CHAPTER 4: EXPERIMENTAL RESULTS

4.1. Research Participants

4.1.1. General Information about Research Participants

The research participants are recruited from three different programs of study (***Subject Group 1***: MBA-FSA, ***Subject Group 2***: MIF, and ***Subject Group 3***: MBA-FN) from two renowned public universities. The total number of subjects participated in this study is 138 participants. Ninety three participants are from one university (University #1) and 45 participants are from another university (University #2). ***Subject Group 1*** comprises 44 MBA students currently enrolled in Financial Statement Analysis course. ***Subject Group 2*** consists of 49 MIF students specialized in Finance and currently enrolled in Equity Investment course. Finally, ***Subject Group 3*** includes 45 MBA students majoring in Finance and currently enrolled in Seminar of Finance course. Research participants in ***Subject Group 2*** and ***Subject Group 3*** are compensated at a rate of 500 Baht per participant. This is due to the fact that the participants are recruited outside class time. Moreover, from what I observed, the incentive paid induces more attentiveness from the research participants.

4.1.2. Characteristics of Research Participants by Subject Groups

Table 4.1 illustrates the statistics on characteristics of research participants by subject groups. Panel A of Table 4.1 depicts the number of participants assigned to each experimental condition. Participants in each subject group are randomly and evenly assigned to five experimental conditions in two experiments (χ^2= 0.2833, p-value = 0.5000). The average number of participants from each subject group in each of the experimental condition is 9.20 persons. Panel B and Panel C of Table 4.1 presents the age range and gender of the participants. A Chi-square test indicates that the age group of participants from each subject group is statistically different from

each other (χ^2= 4.0695, p-value = <0.0000). The participants in Subject Group 1 are, on average, older than those in Subject Group 2 and Subject Group 3. This is due to the fact that the MBA program from University #1 requires that the applicants must have at least 2 years of experience before applying to the program. Most of the subjects participated in my study are female and the proportion of male and female across the subject groups are not statistically different from each other (χ^2= 1.1088, p-value = 0.2870). Panel D of Table 4.1 shows the number of accounting-related and finance-related courses taken by the participants. The number of courses studied by subjects from the three groups are not statistically different from each other (χ^2= 3.4728, p-value = 0.3740). Most of the participants were taken more than 6 accounting-related and finance-related courses (in both bachelor and master studies). This provides the evidence that the subjects in my study have sufficient background knowledge to comprehend the case materials used in the experiments. Panel E of Table 4.1 summarizes number of years in work experience of participants. The results are consistent with the analysis on the average age of the participants. On average, the participants from Subject Group 1 have more experience as compared to the two other groups (χ^2= 92.0194, p-value = <0.0000).

Panel F and Panel G of Table 4.1 summarize professional certificates hold and membership in professional association, respectively. Some participants (21.74% of total participants) hold professional certification and 16.67% of the participants are the members in professional association. The certifications held by the participants include Certified Financial Analysts, Certified Investment and Securities Analysts, Certified Public Accountants, Bond Trader License, Engineer License, and Lawyer License. Some of the participants are also members of Federation of Accounting Profession, Securities Analysts Association, Council of Engineers, Lawyers Council of Thailand, and The Professional Risk Managers' International Association. However, the proportion of participants holding professional certifications (χ^2= 2.8787, p-value = 0.1185) and associating with professional association (χ^2= 3.5044, p-value = 0.0865) across subject group are not statistically different from each other.

Finally, Panel H of Table 4.1 presents investing experience of participants. In each subject group, the participants have some investing experiences and the level of investing experience is not statistically different from each other (χ^2= 8.6568, p-value = 0.0970).

To conclude, the participants from three program of study are different in a matter of age and work experience. However, this is not a concern because they are randomly and evenly assigned to five experimental conditions. The analysis of participant's characteristics by experimental conditions is presented next to ensure that the random assignment is successful.

Table 4.1: Analysis of Research Participant's Characteristics by Subject Groups

Analysis of Research Participant's Characteristics by Subject Groups

Panel A: Analysis of Research Participants in Experimental Condition

Characteristics	Responses	Subject Groups			Total
		Group 1: MBA-FSA	Group 2: MIF	Group 3: MBA-FN	
Number of research participants assigned to experimental conditions	TFS-NOTES	10	10	9	**29**
	MFS-NOTES	9	10	9	**28**
	WFS-NOTES	8	10	9	**27**
	WFS-NO	8	10	9	**27**
	WFS-FACE	9	9	9	**27**
	Total	**44**	**49**	**45**	**138**
	Chi-Square Tests	**Value**	**df**	**p-value (one-sided)[a]**	
	Pearson Chi-Square	0.2833	8	0.5000	
	Likelihood Ratio	0.2841	8	0.5000	
	Linear-by-Linear Association	0.0509	1	0.4110	

Panel B: Analysis of Research Participant's Age Range

Characteristics	Responses	Subject Groups			Total
		Group 1: MBA-FSA	Group 2: MIF	Group 3: MBA-FN	
Age range of research participants	18-22 years old	0	1	0	**1**
	22-25 years old	1	20	29	**50**
	25-30 years old	37	23	15	**75**
	30-40 years old	6	3	1	**10**
	More than 40 years old	0	2	0	**2**
	Total	**44**	**49**	**45**	**138**
	Chi-Square Tests	**Value**	**df**	**p-value (one-sided)[a]**	
	Pearson Chi-Square	45.0695	8	<0.0000 ***	
	Likelihood Ratio	53.9455	8	<0.0000 ***	
	Linear-by-Linear Association	26.7907	1	<0.0000 ***	

Table 4.1 (Continued)

Panel C: Analysis of Research Participant's Gender

Characteristics	Responses	Subject Groups			Total
		Group 1: MBA-FSA	Group 2: MIF	Group 3: MBA-FN	
Gender of research participants	Male	21	19	17	**57**
	Female	23	30	28	**81**
	Total	**44**	**49**	**45**	**138**
	Chi-Square Tests	**Value**	**df**	**p-value (one-sided)[a]**	
	Pearson Chi-Square	1.1088	2	0.2870	
	Likelihood Ratio	1.1026	2	0.2880	
	Linear-by-Linear Association	0.8961	1	0.1720	

Panel D: Analysis of Number of Accounting-related and Finance-Related Courses Taken

Characteristics	Statistics	Subject Groups			Total
		Group 1: MBA-FSA	Group 2: MIF	Group 3: MBA-FN	
Number of accounting-related and finance-related courses taken	1-2 courses	5	5	7	**17**
	3-4 courses	11	9	9	**29**
	5-6 courses	10	7	9	**26**
	More than 6 courses	18	28	20	**66**
	Total	**44**	**49**	**45**	**138**
	Chi-Square Tests	**Value**	**df**	**p-value (one-sided)[a]**	
	Pearson Chi-Square	3.4728	6	0.3740	
	Likelihood Ratio	3.4434	6	0.3755	
	Linear-by-Linear Association	0.0000	1	0.4990	

Panel E: Analysis of Research Participant's Work Experience

Characteristics	Statistics	Subject Groups			Total
		Group 1: MBA-FSA	Group 2: MIF	Group 3: MBA-FN	
Number of years in working experience	None	0	5	21	**26**
	Less than 3 years	1	21	19	**41**
	3-5 years	16	17	5	**38**
	5-10 years	23	4	0	**27**
	More than 10 years	4	2	0	**6**
	Total	**44**	**49**	**45**	**138**
	Chi-Square Tests	**Value**	**df**	**p-value (one-sided)[a]**	
	Pearson Chi-Square	92.0194	8	<0.0000 ***	
	Likelihood Ratio	107.1040	8	<0.0000 ***	
	Linear-by-Linear Association	72.2756	1	<0.0000 ***	

Panel F: Analysis of Research Participant's Professional Certifications Held

Characteristics	Statistics	Subject Groups			Total
		Group 1: MBA-FSA	Group 2: MIF	Group 3: MBA-FN	
Professional Certifications Hold	No	32	37	39	**108**
	Yes[b]	12	12	6	**30**
	Total	**44**	**49**	**45**	**138**
	Chi-Square Tests	**Value**	**df**	**p-value (one-sided)[a]**	
	Pearson Chi-Square	2.8787	2	0.1185	
	Likelihood Ratio	3.0526	2	0.1085	
	Linear-by-Linear Association	2.5346	1	0.0555 *	

Table 4.1 (Continued)

Panel G: Analysis of Research Participant's Membership in Professional Association

Characteristics	Statistics	Subject Groups			Total
		Group 1: MBA-FSA	Group 2: MIF	Group 3: MBA-FN	
Membership of Professional Association	No	32	42	39	**113**
	Yes[c]	11	7	5	**23**
	Total	**43**	**49**	**44**	**136**
	Chi-Square Tests	**Value**	**df**	**p-value (one-sided)[a]**	
	Pearson Chi-Square	3.5044	2	0.0865 *	
	Likelihood Ratio	3.3694	2	0.0925 *	
	Linear-by-Linear Association	3.0905	1	0.0395 **	

Panel H: Analysis of Research Participant's Investing Experience

Characteristics	Statistics	Subject Groups			Total
		Group 1: MBA-FSA	Group 2: MIF	Group 3: MBA-FN	
Mutual funds and securities investment experience	Never and will not invest in the future	1	0	0	**1**
	Never, but willing to invest in the future	8	17	16	**41**
	Sometimes	25	22	25	**72**
	Regularly	10	10	4	**24**
	Total	**44**	**49**	**45**	**138**
	Chi-Square Tests	**Value**	**df**	**p-value (one-sided)[a]**	
	Pearson Chi-Square	8.6568	6	0.0970 *	
	Likelihood Ratio	9.4263	6	0.0755 *	
	Linear-by-Linear Association	3.2632	1	0.0355 **	

Note [a] **** denotes significance level of 1%, ** denotes significance level of 5%, and * denotes significance level of 10%.*

[b] *The participant's responses include Certified Financial Analysts, Certified Investment and Securities Analysts, Certified Public Accountants, Bond Trader License, Engineer License, and Lawyer License.*

[c] *The participant's responses includes Federation of Accounting Profession, Securities Analysts Association, Council of Engineers, Lawyers Council of Thailand, The Professional Risk Managers' International Association.*

4.1.3. Characteristics of Research Participants by Experimental Conditions

Table 4.2 shows the statistics on characteristics of research participants by experimental conditions. Panel A through Panel H of Table 4.2 report the cross tabulation analysis of participant's program of study (χ^2 = 0.2833, p-value = 0.5000), age range (χ^2 = 20.6458, p-value = 0.0965), gender (χ^2 = 1.2607, p-value = 0.4340), number of accounting-related and finance-related courses taken (χ^2 = 21.9568, p-value = 0.0190), number of years in working experience (χ^2 = 11.5505, p-value = 0.3870), professional certifications hold (χ^2 = 3.5972, p-value = 0.2315), membership of professional association (χ^2 = 1.9857, p-value = 0.3690), and investing experience (χ^2 = 13.7780, p-value = 0.1575). All characteristic variables, except for number of accounting-related and finance-related courses taken, are not related to the experimental conditions. The evidence suggests that the participants are randomly assigned to five different experimental conditions.

