The Effects of Time-limited Pressure and Perceived Value on Consumers’ Intention to Purchase: A Study of Travel Fairs

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Abstract: - In this paper we establish a consolidated framework to verify the association of consumers’ purchase intention under the time-limited situation, by employing the linear structure equation model for data test. The questionnaire sample collected from consumers visiting two annual International Travel Fairs in Taiwan, 2007. The empirical results indicate that time-limited pressure has positive significant influence on perceived value and purchase intention. In addition, perceived value is served as a mediating factor between the relationship of time-limited pressure and purchase intention. The results would provide tourism businesses with a beneficial reference for planning a marketing strategy.

Key-Words: - Time-limited pressure, perceived value, purchase intention, linear structure equation model, travel fairs.

1 Introduction

In developing promotion strategies, one of the most important stages is to understand consumer behavior, particularly in shopping situations with time-limited pressure. There has already been a considerable amount of research into this subject. Studies have focused on judgment and choice of products, choice deferral, purchase acceleration, and the effects of varying time limits on decisions. Some studies have measured the effects of promotions, but few have looked at the differences between time pressure and fixed-term promotions.

Howard and Sheth [1] see time-limited pressure as an external factor that can influence consumer behavior. Suri and Monroe [2] find that perceived quality and financial outlay are affected by factors including time-limited pressure, produce price and motivation to process information. These studies suggest that time-limited pressure plays an important role in consumer perceived quality and purchase decisions. Perceived value has been shown to be a balance of perceived quality and perceived sacrifice [3]. Beatty and Smith [4] find empirical evidence that there is a significant relationship between product choice and value. Bruce and Abhijit [5] show that when perceived value is high, purchase intention is also high; when perceived value is low, purchase intention is low. Roselius [6] suggests that when facing risky consumption choices, consumers can pursue a number of strategies: reducing the risk to tolerable levels; deferring the purchase; or accepting and taking on the risk. Other studies [7,8] have also found that perceived value is a key factor driving purchase and repurchase intentions.

Most empirical studies which address time-limited pressure, perceived value and purchase decisions examine the relationships between these variables, and their relationships with other factors. Although the research often shows some correlation between time-limited pressure, perceived value and purchase decision, there is still a lack of quantitative analysis to clarify exactly how they are related. In this study, we propose a linear structural equation model to verify the relationship between perceived value and purchase intention when shopping under time pressure situation, created by the business product promotion. The dataset for model test were collected from 181 completed questionnaires filled out by consumers visiting two international travel fairs in Taiwan, 2007.

The following section reviews previous literature in this area. Section three sets out the research methods. Section four presents the model and its verification. Section five gives the results of the analysis. Finally we present our conclusions and directions for future research.

2 Literature Review
2.1 Time-limited pressure and purchase intention

Weber et al. [9] suggest that time-limited pressure is a subjective concept related to information load. Ahituv et al. [10] find that time-limited pressure is generated mainly when individuals do not have enough time to find a solution or make a better choice, so urging them to make a decision can create pressure. Pavi and Nowlis [11] find that when people are forced to make a choice, there are three responses to time-limited pressure. (1) Consumers normally speed up the information examination process [12]. (2) Consumers tend to filter available information and focus on more important attributes. For instance, as time-limited pressure increases, consumers pay more attention to key features and negative information [12,13,15]. (3) Consumers may change their decision-making strategy under time-limited pressure. Some studies suggest that the most common reaction to time-limited pressure for decision makers is to replace non-compensatory decision-making principles with compensatory principles [13,14].

Some studies have also shown that under time-limited pressure, the choice to defer a decision is affected by the degree of difficulty and the form of the choice. As a consequence, consumers under time-limited pressure are likely to use non-compensatory strategies to simplify the decision-making process. Many authors have suggested that time-limited pressure causes consumers to change their decision-making tactics because of the opportunity cost associated with deferring a choice. Under time-limited pressure, decision-makers often accelerate their decision-making process, speed up their strategy or apply a simpler strategy to make the choice [13,15]. Lin and Wu [16] maintain that when consumers are faced with a choice, perceived time-limited pressure increases the chances that they will not make any decision. There certainly is a link between time-limited pressure and decision making. Reducing time-limited pressure generally increases the quality of decision-making. However, the nature of the link remains unclear [17].

