Consumer Evaluation of Multiple Internal Reference Prices

Miyuri Shirai, Yokohama National University

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ABSTRACT
This study aims to understand the consumers’ general view of each of multiple IRPs in terms of importance and usage propensity for price judgments, the effort devoted to its formation, and whether its adoption is universal through all product categories and brands. Findings are as follows. First, in terms of importance, usage propensity, and effort, a normal price is highly evaluated and the highest-observed and lowest-acceptable prices less so. Second, the normal and expected prices are likely to be used over many product categories, whereas the lowest-acceptable price is not. Third, purchased price is likely to be used over many brands, whereas reservation price is not.

INTRODUCTION
An internal reference price (IRP) is known to have a multidimensional nature. That is, IRP has multiple operational definitions even though the conceptual definition of IRP is clearly defined. Winer (1988) presented eight common IRPs and organized them into five prices: fair, reservation, lowest acceptable, expected, and perceived. Although IRPs have been a focus of marketing research in the past, most have examined the importance of IRPs in consumers’ purchase decisions (for an early review, see Kalyanaram and Winer 1995), explored promotional tools that affected IRPs (e.g., Folks and Wheat 1995; Kalwani and Yim 1992; Lichtenstein and Bearden 1989), or measured the accuracy of IRPs (e.g., Helgeson and Beatty 1987; Mazumdar and Monroe 1990). Consequently, the operationalization of IRPs has been unrestrained and various actions have been adopted. Previous studies that measured several IRPs found that some levels were fairly similar (e.g., Bearden et al. 1992; Diamond and Campbell 1989; Folkes and Wheat 1985). Nevertheless, each IRP is conceptually different and consumers are likely to use them differently depending on product type, consumer characteristics or purchase occasions. Therefore, investigations on the multidimensional nature of an IRP are needed, especially on the type of IRP used, factors that affect its adoption, and the perceived difference of each IRP.

As mentioned above, this topic has attracted the attention of few researchers. However, research on the topic recently has increased. Chandra Shekaran and Jagpal (1995) presented the first study of this and demonstrated that consumers used IRPs (fair, reservation, normal, and lowest prices seen) independently to evaluate an offered price, instead of combining them into an overall unitized IRP prior to making an evaluation. Then, Chandra Shekaran (2001) extended the study of Chandra Shekaran and Jagpal and showed that this non-unitized process was regardless of the level of product involvement. However, product involvement affected the number and types of IRPs utilized; while high-involvement consumers used only reservation price, low-involvement consumers used fair and normal prices as IRPs. Klein and Ogletorpe (1987) classified multiple IRPs into three categories that were not mutually exclusive: aspirational, market, and historical IRPs. The aspirational IRP was based on consciously established goals or targets for price, the market IRP on the perceptions of price levels in the marketplace, and the historical IRP on consumers’ purchase experience. By following this classification, Vaidyanathan et al. (2000) investigated the effects of aspirational IRP (AIRP) and market IRP (MIRP) on deal attitude and purchase intention. The AIRP was operationalized by fair and reservation prices and MIRP by lowest market and normal prices. They showed that consumer use of AIRP and MIRP depended on the level of consumer confidence in IRP estimates and on the type of consumer response. When price uncertainty was low, AIRP influenced purchase intention and MIRP deal attitude. However, when price uncertainty was high, only AIRP influenced deal attitude and no IRPs were regarded in forming purchase intention. Subsequently, Vaidyanathan and Muehling (1999) derived theoretically that AIRP was more likely to be used when product knowledge was low, but price consciousness high, whereas MIRP was more likely to be used when both product knowledge and price consciousness were high. Furthermore, Vaidyanathan and Aggarwal (2001) demonstrated that AIRP was used when product involvement was low and MIRP when it was high. Finally, Shirai (2003) investigated the number and types of IRPs utilized for products that differed in perceived price expensiveness and product involvement. The number of IRPs utilized was found to increase as perceived price expensiveness and product involvement increased. While normal and expected prices were commonly used among the products, fair, reservation, lowest-acceptable, and average-observed prices were used when perceived price expensiveness and product involvement were high, and purchased price was used when they were low. Also, Shirai showed that combinations of multiple IRPs utilized were similar, but the most important IRP varied among consumers.

The above studies have targeted just one or only a few product categories; therefore, their findings have not yet reached generalization. Accordingly, some of the findings are not consistent. In particular, the results provided by Chandra Shekaran (2001), Vaidyanathan and Aggarwal (2001) and Shirai (2003) seem to contradict each other in terms of consumer use of reservation and fair prices. Chandra Shekaran showed that reservation price was used when purchase involvement was high and a fair price when it was low. In Vaidyanathan and Aggarwal’s study, both prices were used when product involvement was low. However, Shirai showed that both prices were used when it was high. These studies, however, differed in the type of product involvement and the product category they focused on. While the first two studies looked at the involvement within a product category (running shoes in Chandra Shekaran and coffee makers in Vaidyanathan and Aggarwal), Shirai looked at the involvement among different product categories (personal computers, cellular phones, and shampoo). Thus, further investigations are necessary, especially on the type of IRPs utilized for different product categories and in respect of consumer characteristics.

