The Use of Schematic Faces as An Alternative Communication Format In Sending Accounting Information

(An Experimental Study on High School and Accounting Department Students)

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ABSTRACT

This research aims to know the reaction of financial report readers by analyzing their speed and accuracy (efficiency and effectivity) in interpreting the accounting information about company's profitability, liquidity, and leverage sent using schematic faces format presentation compared to conventional formats such as financial ratios and financial data.

Method of analysis used in this research are descriptive statistic and differential t-test using one-way anova, besides utilizing validity and reliability tests, to know the quality of data from implementing the research instruments. The sample contain 251 respondents which consist of 33 students of grade 3th majoring in social science from 1st Senior High School Margahayu Bandung and 218 students from accounting department of Widyatama University Bandung which are taken using *stratified random sampling* by grouping students into first year students (at least had covered three semesters) and final year students (completing a thesys).

The results show that financial report readers in average have a shorter time (efficient) and a smaller deviation (effective) in interpreting accounting information about company's profitability, liquidity, and leverage sent using schematic faces format presentation instead of conventional ones such as financial ratios and financial data.

Key words : *Schematic Face, Accounting Information, Efficiency, Effectiveness*

I. INTRODUCTION

Research Background

As an information system, accounting is a process consisted of three acivities, which are to identifiy, record, and communicate economic events of an organization to users interested in that information. The end-product of those activities is a financial statements (financial reporting), which is generally presented in the numerical list form as a primary mean where accounting information is communicated to the both company's internal and external users in making a decision.

Considering that the general function of accounting is to provide a useful information to the both internal and external parties in making a decision and because of alot of users concern with that financial reporting, so communicating financial statment should probably be effective and efficient.

Readers of financial statement who have educational background and experience in accounting should be assumed to be capable of making analysis and interpretation to accounting information presented in the financial statement. As a contrarary, if untrained, uneducated, and unexperienced financial statement readers are asked to analyse and interpret the same accounting information so different things could be happen.

Accounting information has a very important role in a corporate structure because now aday the gap between owner and management become more wider than before. The owner is more passive and relatively do not have knowledge about corporate performance and condition so he has more dependencies on the information presented in the financial statement.

Recently, the concern of accounting academicy to the ways of improving communication ability of the financial statement and its role in supporting of the decision making is still very low, whereas interested parties to the financial statement are always and continuosly growing. In addition to their different level of understanding, the financial accounting users also have different level of informational needs. However, the type of financial statement produced by accountants is still uniform using numerical table. A part of accountants, there is another responsible party that is identified to be untrained and uneducated. this is what attract the attention of this research.

Libby (1981) states that there are three options for improving the decision-making with: (1) change content or presentation of existing information, (2) provide education to decision makers and (3) replace the decision maker with a model.

Based on these ideas, particularly through the choose to change content or presentation of information to improve decision making, this research interested in conduct through experimental studies for the preparation of accounting information using the schematic faces format presentation.

This research is also intended to re-examine two factors: the readers speed (efficiency) and accuracy (effectiveness) for interpreting the accounting information in financial statements using schematic faces format presentation compared with other conventional presentation formats eg financial ratios format and financial data format by improving past research by Febrianto (2003) and Suryaningrum (2005).

Problem Formulation

The research problem is how the financial statement reader's speed (efficiency) and accuracy (effectiveness) in interpreting the accounting information about company's information for profitability, liquidity, and leverage by using schematic faces format

presentation compared to conventional formats such as financial ratio's format and financial data format.

II. THEORETICAL STUDY

The term communication in English is derived from the latin word *communis* which means the same meaning. Communications according to Laswell quoted from Onong (2007:10) is the process of delivering a message by the communicator to communicant through media that create certain effects

Accounting information according to Harahap (2006:57) is quantitative information about economic entities that are useful to economic decision making in determining the choices between the alternatives of action.

Relevancy and reliability are two things that make accounting information useful in making decisions. Relevance is defined as the information capacity distinguishing in decision making process by its user, whereas reliability is defined as the quality in order to ensure that the information is not wrong inrepresenting important things.

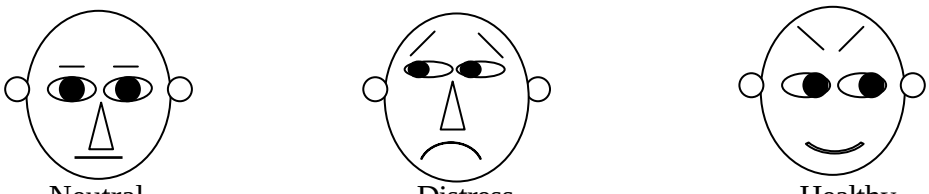
This research did not focus on conventional presentation formats using charts with the number of arguments that support the current accounting theory because terms of its efficient and effectiveness presentation of accounting reports in order to avoid gaps between the users of financial statements in which the financial statements can be read by a person without having knowledge about accounting and also can immediately take a correct decision.

Therefore, with the development of communication, this research used symbols as a means of communication. The used symbol is the schematic faces. This research wanted to explore empirically the usefulness of schematic faces, as has been noted by non-verbal communication expert, Dale G. Leather quoted from Febrianto (2003) and Suryaningrum (2005), about the schematic faces:

> "The face has long been a source of information in interpersonal communication. This is an important tool in communicating meanings. In a few seconds facial expressions can move us to the summit decisions. We examine the face of our colleague and friend for subtle changes and nuances of meaning and their turn, we are reviewing. "

Another reason why the this research choose schematic faces as a replacing media for financial statement, because by looking at the schematic faces, a person can quickly react and respond to a problem and immediately take a decision regarding the condition of a company without having to have special expertise.

