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Revista de cercetare și intervenție socială

ISSN: 1583-3410 (print), ISSN: 1584-5397 (electronic)

Selected by coverage in Social Sciences Citation Index, ISI databases

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Revista de cercetare și intervenție socială, 2016, vol. 53, pp. 232-248

The online version of this article can be found at:

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Published by:

Expert Projects Publishing House



On behalf of:

„Alexandru Ioan Cuza” University,

Department of Sociology and Social Work

and

Holt Romania Foundation

REVISTA DE CERCETARE SI INTERVENTIE SOCIALA

is indexed by ISI Thomson Reuters - Social Sciences Citation Index

(Sociology and Social Work Domains)



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Examining the Critical Factors Affecting Learning Finance Online

Nathan Cheng-Hu CHOW¹, Hui-Min CHIEN², I-Jan YEH³

Abstract

The utilization of online financial information and learning finance online are gradually becoming the daily life of most investors and students alike. The purpose of this study is to tap into the critical factors affecting learning finance online from the perspectives of graduate students majoring in finance. Three instruments were implemented in this study to assess the graduate students' learning motivation for online financial information (LMOF), Internet self-efficacy (ISS), and commitments to online financial information (FICS). Our results suggest that the male participants scored higher on all the domains of information searching, and gender differences in motivational issues have been noted as well. Interestingly, we also found that the participants tend not to believe in the accuracy of online financial information from well-known websites, official information or expert information. As confirmed in other studies, our findings indicate that finance students applied an assortment of standards to seek information via the Internet.

Keywords: learning finance online, internet self-efficacy, learning motivation, financial information commitment.

Introduction

Financial information has become a concern of policymakers in recent years. This concern is primarily due to reports of high credit card debt, low and negative savings rates, and increased personal bankruptcies which have led many states to adopt financial education policies (Bernheim, Garrett, & Maki, 2001). As the role of psychological factors in financial decisions has become widely acknowledged,

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consumer educators recognize that simply providing more financial education may not be sufficient to improve financial capability (Schuchardt *et al.*, 2009). Behavioral economists have demonstrated that information and education alone are not sufficient to induce behavior change (Gilovich, Griffin, & Kahneman, 2002; Thaler & Sunstein, 2008; Zweig, 2007). Searching for information on the Web is a common activity for many hundreds of millions of people around the world. Internet World Stats (2007) estimate that there are now more than one billion people connected to the Internet, and a large proportion of these people utilize the Web frequently.

According to Strader and Ramaswami (2004), more and more investors are using the Web to get financial information and then to buy or sell stocks, funds and foreign currency. Nowadays, college students learn how to read and understand information presented on financial websites. Working in pairs, they examine sample listings for stocks, mutual funds, and bonds. They participate in a scavenger hunt for financial information, using online sources. Nevertheless, improving students' understanding of personal finance is not just a goal of educators; it has become a major issue of parents, community groups, businesses, government agencies, organizations, and policy makers. Inasmuch as the average score of high school seniors on basic financial facts is a mere 52% (Gandel, 2006) and billions of dollars are spent yearly by children under the age of 18 (Schor, 2004), it is no surprise that the financial education of students has become a national issue.

To explore the issues related to the field of financial information commitments on the Web, that is, what critical factors affect the financial information seeking behavior of students, and how they search for financial information on the Web, this study adopts the concept of 'information commitment' as a set of evaluative standards which Web users utilize in order to assess the accuracy and usefulness of Web-based materials, and which are also relevant to searching strategies.

Financial literacy, as defined by Garmen (2006), is one's "knowledge of facts, concepts, principles, and technological tools that are fundamental to being smart about money" (pg. 3). According to Hogarth, Beverly, and Hilgert (2003), a sudden interest in financial education has come about due to a) the increased complexity of the 21st century financial marketplace, b) a shift in responsibility for financial security or long-term well-being away from the institution to the individual, and c) a shift in demographics. Although the interest in financial literacy or financial education has continuously increased in the past few decades, a 2007 survey of college students and parents indicated that both students and parents felt that college students were not prepared to deal with future financial challenges (Hartford Financial Services Groups Inc., 2007). In a nationwide study commissioned by KeyBank and conducted by Harris Interactive, nearly one-third (32%) of the 1,003 college students surveyed indicated that they were "not at all"

or “not very well prepared” for managing their money on campus during their freshman year (KeyBank & Harris Interactive, 2006).