Note that the number of accounting-related and finance-related courses taken by the participants assigned to each experimental condition is significantly different from each other (χ^2 = 21.9568, p-value = 0.0190). The proportion of participants in MFS-NOTES condition took more courses than those in other conditions.

To ensure the random assignment of the subjects to experimental conditions, the knowledge test is explored (in the next section) to check whether the level of knowledge the subjects brought to the experiments are not statistically significant across the experimental conditions.

Table 4.2: Analysis of Research Participant's Characteristics by Experimental Conditions

Analysis of Research Participant's Characteristics by Experimental Conditions

Panel A: Analysis of Research Participant's Program of Study in Each Experimental Condition

Characteristics	Responses	Experimental Conditions					Total
		Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	Cell 4: WFS-NO	Cell 5: WFS-FACE	
Program of study	MBA with Financial Statement Analysis	10	9	8	8	9	44
	Master in Finance	10	10	10	10	9	49
	MBA with Finance Major	9	9	9	9	9	45
	Total	**29**	**28**	**27**	**27**	**27**	**138**
	Chi-Square Tests	**Value**	**df**	**p-value (one-sided)[a]**			
	Pearson Chi-Square	0.2833	8	0.5000			
	Likelihood Ratio	0.2841	8	0.5000			
	Linear-by-Linear Association	0.0509	1	0.4110			

Panel B: Analysis of Research Participant's Age Range in Each Experimental Condition

Characteristics	Responses	Experimental Conditions					Total
		Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	Cell 4: WFS-NO	Cell 5: WFS-FACE	
Age range of research participants	18-22 years old	1	0	0	0	0	1
	22-25 years old	7	14	15	9	5	50
	25-30 years old	18	13	10	16	18	75
	30-40 years old	2	1	2	1	4	10
	40 years old	1	0	0	1	0	2
	Total	**29**	**28**	**27**	**27**	**27**	**138**
	Chi-Square Tests	**Value**	**df**	**p-value (one-sided)[a]**			
	Pearson Chi-Square	20.6458	16	0.0965 *			
	Likelihood Ratio	20.6678	16	0.0960 *			
	Linear-by-Linear Association	1.4819	1	0.1115			

Panel C: Analysis of Research Participant's Gender in Each Experimental Condition

Characteristics	Responses	Experimental Conditions					Total
		Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	Cell 4: WFS-NO	Cell 5: WFS-FACE	
Gender of research participants	Male	12	12	13	11	9	57
	Female	17	16	14	16	18	81
	Total	**29**	**28**	**27**	**27**	**27**	**138**
	Chi-Square Tests	**Value**	**df**	**p-value (one-sided)[a]**			
	Pearson Chi-Square	1.2607	4	0.4340			
	Likelihood Ratio	1.2711	4	0.4330			
	Linear-by-Linear Association	0.3576	1	0.2750			

Table 4.2 (Continued)

Panel D: Analysis of Number of Accounting-related and Finance-related Courses Taken in Each Experimental Condition

Characteristics	Responses	Experimental Conditions					Total
		Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	Cell 4: WFS-NO	Cell 5: WFS-FACE	
Number of accounting-related and finance-related courses taken	1-2 courses	4	1	7	1	4	17
	3-4 courses	10	2	5	8	4	29
	5-6 courses	2	10	5	4	5	26
	More than 6 courses	13	15	10	14	14	66
	Total	**29**	**28**	**27**	**27**	**27**	**138**
	Chi-Square Tests	**Value**	**df**	**p-value (one-sided)[a]**			
	Pearson Chi-Square	21.9568	12	0.0190 **			
	Likelihood Ratio	22.5780	12	0.0160 **			
	Linear-by-Linear Association	0.1524	1	0.3480			

Panel E: Analysis of Research Participant's Work Experience in Each Experimental Condition

Characteristics	Responses	Experimental Conditions					Total
		Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	Cell 4: WFS-NO	Cell 5: WFS-FACE	
Number of years in working experience	None	4	6	9	4	3	26
	Less than 3 years	8	9	8	10	6	41
	3-5 years	10	6	5	7	10	38
	5-10 years	5	6	5	4	7	27
	More than 10 years	2	1	0	2	1	6
	Total	**29**	**28**	**27**	**27**	**27**	**138**
	Chi-Square Tests	**Value**	**df**	**p-value (one-sided)[a]**			
	Pearson Chi-Square	11.5505	16	0.3870			
	Likelihood Ratio	12.2014	16	0.3650			
	Linear-by-Linear Association	0.2298	1	0.3160			

Panel F: Analysis of Research Participant's Professional Certicications Hold in Each Experimental Condition

Characteristics	Responses	Experimental Conditions					Total
		Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	Cell 4: WFS-NO	Cell 5: WFS-FACE	
Professional Certifications Hold	No	25	20	23	21	19	108
	Yes[b]	4	8	4	6	8	30
	Total	**29**	**28**	**27**	**27**	**27**	**138**
	Chi-Square Tests	**Value**	**df**	**p-value (one-sided)[a]**			
	Pearson Chi-Square	3.5972	4	0.2315			
	Likelihood Ratio	3.6660	4	0.2265			
	Linear-by-Linear Association	1.0511	1	0.1525			

Panel G: Analysis of Research Participant's Membership in Professional Association in Each Experimental Condition

Characteristics	Responses	Experimental Conditions					Total
		Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	Cell 4: WFS-NO	Cell 5: WFS-FACE	
Membership of Professional Association	No	25	24	22	22	20	113
	Yes[c]	4	4	4	4	7	23
	Total	**29**	**28**	**26**	**26**	**27**	**136**
	Chi-Square Tests	**Value**	**df**	**p-value (one-sided)[a]**			
	Pearson Chi-Square	1.9857	4	0.3690			
	Likelihood Ratio	1.8315	4	0.3835			
	Linear-by-Linear Association	1.2516	1	0.1315			

Table 4.2 (Continued)

Panel H: Analysis of Research Participant's Investing Experience in Each Experimental Condition

Characteristics	Responses	Experimental Conditions					Total
		Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	Cell 4: WFS-NO	Cell 5: WFS-FACE	
Mutual funds and securities investment experience	Never and will not invest in the future	1	0	0	0	0	**1**
	Never, but willing to invest in the future	7	10	5	7	12	**41**
	Sometimes	14	11	17	17	13	**72**
	Regularly	7	7	5	3	2	**24**
	Total	**29**	**28**	**27**	**27**	**27**	**138**
	Chi-Square Tests	**Value**	**df**	**p-value (one-sided)[a]**			
	Pearson Chi-Square	13.7780	12	0.1575			
	Likelihood Ratio	13.3984	12	0.1705			
	Linear-by-Linear Association	2.3159	1	0.0640 *			

Note [a] **** denotes significance level of 1%, ** denotes significance level of 5%, and * denotes significance level of 10%.*

[b] *The participant's responses include Certified Financial Analysts, Certified Investment and Securities Analysts, Certified Public Accountants, Bond Trader License, Engineer License, and Lawyer License.*

[c] *The participant's responses includes Federation of Accounting Profession, Securities Analysts Association, Council of Engineers, Lawyers Council of Thailand, The Professional Risk Managers' International Association.*

4.2. Analysis of Pre-Experimental Questionnaire

4.2.1. Self-Rated Knowledge

Panel A of Table 4.3 presents the statistical analysis of self-rated knowledge variables related to accounting and investment knowledge. The participants are asked to rate themselves on several aspects related to the level of their interests and understanding about business environment as well as accounting and investment knowledge. The 11-point rating scale (0 [low] – 10 [high]) is employed in the self-rated variables. The issues include (a) business & investment knowledge, (b) interest in capital market and securities trading, (c) risk behavior, (d) financial statement knowledge, and (e) familiarity with annual reports.

The ANOVA analysis suggests that the level of self-rated knowledge of participants across the experimental cells is not different from each other, with the exception of the level of interest in the capital market. The participants in all conditions evaluate that they have moderate level (an average of 4.9746 out of 0-10 scale) of business and investment knowledge and the rating is not significantly different from each other ($F = 1.5447$, p-value = 0.1929). The participants in MFS-NOTES and WFS-NOTES conditions indicates a statistically higher level of interest of the participants in the news related to local and world economy, capital/securities

or money markets e.g. changes in SET index, or the indices, and change in interest rate as compared to that of other conditions (F = 2.7996, p-value = 0.0285). The participants moderately rate their knowledge with respect to meaning and interpretation of financial statements (an average of 5.2935 out of 0-10 scale) and familiarity with the financial information presentation in the annual report or financial statements (an average of 5.6957 out of 0-10 scale). However, the differences among the experimental conditions do not exist (F = 1.4724, p-value = 0.2141 for financial statements and F = 1.3110, p-value = 0.2692 for familiarity with annual reports).

