

Print ISSN: 1738-3110 / Online ISSN 2093-7717  
<http://dx.doi.org/10.15722/jds.16.2.201802.25>

# The Effect of Counterfactual Thinking on Post-purchase Behavior of Retail Management\*

Young-Ei Kim\*\*, Hoe-Chang Yang\*\*\*

Received: June 24, 2017. Revised: January 10, 2018. Accepted: February 15, 2018.

## Abstract

**Purpose** - This study focused on the effect of counter-factual thinking on post-purchase behavior producing consumer regret at HMR selection and purchase. We have analyzed the factors that HMR production and distribution businesses should consider because distribution and marketing strategy reflecting consumers' demand.

**Research design, data, and methodology** – For the purpose of carrying out this research, we conducted a direct structured questionnaire to students at 'J' college. A total of 237 valid questionnaires were collected for students and their parents at 'J' university. For the hypothesis test, exploratory factor analysis, t-test, regression and structure equation path analysis were performed.

**Results** - The consumers who often resented HMR purchase did counter-factual thinking on post-purchase behavior were likely to do switching purchases. Counter-factual thinking on post-purchase behavior had a negative influence upon consumer's satisfaction with HMR safety and marketing characteristics.

**Conclusions** - Consumers who had been satisfied to a certain degree might have cognitive dissonance of minor mistakes of HMR product were likely to have downward counter-factual thinking through contrast effects. Therefore, HMR producer and distribution businesses that had production, distribution and marketing strategy to satisfy consumers by raw material, freshness and safety were likely to switch to another product at one time mistake of selection, purchase and use.

**Keywords:** HMR, Counterfactual Thinking, Switching Purchase, Repeated Purchase, HMR Satisfaction Factors.

**JEL Classifications:** I30, L11, M10, M31, L66.

## 1. Introduction

These days, consumers are interested in a wellbeing life and are increasingly interested in food safety. They feel uneasy about the numerous reports on food safety incidents. MFDS (Ministry of Food and Drug Safety) said that as many as 16,686 cases of poor quality food were reported in 2016 and 2,995 businesses were discovered to be violating laws and regulations of on-the-spot surveys. People's report of

602 cases made by the task squad said there were 282 cases of crack down of violators having crimes of business without license, expiration and modification of shelf life, use of non permitted raw material, and conducting businesses during the suspension period (quoted by MFDS blog). Nonetheless, radioactive contamination of Japanese nuclear power plants, unethical food export of China and other cases at home and abroad have threatened people's lives. Food is an important for people's survival and integral to the health and wellbeing of quality and needs to be given a lot of attention.

This study investigated HMR (Home Meal Replacement) that was convenient to take and was not a healthy food. HMR has grown up remarkably to compete with large businesses as well as many of small businesses at home and abroad. HMR market in Europe had a volume of 11.67 billion dollars (52.4%), followed by 4.6 billion dollars (20.7%) in Asian and Pacific Rim, market volume in each country was 4.3 billion dollars in the United States (73% of the

\* This paper has been represented 2017 International Conference on Business and Economics(ICBE2017). Reviewed by new discussion of two panelist and revised faithfully reflected by three anonymous reviews.

\*\* First Author, Professor, Dept. of Business Administration, Seoul Digital University, Seoul, Korea. Tel: +82-2-2128-3292, E-mail: kimyei@sdu.ac.kr

\*\*\* Corresponding Author, Assistant Professor, Dept. of Distribution Management, Jangan University, Hwaseong, Korea. E-mail: pricezzang@jangan.ac.kr

American Continent), 3.26 billion dollars in Japan and 2.12 billion dollars in France (Kim, 2017). In Korea, HMR market had grown up from 717 billion KRW in 2009 to trillion 700 KRW in 2014 according to Korea Agro-Fisheries Food Trade Corporation in 2016 to grow up 15 to 20% a year than previous year owing to higher income, Westernized life style, small number of household members on average, aging society, single man household and dual-income family and others (Kim, 2017).

This study inspected regret of HMR of consumers (61.9%) who did not buy HMR because of taste, safety and hygiene according to Korea Agro-Fisheries Food Trade Corporation survey on consumers' attitude. Various kinds of HMR products and premium products were released at the market to let HMR producers and distributors inspect effects of regret of HMR upon satisfaction with HMR, and effects of HMR upon switching buying as well as repeated buying to establish production, distribution and marketing strategy reflecting consumers' demand. In this study, independent variable was set to be counter-factual thinking producing consumers' regret and to inspect effect of counterfactual thinking upon switching purchasing and repeated purchasing through consumer's satisfaction with HMR: structured models and significant paths were used to give implications.

The result of this study will be able to confirm what factors of HMR are most important for consumers counterfactual thinking, which is the cause of consumer regret. It is expected that HMR production and distribution companies will be able to present the direction that should be considered as the most important factor.