Self-efficacy refers to a sense of personal agency, the belief that one can achieve and succeed at a given task, and is related to self-confidence, motivation, optimism, and the belief that one can cope with a variety of life’s challenges (Bandura, 1997; 2006). People with high levels of self-efficacy believe that they can perform well at a specified task. Although a person may possess a high level of general self-efficacy, this belief may vary considerably, depending on the task to be accomplished (Bandura, 2006). Internet self-efficacy affects the development of research strategies in web-based environments, and students with higher Internet self-efficacy can carry out better research. In addition, a significant relationship has been detected between prospective teachers’ achievement in Internet-assisted chemistry applications and their preferences for constructivist Internet environments and their Internet self-efficacy (Chen & Tseng, 2012).

Method

Participants

The questionnaire in this study was presented in Chinese. Some background information, such as the respondent’s gender, learning stage and online hours per week, was also gathered by the questionnaire. In this study, a total of 224 students from six universities in Taiwan were selected as the subjects. We chose six universities in Taiwan and volunteer graduate students majoring in finance from those schools to complete our online questionnaires. Students who participated in this research showed interest in responding to the questionnaires.

Instruments

To assess the graduate students’ learning motivation to search for online financial information, Internet self-efficacy, and commitments to online financial information, three instruments were implemented in this study.

The Learning Motivation for Online Financial Information Survey (LMOF) administered in this study was mainly modified from Kao, Wu and Tsai’s (2011) latest version of the learning participation scale which defines a factor structure of the motivation of participants. The items were included after consulting with graduate students in the Department of Finance in three universities. As a result, the initial pool of items in the survey included a total of 27 items which were presented using a five-point Likert mode (ranging from 1, “strongly agree” to 5, “strongly disagree”). Five scales were designed for the LMOF. The details of these five scales are as follows:

Personal interest: People who score highly on this scale participate in online financial learning for its own interest. That is, they care about the inherent enjoyment of online financial learning that impels their participation. A sample item of this scale is “I participate in online financial learning for enhancing self-growth.”

Social stimulation: People who score highly on this scale are usually lonely or bored in regular life or learning and they participate in online financial learning to meet others and to grapple with problems in their social life. A sample item of this scale is “I participate in online financial learning to take a break from my routine.”

External expectation: People who score highly on this scale participate in online financial learning because of the expectation from others at school. A sample item of this scale is “I participate in online financial learning under the influence of classmates’ encouragement.”

Financial practice: People who score highly on this scale are committed to “doing well” in Finance. That is, they think online financial learning helps them do good work in Finance. A sample item of this scale is “I participate in online financial learning to help me acquire more relevant financial information.”

Social contact: People who score highly on this scale participate in online financial learning because of the enjoyment of interacting with others. A sample item of this scale is “I participate in online financial learning to make more friends with the same interest.”

The second instrument, the Internet Self-efficacy Survey (ISS), was adapted from Kao and Tsai (2009) and Wu and Tsai (2006). The items were included after consulting with two experts in educational technology. They proposed three factors of Internet self-efficacy, including a total of 16 items presented with bipolar strongly confident/strongly unconfident statements on a five-point Likert scale. The details of the three scales are as follows:

The Web-based related tools scale: measuring students’ perceived confidence at a basic level in using the Internet, such as using Internet-related tools. That is, the higher the score, the better basic self-efficacy for the Internet. A sample item of this scale is “I feel confident printing the content of a website.”

