Journal of Economics, Business, and Accountancy Ventura Vol. 20, No. 2, August – November 2017, pages 213 – 226

Belief revision towards long-series information

Tri Ika Ayuananda[1], Intiyas Utami[2]

[1, 2] *University of Satya Wacana, Diponegoro Street No. 52-60, Salatiga, 50711, Middle Java, Indonesia*

A R T I C L E I N F O

Article history:
Received 24 November 2016
Revised 7 April 2017
Accepted 10 October 2017

JEL Classification:
G02

Key words:
Primacy Effects,
Order of Information,
Manner of Presentation,
Form of information, and
Decision Audit.

DOI:
10.14414/jebav.v20i2.1124

A B S T R A C T

The purpose of the research is to assess the primacy effect of the sequence for the manner of presentation and information formation on the audit decisions in revising the belief when the information is presented differently. The primacy effect is the decision by the auditor when the information is provided in sequence and weighting the larger initial information towards the auditor belief. This research used a 2×2×2 experimental design with 116 participants of the Undergraduate accounting majors (S1). The results of the research showed that: 1) the primacy effect on decision-making occurred when information was presented sequential pattern;2) the decision making audit, the primacy effects occurred in a visual form; 3) there is a primacy effect when the information is presented with a long series order.

A B S T R A K

Tujuan dari penelitian ini adalah pengujian efek primasi atas urutan, cara penyajian dan format informasi terhadap pengambilan keputusan audit dalam merevisi keyakinan ketika informasi yang disajikan berbeda-beda. Efek primasi adalah keputusan seorang auditor ketika informasi yang diberikan secara berurutan dan membobot informasi awal lebih besar terhadap keyakinan auditor. Penelitian ini menggunakan desain eksperimental 2×2×2 between subject dengan 116 peserta dari Jurusan Sarjana Akuntansi. Hasil penelitian menunjukkan bahwa: 1) terjadi efek primasi pada pengambilan keputusan ketika disajikan denga pola sekuensial; 2) pada pengambilan keputusan, terjadi efek primasi dalam format visual; 3) terdapat efek primasi ketika informasi disajikan dengan urutan seri panjang.

1. INTRODUCTION

An audit is a very important duty in which it must be a systematic process when it is done by the auditor to assess the fairness of a financial report. In this case, the auditor is responsible for the clients or users of financial statements. They use this financial report for the opinion of the auditor as a reference in completing the financial statements. For that reason, the decision of an auditor is considered important in determining an opinion. However, in practice, auditors always get a lot of evidence received and evaluated in sequence.

The present issue in this research is the limitations of individuals in processing information so that they tend to experience a bias. This, in turn, affects the result in an inaccurate decision. Limitations of rationality or bounded rationality include, for example, the condition of individuals who have limited information, time, and memory capacity. This condition leads to have a lack of consideration in the decision-making process. Finally, it tends to use heuristic strategy, namely simplification of decision-making process (Bazerman 1994).

Ideally, certain calculations or judgments made by the auditor in making decisions should be based on systematic and accurate stages. However, the presentation of the information concerned is the order of evidence. This causes the influence of the order of effect on the decision of an auditor described by the belief adjustment model by Hogarth and Einhorn (1992). The application of belief adjustment theory has been tested in various contexts, among others, the context of the capital market Tuttle et al. (1997), Balsara et al. (2007), Pinsker (2007; 2011) and Almilia (2010). Auditing context Ashton and Ashton (1988), Tubbs et al. (1990), Kennedy (1993), Meisser and Tubbs (1994), Trotman and Wright (1996), Suartana (2007), Haryanto

** Corresponding author, email address: [1] triikaayuananda@gmail.com, [2] intiyas@staff.uksw.edu.*

(2012), Utami and Wijono (2014) and Ayuananda and Utami (2015).

Some efforts to eliminate the habits of audit decisions made by the auditor can be done by decreasing the bias mechanism. In this effort, Kennedy (1993) uses accountability method it, in which the decision is caused by a review bias. Trotman and Wright (1996) proposed aspects of the audit experience to address regular reviews. Ashton and Kennedy (2002) proposed self-review reviews for auditors to overcome the biases caused by sequential information. In addition, Suartana (2007) stated that self-review is the effort for reducing the reviewer effects and improving the assessment quality. The results show that self-review mechanisms significantly reduce errors in going concern.

For further example, Utami and Wijono (2014) also conducted a test of decision-making studies on the information presentation model by client management. They used an experimental testing on halo and risk-effects. Besides that study, Ayuananda and Utami (2015) also used the charts and non-charts as a way to mitigate the effects of reviews. By doing this, they could show the result that there is a reviewer effect when information is presented in the form of a larger chart than the non-charts, both in sequential and simultaneous representation patterns.

The results of some empirical studies concluded that individuals tend to experience the effects of reviews when information is presented in short-series sequence. Hogarth and Einhorn (1992) explain that the short series information is the presentation of positive-negative sequence information, the total maximum of 12 items of evidence. Empirical research on the sequence of presentation of information on the revision of an auditor's beliefs tend to be influenced by a positive sequence of information and then followed by negative information presented in sequence so that the audit decision becomes inaccurate.

When looking at the development of reviewer studies, it provides the evidence that testing has been done on the information with a long-series sequence but the results are still not convincing. For example, Pinsker (2011) built the argument that in long series conditions information consisting of 20 positive-sequence information followed by negative and vice versa). It could not cause the effects of the reviews but it gave the primacy effects. However, the results of his research showed no primary effects but the effects of the reviewer in a long sequence of evidence. This research developed from that done by Pinsker (2007) and Ayuananda and Utami (2015). The previous studies provide evidence that the auditor experiences a review effects bias when the information presented is a short-series sequence.

This research uses long-sequence information to test causality. The effect of the reviewer decreases when the information presented is long-series information (Hogarth and Einhorn 1992). Long series can be presented over 17 sequences of information. The idea of Hogarth and Einhorn has been tested by Pinsker (2011). Pinsker (2011) develops his own, Pinsker (2007) research findings in the context of nonprofessional investors. The findings by Pinsker (2011) could predict that the information presented with long-series sequence will not cause the effects of reviews. Instead, it caused the effects of primacy.

However, the results of his research indicate that there is no premature effect but there is a reviewer effect in a long-sequence of evidence. However, the previous study in the context of auditing (Ayuananda and Utami 2015) has not tested the potential for the emergence of a primed effect in a long sequence of evidence. The existence of research gaps in the testing of primacy effects in long-sequences of evidence is interesting to be reexamined and presented in the context of auditing.

The order and way of presenting information can lead to bias decision-making. Similarly, different format of information delivery causes decision making in processing information is also different so that it affects the decisions taken (Ricchiute 1984). Prior research provides empirical evidence that the presentation format of the information presented varies - it can affect the accuracy of a decision. Tang et al. (2014) provide empirical evidence that decision makers who receive financial information presented in a visual form allow someone to get better information and make more accurate decisions

The findings by Pinsker (2007) and Ayuananda and Utami (2015) show a research gap in terms of the effect of presenting information in a visual or non-visual format. The visual and non-visual format used in this study refers to visual information presented in video form, whereas non-visualization refers to information presented only in text form. Non-visual format has the potential to cause a reviewer effect so the result becomes inaccurate. The visual format can reduce the effects of reviews when information is presented with a long series, so an auditor's decision becomes more accurate.

The auditor's quality is indicated by the quality of the decision given by the auditor in examining

the transaction evidence. As individuals who have limited time and process information as well as the existence of high potential job complexity, they find a reviewer effect affecting the quality of the auditor's decision. The revised model of belief reveals the effect of the sequence, manner and format of presentation on short series information, whereas in practice an audit assignment is potentially informed in the long series for decision making. This study was motivated by the effect mitigation model reviews on long test of sequence proof with different format and way of presentation. This research is conducted individually for audit decision making on internal control system (SPI). An important reason this research using auditor decisions on SPI is to solve a problem in processing information, so that the decision given results can be relied upon because of strong control.