## 2. Theoretical Background

### 2.1. Counterfactual thinking

Generally, regret expresses feeling of an action and/or a behavior to indicate sorrow and/or disappointment (Landman, 1987). Consumer's regret is said to be the emotion after comparing decision-making with forgone alternatives and is opposite to consumer's pleasure (Landman & Manism, 1992). Consumer's regret is said to be a negative emotion when consumer experiences and takes action under a current situation (Zeelenberg, Van den Bos, Van Dijk, & Pieters, 2002). In other words, regret is said to be a cognitive emotion (Sudgen, 1985; Zeelenberg et al., 2002) after counterfactual thinking of alternatives that the consumer has not selected. Therefore, counterfactual thinking consists of not only conditions of 'if do' but also a result of 'should do'. Counterfactual thinking was defined to be the generation of alternate realities at a change of two or more of precedent cases (Krishnamurthy & Sivaraman, 2002). Therefore, not only mutability but also alternate realities plays an important role at production of counterfactual

thinking (Huh, 2001). Counterfactual thinking are mental representations of alternatives to past events, actions, or states (Byrne, 2005; Epstude & Roese, 2008; Roese & Olson, 1997). Epstude and Roses(2008) reported that counterfactual thoughts epitomizes by the phrase "what might have been," which implicates a juxtaposition of an imagined versus factual state of affairs. The term counterfactual derives from philosophical writings in which the logical status of possibility and probabilistic reasoning were closely scrutinized (Epstude & Roses, 2008).

Many researchers such as Markman, Gavanski, Sherman and McMullen(1993) and McNullen(1997) classified counterfactual thinking into two kinds of thinking, upward and downward, based on the result. Upward counterfactual thinking imagines cases not happened in good way regardless of addition and/or deletion and alternate realities in a bad way (Markman et al., 1993; McNullen, 1997).

### 2.2. Satisfaction with HMR

Satisfaction with any product is a multi-dimensional inclusive concept, referring to the extent to which one is favorable for the product in the process of comparing, evaluating, selecting and purchasing (Kim, 2013; Kim & Lee, 2016; Seo & Oh, 2009; Shin, Hwang, Lee, & Cho, 2015; Yang, Choi, Lee, & Kim, 2016; Choi et al., 2017). A consumer's satisfaction with any product is believed to exert a critical influence on not only one's initial purchase behavior but also subsequent purchases on the grounds that satisfaction with a product directly and strongly acts on the decision making for a purchase behavior (Yang et al., 2016). And that it is part of the evaluation concerning whether the chosen option conforms to a prior belief in it as well as any difference between a pre-purchase expectation of the product and an actual feeling after use (Engel & Blackwell, 1982; Yang et al., 2016).

Satisfaction with HMR is said to be a favorable experience and cognition of either product or services and to maximize business profit (Swan & Comb, 1976). Satisfaction with HMR is defined to experience favorable feeling at comparison, evaluation and selection of product and/or services (Westbrook, Newman, & Taylor, 1978). Satisfaction with HMR is said to be an emotion between men's value and perceived outcome and an individual's pleasure (Kotler, 1991), and consumer's response to a product and/or service and feeling after consumption and pleasure (Oliver, 1996). Studies on consumer behavior (e.g., Campbell, 1999; Herrmann, Xia, Monroe, & Huber, 2007; Seiders, Voss, Grewal, & Godfrey, 2005) said that consumers who were satisfied with their own transaction had influence upon repurchase intention, complaint and words-of-mouth, and switching intention. Consumer's satisfaction with HMR may have influence upon switching purchase and/or repeated purchase depending upon satisfaction.

### 2.3. Behavior after purchase

Behavioral intention is said to be an individual's will and belief that take actions after deciding (Fishbein & Ajzen, 1980; Kim, 2017). Behavior after purchasing includes affirmative purchasing intention and negative purchasing intention based on the assumptions that behavioral intention is to make changes after purchasing. This study investigated repeated purchase intention and switching purchase intention after purchasing.

Festinger(1957) described cognitive dissonance as a psychologically uncomfortable state that motivates a person to reduce that dissonance (Sweeney, Hausknecht, & Soutar, 2000). Sweeney et al.(2000) argued that cognitive dissonance is an elusive construct. In experimental situations it has been measured in terms of indicators such as physiological reactions following dissonance arousal, attitude change following dissonance arousal or through changes in attitude to chosen and unchosen alternatives that were initially similarly valued. According to Festinger(1957)'s theory of cognitive dissonance, consumers who experience regret experienced cognitive dissonance, so they go through a post-cynsure process to regain self-regret. In other words, they can neglect and avoid advantages of the alternative by perceptual defense to nominate his or her alternative selected and to compare with the alternative not selected and to recover regret by comparative direction. Therefore, the consumers who had not experienced regret were likely to believe in their behavior selected. However, common consumers who experienced regret after buying were likely to do switching purchase.