The Web-based Searching scale: assessing students’ perceived confidence and self-expectations of Internet-based searching or advanced usage of the Internet. In other words, the higher the score, the more perceived confidence the student had in advanced usage of the Internet. A sample item of this scale is “I feel confident typing keywords to search for specific websites.”

The Communication scale: measuring students’ perceived confidence at a basic level of using the Internet. That is, the higher the score, the better the student is able to use the Internet to communicate with others. A sample item of this scale is “I feel confident playing online games on the Internet.”

The third instrument of this study was the Financial Information Commitment Survey (FICS) developed by Wu and Tsai (2005) for an investigation of financial students' standards of judging online financial information and their search strategies on the Web. Tsai (2004) proposed a theoretical framework for the ICS consisting of three aspects: (1) standards for accuracy, (2) standards for usefulness, and (3) searching strategies, each of which included two scales. Therefore, the ICS consisted of six scales, that is, 'multiple sources as accuracy,' 'authority as accuracy,' 'content as usefulness,' 'technical issues as usefulness,' 'elaboration and exploration as searching strategy' and 'match as searching strategy.' Tsai (2004) also concluded that information commitments including 'multiple sources,' 'content' and 'elaboration' were more advanced information commitments, while the others are considered less sophisticated. Wu and Tsai (2005; 2007) have found that the ICS is sufficiently reliable for assessing learners' information commitments to Web-based information. The items of the FICS were presented with bipolar strongly agree/strongly disagree statements on a five point Likert scale (i.e., strongly agree, agree, somewhat agree, disagree and strongly disagree).

Multiple sources as correctness scale (Multiple sources): measuring the extent to which students validate the correctness of unknown financial information on the Web by relating it to other websites, prior knowledge, peers or other printed materials.

Authority as correctness scale (Authority): assessing the extent to which students examine the accuracy of unknown financial information in online financial learning environments by the 'authority' of the websites or sources.

Content as usefulness scale (Content): measuring the extent to which students assess the usefulness of the financial information viewed in online financial learning environments by the relevancy of its content.

Technical issues as usefulness scale (Technical): assessing the extent to which students judge the usefulness of the financial information viewed in online financial learning environments by the ease of retrieval, the ease of searching or the ease of obtaining financial information. Therefore, their standard for evaluating online financial information is more related to some technical issues.

Elaboration as searching strategy scale (Elaboration): measuring the extent to which students have purposeful (metacognitive) thinking or integrate online financial information from several websites to find the best fit that fulfills their purpose.

Match as searching strategy scale (Match): investigating the extent to which students are eager to find only a few websites that provide the most fruitful and relevant financial information when they search for online financial information. Their strategy is oriented towards matching the purposes of their search.

Data analysis

Factor analysis

The principle component analysis was utilized as the extraction method, with the rotation method of varimax with Kaiser normalization. An item was retained if its factor loading was larger than 0.5 in the relevant scale and smaller than 0.5 in the non-relevant scale. The results of the factor analyses revealed that students' responses on the Internet Self-efficacy Survey (ISS) were grouped into three factors, namely the the "Web-based related tools scale," the "Web-based Searching scale," and the "Communication scale." The initial 16 items were reduced to 11, and there were, respectively, 4, 4, and 3 items in the three ISS scales. The factor loadings for the retained items are presented in *Table 1*. The three scales accounted for 71.76% of variance totally. Moreover, the reliability (alpha) coefficients for the three scales respectively were 0.90, 0.80 and 0.73, and the overall alpha was 0.90.

