# THE EFFECTS OF PRICE COMPARISON SITE ON PRICE PERCEPTION AND VALUE PERCEPTION OF ONLINE CONSUMER 

## SUN LEE

## THESIS

Submitted to<br>KDI School of Public Policy and Management in partial fulfillment of the requirements for the degree of<br>MASTER OF BUSINESS ADMINISTRATION

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Supervisor Kwon Jung $\qquad$

# ABSTRACT <br> EFFECTS OF PRICE COMPARISON SITE ON PRICE PERCEPTION AND VALUE PERCEPTION OF ONLINE CONSUMERS 

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Sun Lee

The main objective of this study is to examine whether and how consumers' perception can be changed in online shopping context when the consumers adopt a price-comparison site. Price-comparison sites are the informative websites which provide all the possible prices along with the vendors in online. It has been argued that the more online consumers adopt price-comparison sites, the more consumers weigh with 'price' in their decision making. There are some evidences supporting that a consumer becomes more sensitive to the prices after employing a pricecomparison site, although, the price perception still remains unexplored in relation with the adoption of a price-comparison site. This study, for that reason, sheds light on the consumers' price perception rather than the price sensitivity. Especially what kind of effect a price-comparison site would have on the price perception is to be explored.

This study employs an experimental method which is designed to compare the
perceptions of the two groups one of which is provided with a price-comparison site whereas the other not. Buyers' Perceived Acquisition Value (PAV), Perceived Transaction Value (PTV), and Willingness to Buy (WB) as well as their Internal Reference Price (IRP) and Acceptable Price Range (APR) are compared across price-comparison-site user group and non-user group.

From the analysis of responses, it is found that online consumers perceive relatively higher level of reference price when they are provided with alternatives' price information by a price-comparison site than when they are not. This result appears to be contradicted to the conventional idea that price-comparison sites drive consumers to the lower level of price perception. From the further analyses in this study, it is discovered that price-comparison sites are doing important role as relieving consumers from possible loss regarding price which is usually assumed extremely volatile in online retail market.

This paper suggests meaningful evidences contradicting to the conventional predictions asserting that, based upon the theory of Economics of information (Stigler 1961), price perception of online consumers are getting lower and lower as consumers are more armed with price information. This study suggests some strategic implications to the online retail managers, and also some for the further studies on e-consumer behavior.

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## I. INTRODUCTION

## 1. Distinctive Features of Internet Shopping

Electronic retail market has been considered to bring a fundamentally new environment to consumers (Hoffman, Novak, and Chatterjee 1995). The major impacts of electronic shopping interface on the retail business are presented as five (Grewal et al. 2003); first, a drop in buyers' information search costs, and consequent retrenchment in sellers' margin; second, a decline in market entry barrier and increasing competition; third, a reduction of the information asymmetry between sellers and buyers; fourth; a renewed emphasis on perceived value; and fifth, an increased emphasis on customized marketing.

Brynjolfsson and Smith (2000) have discovered that buyers' search cost declines at least 30 -fold in the Internet shopping in comparison to in-person retail stores or telephone-based shopping. Obviously it costs far less for shoppers to navigate back and forth with only clicking than to drive malls to malls. Buyers even benefit from the Internet in which they can directly reach to the sellers without any intermediaries. Obviously, it is one of the most profound impacts of the Internet shopping facilities that buyers' search cost is reduced significantly. The successful business models of eBay.com or Auction.com manifest that increasing numbers of transactions in online
would occur without intermediaries. In this sense, early researchers have anticipated that "disintermediation" would occur in the E-tail market (Gellman 1996; Hoffman 1995).

However recently, although the Internet environment may save consumers effort, money, and time to search and evaluate alternatives, they leave consumers with information overload problem (Suri et al. 2003). Since the Internet provides indefinite amount of information and too-much alternatives that none of the other retail format can provide, it becomes difficult and costly for buyers to identify and screen the relevant information. Therefore, consumers began to adopt communication channels that can customize information on behalf of themselves (Li 1999). Now consumers develop a small set of alternatives with a help of 'Internet shopping agents' based either the price level (Dodds, Monroe, and Grewal 1991) or the brand (Chang, Mendonca, and Im 2004). Considering that consumers prefer small numbers of alternatives- usually less than four- due to the short-term memory limitation (Montgomery et al., 2004), those Internet shopping agents are considered to be great boon to the online consumers. This is how 'Reintermediation' (Smith, Bailey, and Brynjolfsson 1999) in the Internet retail market occurs. Unlikely to the traditional theory that the E-tail market would evolve to greater efficiency with the disintermediation, E-tail market seems to be evolving the other way,
'Reintermediation'. This reintermediation is so meaningful that E-tail managers should seriously consider the impact of this new intermediary on consumer attitude.

## 2. Internet Shopping Agents

Literatures have termed these Internet shopping agents in variety such as Shopbots (Greenwald and Kephart 1999; Smith and Brynjolfsson 2001), Interactive Home Shopping (Alba et al. 1997), Informediaries (Hagel and Singer 1999), Interactive decision aids (Haubl and Trifts 2000), Internet shopping agents (Iyer and Pazgal 2003), and Price comparison sites (Waldfogel and Chen 2003). A designated concept of them is that it automatically collates comprehensive information about price and product quality then distributes them to the customers at almost zero cost (Greenwald and Kephart 1999).

Generally Internet shopping agents are considered to bring wealth to the buyers. Haubl and Trifts (2000) demonstrated that the Interactive decision aids allow consumers to make much better decisions while expending substantially less effort. Lynch and Ariely (2000) argued that a shopbot enhances overall customers' welfare through reducing information asymmetry between buyers and sellers.

Although a report by Jupiter Communications (2001) exhibits that $18 \%$ of respondents above the age of 16 in the United States are still unaware of the existence
of any Internet shopping agent websites, it is clear that the number of visitors to the Internet shopping agents is increasing over time according to the 13 -month panel dataset analysis by Waldfogel and Chen (2003). Besides, e-Consultancy (2007) has reported that the percentage of online retail sales derived from comparison sites is growing (see Appendix 1). This is why global search engines such as Yahoo, MSN, Google have introduced the 'shopping-aid' services that had been provided by mysimon.com or Bizrate.com.