## 3. Methodologies

### 3.1. Research model and Hypotheses

Regret is said to be an unpleasant experience at comparison between selection and non-selection (Landman, 1987) to pay regret premium (Bell, 1982) and to delay buying time (Cooke, Meyvis, & Schwartz, 2001) and likely to switch product brand when buying similar types of product. Also, the degree of regret depends on the sense of responsibility of the decision-making (Simonson, 1992), and on whether the situation can be reversed, whether the inconsistency of the selection and cognition on given up alternatives have been given (Tsiros & Mittal, 2000). Especially, since the direction of the counterfactual thinking focuses on the result part of the counterfactual, if the experience of regret occurred, it causes unpleasant emotions because it evaluates the alternative idea more subjective that the case which has already happened (Krishnamurthy & Sivaraman, 2002). Therefore, the following hypothesis was established.

**<Hypothesis 1>** Consumers with regret will have higher intentions to switch purchasing and counterfactual thinking than consumers who have no experience of regret.

Studies were conducted to investigate effect upon behavior after selection and/or purchase (Inman, Dyer, & Jia, 1997; Simonson, 1992; Taylor, 1997; Tsiros & Mittal, 2000; Yoo et al., 2017). At regret of selection of HMR based on precedent studies, consumers might have counterfactual thinking of selection of better quality product: "I could select better quality product when I did not select the product.", "I could take better food when I selected that product." According to Roese and Olson(1997), an active counterfactual thinking has a variety of social judgements related to emotional experiences, attitude and intentions, expectation and predictions, compensation, responsibility and punishment. They also argued that the effects of these counterfactual thinking are explained through the psychological mechanisms of contrast effect and causal inference (Roese & Olson, 1997).

The reason for the double-sidedness of the consumer behavior through the contrast effect is that the emotional experience and the cognitive judgement about the actual event become distinctive events that were not selected through the counterfactual thinking (McMullen, 1997; Roeses & Olson, 1997; Prashar et al., 2014). In other words, upward counterfactual thinking may judge unselected thing in favorable way to produce negative emotion, while downward counterfactual thinking may judge selected thing in favorable way to give affirmative feeling (Huh, 2002; Markman et al., 1993). Festinger(1957)'s theory of cognitive dissonance is also supported such a phenomenon. Therefore, consumers who had post solution after regret were likely to believe in their behavior to have affirmative and/or negative influence upon product and/or service cognized. In other words, the regret due to the consumer's choice or non-selection of an HMR product will lead to counterfactual thinking, and this counterfactual thinking will eventually affect the willingness to purchase or intend to purchase. The satisfaction factor of the HMR, which is a basic attitude variable that consumers have, is also affected. In addition, satisfaction factors that negatively affects because of counterfactual thinking can be interpreted as a consideration factor that consumers consider to be very important in selection and purchase. In this study, we established the following hypotheses based on the process of resolving consumer regret for HMR was the assumption of a bottom-up counterfactual thinking. The satisfaction factor of HMR was extracted from sub-factors and analyzed sub-hypotheses through PCA (Principal Component Analysis). Therefore, the following hypothesis was established.

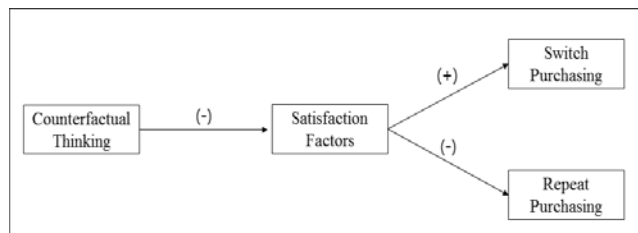
**<Hypothesis 2>** Consumer's counterfactual thinking about purchasing and using HMR will negatively affect

consumer's satisfaction with HMR.

When explaining the process of consumer satisfaction and dissatisfaction, it is common to approach through the expectancy-discrepancy model because it was often used to account for judgment of their satisfaction and how it was influenced by difference between perception and preliminary expectation level (Jun, Hyun, Gentry, & Song, 2001). This is because the pre-expectation level proposed by the model is a comparative criterion for evaluation the perceived performance of consumers after using the product and service, and it is possible to judge the satisfaction level from this viewpoint (Lee, Jun, & Choi, 2007; Yi & Su, 2014). For this reason, the satisfaction factors of consumers are the leading variable in switch purchasing or repeat purchasing. The factors that affect consumers' repeat purchasing or switch purchasing will ultimately lead to an important clue suggesting what factors should be strengthened for HMR production and distribution companies. Therefore, the following hypothesis was established.