Table 1. Rotated factor loadings and Cronbach alpha values for the ISS scales

Scale	Factor 1	Factor 2	Factor 3
Factor 1: Web-based related tools, $\alpha=0.90$			
ISS6	0.58		
ISS10	0.88		
ISS11	0.81		
ISS12	0.85		
Factor 2: Web-based Searching, $\alpha=0.80$			
ISS8		0.82	
ISS9		0.70	
ISS14		0.66	
ISS15		0.71	
Factor 3: Communication, $\alpha=0.73$			
ISS2			0.77
ISS4			0.65
ISS5			0.81
Percentage of variance	28.32	25.52	18.94
Overall $\alpha=0.90$ Total variance explained is 71.76%			

Similarly, through the factor analysis, the final version of the MWPD consisted of 24 items in five scales. The reliability coefficients for the scales, respectively, were 0.89 (Social stimulation, 6 items), 0.89 (Personal interest, 5 items), 0.91 (Social Contact, 5 items), 0.83 (External expectation, 4 items), and 0.59 (Financial practice, 4 items). The factor loadings for the retained items are shown in *Table 2*. The alpha value of the whole LMOF questionnaire is 0.93, and these scales explained 70.37% of variance totally. Therefore, these scales were deemed to be

sufficiently reliable for assessing students' learning motivations to search for online financial information.

Table 2. Rotated factor loadings and Cronbach alpha values for the LMOF scales

Scale	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Factor 1: Social stimulation, $\alpha = 0.89$					
LMOF7	0.80				
LMOF8	0.65				
LMOF9	0.55				
LMOF10	0.81				
LMOF11	0.58				
LMOF12	0.79				
Factor 2: Personal interest, $\alpha = 0.89$					
LMOF1		0.76			
LMOF2		0.63			
LMOF3		0.71			
LMOF4		0.73			
LMOF6		0.74			
Factor 3: Social contact, $\alpha = 0.91$					
LMOF23			0.58		
LMOF24			0.85		
LMOF25			0.83		
LMOF26			0.86		
LMOF27			0.58		
Factor 4: External expectation, $\alpha = 0.83$					
LMOF14				0.52	
LMOF15				0.54	
LMOF16				0.71	
LMOF17				0.82	
Factor 5: Financial practice, $\alpha = 0.59$					
LMOF18					0.73
LMOF20					0.72
LMOF21					0.54
LMOF22					0.53
Percentage of variance	18.60	16.80	15.87	10.50	8.62

Overall $\alpha = 0.93$ Total variance explained is 70.37

In Table 3, the factor analysis of the students' responses to the FICS questionnaire reveals that a total of 25 items corresponded to the six factors: 238 Match (5 items, $\alpha = 0.93$), 238 Elaboration (5 items, $\alpha = 0.87$), 238 Content (5 items, $\alpha = 0.88$), 238 Authority (4 items, $\alpha = 0.91$), 238 Multiple sources (3 items, $\alpha = 0.81$), and 238 Technical (3 items, $\alpha = 0.77$). The overall α coefficient for these scales was 0.92. These factors were consistent with those found in previous studies (Liang & Tsai, 2009; Wu & Tsai, 2005, 2007), and accounted for 76.68% of the total variance. Hence, these results indicate that the ICS questionnaire is an adequate instrument to reflect the students' ICs when accessing financial information.

Table 3. Rotated factor loadings and Cronbach alpha values for the FICS scales

Scale	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Factor 1: Match, $\alpha = 0.93$						
FICS26	0.78					
FICS27	0.84					
FICS28	0.84					
FICS29	0.81					
FICS30	0.86					
Factor 2: Elaboration, $\alpha = 0.87$						
FICS20		0.66				
FICS22		0.69				
FICS23		0.72				
FICS24		0.78				
FICS25		0.76				
Factor 3: Content, $\alpha = 0.88$						
FICS10			0.64			
FICS11			0.72			
FICS12			0.82			
FICS13			0.57			
FICS14			0.66			
Factor 4: Authority, $\alpha = 0.91$						
FICS6				0.75		
FICS7				0.60		
FICS8				0.76		
FICS9				0.72		
Factor 5: Multiple sources, $\alpha = 0.81$						
FICS1					0.62	
FICS2					0.75	
FICS4					0.72	
Factor 5: Technical, $\alpha = 0.77$						
FICS15						0.62
FICS17						0.88
FICS18						0.89
Percentage of variance	17.60	15.20	13.60	11.53	9.70	9.04

Overall $\alpha = 0.92$ Total variance explained is 76.68

Table 4 shows the students' average scores and standard deviations for the ISS, LMOF and FICS scales. The students attained similarly high scores on the Web-based related tools scale (an average of 4.48 per item), the Web-based Searching scale (an average of 4.20 per item), and the Communication scale (an average of 4.14 per item) in the 1–5 Likert measurement. These results imply that the university students in this study tended to display high confidence and expectation of using the Internet for general and communicative purposes. Furthermore, they

might show higher confidence and expectation of using the Internet for general purposes than those for communicative purposes.

Table 4 also shows the average scores and standard deviations on the five scales of the LMOF for these students. They scored highest on the ‘Personal Interest’ (an average of 4.40 per item in the 1-5 Likert mode) followed by ‘Social Stimulation’ (an average of 4.20 per item), ‘Financial Practice’ (an average of 4.15 per item), and ‘External Expectation’ (an average of 4.14 per item) scales. The lowest was ‘Social Contact’ (an average of 4.13 per item).

Furthermore, according to Table 4, the highest score was for ‘Content’ (an average of 4.23 per item), followed by ‘Elaboration’ (an average of 4.10 per item), ‘Multiple sources’ (an average of 4.20 per item), ‘Authority’ (an average of 4.04 per item), ‘Match’ (an average of 3.91 per item) and finally ‘Technical’ (an average of 3.41 per item). This result indicates that the participants in this study, on average, did not agree that they often used ‘Technical’ as the crucial tool to search for financial information on the Web. In light of these findings, it can be explained that the participants in this study had both the ability to use and good knowledge of the technologies on the Web.

Table 4. *Students’ scores on the ISS, LMOF and FICS scales*

Scale	Mean	SD
Internet self-efficacy		
Web-based related tools	4.48	0.55
Web-based Searching	4.20	0.94
Communication	4.14	0.82
Learning Motivation for Online Financial Information		
Personal Interest	4.40	0.57
Social Stimulation	4.20	0.62
External Expectation	4.14	0.65
Financial Practice	4.15	0.49
Social Contact	4.13	0.68
Financial Information Commitment		
Multiple Sources	4.20	0.60
Authority	4.04	0.79
Content	4.23	0.55
Technical	3.41	0.95
Elaboration	4.10	0.58
Match	3.91	0.83

In this study, t-tests and ANOVA tests were employed to examine the background differences such as gender and Internet experience on the ISS, LMOF and FICS scales. First of all, *Table 5* shows that the male and female students' scores on the Web-based related tools and Communication scales did not show significant differences, which implies that both the male and female students tended to have similar confidence in their Internet self-efficacy. However, a series of t-tests was performed on the gender differences of students' mean scores for the LMOF. Among the variables examined in *Table 5*, except for Financial Practice, significant differences between the two genders were found on the scales of students' learning motivation for online financial information. That is, on the Financial Practice scale of motivation, the male students scored the same as the female students ($p < 0.001$). Lastly, this study further compared the possible differences in the Information Commitment to learning between the male and female students. *Table 5* shows that the male and female students in this study had insignificant differences in their scores only on the "Elaboration" scale ($p > 0.05$). This indicates that, compared with the female students, the male students in this study were more oriented towards using the "Match" "Authority" and "Multiple Sources" searching strategies when seeking information on the Web.

Table 5. Gender comparisons of the ISS, LMOF and FICS scales

Scale	Male (mean, SD)	Female (mean, SD)	t value
Internet self-efficacy			
Web-based related tools	4.59(0.50)	4.43(0.57)	1.94(n.s.)
Web-based Searching	4.64(0.59)	4.02(0.99)	4.76***
Communication	4.31(0.76)	4.07(0.83)	1.96(n.s.)
Learning Motivation for Online Financial Information			
Personal Interest	4.67(0.44)	4.30(0.58)	4.65***
Social Stimulation	4.45(0.50)	4.10(0.63)	3.92***
External Expectation	4.43(0.51)	4.03(0.67)	4.31***
Financial Practice	4.19(0.40)	4.13(0.52)	0.81(n.s.)
Social Contact	4.40(0.54)	4.02(0.70)	3.96***
Financial Information Commitment			
Multiple Sources	4.41(0.51)	4.11(0.61)	3.50***
Authority	4.34(0.73)	3.93(0.78)	3.65***
Content	4.41(0.43)	4.15(0.57)	3.19**
Technical	3.10(1.09)	3.53(0.87)	-3.09**
Elaboration	4.22(0.65)	4.05(0.55)	2.00(n.s.)
Match	4.35(0.70)	3.74(0.82)	5.25***

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

Furthermore, analyses comparing the different Internet experience groups and their ISS, LMOF and FICS scales were conducted, with the results presented in Table 6. According to the students' average online hours per week, they were divided into four groups of different Internet experience: less than 6 hours, 7-12 hours, 13-18 hours, and 19+ hours. Table 6 indicates that Internet experience did not show many significant differences for the ISS and FICS scales. On the other hand, students with different Internet experience tended to express statistically higher motivation to seek online financial information.

Table 6. *Students' Internet self-efficacy, Learning Motivation for Online Financial Information and Financial Information Commitment by different Internet experience*

Internet Experience	(1) Less than 6 hours (mean, SD)	(2) 7-12 hours (mean, SD)	(3) 13-18 hours (mean, SD)	(4) 19+ hours (mean, SD)	F(ANOVA)	Scheffe Test
Web-based related tools	4.35(0.65)	4.56(0.49)	4.20(0.47)	4.68(0.46)	9.06***	(2)>(3) (4)>(1)>(3)
Web-based Searching	4.09(1.04)	4.27(0.78)	4.18(0.83)	4.23(1.04)	0.40(n.s.)	
Communication	3.97(1.03)	4.18(0.79)	4.17(0.59)	4.22(0.77)	1.12(n.s.)	
Personal Interest	4.42(0.67)	4.57(0.46)	4.44(0.50)	4.24(0.57)	3.89**	(4)>(2)
Social Stimulation	4.28(0.58)	4.36(0.61)	4.20(0.68)	4.01(0.57)	4.12**	(2)>(4)
External Expectation	4.37(0.60)	4.28(0.48)	4.08(0.63)	3.89(0.72)	7.29***	(1)>(2)>(4)
Financial Practice	4.06(0.45)	4.33(0.38)	4.15(0.43)	4.07(0.57)	4.01**	(2)>(4)>(1)
Social Contact	4.10(0.70)	4.32(0.55)	4.01(0.73)	4.07(0.72)	2.05(n.s.)	
Multiple Sources	4.19(0.69)	4.35(0.39)	4.16(0.60)	4.11(0.64)	1.85(n.s.)	
Authority	4.22(0.68)	4.15(0.61)	4.01(0.69)	3.84(0.99)	2.97(n.s.)	
Content	4.13 (0.56)	4.32(0.45)	4.28(0.48)	4.20(0.63)	1.34(n.s.)	
Technical	3.10(1.02)	3.64(1.01)	3.31(0.91)	3.53(0.82)	3.59(n.s.)	
Elaboration	4.15(0.61)	4.23(0.46)	4.11(0.48)	3.96(0.67)	2.40(n.s.)	
Match	4.23(0.52)	3.97(0.72)	3.99(0.89)	3.57(0.97)	7.31***	(1)>(4)

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

The Pearson correlation coefficients shown in *Table 7* indicate that the scales of the ISS and LMOF were significantly positively correlated with FICS, except for the result that no statistical correlation was found between Technical and Match. These results in general support that students expressing higher Internet self-efficacy and motivation displayed stronger Financial Information Commitment. In particular, students' responses on the Multiple Sources, Authority and Content scales were relatively more highly correlated with those on the ISS and LMOF scales ($p < 0.001$).