This research aims to provide empirical evidence of revision belief on: (1) Testing the causality of the order of long series sequence that is positive-negative and negative positive. (2) Testing on the way of sequential and simultaneous presentation. (3) Mitigation on presentation format is both visualization and non-visualization. This research contributes in the revision model of belief by explaining the effect of sequence, manner and format of information presentation. As for the contribution of practitioners, this research is expected to provide input for KAP in anticipating the potential of bias in the auditor.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

Model of Belief Revision and the Effect of Sequence

The belief adjustment model was previously also proposed by Hogarth and Einhorn (1992). In that study, they suggest that individuals have cognitive limitations in processing information. The revision model of belief predicts that the way people improve their current beliefs is likely to be influenced by the evidence factor of the order of evidence by doing anchoring and adjustment. The main advantage of the belief-adjusting model developed by Hogarth and Einhorn (1992) is the inclusion of three characteristics of direction, strength and type (Bayes' theorem) but also extending it by adding a sequence of information and presentation models of direction information and the evidence provided indicates whether evidence supports does not support an individual's beliefs.

The additional evidence supporting the belief is a positive proof (conforming), while that which does not support is negative (disconfirming) evidence. The second characteristic is the strength or level of evidence, supporting or not supporting the initial belief. The last type of evidence is categorized as consistent and combined evidence. When all evidence has the same direction (both positive and negative), the evidence is consistent proof. Yet, when there is a collection of negative and positive evidence, the evidence is categorized into joint evidence. The way in which information is presented in the belief revision model is divided into two dimensions: individual sequential or sequential (step-by-step) updating their beliefs after they are given each piece of information in a separate set of information. The individual's End of sequence renews his beliefs when information is presented in a collected bench.

Pinsker (2007) explains that when information is presented with a consistently positive (negative) short series that is expressed sequentially, compared with information revealed simultaneously, then an investor's belief in the stock price decision is significantly greater in a sequential condition. The results of Hogarth and Einhorn (1992), Tuttle et al. (1997), Nasution and Supriyadi (2007), Almilia (2010) and Ayuananda and Utami (2015) support the effect of short series sequences with a consistent type of information. The reviewer effect is a biased decision when a person receives the information presented sequentially so that the individual adjusts and considers the last information they receive in the decision. The larger weights on the initial information than weights the last information, then the condition is called the primacy effect.

The Way of Presenting

The belief revision model predicts the effects of reviews and anchoring effects on the mixed-positive (positive-negative) information structure and is presented gradually or sequentially (Hogarth and Einhorn 1992). Hogarth and Einhorn (1992) and Pinsker (2007) stated that the information presented in different ways would result in different beliefs as well. Information is presented in a sequential way so individuals tend to revise each piece of evidence it receives. Unlike the information presented simultaneously (End of Sequence), in this case the individual revises his belief on the collection of evidence it receives.

Ashton and Ashton (1988) stated that empirically individuals make greater confidence improvements when individuals are informed in the form of each piece of information (SbS). The greater potential for later bias occurs in sequential strate-

gies, since simultaneous positive and negative evidence are filtered before being integrated with prior beliefs. When tasks are given in complex form, individuals will use sequential processing strategies that require minimal demands on memory and the content of the information processor.

The Sequence of Information

This study examines the sequence of information presented by Hogarth and Einhorn (1992) in which they argue that the reviewer may decrease when information is presented in a long-series sequence. Information is called a long-series when it has a minimum number of 17 pieces of evidence sequence. The idea, Pinsker (2007) has tested in the investor context proves that in short-series of individuals receiving consecutive information (++++++ ------ and -------- +++++++) have stronger convictions than those who receive information simultaneously.

Hogarth and Einhorn (1992), Ashton and Ashton (1988), Pinsker (2007), Tuttle et al. (1997), Almilia (2010) and Ayuananda and Utami (2015) suggest that when the information is presented in short series, individuals experience reviewer effects in decision making. The idea of Pinsker (2007) was developed by Pinsker (2011). They predicted the results of his research that the sequence of long series will not occur the effects of reviews but the primacy. However, the results of his research indicate that the effects of reviews are not primacy.

This study uses long-series of evidence sequences as a model of mitigation effect of reviews. The sequence of long series information is good news (positive sequence information) and bad news (negative sequence information) which has 40 pieces of evidence. Forty evidences are divided into 20 pieces of evidence are positive and vice versa 20 pieces are negative. Each of these evidence is presented sequentially and simultaneously.

