

What Determines the Self-reported Expected Christmas and New Year Holiday
Consumption Behavior? A Survey Study in Hong Kong

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Abstract

The determinants of consumption behavior are important sources of information for businesses, especially during the retail market peak season of the Christmas and New Year holiday period. In this paper we focus on relating self-reported expectations of happiness during the holiday season and self-reported expectations concerning the economic performance of Hong Kong to the expected consumption behavior over the holidays (the timing of such consumption and the level of expenditure) using an ordered probit model. Data obtained from a survey conducted in November 2005 with 1206 randomly selected citizens in Hong Kong suggest the following conclusions. 1) The expected timing of holiday consumption is influenced both by expectations of happiness and by the expected economic performance of Hong Kong; 2) The expected holiday expenditure is influenced by expectations of happiness but not by the expected economic performance of Hong Kong. 3) The expected time of starting consumption for the holiday and the expected holiday expenditure are influenced also by gender, household income, age group and educational background.

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1. Introduction

The determinants of consumption behavior are important sources of information for businesses, especially during the retail market peak season of the Christmas and New Year holiday period. Laroche, Cleveland and Browne (2004) examine the significance of age differences with respect to consumers' use of in-store information sources, and the underlying antecedents of in-store information search, in the context of the purchase of clothing as a Christmas gift. Basker (2005) studies the effect of the length of the Christmas shopping season on aggregate retail sales. Fischer and Arnold (1990) study the effect of gender-related variables on the pattern of Christmas gift shopping.

The general hypothesis in this paper is that the self-reported expectations of the general public about their consumption behavior at the end of a year are likely to be determined by their present income as well as their expectations about their future income. In addition, these self-reported expectations are also likely to be determined by their present feelings of well being and expectations of future well being. For those retailers who need to make business decisions ahead of the Christmas and New Year holiday, the main concern would be to anticipate the timing of holiday consumption and the amount of holiday expenditure. Therefore, in this paper we focus on relating the expected holiday consumption behavior (timing of holiday consumption and amount of holiday expenditure) to the self-reported expectations of happiness and expectations concerning the economic performance of Hong Kong. Self-reported expected happiness serves as the proxy for the feelings of well being

and expected well being. Self-reported expected economic performance of Hong Kong serves as a proxy for present income as well as expectations about future income.

The rest of this paper is organized as follows: Section 2 describes the survey that was employed to collect the empirical data; Section 3 discusses the construction of the empirical models; Section 4 describes and evaluates the empirical results; and Section 5 contains the conclusion.

2. The Survey

The survey was conducted by telephone interview during the first two weeks of November 2005 using randomly selected telephone numbers from residential telephone directories. A total of 1026 respondents were successfully interviewed, representing a response rate of 23.5%. The most often cited reason for refusing to respond was “no time”. The margins of sampling error were estimated to be $\pm 3.122\%$ at a 95% confidence level. Since the majority of the population of Hong Kong is Cantonese speaking, the original questionnaires were written in Chinese.

2.1 The questionnaire design

The questionnaire consisted of two main parts. In the first part we collected personal information on the respondents, such as their gender, education, age and household income. In the second part we focused on questions concerning Christmas and New Year consumption behavior, happiness and expectations concerning the future economic perspective of Hong Kong.

The first question dealt with the time that the holiday consumption would begin, and asked:

1. How many weeks before the Christmas and New Year holiday would you begin your holiday consumption? _____ Week(s) before the holiday.

The data obtained was recorded using the following ordinal scale:

Week(s) before holiday	0	1	2	3	4	5	6	7	8 or more
Ordinal Scale	0	1	2	3	4	5	6	7	8

The second question asked the respondents to indicate their expectations of happiness during the Christmas and New Year holiday, using an ordinal scale with five levels.

2. Do you expect to be happier during this Christmas and New Year holiday than last year?

Certainly less happy than last year	Maybe less happy than last year	The same as last year	Maybe happier than last year	Certainly happier than last year
1	2	3	4	5

The third question asked the respondents to indicate their expected expenditure over the Christmas and New Year holiday using an ordinal scale with five levels.

3. Do you expect to increase or decrease your consumption during this year's Christmas and New Year holiday compared with last year?

Certainly decrease	Maybe decrease	The same	Maybe increase	Certainly increase
1	2	3	4	5

The fourth question asked directly the amount, in Hong Kong Dollars, that respondents expected to spend on consumption during the coming Christmas and New Year holiday period.