Moreover, the average self-rated scores are determined and compared. The average level of self-rated scores of MFS-NOTES condition is significantly higher than that of other conditions (F = 2.5379, p-value = 0.0429).

4.2.2. Knowledge Test

Panel B of Table 4.3 portrays the ANOVA analysis of accounting and finance knowledge tests. The participants are solicited to answer 15 true/false questions related to accounting (8 questions) and finance topics (7 questions). The ANOVA analysis of the accounting score (F = 1.5949, p-value = 0.1793), finance score (F = 1.1656, p-value = 0.3289), and total score (F = 1.6037, p-value 0.1770) suggests that the scores of participants in all conditions are in the comparable level. The average scores of all the participants are 5.5942 (out of 8 points) for accounting questions, 5.3623 (out of 7 points) for finance questions, and 10.9565 (out of 15 points) for total score. The evidence suggests that the participants have adequate level of accounting and finance knowledge to comprehend the case materials in my study.

The reliability analysis (Cronbach's Alpha) of self-rated business knowledge and knowledge test is 0.8106. This indicates that both self-rated knowledge variables and questions in the knowledge test measure the same construct.

Interestingly, even though the self-rated knowledge across the experimental conditions is statistically different from each other, the result from the knowledge test is not statistically different. This might be due to the fact that the participants are overly optimistic. The knowledge variables would be used to control the differences in knowledge level in the main analysis.

Table 4.3: Analysis of Prior Knowledge of Research Participants by Experimental Conditions

Analysis of Prior Knowledge of Research Participants by Experimental Conditions
Mean Self-Rated Knowledge and Knowledge Test (Standard Deviation**)**
Panel A: Self-rated Accounting and Investment Knowledge

Self-Rated Knowledge Variables[b]	Experimental Conditions					F-Statistic (P-Value)[a]
	Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	Cell 4: WFS-NO	Cell 5: WFS-FACE	
Business & investment knowledge	**4.6207**	**5.6071**	**5.1852**	**4.5741**	**4.8889**	**1.5447**
(0 [not at all sophisticated] - 1 [very sophisticated])	(1.8011)	(1.5477)	(2.0007)	(1.8224)	(1.9282)	(0.1929)
Interest in capital market and securities	**6.3103**	**7.1071**	**7.0741**	**5.9074**	**5.8889**	**2.7996**
(0 [not interested] - 10 [very interested])	(1.5608)	(1.5715)	(1.9792)	(1.8294)	(2.3751)	(0.0285) **
Risk behavior	**5.4138**	**5.6071**	**5.4074**	**4.9815**	**5.0000**	**0.4398**
(0 [risk averse] - 10 [risk seeking])	(2.2123)	(2.1489)	(2.2576)	(2.0591)	(2.2871)	(0.7797)
Financial statements knowledge	**4.9655**	**6.0000**	**5.2963**	**4.9815**	**5.2222**	**1.4724**
(0 [not at all sophisticated] - 10 [very sophisticated])	(1.7420)	(1.6102)	(2.0905)	(1.9139)	(1.8046)	(0.2141)
Familiarity with annual reports	**5.3793**	**6.3929**	**5.9259**	**5.2963**	**5.4815**	**1.3110**
(0 [not familiar] - 10 [very familiar])	(2.0601)	(1.8123)	(1.8171)	(2.4933)	(2.3266)	(0.2692)
Average self-rated knowledge	**5.3190**	**6.2768**	**5.8704**	**5.1900**	**5.3704**	**2.5379**
	(1.3902)	(1.2140)	(1.5634)	(1.6016)	(1.7298)	(0.0429) **

Panel B: Accounting and Finance Knowledge Test

Knowledge Test Variables[c]	Experimental Conditions					F-Statistic (P-Value)[a]
	Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	Cell 4: WFS-NO	Cell 5: WFS-FACE	
Accounting knowledge test	**5.6207**	**5.8214**	**5.1481**	**5.7778**	**5.5926**	**1.5949**
(Accounting T/F Questions)	(1.0147)	(1.0905)	(0.9488)	(1.2810)	(1.1522)	(0.1793)
Finance Knowledge test	**5.0000**	**5.5357**	**5.2963**	**5.5556**	**5.4444**	**1.1656**
(Finance T/F Questions)	(0.9636)	(1.1701)	(1.2346)	(1.1875)	(1.0860)	(0.3289)
Accounting & Finance Knowledge test	**10.6207**	**11.3571**	**10.4444**	**11.3333**	**11.0370**	**1.6037**
(Total T/F Questions)	(1.5216)	(1.8898)	(1.7394)	(1.7097)	(1.6980)	(0.1770)

Note [a] *One-tailed test. *** denotes significance level of 1%, ** denotes significance level of 5%, and * denotes significance level of 10%.*
[b] *The self-rated knowledge is solicited in 11-point rating scale (0 [low] - 10 [high]).*
[c] *The reliability analysis (Cronbach's Alpha) of self-rated business knowledge and knowledge test is 0.8106.*

4.3. Experiment 1

4.3.1. Performance Evaluation in Experiment 1

4.3.1.1. Analysis of Judgments Related to Performance Evaluation in Experiment 1

The participants are asked to evaluate overall performance, operating performance, and investing performance using 11-point scale (0-10)[44]. Moreover,

[44] In the case materials, the financial statements show poorer operating results as compared to those of prior year, while the overall performance is relatively constant. The operating results might be clouded by presentation format of the financial statements. The hypothetical firm is able to maintain the overall profit due to the fact that the investing income is increasing in the current year. This setting allows me to explore the possible benefits and costs of the proposed format financial statements. Specifically, given the proposed financial statements as opposed to traditional financial statements, if the

they are asked to provide the judgments related to trend of operating profit, future growth prospect, and persistence of net income.

Panel A of Table 4.4 and Figure 4.1 present an analysis of judgments related to performance evaluation and mean plots of performance evaluation judgments in Experiment 1. The participant's overall performance ratings in each of the experimental conditions are not significantly different from each other (F = 0.6797, p-value = 0.5097). The investing performance rating is not statistically different across experimental condition (F = 0.1283, p-value = 0.8798).

The means operating performance evaluation of TFS-NOTES, MFS-NOTES, and WFS-NOTES are 3.6897, 2.6786, and 2.9615, respectively. The rating is slightly higher for the subjects from TFS-NOTES condition (F = 2.7076, p-value = 0.0728), as compared to those in the other conditions. The evidence suggests that the participants in the TFS-NOTES might not notice the decreasing trend in operating income since the operating income subtotal is not saliently presented and the participants must incur higher cognitive cost in extracting operating income.

Interestingly, the reduction in rating (Overall Performance – Operating Performance) of the participants in WFS-NOTES (3.1866) and MFS-NOTES (3.1786) is slightly higher than that of TFS-NOTES (2.8276). That is, the participants in WFS-NOTES and MFS-NOTES conditions, who received the proposed income statement with the operating income subtotal presented discount more when they evaluate the operating performance relative to overall performance. The evidence on operating performance rating and the reduction in rating provides partial support for Hypothesis 1.

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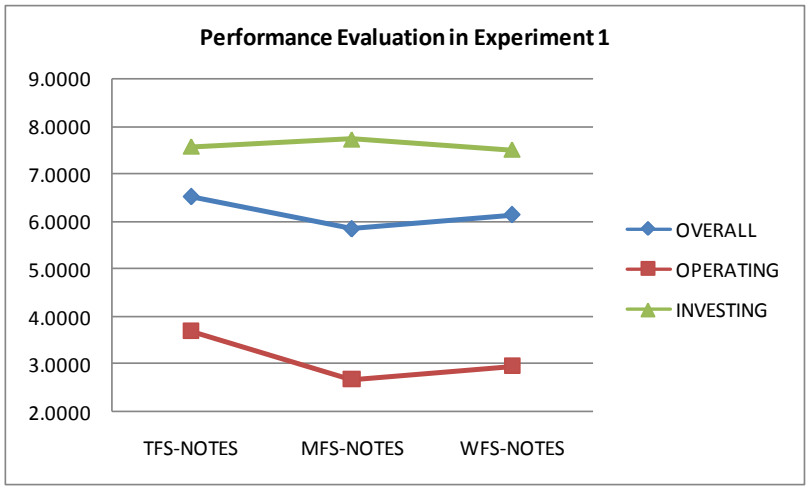
participants can better spot the decreasing trend or poorer operating performance of the hypothetical firm reflected in lower rating scores, the judgments related to operating performance evaluation is said to be improved by the proposed presentation format.

Figure 4.1 Mean Plots of Performance Evaluation Judgments



4.3.1.2. Analysis of Judgments Related to Operating Performance Evaluation, Future Trend, and Growth Prospects in Experiment 1 and Test of Hypothesis 1

The participants are also asked to evaluate the trend of operating profit using the information from income statement. As shown in Panel B of Table 4.4, the participants in TFS-NOTES spot somewhat negative trend (Mean of 3.7931), while the participants in WFS-NOTES (Mean of 2.8148) and MFS-NOTES (Mean of 2.4286) condition spot more decreasing trend ($F = 2.8214$, p-value = 0.0654). Note that the 0-10 rating scale is employed and that "0" represents decreasing trend, "5" represents stable trend, and "10" represents increasing trends. Again, this provides partial support to Hypothesis 1. However, when the participants evaluate the future growth prospects and persistence of net income, the mean ratings are not significantly different across the experimental conditions in Experiment 1 ($F = 0.4402$, p-value = 0.6454 for future operating growth prospects and $F = 0.2473$, p-value 0.7815 for persistent of net income.

Panel C of Table 4.4 presents the planned comparisons to test hypotheses. H1a hypothesizes that *the proposed format financial statements improve investors' operating performance evaluation judgments when compared to mixed format financial statements*. However, the planned comparisons of performance evaluation

and operating-related measures between WFS-NOTES and MFS-NOTES conditions show statistically insignificant results. Thus, H1a is not supported. The evidence is consistent with the fact that when assessing the operating performance, the participants usually explore the information on the income statement. Since the MFS-NOTES and WFS-NOTES conditions similarly present the proposed format income statement, the judgments on operating performance are, thus, not different from each other. The inconsistence in presentation format might not cause the cognitive dissonance or uneasiness to the participants. This might due to the fact that the participants are, to some extent, familiar with the information contained in the financial statements.

Interestingly, the participants in both MFS-NOTES (Mean of 2.6786 from 0-10 rating scale) and WFS-NOTES (Mean of 2.9615) conditions assess poor operating performance, compared to overall performance and lower than those from TFS-NOTES (Mean of 3.6897) condition. The evidence suggests that the proposed income statement presented in both MFS-NOTES and WFS-NOTES conditions, but not in TFS-NOTES condition, help participants spot the decline in operating performance of the hypothetical firm.

H1b proposed that *the mixed format financial statements improve investors' operating performance evaluation judgments when compared to traditional financial statements*. The planned comparisons in Panel B of Table 4.4 show statistically significant results for the operating performance evaluation (t-statistics = -2.1560, p-value = 0.0177) and for trend of operating profit (t-statistics = -2.0486, p-value = 0.0226). Stated again, the means of operating performance evaluation of MFS-NOTES and TFS-NOTES are 2.6786 and 3.6897, respectively. The participants in MFS-NOTES (Mean of 2.4286 out of 0-10 rating scale) condition assess a poorer trend of operating profit than those in TFS-NOTES condition (Mean of 3.7931). The evidence supports H1b. That is to say, the participants in MFS-NOTES condition better spot the poor operating performance and better observe the decreasing trend in operating profit when compared to those in TFS-NOTES. The evidence portrays the possible benefits of the proposed income statements in assisting investors assess the operating performance of a given firm. Recall that the proposed income statement presents the operating section separately and clearly labeled. Moreover, the operating

profit subtotal is saliently presented on the face of the income statement, which helps the participants notice the possible problems associated with operations of the company.

H1c hypothesized that *the proposed format financial statements improve investors' operating performance evaluation judgments when compared to traditional financial statements*. The planned comparisons between WFS-NOTES and TFS-NOTES are performed. The experimental result shows marginally significant result for operating performance evaluation (t-statistics = -1.5963, p-value = 0.0582). Also, the experimental results show that the participants better spot the decreasing trend in operating profits (t-statistics = -1.7095, p-value = 0.0472). The participants in WFS-NOTES condition (Mean of 2.8148) assess significantly lower trend of operating profit when compared to those in TFS-NOTES condition (Mean of 3.7931). This is consistent with H1c; thus, H1c is supported. Again, the participants in WFS-NOTES better spot the decreasing trend in operating profit when compared to those in TFS-NOTES condition. The evidence from Experiment 1 is consistent with Incomplete Revelation Hypothesis. That is, if the operating section is saliently presented, the cognitive cost associated with the operating information extraction is, thus, lower. Also, if the extraction cost is lower, then the information has more impact on investors' judgments.

Note that I also performed analysis of covariance (ANCOVA) to test H1a, H1b, and H1c. The average self-rated investment and accounting knowledge scores and the scores from the accounting and finance knowledge test are used as covariates in the analysis. Prior literature suggests that knowledge might play roles in the performance evaluation and financial statement analysis; thus, using the knowledge variables as covariates in an analysis helps validating the results of the main analysis. The untabulated results from the ANCOVA are qualitatively identical to those from ANOVA.

Table 4.4: Analysis of Performance Evaluation Judgments in Experiment 1

Analysis of Performance Evaluation Judgments, Future Trend, and Growth Prospects in Experiment 1

Panel A: Mean Performance Evaluation Judgments (Standard Deviation)

Performance Evaluations[b]	Experimental Conditions			F-Statistic (P-Value)[a]
	Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	
Overall performance evaluation	**6.5172**	**5.8571**	**6.1481**	**0.6797**
(0 [worse] - 10 [better])	(2.1317)	(2.4147)	(1.8335)	(0.5097)
Operating performance evaluation	**3.6897**	**2.6786**	**2.9615**	**2.7076**
(0 [worse] - 10 [better])	(1.8343)	(1.7008)	(1.5095)	(0.0728) *
Investing performance evaluation	**7.5862**	**7.7407**	**7.5185**	**0.1283**
(0 [worse] - 10 [better])	(1.7012)	(1.7452)	(1.5031)	(0.8798)

Panel B: Mean Operating Performance Evaluation Judgments and Related Measures (Standard Deviation)

Operating Performance Judgments[b]	Experimental Conditions			F-Statistic (P-Value)[a]
	Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	
Operating performance evaluation	**3.6897**	**2.6786**	**2.9615**	**2.7076**
(0 [worse] - 10 [better])	(1.8343)	(1.7008)	(1.5095)	(0.0728) *
Trend of operating profit	**3.7931**	**2.4286**	**2.8148**	**2.8214**
(0 [decreasing trend] - 10 [increasing trend])	(2.6643)	(2.3480)	(1.4945)	(0.0654) *
Future operating growth prospects	**4.7143**	**4.9643**	**4.4815**	**0.4402**
(0 [very poor prospect] - 10 [very good prospect])	(2.3071)	(1.7101)	(1.6260)	(0.6454)
Persistence of net income	**4.1724**	**4.5179**	**4.4815**	**0.2473**
(0 [transitory] - 10 [persistent])	(2.1888)	(2.1408)	(1.7403)	(0.7815)

Panel C: Planned Comparisons	df	T-Statistic	P-Value[a]
WFS-NOTES VS. MFS-NOTES (H1a)			
Operating performance evaluation	52	0.6447	0.2610
Trend of operating profit	53	0.7247	0.2359
Future operating growth prospects	53	-1.0722	0.1442
Persistence of net income	53	-0.0690	0.4726
MFS-NOTES VS. TFS-NOTES (H1b)			
Operating performance evaluation	55	-2.1560	0.0177 **
Trend of operating profit	55	-2.0486	0.0226 **
Future operating growth prospects	54	0.4606	0.3235
Persistence of net income	55	0.6021	0.2748
WFS-NOTES VS. TFS-NOTES (H1c)			
Operating performance evaluation	53	-1.5963	0.0582 *
Trend of operating profit	45	-1.7095	0.0472 **
Future operating growth prospects	53	-0.4311	0.3341
Persistence of net income	54	0.5821	0.2815

Note [a] *One-tailed test. *** denotes significance level of 1%, ** denotes significance level of 5%, and * denotes significance level of 10%.*

[b] *Judgments on financial performance is solicited in 11-point rating scale.*

4.3.1.3. Analysis of Judgments Related to Performance Evaluation, Future Trend, and Growth Prospects Performing for the Two Subsamples Partitioned using Knowledge Variables, in Experiment 1

Table 4.5 presents the planned comparisons of differences in presentation formats and data aggregation level controlling for knowledge variables. In addition, Figure 4.2 portrays the mean plots of operating performance evaluation and related measures in Experiment 1.

Using the median values of knowledge variables, the observations are partitioned based on the two knowledge variables (Average Self-rated Knowledge and Knowledge Test Variables)[45] into (1) High-knowledge subsample and (2) Low-knowledge subsample. The analyses are then performed for both high- and low-knowledge subsamples[46].

Panel A through Panel C of Table 4.5 present the test of hypotheses H1a (WFS-MFS), H1b (MFS-TFS), and H1c (WFS-TFS), respectively. The results from both high- and low-knowledge subsamples (using both Average Self-rated Knowledge Variable and Knowledge Test Variable), in general, are not consistent with H1a. However, in a high-knowledge subsample, the participants in WFS-NOTES (Mean of 4.0833) predict significantly lower operating growth prospect than those in MFS-NOTES (Mean of 5.1111) (t-statistics = -1.7607, p-value = 0.0446). The experimental result suggests the participants with high knowledge who receive the whole set of the proposed financial statements better spot the decline in operating performance of the firm when compared to those receiving just the new-format income statement, which is consistent with H1a. To comprehend the information on the proposed financial statement, a certain level of knowledge related to business and accounting is required.

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[45] The average self-rated score of 5.75 (median) and the knowledge test score of 11 (median) are used as cut-off points to partition high-low knowledge subsamples. Including observations with the median value in either one of the subsamples or excluding those yield qualitatively similar results.

[46] Note that the information content might be lost in the process of discretizing the knowledge variables into "High" and "Low" knowledge subsamples. However, this analysis reduces the measurement errors that might exist when measuring the business, accounting, and investment knowledge of the participants.

In most cases, the planned comparisons between MFS-NOTES and TFS-NOTE for both high- and low-knowledge subsamples show the support for H1b. That is, investors with proposed income statement would better assess the operating performance of the firm compared to those with traditional income statement.

Interestingly, the participants with low knowledge test score in MFS-NOTES condition rate the operating performance and trend of operating profit of the hypothetical firm significantly lower than those in the TFS-NOTES (Mean of MFS-NOTES = 2.7857 VS. Mean of TFS-NOTES =3.6818, t-statistics = -1.4122, p-value = 0.0835 for operating performance, and Mean of MFS-NOTES = 2.4286 VS. Mean of TFS-NOTES = 4.2727, t-statistics = -2.1411, p-value = 0.0198 for trend of operating profit). This implies that the presentation format does matter for the low-knowledge subsample. That is to say, participants with lower level of knowledge would be able to spot the decline in operating performance only when the operating section is saliently labeled and separately presented, like in the proposed format income statement. This is consistent with Incomplete Revelation Hypothesis because the proposed format of income statement requires less cognitive effort to extract the information related to the operating performance.