Format of Presenting

The format of presentation on different audit evidence also causes a person to respond differently. The need for considering the design of evidence is to recognize the diagnostic pattern of causal associations, among the component activities of a business process (Senge 1990). The results of Ricchuite (1984) suggested that the form of information presented in decision making also causes a person's cognitive process in digesting different information that affects the decisions taken.

O'Donnell and Perkins (2011), provide empirical evidence that research using causal loop diagrams, will increase auditors to recognize and respond appropriately to the diagnostic pattern of account-related changes as they analyze procedures for assessing the risk of material misstatement during the planning stage of the audit. Kaplan (1988) examined the effect of graphical representation with the top table in the presentation of account balances. The results show that there is no difference in graphical and table presentation format. Ayuananda and Utami (2015) in his research using the chart format and non-chart which shows the result that there is a reviewer effect when the information is presented in a larger chart format than the non-charts format. Ricchuite (1984) argues that the form of information presented in decision making also causes a person's cognitive processes in digesting different information so that it affects the decisions that have been made.

Tang et al. (2014) also provide empirical evidence that decision makers who receive financial information presented in a visual form allow someone to get better information and make more accurate decisions. Visualization refers to visual information presented in the form of images and graphs, whereas non-visualization refers to information presented in text form. This research adopts the presentation format performed by Tang et al. (2014) using visualization and non-visualization format.

The visualization element used in this study uses experimental video media, in which there is a long sequence of series (positive-negative and negative) sequence information both in sequential and simultaneous presentation. Visually positive means audit evidence is presented using a video of convincing information early on. Meanwhile, a negative visual means audit evidence is presented using a video that the information is not convincing, so the subject gives different judgments. The video is used as a measurement and assessment of whether the subject is affected by a reviewer or a premature effect.

The non-visualization element used in this study uses narrative media or presented in text form containing client company information. Non-visualization information is presented based on sequence of long series information (positive-negative and negative-positive) both in sequential and simultaneous presentation. A positive non-visual means audit evidence is presented using a module whose information is convincing in advance. Conversely, non-visual negatives mean audit evidence is presented using modules whose information is inconclusive. The module is used as a measurement and assessment of whether the sub-

ject is affected by the effects of reviews and the effects of primacy.

The Presentation and Evidence Sequence on Audit Decision Making

Based on the auditor's consideration in evaluating the evidence, it is ideally that the individual should base on the substance of the evidence. By doing so, they can conclude the belief as it is based on the substance of the proof rather than the sequence of information. The sequence effect occurs when individual decisions differ when they have received evidence in different order. If the initial information is orderly arranged it has the greatest judgment or influence on individual beliefs. In that case, it is called the primacy effect. On the contrary, when individuals weight the later information larger than the initial one, it is called the reviewer effect.

As reported by many researchers report, audit decisions often experience reviews. Ashton and Ashton (1988), for example, provide evidence that subjects who revise their beliefs are greater when receiving evidence contrary to current beliefs. Asare (1992) provides the result of the emergence of reviewers' effects on managers and partners audit related judgment of going concern. The same is also shown by Tubbs et al. (1990), they suggest a reviewer's effect when individuals that receive inconsistent evidence, even though the individual has been trained and assessed the evidence, but the effects of the reviewer still exist under these conditions.

Hogarth and Einhorn (1992) clarify that the information individuals obtain sequentially tends to weigh the last information that is greater than the initial one when they get. Individuals who receive information sequentially tend to revise their beliefs more strongly than those who receive information concurrently or simultaneously (Almilia 2010, Utami and Wijono 2014, Ayuananda and Utami 2015).

The auditor's judgment in revising his convictions is often based on the order of evidence they received. The previous studies by Tuttle et al (1997), Bamber et al (1997), Pinsker (2007) and Almilia (2010) provide evidence: when individuals receive information in positive-negative sequence or vice versa in short series, they tend to revise their beliefs when new information is present and weigh greater recent information. Long-series sequence information has research slack. Pinsker (2011) predicts that when individuals receive information with a long series of sequences (40 pieces of evidence) there will not be a reviewer but a premature effect. However, the results of his research indicate that there is a reviewer effect is not a primary effect in a long- series sequence.