4. How much do you expect to consume during the holiday period this year?

(HK\$___)

The replies of the respondents were recorded using the following six-level ordinal scale.

0 to 999	1000 to 1999	2000 to 2999	3000 to 3999	4000 to 4999	5000 or above
1	2	3	4	5	6

The final question asked the respondents to comment on their expectations concerning the economic performance of Hong Kong during the coming year using a five-level ordinal scale.

5. How do you expect the economy of Hong Kong to perform in the coming year?

Much weaker than this year	Weaker than this year	The same as this year	Better than this year	Much better than this year
1	2	3	4	5

3. The Models

3.1 The ordered probit model

This paper uses the commonly used ordered probit model (see Miyata 2003, Greene 2000) as the workhorse to handle the ordinal scale dependent and independent variables.

$$CB_i = X_i \beta' + \varepsilon_i \quad (1)$$

where CB is the consumption behavior, X is the vector of the independent variables also in the ordinal scale, β is a vector of the coefficients to be estimated, and ε are independent and identically distributed random variables. The subscript i indicates an individual.

$$CB_i = \left\{ \begin{array}{l} 1 \quad \text{if } CB_i \leq \gamma_1 \\ 2 \quad \text{if } \gamma_1 < CB_i \leq \gamma_2 \\ \vdots \\ k \quad \text{if } \gamma_k < CB_i \end{array} \right\} \quad (2)$$

where γ represents the limits of CB . The empirical model to be estimated becomes an ordered probit model. The log likelihood function to be maximized is:

$$l(\beta, \gamma) = \sum_i^n \sum_j^k \log(\Pr(CB = j | X_i, \beta, \gamma)) \cdot 1(CB = j) \quad (3)$$

The conditional probabilities of observing each ordinal level of CB_i are given by

$$\Pr(CB_i = 1 | X_i, \beta, \gamma) = F(\gamma_1 - X_i \beta') \quad (4)$$

$$\Pr(CB_i = k | X_i, \beta, \gamma) = F(\gamma_k - X_i \beta') - F(\gamma_{k-1} - X_i \beta') \quad (5)$$

where F is the cumulative distribution function of ε . It is worth mentioning that the magnitude of the coefficient (β) does not reveal the effect of the independent variables (X'_i) on the dependent variable (CB). The estimated coefficients β only influence the conditional probability that a certain value of the dependent variable will appear. A positive estimated coefficient indicates that an increase in the ordinal scale of the independent variable influences the dependent variable in such a way that the conditional probability of the dependent variable falling into a higher ordinal scale increases while the opposite happens in the case of a negative estimated coefficient. (See: Boccaletti and Moro, 2000). In the cases where the independent variables are discrete, the discrete change in the conditional probability can be evaluated at the average of the independent variables. (See: Rivera, 2001) In this paper the influence of the independent variables on the dependent variable is identified using the average conditional probability of the consumer behavior (CB) described in equation 4 and 5.

3.2 The Empirical Models

This paper estimates three empirical models to link consumption behavior to expectations of happiness during the holiday period and perceptions of the economic performance of Hong Kong in the coming year. The effects of gender, age, education and income on holiday consumption behavior are investigated using dummies. The three empirical models can be written as:

$$Beginc = \beta_1Happiness + \beta_2Econ + \beta_3Age + \beta_4Edu + \beta_5Income + \beta_6MF \quad (6)$$

$$Cdata = \beta_1Happiness + \beta_2Econ + \beta_3Age + \beta_4Edu + \beta_5Income + \beta_6MF \quad (7)$$

$$Camount = \beta_1Happiness + \beta_2Econ + \beta_3Age + \beta_4Edu + \beta_5Income + \beta_6MF \quad (8)$$

Where *Beginc* is the number of week(s) before the Christmas and New Year holiday, when the respondents would begin their holiday consumption. *Cdata* is the ordinal scale indicating whether the respondents would expect to increase or decrease their consumption during this year's Christmas and New Year holiday compared with last year. *Camount* is the amount in an ordinal scale of 6 levels showing their expected expenditure during the holiday period this year. *Happiness* is the five-level ordinal scale indicating the expectations of happiness of the respondents during the coming holiday. *Econ* is the five-level ordinal scale indicating their expectations concerning the economic performance of Hong Kong in the coming year. *MF*, *Age*, *Edu* and *Income* are the dummies representing gender, age group, education level and household income level respectively.