However, the participants in the high-knowledge subsample in both MFS-NOTES and TFS-NOTES conditions rate the operating performance (Mean of MFS-NOTES = 2.5714 VS. Mean of TFS-NOTES = 3.7143) and trend of operating profit (Mean of MFS-NOTES = 2.4286 VS. Mean of TFS-NOTES = 2.2857) at a very low level, even lower than those of the low-knowledge subsample. Specifically, the participants in the high-knowledge group spot the poor operating performance of the hypothetical company, regardless of the presentation formats. The participants with higher level of accounting and finance knowledge would be able to see through the presentation format and understand the real financial performance of a given firm. In other words, the knowledge level influences the understanding of the investors in analyzing complex financial information.

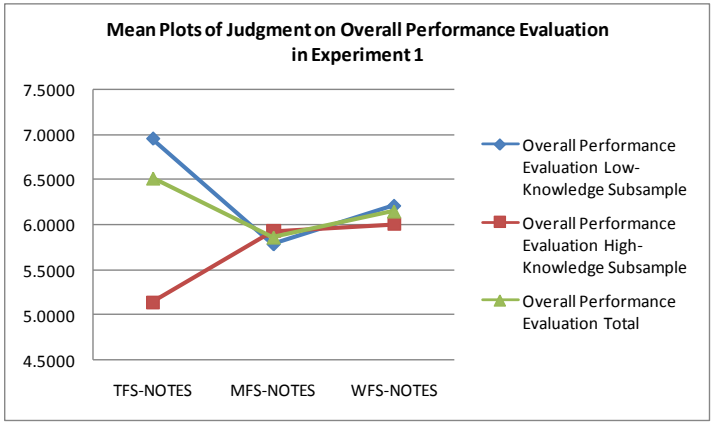
The results from additional analysis suggest that H2c is also supported, especially for low-knowledge subsample. As reported in Panel C of Table 4.5, in the low-knowledge subsample, the participants in WFS-NOTES condition rate operating performance and trend of operating profit significantly lower than participants in

TFS-NOTES condition (t-statistics = -1.7461, p-value = 0.0455 for operating performance and t-statistics = -2.0969, p-value = 0.0239 for trend of operating profit). The means of operating performance evaluation for WFS-NOTES and TFS-NOTES are 2.9286 and 3.8333, respectively and the means of judgment on operating trend for WFS-NOTES and TFS-NOTES are 2.6667 and 4.1111, respectively. Even though the rating of the participants in WFS-NOTES and TFS-NOTES in the high-knowledge subsample is not significantly different from each other, the overall rating is quite low, which suggests that the participants can spot the drop in the operation of the hypothetical company.

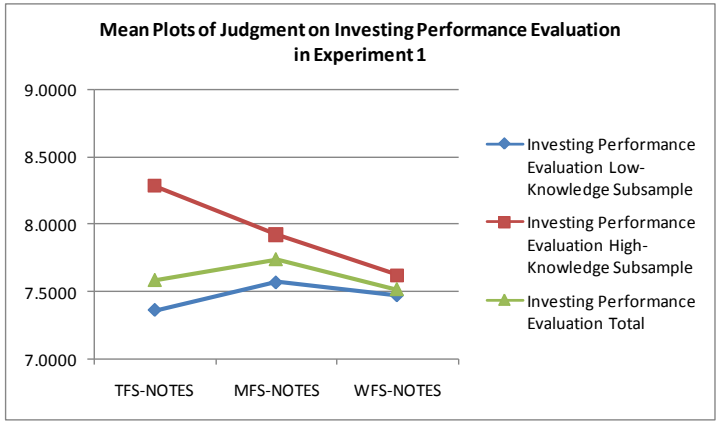
Using the knowledge test score to partition the sample yields an interesting result. To be exact, the participants in the low-knowledge subsample detect the lower trend in the operating profit only when the presentation format tips off the decline in the operating performance by presenting the operating profit in as one of the prominent subtotals on the face of the income statement. The rating of the trend of operating profit is statistically lower in WFS-NOTES (Mean of 2.8947) compared to that in TFS-NOTES (Mean of 4.2727) (t-statistics = -2.2113, p-value = 0.0169). However, for the high-knowledge subsample, the participants rate the operating trend at a very low level. Specifically, the means judgment on trend of operating profit for WFS-NOTES and TFS-NOTES in the high-knowledge subsample are 2.6250 and 2.2857, respectively. That is, regardless of the presentation format, the participants with high knowledge recognize the lower trend in operations.

Figure 4.2: Mean Plots of Judgments on Performance Evaluation and Related Operating Measures in Experiment 1

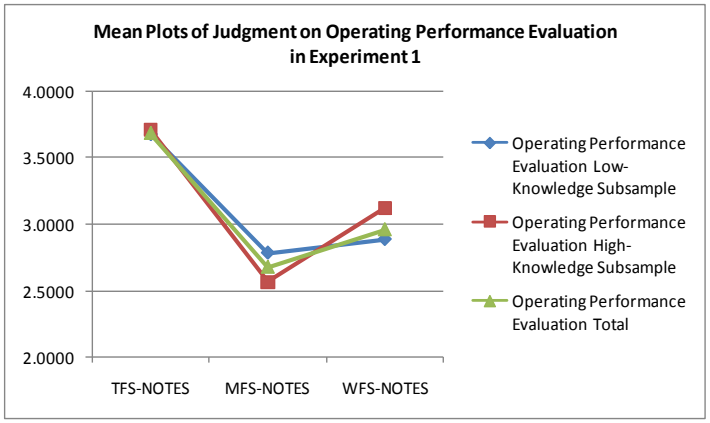
Panel A: Mean Plots of Judgment on Overall Performance Evaluation



Panel B: Mean Plots of Judgment on Investing Performance Evaluation



Panel C: Mean Plots of Judgment on Operating Performance Evaluation



Panel D: Mean Plots of Judgment on Trend of Operating Profit

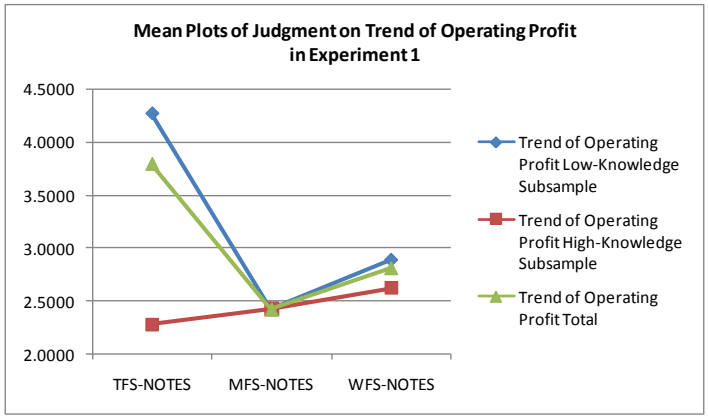
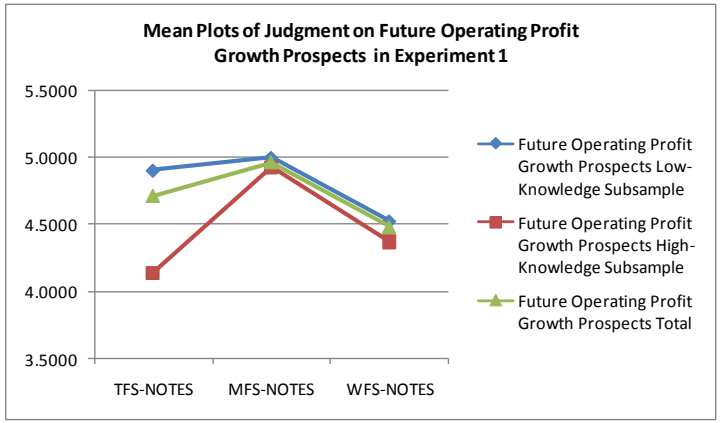


Figure 4.2 (Continued)

Panel E: Mean Plots of Judgment on Future Operating Profit Growth Prospects



Panel F: Mean Plots of Judgment on Persistence of Net Income

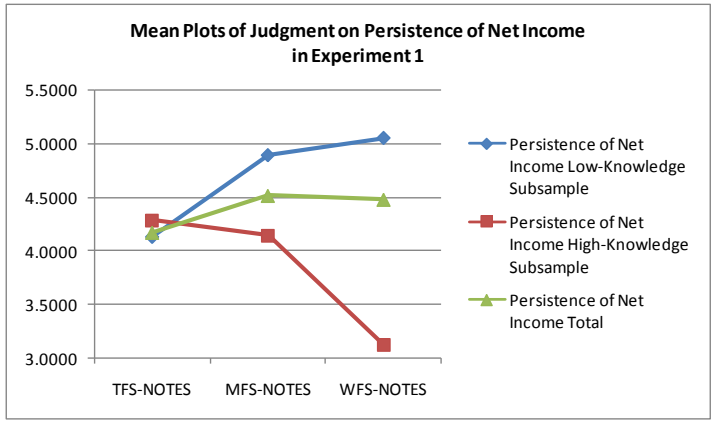


Table 4.5: Additional Analysis for High-Low Knowledge Subsamples in Experiment 1

Additional Analysis for High-Low Knowledge Subsamples in Experiment 1
Mean Judgments on Operating Performance Evaluation and Related Measures (Standard Deviation**)**

Panel A: Planned Comparisons for Differences in Presentation Format (H1a: WFS VS. MFS)