**<Hypothesis 3>** Consumer's satisfaction factor that has a negative effect on counterfactual thinking will increase the switch purchase intention and reduce the repeat purchasing intention.

The conceptual research model reflecting all the above hypotheses is shown in <Figure 1>.



<Figure 1> Conceptual Research Model

### 3.2. Methods and Data Collection

For the purpose of carrying out this research, we conducted a direct structured questionnaire to students at 'J' college, located in the metropolitan area for 19days from September 5, 2016 to September 23, 2016. Their families were asked to make an inquiry, and 237 of the respondents who had experience purchasing HMRS were analyzed and utilized.

At first, the study gave a single question of experience of the regret, and counterfactual thinking consisting of six questions based on precedent studies (Huh, 2002; Kim, 2005; Roese & Hur, 1997): "I thought it was useless after buying a HMR product." "I thought of another product after buying a HMR product." and others. Likert 5-point scales were used. Based on the research of Zeithaml, Berry and

Parasuraman(1996) and Kim(2005), we measured negative intentions to switch purchasing intention, 5 items such as "I will not buy a HMR product again now that I experienced regret.". And repeat purchasing intention was measured by 5 items such as "After regretting once, I will still buy a HMR product again in the next purchasing." was measured on a Likert 5-point scale based on the research of Caudhuri and Holbrook(2001) and Kim(2005). Satisfactory factors for HMR are satisfaction with 25 factors such as "product price, brand, taste" used in previous research (Park, Kim, & Yang, 2015; Yang et al., 2016; Yang, Kim & Kim, 2016), and was measured on a Likert 5-point scale of "1" which was all satisfactory, and "5" which was not at all satisfactory. Then, it was decoded and used for analysis.

## 4. Empirical Analysis

### 4.1. Demographic characteristics

The interviewees consisted of 134 men (56.5%) and 103 women (43.5%). The age group was from 21 to 29 years old (33.3%), the largest group with a total of 79 people, followed by below than 20 years old consisting of 58 people (24.5%) and 40 to 49 years old with 48 people (20.3%) and 50 to 59 years old with 48 people (20.3%). College students consisting of 135 people (57.0%) was the largest, followed by office workers with 49 people, (20.7%), housewives with 26 people, (11.0%) and self-employed consisting of 19 people (8.0%) in order.

The ones who earned 3 million to 4 million KRW a month were 62 people (26.2%) to be the largest, followed by 60 people (25.3%) earning 4 million to 5 million KRW, 58 people (24.5%) earning less than 3 million KRW and 33 people (13.9%) of more than 6 million KRW.

86 people (36.3%) paid 5,000 to 10,000 KRW a time to buy HMR, followed by 72 people (30.4%) paying less than 5,000 KRW a time and 60 people (25.3%) paying 10,000 to 30,000 KRW; 105 people (44.3%) bought HMR at convenience store, followed by big mart of 88 people (37.1%). Convenience store helped increase sales of HMR.

### 4.2. Principal component analysis(PCA) on consumer's satisfaction

The study measured 25 factors of satisfaction with HMR (Park et al., 2015; Yang et al., 2016; Yang et al., 2016) to produce a minimum number of new variables by principal component analysis. Factor 4 with product price and brands was not used; the study inspected 3 factors without cognition on manufacturer of factor 1 that was thought to have no face validity. Factor 1 had 8 questions, for instance, state of food additives, main material (raw material), nutrition value, country of origin, safety, freshness,

environment friendly certification, and nutrition contents, to name a few HMR safety characteristics. Factor 2 included 11 questions, for instance, convenience to buy, cooking time, cooking method, place to sell, taste, time to supply food, shelf life, kinds of menu, discount event, capacity, and type of packing (appearance) to name a few HMR selection characteristics. Factor 3 included 3 questions such as distribution path, recommendation of neighboring persons, advertising and public relations to name a few HMR marketing characteristics. Kaiser-Meyer-Olkin (KMO) value was 0.918 found to be good at PCA analysis, and sphericity was found to be good at Bartlett's sphericity test ( $\chi^2=3052.490$ ,  $df=300$ ,  $p=.000$ ).