Suri and Monroe [2] find that as time-limited pressure increases, consumers’ perceptions of product quality can actually decline. In addition, as time-limited pressure grows, consumers process less information, and so may overlook positive quality attributes. They are thus more likely to judge that the quality of the product or service is poor. Perceived quality and money spent are also found to be affected by factors such as time limits, pricing standards and processing of information.

Hypotheses 1 and 2 are based on the studies above.

The following Hypotheses 1 and 2 have been established on this basis:

H1: Time-limited pressure has a significant impact on perceived value.

H2: Time-limited pressure has a significant impact on purchase intention.

2.2 Perceived value and purchase intention

Perceived value can be seen as consumers’ rating of the benefits a product or service can bring, in other words, a guideline to compare “payment” and “feedback” [7]. Zeithaml [7] surveyed consumers to understand their conceptions of value. She found four concepts. (1) Value is correlated with price: paying higher prices is assumed to bring higher value to the consumer. (2) Value is the balance between the costs and the benefits: when benefits exceed costs, the value is high, and vice versa. This is a relative concept. (3) Value is a balance between recognized quality and expected quality: when recognized quality surpasses the expected quality, higher value is created. It is a comparison between expectation and actual experience. (4) Value is an evaluation of all relevant factors: including quality, quantity and subjective and objective factors throughout the consumption process. These factors make up the entire consumption experience.

Bredahl et al. [18] believe that perceived quality is the expectation of quality, based on consumers’ experience and information acquired. They conclude that expectations and experience will affect consumer purchasing behavior. Hansen [19] studies the decision modes of customers, concludes that perceived quality and attitudes have an obvious and direct effect on their purchase intentions. Prices affect purchase intention only via the mediator of perceived quality; they do not have any direct impact.

Price is something the consumer has to give up or sacrifice in order to acquire a product or service [20]. In addition, Hawkins et al. [21] define price as the amount the consumers have to pay when receiving a product or service. For general consumers, it is not easy to remember the price of a product or service. Therefore prices are perceived in a simplified binary system: cheap (low price) or expensive (high price). This easy-to-remember system is perceived price [22]. Petrick [23] also indicates that perceived price is connected to the consumer’s sensitivity to price for the product or service. Lichtenstein et al. [24] make a related argument that even when the same product is sold at the same price, different consumers’ perceived prices may be different.
Sweeney and Soutar [25] define perceived risks as consumers’ subjective expectations of the possibility of losses resulting from their purchase. Bruce and Abhijit [5] also note that when perceived value is high, consumer purchase intentions are also high, and vice versa. In their study on perceived price fairness, Suter and Hardesty [26] also find that perceived prices have a significant impact on consumer purchase intentions. Roselius [6] suggests that when a purchase seems risky, consumers may reduce the risks to within an acceptable range, defer the consumption decision, or take on the losses.

Hypothesis 3 is based on a reading of the literature above.

H3: Perceived value has a significant impact on purchase intention.

3 Research Method
3.1 Definitions of model variables
The objective of this study was to investigate the interrelations between time-limited pressure, perceived value and purchase decisions. The framework developed for the study is shown in Figure 1. Perceived value is measured as a function of perceived quality, perceived price and perceived risk.

The variables in this study were chosen with reference to past empirical research, and were adapted based on the particular features of the travel industry. The survey questionnaire items were then developed accordingly. The definition of time-limited pressure was based on time limits (see Ordonez and Benson [27], Aggarwal [28] and Beatty [29]). A scale was devised with eight items on time-limited pressure, time limits, short promotion time, long promotion time, etc.

