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## A study of the consumption of Chinese online fortune telling services

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This study examines consumer behavior in the online fortune telling market. Both quantitative and qualitative data were collected and analyzed through a content analysis of websites, in-depth interviews with website owners, and online consumer surveys. Focus group discussions were conducted to uncover a general profile of and the motives for users who visited fortune telling websites in Taiwan, Hong Kong, and mainland China. In addition, a survey of 6,088 members of major fortune telling websites was conducted in order to identify a dynamic psychological model to explain online fortune telling behavior and attitudes. Three types of explanatory variables were used as predictors – demographics, psychological orientations, and motivations. Results from the analyses indicate that the majority of users were attracted to the fortune telling websites by free trial services. Personal relationship fortunes were the most popular service item consumed by both male and female users. Some consistent patterns regarding the effects of the predictor variables on online fortune telling behavior and attitudes were reported and discussed. The three types of predictors in question all contributed to different online fortune telling behavior and attitudes. Results and implications are reported and discussed.

**Keywords:** online fortune telling; Internet horoscope readings; sensation seeking; external control; subjective well-being; self-esteem; fortune telling motivations

### Introduction

In Taiwan, star signs and Chinese horoscope readings have lately become popular topics in mass media and on the Internet. Cable TV talk shows hosted by fortune tellers and astrologists have received high ratings in the past two years. Publications about star sign readings and Chinese horoscopes have not only increased significantly in the sheer number of titles, but also have reached the bestseller's list (Yang, 2004). As for websites, online fortune telling has emerged as a promising new business (Kuo, 2004).

According to NetValue survey results (Blink-Net Value, 2002), Taiwanese Internet users are the most frequent visitors to online fortune telling websites among the four Asian tigers, followed by Hong Kong users. Singaporeans were the least frequent users of these online services. According to a July 2002 survey by NetValue, Taiwanese fortune telling websites attracted approximately 12.8 million unique visitors. Males made up 23% of these visitors, while 77% were female. Youth dominated with 15–24 year old users accounting for about half of the visitor population. The majority of these visitors were students. This same survey reported that women aged 20–30 showed special preference for horoscope reading. About 68% of them espoused fatalism, agreeing that everything is predestined. Fifty-two percent

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of them frequently discussed horoscopes and star signs with friends and relatives, while 15% of them frequently visited fortune telling websites. These visits stemmed from a variety of motivations, including to get advice and life guidance, to look for gossip topics, and for curiosity and fun (Blink-Net Value, 2002).

In addition to the increasing popularity in the four Asian tigers, during the past few years fortune telling has become increasingly popular in mainland China. According to a 2003 national survey conducted by the China Science Association, more than 25% of Chinese aged 18–69 indicated that they believed in fortune telling (“Three Hundred Million Chinese People Believe in Fortune Telling”, 2003). Another study reported that 70% of middle school students and 50% of school teachers in Beijing believed in fortune telling (Wen, 2005). Although online fortune telling services have developed quickly, we have only seen limited media coverage about these services in magazines. Little academic research has been conducted to examine these emerging online businesses. After analyzing websites and performing a series of in-depth interviews with site owners, Kuo (2004) identified four online fortune telling business models: department stores, specialty shops, boutiques, and master agency. In the present study, I examine consumer behavior on these online fortune telling sites by investigating the relative importance of demographics, psychological factors, and motivational factors that have influenced the consumption of online fortune telling services.

## Theoretical background

### *The origin of Chinese horoscopes and astrology*

Practices of augury in ancient China can be traced back to the Yinshang Dynasty (1766–1122 BC). Relics from archeological sites show that Chinese emperors had augurs practice divination by reading omens on turtle shells and ox bones during important occasions, such as battles and ancestor worshiping rituals. Emperors often made decisions on these important events based on the omens they received. The *Yi Ching* (易經), or The Book of Changes, has been a very influential classic. Its theory of *Yin* and *Yang* and the practices of divination by the 64 *Gua* (卦) to predict and explain social phenomena have long been the primary foundation of Chinese prophecy and fortune telling.

According to Liang (1982), a well-known scholar of Chinese astrology and the four pillars, records of fortune telling in China also appeared in other Chinese historical classics during the spring and autumn period (770–476 BC). These fortune telling rites started among aristocrats and members of the royal family during the seventh century BC. Fortune tellers made predictions about luck and misfortune by examining their subject’s physical build and appearance. These skills later spread to civilians and were well received. During the Han Dynasty (206 BC–220 AD), fortune telling theories and philosophy developed and were further established and documented in the official historical document *Han Shu*.

The development of Chinese astrology and zodiac theories reached its peak during the Song Dynasty (960–1279 AD) when Xu Ziping made revolutionary changes to the methods for reading fortunes by proposing the *Four Pillars* method. This method combines the *Yi Ching* and the five elements derived from a person’s birth date and hour based on the solar calendar. His work was collected in the book *Yuan Hai Zi Ping* (淵海子平), which constitutes a complete fortune telling system.

Fortune telling and horoscope reading have subsequently been part of life for ordinary people since the Song Dynasty, especially during times of turmoil and rapid social changes. This history demonstrates how fortune telling is an element of the Chinese cultural heritage. Consulting with fortune tellers has long been popular in Chinese society, especially as people prepare to make important decisions about marriage, careers, and education and even for matters like choosing dates on which to give birth.