The consumption behavior is measured in terms of:

- 1) The time that holiday consumption would begin, as described in equation 6.
- 2) The expectation of the respondents about whether they would increase or

decrease their consumption during this year's Christmas and New Year holiday compared with last year, as described in equation 7.

- 3) The amount respondents expect to consume during the holiday period this year, as described in equation 8. The significance of the estimated coefficients indicates that the consumer behaviors are influenced by the independent variables.

4. Empirical Results

4.1 The Estimated Coefficients

Table 1, model 1.1 shows that the timing of holiday consumption is positively influenced by the expectations of happiness of the respondents during the coming holiday, their perceptions of the expected economic performance of Hong Kong in the coming year, and by their gender, education level and household income level. However, it is negatively influenced by the age group variable.

Table 1, model 2.2 shows that the decision of the respondents to increase or decrease their holiday expenditure this year, is positively influenced by their expectations of happiness during the coming holiday, by their perceptions of the expected economic performance of Hong Kong, and by their household income. It is negatively influenced by the age group variable. However, their expenditure is not influenced by either their gender or their educational background.

Table 1, model 3.2 shows that the expected amount of holiday expenditure is positively influenced by the expectations of happiness of the respondents during the coming holiday, their education, household income level and age group. It is not influenced by their perceptions of the expected economic performance of Hong Kong in the coming year nor by their gender.

5.2 Interpretation of the result of the estimations

Figures 1.1 to 3.4 show the influence of an independent variable on the average conditional probability of the dependent variables of “holiday consumption behavior” in different ordinal scales under the assumption that all of the other independent variables remained at their mean.

In Figures 1.1 to 1.6 the peaks of the average conditional probabilities in the ordinal scale indicate that most respondents will begin their holiday consumption 1 to 2 weeks before the holiday. In Figure 1.1 those respondents who expect to be happier during the holiday have higher average conditional probabilities of beginning their holiday consumption two to eight weeks before the holiday than those respondents who expect to be only as happy or more unhappy than last year during the holiday. On the other hand, the latter respondents have higher average conditional probabilities of beginning their holiday consumption one week or less before the holiday. Indeed, except for the case of the age group variable shown in Figure 1.6, Figures 1.1 to 1.5 show that as the ordinal scale of the independent variable increases, there is a tendency towards the average conditional probability of holiday consumption beginning earlier. Consequently, model 1.1 predicts that respondents who expect to be happier, have a better perception of the economy of Hong Kong, have a college level or above education, have a high household income and are female, will begin their holiday consumption earlier than other groups of respondents. In the case of the age group variable, younger respondents tend to begin their consumption earlier than older respondents.

Figures 2.1 to 2.4 show that peaks of the conditional probabilities of holiday spending appear at the ordinal scale points “the same” and “maybe increase”. This indicates that most of the respondents expect to spend at least as much as they did

last Christmas. Moreover, those respondents who expect to be happier, have a better perception of the economy of Hong Kong, are younger and have a high household income have higher conditional probabilities of increasing their holiday expenditure this year as compared with last year.

Figures 3.1 to 3.4 show that peaks of the conditional probabilities appear at the ordinal scale point of spending less than HK\$1000 during the holiday period. In addition, respondents who expect to be happier, have college level or above education, are older and have high household incomes have higher conditional probabilities than do other respondents in the ordinal expenditure scales of larger than HK\$1000.

5. Conclusion

The empirical result of this paper shows that both expectations of happiness and perceptions of the future economic performance of Hong Kong influence the timing of holiday consumption. Most of the respondents expected to begin their Christmas and New Year consumption one to two weeks before the beginning of the holiday period. In addition, the survey revealed a tendency for holiday consumption to start earlier in the case of those people who expect to be happier during the holiday period, have a better perception of the economy of Hong Kong, have a college level or above education, have a high household income, are female and are younger. , Therefore, businesses that plan to promote expensive Christmas and New Year gifts should begin their promotion earlier.

The decision to increase or decrease holiday spending is influenced by the respondent's expectations of happiness and their perceptions of the economic performance of Hong Kong. Most people intend to spend at least as much as they did

last year over Christmas and the New Year. In addition, there is a tendency for people who expect to be happier, have a better perception of the economy of Hong Kong, are young and have high household income to increase their holiday expenditure this year as compared with last year. It appears, therefore, that if the public is optimistic about both their own well being and the prospects of the economy this will tend to increase the Christmas and New Year retail sales. In addition, young people and those in the high household income group, would be the best targets for promoting Christmas and New Year sales.