3.2 Sample collection
The primary data for test were collected through a questionnaire survey. The questionnaire had four sections. Section one asked for basic personal information. Section two was about the subject’s reactions to shopping time and limited-term promotions when shopping for travel products or services. The third section concerned the time and money spent purchasing a travel product, and the perceived value of that product. Section four measured the subject’s purchase intention.

In 2007, UNWTO predicted that the average annual growth rate of world travel market would be over 4% in next decade [33]. Some discuss demand forecasting for travel business [see 34,35]. As the development of travel business is a potential market, it is interesting to understand the travel consumer behavior. The sample for model test is collected from consumers visiting the 2007 Hsinchu Travel Fair and the 2007 Taipei International Travel Fair. Data were processed using the SPSS 14.0 and Amos 7.0 software packages. The analyses involved: (1) descriptive statistics; (2) reliability analysis; (3) confirmatory factor analysis (CFA); (4) analysis of structural equation model (SEM).

3.3 Reliability analysis
Before analyzing the structural equation model (SEM), we needed to test the overall goodness of fit and construct validity. Two methods was used to test the model reliability: convergent validity (measure: composite reliability (CR)) and discriminate validity (measure: variance extracted (VE)). The measures of model formulation used are listed in Table 4.

3.4 Confirmatory factor analysis
After confirming the validity of the constructs, the SEM was examined by path analysis with path coefficients to test the above three hypotheses and find the linear structural relations between the model variables: time-limited pressure, perceived value and purchase intention.
Table 3. Definitions of model variables and measurement scales

<table>
<thead>
<tr>
<th>Variable</th>
<th>Researcher</th>
<th>Definition</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time-limited Pressure</td>
<td>Ordonez and Benson [27]</td>
<td>Sense of pressure derived from limited time.</td>
<td>8 question targets covering the aspects of time-limited pressure, limited time, short promotion time, long promotion time, and etc.</td>
</tr>
<tr>
<td>Perceived Value</td>
<td>Hellier et al [30]</td>
<td>Consumers’ judgment of overall expected benefits from the product, in other words, comparison between what to pay and what to get.</td>
<td>15 question targets covering the 3 aspects of perceived quality, perceived prices, and perceived risks.</td>
</tr>
<tr>
<td>Purchase Intention</td>
<td>Engel et al [31]</td>
<td>Consumers’ decision is a series of procedures to find the solution generated through interactions of internal and external factors.</td>
<td>6 question targets covering the aspects of the possibility of purchasing a promoted product (considering purchasing, probably purchasing and making the actual purchase) and regretting after purchasing.</td>
</tr>
</tbody>
</table>

Table 4. Measures for construct validity

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
<th>Recommended Value</th>
<th>Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite Reliability (CR)</td>
<td>This indicates internal consistency – the higher the composite reliability, the higher the internal consistency of potential variables.</td>
<td>&gt;0.6</td>
<td>Fornell and Larcker [36]</td>
</tr>
<tr>
<td>Variance Extracted (VE)</td>
<td>This is used to calculate the variation explanation of each measured variable of the latent variable for that very latent variable – the higher the VE value, the higher the discriminate validity and convergent validity of the latent variable.</td>
<td>&gt;0.5</td>
<td>Fornell and Larcker [36]</td>
</tr>
</tbody>
</table>

The most common goodness-of-fit statistic is the chi-square. The lower the value of the chi-square, the better the fit; however, degrees of freedom must also be taken into account. The statistic is a probability, with p < 0.05 taken to be significant. However, since the chi-square value is related to the degree of freedom, evaluation of goodness of fit is based on whether the p-value is larger than 0.05. Other goodness-of-fit statistics are as shown in Table 5. The hypotheses are tested using t-values, p-values and the path coefficients in the model shown in Figure 1.