In South Korea, over thirty numbers of price comparison service websites have been launched since the shopbinder.com first introduced the business in 1998 (Metrix 2005). For the top two price comparison service websites (www.enuri.com and www.danawa.com), average number of weekly visitors is estimated to be around 0.7 millions (Webstory 2007). According to a $\mathrm{KNP}^{1}$ report (2005), it is estimated that $29.8 \%$ of the Korean online consumers are using price-comparison websites for shopping.

## 3. Price Perception in E-tail Market

According to a KISDI $^{2}$ report (2004), one of the critical factors driving Korean consumers to the online shopping is the online prices that are usually supposed to be

[^0]lower than in any other retail shops. It has been observed that consumers generally expect relatively low prices in online than in brick-and-mortar counterparts (Brynjolfsson and Smith 2000; Hardesty and Suter 2005). Assuming that it would cost far less for the e-tailers at least in the overhead cost than for the brick-and-mortar retailers and that e-tailers are suffering furious price-competition (Greenwald and Kephart 1999; Grewal et al. 2003), consumers are taking it for granted to see relatively low prices in the Internet (Dickson and Sawyer 1990). Even if consumers never consider the sellers' competitive situations, they show high level of price sensitivity in especially online because they have been frequently exposed to the strong signals of discount and promotion in online (Degeratu, Rangaswamy and Wu 2001).

On the other hand, at the same time, consumers seem to be increasingly concerned about the possible loss which might occur when they overlook alternatives in terms of prices. Prices in online are highly volatile and dispersed due to the low menu cost (Brynjolfsson and Smith 2000; Grewal et al. 2003; Lynch and Ariely 2000) and e-consumers are well aware of that. Therefore, e-consumers are likely to be less dependent on their memory or knowledge regarding prices and more relying on the information from online shopping agents.

## 4. Impact of Internet Shopping Agents on E-Consumer Behavior

Regarding the impact of Internet shopping agents on e-consumers attitude, majority of studies have focused on price sensitivities. Some of them argue that proliferation of Internet shopping agents would necessarily increase sellers' price competition and buyers' price sensitivity as well (Bakos 1997; Degeratu, Rangaswamy, and Wu 2001; Iyer and Pazgal 2003; Shankar, Rangaswamy, and Pusateri 1999; Waldfogel and Chen 2003). 오정은 (2001) has discovered that the more a customer uses price comparison sites, the greater price sensitivity he shows. In addition, Greenwald and Kephart (1999) found that shoppers using Internet shopping agents make more purchase from low-price retailers than shoppers who don't use would do. Waldfogel and Chen (2003) also found that individuals reduced frequency of purchasing at branded retailers by about 10 percent after taking up Internet shopping agents. Based upon these findings, it has been expected that Internet shopping agents would undermine retailers' investment in brand and may bring ultimate market efficiency. For the e-tail managers, in this sense, it would be recommended to take price-focusing strategies as more buyers adopt Internet shopping agents. (Iyer and Pazgal 2003; Waldfogel and Chen 2003).

On the other hand, there are contradicting arguments. E-consumers' price sensitivity has not to be necessarily high when the all the price information is
available by the Internet shopping agents. Sometimes consumers are more conscious about time and effort cost than opportunity cost of overlooking better alternatives. In fact, it is an annoying process to register at a new shopping site and get used to its process for the consumers who consider time and security as more important commodity than any others. In addition, online shoppers may not actively search the prices because they consider other features such as delivery and refund policy more important. Too-low prices are often associated with something suspicious regarding product quality or store reliability. Internet shoppers who favor certain e-tailer brands or try to avoid possible risk would also be inactive in searching price information in online (Smith, Bailey, and Brynjolfsson 1999). Ernst \& Young (2001) has reported that some e-consumers actually have purchased from their favorite sellers or big retailers in online even being aware of their arrogant prices.

From above, one needs to note that e-consumers, even if they have higher pricesensitivity in online compared to physical stores, would not necessarily associate the highest value with the lowest price. Consumers may use the Internet shopping agents only for identifying whether the price of their favorite seller is not ridiculously higher than the market average (Iyer and Pazgal 2003).

## 5. Research Objectives

As far as e-consumers are trying to get information from the price-comparison sites, the e-tailers should locate themselves at this venue. Then it is essential for the etailers to know what kinds of attitude e-consumers have with the price-comparison sites and how e-tailers should respond to them.

Recent studies on the Internet shopping behavior (Chang, Mendonça, and Im 2004; Moe 2003; Rowley 2000) have been successful in terms of efficiency and accuracy which was driven by thousands of individual click-stream data. Although, these studies are short of theoretical demonstration as they are dependent on observation of consumers' final choice. It is pathetic that the recent studies have focused only on how much e-consumers are sensitive to price, however, and have not included why they have such attitudes or how they would like to be in future. What really needs for e-tail managers now may be how the process in which a consumer perceives one single price and evaluate it can be different in the Internet from it in the physical stores.

Information provided by the Internet shopping agents is supposed to have some influence on consumers' perception and attitude not only because those information are highly reliable by its nature but because they are efficient to be compared and
evaluated. It is great interest to explore how the information in price-comparison sites can influence consumers' price perception.

Therefore this study sheds light on the impact of price comparison sites on econsumers' behavior. Specifically, the effects of price-comparison sites on consumers' price perception, value perception, and purchase intention will be examined. For this purpose, this study employs experimental method which is supposed to take more generic picture of consumers' perception and attitude in eshopping.

The present research is expected to make a contribution in two main ways. First, the major effect of price comparison sites on consumer attitude would be manifested. Second, the relationship among price perception, value perception, and purchase intention (Monroe 1990) will be examined in online shopping context.

The following sections are consisted of the review of early literatures on consumer price perception and the theoretical explanations of reference price effects on consumer perception. Hypotheses based on those theory, experimental design, study result and analyses will be followed.

## II. CONCEPTUAL FRAMEWORK

## 1. Price-Comparison Sites and Internal Reference Price

Consumers' responses to the prices are known to be consequences of individual cognition or perception. This is based on the S-O-R (stimulus-organism-response) model proposed by Jacoby and Olson (1977) who proposition that external stimuli are first encoded, stored, or interpreted in an organism and then affect behavioral responses. In the same sense, what really affects buyer' decision making may be not the objective price but the interpreted prices that are meaningful and relevant to the buyer (Monroe 1990; Zeithaml 1984).