Yu (1987) reported that 52% of the 1,079 surveyed respondents in her survey indicated that they consulted fortune tellers. Another scholar reported that 45% of surveyed couples said that they consulted fortune tellers prior to marriage in order to find out whether or not their horoscopes were a good match (Lu, 1990). Based on a longitudinal study of three national sample surveys, Qu (1999) pointed out that uncertainties in domestic political and economic situations were a significant contributing factor in influencing Taiwanese people to seek out fortune telling services. He contended that the following three conditions jointly contributed to a trend of increasing fortune telling popularity among Taiwanese people: (a) a deep-rooted cultural belief in fortune telling and witchcraft has been socialized and cultivated in people for a long time; (b) problems arising from rapid and drastic social changes were unsolvable through rational means; and (c) mass media and entertainment celebrities have promoted fortune telling and horoscope readings in talk shows to achieve high ratings for commercial gains. As a result of these factors, more than one-third of the people in Taiwan believe in fortune telling. Another interesting finding was that educational level showed no effect on people's acceptance of fortune telling and witchcraft. However, religion did make some differences. Christians were less likely to seek out fortune tellers than Buddhists or Taoists. Occupation also made some differences in this regard. Policemen and military officers were less likely to seek out fortune telling, while administrators and businessmen were more likely to do so.

### ***Fortune telling and the Internet***

At the turn of the century, fortune telling and horoscope-related websites began to flourish in Taiwan. Nowadays almost every large portal site has links to fortune telling sites. In addition, because fortune telling sites can attract such large visitor volumes, some portal sites have their own special pages providing these services. According to NetValue's report, Taiwanese Web users spent over \$100 million (ntd) on online fortune telling services in 2001. According to the same survey, more females (53.3%) than males (46.5%) visited fortune telling websites. Those between the ages of 15 to 24 were the largest group, accounting for over half of the visitors. After analyzing the content of 384 fortune telling websites based in Taiwan, Hong Kong, and mainland China, Kuo (2004) reported that while these websites provide a wide variety of Chinese and Western styles of fortune telling services, the majority of services are Chinese style. The most popular services are *Four Pillars* (四柱八字), *Feng Shui*, *Zi Wei Do Shu* (紫薇斗數), *Yi Ching* divination, name fortunes, and Western astrology. Many of the fortune telling websites require users to register as members before using the online services. Sometimes such memberships are free and other times there are fees involved. In addition, many of the sites segmented the services and charged piecemeal fees.

### Online fortune telling behavior and attitudes

Consumption of online fortune telling services often starts with a visit to the website, reading the free information provided, and subsequently trying out the free fortune telling services. If users are satisfied with the services, they may then proceed to purchase further services in either a piecemeal fashion or by paying membership fees for a package of fortune telling services for a certain period of time. After trying the fortune telling services, similar to consumers of other products and services, the users may evaluate the services' quality and assess it as either satisfactory or unsatisfactory. With fortune telling predictions, it is interesting to know whether consumers believe in the predictions provided by online fortune telling software and whether such predictions have any influence on their subsequent behavior.

Taking into consideration the various aspects of behavior and attitudes with regard to online fortune telling consumption, this study includes the following four variables as the dependent variables in its investigation: (a) frequency of visiting fortune telling websites, (b) satisfaction toward the fortune telling services, (c) self-reported level of belief in the fortune telling predictions, and (d) self-perceived influences of such predictions on their own behavior. These four variables all relate to the consumption of online fortune telling services. However, there is no definite pattern dictating how they associate with one another. It is reasonable to postulate that those who are satisfied with the fortune telling services and those who believe in the predictions may be more likely to re-visit fortune telling websites. However, it remains to be investigated whether consumers with similar attitudes may consider the predictions very influential on their subsequent behavior.

### *Factors that influence the consumption of fortune telling services*

In order to identify a psychological dynamic model to explain the dependent variables in question, this study includes three types of predictor variables.

#### *Demographics*

Scholars have reported that some demographic factors, such as gender, age, and religious belief, have shown significant influence on the consumption of fortune telling services among Taiwanese. For example females, seniors, and singles generally hold a more favorable attitude toward fortune telling. Christians tend to have a less favorable attitude toward fortune telling than non-Christians (Qu, 1997, 1999). People with different occupations have also been found to differ in their attitudes toward fortune telling. For instance, military officers and policemen are less likely to consult fortune tellers, whereas business people and government administrators are more inclined to seek out fortune telling and *feng shui* services when they encounter difficulties. Educational level, however, was found to be unrelated to fortune telling behavior, which is inconsistent with a general belief that highly educated people should have a less favorable attitude toward fortune telling because education cultivates rationalism over superstition (Qu, 1997, 1999). Nevertheless, this author still believes that educational level may have some influence on the consumption of online fortune telling services. As a result, this study proposes the following hypotheses:

- H1: Gender makes a difference in people's online fortune telling behavior and attitudes such that females tend to (a) visit fortune telling websites more frequently; (b) have a higher level of satisfaction in online fortune telling services; (c) have a higher level of belief in the predictions of online fortune telling; and (d) report more that the online predictions influence their behavior.
- H2: Age makes a difference in people's online fortune telling behavior and attitudes such that those younger tend to (a) visit fortune telling websites more frequently; (b) have a higher level of satisfaction in online fortune telling services; (c) have a higher level of belief in the predictions of online fortune telling; and (d) report more that the online predictions influence their behavior.
- H3: Educational level makes a difference in people's online fortune telling behavior and attitudes such that those less educated tend to (a) visit fortune telling websites more frequently; (b) have a higher level of satisfaction in online fortune telling services; (c) have a higher level of belief in the predictions of online fortune telling; and (d) report more that the online predictions influence their behavior.
- H4: Personal income makes a difference in people's online fortune telling behavior and attitudes such that those who have less income tend to (a) visit fortune telling websites more frequently; (b) have a higher level of satisfaction in online fortune telling services; (c) have a higher level of belief in the predictions of online fortune telling; and (d) report more that the online predictions influence their behavior.

#### *Individual psychological factors*

In addition to demographic variables, users' psychological orientations may also influence their attitudes and behavior toward fortune telling. This study includes four psychological variables, which include sensation seeking, locus of control, subjective well-being, and self-esteem, as predictors, and I postulate that these variables may contribute either positively or negatively to fortune telling behavior on the Internet.

##### (1) Sensation seeking

Although often portrayed as the pursuit of physically stimulating and/or dangerous behaviors, sensation seeking, as described by the developer of the concept, Zuckerman (1994), includes other less obvious dimensions. A scale devised by Zuckerman measures individual differences in sensation seeking along four dimensions: thrill and adventure seeking, experience seeking, dis-inhibition, and susceptibility to boredom. These four dimensions encompass behaviors, such as engaging in physically risky activities; pursuing new experiences through travel, music, art, and drugs; seeking social stimulation through parties, social drinking, and a variety of sexual partners; and avoiding boredom produced by unchanging circumstances. As a result, sensation seeking may include a wide variety of activities, such as skydiving, body-contact sports, hiking and camping, visiting a museum, attending a theatrical performance, or playing computer and video games. Other scholars have found that people with a higher level of sensation seeking orientation were more inclined to be engaged in highly risky behavior, such as drug abuse, smoking, drinking to excess, gambling, and reckless driving (Arnett, 1996; Breen & Zuckerman, 1999; Dolezal, Meyer-Bahlburg, Remien, & Petkova, 1997; Wolfgang, 1988; Woods, Cochran, Prefferbaum, & Arneklev, 1995).

Meanwhile, scholars have also reported that individuals with greater sensation seeking orientations show more favorable attitudes toward hard rock and heavy metal music (Arnett, 1991). These individuals also tend to click trick banner ads and



online banner advertisements offering premiums and incentives (Kuo & Chang, 2003, 2004) more often than others. Fortune telling websites are likely to arouse excitement since they provide predictions about one's future and fortune. Based on the previous findings, a hypothesis is proposed as follows:

- H5: People with a higher level of sensation seeking orientation tend to (a) visit fortune telling websites more frequently; (b) have a higher level of satisfaction in online fortune telling services; (c) have a higher level of belief in the predictions of online fortune telling; and (d) report more that the predictions influence their behavior

## (2) Locus of control

Locus of control refers to an individual's generalized expectations concerning where control over subsequent events resides. In other words, it is a concept related to where individuals conceptually place responsibility, choice, and control for events in their lives. It distinguishes between two common approaches that place the actual control either internal or external to the individual. According to Rotter (1966) locus of control can be divided into 2 separate sources of control: *internal* and *external*. People with an *internal* locus of control believe that they control their own destiny. They also believe that their experiences are controlled by their own skills or efforts. Other scholars have found that people with an external locus of control are more likely to believe in astrology (Jackson & Fiebert, 1980; Sosis, Strickland, & Haley, 1980).

Levenson (1981) proposed an alternative model with a multidimensional scale to measure locus of control. She conceptualized the concept as having 3 independent dimensions: internality, chance, and powerful others. According to Levenson's model, one can endorse each of these dimensions of locus of control independently and simultaneously. For example, a person might simultaneously believe that both she and powerful others influence her life, while chance does not. Levenson's measurement, which has good reliability and validity, uses Likert scale questions for ease of administration. In the present study I adopt her measurement in the survey and focus on external control only (see Appendix 1). It is expected that people with a high external locus of control tend to believe in destiny and that they are more likely to seek out fortune telling services. As a result, I propose the following hypothesis:

- H6: People who score highly on external control tend to (a) visit fortune telling websites more frequently; (b) have a higher level of satisfaction in online fortune telling services; (c) have a higher level of belief in the predictions of online fortune telling; and (d) report more that the predictions influence their behavior.

## (3) Subjective well-being

Subjective well-being (SWB) is an attitude that encompasses both cognitive and affective elements. This concept has been widely researched by scholars in psychology as well as sociology since the 1950s (Andrews & Robinson, 1991). Some scholars conceptualize it as the discrepancy between "aspired level" and "achieved level" (Andrews, 1981; Michalos, 1980, 1983). Other scholars contend that SWB may include three components: (a) life satisfaction – a cognitive evaluation of one's overall life, (b) the presence of positive emotional experiences, and (c) the absence of negative emotional experiences. Thus, a person is described as enjoying a high level of SWB if she is satisfied with her life, frequently experiences positive emotions (such as joy or affection), and seldom feels negative emotions (such as anxiety or sadness). One hallmark of SWB is that it is judged from the individual's own perspective. Thus, in

SWB, people's *subjective* perceptions about their own well-being – which are shaped in complex ways by cultural factors – are of paramount importance (Pavot & Diener, 1993).

Findings from previous studies indicate that some demographic variables are related to SWB. For example, an increase in income, marriage, and greater social support contribute positively to SWB in the USA. Those with higher educational levels and higher incomes also scored higher on the SWB scale (Davis, 1984). In a cross-cultural study, scholars reported the following three key findings: (a) individualist cultures are happier than collectivist ones, (b) psychological attributes characterizing the self (e.g., self-esteem, self-consistency) are more relevant to the happiness of Western individualists than to the happiness of collectivists, and (c) the self-judgment of happiness is anchored on different types of cues and experiences across cultures (Suh & Oishi, 2002).

In the present study, however, I focus on measuring the dimension of overall satisfaction in life and adopt the scale devised by Fazio (1977). Based on past research findings, I propose the following hypothesis:

- H7: People with a low level of subjective well-being tend to (a) visit fortune telling websites more frequently; (b) have a higher level of satisfaction in online fortune telling services; (c) have a higher level of belief in the predictions of online fortune telling; and (d) report more that such predictions influence their behavior.

#### (4) Self-esteem

Self-esteem is a widely used concept both in day-to-day use and in psychology. It refers to an individual's sense of his or her value or worth or the extent to which a person values, approves of, appreciates, prizes, or likes him or herself (Blascovich & Tomaka, 1991, 1997). Many scholars treat self-esteem as a relatively stable personality trait, and they believe that self-esteem is related to confidence and anxiety (Tennen & Herzberger, 1987). It is also generally considered the evaluative component of the self-concept, a broader representation of the self that includes cognitive and behavioral aspects as well as evaluative or affective ones (Blascovich & Tomaka, 1991). While the construct is most often used to refer to a global sense of self-worth, narrower concepts, such as self-confidence or body esteem, are used to imply a sense of self-esteem in more specific contexts. It is also widely assumed that self-esteem functions as a trait, that is, it is stable across time within individuals. Self-esteem is an extremely popular construct within psychology and has been related to virtually every other psychological concept or domain, including personality (e.g., shyness), behavioral (e.g., task performance), cognitive (e.g., attributional bias), and clinical (e.g., anxiety and depression). While some researchers have been particularly concerned with understanding the nuances of the self-esteem construct, others have focused on the adaptive and self-protective functions of self-esteem (see Blascovich & Tomaka, 1991, for a review of conceptual and methodological issues).

The broadest and most frequently cited definition of self-esteem within psychology is Rosenberg's self-esteem scale (Robins, Hendin, & Trzesniewski, 2001; Rosenberg, 1965), which conceptualizes self-esteem as a favorable or unfavorable attitude toward the self. Reasoner (2004) added a behavioral component to the concept and contended that the concept of self-esteem is founded on the



premise that it is strongly connected to a sense of competence and worthiness and the relationship between the two over time. Worthiness might be considered the psychological aspect of self-esteem, while competence might be considered the behavioral or sociological aspect. Self-esteem stems from the experience of living consciously and might be viewed as a person's overall judgment of him or herself pertaining to self-competence and self-worth based on reality (Reasoner, 2004).

In the present study I adopt Rosenberg's measurement scale as a survey tool. It is expected that people with low self esteem are more likely to feel dissatisfied and frustrated in life and may need to seek out comfort from fortune telling. Thus, I propose the following hypothesis:

- H8: People with low self-esteem tend to (a) visit fortune telling websites more frequently; (b) have a higher level of satisfaction toward online fortune telling services; (c) have a higher level of belief in the predictions from online fortune telling; and (d) report the predictions influence their behavior.

#### *Identifying the motives for online fortune telling*

In his study on the religious beliefs of Taiwanese people, Qu (1999) stated that the Taiwanese tend to resort to witchcraft and fortune telling when they feel a strong sense of uncertainty resulting from rapid social change. People are motivated to seek out fortune telling services for different reasons, for example, seeking guidance for future directions when they feel lost or confused. Others may wish to know whether their decisions will bring them good luck. And still others may visit fortune telling websites just for fun and curiosity. This author assembled a list of various motives for visiting fortune telling websites based on findings from focus group discussion sessions. For the purpose of this study, respondents were asked to state the importance of each motive in leading them to either visit fortune telling websites or use online fortune telling services.

Taking into consideration the theoretical concepts discussed above and the derived hypotheses, a research framework of online fortune telling behavior was proposed (Figure 1).

#### **Research methodology**

This study used both qualitative and quantitative data collection methods. Qualitative methods included in-depth interviews and focus group discussions; quantitative methods included content analysis and online survey. This paper focuses on reporting the results from the online survey.

#### *Online survey of fortune telling website visitors*

The target subjects of this survey were fortune telling website users. Five top-ranked fortune telling websites in Taiwan participated in the study to help recruit close to 10,000 online survey respondents, who were frequent users of these websites. E-mails were sent to these selected users inviting them to participate in the online survey, and each respondent was given a unique one-time password for logging on the designated survey website. This password ensured that each respondent only logged onto the

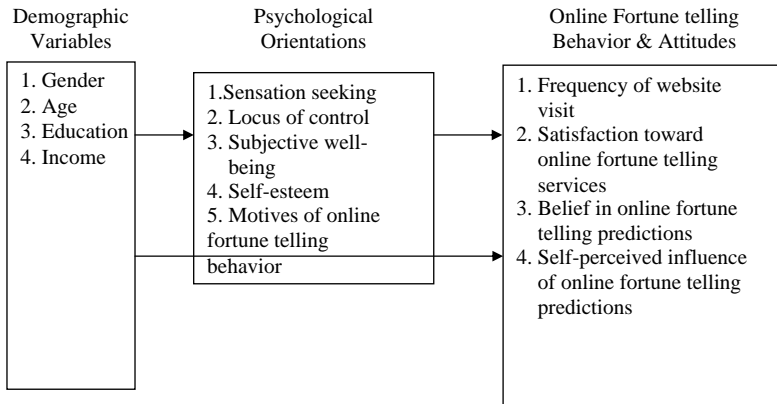


Figure 1. A research framework of online fortune telling behavior.

website once to fill out the questionnaire. In order to encourage participation, ten \$500 (twd) gift certificates, awarded through a lottery drawing, were used as incentives. In total, 6,088 people responded to the invitation e-mails and participated in the online survey. The resulting response rate was approximately 61%.

### *Measurement of predictors*

Multiple indicators were used to measure some of the major predictor variables. For example, Levenson's (1981) 3-factor measurement was used to measure locus of control. To measure sensation seeking, I adopted Zuckerman's (1994) revised measure, which had also been used by Kuo and Chang in their study of Internet advertising (Kuo & Chang, 2003). In addition, Fazio's (1977) measure of subjective well-being and Rosenberg's (1965) measure of self-esteem were used for these variables. Thirteen motives for online fortune telling use were identified based on two focus group discussion sessions, and these were used in the online survey. Factor analysis was conducted to identify meaningful motives. Reliability coefficients (Cronbach Alphas and factor loadings) of measured predictor variables are presented in Appendix 1.

### *Measurement of dependent variables*

With regard to the four aspects of online fortune telling consumption, single indicator was used for each of them. An eight-point scale was used to measure "frequency of visiting fortune telling websites", ranging from "at least once per day" to "have not visited websites in the past six months". A five-point scale was used to measure "satisfaction toward the fortune telling services", ranging from "very dissatisfied" to "very satisfied". A five-point scale was used to measure "self-reported belief in fortune telling predictions", ranging from "don't believe in it strongly" to "believe in it strongly". And "self-perceived influences of such predictions on their own behavior" was also measured by a five-point scale, ranging from "always" to "never".

## Results

### *A profile of the online survey respondents*

Among the 6,088 online survey respondents, 31% were male and 69% were female, with more than half being between 20 and 29 years of age and college educated. Students were the largest group (34%), followed by those who worked in the telecommunication industry (10.2%) and banking/finance services (10.1%). Never-married singles comprised 78.8% of the respondents. It is not surprising, therefore, that the most popular service items consumed were predictions about romantic relationships and marriage. Most of the respondents resided in Taiwan (85.5%), but there were also respondents from Hong Kong, Macau, mainland China, and even North American regions. The respondent profiles are summarized in Table 1.

Table 1. Profile of the survey respondents.

	Frequency	Percentage
<b>Gender</b>		
Male	1866	30.9%
Female	4175	69.1%
<b>Age</b>		
19 and under	802	13.3%
20–29	3,457	57.0%
30–39	1,460	24.1%
40 and over	339	5.6%
<b>Occupation</b>		
Students	2,062	34.0%
Telecomm	620	10.2%
Business/Finance	610	10.1%
Other	2,719	45.7%
<b>Marital Status</b>		
Single/never married	4,762	78.8%
Other	1,001	16.6%
Married	163	4.6%
<b>Residing areas</b>		
Taiwan	5,171	85.5%
Hong Kong/Macau	352	5.8%
China	242	4.0%
North America	148	2.4%
Other	137	2.2%

N = 6,088.

Over 95% of the surveyed respondents had visited fortune telling websites at least once, and most had tried the free online services. However, only 1,672 people indicated that they had paid for online fortune telling services. The three most popular service items were predictions about romantic relationships, careers, and sexual adventure fortunes. Gender was found to be a significant influence in the use of these services, with males showing more interest in career, wealth, and real estate fortunes and females showing more concern for interpersonal relationship, marriage, and romance fortunes.

After factor analyzing a list of motives for using online fortune telling services (collected from focus group discussion sessions), four primary dimensions were identified: (a) seeking solutions for problems, (b) increasing the understanding of self and others, (c) fun and curiosity, and (d) preferring the superiority of online services. The reliabilities of these motive scales and those of measurement scales for psychological orientations, namely, sensation seeking, subjective well-being, locus of external control, and self-esteem are summarized in Appendix 1.

In order to help identify a psychological dynamic model in explaining consumers' online fortune telling behavior, multiple regression analyses were used to examine the influence of three types of explanatory variables: demographics, psychological orientation, and motivations for using online fortune telling services. The four dependent variables were (a) frequency of visiting fortune telling websites, (b) satisfaction in online fortune telling services, (c) level of belief in the predictions of instant online services, and (d) self-perceived influence of online fortune telling. Results from multiple regression analyses are summarized in Tables 2 through 5.

Table 2. Factors that influence frequency of visiting fortune telling websites.

Explanatory variables	$\beta$
Gender (Female = 1)	.133***
Age	-.020
Education	-.051***
Monthly income	.013
Sensation seeking	.040**
External control	.017
Subjective well-being	-.036*
Self-esteem	.004
Seeking solutions	.146***
Increasing understanding	.118***
Fun and curiosity	-.073***
Advantages of Internet	.021
$R = 0.313$ , adjusted- $R^2 = 0.096$	

Notes: Dependent variable: Frequency of visiting fortune telling websites.  
 $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

### ***Frequency of visiting fortune telling websites***

Only two demographic variables showed significant influences on the frequency of visiting fortune telling websites. Females visited such websites more frequently than their male counterparts ( $\beta = .133$ ,  $p < .001$ ), and individuals who were less educated tended to visited such websites more frequently than those with a higher educational level ( $\beta = -.051$ ,  $p < .001$ ). Thus,  $H_{1a}$  and  $H_{3a}$  were supported. With regard to the 4 personality traits, both sensation seeking orientation and subjective well-being had different but significant effects on the frequency of visiting fortune telling websites; those individuals with a higher level of sensation seeking orientation or a lower level

Table 3. Factors that influence satisfaction toward online fortune telling services.

Explanatory variables	$\beta$
Gender (Female = 1)	.023
Age	-.095***
Education	-.068***
Monthly income	-.018
Sensation seeking	.046***
External control	.014
Subjective well-being	.038**
Self-esteem	.057***
Seeking solutions	.148***
Increasing understanding	.130***
Fun and curiosity	-.037**
Advantages of Internet	.187***
$R = 0.404$ , adjusted- $R^2 = 0.161$	

Notes: Dependent variable: Satisfaction toward online fortune telling services.  
 $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Table 4. Factors that influence believing in online fortune telling predictions.

Explanatory variables	$\beta$
Gender (Female = 1)	.039**
Age	-.073***
Education	-.062***
Monthly income	-.041**
Sensation seeking	.012
External control	.054***
Subjective well-being	-.005
Self-esteem	.049**
Seeking solutions	.209***
Increasing understanding	.159***
Fun and curiosity	-.111***
Advantages of Internet	.111***
$R = 0.439$ , adjusted- $R^2 = 0.191$	

Notes. Dependent variable: Believing in online fortune telling predictions.  
 $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

of subjective well-being tended to visit fortune telling websites more frequently ( $\beta = .04$ ,  $p < .01$ ;  $\beta = -.036$ ,  $p < .05$ , respectively). These findings supported  $H_{5a}$  and  $H_{7a}$ . As for motivation, the motives of seeking solutions for problems and increasing the understanding of self tended to enhance the website visit frequency ( $\beta = .146$ ,  $p < .001$ ;  $\beta = .118$ ,  $p < .001$ , respectively). However, the fun and curiosity motive showed a negative effect on visit frequency ( $\beta = -.073$ ,  $p < .001$ ).

Table 5. Factors that influence perceived influences of fortune telling on one's behavior.

Explanatory variables	$\beta$
Gender (Female = 1)	.043***
Age	-.028*
Education	.009
Monthly income	-.053***
Sensation seeking	.015
External control	.087***
Subjective well-being	-.047**
Self-esteem	-.043**
Seeking solutions	.361***
Increasing understanding	.073***
Fun and curiosity	-.117***
Advantages of Internet	.000
$R = 0.483$ , adjusted- $R^2 = 0.231$	

Notes: Dependent variable: Perceived influences of fortune telling on one's behavior.  
 $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

### *Satisfaction in online fortune telling services*

Age and educational level had a significant influence on service satisfaction, with younger users and those with less education being more satisfied in online fortune telling services ( $\beta = -.095$ ,  $p < .001$ ;  $\beta = -.068$ ,  $p < .001$ , respectively). Therefore,  $H_{2b}$  and  $H_{3b}$  were supported. Individuals who had higher levels of sensation seeking, subjective well-being, and self-esteem tended to report having greater satisfaction in the online fortune telling services ( $\beta = .046$ ,  $p < .001$ ;  $\beta = .038$ ,  $p < .01$ ;  $\beta = .057$ ,  $p < .001$ , respectively). Such results strongly supported  $H_{5b}$ ,  $H_{7b}$ , and  $H_{8b}$ . As for the motives predictors, seeking solutions for problems, increasing the understanding of self and others, and preferring the superiority of online services seemed to enhance consumer satisfaction in online fortune telling services ( $\beta = .148$ ,  $p < .001$ ;  $\beta = .130$ ,  $p < .001$ ;  $\beta = .187$ ,  $p < .001$ , respectively). However, the fun and curiosity motive showed a negative effect on the satisfaction level ( $\beta = -.037$ ,  $p < .01$ ).