4 Data Analysis
4.1 Descriptive statistics
This study involved consumers who visited the 2007 Hsinchu Travel Fair and the 2007 Taipei International Travel Fair. 220 copies of the questionnaire were returned, of which 181 were valid. Gender: 50.3% of respondents were male; 49.7% female. Age: 51.9% were in the 20-30 age group; 28.5% in the 31-40 group; 8.3% were 20-and-under; 7.2% were 41-50. Education: the largest group was college and university graduates, making up 66.3%. Marital status: singles made up 70.2% of respondents; 17.7% were married people with children; 11.6% were married people without children. Employment: 34.3% of those surveyed were from the industrial, business and service industry sectors; 22.7% were students; 14.4% were from hi-tech industries. Disposable income: those with NT$10,000 (and below) per month made up 37.6%; 34.3% had 10-30,000; 17.7% had 30-50,000.
Frequency of overseas travel: 33.7% of people took one trip per year; 31.5% took two trips; 19.9% took four or more trips per year; 13.3% took three trips. Spending on overseas travel: the largest group, 44.2%, spent NT$20,000 per year; 30.9% spent 20-50,000; 9.9% spent 50-80,000.
Table 5. Measures for model goodness-of-fit

<table>
<thead>
<tr>
<th>Name of Index</th>
<th>Judgment Value</th>
<th>Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normed Fit Index (NFI)</td>
<td>&gt;0.90</td>
<td>Bentler and Bonett [37]</td>
</tr>
<tr>
<td>Goodness-of-fit index (GFI)</td>
<td>&gt;0.90</td>
<td></td>
</tr>
<tr>
<td>Adjusted Goodness-of-Fit Index (AGFI)</td>
<td>&gt;0.80</td>
<td>Hu and Bentler [38]</td>
</tr>
<tr>
<td>Parsimonious Goodness-of Fit Index (PGFI)</td>
<td>&gt;0.50</td>
<td>Mulaik et al [39]</td>
</tr>
<tr>
<td>Comparative Fit Index (CFI)</td>
<td>&gt;0.95</td>
<td>Bentler [40]</td>
</tr>
<tr>
<td>Root Mean Square Error of Approximation (RMSEA)</td>
<td>&lt;0.08</td>
<td>Browne and Cudeck [41]; McDonald and Ho [42]</td>
</tr>
</tbody>
</table>

Table 6. Cronbach’s alpha for revised time-limited pressure and purchase intention

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Questions</th>
<th>Cronbach’s α</th>
<th>Corrected Item-Total Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time-limited pressure</td>
<td>5</td>
<td>0.857</td>
<td>0.588-0.782</td>
</tr>
<tr>
<td>Purchase Intention</td>
<td>5</td>
<td>0.789</td>
<td>0.491-0.642</td>
</tr>
</tbody>
</table>

Table 7. Confirmatory analysis of individual variables

<table>
<thead>
<tr>
<th>Latent Variable</th>
<th>Number of Questions</th>
<th>χ²(df)</th>
<th>χ²/df</th>
<th>GFI</th>
<th>AGFI</th>
<th>CFI</th>
<th>CR</th>
<th>VE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time-limited Pressure</td>
<td>4</td>
<td>4.351(2)</td>
<td>2.175</td>
<td>0.988</td>
<td>0.938</td>
<td>0.989</td>
<td>0.803</td>
<td>0.508</td>
</tr>
<tr>
<td>Perceived Quality</td>
<td>2</td>
<td>12.335(11)</td>
<td>1.121</td>
<td>0.982</td>
<td>0.953</td>
<td>0.997</td>
<td>0.809</td>
<td>0.586</td>
</tr>
<tr>
<td>Perceived Price</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Risk</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.744</td>
<td>0.593</td>
</tr>
<tr>
<td>Purchase Intention</td>
<td>2</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.713</td>
<td>0.556</td>
</tr>
</tbody>
</table>

4.2 Reliability analysis

The purpose of a reliability analysis was to test the internal consistency of the questions on time-limited pressure and purchase intention. On the time-limited pressure scale, Cronbach’s alpha was originally 0.812. Three items with a corrected item-total correlation lower than 0.5 were deleted (“prices are displayed at the sales venue without time limit”; “a longer sale with discounts for payment with vouchers”; “price discounts for a limited period at the sales venue”). After these deletions, the Cronbach’s alpha increased to 0.857. For the purchase intention scale, Cronbach’s alpha was originally 0.638. One item with a corrected item-total correlation lower than 0.5 was removed (“regret buying this product”). The Cronbach’s alpha then improved to 0.789. The results of analysis are as shown in Table 6. Cronbach’s alpha for the purchase intention scale was slightly below 0.8, but for time-limited pressure it was above 0.8. This suggests that the scales are generally internally consistent and reliable.