The expected holiday expenditure is positively influenced by the expectations of happiness of the respondents for the coming holiday period, the level of education and household income and the age group. It is not influenced by perceptions of the expected economic performance of Hong Kong in the coming year or by gender. Most people expect to spend less than HK\$1000 during the holiday period. However, there is a tendency for people who expect to be happier, who have a college level or above education, have a high household income and are older to spend more than HK\$1000 during the holiday period.

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Table 1: Empirical Coefficients (β) of the Ordered Probit Models (equations 6 to 8)

Model	1.1	2.1	2.2	3.1	3.2
	Dependent Variable				
Independent Variables	<i>Beginc</i>	<i>Cdata</i>	<i>Cdata</i>	<i>Camount</i>	<i>Camount</i>
<i>Happiness</i>	0.167030** (0.037789)	0.634560** (0.041553)	0.634639** (0.041525)	0.183266** (0.040001)	0.181081** (0.038934)
<i>Econ</i>	0.127074** (0.040143)	0.298576** (0.041929)	0.298522** (0.041724)	-0.01080 (0.041995)	-
<i>Age</i>	-0.049278** (0.023656)	-0.047063* (0.024453)	-0.046156** (0.021530)	0.121458** (0.025135)	0.121405** (0.025117)
<i>Edu</i>	0.075753** (0.032964)	-0.002182 (0.034090)	-	0.086458** (0.034496)	0.085001** (0.034253)
<i>Income</i>	0.052018** (0.012303)	0.060871** (0.012580)	0.060681** (0.012268)	0.176610** (0.014372)	0.176582** (0.014371)
<i>MF</i>	0.193405** (0.061041)	0.022621 (0.063070)	-	0.016096 (0.063763)	-

Note:

1. *Beginc* is the number of week(s) before the Christmas and New Year holiday that the respondents would begin their holiday consumption.
2. *Cdata* is the ordinal scale showing whether the respondents would expect to increase or decrease their consumption during this year's Christmas and New Year holiday as compared with last year.
3. *Camount* is the amount on an ordinal scale of 6 levels of the expected expenditure of respondents during the holiday period this year.
4. *Happiness* indicates on a five-level ordinal scale the expectations of happiness of the respondents during the coming holiday period.
5. *Econ* indicates on a five-level ordinal scale the perceptions concerning the expected economic performance of Hong Kong in the coming year.
6. *MF*, *Age*, *Edu* and *Income* are the dummies representing gender, age group, educational level and household income respectively.
7. * means significantly different from zero at a 10% significance level
8. ** means significantly different from zero at a 5% significance level
9. () is the standard error
10. The models

$$Beginc = \beta_1 Happiness + \beta_2 Econ + \beta_3 Age + \beta_4 Edu + \beta_5 Income + \beta_6 MF \quad (6)$$

$$Cdata = \beta_1 Happiness + \beta_2 Econ + \beta_3 Age + \beta_4 Edu + \beta_5 Income + \beta_6 MF \quad (7)$$

$$Camount = \beta_1 Happiness + \beta_2 Econ + \beta_3 Age + \beta_4 Edu + \beta_5 Income + \beta_6 MF \quad (8)$$

Figure 1.1: The Influence of Happiness on the timing of Holiday Consumption

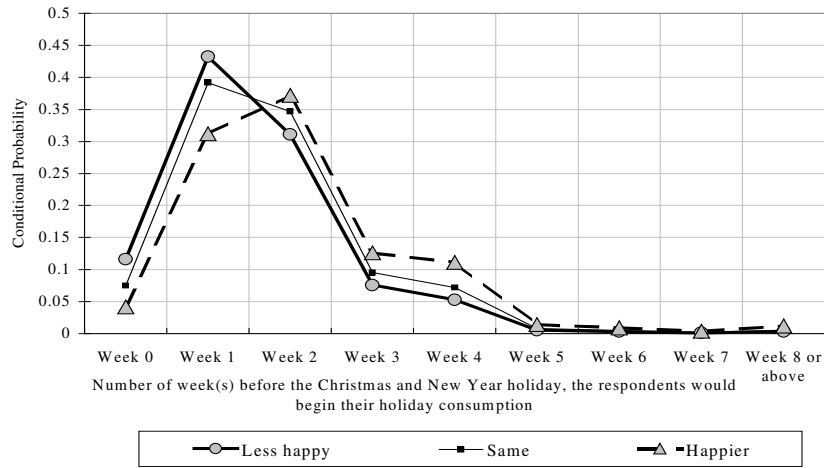


Figure 1.2: The Influence of Economy Perception on the timing of Holiday Consumption