Basic form of schematic faces are still very rarely used but had been used by Smith and Taffler (1996) and Febrianto (2003) and Suryaningrum(2005) in his research:



Neutral Distress Healthy

Source: Febrianto, 2003

Efficiency is the amount of time needed by subjects to complete each given case. Effectiveness is the accuracy of the answers which must be derived by determining the number of correct answers by the subjects based on the standards that have been prepared.

Previous Research

Chernoff (1971) began the design of schematic faces which are made vary in size and shape depending on the amount charged on a variable. The use of Chernoff ‘s schematic faces has been conducted, among others,by Moriarty (1979); Smith and Taffler (1984); Stock and Watson (1984), Smith et al. (1993); Smith and Taffler (1996) and Rafdinal (1999).

Moriarty (1979) conducted research to describe the company's financial status using face presentation format. The variables were studied using data from financial reporting, and the study tested the use of a multi-dimensional graphs to illustrate the company's financial status. His research aims to test the speed and accuracy of the respondents in classifying the company into a "failed" or "not failed". The results suggested that respondents can easily detect changes in the faces that are presented, even faster and more accurate than using accounting numbers or ratios which are derived from those statements.

Smith and Taffler (1984) conducted research in the UK environment. The study illustrated how the performance of inter-temporal comparisons can be used with the use of schematic faces and can help to distinguish between companies that were "failed" and that were "not failed". They stated that schematic faces may provide a clearer indication about the financial status as compared to financial ratios.

Stock and Watson (1984) in their research also showed the usefulness of the face in describing the company's financial status. However, their findings further illustrated the complexity of tasks, not on data presentation method. While the research conducted by Smith and Taffler (1984) did not indicate whether accounting data can be analyzed more quickly or more effectively using face format or using conventional methods.

Smith and Taffler (1996) showed that schematic faces are processed faster and more accurate than traditional methods of financial information presentation, and does not occur accuracy off the mark.

Rafdinal (1999) also used graphs to illustrate the company's financial status and the respondents were divided into 4x4 treatment groups, based on the four complexity of the task (accumulation, recognition, estimation, projection) and four forms of presentation (tables, bar graphs, line graphs, and circle graphs). The results showed that there was a mean difference between observed groups or at least there was a different group. If it was viewed per group task complexity, for accumulation task complexity (accumulation), the results showed that all forms of presentation showed the accuracy and effectiveness that are not significantly different. To estimate the complexity of the task, was other presentation forms. Projection task complexity, showed that the bar graph was more effective than other forms of presentation, although not significantly different from that of other forms of presentation. Projection task complexity, showing that the bar graph is more effective than other forms of presenting, although not significantly different.

Febrianto (2003), aimed to explore empirically the usefulness of schematic faces as a communication tool compared with conventional presentation format, with the focus on the relative usefulness of schematic faces, financial ratios and accounting reports as the format of information for decision making. Samples were taken from three groups

and were divided according to the same division conducted by Smith and Taffler (1996): students, academics and practitioners. The sample consisted of 110 samples with the composition of 33 for students, 33 people to academics, and the remainder for practitioners.

Suryaningrum (2005) improved research conducted by Febrianto (2003) using questionnaires as research instruments where the first part was the format of financial statements (balance sheet) showing that income account should be in the income statement, so the researchers changed the form of questionnaires in the first part with financial data so it was more easily understood by respondents. Samples were taken from three groups divided according to the same division that had been conducted by Smith and Taffler (1996) such as students, academics and practitioners. The sample consisted of 105 respondents which were taken by the division of 35 entry-level students, 35 final year students, and the remainder for 2004 accounting graduate practitioners and scholars who were already working.

This research was motivated and was a replication of research conducted by Febrianto (2003) and Suryaningrum (2005) with the purpose of examining the consistency of the results but there are differences in this research:

1. The unit of analysis has different respondents that is high school students majoring in social studies, first year level students and final year level students majoring in accounting.
2. The sample of respondents in the study was duplicated to more than double from the previous research with a sample of 251 people
3. All respondents had no experiences in the managerial practices of work / company, but they were considered to have a different level of understanding in accounting knowledge. This research believes this is to be more ideal conditions to produce a more precise conclusions.

All of the cases in this research also used the same case used by Suryaningrum (2005) and Febrianto (2003) which are derived from financial statements of 20 manufacturing companies in the U.S. ended December 31, 1999. Comparison between the companies that were failed and not failed is 6:14. But in this research only used the case of 10 manufacturing companies adopted from previous research. Comparisons between companies that were failed and not failed is 4:6. In order to facilitate the respondents in filling the research instruments easier so that data requirements can be realized. Choices in this research were between whether the company condition was healthy or unhealthy. The reason this research did not use neutral conditions was in order to remove the doubtfull impression to the readers of financial reports (respondent) in determining whether the company was in a healthy condition or was in an unhealthy condition

Based on the above the research judgments propose research questions as follows:

1. Does the use of schematic faces format be processed significantly faster than the format of financial ratio's format or financial data format?
2. Are decisions made based on the use of schematic faces format more accurate than the decisions made with the format of financial ratio's or financial data?