4.3 Confirmatory factor analysis

Before analyzing the SEM, CFA was used to test the goodness-of-fit and the construct validity. Items with path values lower than 0.7 were deleted, and the model was revised again. After this revision, the χ²/df values for every variable were lower than 3, and the p-higher lower than 0.05. This suggests that the measurement model is now a good fit for the data.

To test construct validity we used composite reliability (CR) and variance extracted (VE). These indices were above the recommended thresholds (CR>0.7; VE>0.5) for all variables in the model. The other goodness-of-fit measures also meet the recommended standards (GFI>0.98; AGFI>0.93; CFI>0.98) as set out in Table 7.
Table 8. Model Goodness of Fit

<table>
<thead>
<tr>
<th>Name of Index</th>
<th>Recommended Standard</th>
<th>Reference</th>
<th>Empirical Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\chi^2$ (Chi-Square)</td>
<td>The smaller the better</td>
<td>--</td>
<td>65.141 (p = 0.303)</td>
</tr>
<tr>
<td>Ratio of $\chi^2$ to Degree of Freedom</td>
<td>&lt;3</td>
<td>Chin and Todd</td>
<td>1.522 (df =60)</td>
</tr>
<tr>
<td>Goodness-of-Fit Index (GFI)</td>
<td>&gt;0.90</td>
<td>Hu and Bentler</td>
<td>0.950</td>
</tr>
<tr>
<td>Adjusted Goodness-of-Fit Index (AGFI)</td>
<td>&gt;0.80</td>
<td>Hu and Bentler</td>
<td>0.923</td>
</tr>
<tr>
<td>Comparative Fit Index (CFI)</td>
<td>&gt;0.95</td>
<td>Bentler</td>
<td>0.994</td>
</tr>
<tr>
<td>Root Mean Square Error of Approximation (RMSEA)</td>
<td>&lt;0.08</td>
<td>McDonald and Ho</td>
<td>0.022</td>
</tr>
</tbody>
</table>

5 Analysis of the SEM

Given the success of the framework, as confirmed by the CFA, a structural model could be developed, and a structural equation model was used to verify the goodness-of-fit of the structural model. The results, which meet or exceed recommended threshold levels ($\chi^2$/df= 1.522; GFI=0.95; AGFI=0.923; CFI=0.994; RMSEA= 0.022), are shown in Table 8.

5.1 Path analysis

Using standardized path coefficients, the existence of the relationships in H1, H2 and H3 is supported, i.e. there are positive significant relationships. For time-limited pressure and perceived value, $t = 1.972$, $p<0.05$; for time-limited pressure and purchase intention, $t = 2.215$, $p<0.05$; for perceived value and purchase intention, $t = 3.767$, $p<0.01$. This means that high time-limited pressure does result in higher perceived value and higher purchase intention. High perceived value also results in higher purchase intention. The results are shown in Table 11.

When the factors of perceived quality, perceived price and perceived risk are included in the model, the results are as shown in Figure 2.

One interesting result is that time-limited pressure is positively correlated with perceived price; negatively correlated with perceived risk; and not significantly correlated with perceived quality. However, under conditions of high time-limited pressure, none of these three factors (perceived price, perceived risk, perceived quality) have a significant impact on purchase intention. This finding contradicts the work of Hansen [19]. The reason might have been that the subjects of this study were consumers visiting a travel fair; their requirements on product quality may have been reduced because of the many attractive promotions and short time limits at the fairs.