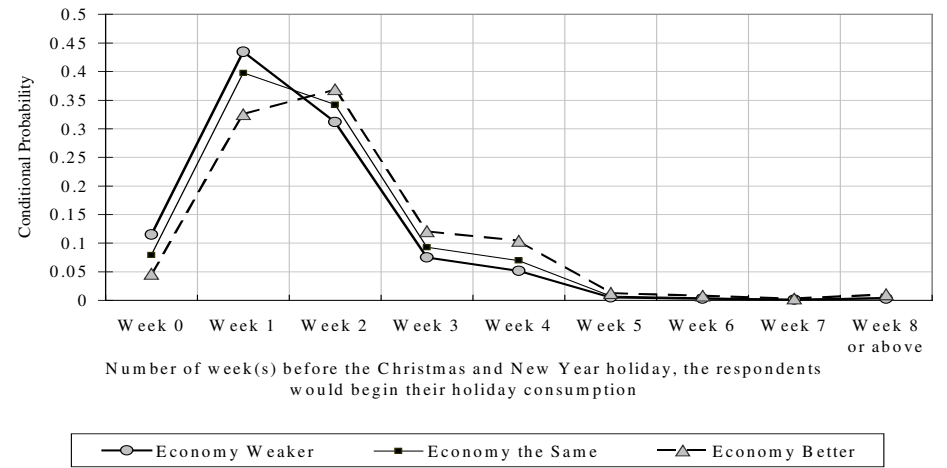


Figure 1.3: The Influence of Gender on the timing of Holiday Consumption

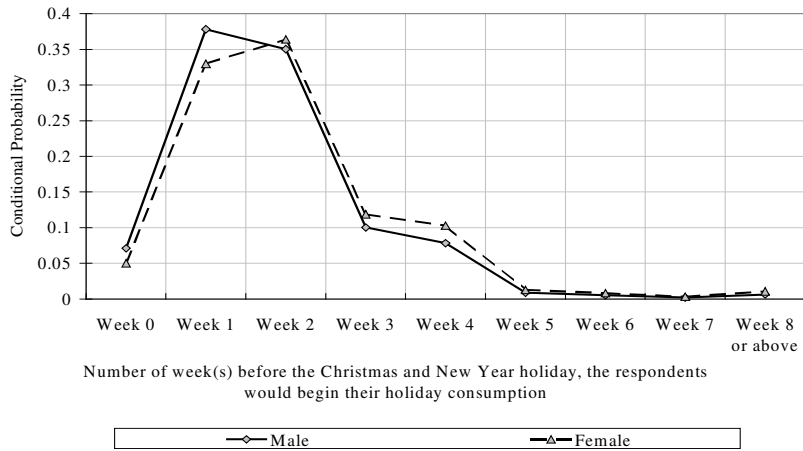


Figure 1.4: The Influence of Education on the timing of Holiday Consumption

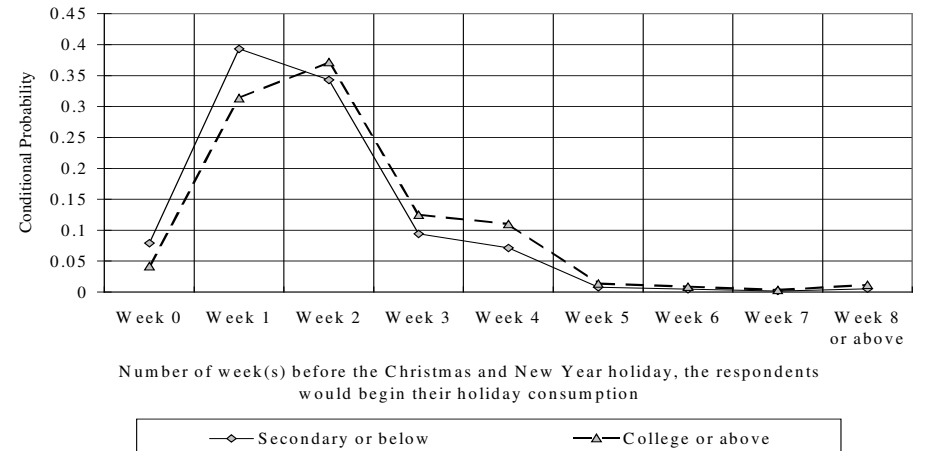


Figure 1.5: The Influence of Household Income on the timing of Holiday Consumption