<Table 1> Main component analysis result

No	Item	Factors			
		HMR Safety	HMR Selection	HMR Marketing	Factor 4
hb11	State of food additives	.786	-.035	.140	.288
hb20	Main material (raw material)	.760	.254	.146	.134
hb12	Value of nutrition	.754	.069	.302	.140
hb10	Country of origin	.660	.284	.185	.169
hb9	Safety	.649	.394	.011	.175
hb19	Freshness	.623	.399	.120	.005
hb23	Environment friendliness certification	.610	.360	.276	-.021
hb14	Contents of nutrition	.567	.069	.536	.198
hb21	Cognition on manufacturer	.387	.280	.350	.054
hb25	Convenience of the purchase	.191	.710	.222	-.017
hb5	Cooking time	-.026	.693	.221	.247
hb4	Cooking method	.040	.668	.173	.368
hb24	Selling place	.250	.661	.271	.119
hb3	Taste	.310	.601	-.166	.226
hb18	Food supply time	.198	.580	.456	-.049
hb8	Shelf life	.387	.576	.184	.035
hb22	Kinds of menu	.400	.537	.200	.055
hb17	Discount event	.232	.536	.395	.114
hb6	Capacity	.254	.528	-.014	.434
hb7	Packing (appearance)	.204	.444	.402	.083
hb15	Distribution channel	.153	.238	.750	.007
hb16	Recommended by neighboring person	.188	.232	.733	.101
hb13	Advertising and public relations	.407	.115	.514	.443
hb1	Product price	.181	.207	-.021	.745
hb2	Brand	.217	.145	.406	.609

4.3. Results of reliability, validity and correlation analysis

Confirmatory factor analysis was done to verify validity, and reliability was tested to verify internal consistency to have reliability of 0.808~0.927, AVE of 0.465~0.616 and Cronbach's  $\alpha$  coefficient of 0.698~0.896.

<Table 2> Reliability and validity test result

Variables	item	Cronbach's $\alpha$	Construct Reliability	AVE	
Counterfactual Thinking	6	0.786	0.838	0.465	
Satisfaction Factors	Safety	8	0.896	0.928	0.616
	Choice	11	0.888	0.927	0.536
	Marketing	3	0.698	0.808	0.584
Switch Purchasing	5	0.826	0.871	0.576	
Repeat Purchasing	5	0.803	0.888	0.615	

Correlation analysis was done to inspect directions between variables as well as validity between variables (<Table 3>). At counter-factual thinking with AVE of 0.46, square of correlation coefficient had validity between variables.

<Table 3> Correlation analysis result

	1	2	3	4	5	6
1. Counterfactual Thinking	(0.465)					
2. Safety	-.207**	(0.616)				
3. Choice	-.046n.s	.663**	(0.536)			
4. Marketing	-.179**	.624**	.611**	(0.584)		
5. Switch Purchasing	.357**	-.093n.s	.055n.s	-.001n.s	(0.576)	
6. Repeat Purchasing	.245**	.145*	.126n.s	.094n.s	.369**	(0.615)
Mean	3.11	3.21	3.39	3.19	3.11	3.00
Standard Deviation	0.58	0.63	0.54	0.63	0.65	0.54

Note: \*\*  $p<.01$ , n.s means non-significant, AVE marked in ( ).

4.4. Results of hypotheses verification

Independent t-test was done to inspect independent samples of one group ( $n= 147$  persons) having regret experience, and the other group ( $n= 90$ ) to verify <Hypothesis 1>. As shown in <Table 4>, it was found that the group with regret experience had higher intention of counterfactual thinking and switch purchasing intention. Therefore, <Hypothesis 1> was adopted.

<Table 4> Results of independent t-test

	Group	Mean	Standard Deviation	Mean Difference	t-value	p
Counterfactual Thinking	Exp.	3.23	0.53	0.283	3.561	.000
	No Exp.	2.94	0.62			
Switch Purchasing	Exp.	3.20	0.56	0.256	2.987	.003
	No Exp.	2.95	0.75			

Note: Exp. means Regret Experience.

In order to verify <Hypothesis 2>, it is necessary to control the sex, age, and occupation that are confirmed to have a possibility of influencing the variables of the demographic characteristics through correlation analysis. We conducted regression analysis between counterfactual thinking and the HMR safety characteristics, the HMR selection characteristics, and the HMR marketing characteristics derived from PCA(Principal Component Analysis), respectively. Counterfactual thinking had a significantly negative influence upon HMR safety ( $\beta=-.196, p<.01$ ) and HMR marketing ( $\beta=-.169, p<.05$ ), and had no significant influence upon HMR selection ( $\beta=-.057, p=.391$ ). Therefore, <Hypothesis 2> was partially adopted.

Regression analysis was done to inspect effects of HMR safety and HMR marketing that counterfactual thinking had negative influence. Results of regression analysis showed that HMR safety had no significant influence upon switch purchasing intention ( $\beta=-.109, p=.102$ ) and repeat purchasing intention ( $\beta=.128, p=.053$ ). Meanwhile, HMR marketing had no significant influence upon switch purchasing intention ( $\beta=-.010, p=.874$ ) and repeat purchasing intention ( $\beta=.083, p=.208$ ). Therefore, <Hypothesis 3> was not adopted.