Operating Performance Judgments	Self-rated Knowledge Variable[b]						Knowledge Test Variable[b]					
	Low-Knowledge Subsample			High-Knowledge Subsample			Low-Knowledge Subsample			High-Knowledge Subsample		
	Presentation Format		t-statistic (p-value one-tailed)[a]	Presentation Format		t-statistic (p-value one-tailed)[a]	Presentation Format		t-statistic (p-value one-tailed)[a]	Presentation Format		t-statistic (p-value one-tailed)[a]
	WFS	MFS		WFS	MFS		WFS	MFS		WFS	MFS	
Operating performance evaluation	**2.9286**	**3.1000**	**-0.2291**	**3.0000**	**2.4444**	**1.0146**	**2.8889**	**2.7857**	**0.1689**	**3.1250**	**2.5714**	**0.8209**
(0 [worse] - 10 [better])	(1.5915)	(2.0790)	(0.4104)	(1.4771)	(1.4642)	(0.1595)	(1.4096)	(2.0448)	(0.4335)	(1.8077)	(1.3425)	(0.2107)
Trend of operating profit	**2.6667**	**3.2000**	**-0.8611**	**3.0000**	**2.0000**	**1.1832**	**2.8947**	**2.4286**	**0.6585**	**2.6250**	**2.4286**	**0.2198**
(0 [decreasing] - 10 [increasing])	(0.9759)	(2.0976)	(0.1990)	(2.0000)	(2.4254)	(0.1233)	(1.4489)	(2.5933)	(0.2575)	(1.6850)	(2.1738)	(0.4141)
Future operating growth prospects	**4.8000**	**4.7000**	**0.1361**	**4.0833**	**5.1111**	**-1.7607**	**4.5263**	**5.0000**	**-0.7248**	**4.3750**	**4.9286**	**-0.8745**
(0 [very poor] - 10 [very good])	(1.8593)	(1.7029)	(0.4465)	(1.2401)	(1.7452)	(0.0446) **	(1.7438)	(2.0000)	(0.2370)	(1.4079)	(1.4392)	(0.1961)
Persistence of net income	**4.2000**	**4.1500**	**0.0811**	**4.8333**	**4.7222**	**0.1309**	**5.0526**	**4.8929**	**0.2376**	**3.1250**	**4.1429**	**-1.2780**
(0 [transitory] - 10 [persistent])	(1.4736)	(1.5644)	(0.4680)	(2.0375)	(2.4206)	(0.4484)	(1.5447)	(2.3220)	(0.4069)	(1.4577)	(1.9556)	(0.1079)

Panel B: Planned Comparisons for Differences in Presentation Format (H1b: MFS VS. TFS)

Operating Performance Judgments	Self-rated Knowledge Variable[b]						Knowledge Test Variable[b]					
	Low-Knowledge Subsample			High-Knowledge Subsample			Low-Knowledge Subsample			High-Knowledge Subsample		
	Presentation Format		t-statistic (p-value one-tailed)[a]	Presentation Format		t-statistic (p-value one-tailed)[a]	Presentation Format		t-statistic (p-value one-tailed)[a]	Presentation Format		t-statistic (p-value one-tailed)[a]
	MFS	TFS		MFS	TFS		MFS	TFS		MFS	TFS	
Operating performance evaluation	**3.1000**	**3.8333**	**-1.1381**	**2.4444**	**3.4545**	**-1.3772**	**2.7857**	**3.6818**	**-1.4122**	**2.5714**	**3.7143**	**-1.4530**
(0 [worse] - 10 [better])	(2.0790)	(1.3394)	(0.1327)	(1.4642)	(2.5045)	(0.0899) *	(2.0448)	(1.7289)	(0.0835) *	(1.3425)	(2.2887)	(0.0813) *
Trend of operating profit	**3.2000**	**4.1111**	**-0.9160**	**2.0000**	**3.2727**	**-1.3325**	**2.4286**	**4.2727**	**-2.1411**	**2.4286**	**2.2857**	**0.1278**
(0 [decreasing] - 10 [increasing])	(2.0976)	(2.7201)	(0.1841)	(2.4254)	(2.6112)	(0.0969) *	(2.5933)	(2.4724)	(0.0198) **	(2.1738)	(2.8702)	(0.4498)
Future operating growth prospects	**4.7000**	**5.1765**	**-0.5314**	**5.1111**	**4.0000**	**1.6289**	**5.0000**	**4.9048**	**0.1287**	**4.9286**	**4.1429**	**0.8986**
(0 [very poor] - 10 [very good])	(1.7029)	(2.5059)	(0.2999)	(1.7452)	(1.8439)	(0.0575) *	(2.0000)	(2.2339)	(0.4492)	(1.4392)	(2.6095)	(0.1901)
Persistence of net income	**4.1500**	**4.2778**	**-0.1672**	**4.7222**	**4.0000**	**0.7811**	**4.8929**	**4.1364**	**1.0179**	**4.1429**	**4.2857**	**-0.1394**
(0 [transitory] - 10 [persistent])	(1.5644)	(2.1090)	(0.4343)	(2.4206)	(2.4083)	(0.2208)	(2.3220)	(2.0770)	(0.1580)	(1.9556)	(2.6904)	(0.4453)

Panel C: Planned Comparisons for Differences in Presentation Format (H1c: WFS VS. TFS)

Operating Performance Judgments	Self-rated Knowledge Variable[b]						Knowledge Test Variable[b]					
	Low-Knowledge Subsample			High-Knowledge Subsample			Low-Knowledge Subsample			High-Knowledge Subsample		
	Presentation Format		t-statistic (p-value one-tailed)[a]	Presentation Format		t-statistic (p-value one-tailed)[a]	Presentation Format		t-statistic (p-value one-tailed)[a]	Presentation Format		t-statistic (p-value one-tailed)[a]
	WFS	TFS		WFS	TFS		WFS	TFS		WFS	TFS	
Operating performance evaluation	**2.9286**	**3.8333**	**-1.7461**	**3.0000**	**3.4545**	**-0.5358**	**2.8889**	**3.6818**	**-1.5652**	**3.1250**	**3.7143**	**-0.5571**
(0 [worse] - 10 [better])	(1.5915)	(1.3394)	(0.0455) **	(1.4771)	(2.5045)	(0.2989)	(1.4096)	(1.7289)	(0.0629) *	(1.8077)	(2.2887)	(0.2935)
Trend of operating profit	**2.6667**	**4.1111**	**-2.0969**	**3.0000**	**3.2727**	**-0.2827**	**2.8947**	**4.2727**	**-2.2113**	**2.6250**	**2.2857**	**0.2839**
(0 [decreasing] - 10 [increasing])	(0.9759)	(2.7201)	(0.0239) **	(2.0000)	(2.6112)	(0.3901)	(1.4489)	(2.4724)	(0.0169) **	(1.6850)	(2.8702)	(0.3905)
Future operating growth prospects	**4.8000**	**5.1765**	**-0.4771**	**4.0833**	**4.0000**	**0.1282**	**4.5263**	**4.9048**	**-0.5927**	**4.3750**	**4.1429**	**0.2186**
(0 [very poor] - 10 [very good])	(1.8593)	(2.5059)	(0.3184)	(1.2401)	(1.8439)	(0.4496)	(1.7438)	(2.2339)	(0.2785)	(1.4079)	(2.6095)	(0.4152)
Persistence of net income	**4.2000**	**4.2778**	**-0.1203**	**4.8333**	**4.0000**	**0.8985**	**5.0526**	**4.1364**	**1.5811**	**3.1250**	**4.2857**	**-1.0590**
(0 [transitory] - 10 [persistent])	(1.4736)	(2.1090)	(0.4525)	(2.0375)	(2.4083)	(0.1895)	(1.5447)	(2.0770)	(0.0610) *	(1.4577)	(2.6904)	(0.1544)

Note [a] **** denotes significance level of 1%, ** denotes significance level of 5%, and * denotes significance level of 10%.*

[b] *The average self-rated score of 5.75 (median) and the knowledge test score of 11 (median) are used as cut-off points to partition high-low knowledge subsamples. Including observations with the median value in either one of the subsamples or excluding those yield qualitatively similar results.*

4.3.2. Information Extraction and Ratio Analysis in Experiment 1

The participants are asked to extract certain information from the financial statements and calculate some financial ratios using extracted information. Panel A of Table 4.6 shows an analysis of information extracted from income statement. The operating income and the investing income are solicited as well as associated difficulty level associated with information extraction. The means of error in operating income determination (Error = |OI specified – True OI|/True OI) of TFS-NOTES, MFS-NOTES, WFS-NOTES conditions are 0.5342, 0.0117, and 0.0394, respectively. In addition, the means of error in investing income determination (Error = |II specified – True II|/True II) of TFS-NOTES, MFS-NOTES, WFS-NOTES conditions are 0.5090, 0.0306, and 0.1125, respectively. The participants in WFS-NOTES and MFS-NOTES conditions outperform those in TFS-NOTES when they are asked to determine the operating and investing income ($F = 32.3898$, p-value <0.0000 for error in operating income calculation; $F = 36.7515$, p-value <0.0000 for error in investing income calculation).

The participants in WFS-NOTES and MFS-NOTES conditions rate the difficulty level associated with the information extraction significantly lower when compared to that of TFS-NOTES condition ($F = 4.2092$, p-value = 0.0182 for difficulty level associated with operating income calculation and $F = 8.1625$, p-value = 0.0006). As expected, the information regarding operating income and investing income (two proposed subtotals on the income statement) is easily extracted with low cognitive cost because the subtotals are clearly and saliently labeled.

Panel B of Table 4.6 presents the statistical analysis of information extracted from balance sheet. The participants are solicited to extract or determine total assets, total liabilities, total stockholders' equity, operating assets and operating liabilities. The means of error in total assets calculations (Error = |A specified – True A|/True A) of TFS-NOTES, MFS-NOTES, and WFS-NOTES are 0.0000, 0.0012, and 0.1130, respectively. The means of error in total liabilities calculation (Error = |L specified – True L|/True L) of three experimental conditions in Experiment 1 are 0.0000, 0.0000, and 0.1744. The participants in TFS-NOTES condition outperform those in MFS-NOTES and WFS-NOTES conditions in determining the traditional measures like

total assets and total liabilities (F = 27.1717, p-value <0.0000 for total assets determination and F = 47.2777, p-value <0.0000 for total liabilities calculation).