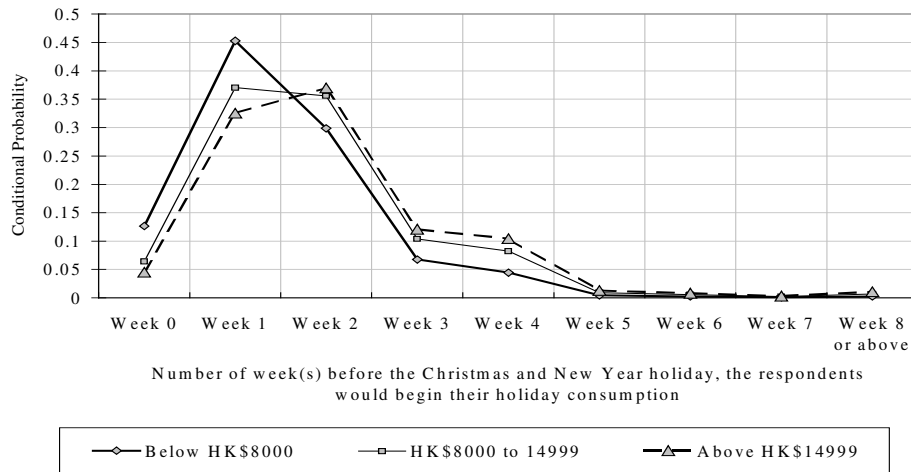


Figure 1.6: The Influence of Age on the timing of Holiday Consumption

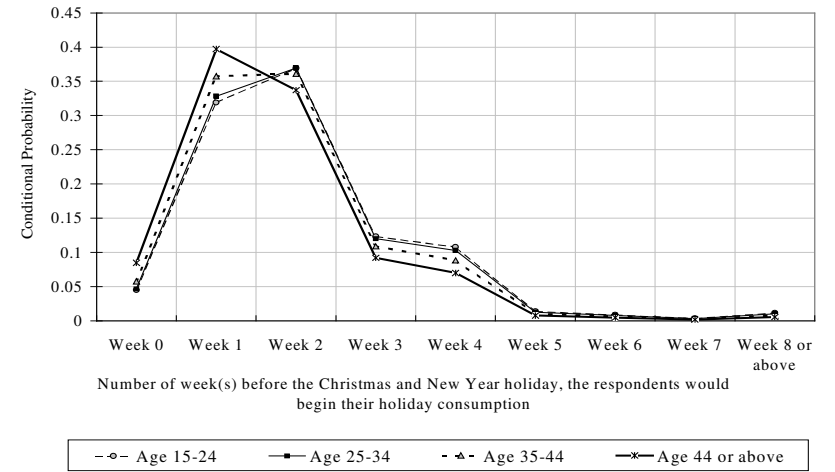


Figure 2.1: The Influence of Happiness on the decision of Holiday Spending

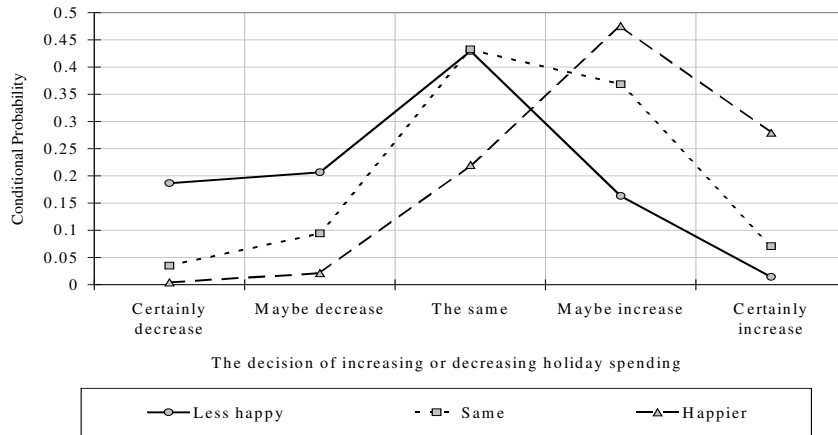


Figure 2.2: The Influence of Economy Perception on the decision of Holiday Spending