Table 7. Correlation of the students' Internet self-efficacy, Learning Motivation for Online Financial Information and Financial Information Commitment

Scale	Multiple Sources	Authority	Content	Technical	Elaboration	Match
Web-based related tools	0.34***	0.23***	0.39***	0.20**	0.26***	0.14
Web-based Searching	0.39***	0.36***	0.38***	-0.05	0.25***	0.24***
Communication	0.26***	0.19***	0.31***	0.10	0.21**	0.13
Personal Interest	0.65***	0.62***	0.60***	-0.10	0.51***	0.44***
Social Stimulation	0.58***	0.52***	0.48***	0	0.49***	0.40***
External Expectation	0.61***	0.61***	0.54***	-0.01	0.54***	0.52***
Financial Practice	0.48***	0.42***	0.33***	0.11	0.41***	0.11
Social Contact	0.48***	0.45***	0.49***	0	0.40***	0.40***

** $p < 0.01$. *** $p < 0.001$.

In this study, stepwise multiple regression analysis was used to predict the students' Financial Information Commitment. The ISS and LMOF scales were processed as the predictors, and the outcome variables were the FICS scales (i.e., Multiple Sources, Authority, Content, Technical, Elaboration, and Match). In other words, the stepwise multiple regression analysis was conducted to explore the predictive power of the ISS scales (Web-based related tools, Web-based Searching and Communication) and the MWCL scale (Personal Interest, Social Stimulation, External Expectation, Financial Practice and Social Contact), as shown in *Table 8*.

The regression analysis revealed that External Expectation, Personal Interest and Financial Practice of the LMOF were significant predictors for the 'Multiple Sources' scale of the FICS, which could explain 51% of the students' Multiple Sources. In particular, External Expectation and Personal Interest were significantly positive predictors for Multiple Sources, Authority, Content and Elaboration in the FICS. These results indicate that those students had stronger Financial Information Commitment to Learning Motivation.

Table 8. Stepwise regression model of predicting students' Internet self-efficacy and learning motivation for financial information commitment

Dependent variables	Predicting variables	B	S.E.	β	t	R ²
Multiple Sources	External Expectation	0.29	0.06	0.31	4.84***	0.51
	Personal Interest	0.29	0.08	0.27	3.71***	
	Financial Practice	0.25	0.07	0.21	3.68***	
	Web-based related tools	0.15	0.06	0.14	2.68**	
	Constant	0.04	0.32		0.13	
Authority	External Expectation	0.43	0.08	0.35	5.17***	0.46
	Personal Interest	0.43	0.10	0.31	4.11***	
	Financial Practice	0.20	0.10	0.12	2.10	
	Constant	-0.43	0.37		-1.15	
Content	Personal Interest	0.28	0.07	0.29	3.78***	0.43
	Web-based related tools	0.19	0.05	0.19	3.57***	
	External Expectation	0.18	0.06	0.21	2.96**	
	Social Contact	0.11	0.05	0.14	2.11	
	Constant	0.92	0.27		3.36***	
Elaboration	External Expectation	0.32	0.06	0.36	5.07***	0.36
	Financial Practice	0.25	0.07	0.21	3.43***	
	Social Stimulation	0.16	0.07	0.17	2.34	
	Constant	1.08	0.30		3.64***	
Match	External Expectation	0.55	0.09	0.43	6.14***	0.29
	Social Contact	0.20	0.08	0.16	2.33	
	Constant	0.84	0.34		2.50	

** p < 0.01. *** p < 0.001.

Discussion

Traditional classroom mechanisms for delivering higher education play an important role in laying the groundwork for student learning, but new innovations in experiential learning have the potential to make dramatic improvements in students' finance related skills and competencies. This study has attempted to enhance our understanding of financial information commitments on the Web. It not only identified students' differences in Internet self- efficacy, motivation and financial information commitment, but also investigated the gender differences and Internet experience in the ISS, LMOF and FICS scales. The proposed model is mainly constructed based on the ICS survey developed by Wu and Tsai (2005) to explore Taiwanese financial information commitments.

