The Relationship between Price Perceptions and Price Acceptability of Digital Information Goods

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Abstract. The purpose of this paper is to investigate what factors affect the price perception of digital information goods on the price acceptability. We developed a structural model that explains the relationship between price perception and price acceptability of digital goods consumers. The empirical test proved that perception of price fairness is very important factor that affects strongly on the price acceptability through payment intention. The important implication is that digital goods marketplace operators need to be more rational and fair in pricing.

Keywords: Digital Goods, Price Perception, Price Acceptability, Price Fairness, Payment Intention, Sale Proneness

1   Introduction

The major departure from accepted pricing theory is to price at marginal willingness to pay. The theory of price discrimination analyses the pricing strategies at marginal cost, whereas information is priced at the consumer's marginal valuation. The style or degree in pricing that ought to be adopted for digital information goods and services depends on the characteristics of the goods themselves rather than the universal application of a particular price discrimination scheme. Bakos and Brynjolfsson(1999) extensively debated about pricing schemes in the digital goods markets. To understanding the pricing problem of digital goods, the services and contents providers should know the reason of purchasing and price acceptability from the perspective of consumer behavior. Lichtenstein et al.(1988, 1993) classified positive and negative price perceptions which affect price acceptability. To prove the relationship among the price perception and acceptability, this paper suggests a structural model which will contribute to explain the digital goods consumer's price acceptability and to derive some implications for digital good marketplace operators.

2   Research Method

2.1 Research Framework and Hypotheses

In conceptualizing price perception process, Jacoby and Olson (1977) employed a S-O-R (Stimulus-Organization-Response) model. According to this model, actual price that consumers encounter represent the stimuli or cues activating the perception process. In S-O-R model, judgment of price acceptability is key component which link between the psychological process of the organism and overt responses such as purchase. The concept of price acceptability helps explain relationships among variables such as perceived value, perceived quality, willingness to pay, intention to purchase (Lichtenstein et al. 1988).

Erickson and Johansson (1985) modeled the dual role of the price cue, "positive role" and "negative role". They found that price-level perceptions had a direct negative effect on purchase intentions and an indirect positive effect on purchase intention via product quality perceptions. Lichtenstein et al.(1993) suggested seven price-related constructs, i.e., five consistent with a perception of price in its "negative role": value consciousness, price consciousness, coupon proneness, sale proneness, price mavenism, and two consistent with a perception of price in its "positive role": price-quality schema, prestige sensitivity. Another important variable with the positive role of price is price fairness. Many previous studies have indicated that price acceptance level of consumer relies on their perception of price fairness (Lii and Sy, 2009). Lii and Sy(2009) proved that the consumer's perception of price fairness affects both positive and negative emotions directly and affect on repurchase intention and behaviors indirectly. From the theoretical background and previous researchers study, we can derive the following four hypotheses and a research model.
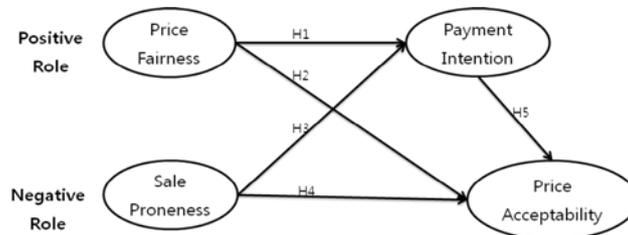

Fig. 1. Research Model

H1: Consumer's perception of price fairness will have a positive effect on payment intention.
H2: Consumer's perception of price fairness will have a positive effect on price acceptability.
H3: Consumer's sale proneness will have a negative effect on payment intention.
H4: Consumer's sale proneness will have a negative effect on price acceptability.

2.2 Operational Definitions and Measures

We defined each construct from the previous researches and our domain knowledge as seen in Table 1. The items used to measure the research model constructs are based on an extensive review of related literatures.