This result is quite different from the expectation that the effect of psychological mechanism of the contrast effect and causal inference claimed by Roese and Olson (1997) and

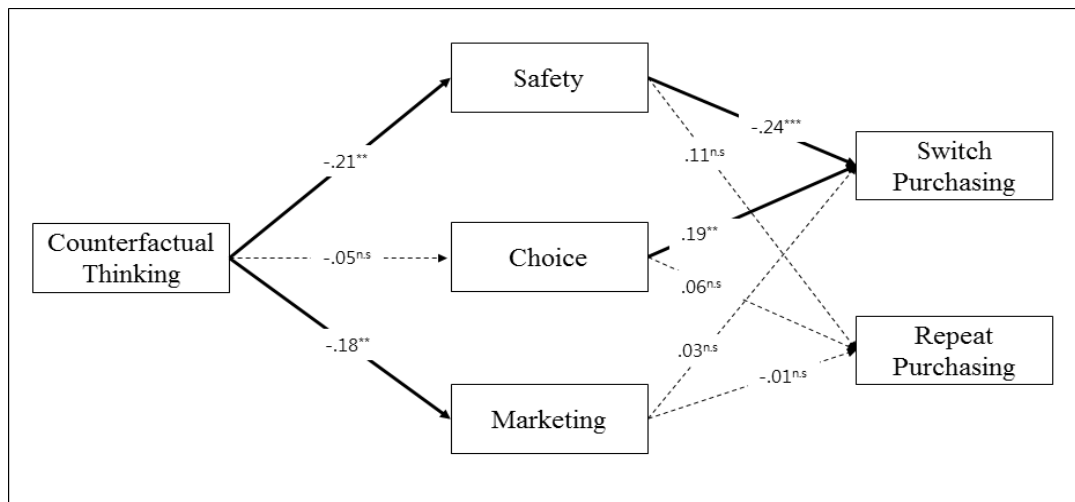
Festinger (1957)'s cognitive dissonance theory. The results of the structural equation analysis are shown in <Figure 2> to confirm that the counterfactual thinking is upward or downward.

At path analysis, counterfactual thinking had significantly negative influence upon not only HMR safety characteristics but also HMR marketing characteristics, and HMR safety lessened switch purchasing intention, and HMR choices elevated switch purchasing intention. And it was found that only 'counterfactual thinking → HMR safety → switch purchasing intention' was a valid path. The model had goodness-of-fit of  $\chi^2=354.327, df=6, p=.000, CMIN/DF=59.055, GFI=.661, NFI=.083, RMR=.097$  and  $RMSEA=.496$  to be much low. If we configure the additional path as the AMOS's MI(Modification Indices) provided such as between counterfactual thinking and behavior after purchase, and between consumer satisfaction factors, we can improve this model's goodness-of-fit. However, the purpose of this study is inconsistent and no further analysis is performed.

### 5. Conclusion

This study inspected the effects of counterfactual thinking upon switch purchasing intention as well as repeat purchasing intention through consumer's satisfaction attributes. The study found the effect of counterfactual thinking upon HMR, effect of consumer's satisfaction upon switch purchasing intention, and repeat purchasing intention to find out conditions of the appeal that the HMR producer and distribution thought of.

Some implications were extracted from the analysis findings as follows.



<Figure 2> Results of Path Analysis

First, results of independent t-test showed that consumers who regretted HMR purchasing had more counterfactual thinking than the ones who did not regret. The former was likely to conduct switch purchasing. As shown in the expectancy-discrepancy model, consumers who were not satisfied with HMR purchasing and use were more likely to produce more counterfactual thinking and to neglect products and/or brands bought and switch purchasing. Therefore, HMR manufacturers and distributors shall inspect consumers' expectation in the process of selection, buying and use to satisfy. More than the consumer's expectations, consumers may have high loyalty so that manufacturers and distributors shall monitor all of marketing process from shipping to selling to satisfy consumers' expectations and to take counter actions.

Second, results of regression analysis showed that counterfactual thinking had negative influence upon satisfaction with HMR safety and marketing. Nonetheless, consumers were likely to believe in their own selection of cognition dissonance theory proposed by Festinger (1957), and the psychological mechanisms of the contrast effect and causal inference proposed by Roese and Olson (1997). After counterfactual thinking, regret of HMR purchasing was likely to destroy not only satisfaction with HMR product but also appeal through marketing. Therefore, factors producing consumer's regret requires inspection.

