 1994). The use of well-managed brand equity can intensify the purchase preferences of potential customers, encourage repeated purchase of existing customers, spread word of mouth and price premium on the product, and increase market shares (Jacoby, Chestnut 1978; Aaker 2009; Riezebos 1994; Keller 2002). On the other hand, powerful brand equity can also provide values to customers who are willing to purchase or who already purchased the product (Riezebos 1994; Keller 2002). According to Erdem and Swait (1998), a strong brand can generate consumer values by reducing perceived risk before purchase, and reducing information search costs. Furthermore, a customer's confidence and satisfaction in the purchase decision can be enhanced by the brand (Aaker 2009). Riezebos (1994) categorized these values provided to customers as functional and expressive benefits.

With respect to the mainstream research in brand equity, this research focuses on strong feedback and dynamics among brand equity constructs, sub-dimensions, and brand values provided to the company and the customers.

2.3. Knowledge gaps from apartment brand management literature

Concurrent with the apartment branding phenomena, nearly two million housing units were built with unique brand names between the years of 2002 to 2007 in Korea (Lee 2012b). The wide application of apartment branding was followed by research efforts on apartment brand management to analyze the impact of the brand on the industry

and the customers. Previous research using one-way ANOVA, regression analysis, and case studies stated that brand equity elements and customers' apartment purchasing preferences are correlated with each other and well-established apartment brands positively affect company sales and customers' brand loyalty (Kim 2006; Park *et al.* 2008; Shin, Min 2011; Lee 2012a). These research outcomes emphasize the effectiveness of branding to apartment sales and the relationship between brand equity building elements. However, less attention has been paid to the necessity of increasing brand loyalty in terms of apartment brand equity building. To address the current issues in managing apartment brand equity, a systematic approach with causal modeling can be helpful for the comprehensive analysis of dynamic interactions among the apartment market, products, construction companies, and customers. Thus, this research develops system dynamics models including relationships and interactions among apartment brand equity to analyze the cause of problems establishing brand loyalty and managerial suggestions for the future.

3. RESEARCH METHODOLOGY

3.1. System dynamics

A qualitative form of system dynamics (SD) models are developed in this research to visualize the system of apartment brand management, as well as to illustrate interactions among model variables. Our research approaches complex systems and problems by framing, understanding, and discussing the behavior over time (Sterman 2000). It deals with internal feedback loops (i.e., balancing loops and reinforcing loops) and time delays that affect the behavior of the entire system (Forrester 1961; Ahmad, Simonovic 2000). The legends used to visualize causal loop diagrams are summarized in Figure 2.

Causal loop diagrams are developed to determine the causal relationships and feedback processes among variables associated with apartment brand equity while incorporating unique attributes of constructed products. The use of qualitative SD models can be particularly helpful when the significant effects of the external variables (i.e., product attributes) to the internal system (i.e., brand equity building process) exist (Elg, Exelby 2000). Furthermore, SD is an effective tool for incorporating intangible aspects of a system and accumulated knowledge from real-life experiences and conventions.

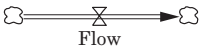

Legend	Explanation
A $\xrightarrow{+}$ B	When other conditions are the same When Factor A increases (decreases), Factor B increases (decreases)
A $\xrightarrow{-}$ B	When Factor A increases (decreases), Factor B decreases (increases)
A $\xrightarrow{ }$ B	Including weighted delay time between two factors
 Flow	Flows: Define the rate of change in system states and control quantities flowing into and out of stocks, also called 'Rate'
 Stock	Stocks: Define the state of a system and represent stored quantities, also called 'Levels'

Fig. 2. Legends in the causal loop diagrams (Sterman 2000; Park *et al.* 2010)

3.2. Expert interview

Expert interviews are also conducted to test the appropriateness of model structure and implications presented in this research. We designed face-to-face expert interviews with the general interview guide approach for brand managers who have devoted to planning and developing the apartment brand in one of the major construction companies in Korea for more than 15 years. The general interview guide approach allows interactions with respondents with questions in a relaxed and flexible manner and asking follow-up or specific questions based on the answers to pre-constructed questions (Turner 2010). Considering the interviews aim to test the appropriateness of developed models, qualitative interview questions are designed and used to confirm validity of model variables, model structures, and model behaviors including interactions and dynamics between variables based on respondents' knowledge and experience for apartment branding.