Table 1. Operational definition of constructs

Constructs	Operational Definition
Price Fairness	The price of products which sale on the Internet shopping mall is very rational, consistent, and reliable to buy. The product has also enough value to buy.
Sale Proneness	Most consumers feel that there is some price bubble, and they would like to buy a brand when it is on sale.
Payment Intention	If the digital goods have enough value to pay willingly, consumers will have positive attitude to pay money for the goods.
Price Acceptability	The price of the digital goods which he bought was in the latitude of his price acceptance level. The price was rational and predictable enough.

2.3 Characteristics of Samples

The data were gathered from September 5 to October 15, 2014 in Korea. Of the 201 samples, 288 samples were available. Table 2 describes the characteristics of samples.

Table 2. Distribution Characteristics of Samples

Variables		n	%	Variables		n	%
Sex	Male	173	60.1	Ages	Less than 20s	247	85.5
	Female	115	39.9		More than 30s	41	14.2

3 Data Analysis and Tests

3.1 Reliability and Validity

All the composite reliabilities for the 4 subjective scales were more than 0.90, and average variances extracted ranging from 0.811 to 0.907 (see Tables 3), which are both above the 0.7 and 0.5 recommended level. All the results indicate that the items demonstrated adequate convergent validity. The overall fit measures of the structural model show a good fit of the model with χ^2(df, p) = 131.46(115,0.140), χ^2/f = 1.143, RMR = 0.036, GFI = 0.950, AGFI = 0.925, NFI=0.946, TLI = 0.990, CFI = 0.993, RMSEA = 0.022.

Table 3. Reliability and Correlation Analysis

Constructors	Reliability	PF	SP	PI	PA
Price Fairness	**0.944**	**0.811**			
Sale Proneness	**0.964**	0.210	**0.843**		
Payment Intention	**0.975**	0.305	0.053	**0.907**	
Price Acceptability	**0.972**	0.461	0.026	0.446	**0.847**

※ The diagonal values on the correlation matrix are AVE(Average Variance Extracted) values

3.2 Hypotheses Test and Path Analysis

Table 4 shows the analysis results of hypotheses test. The first subgroup hypotheses test result show that all hypothesis were supported except H2. Next, there are strong relationship among price fairness, payment intention, and price acceptability. The coefficients were enough support for H1, H2, and H5, i.e. price fairness perception affects on price acceptance directly and indirectly.

Table 4. Results of Hypotheses Test

Hypo-theses	Relationship between Variables			Estimate		S.E.	C.R.	p	Results
				Non_STD	STD				
H1	Payment Int.	←	Price Fair.	0.535	0.382	0.097	5.514	***	Supported
H2	Price Acc.	←	Price Fair.	0.519	0.421	0.094	5.504	***	Supported
H3	Payment Int.	←	Sale Pron.	-0.039	-0.045	0.055	-0.7170	0.473	Not Supported
H4	Price Acc.	←	Sale Pron.	-0.096	-0.125	0.045	-2.156	**	Supported
H5	Price Acc.	←	Payment Int.	0.336	0.382	0.064	5.220	***	Supported

※ Significance level * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

4   Implications and Conclusion

The hypothesis test results show that price fairness perception in the digital knowledge marketplace is very important factor which affects strongly on the price acceptance directly and indirectly. The Internet market place operators who decide digital goods prices need to be more rational and fair. In the digital goods market, sometimes, sale promotion would be effective, but the strategy will impair the consumers' price perception. The style or degree in pricing that ought to be adopted for digital information goods and services depends on the characteristics of the goods themselves rather than the universal application of a particular price discrimination scheme. Our research has some limitations. First, most of the survey data was gathered from university students and some are from business workers. Some of these respondents may not have concrete concepts on the information and knowledge goods if they have little experiences on purchasing digital goods. Second, because our data in the survey are not objective data, there may be a measurement bias of respondents. 5-point scaled dependent variables are simple to measure, but they will cause some bias error because of subjective high-end nature of respondents.

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