5.2 Confirmatory analysis of mediating effect

With linear structural equation models, in addition to goodness-of-fit, it is necessary to carry out a confirmatory analysis on the direct and indirect path effects. Endogenous variables are affected directly by exogenous variables, but there can also be indirect effects generated via mediating endogenous latent variables. The indirect, direct and overall effects between the variables in this study are shown in Table 12. From this table, it is noticeable that time-limited pressure could have significant indirect effects on purchase intention through the mediator of perceived value.

Table 11. Results of hypothesis tests

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Path Relation</th>
<th>Path Value</th>
<th>Hypothesis Supported or Not</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Time-limited pressure $\rightarrow$ Perceived value</td>
<td>0.18*</td>
<td>Yes</td>
</tr>
<tr>
<td>H2</td>
<td>Time-limited pressure $\rightarrow$ Purchase Intention</td>
<td>0.20*</td>
<td>Yes</td>
</tr>
<tr>
<td>H3</td>
<td>Perceived value $\rightarrow$ Purchase Intention</td>
<td>0.38**</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*: $p<0.05$, **: $p<0.01$
In linear structural equations model, besides the verifiable goodness of fit of measurement and structural models, confirmatory analysis of the direct and indirect path effects should also be considered. For the endogenous latent variables, apart from the direct effect of exogenous latent variables on the endogenous latent variables, there can also be indirect effects generated from the latent variables through mediating endogenous latent variables. The indirect, direct and overall effects between the variables in this study are consolidated and shown in Table 12. In the table, it is noticeable that time-limited pressure could have significant indirect effects on purchase intention through perceived value. This suggests that perceived value serves as a mediating factor between time-limited pressure and purchase intention. In Table 12, all four of the relations shown (time-limited pressure-perceived value, time-limited pressure-purchase intention (direct), time-limited pressure-purchase intention (indirect), perceived value-purchase intention) were significant. The effects of time-limited pressure on purchase intention were also weaker than those of perceived value. This supports the claim that perceived value plays a mediating role in time-limited pressure situations.

Table 12. Indirect, Direct and Overall Effects of time-limited pressure and perceived value

<table>
<thead>
<tr>
<th>Latent Variable</th>
<th>Latent Dependent Variable</th>
<th>Indirect Effect</th>
<th>Direct Effect</th>
<th>Overall Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time-limited Pressure</td>
<td>Perceived Value</td>
<td>--</td>
<td>0.18*</td>
<td>0.18*</td>
</tr>
<tr>
<td></td>
<td>Purchase intention</td>
<td>0.07**</td>
<td>0.20**</td>
<td>0.27**</td>
</tr>
<tr>
<td>Perceived Value</td>
<td>Purchase intention</td>
<td>--</td>
<td>0.38**</td>
<td>0.38**</td>
</tr>
</tbody>
</table>

*: p<0.05, **: p<0.01


6 Conclusions

In this paper we propose a framework to assess the relationships between time-limited pressure, perceived value and purchase intention. AMOS 7.0 software was employed to calibrate the sample data for the SEM method, which is different from the experiment design or simulation approach used often in previous studies. A real-world case of a questionnaire survey collected from two travel fairs in Taiwan, 2007 is presented to verify the relationships of model variables.

The empirical results indicate that time-limited pressure has statistically significant impacts on both perceived value and purchase intention. Time-limited pressure also has a positive significant effect on perceived price, a negative effect on perceived risk, but no effect on perceived quality. Finally, in time-limited pressure situations, none of the three constituent factors of perceived value (perceived quality, perceived risk, perceived price) have significant impacts on purchase intention. Time-limited pressure acts to stimulate high levels of purchase intention in customers.

The other result of note is that perceived value is a mediator between time-limited pressure and purchase intention. This implies that consumers can decide to accelerate their purchase decision when businesses create time-limited pressure, but they still evaluate the product based on its perceived value. Time-limited pressure thus has an indirect effect on purchase intention. Perceived value still plays a significant role in the purchase decision. These results could be of benefit to travel companies in their planning of marketing strategies.

References:


