

# The Study of Relationship among Money Attitude, Material Values and Compulsive Buying Online

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**Abstract:** The purpose of this study is to estimate mediation effect of material values between money attitude and compulsive buying online. The study used a convenience sample of 172 college students and their online shopping experiences in Taiwan. Structural equation modeling was used to confirm the hypotheses. The result shows that the power prestige affects material value, while distrust and anxiety affect material value negatively. Material value affects compulsive buying online. Material values appear to be the mediator between money attitude and compulsive buying online. These findings offer a new insight about predicting and preventing extreme buying behavior

**Key Words:** money attitude, material value, compulsive buying online, college students, structural equation model

## INTRODUCTION

According to the Market Intelligence Center (MIC) Survey in 2008, the market size of online shopping (B2C) in Taiwan is about 20.5% of the online retail industry, with a growth rate of about 88% for fashion goods and 49% for beauty goods. Due to the lower price, greater convenience and more choices, some consumers may be more likely to shop via Internet. As compared to in-store shopping, advantages of catalog and online shopping include greater merchandise selection and the convenience of shopping from home and of having goods delivered there (Lennon *et al.* 2007). Market Intelligence & Consulting Institute (MIC) (2008) stated that Taiwanese online shopping market had reached 108 billion NT dollars which is 1.3% of the retail section. The use of the internet for retail shopping has expanded exponentially in recent years and has a profound influence on the shopping process for many consumers (Brown *et al.* 2003). 77% used internet for surfing and browsing, and over 44% used it for shopping and buying online (Lennon *et al.* 2007). Neuner *et al.* (2005) mentioned that not only are compulsive buying tendencies on the increase in the developed mass consumer markets of Western societies, but there is preliminary evidence indicating that this is also occurring in societies other than Western societies, as well as in different buying environments, such as the internet (e.g. Dittmar *et al.* 2007; LaRose and Eastin 2002; Lee and Lee 2003). It is interest to explore whether the same is true in Taiwan.

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Compulsive buying tendency has three core features: irresistible urges to buy, loss of control over buying behavior, and continuing with excessive buying despite harmful consequences (Dittmar 2004). Uncontrolled, excessive buying of consumer goods, which has compulsive (e.g. Faber 2004) and addictive (e.g. Benson and Gengler 2004) elements, is attracting increasing research attention (Benson 2000; Black 2004; Dittmar 2004). In addition, recent studies show the development of compulsive behavior is from person's experience of events during adolescent years (Rindfleisch *et al.* 1997; Roberts *et al.* 2003).

In addition, material value has a strong influence on the compulsive buying behavior of consumers (Dittmar *et al.* 2007; Faber and O'Guinn 1992; Hanley and Wilhelm 1992; Huang *et al.* 2003; Xu 2008), because also, money attitude is influenced by material value (Christopher *et al.* 2004; Durvasula and Lysonski 2007; Tatzel 2002). Based on these studies it is interesting to explore the relationship between money attitude and compulsive buying and the mediator effect of material value.

Lyons and Henderson (2000) show that 17% of Korean Internet users suffer from a compulsive buying tendency (Lee and Lee 2003) while in the UK 9.5% of internet users have a compulsive buying tendency (Dittmar *et al.* 2007). Although the internet is fast becoming a significant buying environment, research on compulsive buying online is only just starting to emerge (Dittmar *et al.* 2007). In fact, compulsive buying online requires a detailed understanding of the materialism and money attitude involved in the increasing using of the internet for shopping. As a result, this study will investigate whether Taiwanese internet users show a compulsive buying online behavior similar to that of South Korea or the UK.

The buyers' Income level, educational level, life style; the quality of the product, price of the product, effectiveness, efficiency, and interface of the computer system etc. - most of these factors may influence compulsive buying online. But the purpose of the present study was to investigate the relationship between money attitude, material value and compulsive buying online among Taiwan college students. In addition, the study will determine the use of material value as a mediator between money attitude and compulsive buying online.