When there are two pieces of information presented together, the auditor will have a habit of making decisions. When it is presented sequentially, individuals revise their beliefs when the last information they get is different from the one when information is presented simultaneously. Thus, they revise their beliefs after a collection of evidence is received. For that reason, the sequence of long-series information (positive-negative or negative-positive), when presented in a different way (sequential or simultaneous), can cause a premature effect on the auditor's decision-making. The longer the information is given the greater for the pattern of disclosure. Based on the argument above, the first hypothesis is stated as follows:

H1a: Individuals with positive-negative long-series of information, the audit's decisions show greater confidence revision in the way sequential representation compared to audit decisions in the revision of beliefs on the way of simultaneous presentation.

H1b: Individuals with negative-positive long-series information, the audit's decisions show a greater revision of confidence in the mode of sequential presentation than audit's decisions in the revision of beliefs on the way of simultaneous presentation.

Information and Evidence Sequence on Audit's Decision Making

The revision model confirms that the sequence of evidence presented sequentially (sequentially) will result in a greater revision of convictions (Hogarth and Einhorn 1992). The presentation of positive information followed by negative information has a lower judgment than the presentation of negative information followed by positive information. This is because individual tend to weight the final information is greater than the initial information. Pinsker (2011) provides empirical evidence that the information presented in the long series of reviewer effects occurs in the context of investors.

Nasution and Supriyadi (2007) who conducted tests in order of evidence against the process of revision of beliefs in the context of the audit. Shows the result that the auditor revises the conviction and weighs the information now greater than the previous information, the condition proves that there is a reviewer effect. Ayuananda and Utami (2015) stated that in short series, individuals experience reviewer effects in decision making in the context of an audit. Auditors often experience a reviewer effect when information is presented in

sequence in decision-making.

O'Donnell and Perkins (2011) suggest that causal loop diagrams may increase auditors in recognizing and responding appropriately to the diagnostic pattern of account-related changes, as they analyze procedures for assessing the risk of material misstatement during the planning phase of the audit. Tang et al. (2014) states that the presentation of image formats has been widely practiced. Ayuananda and Utami (2015) stated that in chart and non chart format occurs reviewer effect in decision making, when information presented in the form of chart larger than non chart format, on sequential and simultaneous presentation. Richhuite (1984) argued that the form of information presented in decision making also causes the cognitive process of someone in digesting different information so that it affects the decisions taken. This study, the format of information used is visualization and non-visualization. When information is presented with a visualization format, it tends to increase accuracy and lower the reviewer, in contrast to the information presented in a non-visualized format.

The information presented sequentially and simultaneously causes different decisions. When information is given in the form of sequential visualization, it is different from the information given in the form of non-visualization simultaneously. The highest primacy occurs when information is presented sequentially with the visualization format. Based on the above explanation, this study examines the interaction of simultaneous and sequential presentation with visualization and non-visualization format in audit decision making. The second hypothesis proposed in this study is as follows:

H2a: Individuals who received series of positive-negative sequence of long-information on simultaneous presentation show that an audit decision is in the greater confidence revision of the visual representation format compared to the audit decision in the revised belief in the non-visual format.

H2b: Individuals with negative-sequence negative sequence-long sequence information indicate that an audit decision is in the greater confidence revision of the visual representation format versus the audit decision in the revised belief in the non-visual format.

H2c: Individuals with positive sequence-negative sequence-long sequence information indicate that an audit decision is in the greater confidence revision of the visual representation format versus the audit decision in the revised belief in the non-visual format.

H2d: Subjects with negative sequence-positive sequence-length sequence information indicate an audit decision in the greater confidence revision of the visual representation format versus the audit decision in the revised belief in the non-visual format.

H2e: Subjects who received the positive-negative sequence-length sequence information and the visualization presentation format by sequential presentation experience the highest-priority effect of the other group.