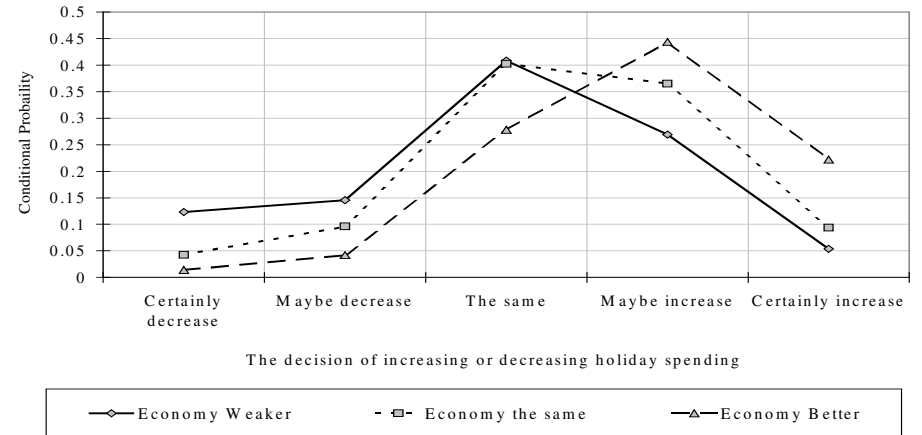


Figure 2.3: The Influence of Age on the decision of Holiday Spending

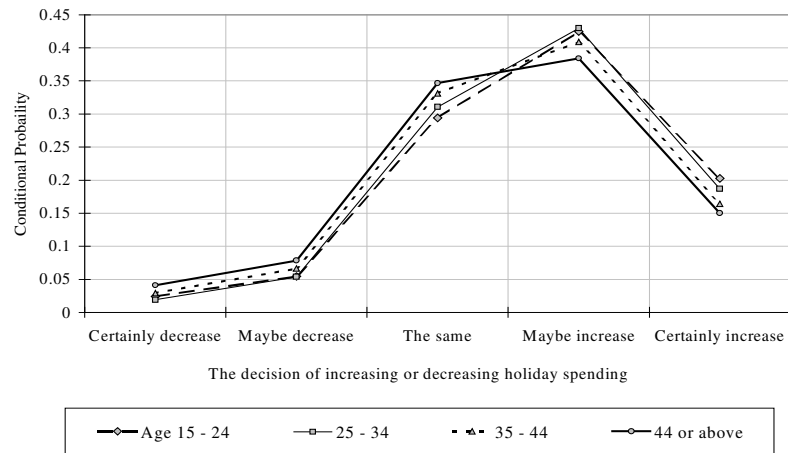


Figure 2.4: The Influence of Household income on the decision of Holiday Spending