## **DEVELOPING THE HYPOTHESES**

### **Money Attitude and Material Value**

Money attitude can be defined as a person's general perception of what is a proper or improper way of spending money. Money is a source of prestige, longing, and anxiety. Its attainment, preservation, and use can serve as a means to an end, a goal in and of itself, a reward for achievement, or a marker of status (Rose and Orr 2007). In addition, money is regarded as a critical motivator of consumer behavior such as the ability to purchase goods and characterizes modern society where people can easy get access to internet to search for information, goods, news, yet only a few empirical researches have explored the relationships between money attitude and consumer intentions.

Previous studies have suggested that money attitude integrates itself into our lives and motivates our behavior in very subtle ways (Hanley and Wilhelm 1992), indicating the importance of money attitude for consumer intentions. Yamauchi and Templer (1982) identified four dimensions of money attitudes: (1) power prestige, (2) retention time, (3) distrust, and (4) anxiety. However, Roberts (1998), Roberts and Martinez (1997) and Dittmar *et al.* (2007) were under the opinion not to use retention-time, because it is not appropriate for students (e.g. “I save now to prepare for my old age and I do financial planning for the future”). Therefore, the present study will use only the three dimensions of (1) power prestige, (2) distrust, and (3) anxiety

Richins and Dawson (1992) defined materialism as the belief that possession is one’s center belief and that the process of possessing material goods represents whether one is satisfied with one’s life or not. However, Rassuli and Hollander (1986) think that materialists often use consumption and life style to measure oneself and other people’s personal value. The study will emphasize on socialization perspective to define material value. Materialists tend to use money to improve their social status (Christopher *et al.* 2004) and also like to pursue luxury (Tatzel 2002) to reinforce their self-esteem in consumption. For materialists, the important things are social status, achievement, and reputation (Liao and Wang 2009).

#### **Power Prestige (Status) and Material Value**

The power prestige dimension of the money attitude scale is the first factor of money attitude (Yamauchi and Templer 1982). People that scoring high on the factor of power prestige use money as a tool to impress others and as a symbol of success, reflecting a strong desire for achievement of acquisition and possession. In other words, money represents the command over material consumption necessary to advance the self-interest of an individual in a free enterprise economy (Walker and Garman 1992).

In addition, status is considered more through the possession of status products than through personal, occupational, or family reputation (Eastman *et al.* 1997). The use of power and status are best viewed as consumer attitudes (Richins and Dawson 1992). Attitude plays an important role for guiding individual materialistic intentions across specific objects (Ajzen 1985). Consequently, in the internet shopping environment the college students’ material values may also be influenced by the perception of money as a tool of power prestige (status). As a result, the following hypothesis was proposed:

***H<sub>1</sub>: Power prestige (status) will have a positive influence on material value.***

#### **Distrust (Price Sensitivity) and Material Value**

Distrust reveals that people scoring high on this factor are hesitant, suspicious, and doubtful under situations involving money (Yamauchi and Templer 1982). Consumers with high scores in this dimension usually show a lack of faith in their ability to make efficient purchasing decisions. A better label for this factor may be price sensitivity because the items focus on the consumer's sensitivity to the price paid for goods and services (Roberts and Jones 2001). Because internet offers better price,

college students may doubt about the quality of the products in the internet retailers. Consequently, college students who are obsessed by the price of a product or service are less likely to value acquisition and be obsessed by material consumption. Therefore, the following hypotheses were proposed:

*H<sub>2</sub>: Distrust will have a negative influence on material value.*

### **Anxiety (Financial Anxiety) and Material Value**

Instead of focusing on anxiety in general, this study narrows the scope of anxiety and renames it financial anxiety. Financial anxiety is the central factor of the conceptualization in consumer buying since it provokes a spontaneous behavior and pushes the consumer to reduce the need of acquisition and possession of material consumption. Richins and Dawson (1992) and Roberts and Jones (2001) found that people who score high in financial anxiety see financial issues as a source of anxiety as well as a source of protection from anxiety. DaVigo (2006) stated that money may provide safety in people lives. He defined the term ATM as an individual's attitude towards money. The result of his study showed that security (financial anxiety) could prevent anxiety and distrust. People with financial anxiety have fewer tendencies to see money as a status symbol. In the internet environment, when college students are going to pay for the product through internet by credit card, they may worry about the leakage of their personal information. Consequently, this study argues that materialistic buyers react with lower levels of financial anxiety towards money than do non-materialistic buyers. Based upon the above, the following hypothesis was proposed:

*H<sub>3</sub>: Anxiety will have a negative influence on material value.*

### **Money Attitudes and Compulsive Buying Online**

There is consensus that compulsive buying has three core features: the urge to buy is experienced as being irresistible, individuals lose control over their buying behavior, and they continue to buy despite adverse consequences (financial debt) in their personal, social, or occupational lives (Dittmar 2004; Dittmar *et al.* 2007). compulsive buying intentions are described as the intention to purchase, triggered by an external event or by personal desire. Some studies have found an increasing frequency of compulsive buying among U.S. college students (Roberts and Martinez 1997; Roberts 1998), and have identified that the motivation for compulsive buying appears to be mainly from trying to attain interpersonal and self-esteem goals (O'Guinn and Faber 1989). Previous research has found that the money attitude has a significant relationship with compulsive buying for college students in different countries such as the US, Mexico, and Taiwan etc (Hsiao and Chang 2007; Roberts and Jones 2001; Roberts and Sepulveda 1999).

The internet encourages "rational" buying (Donthu and Garcia 1999) because it "avoids the marketing distractions of the conventional store" (Burke 1997, p.354). Moreover, internet offers better information and better search facilities, better price, and better product comparisons; and increases convenience and freedom from time pressure. However, there is a problem of trust buying through the internet.

### **Power prestige and Compulsive Buying Online**

Research by D'Astous and Tremblay (1989) found that compulsive buyers were more likely to associate buying with social status. This is consistent with the more recent findings of Roberts (1998) and Roberts and Martinez (1997) who found a positive relationship between the social status associated with buying and compulsive buying, both in the USA and Mexico. Hanley and Wilhelm (1992) found compulsive spenders to be preoccupied with money as a solution to problems and as a means of comparison. Compulsive spenders were more likely to report the need to spend money in such a way as to reflect power and status. Elliot (1994) found that one of the primary functions of compulsive buying is to increase the compulsive buyers' ability to match their subjective perceptions of socially desirable or required appearance.

However, status consumption is a competitive and comparative process, which requires consumers to continually increase their conspicuous signals of wealth and power (Bell 1998). In fact, the use of money as a tool of power and prestige has the potential to lead to compulsive buying. Also, money used as a tool to influence and impress others. Power prestige is a consistent theme across the different cultures. Hsiao and Chang (2007) mentioned that for college students in Taiwan, power has a great influence on compulsive buying. Moreover, they also found that power has a relationship with compulsive buying of lottery tickets.

Lyons and Henderson (2000) pointed out that there are some good reasons and some preliminary evidence that the internet may be just as conducive to compulsive buying as conventional shops and stores. "Consumers can shop the globe from the convenience of their homes" (p.740), with limitless access 24 hours a day, seven days a week. Present studies argue that the college student's perception of money as a tool of power and prestige (status) will increase his/her likelihood of shopping online and purchasing goods. Therefore, the following hypothesis was proposed:

*H<sub>4</sub>: The perception of money as a tool of power prestige (status) will increase compulsive buying online.*

### **Distrust (Price Sensitivity) and Compulsive Buying Online**

Previous research has demonstrated that price sensitivity (distrust) significantly lowers compulsive buying (Roberts and Jones 2001). Nevertheless, Hsiao and Chang (2007) in their study on college students in Taiwan found that price sensitivity has a substantial influence on compulsive buying. The internet offers better information search facilities, price, and product comparisons, thereby increasing convenience and freedom from time pressure. The present research argues that most of college students shop online because of the better price. Therefore, they will become sensitive toward the price of the product. If they found out that the price of product is unfair, they are less likely to shop online. Based upon the above, the following hypothesis was proposed:

*H<sub>5</sub>: Distrust (price sensitivity) will decrease compulsive buying online.*