3. RESEARCH METHOD

Research Design

This study uses laboratory experimental design with 2×2×2 matrix of factorial inter-subjects. The independent variables are the way of presentation, the order of information, and the presentation format while the dependent variable is the audit decision measured from the internal control assessment. The way of information presentation consists of two levels: presented simultaneously or sequentially, the second variable of information sequence is the information presented on the long-series (40 pieces of information consisting of 20 sequences of positive information and vice versa), finally the third variable as the information format presented are Visualization and non-visualization.

The experimental subjects were divided into eight groups. This grouping is related to presentation (simultaneous and sequential), sequence of information (positive-negative and negative-positive) and information format (visualization and non-visualization). The division of the group with the treatment given is shown in Table 1.

Subjects of the Research

The study used accounting students at Satya Wacana Christian University in the Faculty of Economics and Business as the subjects of research, with criteria that the subjects are still taking the course of the audit-auditing laboratory. The selection with students as external auditors was done by the cognitive aspects of human, the use of students in information processing and decision making that can be accepted scientifically. By doing so, the use of students will not deviate (Nahartyo and Utami 2015).

The task given to the subject is that he can provide an assessment of the decision of the internal control system (SPI) on the client who is a manufacturing company. The student involvement as a subject of research in this audit assignment does not require professional judgment in decision making, so the results of the experiment do not alter the

Table 1
Experiment Matrix

		Sequence of Information Format			
		Positive – Negative		Negative-Positive	
		Visualization	Non-visualization	Visualization	Non-visualization
Way or Presentation	Simultaneous	Group 1	Group 3	Group 5	Group 7
	Sequential	Group 2	Group 4	Group 6	Group 8

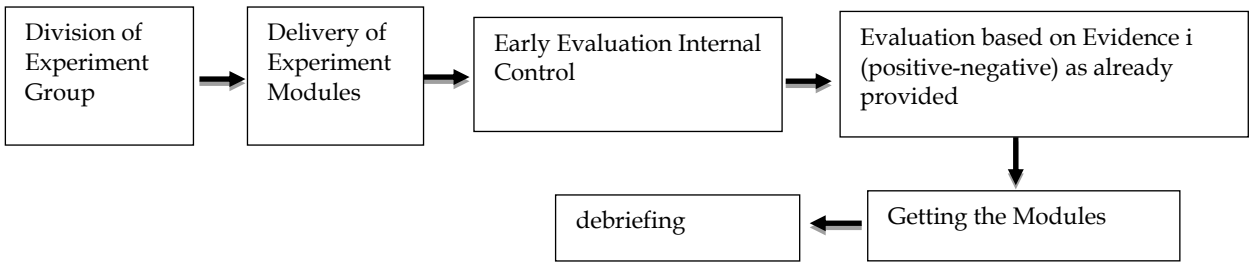

Figure 1
Steps of Experiment

sample, but generalize the theory.

The experimental laboratory process is run through five stages as follows:

1. The participants are the auditors auditing the internal control system in manufacturing companies in Indonesia. The subjects were randomly taken and divided, receiving one of the eight modules prepared by the experimenter. The randomization was done by dividing the subject modules in the experimentally grouped, sequential and simultaneous information. Each consists of forty pieces of positive and negative sequence evidence. The module consists of eight modules divided into four visualized modules and four other non-visualized modules. The visualization module consists of positive sequence information - negative and negative - positive, and vice versa while the non-visualized module consists of positive - negative and negative - positive sequence information.
2. In the early stages, the participants filled the complete data, in which the reason when later on, demographic testing does not affect in decision-making. The participants were asked to answer some fundamental questions in the field of internal audit related to the internal control system. They were informed of the profile of the company in which they perform the audit assignment. Then they were also asked to act as senior auditors within an organization and given the task of making decisions. The treatment of manipulation is in the form of visualization, positive information as well as negative information, presented in video form. An example of a positive piece of information is that an employee entering a company area must wear an identity card for the application of access control. The employees should use identity cards, employees can enter the area in accordance with the field of each employee.
3. The examples of negative pieces of information are goods coming from parts of production, directly stored in inventory warehouses without checking in advance whether there is a defect in the product or deficiencies to the goods inventory (quantity and quality). Manipulation in the form of visualization, positive or negative information is presented in the form of a pictorial video. This entails visual audio associated with both positive and negative information to explain every detail of the image story.
4. The manipulation in non-visualized form, positive information as well as negative information is presented in narrative form. The effect of primacy occurs when the subject receives positive information in a visual format will give an audit decision greater than when the subject receives positive information in a non-visual format, both when the information is presented simultaneously or sequentially. The assessment suggests that subjects weigh greater initial information. The same information presented in different ways makes the judgment different. Subsequently, participants received three questions of manipulation checking on the understanding of the task and its role as the auditor where they performed the audit assignment. The next stage is checking manipulation. The last stage is debriefing as a stage to explain the purpose and purpose of the research.