III. RESEARCH METHODOLOGY

This research empirically explored about the reactions of financial statements reason for analyzing and interpreting three variables such as profitability, liquidity, and leverage through the use of schematic faces format compared with conventional

presentation formats such as financial ratios format and financial data format. Respondents were asked to determine the healthy condition or unhealthy of a company from those three variables.

Measurement of variables in this study uses the Likert- interval by eliminating neutral alternatives. The reasons to not include neutral answers are:

1. the existence of a neutral response can have double meanings, the bias is defined not decided or give answers even hesitate
2. The availability of a neutral answer raises a tendency to answer neutral, especially for those who has doubt about the tendency toward an answer, the direction healthy or unhealthy.

Data of this research using primary data in which samples were taken with a stratified random sampling of 251 respondents who comprised of 33 third grade students majoring social science at Margahayu Senior High School Bandung-Indonesia and 218 students of Widyatama University Bandung-Indonesia majoring Accounting grouping students with entry-level (minimum is take three semesters) and the final level (is doing his thesis).

The sampling means according to Sugiyono (2007:70) is as follows:

$$N = Na + Nb + Nc$$

Description:
Na = Σ High School Students
Nb = Σ Students beginning level
Nc = Σ Student final level

$$ni = \frac{Nj}{} \times nx$$

Operationalization of the variables in the study are indicated by the table below:

Variable	Indicator	Variable Concept	Questionnaire Code	Scales
1. Effectiveness a. Financial Data - Profitability - Liquidity - Leverage	Value of financial data compared with an industry average (The healthier condition: If the value of profitability and liquidity ratios higher than the industry average. Unhealhtier condition: if the value of leverage ratio lower than the industry average.	Fallacy respondent in classifying company financial conditions	Part 2	Ordinal
b. Financial Ratios - Profitability - Liquidity - Leverage	Value of financial ratios compare than the industry average. (The healthier company : If the value of the ratio of profitability and liquidity ratios higher than the industry average, (Unhealtier compay : if the value of leverage ratio	Fallacy respondent in classifying company financial conditions	Part 3	Ordinal

	lower than the industry average)			
c. Schematic faces - Profitability - Liquidity - Leverage	shape of schematic face (The company condition with good profitability is indicated by a ball big eyes, good liquidity is indicated by the shape of the mouth that leads upwards, good leverage is indicated by shape of eyebrow shown by the long ascending)	Fallacy respondent in classifying company financial conditions	Part 4	Ordinal
2 .Efficiency	Difference Time to answer questionnaires	Difference the end time minus the initial time	Part 3	Ordinal

Research method with direct survey using personally administrated questionnaire method to distributed questionnaires to be filled. Distribution and filling out the questionnaire for respondents from high school students conducted during accounting class hours and for the university students is performed at hours after financial accounting class assistances. With direct surveys, researchers can expand the geographical coverage and can provide the opportunity to respondents to think before answering.

Prior to the submission, each respondent is explained content and instruction in the questionnaires. In the instructions, the researchers emphasize the schematic face picture by giving examples of schematic facial image company that has a healthy and unhealthy conditions for profitability, liquidity, and leverage random with a good performance comparison (not failed) with a bad (failed) divided into 6:4. companies were not selected randomly because if it is so, the researcher will not get the financial condition as expected. The problem of division is not notified to the subject. These financial statements were obtained from the web-site www.annualreportservice.com. Form of questionnaires that were distributed consisting of five parts:

1. Section IA contains a list of questions about the demographics of respondents consisted of gender, last education, jobs, high school science, frequency of reading financial statements, and frequency study accounting, scientific relationship of respondents with financial reporting, scientific relationship of respondents with financial statement analysis.
2. The IB section contains the respondent knowledge about the formula primarily about how to associate the formula with the actual ratio and also how to identify whether a company with good conditions have higher financial ratio or lower than the industry average.
3. Part II contains the financial data. The numbers of such financial statements are rounded into the nearest million. Each of the financial data is given a column for classify whether company have good performance or not.
4. Part III contains the financial ratios (profitability, liquidity and leverage) derived from the financial statements. Respondents were asked to classify whether the company is performing good or not.
5. Part IV is a schematic faces. This schematic faces format is similar with that used by Chernoff (1971) and Smith and Taffler (1996). The previous financial ratio is also derived from financial statements and respondents were asked to classify whether the company has performed well or not. From the third part to four, each consists of financial data, financial ratios, and schematic faces, with a randomized

sequence. In the first part of each given case there is a column to record the time when the respondent began to answer the questions, and at the end of each of the cases there is given a same column to record the time when the respondent finished answering the questions. Depictions of the face that is used consists of four variables: mouth, eyes, eyebrows, and nose. The ear is made not to change for all conditions because the ear has no effect on any condition. The conditions of a company:

1. Companies that healthy, profitable, and secure depicted with facial smile and eyes wide.
2. companies which experiencing financial stress is described by a face depressed, the mouth that leads downwards, and the eyes are small / narrow.

Following the recommendations given by Febrianto (2003) and Smith et al (1999):

1. Liquidity is indicated by the shape of the mouth, and long.
2. Profitability is represented by the size of the eye and eyeball position.
3. Financial risk (in this case is the financial leverage the company) shown by the high angle of eyebrows and the nose.