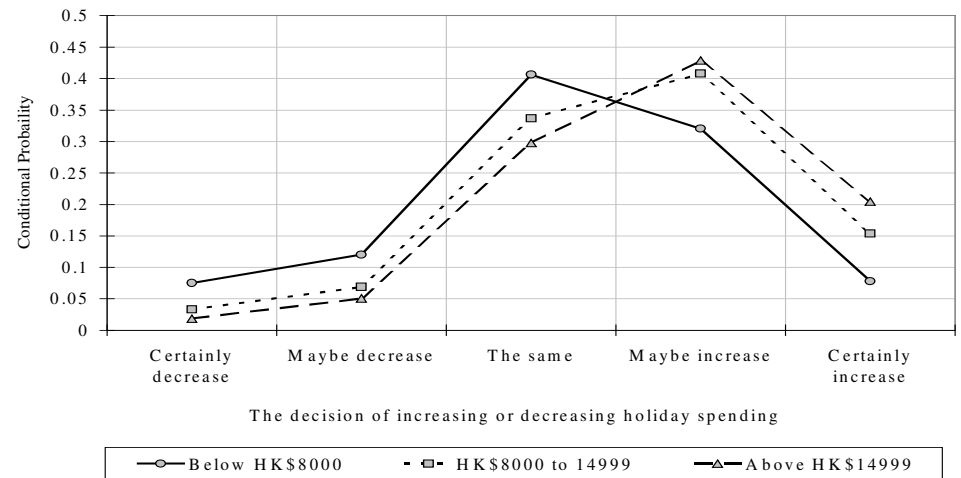


Figure 3.1: The Influence of Happiness on the amount of Holiday Spending

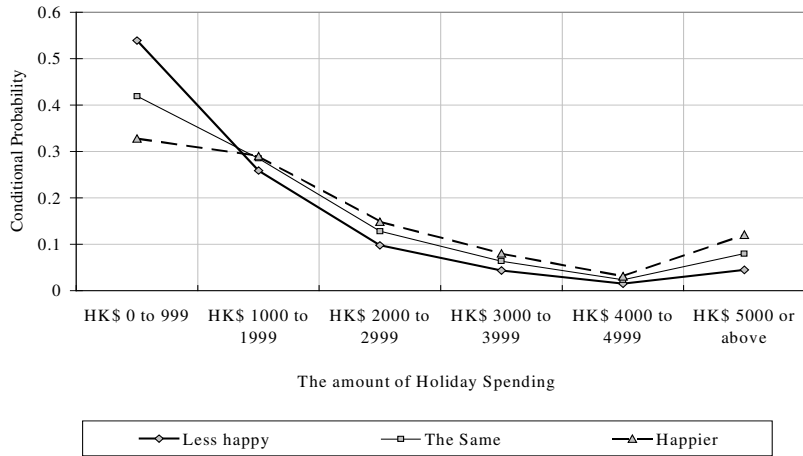


Figure 3.2: The Influence of Education on the amount of Holiday Spending

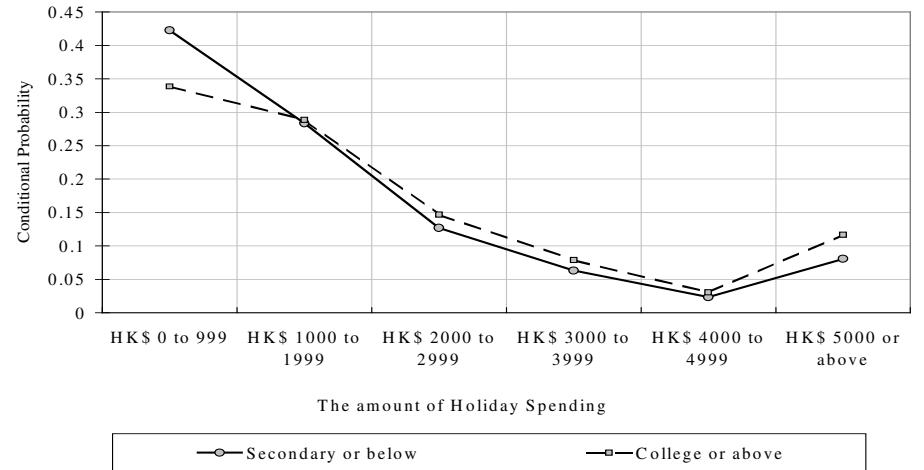


Figure 3.3: The Influence of Age on the amount of Holiday Spending

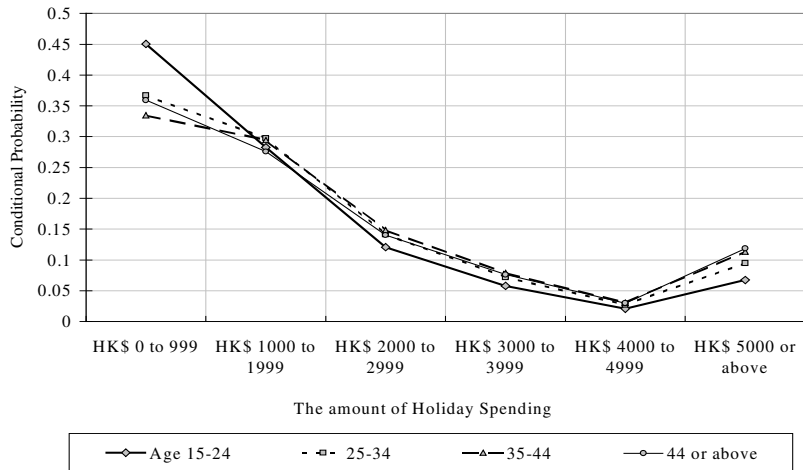


Figure 3.4: The Influence of Household Income on the amount of Holiday Spending