Adaptation-Level Theory which is originally interpreted by Helson (1964) demonstrates that consumers carry with them an adaptation price level against which they evaluate offer prices. This anchor is called 'reference price' for which buyers judge given prices acceptable, too high, or too low (Monroe 1990). Note that buyers' judgments are influenced by the relative difference between offer price and reference price. That is to say, one single price can be regarded as either expensive or cheap in accordance with the individual reference price. This idea coincides with a classical psychophysics concept asserting that judgment of a stimulus difference depends on the magnitude of standard against which such judging is made (Monroe 1973).

Regarding reference prices, scholars have been recently argued that they should be classified into External and Internal Reference Price (Chandrashekaran 2004; Grewal et al. 1998; Han, Gupta, and Lehmann 2001; Monroe 1990). External Reference Price (ERP) represents stimulus given by either media or retailers while Internal Reference Price (IRP) represents a point set by consumers themselves. Some researchers argue that IRP is again classified into several forms and consumers use more than one IRP even in single purchase occasion (Shirai 2003).

Internal reference prices are known to be influenced by external reference prices such as advertised selling prices as well as product quality perception. Urbany, Bearden, and Weilbaker (1988) and Grewal, Monroe, and Krishnan (1998) have demonstrated that the advertised reference prices have certain influence on buyers' internal reference prices. In addition, price expectation or price memory have also nominated as variables having substantial impact on consumers' internal reference prices (Jacob and Obermiller 1989; Kalwani and Yim 1992; Krishna 1992; Mela and Urbany 1997; Winer 1986).

It has been found that there is a positive relationship between the certainty on information and the consumers' reference price (Kosenko and Rahtz 1988) because consumers having less certainty are more likely to depend on their memories which tend to keep internal reference prices at plausible or discounted level. Assuming that
uncertainty magnifies the impact of 'memory' on setting internal reference prices, online consumers in uncertain situation are supposed to set their IRP at lower level than consumers with high certainty are supposed to do (Bettman 1979; Monroe 1971; Rosch 1975; Zeithaml and Graham 1983).

Considering that the reliable information of price comparison sites could reduce the consumers' uncertainty level, online consumers may perceive relatively higher IRP when they employ price-comparison sites compared to when they don't. In other words, online consumers are less likely to expect great amount of discounting when they are provided with the reliable information

Current study propositions that, under the adaptation-level theory, there is a certain relationship between price information of a price-comparison site and buyers' internal reference prices. Provided that consumers are provided simultaneous market information by a price-comparison site therefore have less uncertainty in the domain of price dispersion at least, IRP of those consumers would relatively high compared to those who don't have such information.

Hypothesis1. Online buyers who have price information provided by Price-Comparison Sites will have higher internal reference prices than those who do not have such information.

## 2. Price-Comparison Sites and Acceptable Price Range

Several studies demonstrate that there is latitude of acceptance level of reference price rather than a single point of it (Han, Gupta, and Lehmann 2001; Monroe and Petroshius 1981). The concept of the acceptable price range (APR) is based upon social judgment theory and the assimilation-contrast effects (Sherif 1963; Sherif and Sherif 1967). The acceptable range is identified by upper and lower limit. The upper price limit captures the maximum price above which consumers would think it too expensive thus unfavorable, while the lower price limit identifies the price below which consumers would be suspicious of the quality of the product (Gabor and Granger 1966; Monroe and Venkatesan 1969).

Historically researchers have been interested in either the width or the level of APR (Lichtenstein, Bloch, and Black 1988). The acceptable price range is not a fixed one but a flexible one thus can be shaped or shifted by information consumers find (Cox and Saliagas 1986; Kosenko and Rahtz 1988). Researchers have suggested that individual's acceptable price range is influenced by numerous factors, such as price consciousness and product involvement (Lichtenstein et al. 1988). According to the Theory of Social Judgment, a buyer who has greater involvement or more discriminating attitude is more likely to have a narrower acceptable price range
(Kosenko and Rahtz 1988).

Interestingly, it has been argued that uncertainty in prices magnifies the range of prices consumers consider acceptable (Dickson and Sawyer 1990; Winer 1989). It is easy to assume that a buyer would narrow down the extent of acceptable prices as he or she is provided with more information about the extent of price dispersion in market. Mazumdar and Jun (1992) also affirmed that high price uncertainty widens a gap between the budget a consumer allocate for purchasing and the threshold from which he or she would perceive a loss while the uncertainty has no significant impact on the gap between the budget and the thresholds for gain

In this consequence, assuming that a price comparison site reduces uncertainty in buyers' price judgment, it is proposed that the width of Acceptable Price Range of online buyers would be narrower when they employ price comparison sites than they don't.

Hypothesis2. Online buyers who have price information provided by Price-Comparison Sites will have narrower acceptable price ranges than those who do not have such information.

## 3. Price-Comparison Sites and Perceived Value and Willingness to

 PurchaseEarlier researchers have demonstrated that there is direct relationship between the perceived value and the purchase intention. It must be fruitful to measure buyers' perceived value in anticipating their purchase decision. Perceived value is defined as a customer's assessment on the net utility based upon a judging what would be received from and what would be given for the purchasing (Monroe and Petroshius 1981; Sweeney, Soutar, and Johnson 1999; Zeithaml 1988). Current study defines perceived value as a buyer's evaluation on the tradeoff between the perceived quality of a product and the price.

It is often observed in literatures that perceived value is composed with two independent concepts: (1) acquisition value (AV), and (2) transaction value (TV) (Grewal, Monroe and Krishnan 1998; Lichtenstein, Netemeyer and Burton 1990; Monroe 1990; Monroe and Chapman 1987; Thaler 1985). The acquisition value, by definition, means expected pleasure gained from using product less what is paid for getting it. Whereas the transaction value means psychological utility generated from a good buy independent of the product quality. Total Perceived Value is the weighted sum of the acquisition value and transaction value.