Smith et al. (1999) conducted a randomization between financial ratios and the face that representing financial ratios and get that assignment is one of the two most optimal assignment although they stated that they did not deem it as necessary to determine the actual assignment because most decisions are made separately from reference.

Following advice from Febrianto (2003) to exclude working capital to the efficiency of experimental designs. Three variables (liquidity, profitability and leverage) were randomized order to six combinations for the three groups of subjects above: F/S-Ratio-Face; F/S-Face-Ratio; and beyond. Each combination is divided equally to each group of respondents. This followed the randomization procedures used by Smith and Taffler (1996) and Rafdinal (1999) to obtain the sequence of presenting the impact on accuracy and speed of the grouping. Respondents were not informed of the existence of differences in the processing sequence.

1) Methods of data analysis used in this study are three, which are: descriptive statistics to provide an explanation for interpreting data analysis and discussion.
2) The coefficient of Pearson product moment correlation to test the validity of the questionnaire and using the Cronbach alpha to test reliability.
3) t test for analyzing the answers of respondents, the analysis methods used are the mean and One Way Anova analysis.

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IV. DATA ANALYSIS AND DISCUSSION

4.1. Descriptive statistics

Based on the sex of respondents composition, it could be showed that male respondents were 99 persons (39.4%) and 152 were female respondents (60.6%). Graduated high school were 218 people (86.9%) and junior high school were 33 people (13.1%). Most respondents, or 218 persons (86.9%) had a job as a student and the remaining 33 people as a high school student. From the high school subject's point of view , 85 people (33.9%) come from science, and social studies majors is larger, ie 166 persons (66.1%). Judging from the study frequency of each respondent, the majority of

respondents, amounting to 156 people (62.2%) admitted somewhat routine study, 67 men (26.7%) claimed to regularly study and 28 men (11.2%) admitted carelessly in learning. It is known that the frequency of respondents in reading financial reports as many as 97 people (38.6%) admitted financial often read the report, 142 people (56.6%) claimed to rarely read a financial statement, and 12 people (4.8%) never read the report finance

1.1.1 Relationships Between Background Knowledge Respondents with Financial Statements

The results showed 42 respondents (16.7%) answered very closely consist of 31 university students and 11 high school students; 130 respondents (51.8%) answered closely that consist of 113 university students and 17 high school students; and 79 respondents (33.9%) answered ordinary that consists of 74 university students and 5 high school students

4.1.2. Relationships Between Background Sciences Respondents with Financial Statement Analysis

The results showed 45 respondents (18%) answered very closely consist of 29 university students and 16 high school students; 116 respondents (46.2%) answered tightly consist of 104 university students and 15 high school students, and 90 respondents (35.8%) answered ordinary that consist of 85 university students and 5 people hgh school students.

4.1.3 Respondent Knowledge About Formulas

This research use the method to match the formula have been used to determine the ability of respondents in identifying correct formula for profitability, liquidity, and leverage. The result showed 237 respondents (94.4%) correctly answered all three formulas consist of 206 university students and 31 people high school students. While only 14 respondents just answer 1st formula (profitability) consist of 12 university students and 2 high school students. There were no respondents who answered all right and all wrong.

4.1.4. Respondent's logic about their understandbility on Profitability, Liquidity and Leverage.

Questionairres are presented to determined the ability of respondents in using logic for profitability, liquidity and leverage, That was conducted an experiment to determined healthy companies from the industry average conditions if:

1. Profitability ratios higher or lower than the industry average
2. Liquidity ratio higher or lower than the industry average
3. Leverage ratio higher or lower than the industry average

The results showed 213 respondents (84.9%) correctly answered all three logic consist of 195 university students and 18 high school students. 26 respondents (10.4%) answered correctly two of three logic that consists of 15 university students and 11 high school students. The remaining only 12 respondents (4.7%) correctly answered one of three logic that consists of 8 university students and 4 high school students

4.2. Validity And Reliability Tests

The critical r value for the total sample population of 251 people and 908 people is 0.0653. If r value greater than the critical r value, it can be concluded that all items

were valid questions, Based on the calculation details can be seen in table 4.1 (in appendix).

Similarly, to test the reliability of questionnaires based on Table 4.2 (in appendix) it can be concluded that all the attributes of the research is reliable. This is because the Cronbach Alpha values of each attribute greater than the critical Cronbach Alpha value that concluded reliable 0.0653

4.3. Hypothesis Tests

Statistical hypotheses used in this study are as follows:

- **Hypothesis of Efficiency Schematic Faces Format**

Ho1: There was no significant time differences in analyzing the financial statements using schematic face format with the conventional format.

Ha1: There are significant time differences in in analyzing financial statements using the schematic faces with conventional format.

- **Hypothesis Effectiveness Schematic Faces**

Profitability (P), Liquidity (L) and Leverage (Le):

HoP1/HoL1/HoLe1: There was no significant differences accuracy in detemine error type 1 (healthy in fact not healthy) Profitability (P) / Liquidity (L) / Leverage (Le) by using the schematic face format to the conventional presentation format.

HaP1/HaL1/HaLe1: There are significant differences accuracy in determine error type 1 (healthy in fact not healthy) profitability (P) / Liquidity (L) / Leverage (Le) by using the schematic face format to the conventional presentation format.