4. MODEL DEVELOPMENT

To investigate the issue of unbalanced levels of brand equity elements, this research focus on two brand equity constructs, brand image and brand loyalty, which often shows significantly different levels within the same apartment brand. The developed SD models explain how the level of these brand equity constructs changes based on the effects of other model variables. The variables are assigned based on the sub-dimensions of brand equity constructs (e.g., brand awareness, brand credibility, resident satisfaction/dissatisfaction) and customers' responses toward brand performance (e.g., word of mouth, willingness to pay price premium). The sub-dimensions are essential for operationalizing the brand equity constructs as they directly increase or decrease the level of each construct, brand image, and brand loyalty. Although

the research conducts a qualitative analysis, the operationalization can be assumed with the use of stocks (i.e., representations of stored quantities or levels) and flows (i.e., representations of the rate of change that flow into and out of stocks) in the models. Then, the effects of the two constructs on each other are also presented to understand the interactions between brand equity constructs.

4.1. Establishing favorable brand image

Brand image is central to generate positive responses from brand customers and attract new customers (Keller 1993). This research interprets the term brand image for apartments as customers' general knowledge or information of a brand insofar as it significantly influences customers' apartment purchase decisions.

Figure 3 describes the effect of a favorable brand image on customer attraction. In the R1 loop, Favorable Brand Image can be increased or decreased over time based on two different variables (sub-dimensions): brand awareness and brand credibility. Brand image can be established directly from a customer's own experiences with the brand or formed indirectly through advertising or word of mouth (Keller 1993; Krishnan 1996). In this model, a customer's evaluation from direct and positive

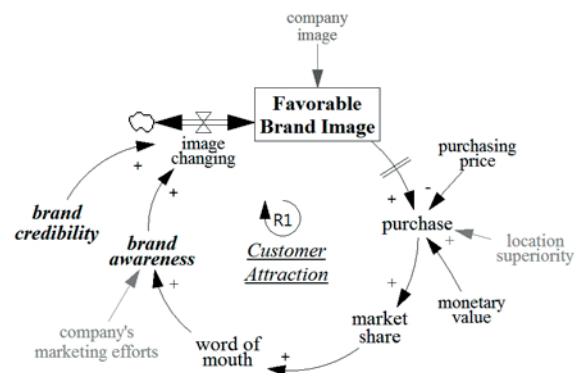


Fig. 3. Establishing favorable brand image

price premium could encourage the residents to feel more satisfied and loyal toward the brand as they respond sensitively to future profits (R4). In this context, an increase in the apartment's monetary value can also attract more new customers by guaranteeing more profits in the future before purchasing (R5).

To the contrary, the price premium may decrease potential customers' actual purchase since a greater financial burden will be imposed at the point of purchase as summarized in a balancing loop (B1) in Figure 6.

5. MODEL COMPARISONS & VERIFICATIONS

A number of models have been developed by researchers to measure brand equity to assess the value of brands (Farjam, Hongyi 2015). To confirm the appropriateness of the model for explaining the issues of brand equity building in apartment market, the proposed models are compared with existing models as shown in Table 2. All four

models have various constructs for brand equity and each constructs have sub-dimensions that increase or decrease brand equity. For example, Keller's model (2002) uses brand quality, credibility, consideration, and superiority as sub-dimensions of brand judgment whereas brand awareness and brand credibility are used in the proposed model for brand image. One of the major distinctions of the proposed models is that the models' analysis ability can be expanded to explain the dynamics and interactions among brand equity constructs (e.g., brand image and brand loyalty), sub-dimensions of brand equity constructs, brand values to the company and customers, and external variables (e.g., location superiority, purchasing price, and monetary value) in the housing market. However, the proposed model focuses on analyzing the building process of two brand equity constructs (i.e., brand image and brand loyalty) which show inconsistent performances in Korean apartment sector while existing models present overall descriptions on brand equity dimensions and values for more comprehensive applications (Keller 1993;