The means of error in total stockholders' equity calculation (Error = |E specified – True E|/True E) of TFS-NOTES, MFS-NOTES, and WFS-NOTES conditions are 0.1273, 0.0027, and 0.0006, respectively (ANOVA F = 2.9767, p-value = 0.0566). Interestingly, the total stockholders' equity is one of the measures that are presented on both traditional and proposed financial statements; thus, the differences across experimental conditions should not exist. The participants in WFS-NOTES (Mean of 4.3077), as compared to that of TFS-NOTES (Mean of 0.7931) and MFS-NOTES (Mean of 1.3750), perceived that it is difficult when they are asked to determine total assets, total liabilities, and total stockholders' equity.

The means of error in operating assets determination (Error = |OA specified – True OA|/True OA) of TFS-NOTES, MFS-NOTES, and WFS-NOTES are 0.4151, 0.4354, and 0.1680, respectively (F = 11.7007, p-value = <0.0000). The mean of error in determination of operating liabilities (Error = |OL specified – True OL|/True OL) of TFS-NOTES, MFS-NOTES, and WFS-NOTES are 1.5032, 1.0254, and 0.3638, respectively (F = 2.1637, p-value = 0.1215). The error in determining operating liabilities is higher when compared to the error in determining operating assets.

Finally, Panel C of Table 4.6 portrays an analysis of financial ratios calculated. The mean of error in return on assets calculation is significantly higher in WFS-NOTES condition (0.2996) as opposed to other conditions (MFS-NOTES, $\bar{x}$ = 0.0217 and TFS-NOTES, $\bar{x}$ = 0.0345). The ANOVA analysis shows statistical significant result (F = 10.5151, p-value = 0.0001). The associated confidence level is significantly higher for the participants in TFS-NOTES and MFS-NOTES conditions as opposed to that of WFS-NOTES condition (F = 13.2731, p-value <0.0000).

The means of error in return on operating assets calculation of TFS-NOTES, MFS-NOTES, and WFS-NOTES are 1.3799, 0.9928, and 0.3704, respectively (F = 9.6506, p-value = 0.0002). The confidence level associated with the determination of return on operating assets is higher in MFS-NOTES and WFS-NOTES conditions (F = 7.2709, p-value = 0.0014). The errors in determining debt-to-equity ratio are

greater in WFS-NOTES condition (F = 2.4732, p-value = 0.0907) and, thus, the associated confidence level is significantly lower (F = 5.8085, p-value = 0.0047).

In sum, the participants in TFS-NOTES outperform those in WFS-NOTES when they are asked to determine the traditional measures such as assets, liabilities, as well as return on assets. However, the opposite is true when the participants are required to determine operating-related measures such as operating income, operating assets and liabilities, and return on operating assets.

Table 4.6: Analysis of Information Extraction in Experiment 1

Analysis of Information Extraction and Difficulty & Confidence Levels in Experiment 1
Mean Error of Extracted Information and Difficulty & Confidence Levels (Standard Deviation**)**
Panel A: Information Extracted from Income Statement

Information Extraction and Associated Difficulty Level[b]	Experimental Conditions			F-Statistic (P-Value)[a]
	Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	
Error in operating income calculation	**0.5342**	**0.0117**	**0.0394**	**32.3898**
[Error = |OI specified - True OI|/True OI]	(0.4560)	(0.0344)	(0.1061)	(<0.0000) ***
Difficulty level associated with operating income	**3.5517**	**1.7857**	**2.7407**	**4.1992**
calculation	(2.6937)	(1.9314)	(2.1943)	(0.0184) **
Error in investing income calculation	**0.5090**	**0.0306**	**0.1125**	**36.7515**
[Error = |II specified - True II|/True II]	(0.2520)	(0.1350)	(0.2611)	(<0.0000) ***
Difficulty level associated with investing income	**5.0000**	**2.2143**	**3.6667**	**8.1625**
calculation	(2.7756)	(2.2991)	(2.6458)	(0.0006) ***

Panel B: Information Extracted from Balance Sheet

Information Extraction and Associated Difficulty Level[b]	Experimental Conditions			F-Statistic (P-Value)[a]
	Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	
Error in total assets calculation	**0.0000**	**0.0012**	**0.1130**	**27.1717**
[Error = |A specified - True A|/True A]	(0.0000)	(0.0063)	(0.1150)	(<0.0000) ***
Error in total liabilities calculation	**0.0000**	**0.0000**	**0.1744**	**47.2777**
[Error = |L specified - True L|/True L]	(0.0000)	(0.0000)	(0.1355)	(<0.0000) ***
Error in total equity calculation	**0.1273**	**0.0027**	**0.0006**	**2.9767**
[Error = |E specified - True E|/True E]	(0.3814)	(0.0142)	(0.0032)	(0.0566) *
Difficulty level associated with total assets, total	**0.7931**	**1.3750**	**4.3077**	**23.3159**
liabilities, and total equity calculation	(1.3985)	(1.9561)	(2.6041)	(<0.0000) ***
Error in operating assets calculation	**0.4151**	**0.4354**	**0.1680**	**11.7007**
[Error = |OA specified - True OA|/True OA]	(0.2326)	(0.2166)	(0.2344)	(<0.0000) ***
Error in operating liabilities calculation	**1.5032**	**1.0254**	**0.3638**	**2.1637**
[Error = |OL specified - True OL|/True OL]	(3.3336)	(0.8959)	(0.5784)	(0.1215)
Difficulty level associated with operating assets	**4.2857**	**3.8750**	**5.2308**	**1.7164**
and liabilities calculation	(3.1134)	(2.6163)	(2.4382)	(0.1863)

Table 4.6 (Continued)

Panel C: Ratio Calculation

Ratio Calculation and Associated Confidence Level[c]	Experimental Conditions			F-Statistic (P-Value)[a]
	Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	
Error in return on assets calculation	**0.0345**	**0.0217**	**0.2996**	**10.5151**
[Error = |ROA specified - True ROA|/True ROA]	(0.1724)	(0.0739)	(0.3955)	(0.0001) ***
Confidence level associated with ROA calculation	**8.6400**	**8.5600**	**5.9583**	**13.2731**
	(1.5242)	(1.5567)	(2.8663)	(<0.0000) ***
Error in return on operating assets calculation	**1.3799**	**0.9928**	**0.3704**	**9.6506**
[Error = |ROOA specified - True ROOA|/True ROOA]	(1.2618)	(0.5698)	(0.4583)	(0.0002) ***
Confidence level associated with ROOA calculation	**3.3200**	**5.7500**	**5.4167**	**7.2709**
	(2.6413)	(2.3078)	(2.3015)	(0.0014) ***
Error in debt-to-equity ratio calculation	**1.8821**	**0.6369**	**8.3577**	**2.4732**
[Error = |DE specified - True DE|/True DE]	(9.9462)	(3.3518)	(21.7156)	(0.0907) *
Confidence level associated with DE calculation	**7.6296**	**8.3913**	**6.1429**	**5.8085**
	(2.4202)	(1.8766)	(2.2866)	(0.0047) ***

Note [a] *One-tailed test. *** denotes significance level of 1%, ** denotes significance level of 5%, and * denotes significance level of 10%.*

[b] *Difficulty level is solicited in 11-point rating scale (0 [not at all difficult] - 10 [very difficult]).*

[c] *Confidence level is solicited in 11-point rating scale (0 [not at all confident] - 10 [very confident]).*

4.3.3. EPS Forecasts in Experiment 1

The participants are solicited to provide the best estimate of the 2009 (1 year ahead) and the 2010 (2 years ahead) earnings per share of the hypothetical company based on the given financial information. The 2007 EPS (30.02) and 2008 EPS (32.78) are given as part of the financial information in the annual reports. The analysis of EPS forecasts is presented in Table 4.7. Panel A-C shows the detailed analysis related to (1) EPS forecasts and associated confidence level, (2) additional analysis of the EPS forecasts, and (3) trend of EPS forecasts, respectively.

The mean EPS_{YR+1} forecast provided by the participants in TFS-NOTES, MFS-NOTES, and WFS-NOTES conditions are 37.0721, 33.3978, and 33.7337, respectively. In addition, the mean EPS_{YR+2} forecast provided by the participants in TFS-NOTES, MFS-NOTES, and WFS-NOTES conditions are 39.2779, 35.1478, and 35.7741, respectively. Even though the forecasts of participants in TFS-NOTES are at a higher level when compared to those in two other experimental conditions (which is consistent with expectation), the ANOVA analysis show statistically insignificant results ($F = 0.9072$, p-value = 0.4078 for EPS_{YR+1} forecast and $F = 0.8452$, p-value = 0.4333 for EPS_{YR+2} forecast).

The means rate of change of EPS_{YR+1} relative to EPS_{YR0} of participants in TFS-NOTES, MFS-NOTES, and WFS-NOTES are 13.09%, 1.88%, and 2.91%, respectively. The participants in the latter two experimental conditions might notice the decreasing trend in the operating income; however, the differences are not statistically significant (F = 0.9072, p-value = 0.4078). The growth in EPS forecasts is somewhat higher in TFS-NOTES condition; however, the differences are not statistically significant (F = 0.6940, p-value = 0.5026).

Most of the participants (76.83%) from all conditions forecast the increasing trend in future EPSs. The cross tabulation analysis shows that the trend of EPS forecasted is independent from the experimental conditions (χ^2 = 0.2583, p-value = 0.0992). The trend of EPS forecasts is denoted in a coordinate (a,b), given that "a" indicates the trend of EPS_{YR+1} relative to EPS_{YR0} and "b" indicates the trend of EPS_{YR+2} relative to EPS_{YR+1}. The trend of EPS forecasts are grouped into four categories; increasing trend [(+,+), (0,+), (+,0)], decreasing trend [(-,-), (0,-), (-,0)], mixed trend [(+,-), (-,+)], and steady trend [(0,0)].