Thaler (1985) and Monroe and Chapman (1987) have proposed that the perceived transaction value is a function of current deal price and buyers' internal reference price. Some earlier researches have validated this 'arithmetic model' to measure the perceived value constructs (Grewal, Monroe, and Krishnan 1998; Levin and Johnson 1984; White and Truly 1989). Urbany, Bearden, and Weilbaker (1988) demonstrated that there's a positive relationship between buyers' internal reference prices and their perceived transaction values. It has been shown that if a consumer encounters a product at a price lower than his or her reference price, he or she perceives a gain. Conversely, a price higher than the reference price is perceived as a loss. From this gain or loss, do consumers perceive transaction utility (Han, Gupta, and Lehmann 2001; Kalwani and Yim 1992, Mayhew and Winer 1992, Thaler 1985). Accordingly PTV is positive if the actual price is less than the buyer's reference price, zero if it they are equal, and negative otherwise (Monroe 1990 p.76). And if a buyer perceives a positive transaction utility based upon a comparison between the sale price and the internal reference price, it means likelihood of purchasing. This conceptual demonstration has been empirically confirmed (Monroe and Chapman 1987; Thaler 1985; Urbany, Bearden, and Weilbaker 1988).

$$
\begin{aligned}
& \quad \text { PTV }=\boldsymbol{I R P}-\boldsymbol{P} \\
& \text { PTV : Perceived Transaction Value } \\
& \text { IRP : Internal Reference Price }
\end{aligned}
$$

## P : Offer Price

Grewal et al. (2003) demonstrate that the perceived transaction value, in online shopping context, is higher when a buyer has better ability or tool for searching out the best deal. Admitting that a price-comparison site provides buyers with better tool for searching and evaluating the alternatives, current study assumes a relationship between buyers' employment of a price-comparison site and their perceived transaction value.

There are two significant variables influencing perceived transaction value especially in online. First, it is known to be influenced by consumers' perception on expected future price. Kwon and Schumann (2001) have demonstrated that there is a significant drop in buyers' transaction value when they expect the future price being lower than the current one. Second, perceived transaction utility is also influenced by the level of buyers' certainty on the expected price. The relationship between the perceived transaction value and the expected price was found to be stronger when consumers have higher certainty about their expectation (Kwon and Schumann 2001). Besides, it also has been demonstrated that there is significant relationship between price dispersion and consumers' transaction utility in an Internet group-buying situation (Lai, Doong, and Yang 2006).

Given that a consumer is concerned about the risk of an alternative which may
offer better price than the current one does, both the level of expected price and its probability appear to have significant impact on the level of perceived transaction value on the current deal.

Since online consumers have witnessed frequent price promotion or discount in the Internet retail market, they usually have low price expectation in online. Consequently Internet shoppers are supposed to perceive low transaction value against a normal price unless they are certain about what the other alternative prices are. Therefore current study propositions that the perceived transaction value will be higher when a buyer is provided comprehensive price information by a pricecomparison site compared to when without it.

## Hypothesis3. Online buyers who have price information provided by Price-

## Comparison Sites will perceive higher transaction value than those who do not

## have such information.

Perceived Acquisition Value (PAV) is associated with the perceived benefit acquired from the product quality relative to the price (Grewal, Monroe, and Krishnan 1998; Grewal et al. 2003; Monroe 1990; Monroe and Chapman 1987; Thaler 1985). In economic theory, the value is equivalent to the reservation price or the maximum acceptable price the buyer would be willing to pay. Therefore Perceived Acquisition

Value (PAV), by definition, can be determined by comparing buyer's maximum acceptable price to the current offer price as follows (Monroe 1990 p.76). PAV is positive if the actual price is less than the buyer's maximum acceptable price, zero if they are equal, and negative otherwise.

$$
\begin{gathered}
\boldsymbol{P A V}=\boldsymbol{M A P}-\boldsymbol{P} \\
\text { PAV : Perceived Acquisition Value } \\
\text { MAP : Maximum Acceptable Price } \\
\text { P : Offer Price }
\end{gathered}
$$

Ford and Smith (1987) demonstrated that greater uncertainty leads to greater discounting of the inferred attribute value. It is attributed to the theory that consumers generally want to avoid possible disappointment or future loss related to poor quality (Rao and Sieben 1992). Consumers, in general, behave in a risk-averse and a conservative manner in which they assume that low price implies a below-average quality or some defaults particularly when consumers are not provided reasonable information. This is also consistent with the argument of the Information Economics according to which consumers are apprehensive of an unidentified seller who offers below average prices selling low quality products.

Since PAV is related to the given price and product quality, we cannot intuitively expect any direct effect of price-comparison site on buyer's PAV. However one can imagine that consumers might perceive enhanced PAV, for the same product, after
visiting a price comparison site in which consumers' uncertainty about product quality are discarded to some extent and in which consumers get some positive influence about product qualification from the fact that wider domain of retailers are providing it.

## Hypothesis4. Online buyers who have price information provided by Price-

 Comparison Sites will perceive higher acquisition value than those who do not have such information.If a buyer perceives positive value either in transaction or in acquisition from a product, he or she is highly likely to purchase it. It has been firmly demonstrated that buyer' willingness to purchase is positively related to his or her perceived value.

For a product, if a buyer perceives relatively higher value with price information of price-comparison sites, he or she would probably exhibit relatively higher purchase intention with price information of price-comparison sites than without it.

Hypothesis5. Online buyers who have price information provided by Price-Comparison Sites will show higher willingness to purchase than those who do not have such information.

## III. Method

## 1. Study Design

In order to examine the effects of adopting price-comparison site on online buyers' cognitive attitude independently of their individual shopping habits, current research employs an experimental method. A between-subject design was employed in this study by manipulating the availability of a price comparison site.

At the beginning of each session, subjects were asked to assume a situation in which they got need of the product for personal use and come to try to evaluate the given item. All the web pages were suggested as if they were real ones. Subjects positioned in price comparison site (PCS) group were provided a web page (named "price-compare.com") which showed five online retailers’ alternative prices annexed all the charges prior to that they were driven to the web page of the target store which offers the medial price of five. Contrastingly, subjects in non-PCS group were only provided with the target store web page. And then all the subjects were presented questionnaire pages. All the other qualities as well as web design were identical in both conditions.

## 2. Procedure

Two product categories- laptop computer and jeans- were selected. Since it has been demonstrated that online consumer attitude and behavior are variable along the level of perceived ease in judging product quality online (Cho and Ha 2004; Figueiredo 2000; Lal and Sarvary 1999), two product categories should be eligible for the followings: (1) both should be considered as viable to be bought online, and (2) two categories should be discriminated as to the easiness of quality-judging online. Based on a pretest ( $\mathrm{n}=32$ ) result, laptop computer and jeans were chosen from the eight product categories that are known to be frequently purchased online (Ernst \& Young 2001). The order of two sessions was alternately posited across the subjects and was found to have no effect on the experiment.

All the subjects were recruited and provided experiment materials in the website of a professional online market research agency Embrain (www.embrain.com) in Korea. Among those who had experienced online purchasing within three months, eighty responses were collected after screening out some ineligible responses.