### **Anxiety (Financial Anxiety) and Compulsive Buying Online**

Anxiety is an important factor during the formation of compulsive buying intentions (Yamauchi and Templer 1982). Compulsive buying is viewed as a quick fix for financial anxiety. Valence, D'Astous and Fortier (1988) conceptualized a model of compulsive buying where financial anxiety is the central factor of the conceptualization "because it provokes a spontaneous action and pushes the consumer to reduce the tension" (p.424). Compulsive buyers react to stress with higher levels of anxiety than do non-compulsive buyers (Edwards 1993; Valence *et al.* 1988). As predicted by the authors, a positive and significant relationship was found between financial anxiety and compulsive buying (Edwards 1993; Valence *et al.* 1988). Escape from financial anxiety is thought to be the primary motivation of persons exhibiting addictive or compulsive behaviors. Compulsive buyers use the shopping and buying activity as a means of relieving stress and its associated financial anxiety (DeSarbo and Edwards 1996). In the internet environment, if college students have financial anxiety, they are more likely to find a way to relieve their anxiety. For example, they are more likely to surf net and even they like to purchase goods from the internet. Based upon the above, the following hypothesis was proposed:

**H<sub>6</sub>:** *Anxiety regarding money will increase compulsive buying online.*

#### **Material Value and Compulsive Buying Online**

A person with highly materialistic values believes that the acquisition of material goods is the main goal in life, is a prime indicator of success, and is a key to happiness and self-definition (Richins 2004). Such a material value orientation is central to the current consumer culture (e.g., Kasser and Kanner 2004). Therefore, material values not only entail a strong focus on acquiring material goods, but are also associated with beliefs about the psychological benefits that consumer goods may provide (Dittmar *et al.* 2007).

The evidence showing a direct correlation comes from an early study that shows a link between compulsive buying and materialistic personality traits (Faber and O'Guinn 1992). In addition, material value has a strong influence on the compulsive buying behavior of consumers (Dittmar 2005; Dittmar *et al.* 2007; Faber and O'Guinn 1992; Hanley and Wilhelm 1992; Huang *et al.* 2003; Xu 2008). More directly relevant to the present research are four recent UK surveys (Dittmar, 2005), in which validated measures were used to assess individuals' material value (Richins 2004), their compulsive buying tendency (D'Astous *et al.* 1990; Dittmar *et al.* 2007). Also, research on Taiwan college students found that people who have material value are likely to have a compulsive buying tendency (Huang *et al.* 2003). Wearing fashion clothes is very important for college students, because they always compare clothes and talk about who is wearing good clothing in school. Consequently, they are likely to surf the net and find the latest clothes and purchase them on the internet. Based upon the above, the following hypothesis was proposed:

**H<sub>7</sub>:** *An individual with material value will increase compulsive buying online.*

## **METHODOLOGY**

### **Data collection and analysis**

A convenient sampling of 750 students was selected from colleges in northern of Taiwan. In total, 306 respondents provided data suitable for analysis. However, only 172 respondents have online shopping experiences. Most of them are male (n=90, 52.33%). Most of them are aged between 19 and 21 (n=99, 57.56%). Most of them have average monthly individual income over 304 US dollars (n= 60, 34.88%). Most of them are supported by themselves financially (n=112, 65.12%). Most of them spend 1~4 hours on internet (n= 92, 53.49%). Most of them have at least made 5 or more purchases on the internet (n=73, 42.44%).

### **Measurement**

The questionnaire for this study contained multi-item measures of money attitude, material value and compulsive buying online. The questionnaire was written in English and translated into Mandarin. It was then administered to students who are studying colleges in Taiwan. Money attitude was measured using Yamauchi and Templer's (1982) money attitude scale modified to fit a college students sample and is composed of only three factors: power prestige, distrust, and anxiety. The measure of power prestige was composed of nine items, distrust was composed of seven items and anxiety was composed of six items. Material value was measured using the scale developed by Richins (2004), which was composed of 15 items. The compulsive buying scale was developed by D'Astous (1990) and was revised as the compulsive buying online scale by (Dittmar *et al.* 2007). The compulsive buying online scale is composed of eleven items and several of them were rephrased to refer to the specifically to the internet, such as: "As soon as I log onto the internet, I want to go to a retail site and buy something". These items assess the three core aspects of compulsive buying: irresistible urges to buy (e.g., "I often have a real desire to go online to shop and buy something"); loss over buying behavior (e.g., "I often buy something I see on the internet without planning to, just because I've got to have it"); and continuing buying despite adverse consequences ("I have often bought a product that I did not need, even when I knew I had very little money left"). The internal consistency of this adapted scale by (Dittmar *et al.* 2007) was excellent ( $\alpha = .91$ ). Normative data in both Canada and the UK for conventional compulsive buying tendencies suggest that a mean score of 4 or above can be used as the cut-off point for classifying respondents as showing dysfunctional elements in their buying. All scales in this study used a 6-point Likert-type scale ranging from disagree completely (1) to agree completely (6).