Given that consumer use of IRP for price judgments is changeable, some questions arise regarding how consumers basically think of each IRP without assuming particular purchase situations by specifying a product category, brand, contest, or shopping purpose. Do consumers really perceive each IRP differently? If so, on what aspect, do they differ? This study aimed to find some answers to those questions. More specifically, instead of focusing on particular product categories, this study aimed to investigate consumers’ general views toward various IRPs in terms of importance and usage propensity for price judgments, and the effort devoted to its formation. Our interest in elucidating the perceived effort devoted to the formation of IRPs was motivated by Vaidyanathan and Aggarwal (2001). They assumed that MIRP was more data driven and more analytic than AIRP so that consumers who use MIRP are considered to have high product involvement. Since they did not examine this view empirically, whether the
formation of MIRP actually required more effort than AIRP is not clarified. Accordingly, we investigated this and also whether consumers felt that the use of each IRP depended on product category or on brand. The latter enabled us to see whether consumers were likely to use each of the IRPs in price judgments of most product categories or most brands.

**METHOD**

Data were collected from 53 undergraduate student subjects by a survey questionnaire. Prior to participation in the survey, the subjects were briefed about the concept of IRP and given a specific description of nine operational IRPs: fair price (FP), reservation price (RP), lowest-acceptable price (LAP), lowest-observed price (LOP), highest-observed price (HOP), average-observed price (AOP), normal price (NP), expected price (EP), and purchased price (PP). These IRPs have appeared in previous research. Based on the Klein and Ogletorpe (1987) classification, FP, RP, LAP, and EP may be categorized as AIRP and LOP; HOP, AOP, and NP as MIRP. PP is historical IRP; however, and it is likely to be related to both AIRP and MIRP as noted by Vaidyanathan et al. (2000, p.181).

Then a questionnaire was distributed to subjects and these five questions were asked for each IRPs:

Q1: “In general, do you think that this price is necessary in evaluating the validity of an offered price?”
Q2: “In general, do you consider this price when evaluating the validity of an offered price?”
Q3: “Suppose that you use this price to evaluate the validity of an offered price. Do you think that it takes some time and effort for you to decide how much this price should be?”
Q4: “Do you think that whether to use this price for your price judgments depends on product category? That is, you might not use this price for all product categories?”
Q5: “Do you think that whether to use this price for your price judgments depends on brand? That is, you might not use this price for all brands?”

Q1 measured the perceived importance of each IRP for price judgments, Q2 whether each IRP is commonly used in price judgments, Q3 the level of involvement devoted toward each IRP, and Q4 and Q5 whether the use of the price is universal throughout product categories or brands. Hereinafter, Q1 is referred to as the “importance” feature, Q2 as “usage-propensity”, Q3 as “involvement”, Q4 as “category-specific”, and Q5 as “brand-specific”. This design can be considered as a single, nine-level within-subjects experimental design. Each IRP was again described specifically. The order of presenting these IRPs was alternated. Subjects were asked to answer each question on a seven-point scale anchored by “1=Not at all” and “7=Very Much”. Subjects also rated their level of price consciousness and importance of price in purchase decisions on a five-point scale.

**RESULTS**

Before examining individual repeated-measures of ANOVA on each measure of five features (importance, usage-propensity, involvement, category-specific, and brand-specific), we carried out a one-way MANOVA using IRP type (nine different IRPs) as dependent variables. The MANOVA revealed an overall significant effect of IRP type (Wilk’s lambda=.53, F=7.83, p<.0001). Therefore, follow up ANOVAs were performed for each of the five features. The mean values of the nine IRPs for each feature are presented in Table 1. Table 1 shows that each feature varied among the nine IRPs.

<table>
<thead>
<tr>
<th>Importance</th>
<th>Usage propensity</th>
<th>Involvement</th>
<th>Category specific</th>
<th>Brand specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP</td>
<td>5.698</td>
<td>4.377</td>
<td>4.302</td>
<td>4.887</td>
</tr>
<tr>
<td>RP</td>
<td>5.075</td>
<td>5.208</td>
<td>4.151</td>
<td>5.019</td>
</tr>
<tr>
<td>LAP</td>
<td>4.340</td>
<td>4.038</td>
<td>3.566</td>
<td>5.453</td>
</tr>
<tr>
<td>LOP</td>
<td>5.226</td>
<td>5.642</td>
<td>4.283</td>
<td>4.792</td>
</tr>
<tr>
<td>HOP</td>
<td>4.075</td>
<td>3.943</td>
<td>3.491</td>
<td>4.264</td>
</tr>
<tr>
<td>AOP</td>
<td>5.906</td>
<td>5.698</td>
<td>4.528</td>
<td>4.094</td>
</tr>
<tr>
<td>NP</td>
<td>6.472</td>
<td>6.113</td>
<td>4.642</td>
<td>3.396</td>
</tr>
<tr>
<td>PP</td>
<td>5.585</td>
<td>5.453</td>
<td>3.868</td>
<td>4.189</td>
</tr>
</tbody>
</table>