Each subject was positioned in one of the two conditions (see Table 1) and conditions of two product sessions were fixed in each subject.

Table 1 <MANIPULATION>

| Cell | C $\mathbf{1}$ (NON-PCS) | C 2 (PCS) |
| :---: | :---: | :---: |
|  |  | M1 |
| Price |  | M2 |
| information | M5 | M5 |
|  |  | M3 |
|  |  | M4 |

M1 to M5 represents five alternative retailers which correspond to each fixed price level. Prices including the highest, the lowest, and the middle were set according to them in real market. One of the most popular items in each category was selected and its prices were borrowed from a reliable shopping portal site in Korea. The other price levels were set so that all the price gaps between any two adjacent ones are even.

Five retailer names were chosen based on a pretest of thirty-two university students. Respondents gave ratings to ten fictitious but plausible store names as their preference level with seven Likert scales. Pretests in several studies were referred (Osgood, Suci, and Tannenbaum, 1957; Simonin and Ruth 1995). Five among ten were finally selected for the experiment. It was confirmed that there's neither overlapping of endings, such as ' $\sim$ mall', ' $\sim$ shop' nor significant discrepancy in consumer preference for those five names. For the product brands also, fictitious names were used in order to control undue effect related to the personal experience or knowledge.

## 3. Measures

Scales were borrowed from previous researches after ten repeated backtranslation so that scales could convey identical meanings used in previous studies as much as possible.

Internal Reference Price(IRP) was measured as the mean value of five items such as the normal price, the market(online) average price, the fair price, the maximum acceptable price, and the minimum acceptable price (Grewal et al. 2003). Acceptable Price Range (APR) was defined as the gap between the maximum acceptable price and the minimum acceptable price (Kosenko and Rahtz 1988, Lichtenstein, Bloch, and Black 1988; Lee and Lii 2005; Monroe 1971). Perceived Acquisition Value (PAV), Perceived Transaction Value (PTV), and Willingness to Purchase (WP) were also measured with the scales borrowed from the study of Grewal et al. (1998) in order for the comparison to be viable. IRP and APR were measured in numeral terms (Korean won unit) and the others were measured using seven Likert scales.

The Cronbach alphas of all variables are well above the reliability standard value of 0.7 for basic research suggested by Nunnally (1978) as seen in Table 2. It was confirmed that any demographic profile or Internet shopping experience does not pertain to the result.

Table 2 < SCALES AND MEASUREMENT PROPERTIES>

| Scale | Number <br> of items | Source of Measure | Reliability <br> (coefficient alpha) |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Jeans | Laptop |  |
| IRP | 5 |  | Grewal et al. (2003) | 0.948 |
| PAV | 9 | Grewal, Monroe, and Krishnan (1998) | 0.988 | 0.958 |
| PTV | 3 | Grewal, Monroe, and Krishnan (1998) | 0.911 | 0.932 |
| WP | 3 | Grewal, Monroe, and Krishnan (1998) | 0.792 | 0.904 |

## IV. Data Results and Analyses

Ratio of female subjects to male subjects was $48 \%$ to $52 \%$. Seventy-six percent of the respondents answered that they visit price-comparison sites whenever they need online shopping and seventy-eight percent of the respondents direct themselves to the one of the cheapest alternatives.

Majority of respondents considered it is viable to purchase laptops and jeans in online (Laptop $=76.4 \%$, Jeans $=43.6 \%$ ), and perceived higher level of difficulty in decision making when shopping jeans in online than laptops in online ( $\mathrm{t}=4.27$, $\mathrm{p}=0.0002$ ). A successful manipulation was identified that subjects perceived different level of awareness and familiarity across the well-known store names and new names.

## 1. Effects on Price Perception

Table 3 provides the mean estimates of the internal reference price (IRP), the perceived acquisition value (PAV), the perceived transaction value (PTV), and the willingness to purchase (WP) of each group. IRP responses were transitioned into $\operatorname{RPDR}^{3}$ (Reservation Price Deviation Ratio, Simonin and Ruth 1995) so that the results of the two product sessions are compared (Table 4). From the RPDR measures, it is

[^1]easy to assume how the response value is deviated from the given price regardless of product category or price level. For the same purpose, APR results were divided ${ }^{4}$ by the offer price which implies an offer price for the non-PCS respondents and the average prices of five retailers for the PCS respondents (Table 4).

Hypothesis 1 which assumes that mean IRP of the buyer's who are provided with comprehensive information by price-comparison sites would be higher is supported in the both product sessions. As expected, it is likely that consumers who explore pricecomparison sites set their IRPs at a relatively higher level than consumers who direct themselves to a retailer's web site do. This result is consistent with the early findings that consumers who are less-knowledgeable (or more uncertain) about prices are likely to perceive lower prices than the more-knowledgeable consumers do for the same item. One can also confirm that online consumers without information about current market prices usually expect greater discounts based upon the strong signals of frequent discount and promotions in online (Degeratu et al. 2001).

Table 3 <EFFECT OF PCS ON PRICE PERCEPTION>


|  |  | Non-PCS | PCS | Non-PCS | PCS |
| :---: | :---: | :---: | :---: | :---: | :---: |
| IRP | mean | 1,499,553 | 1,619,046 | 50,503 | 56,308 |
|  | (s.d.) | (0.13) | (0.06) | (0.26) | (0.12) |
|  | T Value | 10.69 *** |  | $4.04{ }^{* *}$ |  |
| MAP | mean | 1,501,236 | 1,652,706 | 50,697 | 57,792 |
|  | (s.d.) | (0.13) | 0.06 | (0.28) | (0.14) |
|  | T Value | 15.93 *** |  | $5.02^{* *}$ |  |
| LAP | mean | 1,396,890 | 1,506,285 | 44,699 | 48,697 |
|  | (s.d.) | (0.14) | (0.08) | (0.29) | (0.13) |
|  | T Value | $6.35{ }^{* *}$ |  | 1.49 |  |
| APR | mean | 106,029 | 146,421 | 5,934 | 9,159 |
| (MAP- | (s.d.) | (0.07) | (0.08) | (0.10) | (0.10) |
| LAP) | T Value | 2.36 |  | $5.01^{* *}$ |  |