## **RESULTS**

### **Scale assessment**

Reliability measures the consistency or stability of the result. The total reliability (Cronbach's  $\alpha$ ) for money attitude, material value and compulsive buying online are all in the range of .77 to .92. It is with study of Nunnally (1978) confirmed that when the value of  $\alpha$  is higher than .7, it shows good internal consistency. Therefore, this questionnaire has good reliability. the GFI and AGFI were all

greater than .9. All RMR were less than .05. All  $\chi^2$  value were not significant and all  $\chi^2/df$  were less than 3. Therefore, all values had goodness of fit.

To further assess discriminant validity, correlations were calculated via a measurement model in LISREL for between concepts (power prestige, distrust and anxiety) of main construct (money attitude). If the correlation is high, discriminant validity is low. If the correlation is low, discriminant validity is high (Bearden *et al.* 2001; Blau 2001; Carless 2001; Durvasula *et al.* 2001; Marks 2000). In the scale of money attitude, the correlation between power prestige and distrust is .45,  $t = 5.72$ . The correlation between power prestige and anxiety is .43,  $t = 5.49$ . The correlation between distrust and anxiety is .68,  $t = 2.72$ . These results provide evidence of good discriminant validity.

#### **Prevalence measure of compulsive buying online**

Present study we used “a mean score of 4 or above as the cut-off point for showing dysfunctional elements” as was suggested by Dittmar *et al.* (2007). The result revealed that 19% of the sample ( $n=22$ ) in this study was identified as reporting compulsive buying online that were dysfunctional. The gender composition of this group was 10 men and 12 women, which similar to what is commonly observed in conventional compulsive buying, where the usually most subjects are female (Dittmar 2004). This suggests that women are comparatively more vulnerable to compulsive buying online.

#### **Test of Model**

The results of the model fit (GFI= .97, AGFI= .91, RMR= .03,  $\chi^2/df=.25$ ). All GFI and AGFI values were greater than .9, and the RMR were below .05 and  $\chi^2$  value were not significant and  $\chi^2/df$  were less than 3. Therefore, it can be concluded that the model fit is acceptable for testing the hypothesized relationship.

#### **Hypothesis test**

The hypotheses of the present study used the structural equation model (SEM) of the SAS 9.1 Calis software. Table 1 shows the result of the SEM. Power prestige has a positive influence on material value which make that  $H_1$  is acceptable ( $\gamma_{21} = .53$ ,  $t = 3.11$ ,  $p < .001$ ). On the other hand, distrust has a negative affect on material value ( $\gamma_{22} = -.72$ ,  $t = -2.46$ ,  $p < .01$ ) therefore  $H_2$  is acceptable. Similarly,  $H_3$  is accepted ( $\gamma_{23} = -.85$ ,  $t = -2.79$ ,  $p < .001$ ) show that there is a significant relationship between anxiety and material value.

There is no significant relationship between power prestige and compulsive buying online ( $\gamma_{31} = .10$ ,  $t = .45$ ,  $p > .1$ ) so that  $H_4$  is also rejected. However, distrust has a negative influence on compulsive buying online ( $\gamma_{32} = -.88$ ;  $t = -2.45$ ,  $p < .01$ ) so therefore  $H_5$  is accepted. Similarly, anxiety has a positive influence on compulsive buying online ( $\gamma_{33} = .91$ ;  $t = 2.11$ ,  $p < .01$ ) so  $H_6$  is acceptable. Lastly, material value has a positive relationship with compulsive buying online so that  $H_7$  is acceptable ( $\beta_{32} = .91$ ;  $t = 2.59$ ,  $p < .01$ ).