Table 2. Brand equity model comparisons

Brand equity models	Aaker (2009)	Keller (2002)	Yoo <i>et al.</i> (2000)	Proposed model
Brand equity constructs/dimensions	<ul style="list-style-type: none"> – Brand loyalty – Brand awareness – Perceived quality – Brand association 	<ul style="list-style-type: none"> – Brand salience – Brand performance – Brand imagery – Consumer judgements – Consumer feelings – Brand resonance 	<ul style="list-style-type: none"> – Perceived product quality – Brand loyalty – Brand awareness/associations 	<ul style="list-style-type: none"> – Brand image – Brand loyalty
Examples of sub-dimensions of brand equity constructs	–	<ul style="list-style-type: none"> – Brand quality – Brand credibility – Brand consideration – Brand superiority 	<ul style="list-style-type: none"> – Product experience – Unique needs – Consumption situations 	<ul style="list-style-type: none"> – Brand awareness – Brand credibility – Resident satisfaction – Resident dissatisfaction
Examples of potential measures of brand equity constructs	<ul style="list-style-type: none"> – Repurchase rate – Switching costs – Level of satisfaction – Preference for brand – Perceived quality 	<ul style="list-style-type: none"> – Top-of-mind recall – Free associations – Ratings of evaluations – Beliefs of associations 	<ul style="list-style-type: none"> – Intention to primary purchase choice – Favorable responses – Repurchase rate – Strong association 	<ul style="list-style-type: none"> – Willingness to pay price premium – Level of social/psychological fulfillment – Quality/frequency of word of mouth – Repurchase rate – Tolerance to product dissatisfaction
Model structure & model's analysis ability	<ul style="list-style-type: none"> – Divided into effects of brand equity constructs and values to company and customers 	<ul style="list-style-type: none"> – Four sequenced stages of six brand equity building blocks 	<ul style="list-style-type: none"> – Relational paths among marketing mix elements and brand equity constructs 	<ul style="list-style-type: none"> – Dynamic interactions among brand equity constructs, values, and external variables
External factors affecting brand equity	–	–	<ul style="list-style-type: none"> – Marketing mix elements (price, store image, distribution intensity, advertising spending, price deals) 	<ul style="list-style-type: none"> – Construction product attributes (purchasing price, monetary value, location superiority) – Company's marketing efforts

Table 3. Structure verification tests for the proposed models

Tests	Methods	Model structures
Structure verification	Comparing the structure of the model with the real system or generalized knowledge in the literature (Forrester, Senge 1980)	<ul style="list-style-type: none"> – Increase in brand awareness, image, and decrease in perceived risk having positive influence on purchasing intention is widely accepted knowledge and proven by a number of research outcomes including Aaker (2009), Jarvenpaa and Todd (1997), and Mitchell (1999). – Well known theory such as Herzberg's two factor theory, and theoretical models of Aaker (2009), Riezebos (1994), and Keller (2002) is used as basis for core ideas in the causal loop. – Expert interviews indicate that quality defects in apartment negatively affect to resident dissatisfaction and very sensitively according to market condition and residents' perceived monetary value of the house.
Direct extreme condition	Evaluating the validity of model equations under extreme conditions (Forrester, Senge 1980)	<ul style="list-style-type: none"> – If there is no favorable brand image, the purchase consideration would not be generated, and perceived risk would keep high rate. This will lead to customer's purchase decision only based on the product's price, investment value, and location superiority. – If there is no resident satisfaction, brand loyalty from resident would not be generated, and the influence of quality different between expected and perceived may directly impact on resident satisfaction again.
Parameter verification	Evaluating the constant parameters against knowledge of the real system (Forrester, Senge 1980)	<ul style="list-style-type: none"> – External variable such as location superiority acts independently to entire inner structure and from expert interviews, it is identified that different statistics are shown based on the external variable within the same brand product.

Yoo *et al.* 2000; Aaker 2009). The proposed model can address further issues in brand equity management with additional analysis on the interactions between other brand equity constructs and variables.

To test the validity of the model variables and behavior, the structure verification test proposed by Forrester and Senge (1980) is conducted. It is particularly important in this study to see whether the causal loop diagrams are in accordance with brand theories and market situations. The gap between reality and the assumptions in the model is more noticeable when the model includes soft variables, such as customer satisfaction, product quality, or perceived quality (Luna-Reyes, Andersen 2003). In-depth expert interviews from the branding managers in the apartment sector contribute to fill this gap by interpreting their experiences and knowledge. The methods and model structures are summarized in Table 3 including structure verification, direct extreme condition, and parameter verification.

6. DISCUSSIONS ON PROBLEMS OF BRAND MANAGEMENT

Based on the proposed models, the reasons for the obstacles in increasing brand loyalty despite a positive brand image can be summarized as follows: (a) overwhelming influence of company image on brand image, (b) the potential risks of well-established brand image, (c) sensitive responses toward resident dissatisfaction, and (d) the significance of apartment locations.