Table $4<$ EFFECT OF PCS ON PRICE PERCEPTION (in RPDR ${ }^{+}$) $>$

|  |  | Laptop |  | Jeans |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Non-PCS | PCS | Non-PCS | PCS |
| IRP | mean | -0.11 | -0.04 | -0.22 | -0.13 |
|  | (s.d.) | (0.13) | (0.06) | (0.26) | (0.12) |
|  | T Value | $10.69{ }^{* * *}$ |  | $4.04{ }^{* *}$ |  |
| MAP | mean | -0.11 | -0.02 | -0.21 | -0.10 |
|  | (s.d.) | (0.13) | 0.06 | (0.28) | (0.14) |
|  | T Value | $15.93{ }^{* * *}$ |  | $5.02{ }^{* *}$ |  |
| LAP | mean | -0.17 | -0.11 | -0.31 | -0.25 |
|  | (s.d.) | (0.14) | (0.08) | (0.29) | (0.13) |
|  | T Value | $6.35{ }^{* *}$ |  | 1.49 |  |
| APR | mean | 0.06 | 0.09 | 0.09 | 0.14 |
| (MAP- | (s.d.) | (0.07) | (0.08) | (0.10) | (0.10) |
| LAP) | T Value | 2.36 |  | $5.01{ }^{* *}$ |  |

${ }^{+}$RPDR $=$Reservation Price Deviation Ratio
${ }^{*} \mathrm{p}<.10 ;{ }^{* *} \mathrm{p}<.05 ;{ }^{* * *} \mathrm{p}<.01$
Hypothesis 2 which propositions that the Acceptable Price Range of the buyers
who have price knowledge provided by the price comparison sites would be narrower
that those who don't is not supported in the current study. Rather the Acceptable Price Range is observed to be greater in PCS-using group. This is explicable with the study of Rao and Sieben (1992) that identified the inverted-U relationship between the amount of information acquired and the width of his/her acceptable price range. According to their study, the width of acceptable price range first increases and then decreases as buyers get more knowledgeable about price. In this sense, it seems that the current research shows little significance regarding the APR study due to the limited manipulation regarding buyer's knowledge level.

Furthermore the result of current study shows that the APR is greater in jeanspurchasing situation. It might be because, as expected, consumers have difficulty in judging product quality and setting fair price when purchasing jeans in online. Noting that standard deviations of the IRP, MAP, and LAP are also greater in jeans compared to those in laptop, subjects seem to have been less certain about jeans value than they were about laptop value. In reality, there seems to be significant disparity in attribute perception among consumers when it comes to the jeans. Some people consider jeans as high-involvement, heterogeneous goods and try to cautiously compare color, brand, or fit before purchasing while the others consider jeans as homogeneous goods and consider only prices. In addition, jeans prices are highly correlated to the brand names. Since the current research provides only fictitious names for product brands, it might
have made subjects feel uncertain about proper price level for the given item and then recall a favorable price for unbranded product.

## 2. Effects on Value Perception and Purchase Intention

Hypothesis 3 and 4 which argue that PCS group, compared to non-PCS group, would show higher Perceived Transaction Value and higher Perceived Acquisition Value respectively were examined by two methodologies. Assuming that consumers' PTV and PAV are linear function of IRP and MAP respectively, hypothesis 3 and 4 are supported with computational method in this study.

And then the scale-measured PTV and PAV were tested whether they show identical results with the computational method results. As table 5 shows, the mean values of scale-items for PTV and PAV do not show a significant difference between the PCS-user group and non-user group. It seems that the hypotheses 3,4 and 5 are not supported in this method. However, it is an intriguing result that the mean values of PTV, PAV and WP of the PCS-user group were higher than the mean values of non-user group. Even though the significance level was low, these results intimate that the hypotheses 3,4 and 5 may be supported in a more refined experiment.

Table $5<$ EFFECT OF PCS ON PTV, PAV, AND WP >

|  | Laptop |  |  | Jeans |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Non-PCS | PCS | Non-PCS | PCS |


| $\begin{gathered} \text { PTV } \\ \text { (IRP-P) } \end{gathered}$ | mean <br> (s.d.) <br> T Value | $\begin{gathered} -0.11 \\ (0.13) \end{gathered}$ | $\begin{gathered} -0.04 \\ (0.06) \end{gathered}$ | $\begin{gathered} -0.22 \\ (0.26) \end{gathered}$ | $\begin{gathered} -0.13 \\ (0.12) \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} \text { PAV } \\ (\mathrm{MAP}-\mathrm{P}) \end{gathered}$ | mean <br> (s.d.) <br> TValue | $\begin{gathered} -0.11 \\ (0.13) \end{gathered}$ | $\begin{gathered} -0.02 \\ (0.06) \end{gathered}$ | $\begin{gathered} -0.21 \\ (0.28) \end{gathered}$ | $\begin{gathered} -0.10 \\ (0.14) \end{gathered}$ |
| PTV <br> (scalemeasured) | mean <br> (s.d.) <br> T Value | $\begin{gathered} 3.22 \\ (1.52) \end{gathered}$ | $\begin{gathered} 3.30 \\ (1.26) \end{gathered}$ | $\begin{gathered} 2.80 \\ (1.35) \end{gathered}$ | $\begin{gathered} 2.70 \\ (1.02) \end{gathered}$ |
| PAV <br> (scale- <br> measured) | mean <br> (s.d.) <br> T Value | $\begin{gathered} 3.48 \\ (1.47) \end{gathered}$ | $\begin{gathered} 4.10 \\ (1.37) \end{gathered}$ | $\begin{gathered} 3.08 \\ (1.42) \end{gathered}$ | $\begin{gathered} 3.28 \\ (1.18) \end{gathered}$ |
| WP | mean <br> (s.d.) | $\begin{gathered} 3.33 \\ (1.43) \end{gathered}$ | $\begin{gathered} 3.61 \\ (1.43) \end{gathered}$ | $\begin{gathered} 3.23 \\ (1.03) \end{gathered}$ | $\begin{gathered} 3.38 \\ (1.26) \end{gathered}$ |
|  | T Value | -0.86 |  | -0.58 |  |

Then one might wonder where the increase of price perception in PCS user group came from. It is intriguing whether the increase in price perception of the PCS users ascribes to the enhanced perceived gain or to the reduced perceived loss. In other words, it is required to see whether a price comparison site drives buyers to have more positive ideas about price or to be relieved from the loss related to the price. This idea is driven by the argument that consumers can take either gain-maximizing strategy or loss-minimizing strategy (Peter and Tarpey 1975).