HoP2/HoL2/HoLe2: There was no significant differences accuracy in determine error type 2 (not healhty in fact healthy) profitability (P) / Liquidity (L) / Leverage (Le) by using the schematic face format to conventional presentation format.

HaP2/HaL2/HaLe2: There are significant differences accuracy in determine error type 2 (not healhy infact healthy) profitability (P) / Liquidity (L) / Leverage (Le) by using of schematic faces format to conventional presentation format.

4.3.1. Hypothesis Efficiency of Use of Schematic Faces Tests

Significance test for measuring the speed (efficiency) and accuracy (effectiveness) using schematic face format described as follows:

1. If probability greater than 0.05; there are sufficient evidence to accept Ho, it means there is no significant time differences in analyzing the financial statements using schematic face format with the conventional format to be tested at a significance level of 95%.
2. If probability lower 0.05; there are no sufficient evidence to accept Ho, it means that there are significant time differences in analyzing the financial statements using schematic face format with the conventional format to be tested at a significance level of 95%.

In testing the speed (efficiency) is done by calculating required average time of respondents to analyzing and interpreting of financial statements that are presented in the questionnaire by using schematic face format, financial ratio’s and financial data.

Based on table 4.3 (in appendix), required average time to analyzing and interpreting of financial statements by using schematic face format is (0.0197) minutes or rounded over two minutes, it is lower than required average time by using financial ratios format (0.0955) minutes or as long as 10 minutes and also it is lower than required average time by using financial data formats (0.2091) minutes or rounded off for 20 minutes.

This means financial statements readers when using schematic face format required the shortest time (efficiency) to analyzing company's financial condition that compared with conventional presentation formats (financial ratio's format and financial data formats).

Based on Table 4.4 (in appendix); use of schematic face format than the format of financial ratios and financial data format has difference average < 0.05, which means overall Ho was rejected and we can conclude that : There are significant time differences in in analyzing financial statements using the schematic faces formatcompared with conventional presentation formats.

The results of this research support previous research conducted by Suryaningrum (2005) and Febrianto (2003) because of two previous research had similar results : there are significant time differences and the use schematic faces format more quicker time for processing and classifying of financial statements than using financial ratio's format and financial data format.

4.3.2. Hypothesis Effectiveness of Use of Schematic Faces Tests

Basic deduction of respondents regarding average error of interpreting accounting information to the classifying of profitability / liquidity / leverage the company : if average error classifying for profitability / liquidity / leverage schematic face format lower than average classifying error conventional presentation format (financial ratio's format and financial data formats). It can be concluded the use schematic faces format more effective than the conventional presentation format.

4.3.2.1. Profitability

Table 4.5 shows (in appendix); the effectiveness the use of schematic faces format compared with financial ratio's format and financial data format for interpreting of accounting information about company's profitability. The results shows : it is in significant accuracy differences in determined error type 1 (healthy infact not healthy) and error type 2 (not healthy infact healthy) by using of the schematic face format than the financial format ratio and financial data at α 5%, where obtained p-value is - 0.0680 and -0.0922 respectively, and (with respect to financial ratio's format) and -0.0880, and -0.1351 (with respect to financial data format).

The results differ with research that conducted by Suryaningrum (2005) there was no significant differences in the effectiveness of the use of schematic face format compared to financial ratio's format for error type 1 and type 2 for profitability while for the effectiveness of the use of schematic face format compared with financial data format for error type 1 and type 2 showed significant differences.

Meanwhile, when this research comparing the use of financial ratios format with financial data format for both error type 1 and error type 2 were not any significant differences, because p-value < 0.05 for 0.556 to 0.202 for type 1 and type 2 , which means Ho is accepted and Ha is rejected. The results of this

research turned out to support the results of previous research by Suryaningrum (2005) and Febrianto (2003)

Table 4.6 shows (in appendix); the averages classifying error type 1 and error type 2 in profitability for schematic face format are 16 respondents (6,55%) for error type 1 and 37 respondent (14,96%) for error type 2. This result is lower than average error classifying error type 1 for profitability on financial ratio's format which is 33 respondents(13,36%) and 60 respondent (24,18%) for error type 2. This research also shows average classifying error type 1 for profitability on financial data format is 38 respondent (15,35%) and 71 respondent(28,47%) for error type 2

These results show respondent interpretation of accounting information in determining the condition of the company's profitability with the use of schematic face format has fewer errors (more effective) than conventional presentation format (financial ratio's format and financial data format).

4.3.2.2. Liquidity

Table 4.7 shows (the appendix), the effectiveness the use of schematic faces format compared with financial ratio's format and financial data format for interpreting of accounting information about company's liquidity. The result shows significant differences both on error type 1 and type 2 at α 5%, where p-value obtained is -0.0779 and -0.0112 (with respect to the format of financial ratio's format) and -0.1114 and -0.1462 (with respect to financial data formats). The results of this study support previous research by Suryaningrum (2005) that there are significant differences in the effectiveness of the liquidity interpretation of accounting information through the use of schematic face format compare with the financial ratio format and financial data format for error type 1 or error type 2

In addition this research compared the use of financial ratio format and financial data format for both error type 1 and error type 2 are that no significant differences, because p-value > 0.05 which are 0,254 to 0,311 for error type 1 and error type 2, which means Ho is accepted and Ha is rejected.