### *Level of belief in the predictions of online services*

All four demographic variables had significant effects on the level of belief in the predictions of instant online fortune telling services. Female users were more likely to believe in predictions from such services than males ( $\beta = .039$ ,  $p < .01$ ); younger users tended to believe in these predictions more than older users ( $\beta = -.073$ ,  $p < .001$ ). In addition, socioeconomic level showed a significant effect on people's belief in the predictions; those who had less education and a lower monthly income tended to believe in predictions of online fortune telling services ( $\beta = -.062$ ,  $p < .001$ ;  $\beta = -.041$ ,  $p < .01$ , respectively). Thus,  $H_{1c}$ ,  $H_{2c}$ ,  $H_{3c}$ , and  $H_{4c}$  received strong support. Of the four individual psychological variables, external control and self-esteem showed significant positive effects on the dependent variables, i.e., those who



scored higher on external control ( $\beta = .054, p < .001$ ) and self-esteem ( $\beta = .049, p < .01$ ) were more likely to believe in the predictions of online fortune telling services. Hence,  $H_{6c}$  and  $H_{8c}$  were supported. A similar pattern was observed for motivations of online fortune telling; seeking solutions for problems, increasing the understanding of the self and others, and preferring the superiority of online services tended to enhance consumer belief in the predictions of such fortune telling services ( $\beta = .209, p < .001$ ;  $\beta = .159, p < .001$ ;  $\beta = .111, p < .001$ , respectively). In contrast, seeking fun and curiosity showed a negative effect on the dependent variable ( $\beta = -.111, p < .001$ ).

### *Self-perceived influence of online fortune telling*

Three of the four demographic variables (i.e., gender, age, and income) showed significant effects on the dependent variable. Female users and younger users, and those with less monthly income tended to report that online fortune telling predictions influenced their behavior ( $\beta = .043, p < .001, \beta = -.028, p = .05; \beta = -.053, p < .001$ , respectively). These results provided much support for  $H_{1d}$ ,  $H_{2d}$ , and  $H_{4d}$ . Three individual psychological orientations contributed either positively or negatively to the dependent variable. That is, those who scored high on external control, had a lower level of subjective well-being, or had a lower level of self-esteem were more likely to report that fortune telling predictions influenced their behavior ( $\beta = .087, p < .001; \beta = -.047, p < .01; \beta = -.043, p < .01$ , respectively). Therefore,  $H_{6d}$ ,  $H_{7d}$ , and  $H_{8d}$  were also supported. Finally, three of the four motivational factors showed significant effects on the dependent variable, with those having a high motivation for seeking solutions for problems or for increasing understanding tending to report that the predictions of online fortune telling sites had some effect on their behavior ( $\beta = .361, p < .001; \beta = .073, p < .001$ , respectively). In contrast, those who visited fortune telling websites for fun and curiosity were less likely to report that predictions from online fortune telling had effects on their behavior ( $\beta = -.117, p < .001$ ).

### **Discussions**

A substantial demand for online fortune telling services is real, as revealed by the study of Kuo (2004) and other sources. In addition to this existing consumer market of such services in Taiwan and Hong Kong, there is also a large potential market in mainland China. As the younger generation grows more comfortable with online electronic transactions, fee-based online fortune telling businesses may find success. The fact that Chinese-style horoscope readings are the most frequently used services on these websites could be the result of cultural influences and the greater variety of these types of services on offer. With regard to Western-style fortune telling services, astrology or star sign readings and tarot are becoming more and more popular. They are particularly well received among younger users as a fashionable service and a conversation topic. Kuo's (2004) study revealed that the most visible fortune telling services on most of the websites purported to provide predictions about future luck, family relationships, careers, romantic relationships, and wealth prospects. This online survey yielded results coinciding with the findings from content analysis; that is, it was found that the three most popular service items on the fortune telling websites were romantic relationship, career prospect, and sexual adventure fortunes.

Results from this survey of the members of fortune telling websites may not be fully generalized to online fortune telling behavior as a whole. Nevertheless, findings from the survey data – with a sample of over 6,000 – demonstrate significant behavioral patterns. Through multiple regression analyses, this study uncovered some consistent patterns with regard to the impacts of the three types of explanatory variables – demographics, personality traits, and motives – on the various dependent variables. Three demographic variables, namely gender, age, and education, had significant effects, to varying degree, on three of the four dependent variables – frequency of visiting fortune telling websites, satisfaction with online fortune services, belief in the predictions of the online fortune telling services, and influence on behavior. Gender effect was quite pronounced with regard to three of the four dependent variables, with females tending to visit the websites more frequently, to have a higher level of belief in the predictions, and to admit being influenced by the predictions. This gender effect finding is consistent with people's intuitive beliefs. Interestingly, no age difference was found regarding the frequency of website visiting. This could be due to the fact that the survey respondents were all members of fortune telling websites. Socioeconomic level also showed a consistent pattern of impact on the dependent variables. People with less education tended to visit the websites more frequently and to have greater satisfaction toward and higher belief in predictions of online fortune telling services, whereas people with less monthly income tended to show greater belief in and to admit being influenced by predictions of such online fortune telling. A tentative explanation could be that people with less income cannot afford to use the more expensive offline fortune telling services and, therefore, cannot compare predictions between the online and offline services.

Individual psychological orientation showed significant effects, to varying degrees, on people's online fortune telling behavior. For example, sensation seeking orientation seemed to enhance the frequency of website visits and satisfaction level because online fortune telling is an interesting and novel experience for many people. Nevertheless, such an orientation did not lead to a higher level of belief in or greater perceived influence of the predictions of online fortune telling services.