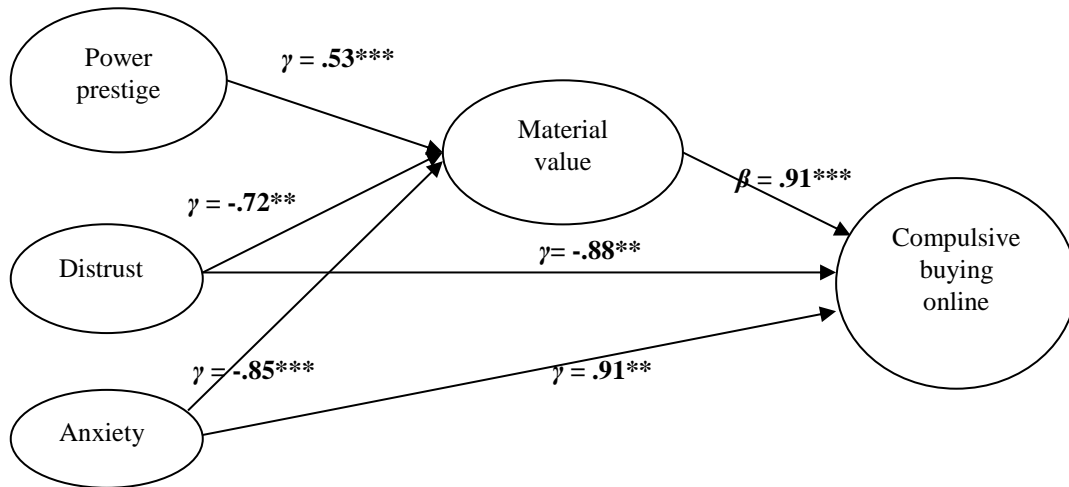


Table 1: Result of SEM

Hypotheses				
H <sub>1</sub> : power prestige → material value	+	$\gamma = .53^{***}$	$t=3.11$	Accept
H <sub>2</sub> : distrust → material value	-	$\gamma = -.72^{**}$	$t=-2.46$	Accept
H <sub>3</sub> : anxiety → material value	-	$\gamma = -.85^{***}$	$t=-2.79$	Accept
H <sub>4</sub> : power prestige → compulsive buying online	+	$\gamma = .10$	$t=0.45$	Reject
H <sub>5</sub> : distrust → compulsive buying online	-	$\gamma = -.88^{**}$	$t=-2.45$	Accept
H <sub>6</sub> : anxiety → compulsive buying online	+	$\gamma = .91^{**}$	$t=-2.11$	Accept
H <sub>7</sub> : material value → compulsive buying online	+	$\beta = .91^{***}$	$t=2.59$	Accept
<b>Model fit GFI= .97, AGFI= .91, RMR= .03, X<sup>2</sup> /df= .25</b>				

PS. \*\*  $p < .01$  \*\*\*  $p < .001$

The result of figure 1 shows that power prestige has a positive influence on material value. However, distrust and anxiety have a negative affect on material value. Both distrust and anxiety have a negative direct influence on compulsive buying online. On the contrary, because status in the society is not so important for college students, power prestige (status) has no significant relationship with compulsive buying online. According to Baron and Kenny (1986), material value is the complete mediation between power prestige and compulsive buying online in which power prestige no longer affects compulsive buying online after material value has been controlled and so path c' (direct effect) is zero.



PS. \*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$

Figure 1. path for having Compulsive buying online experience

However, many authors think that the about testing is not conscientious, because this method ignore the indirect effect (MacKinnon *et al.* 2002; Stone and Sobel 1990). Authors believe that the total effect between independent variable and dependent variable consists of two parts. The first one is the indirect effect. That is independent variable affect dependent variable through meditative variable. The second one is the direct effect. That is after controlling indirect effect, independent variable affects dependent variable. Therefore, MacKinnon *et al.* (2002) and Preacher and Hayes (2004)

suggested that Sobel test to test whether a mediator carries the influence of independent variable to dependent variable. There are three kinds of formulae for Sobel test (MacKinnon and Dwyer 1993; MacKinnon *et al.* 1995). Those are Sobel (1982) test equation, Aroian (1947) test equation and Goodman (1960) test equation.