Third, counterfactual thinking for lessening of regret could reduce satisfaction factors, and HMR safety could control switch purchasing intention to be consumer's important satisfaction. This study supported upward of counterfactual thinking not to switch product immediately at one time error at selection, purchasing and use of product when HMR producer and/or distribution got consumer's satisfaction. Consumers who had satisfied to a certain degree might have cognitive dissonance of minor mistake of HMR product and to be likely to have downward counterfactual thinking through contrast effect. HMR manufacturers and distributors shall have strategies to satisfy food additives, raw material, nutrition value, country of origin, safety, freshness, environment friendliness certification, contents of nutrition.

This study had some of difficulties and limitations that further studies needed to inspect.

First, this study did not consider the effect of consumer characteristics upon counterfactual thinking that precedent studies were much interested in. Counterfactual thinking might have influence upon consumer's selection and motives depending upon consumer's characteristics of selection decision. Further studies are needed to give various implications reflecting consumer's characteristics. Second, the study could not control bias of self-report questionnaire. Further studies shall overcome this bias by experimental research, research methodologies and scales. Third, the study did not include interviewees who had low buying ability with different HMR buying product group. Product shall be nominated and interviewee groups shall be

separated to research effectively. Fourth, longitudinal study and/or experiment shall be used to make use of control technique.

## References

- Bell, D. E. (1982). Regret in decision making under uncertainty. *Operations Research*, 30(5), 961-981.
- Byrne, R. M. (2007). Precipice of the rational imagination: How people create alternatives to reality. *Behavioral and Brain Sciences*, 30(5-6), 439-453.
- Campbell, M. C. (1999). Perceptions of price unfairness: Antecedents and consequences. *Journal of Marketing Research*, 36(2), 187-99.
- Chaudhuri, A., & Holbrook, M. B. (2001). The chain of effects from brand trust and brand affect to brand performance: The role of brand loyalty. *Journal of Marketing*, 65(2), 81-93.
- Choi, N. H., Wang, C. X., & Lim, A. Y. (2017). Roles of character identification and positive emotion response on intent to purchase character-attached product. *Journal of Industrial Distribution & Business*, 8(7), 51-63.
- Cooke, A. D., Meyvis, T., & Schwartz, A. (2001). Avoiding future regret in purchase-timing decisions. *Journal of Consumer Research*, 27(4), 447-459.
- Engel, J. F., & Blackwell, R. D. (1982). *Customer behavior* (4th ed.). IL: Chicago, Dryden Press.
- Epstude, K., & Roese, N. J. (2008). The functional theory of counterfactual thinking. *Personality and Social Psychology Review*, 12(2), 168-192.
- Festinger, L. (1957). *A Theory of Cognitive Dissonance*. Stanford, CA: Stanford University Press.
- Fishbein, M., & Ajzen, I. (1980). Predicting and understanding consumer behavior: Attitude-behavior correspondence. in I. Ajzen, M. Fishbein (Eds.), *Understanding Attitudes and Predicting Social Behavior* (pp.148-172). Englewood Cliffs, NJ: Prentice Hall.
- Herrmann, A., Xia, L., Monroe, K. B., & Huber, F. (2007). The influence of price fairness on customer satisfaction: An empirical test in the context of automobile purchases. *Journal of Product & Brand Management*, 16(1), 49-58.
- Hur, T. K. (2001). The role of regulatory focus in activation of counterfactual thinking. *The Korean Journal of Social and Personality Psychology*, 15(2), 159-171.
- Inman, J. J., Dyer, J. S., & Jia, J. (1997). A generalized utility model of disappointment and regret effects on post-choice valuation. *Marketing Science*, 16(2),