Table 4.8 shows (in appendix), the average classifying company's liquidity for error type 1 for by using schematic faces format is 16 respodents (6,5%) and 32 respondent (12,83%) for error type 2. This result are lower than average classifying company's liquidity by using financial ratio format error type 1 that is 35 respondent (14,29%) and 60 respondents (24%) for error types 2 and also average classifying company's liquidity using financial data format for error type 1 to that is 44 respondents (17,6%) and 68 respondents (27,45%) for error type 2.

These results show the respondents interpretation of accounting information about the company's liquidity through the use of schematic face format has fewer errors (more effective) in classifying the company's liquidity conditions compared with conventional presentation formats (financial ratios format and financial data format).

4.3.2.3. Leverage

Table 4.9 shows (in appendix), the effectiveness the use of schematic face format compared with financial ratio format and financial data format for respondents interpretation of accounting information about company's

leverage. The result show a significant differences in both error type 1 and type 2 at α = 5%, where p-value obtained is - 0.0492 and -0.1241 (with respect of financial ratios format) and -0.0745 and -0.1904 (with respect to financial data format).

The results of this study support previous research by Suryaningrum (2005) that there are significant differences in effectiveness the use of schematic face format for interpretation accounting information of leverage than the financial ratios format and financial data format for error type 1 or error type 2

In addition this research also compared the use of financial ratios format with financial data format for the interpretation of accounting information about the company's leverage. The result show a significant differences for error type 2, because p-value <0.05 is -0.0663, while for error type 1 the result show no significant differences. This results support previous research results from Suryaningrum (2005) and Febrianto (2003), although there are inconsistent results of previous research .

Table 4.10 shows (in the appendix), the average classifying of companies leverage for error type 1 by the use of schematic face format is (16 respondents (6,6%) and 35 respondents (14,2%) for error type 2. This result is more lower than average classifying company leverage through financial ratios format for error type 1 is 28 respondents (11,6%) and 66 respondents (26,6%) for error type 2 and also lower than financial data format for error type 1 were 35 repsondents (14,1%) and 83 respondents (33,3%) for error type 2.

These results indicate fallacy respondents to interpreting of accounting information about company leverage through the use of schematic face format more lower (more effective) than respondent error to classifying company leverage with other presentation formats (financial ratios format and financial data format).

V. CONCLUSION AND RECOMMENDATION

5.1. Conclusion

1. Test of differences the processing time to classifying company condition found that there are significant time differences in interpreting company condition by using schematic face format compare than financial ratios format and financial data format. Likewise, it was found that required time the use of schematic face format to classify the company's financial condition more shorter (efficient) than other presentation formats. It means the use of schematic format more efficient compare with financial data format and financial ratio format.

   This research concluded that the use of schematic faces resulted in the disclosure of accounting information of the respondents (the reader of financial statements) to be more efficient / faster in determining the condition of the company in accordance with existing conditions if compared to the delivery of accounting information in the format of financial ratios and financial data format.
2. Test of differences respondents errors to classifying company's profitability both error type 1 (healthy infact not healthy) and error type 2 (not healthy infact healthy) by using a format of schematic faces compared with other conventional presentation format, found that there are significant differences in classifying error type 1 and type 2 profitability by the use schematic face format to the format of financial ratios and financial data format. This result can be proved that the use of schematic face

format in the delivery of accounting information helps the respondent (the reader of financial statements) may be more appropriate (effective) to determine the error type 1 and type 2 on the profitability of the company compared the delivery of accounting information using the format of financial ratios and financial data format. Likewise, the result with schematic faces in the delivery of accounting information in classifying error type 1 and error type 2 about the company's profitability has a smaller number of respondents (slightly) than the company's profitability with conventional presentation formats.

3. Effectiveness of differences test in classifying respondents in both errors the company's liquidity for error type 1 (healthy infact not healthy) and error type 2 (unhealthy infact healthy) by using the schematic faces format compare with other conventional presentation format, found that there are significant differences in classifying errors type 1 and error type 2 to the format of financial ratios and financial data format. This result can be proved that the use of schematic face format in the delivery of accounting information to help the respondent (the reader of financial statements) may be more appropriate (effective) to determine the error type 1 and type 2 on the liquidity of the company compared the delivery of accounting information using the format of financial ratios and financial data format. Likewise proved that by using schematic face format in the delivery of accounting information about the company's liquidity has a smaller number of respondents (slightly) the wrong in classifying error type 1 (healthy infact not healthy) and error type 2 (not healthy infact healthy) compare to the company's liquidity with conventional presentation formats.
4. Test differences in the effectiveness of the respondents in classifying errors both companies leverage for error type 1 (healthy but not healthy) and type 2 (when healthy unhealthy) by using the format of schematic faces compared with other conventional presentation format, found that there are significant differences in classifying errors type 1 and type 2 firms leverage the schematic face format to the format of financial ratios and financial data format. This result can be proved that the use of schematic face format in the delivery of accounting information to help the respondent (the reader of financial statements) may be appropriate (effective) to determine the error type 1 and type 2 regarding leverage than the delivery of corporate accounting information using the format of financial ratios and financial data format. Likewise proved that by using schematic face format in the delivery of accounting information about a company leverage a smaller number of respondents (slightly) the wrong type of error in classifying a (healthy but not healthy) and type 2 (not healthy but healthy) compared to the company leverage with other presentation formats.