For further analysis, data were split into two sets, one of which consisting gainperceiver group and the other loss-perceiver group. Gain-perceiver group represents the responses having set IRPs 'above the sale price' while loss-perceiver group
implies those having set IRPs 'below the sale price' (Kalyanaram and Little 1994). The 'sale price' designates the price at which respondents are expected to purchase the items in the given shopping store.

The proportions and the mean IRP of the two groups were compared (see Table 6). Independent T analyses results show that, in terms of proportion of the lossperceivers and gain-perceivers, there is no significant difference between PCS group and non-PCS group. However, only in the loss-perceiver group, significant differences in the mean values of IRP, MAP, and LAP between the PCS group and the non-PCS group were found. That is, the difference in the price perception between PCS group and non-PCS group is mainly due to the difference in responses of the loss-perceivers rather than the gain-perceivers. In other words, for a given item, consumers are likely to perceive relatively small loss when they have more information about the alternatives' prices compared to when they have less information. This result corresponds to the Prospect Theory in which the asymmetric result is observed between the responses to the negative stimuli and positive stimuli (Kahneman and Tverskey 1979, Mayhew and Winer 1992). This is also consistent with the findings that intense price promotion makes consumers more sensitive to the losses but does not influence consumers' sensitivity to gains (Han, Gupta, and Lehmann 2001). This implies that consumers assume greater loss when they are not
provided with price-comparison information either because they are suspicious about product quality or because they are afraid of missing better deal or paying unnecessary premiums.

In conclusion, price-comparison sites seem to reduce consumers' anxiety about expected loss. And this seems to be the primary motivation lifting up online buyers' internal reference prices in a price-comparison site.

Table 6 <FFECTS OF PCS ON GAIN PERCEPTION AND LOSS PERCEPTION PRODUCT: JEANS (in PRDR)>

${ }^{\text {a }}$. mean of IRP / sale price -1

Table 7 <EFFECTS OF PCS ON GAIN PERCEPTION AND LOSS PERCEPTION - PRODUCT: LAPTOP (in RPDR)>

|  |  | Non-PCS |  | PCS |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | gain-perceiver | loss-perceiver | gain-perceiver | loss-perceiver |
| proportion |  | 15.0\% | 85.0\% | 30.0\% | 70.0\% |
| IRP | mean ${ }^{\text {a }}$ <br> (s.d.) | $\begin{gathered} 0.05 \\ (0.05) \end{gathered}$ | $\begin{gathered} -0.14 \\ (0.11) \end{gathered}$ | $\begin{gathered} 0.02 \\ (0.01) \end{gathered}$ | $\begin{gathered} -0.06 \\ (0.05) \end{gathered}$ |
|  | T-value (loss) <br> T-value (gain) |  | $\begin{aligned} \mathrm{T} & =-3.26 \\ \mathrm{~T} & =2.27 \end{aligned}$ | $\begin{aligned} & =0.00)^{* * *} \\ & =0.04)^{* *} \end{aligned}$ |  |
| MAP | mean ${ }^{\text {a }}$ (s.d.) | $\begin{gathered} 0.05 \\ (0.08) \end{gathered}$ | $\begin{gathered} -0.14 \\ (0.12) \end{gathered}$ | 0.03 $(0.03)$ | $\begin{gathered} -0.04 \\ (0.05) \end{gathered}$ |
|  | T-value (loss) |  | $\mathrm{T}=-4.01$ | $=0.00)^{* * *}$ |  |
|  | T-value (gain) |  | $\mathrm{T}=0.8$ | $=0.42)$ |  |
| LAP | mean ${ }^{\text {a }}$ <br> (s.d.) | $\begin{gathered} -0.02 \\ (0.03) \end{gathered}$ | $\begin{gathered} -0.20 \\ (0.14) \end{gathered}$ | $\begin{aligned} & -0.07 \\ & (0.05) \end{aligned}$ | $\begin{gathered} -0.12 \\ (0.08) \end{gathered}$ |
|  | T-value (loss) <br> T-value (gain) |  | $\begin{gathered} \mathrm{T}=-2.56 \\ \mathrm{~T}=2.49 \end{gathered}$ | $\begin{aligned} & =0.01)^{* *} \\ & =0.02)^{* *} \end{aligned}$ |  |
| APR | mean $^{\text {a }}$ <br> (s.d.) | $\begin{gathered} 0.06 \\ (0.06) \end{gathered}$ | $\begin{gathered} 0.06 \\ (0.07) \end{gathered}$ | $\begin{gathered} 0.10 \\ (0.06) \end{gathered}$ | $\begin{gathered} 0.08 \\ (0.08) \end{gathered}$ |
|  | T-value (loss) |  | $\mathrm{T}=-1.1$ | $\mathrm{p}=0.27)$ |  |
|  | T-value (gain) |  | $\mathrm{T}=-1.0$ | p=0.32) |  |

${ }^{\text {a }}$. mean of IRP / sale price -1

## V. CONCLUSION

The current research explored the effect of price comparison site on consumers' price perception, value perception, and willingness to purchase in online shopping context through a simulated experiment.

The experiment results demonstrate three major findings. First of all, contrary to the conventional expectations, it is confirmed that price comparison site does not necessarily instigate online shoppers to lower their internal reference prices. Second, a price comparison site does not have a significant influence on the buyers' acceptable price range. Third, it is found that there is asymmetric impact of price comparison sites on loss perception and gain perception. Buyers, after adopting a pricecomparison site, do not seem to tune the perceived amount of expected gain whereas they seem to tune the perceived amount of expected loss. A price comparison site relieves buyers from anxiety about information asymmetry and consequential loss related to the price.

The current research provides several interesting implications and is expected to make a contribution in two main ways. First, the experiment results imply that e-tail managers should consider other effective marketing strategies than the simple bottomprice policies. Second, this study gives a meaningful implication that the growing
popularity of the price comparison sites would not necessarily bring a convergence of online retail price.

## VI. LIMITATIONS AND FURTHER RESEARCH

Since this research focused on the impact of the price comparison sites on the consumer perception, it has tried to rule out the impact of product brand or retail brand. It would be fruitful to explore the combined impact of all those variables on online consumer perception.

And the current research simulated only two product categories therefore it needs to apply wider variety of product categories in terms of involvement, purchasing frequency, heterogeneity or the other features.