- 97-111.
- Jun, S. K., Hyun, Y. J., Gentry, J. W., & Song, C. S. (2001). The relative influence of affective experience on consumer satisfaction under positive versus negative discrepancies. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 14, 141-154.
- Kim, E. H. (2005). *Consumer regret: Its antecedents and the effect of regret recovery process on postpurchase behavior*. (Doctorial dissertation, Jungang University). Retrieved May 22, 2017 from <http://www.riss.kr/link?id=T9991109>
- Kim, G. C. (2013). A study on the effects of super-supermarket service quality on satisfaction in store selection. *The International Journal of Industrial distribution & Business*, 4(2), 41-49.
- Kim, P. J. (2017). The analysis of the factors in customer trust and revisit decision in traditional market. *Journal of Industrial Distribution & Business*, 8(7), 71-81.
- Kim, P. J., & Lee, J. Y. (2016). A study on the effect of perceived quality on whitening cosmetics' satisfaction and repurchase; Focused on university students. *The East Asian Journal of Business Management*, 6(2), 15-22.
- Korea Agricultural & Fish Food Distribution Corporation (2016). 2015 Processed Food Subdivision Market Status: Instant Intake Cooked Food Market. *Food Industry Survey Information Market Trend Report*. 71-96.
- Kotler, P. H. (1991). *Marketing Management: Analysis, Planning, and Control*. NJ: Prentice-hall.
- Krishnamurthy, P., & Sivaraman, A. (2002). Counterfactual thinking and advertising responses. *Journal of Consumer Research*, 28(March), 650-658.
- Landman, J. (1987). Regret and elation following action and inaction. *Personality and Social Psychology Bulletin*, 13(4), 524-536.
- Landman, J., & Manis, J. D. (1992). What might have been: Counterfactual thought concerning personal decisions. *British Journal of Psychology*, 83(4), 473-477.
- Lee, H. S., Jun, S. K., & Choi, Y. J. (2007). The effects of cognitive and emotional responses on consumer satisfaction judgment: Distinguishing perceived performance into functional and psychological benefits. *Korea Marketing Review*, 22(2), 1-19.
- Markman, K. D., Gavanski, I., Sherman, S. J., & McMullen, M. N. (1993). The mental simulation of better and worse possible worlds. *Journal of Experimental Social Psychology*, 29(1), 87-109.
- McMullen, M. N. (1997). Affective contrast and assimilation in counterfactual thinking. *Journal of Experimental Social Psychology*, 33(1), 77-100.
- Oliver, R. L. (1996). *Satisfaction: A Behavioral Perspective on the Consumer*. New York: McGraw Hill.
- Park, K. S., Kim, J. B., & Yang, H. C. (2015). Food and nutrition students' evaluation for home meal replacement quality using importance-performance analysis. *Journal of Distribution Science*, 13(7), 19-24.
- Prashar, S., Raja, A., Parasaran, V. S., & Venna, V. K. (2014). Factors prompting impulse buying behavior: Shoppers in Dubai. *The East Asian Journal of Business Management*, 5(3), 5-15.
- Roese, N. J., & Olson, J. M. (1997). Counterfactual thinking: The intersection of affect and function. *Advances in Experimental Social Psychology*, 29, 1-59.
- Seiders, K., Voss, G. B., Grewal, D., & Godfrey, A. L. (2005). Do satisfied customers buy more? Examining moderating influences in a retailing context. *Journal of marketing*, 69(4), 26-43.
- Seo, J. W., & Oh, M. S. (2009). The effect of dietary life pattern, product diversity, product satisfaction, purchase intention. *Tourism Research*, 29, 43-65.
- Shin, C. S., Hwang, G. S., Lee, H. W., & Cho, S. R. (2015). The impact of Korean franchise coffee shop service quality and atmosphere on customer satisfaction and loyalty. *The East Asian Journal of Business Management*, 5(4), 29-35.
- Simonson, I. (1992). The influence of anticipating regret and responsibility on purchase decisions. *Journal of Consumer Research*, 19(June), 105-118.
- Sudgen, R. (1985). Regret, recrimination and rationality. *Theory and Decision*, 19(July), 77-99.
- Swan, J. E., & Comb, L. J. (1976). Product performance and consumer satisfaction: A new concept. *Journal of Marketing*, 40(2), 25-33.
- Sweeney, J. C., Hausknecht, D., & Soutar, G. N. (2000). Cognitive dissonance after purchase: A multidimensional scale. *Psychology and Marketing*, 17(5), 369-385.
- Taylor, K. A. (1997). A regret theory approach to assessing consumer satisfaction. *Marketing Letters*, 8(2), 229-238.
- Tsiros, M., & Mittal, V. (2000). Regret: A model of its antecedents and consequences in consumer decision making. *Journal of Consumer Research*, 26(March), 401-417.
- Westbrook, R. A., Newman, J. W., & Taylor, J. R. (1978). Satisfaction/dissatisfaction on the purchase decision process. *Journal of Marketing*, 42(4), 54-60.



- Yang, H. C., Choi, B. N., Lee, C. H., & Kim, J. B. (2016). Effects of shopping orientation, trust and satisfaction on WOM intention: Focusing on undergraduates' HMR choices. *International Journal of u- and e-Service, Science and Technology*, 9(4), 175-184.
- Yang, H. C., Kim, J. B., & Kim, A. S. (2016). Different perception on product Attributes of HMR: Focusing on college students and consumers. *Journal of Distribution Science*, 14(2), 47-56.
- Yi, S., & Su, S. (2014). A study of the factors that impact Chinese consumers' purchasing intent for high-tech products. *The East Asian Journal of Business Management*, 4(1), 37-40.
- Yoo, S. S., Huh, M. Y., & Min, K. D. (2017). Women as consumers: An analysis on their consumption culture. *Journal of Industrial Distribution & Business*, 8(7), 31-38.
- Zeelenberg, M., Van den Bos, K., Van Dijk, E., & Pieters, R. (2002). The inaction effect in the psychology of regret. *Journal of personality and social psychology*, 82(3), 314-327.
- Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing*, 60(2), 31-46.