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6.1. Overwhelming influence of company image on brand image

When the major construction companies started branding in the Korean apartment sector, they tried to establish brand images based on their well-established companies' images rather than the actual products. Eventually, only a few large-sized major companies managed to survive in the market with high purchase preferences, as shown in Table 4. The excessive power of the company image may act as a hindrance in activating the reinforcing loop (R1) in Figure 3. For example, Company C in Table 4 has the largest market share in the private apartment sector since 2010 by building nearly 20,000 housing units per year (Prugio 2014). Despite the largest market share, a number of annual market survey and opinions from the expert interview showed that Company C had lower apartment brand image to Company B for more than ten years (Samsung C&T 2011; KMAC 2014). The proposed model and expert interview results agree that it is because of the large difference in the company image that determines the initial amount of favorable brand image. Therefore, the power of the R1 loop in Figure 3, commonly the strongest loop in the general goods market, becomes relatively weak. In this context,

Table 4. Performances of major construction and engineering companies in Korea (Fair trade commission 2014; Construction association of Korea 2014; Mirae asset 2014)

Major construction and engineering companies in Korea	Performance rank	
	Construction company	Apartment brand image
A	1	4
B	2	1
C	3	2
D	4	5
E	5	8
F	6	3
G	7	7

the changes in the amount of favorable brand image become gradual and are not strong enough to impact resident satisfaction and brand loyalty in Figure 4. Furthermore, this phenomenon could explain how the top seven companies dominate the branded apartment market as in Table 4 by making a greater initial gap in terms of favorable brand image from the newcomers in the market.

6.2. The potential risks of well-established brand image

Only 32.9% of Company C's resident are willing to repurchase the same brand while 78.7% of the resident showed willingness to repurchase Company D's product (Samsung C&T 2011). As illustrated in Figure 4, a favorable brand image can lead to the increase in expected quality before purchase. However, the quality of apartment units does not generally vary hugely, especially among the products of major construction companies that use standardized materials and methods. Therefore, residents expecting higher quality generated by great brand image may experience a larger subjective disconfirmation between the expectations and the reality. Establishing a favorable brand image that is superior to market average may eventually become an obstacle to obtaining resident satisfaction and brand loyalty.

6.3. More sensitive responses toward product quality

Resident dissatisfaction is likely to increase when defects are noticed in a resident's apartment. The results from the expert interview indicate that residents' quality expectations seem to change simultaneously with the real estate market condition. The number of resident complaints on apartment qual-

ity, including defects, reportedly peaks when the apartment price drops and financial loss becomes inevitable. This could be explained by a decrease in an apartment's monetary value due to the changing market condition, and it causes a correlative decrease in resident satisfaction and brand loyalty, which in turn results in less tolerance toward low product quality and accelerating a decrease in brand loyalty (Fig. 4). To summarize, resident's sensitive responses to product quality may hinder the establishment of apartment brand loyalty.

6.4. The significance of apartment locations

"Location, location, location" is a popular phrase to describe the most important factor of a property (Brodie 2007). Location functions as a barrier to maintaining loyal customers of a brand apartment as they realize that the main cause for perceiving superiority over other apartments seems to depend on the apartment's location, not its brand. Existing marketing theories strongly support the idea that loyal customers perform repeated purchasing irrespective of situational constraints. However, in the context of apartments, the decision to repurchase cannot be made solely on brand loyalty and is once again affected by location superiority and the monetary value of the apartment. A survey on the potential apartment customer demonstrates that locational excellence triggers residents to recommend and repurchase the apartment they already purchased (Hur, Lee 2005). Furthermore, potential customers display an even more definite response of choosing location as the most important consideration when purchasing an apartment (Kim 2011). This implies that the location, an important variable in Figures 3 and 5, powerfully influences the purchase decision for both potential customers and even residents with brand loyalty. If the location features do not seem to meet customers' expectations, the possibility of a purchase may drop despite a favorable brand image. In this context, it is also challenging to encourage loyal customers to repurchase and recommend the brand regardless of location features.

7. MANAGERIAL IMPLICATIONS

Building a large number of apartments and establishing an exceptionally positive brand image to attract new customers can be regarded as a high priority for construction companies during a booming phase in the housing market. However, a long-term perspective that includes stagnant market condi-

tions suggests that developing strong brands with loyal customers may provide new survival strategies to construction companies. Thus, this section introduces the managerial implications for apartment brand management to generate more brand loyalty based the problems mentioned in prior discussions.