Table 2
Participants' Characteristics

Category	Number (Participants)	%
GPA		
2.5-3	30	27%
3-3.5	60	54%
>3	21	19%
Semester		
5/6	89	80%
7/8	22	20%
Age		
20	33	30%
21	64	58%
22	14	12%
Gender		
Male	32	29%
Female	79	71%

Table 3
The Difference Test of Characteristics

		Mean Squares	F	Sig
GPA	Among the group	0.442	0.972	0.468
	Inter-group	0.455		
Semester	Among the group	0.281	1.882	0.063
	Inter-group	0.150		
Age	Among group	0.392	0.985	0.457
	Inter-group	0.398		
Gender	Among group	0.161	0.762	0.651
	Inter-group	0.211		

Data Analysis

The test done in this study has several stages: the first stage of testing was to check manipulation. This is intended to know which participants qualify and those who do not qualify in checking the manipulation. Furthermore, the participant's descriptive test and randomization effectiveness test with One Way Analysis of Variance (ANOVA) the test is done. This is to know that the participant character has an effect on audit decision making. Hypothesis testing phase was tested using t-test statistics. At this stage, see if there is a difference in confidence in the order of evidence (positive - negative and negative - positive) were presented with visualization and non-visualization either by means of sequential or simultaneous testing.

Table 1 shows the cells compared in the test. Hypothesis 1a compares between groups 2, 4, and group 1, 3, whereas, hypothesis 1b compares between groups 6, 8 with group 5, 7. Hypothesis 1 is statistically supported if there is a statistically significant difference between subjects who received sequential treatment simultaneously. Hypothesis 2a compares groups 1 and 3. Hypothesis 2b compares groups 5 and 7. Furthermore, hypothesis 2c compares group 2 with 4. Hypothesis 2d, compares group 6 with 8. Whereas, the 2e hypothesis tested in group 2 to see the highest- There is in the visualization of the sequence of negative positive long-series by means of sequential representation. Hypothesis 2 is said to be statistically supported, if there is a statistically significant difference between subjects who obtain information in both visual and non-visual forms.

4. DATA ANALYSIS AND DISCUSSION

Subjects and the Characteristics of the Respondents

This study consists of 116 participants from S1 (Undergraduate) Accounting Department of Satya

Table 4
Test of Hypothesis 1a

	N	Mean	Stand. Dev	t-Test (Sig)
Sequence of Positive -Negative				
Audit's Decision who received presentation of information:				
Simultaneous	29	79.69	10.100	-6.913 (0.000)*
Sequential	27	142.35	47.677	

* Significant at α=5%.

Table 5
Test of Hypothesis 1b

	N	Average/mean	Stand. Dev	t-test (Sig)
Sequence of Negative -Positive				
Audits' decision who received presentation of information:				
Simultaneous	29	77.72	11.677	-15.678 (0.000)*
Sequential	27	159.59	25.397	

* Significant at α=5%.

Wacana Christian University. This study examined the manipulation of roles and tasks assigned. The results of checking manipulation shows that all respondents answered exactly the questions given, if from 5 subject questions answered exactly 3 questions then the subject passed the check manipulation. Characteristics of each participant consists of 4 categories namely GPA, semester, age, gender. Table 2 is the characteristics of participants who pass the check for manipulation

The subjects successfully passed in checking the manipulation of a hundred and eleven (111) participants of the hundred and sixteen (116) participants. They are 32 male participants and the remainders are 79 female participants. The subjects who followed the experiment at most aged 21 years. The number of subjects who in majority followed the experiment had a GPA (3-3.5) in the 5/6 semester. These results indicate that participants have different characteristics. For the supporting result, it shows that the participants' characteristic has no difference in terms of decision-making that can be seen in Table 3.