Through descriptive statistical analysis of the three scales, this study found that only the FICS scale showed significant differences, whereas the others did not. The participants tended toward using advanced information commitments: 'Multiple sources,' 'Authority,' and 'Elaboration,' in their financial information seeking behavior. These results suggest that the information of financial corporations on the Web should be built wider portfolio reference information and tends to content relative. Interestingly, these results also showed that the participants might not tend to believe in the accuracy of online financial information from well-known websites, official information or expert information. Liang and Tsai (2009) found that medical students may use both the information commitments of 'multiple sources' and 'authority' as their accuracy standard and use 'content' and 'technical' information commitments as their usefulness standard. In this study, we confirmed a similar result that finance students applied an assortment of standards to seek information via the Internet.

Conclusions

We found that the male participants scored higher on all the domains of information searching. Significant gender differences were noted for 'Web-based Searching,' 'Personal Interest' and 'Match.' This result indicates that males may tend to discuss with others and judge the financial information according to more websites than females when searching for unknown information online. Besides, the males also used the 'Match' search strategy more often than the females to integrate information from several websites to find the best fit to fulfill their purpose. Gender differences in motivational issues have been highlighted by many researchers (e.g., Chouinard, Karsenti, & Roy, 2007; Meece, Glienke, & Burg, 2006; Steinmayr & Spinath, 2008). The finding is consistent with Liang and Tsai's (2009) research, which found that for the two information commitments of 'Multiple sources' and 'Elaboration,' male medical students scored higher than

female students. This may be primarily due to females' lower risk-taking behavior and financial knowledge. Thus, more financial programs should be promoted for females to help them enhance their financial knowledge and their opportunities to acquire better financial knowledge.

The role of Internet experience has often been examined in Internet-related studies (Liaw, Chang, Hung, & Huang, 2006; Liu & LaRose, 2008). Our results suggest that Internet experience may help students use better searching strategies (e.g., elaboration), but they may simultaneously utilize diverse sets of standards (either advanced or less sophisticated) for evaluating the accuracy and usefulness of the online information they find. Besides, online database search experience (novice vs. experienced searchers), and task type (known-item vs. subject search tasks) influence users' search behavior on the Web (Kim, 2001).

Furthermore, through stepwise regression analyses, External Expectation was found to play an essential role and is the most significant positive predictor of Multiple Sources, Authority, Elaboration and Match. Based on Bandura's (1993) socio-cognitive theory, outcome expectations play an important role in motivation. It suggests that students who perceive positive consequences of carrying out expectations will enhance their financial information commitment to participate in Web-based learning. However, many studies have indicated that successful learning is related to students' features such as cognitive style, preferences, learning style, and information processing strategies (Yang & Tsai, 2008). Therefore, it implies that parents and teachers should push students to acquire information, which may positively affect their searching strategies such as Multiple Sources, Authority and Match. These strategies are more beneficial for finance students compared to other different kinds of major, as the Department of Finance tends to emphasize accuracy and reliability.

Similar research is needed to determine the most effective strategies for fostering higher levels of financial self-efficacy (Schuchardt *et al.*, 2009). These findings are consistent with the perspective proposed by Nasco and Hale (2009) that for mature consumers making new financial service decisions, friends and referrals were ranked as the most important information source. Moreover, to understand information searching behavior on the Web, researchers have identified aspects of user behavior, search tasks, system capabilities, and search outcomes as important factors in information seeking (Andrew, 2007; Yuelin & Nicholas, 2008). Learning motivation plays an important role in determining performance and strategic preferences in Internet-based activities, particularly in terms of personal interest (Brítén & Strímsř, 2006).

In general, as confirmed in other studies, college students' financial knowledge level needs improvement (Chen & Volpe, 1998; Volpe, Chen, & Parlicko, 1996; Danes & Hira, 1987). We hope that this study may not only contribute to developing new teaching approaches, but may also help improve college students' learning methods in finance.

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