Overall, the results show that the participants are optimistic as to the future EPS forecasts. They do not seem to take into account the decreasing trend in operating income. The evidence also suggests that the participants provide the EPS estimates based on the current year EPS.

Table 4.7: Analysis of Earnings Per Share Forecasts in Experiment 1

Analysis of Earnings Per Share Forecasts in Experiment 1

Panel A: Mean Earnings Per Share Forecasts and Associated Confidence Level (Standard Deviation)

EPS Forecasts and Associated Confidence Level[b]	Experimental Conditions			F-Statistic (P-Value)[a]
	Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	
Estimation of 1-yr ahead EPS (EPS_{YR+1})	**37.0721**	**33.3978**	**33.7337**	**0.9072**
	(18.5357)	(3.6512)	(3.4775)	(0.4078)
Confidence level associated with 1-yr ahead EPS forecast	**3.9310**	**4.0714**	**3.7308**	**0.1564**
	(2.3894)	(2.3559)	(1.9299)	(0.8555)
Estimation of 2-yr ahead EPS (EPS_{YR+2})	**39.2779**	**35.1478**	**35.7741**	**0.8452**
	(20.4616)	(5.4981)	(5.2335)	(0.4333)
Confidence level associated with 2-yr ahead EPS forecast	**2.7586**	**3.1429**	**3.0741**	**0.2663**
	(1.9938)	(2.3525)	(1.9986)	(0.7669)

Panel B: Mean Additional Analysis on Earnings Per Share Forecasts (Standard Deviation)

EPS Forecasts and Related Measures	Experimental Conditions			F-Statistic (P-Value)[a]
	Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	
Rate of Change of EPS_{YR+1} relative to EPS_{YR0}	**0.1309**	**0.0188**	**0.0291**	**0.9072**
	(0.5655)	(0.1114)	(0.1061)	(0.4078)
Rate of Change of EPS_{YR+2} relative to EPS_{YR+1}	**0.0548**	**0.0529**	**0.0556**	**0.0064**
	(0.0426)	(0.1381)	(0.0612)	(0.9937)
Trend Analysis of EPS_{YR+1} using EPS_{YR-1} as base year	**1.2349**	**1.1125**	**1.1237**	**0.9072**
	(0.6174)	(0.1216)	(0.1158)	(0.4078)
Trend Analysis of EPS_{YR+2} using EPS_{YR-1} as base year	**1.3084**	**1.1708**	**1.1917**	**0.8452**
	(0.6816)	(0.1831)	(0.1743)	(0.4333)
Growth in EPS Forecasts	**0.0566**	**0.0373**	**0.0425**	**0.6940**
	(0.0883)	(0.0472)	(0.0420)	(0.5026)

Panel C: Cross Tabulation Analysis of Trend of Earnings Per Share Forecasts

EPS Trends	Responses[c]	Experimental Conditions			Total
		Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	
Trend of EPS_{YR+1} and EPS_{YR+2} forecasts	Increasing trend [(+,+), (0,+), (+,0)]	21	21	21	**63**
	Decreasing trend [(-,-), (0,-), (-,0)]	4	4	4	**12**
	Mixed trend [(-,+), (+,-)]	3	2	2	**7**
	Steady trend [(0,0)]	*0*	*0*	*0*	***0***
	Total	**28**	**27**	**27**	**82**
	Chi-Square Tests	**Value**	**df**	**p-value (one-sided)[a]**	
	Pearson Chi-Square	0.2583	4	0.4960	
	Likelihood Ratio	0.2504	4	0.4965	
	Linear-by-Linear Association	0.1314	1	0.3585	

Note [a] *One-tailed test. *** denotes significance level of 1%, ** denotes significance level of 5%, and * denotes significance level of 10%.*

[b] *Confidence level is solicited in 11-point rating scale (0 [not at all confident] - 10 [very confident]).*

[c] *In a coordinate (a,b), a describes the trend of EPS_{YR+1} forecast relative to EPS_{YR0} and b describes the trend of EPS_{YR+2} relative to EPS_{YR+1}. The notions +, 0, - denote increase, no change, and decrease, respectively.*

4.3.4. Additional Issues in Experiment 1

Table 4.8 presents an evaluation of financial position in Experiment 1. The participants similarly evaluate the financial position of the hypothetical firm (F = 1.4591, p-value = 0.2385).

Table 4.9 portrays earnings management possibility in Experiment 1. The participants believe that the hypothetical firm has an equal chance (rating of ~5 out of 0-10 rating scale) in engaging in earnings management. The participants across the experimental condition do not rate the earnings management possibility differently (F = 0.8644, p-value = 0.4251). The question on probability that the company cut down necessary costs to maximize short-term profit solicits the participants' perception on the issue.

Table 4.10 is an analysis of Probable Cause of Increase in Cost of Goods Sold in Experiment 1. The evidence shows that 78.31% of participants correctly identified that the increase in labor cost is a probable cause of the increase in cost of goods sold, suggesting that they acquire the by-nature information presented even if it is disclosed in the notes to financial statements.

Table 4.8: Analysis of Financial Position Evaluation in Experiment 1

Analysis of Financial Position Evaluation in Experiment 1
Mean Financial Position Evaluation (Standard Deviation**)**

Evaluation of Financial Position[b]	**Experimental Conditions**			**F-Statistic** (P-Value)[a]
	Cell 1: TFS-NOTES	**Cell 2: MFS-NOTES**	**Cell 3: WFS-NOTES**	
Evaluation of Financial position	**5.5862**	**6.4107**	**5.8148**	**1.4591**
	(2.1300)	(1.6502)	(1.7982)	(0.2385)

Note [a] *One-tailed test. *** denotes significance level of 1%, ** denotes significance level of 5%, and * denotes significance level of 10%.*

[b] *Judgment on financial position evaluation is solicited in 11-point rating scale (0 [weaker] - 10 [stronger]).*

Table 4.9: Analysis of Earnings Management Possibility in Experiment 1

Analysis of Earnings Management Possibility in Experiment 1
Mean Possilbility of Earnings Management (Standard Deviation**)**

Earnings Management Possibility[b]	Experimental Conditions			F-Statistic (P-Value)[a]
	Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	
Probability that the company cut down costs to maximize short-term profit	**5.7586**	**5.5714**	**6.3704**	**0.8644**
	(2.5447)	(2.5156)	(1.9245)	(0.4251)

Note [a] *One-tailed test. *** denotes significance level of 1%, ** denotes significance level of 5%, and * denotes significance level of 10%.*

[b] *Judgment on earnings management possibility is solicited in 11-point rating scale (0 [not likely] - 10 [very*

Table 4.10: Analysis of Probable Cause of Increase in Cost of Goods Sold in Experiment 1

Analysis of Probable Cause of Increases in Cost of Goods Sold in Experiment 1
Cross-Tabulation of Causes and Experimental Condition

Issues	Responses	Experimental Conditions			Total
		Cell 1: TFS-NOTES	Cell 2: MFS-NOTES	Cell 3: WFS-NOTES	
Causes of increases in cost of goods sold	Increase in material cost	2	0	0	**2**
	increase in labor cost	19	27	19	**65**
	Increase in overhead	3	0	3	**6**
	Cannot be identified	4	1	5	**10**
	Total	**28**	**28**	**27**	**83**
	Chi-Square Tests	**Value**	**df**	**p-value (one-sided)[a]**	
	Pearson Chi-Square	11.4923	6	0.0370 **	
	Likelihood Ratio	14.2429	6	0.0135 **	
	Linear-by-Linear Association	0.6681	1	0.2070	

Note [a] **** denotes significance level of 1%, ** denotes significance level of 5%, and * denotes significance level of 10%.*

4.3.5. Understandability and Usefulness of Financial Statements in Experiment 1

The understandability rating and usefulness rating of the financial information presented on the financial statements are presented in Panel A and Panel B of Table 4.11, respectively. The 11-point scale (0-10) is employed when solicited the understandability and usefulness rating from the participants.

The mean understandability rating of balance sheet, income statement, and statement of cash flows are significantly different across experimental conditions (F = 13.2598, p-value = <0.0000 for balance sheet; F = 5.0467, p-value = 0.0086 for income statement; F = 4.5269, p-value = 0.0137 for statement of cash flows). However, the understandability level associated with statement of stockholders'

equity is not significantly different across conditions (F = 1.1277, p-value = 0.3288). Due to higher familiarity associated with traditional format of financial statements (as analyzed in post-experimental questionnaire), the participants higher rate the usefulness of traditional balance sheet (6.6897 for TFS-NOTES and 7.1429 for MFS-NOTES) as compared to the proposed balance sheet (4.7407 for WFS-NOTES). The participants also rate the lower level of understandability with working format income statement (5.7407) as opposed to that of traditional income statement (6.5172).

Consistent with an analysis on the understandability and with subsequent analysis on the familiarity with financial statements of participants, the participants in TFS-NOTES and MFS-NOTES conditions evaluate the overall usefulness rating of the financial statements at a lower level when compared to those in WFS-NOTES condition (F = 8.7329, p-value = 0.0004). The participants in TFS-NOTES and MFS-NOTES conditions identified that the linkage of among financial statements are more clearly evident (F = 9.3821, p-value = 0.0002). The participants in MFS-NOTE condition evaluate that the causes of changes in financial position and cash flows can be identified from the financial information presented in the annual reports (F = 3.4315, p-value = 0.0371).

Interestingly, even though the self-rated understandability and usefulness ratings are lower for the proposed format financial statements, comparing to traditional financial statements, the proposed format financial statements do provide the benefits in operating performance evaluation as evidenced in the analysis of hypotheses 1. The rationale for low ratings of self-rated understandability and usefulness rating might be due to the fact that the participants are less familiar with the proposed financial statements, as reported in the post-experimental analysis. The participants do not realize that they are better off with the proposed, but unfamiliar, financial statements when they evaluate operating performance of the firm.