   Researchers draw conclusions from the results of the study no 2, 3, and 4 that by using schematic face format, the accounting information submitted may be more effective when it is compared with the accounting information presented in the format of financial ratios and financial data format. Therefore, this study supports the results of research conducted by Febrianto (2003) and Suryaningrum (2005), although not entirely consistent with both these previous studies.

5.2. Limitations

Researcher conducted has several weaknesses which limit its perfection. Therefore need to be considered for future research.

1. Limitations in the questionnaire, limited only students of third grade social studies Senior High School and students Faculty of Economics of Accounting Studies Program Widyatama University Bandung
2. Researchers did not develop a questionnaire from the previous study Febrianto (2003) and Suryanigrum (2005)) and does not alter existing variables which consists of three variables: profitability, liquidity and leverage
3. Researchers use only 10 cases of companies in order to facilitate filling out the questionnaire respondents.
4. Questionnaire submitted to the respondent through most of the contact person who is assisted by assistant lecturer at the University Widyatama when distributing questionnaires to students and researchers only convey instructions and previous instructions. This is certainly less assure that assistant lecturers and respondents have sufficient understanding about what they should do.
5. All of the respondents do not have work experience in corporate and managerial practices

5.3. Recommendations

Future research should consider the limitations study is owned by among others:

1. To add other variables besides the profitability, liquidity and leverage. It is necessary to strengthen the research that schematic faces may be used as an alternative to financial statement presentation.
2. Schematic faces presenting more real face format and not monotonous, for example by using facial expression photographs artist or sports star / famous person.
3. Expand and change the composition and number of respondents, for example by comparing the efficiency and effectiveness of accounting information between students, practitioners (accountants), company management and the general public. This could create more ideal further research and better in schematic faces resulted in the disclosure of the use of accounting information.

REFERENCES

Books:

Chernoff, H. 1971. The Use of Faces to Represent Points in Dimensional Space Graphically. Technical Report No. 71. Department of Statistics, Stanford University.

Chernoff, H. 1978. Graphic Representations as a Discipline, in Wang, PCC. (Ed), Graphical Representation of Multivariate Data. Academic Press, New York, NY.

De Santics, G. and S.L Javempaa. 1989. Graphical Presentation of Accounting Data for Financial Forecasting: An Experimental Investigation. Accounting, Organizations and Society, Vol. 14 No.5 / 6, pp.509-525

Haig, N.G. 1984. The Effect of Feature Perception Displacement on Face Recognition, Prentice-Hall, Englewood Cliffs, NJ.vol.13.

Harahap. Sofyan Syafri, 2006. Critical Analysis of Financial Statements. PT Raja Grafindo Persada.Jakarta

Indonesia Institute of Accountants, 2007, the Financial Accounting Standards, 2007, the Accounting Standards of Indonesia, Jakarta, Salemba Empat.

Libby, R. 1981. Accounting and Human Information Processing. Prentice-Hall,

Englewood Cliffs, NJ
Morton, J. and M. Johnson. 1989. Four Ways for Faces to be Special, in Young, A. W and HD Ellis (editor). Handbook of Research on Face Processing. Elsevier, North-Holland.
Onong, 2007. Theory of Communication. PT. Rosada.Bandung.
Prastowo, Dwi. 2007. Financial Statement Analysis, 4th edition, AMP YKPN, Yogyakarta.
Rahmat Jalaludin, 2006. Psychology of Communication, Revised Edition, PT Remaja Rosdakarya, Bandung.
Ridwan and Inge, 2003. Financial Management, PT Astra. Bandung.
Reed, S.K. 1972. Pattern Recognition and Categories. Cognitive Psychology, vol 13
Smith, M. and R.J. Taffler. 1984. Improving the Communication Function of Published Accuonting Statement. Accounting and Business Research, no.54, Spring.
Smith, M. and R.J Taffler, and L. While, 1993. Cartoon Graphics in the Communication of Accounting Information, paper presented to the British Accounting Association, University of Stratholyde, April, www.ssm.com
Sugiyono, 2007. Statistics for Research, PT. Alfabeta, Bandung.
Triton, 2006. SPSS 13 Applied., CV Andi, Yogyakarta.
Wilkinson, L. 1982. an Experimental Evaluation of Multivariate Graphical Point Representationt. Human Factor in Computer Systems: Proceedings, Gaithersburg, MD.

Journals:

Febrianto, Grace, 2003. Efficiency and Effectiveness of Using Accounting Information Communication Cartoon Drawing. SNA VI, Surabaya.
Moriarty, S. 1979. Communicating Financial Information Through Multidimensional Graphics. Journal of Accounting Research, Vol. 17, April
Rafdinal, 1999. Forms Reports and Decision Making Task Using Financial Information: An Experimental Investigation, Thesis S2, UGM.
Smith, E.E.dan G.D. Nielsen. 1970. Representation and Retrieval Processes in STM Recognition and Recall of Faces. Journal of Experimental Psychology, vol 85 no. 3.
Smith, M. and R.J Taffler. 1996. Improving the Communication of Accounting Information Through Cartoon Graphics. Accounting, Auditing, and Accountability Journal, vol.9 No. 2.
Stock, D, and C.J. Watson, 1984, Human Judgement Accuracy, Multidimensional Graphics and Human versus Models, Journal of Accounting Research, vol.22. No. 1, Spring.
Suryaningrum, Sri; Sucahyo Heriningsih and, Lucia Yushanti. 2005. Efficiency and Effectiveness Analysis of Accounting Information Using Cartoon Drawing. SNA VIII - Solo.
Yin, R.K. 1969. Looking at Upside-Down Faces, Journal of Experimental Psychology, vol.8.