With regard to the importance of price judgments (Q1), ANOVA demonstrated that some of the nine IRPs differed significantly (F(8, 468)=14.58, p<.0001). Also, the following results were found by Tukey test. First, the importance of NP was significantly more than RP, LAP, LOP, HOP, and PP. Second, the importance of FP, AOP, EP, and PP was significantly more than LAP and HOP. Third, the importance of HOP was significantly less than RP, FP, LOP, AOP, NP, and PP. Lastly, the importance of LAP was significantly less than FP, LOP, AOP, and PP. These results indicated that in particular, the need for price judgments was relatively high for NP and low for HOP. Also, the results indicated that in terms of the level of importance as IRP, it was inappropriate to classify IRPs as MIRP or AIRP since each member IRP in the same category had a different level. Within the AIRP category, some IRPs were perceived to be more important than others (e.g., EP vs. LAP, FP vs. LAP). Also, within the MIRP category, some IRPs were perceived to be more important than others (e.g., NP vs. HOP, AOP vs. HOP).

Regarding the usage-propensity for price judgments (Q2), the ANOVA revealed that some of the nine IRPs differed significantly (F(8, 468)=15.58, p<.0001). Also, Tukey tests indicated the following: first, NP and EP were used significantly more than FP, LAP, and HOP. Second, HOP was used significantly less than RP,
LOP, AOP, NP, EP, and PP. Third, LAP was used significantly less than RP, LOP, AOP, and PP. Lastly, FP was used significantly less than LOP, AOP, and PP. These results indicated that in particular, the usage propensity for price judgments was relatively high for NP and EP and low for HOP and LAP. Also, similar to the importance feature, these results indicated that in terms of the usage level of IRPs, it was inappropriate to classify IRPs as MIRP or AIRP since each member IRP in the same category had a different level (e.g., EP vs. FP for AIRP and NP vs. HOP for MIRP).

ANOVA revealed that some of the nine IRPs differed significantly in the involvement devoted to its formation (Q3; F(8, 468)=3.0, p<.01). Tukey tests showed that the involvement with HOP was significantly less than AOP and NP, and that of LAP was significantly less than NP. These results indicated that in particular, the time and effort spent on deciding the level of NP was relatively high and HOP and LAP was relatively low. Furthermore, these results indicated that even within MIRP, the level of effort spent in forming each IRP tended to be different (e.g., NP vs. HOP).

Whether the use for price judgments depended on product category was shown to vary among the nine IRPs (Q4; F(8, 468)=8.8, p<.0001). Tukey tests indicated that the extent of NP and EP were significantly less than RP, FP, LAOP, and LOP. Also, the extent of LAP was found to be significantly more than HOP, AOP, and PP. These results indicated that NP and EP were likely to be used on many product categories, whereas the use of LAP was likely to be limited to certain product categories. Also, these results indicated that it was inappropriate to classify IRPs as MIRP or AIRP when considering the product-specific feature, since each member IRP had a different level although they were in the same category (e.g., RP vs. EP for AIRP and LOP vs. NP for MIRP).

Whether the use for price judgments depended on the brand was shown to vary among the nine IRPs (Q5; F(8, 468)=2.78, p<.01). According to Tukey tests, the extent of RP was significantly more than AOP and PP. These results indicated that PP was likely to be used on many brands, whereas the use of RP was likely to be limited to certain brands.

We additionally note that there was not a strong, but positive correlation between the importance and usage-propensity features \((r=0.62, \ p<.0001)\), between the importance and involvement features \((r=0.4, \ p<.0001)\), between the usage-propensity and involvement features \((r=0.39, \ p<.0001)\), and between the category-specific and brand-specific features \((r=0.5, \ p<.0001)\). These indicate that the IRPs that consumers tend to use are the ones they think are necessary to judge an offered price. Moreover, the IRPs used for certain product categories had a tendency to be used for certain brands.

**DISCUSSION**

This paper has presented findings regarding how consumers generally perceive each of multiple operational IRPs without considering any specific purchase situations such as product category, brand, context, and shopping purpose. More specifically, this study investigated consumers’ general view toward each IRP in terms of the following features: importance and usage propensity for price judgments, effort devoted to its formation, and whether the use of each IRP for price judgments depended on product category or brand. Since consumer use of IRP is affected by many factors, we thought it was important to understand their basic views, before hypothesizing certain purchase situations.

The results obtained from a survey done by questionnaire examining nine IRPs (fair, reservation, lowest-acceptable, lowest-observed, highest-observed, average-observed, normal, expected, and purchased prices) indicated that some IRPs were perceived quite differently on the five features. In terms of importance, usage propensity, and effort, normal price was evaluated highly and highest-observed and lowest-acceptable prices were evaluated relatively less. Moreover, normal and expected prices were likely to be used on many product categories, while lowest-acceptable price was likely to be used on particular product categories. Further, purchase price was likely to be used on many brands, while reservation price was likely to be used only on certain brands. Consequently, it is inappropriate to treat each IRP similarly when directly measuring consumers’ IRP or when planning to affect consumers’ IRP at a desired level by using marketing tools. Also, further development of theories that explain consumer use of multiple IRPs is definitely needed.

**REFERENCES**