Results from the survey data confirmed that people scoring highly on the external control scale were more likely to believe in and be influenced by fortune telling. This finding is in line with the notion that people with a high level of external control tend to be fatalistic. Subjective well-being showed more complicated effects. For example, people with a lower level of subjective well-being visited fortune telling websites more frequently and also reported that their behavior was influenced by fortune telling, but they were not satisfied with the fortune telling nor did they believe in the predictions. A plausible explanation could be that people with less subjective well-being tend to feel unhappy and may seek out online fortune telling services more frequently; nevertheless, they often feel dissatisfied with the predictions. As a result, we may see such a contradictory behavioral pattern of visiting fortune telling websites frequently on one hand but feeling dissatisfied with the fortune telling services on the other. Self-esteem also had an interesting effect on people's behavior. For example, those with a high self-esteem showed greater satisfaction toward and higher level of belief in predictions of online fortune telling but they considered themselves unlikely to be influenced by such predictions. It is likely that people with a high self-esteem tend to score highly on subjective well-being, and such people would feel confident in controlling their own destiny.

With regard to the four motives of online fortune telling, three of them (seeking solutions for problems, increasing understanding of self and others, and preferring the advantages of online services) demonstrated an influence on the dependent variables. In contrast, the motive of seeking fun and curiosity turned out to be an inhibitor of repetitive use of online fortune telling services (i.e., people who were motivated to visit the fortune telling websites for fun and curiosity soon lose interest and seldom re-visit them). The frequent and heavy users of such websites are likely to be those who wish to seek solutions for personal problems and those who wish to increase understanding about their own and other's futures.

### **Conclusions**

Fortune telling has been a common practice in Chinese society for thousands of years and, as such, has deep cultural roots. Findings from this study suggest that there is an increasing demand for fortune telling and horoscope reading services in the Chinese consumer market. The demand is especially evident when people experience drastic social changes in a short period of time. In order to reduce uncertainty about the future, people may turn to fortune tellers for directions about future plans. However, the development of fortune telling services in cyberspace has a short history and its future remains uncertain.

The online fortune telling business is quite new and as yet relatively unresearched. It is not easy to identify a complete set of the factors that influence this consumer behavior. Results from the survey analyses indicate that the majority of the users were attracted to fortune telling websites for the free trial services. Only 26% of respondents admitted to having spent money on online fortune telling services during the past six months. Personal romantic relationships and fortunes were the most popular service item among both males and female respondents, followed by career fortunes. Some consistent patterns regarding the influences of demographic, psychological, and motivational factors were uncovered through multiple regression analyses. These findings need to be verified in future studies, with more data collected through means other than online surveys so as to obtain insights about similarities and differences of consumption of fortune telling services in online and offline contexts.

There are, of course, some limitations to this study. First, the measurements used in the analyses may not completely reflect the theoretical concepts. Since there were so many variables, only selections of the scale items were included in the questionnaire in order to reduce total length. As a result, the final scale items are somewhat different from the originally proposed scales. Second, the reliability coefficients of a few scales were not high (Cronbach's  $\alpha = .51$  for external control). Nevertheless, the variable was included in the regression analyses because of its importance to the study. Third, the percentages of explained variance of website visit frequency and satisfaction level were not as high as those of belief in online fortune telling and perceived influence of fortune telling. This suggests that there may be more meaningful factors in alternative directions that account for consumer behavior, for example, individual experiences with fortune telling in offline contexts, preferences for customized prediction, and so on. Finally, the findings cannot be generalized to the overall population of Internet users because the sample population was drawn from the membership of fortune telling websites.

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**Appendix 1**

Appendix 1. Factor loadings and reliabilities of measurement scales.

Measurement Items	Factor loadings	Reliability (Cronbach's alpha)
<b>Sensation seeking</b>		
–I am often fascinated with new things and ideas without considering possible troubles	.69	.72
–I am willing to try out all kinds of things	.75	
–Sometimes I may do crazy things just for fun	.74	
–I like to be involved in uncertain future and unpredictable new situations	.77	
<b>Locus of external control</b>		
–I usually don't know why misfortune fell on me	.75	.51
–I don't know how to keep my luck when things go perfectly smoothly	.75	
–I believe that all things are fixed by destiny and humans can do nothing about it	.62	
<b>Subjective well-being</b>		
–feeling worried and unhappy lately	.89	.85
–feeling emotionally low and depressed	.90	
<b>Self-esteem</b>		
–Overall, I tend to consider myself a loser	.73	.77
–Sometimes I think of myself as good for nothing	.73	
–Overall I am satisfied with myself	.72	
–I can do things as well as most people	.76	
<b>Seeking solution to problems</b>		
–to help me make decisions	.76	.73
–to seek answers or directions	.70	
–to help me avoid misfortunes	.80	
–to seek psychological and comfort	.77	
<b>Increase understanding</b>		
–to understand self better	.86	.76
–to understand others better	.88	
<b>For fun and curiosity</b>		
–just for curiosity	.92	.87
–just for fun	.93	
<b>Taking advantage of online services</b>		
–online service is highly private	.80	.60
–the service is conveniently accessible	.72	
–the charge of fees is reasonable	.69	