APPENDIX

Table 4.1 : Validity Test

Item	*Corrected Item Total Correlation*	Critical R value	Description

Profitability Financial Data	0.4782 - 0.8158	0.0653	Valid
Liquidity Financial Data	0.4211 - 0.6782	0.0653	Valid
Leverage Financial Data	0.5177 - 0.8201	0.0653	Valid
Profitability Ratio	0.5555 - 0.6495	0.0653	Valid
Liquidity Ratio	0.5036 - 0.7995	0.0653	Valid
Leverage Ratio	0.6498 - 0.8927	0.0653	Valid
Profitability Schematic Face	0.4196 - 0.7522	0.0653	Valid
Liquidity Schematic Face	0.8070 - 0.9863	0.0653	Valid
Leverage Schematic Face	0.8654 - 0.9631	0.0653	Valid

Table 4.2 : Reliability Test

Item	*Cronbach Alpha*	Critical R value	Description
Profitability Financial Data	0.9017	0.0653	Reliable
Liquidity Financial Data	0.8301	0.0653	Reliable
Leverage Financial Data	0.9188	0.0653	Reliable
Profitability Ratio	0.8719	0.0653	Reliable
Liquidity Ratio	0.8906	0.0653	Reliable
Leverage Ratio	0.9490	0.0653	Reliable
Profitability Schematic Face	0.9072	0.0653	Reliable
Liquidity Schematic Face	0.9879	0.0653	Reliable
Leverage Schematic Face	0.9827	0.0653	Reliable

Table 4.3 : Mean of Classification Time

Item	Mean (in minutes)	Minimum (in minutes)	Maximum (in minutes)
Schematic Face Format	.0197	.01	.03
Financial Ratio Format	.0955	.05	.19
Financial Data Format	.2091	.10	.25

Table 4.4 : *T-test (p-value)* Differentiation of Processing Time

Description	Processing Time	
	Financial Ratio Format	Financial Data Format
Schematic Face Format	**-0.0758*** (0.000)	**-0.1894*** (0.000)
Financial Ratio Format		**-0.1136*** (0.000)

Table 4.5 : *T-test (p-value)* Profitability Classification Error

Description		Financial Ratio Format		Financial Data Format	
		Type 1	Type 2	Type 1	Type 2
Schematic Face Format	**Type 1**	**-0.0680*** (0.001)		**-0.0880*** (0.000)	
	Type 2		**-0.0922*** (0.001)		**-0.1351*** (0.000)
Financial Ratio Format	**Type1**			-.0.0200 (0.556)	
	Type 2				-0.428 (0.202)

Table 4.6 : *Mean* of Profitability Classification Error

Error Type 1 (healthy but unhealthy)			Error Type 2 (unhealthy but healthy)		
Schematic Face	**Financial Ratio**	**Financial Data**	**Schematic Face**	**Financial Ratio**	**Financial Data**

Format	Format	Format	Format	Format	Format
0.0655	0.1336	0.1535	0.1496	0.2418	0.2847
16	33	38	37	60	71

Table 4.7 : *T-test (p-value) Liquidity Classification Error*

Description		Financial Ratio Format		Financial Data Format	
		Type 1	Type 2	Type 1	Type 2
Schematic Face Format	Type 1	**-0.0779*** (0.001)		**-0.1114*** (0.000)	
	Type 2		**-0.1120*** (0.000)		**-0.1462*** (0.000)
Financial Ratio Format	Type1			-.0.0334 (0.254)	
	Type 2				-0.0343 (0.311)

Table 4.8 : Mean of Liquidity Classification Error

Error type 1 (healthy but unhealthy)			Error Type 2 (unhealthy but healthy)		
Schematic Face Format	Financial Ratio Format	Financial Data Format	Schematic Face Format	Financial Ratio Format	Financial Data Format
0.0650	0.1429	0.1764	0.1283	0.2402	0.2745
16	35	44	32	60	68

Table 4.9 *T-test (p-value)* Leverage Classification Error

Description		Financial Ratio Format		Financial Data Format	
		Type 1	Type 2	Type 1	Type 2
Schematic Face Format	Tipe 1	**-0.0492*** (0.020)		**-0.0745*** (0.000)	
	Tipe 2		**-0.1241*** (0.000)		**-0.1904*** (0.000)
Financial Ratio Format	Tipe1			-.0.0253 (0.351)	
	Tipe 2				**-0.0663*** (0.028)

Table 4.10 : *Mean* Leverage Classification Error

Error type 1 (healthy but unhealthy)			Error Type 2 (unhealthy but healthy)		
Schematic Face Format	Financial Ratio Format	Financial Data Format	Schematic Face Format	Financial Ratio Format	Financial Data Format
0.0666	0.1158	0.1411	0.1424	0.2665	0.3329
16	28	35	35	66	83

CURRICULUM VITAE

The Use of Schematic Faces as An Alternative Communication Formats In Sending Accounting Information

(An Experimental Study on High School and Accounting Department Students)

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