First, the purpose of enhancing a favorable brand image of an apartment needs to be converted from customer attraction to establishing brand loyalty. Company's marketing efforts (e.g., advertisement) to increase their brand image to provide the residents with greater satisfaction may be a solution in convincing the residents about their past purchasing decisions, and in leading them to become loyal customers. In addition, construction companies must constantly remind residents of the brand's favorable image and superiority as a way to generate a sense of social/psychological fulfillment (Fig. 4). This may include building an exclusive community to establish kinship among the residents, doing on- and off-line advertisement to display the market status of the brand, and offering various activities to the residents' children. As residents are more exposed to the brand in their everyday lives, it becomes easier for them to realize the benefits of purchasing the brand, and a personal attachment toward the brand may positively increase.

Second, constant service to increase perceived quality needs to be conducted in order to increase brand loyalty. By providing continuous impressions about receiving quality and service, the residents may come up with a more positive judgment and evaluation on the brand experience. This approach may be especially useful during a market depression, which can cause a decrease in brand loyalty and less tolerance toward physical defects of the apartment (Fig. 4). Therefore, it is essential for construction companies to invest in quality and service before the market crisis.

Third, as the benefits of location superiority and monetary value in an apartment property cannot be easily replaced with any other element of brand equity, the selection of an apartment's location needs to be employed during the planning phase (Figs 3, 5, 6). Locational superiority may also decrease the amount of hesitation (e.g., financial perceived risk) that customers feel when purchasing an apartment with price premium (Fig. 6). An apartment brand that mostly selects a location with promising real-estate value and convenience would gain credibility from its customers, eventually leading to an improved brand image from word of mouth and brand loyalty.

Finally, loyal customers' active participation in the brand's marketing needs to be encouraged in order to further enhance brand image and brand loyalty. According to the model, word of mouth can have an impact both quantitatively and qualitatively (Fig. 5). Positive word of mouth based on actual experiences would strongly appeal to potential customers because of the trustworthiness of the information (Figs 3, 5). With limitations in enlarging a market share in a short period of time, construction companies need to encourage and motivate the existing residents for more active brand participation. This marketing approach that includes loyal customers not only attracts new customers but also creates a chance to remind loyal customers of their personal feelings toward the brand, which generates further psychological/social fulfillment and brand loyalty.

These managerial suggestions on apartment brand management for construction companies can be used by companies with well-known brands as well as newcomers to the market. The implications can open a new door for planning additional brand equity building strategies for those who have neglected the importance of brand loyalty. For the newcomers, the implications can help set appropriate managerial goals at the developing phase of a new apartment brand with a long-term perspective (e.g., focusing on increasing brand image and brand loyalty from the beginning). With respect to the importance of brand loyalty, the existing and new brands can establish strong brand equity constructs with firm brand preferences before and after the purchase.

8. CONCLUSIONS

This study has attempted to map the dynamics and problems of the brand equity building process in apartment market and to long-term managerial suggestions on managing apartment brand equity. The possible factors that challenge the establishment of brand loyalty in the apartment sector are analyzed as: (a) the overwhelming influence of company image to brand image, (b) the potential risks of well-established brand image, (c) the more sensitive responses toward product quality, and (d) the significance of apartment locations.

To overcome these obstacles, the managerial implications suggest that companies (a) focus on enhancing the favorable brand image to increase residents' satisfaction; (b) minimize subjective disconfirmation between expected and perceived quality; (c) consider location superiority and

monetary value of an apartment from the planning phase; and finally (d) encourage loyal customers to participate in the marketing process.

The proposed models and implications highlight the necessity of increasing brand loyalty in apartment branding that has often been overlooked due to the product's low repurchase rate. Also, problems and managerial implications in terms of brand image and brand loyalty are discussed based on the model behavior and expert interviews. The research outcome is expected to assist the decision-making processes of construction companies' brand managers by providing a comprehensive understanding of the dynamics and problems within the brand equity building process. The managerial implications can guide managers as they establish marketing strategies for increasing loyal customers in a long-term perspective. Although this research focuses on the case of the Korean housing market, the core mechanism of the apartment brand equity building process and its managerial implications can be helpful for emerging markets expecting a sharp increase in population and housing demands. By addressing the problems that are observed in the real market situation, more effective managerial strategies with a long-term perspective can be drawn in order to avoid similar issues in apartment branding. In addition, the research outcome may be used to encourage the use of other approaches to innovative marketing for construction products and to reduce the misuses of common marketing strategies that have limited applications to the construction industry by considering the unique attributes of housing market and products.

However, the developed model explains the limited cases in the Korean housing market in a qualitative form of modeling. Thus, further studies on a similar topic – including various types of housing market situations and quantifications of the causal loop diagrams – need to be conducted before wide implementation can occur.

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