Recently online shoppers demand Internet shopping agents to facilitate not only the retailer-to-retailer prices but for more comprehensive information regarding product function, retailer reliability, and systematic comparison tool. In this sense, recent Internet shopping agents are equipped as interactive decision guides providing wide scope of information such as users' review, shipping costs, warranties, return policies, and merchant ratings (Kim 2005). It is strongly aspired to study the impact of such information in a price comparison site on buyers' perception and behavior.

APPENDICES

## APPENDIX 1

Percentage of online retail sales deriving from each channel

[Source: Channel Advisor, 2007 (Combined UK and US figures)]

## APPENDIX 2

## Experimental Survey Page 1



Experimental Survey Page 2


Experimental Survey Page (Jeans) 3-a


Experimental Survey Page (Jeans) 3-b


* The subjects belonging to the PCS-user group were given 3-a while the others were given 3-b.

Experimental Survey Page (Jeans) 4


Experimental Survey Page (Jeans) 5


Experimental Survey Page (Jeans) 6


Experimental Survey Page (Jeans) 7

| embrain |  |  |
| :---: | :---: | :---: |
|  वun 표ㅇㅏㅏㄹㄹㅛ ruc. <br>  |  |  |

Experimental Survey Page (Jeans) 8


## Experimental Survey Page- Questions (Jeans) 9



Experimental Survey Page- Questions (Jeans) 10


Experimental Survey Page- Questions (Jeans) 11


Experimental Survey Page- Questions (Jeans) 12


Experimental Survey Page (Laptop) 13-a


Experimental Survey Page (Laptop) 13-b


* The subjects belonging to the PCS-user group were given 13-a while the others were given 13-b.

Experimental Survey Page (Laptop) 14


Experimental Survey Page (Laptop) 15


Experimental Survey Page (Laptop) 16


Experimental Survey Page (Laptop) 17

| embrain |  |  |
| :---: | :---: | :---: |
|  <br>  <br>  |  |  |

Experimental Survey Page (Laptop) 18


Experimental Survey Page (Laptop) 19


Experimental Survey Page (Laptop) 20


Experimental Survey Page (Laptop) 21


Experimental Survey Page (Laptop) 22


Experimental Survey Page 23


Experimental Survey Page 24


Experimental Survey Page 25


Experimental Survey Page 26


Experimental Survey Page 27


Experimental Survey Page 28


## APPENDIX 3

## Pretest Survey Questionnaire

- 다음 제품들을 인터넷에서 구매한다고 가정할 때, 적당하다고 생각되는 숫자에 표시 $(\sqrt{ })$ 해주십시오.

Q1 ) 인터넷에서 다음 제품을 충분히 검색, 비교한 후 구매를 결정할 때,
(1)

| 1 | DVD / CD |
| :---: | :---: |
| 2 | 구두 |
| 3 | 김치냉장고 |
| 4 | 노트북 |
| 5 | 디지털 카메라 |
| 6 | 비타민/칼슘 |
| 7 | 셔츠/블라우스 |
| 8 | 속옷 |
| 9 | 원두커피/차 |
| 10 | 책 |
| 11 | 청바지 |
| 12 | 화장품 |


| 확신있는 결정을 내릴 수 없다 | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ | 확신있는 결정을 내릴 수 있다 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | ${ }^{\square}$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | ${ }^{\square}$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | ${ }_{1}{ }^{\square}$ | ${ }^{\square}$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | ${ }_{1}$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1{ }^{1}$ | ${ }^{\square}$ | $3 \square$ | ${ }^{4}$ | $5 \square$ |  |

(2)

| 1 | DVD / CD |
| :---: | :---: |
| 2 | 구두 |
| 3 | 김치냉장고 |
| 4 | 노트북 |
| 5 | 디지털 카메라 |
| 6 | 비타민/칼슘 |
| 7 | 셔츠/블라우스 |
| 8 | 속옷 |
| 9 | 원두커피/차 |
| 10 | 책 |
| 11 | 청바지 |
| 12 | 화장품 |


| 결정을 잘 내린 것인지 알 수 없 다 | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ | 결정을 잘 내린 것인지 알 수 있 다 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | ${ }^{\square}$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | ${ }^{\square}$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | ${ }_{2} \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |

(3)

| 1 | DVD / CD |
| :---: | :---: |
| 2 | 구두 |
| 3 | 김치냉장고 |
| 4 | 노트북 |
| 5 | 디지털 카메라 |
| 6 | 비타민/칼슘 |
| 7 | 셔츠/블라우스 |
| 8 | 속옷 |
| 9 | 원두커피/차 |
| 10 | 책 |
| 11 | 청바지 |
| 12 | 화장품 |


| 잘못된 결정을 할 수도 있다 | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ | 잘못된 결정을 <br> 할 걱정이 없다 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | ${ }^{\square}$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | ${ }^{\square}$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | ${ }_{4}^{\square}$ | $5 \square$ |  |
|  | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |  |
|  | $1 \square$ | ${ }^{\square}$ | $3 \square$ | $4 \square$ | $5 \square$ |  |

Q2 ) 인터넷에서 다음 제품을 구매할 생각이 있다.

|  |  |  | 전혀아니다 |  |  | 보통이다 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 매우그렿다 |  |  |  |  |  |  |
| 1 | $\mathrm{DVD} / \mathrm{CD}$ | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |
| 2 | 구두 | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |
| 3 | 김치냉장고 | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |
| 4 | 노트북 | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |
| 5 | 디지털 카메라 | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |
| 6 | 비타민/칼슘 | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |
| 7 | 셔츠/블라우스 | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |
| 8 | 속옷 | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |
| 9 | 원두커피/차 | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |
| 10 | 책 | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |
| 11 | 청바지 | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |
| 12 | 화장품 | $1 \square$ | $2 \square$ | $3 \square$ | $4 \square$ | $5 \square$ |

- 귀하의 나이는?

| 20 세 이하 | $21 \sim 25$ | $26 \sim 30$ | $31 \sim 35$ | $36 \sim 40$ | 40 세 이상 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | X |  |  |  |

귀하의 성별은?

| 남 | 여 |
| :--- | :--- |
|  | X |

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[^0]:    ${ }^{1}$ Korea Netizen Profile
    ${ }^{2}$ KISDI(Korea Information Strategy Development Institute)

[^1]:    ${ }^{3} \mathrm{RPDR}=$ reference Price $/$ market average price (offer price) -1
    Current analysis used the offer price of the target store identically given to all the subjects as the market average price in order to compute the RPDR.