From above three equations, Baron and Kenny (1986) suggested Aroian test equation for Sobel test, because it does not make unnecessary assumptions that  $\sigma_{\alpha}$  and  $\sigma_{\beta}$  are vanishingly small. Therefore, this study used Aroian test equation for Sobel test. After calculating Sobel test, the z value is 1.97 and, *p*-value is .0464 <.05. The result shows statistical significant. That is material value significantly carries the influence of power prestige to compulsive buying online.

### **CONCLUSION AND IMPLICATIONS**

As internet buying has been gaining increasing attention from marketers and researchers all over the world, efforts have been made to identify the underlying determinants of materialism and money attitude, since they play a major role in internet shopping. However, to-date no research has been carried out to examine whether Taiwan has the same problem as Korea and the UK with compulsive buying online.

The result of our study revealed that 19% of the sample (*n*=22) in this study was identified as reporting compulsive buying online and that the gender composition of this group was made up of 10 men and 12 women. An exploratory survey of 355 South Korean consumers (Lee and Lee 2003) showed that in South Korea 17% of internet shoppers had compulsive buying tendencies. The research of Dittmar *et al.* (2007) identified 9.5% of the UK sample (*n* = 12) as reporting compulsive buying online and gender composition of men and women. In addition, Dittmar (2004) mention that in conventional compulsive buying the female. Therefore, the present research was similar to the research of Dittmar (2004). This suggests that women could be comparatively more vulnerable to compulsive buying online. Furthermore, the estimated prevalence of compulsive buying online compares 17% in South Korea and 9.5% in the UK. The prevalence of compulsive buying online for Oriental college students is higher than for Western college students. As a result, it may be necessary to further investigate this situation.

The result of study revealed that students with power prestige are likely to have material value while students with distrust and anxiety are less likely to have material value. Material value has a positive influence on compulsive buying online. Distrust has a negative and direct relationship with compulsive buying online, while anxiety has a negative and direct relationship with compulsive buying online. The most important finding is that the material value seems to be the mediator between money attitude (power prestige) and compulsive buying online.

In summary, power prestige (status) in the society is not something that most students want, because it does not give them more friends to play with, to talk with and to work with. However, material value such as possession of attractive clothing becomes the center of their life. Moreover, distrust and anxiety will make students worry, so that they are less likely to have material value.

They start to surf the net to find the latest clothes and their accessories and then they purchase them through internet. When they do not trust an online store, they are less likely to have compulsive online buying. Similarly, people with anxiety are less likely to have compulsive buying online.

The findings of this study have a few implications for researchers, marketers and government policy makers. The research presented here suggests a new variant of compulsive buying online, which shows that compulsive buying tendencies occur when college students buy online. The study findings may have clinical implications, because it seems likely that compulsive buying online may be an indicator of dysfunctional elements. SEM provides researchers with causality of compulsive buying online for future research reference. Each concept for money attitude, material value and compulsive buying online can be new variables for segmentation for marketers. Moreover, understanding preceding variables of compulsive buying online could help socialists to provide appropriate prevention education or to make government public policies.

This study has some limitations relating to data collection and result interpretation. The first limitation is the possibility of bias when the participants fill out the questionnaire. This study used a single questionnaire to measure all constructs, which may inflate the strength of the relationships among these constructs. Second, it would be interesting to compare the same constructs for two different countries such as Taiwanese internet users vs. South Korea or UK. Third, future research should also consider other factors to measure the same constructs. Because of the limited focus of this research and the difficulties with language translation, the translated questionnaire could be used in future research for further improvement. In addition, Miller *et al.* (2010) mentioned that the appropriate content on the website seems very important and students have realized that some contents are not appropriate. It is very interesting to consider students' money and material value as two factors affecting on inappropriate posting for future research. Convenient, security, the set of ability and risk are factors affecting mobile banking system (Shen *et al.* 2010). Future research could focus on money attitude with banking system, because banking system always deals with money and different money attitude could lead to different behavior. Therefore, it is interesting to take money attitude into consideration for future research.

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