The test result of one-way ANOVA indicates that the characteristics (GPA, semester, age and gender) have no significant difference on audit decision making. The groups with the characteristic of GPA were shown significantly (p = 0.468), semesters significantly (p = 0.063), age significantly (p = 0.457), and gender significantly (p = 0.651). The result of differences between individual characteristics (GPA, semester, age, and sex) has no effect of the characteristics on audit decision making.

Hypothesis 1

Hypothesis 1a states that participants with positive, negative-long-series information, audit decisions show a greater revision of belief in the mode of sequential presentation than audit decisions in the revision of beliefs on the way of simultaneous presentation. H1a test was done by using an independent t-test by comparing audit decisions in series of positive-negative sequence sequences that are presented sequentially to those presented simultaneously. The results of hypothesis 1a can be seen in Table 4.

The result of hypothesis testing 1a shows that the group of participants who received the series information of positive-negative sequence presented simultaneously has an average of the audit decision of 79.69. Participants who received the positive-negative long-series information by means of sequential presentation had an average audit decision of 142.35. There was a significant difference in the two groups of simultaneous and sequential presentations with a sequence of positive-negative long-series information shown significantly (p = 0.000). The results of the tests on hypothesis 1a show that there is a primer effect in the group with the sequence of positive-negative length series, which means that hypothesis 1a is statistically supported. This happens primarily due to the average revision of confidence in the group that receives the long-series information in a positive-negative sequence on the sequential representation greater than the simultaneous presentation.

Hypothesis 1b states that participants with negative-positive long-series information, audit

Table 6
Test of Hypothesis 2a

	N	Mean	Stand. Dev	t-Test (Sig 2-Tailed)
Simultaneous (positive – negative)				
Audit's decision who received presentation format:				
Visualization	16	84.88	8.961	3.696 (0.001)*
Non-visualization	13	73.31	7.565	

* Significant at α=5%.

Table 7
Test of Hypothesis 2b

	N	Mean	Stand. Dev.	t-Test (Sig 2-Tailed)
Simultaneous (negative - positive)				
Audit's decision who received presentation format:				
Visualization	15	85.00	8.775	4.521 (0.000)*
Non-visualization	14	69.93	9.177	

* Significant at α=5%.

Table 8
Test of Hypothesis 2c

	N	Average/Mean	Stand. Dev	t-Test (Sig 2-Tailed)
Sequential (positive – negative)				
Audit decision who received presentation format:				
Visualization	14	182.29	17.700	11.729(0.000)*
Non-visualization	12	95.75	19.928	

* Significant at α=5%.

decisions show a greater revision of confidence in the mode of sequential presentation than audit decisions in the revision of beliefs on the way of simultaneous presentation. H1b test uses independent t-test by comparing audit decisions in series of negative sequence-positive sequence information presented sequentially with simultaneous presented. The results of hypothesis testing 1b can be seen in Table 5.

The test result of hypothesis 1b shows that the group of participants receiving the series of negative sequence-positive sequence presented simultaneously has an average audit decision of 77.72. Participants who received the negative sequence-positive sequence-long sequence information have an average of 159.59 audit decisions. Hypothesis 1b shows the occurrence of a primacy effect in a group receiving information with a sequence of negative-positive long-series shows significantly (p = 0.000). Thus, it is statistically supported. This occurs mainly due to the average revision of belief in the group that receives the long-series information in a negative-positive sequence on the larger-sequentially presentation compared to the simultaneous representation.

The overall results of hypothesis 1 show that the effects of primacy are influenced by the sequence of the long series and the way of presentation. This is indicated by the mean size of audit decision making on how the sequential presentation is greater than the simultaneous presentation method. The results support the research findings by Jones et al (1968) stating that the long series presented with 30 pieces of evidence have a success rate of higher belief revisions at the beginning of the sequence of information. The results are also in line with the Pinsker (2011) argument which states when the auditor begins to evaluate the evidence sequentially in a sequence of long series (40 pieces of evidence) it will not occur the effects of reviews but the effects of primacy.

The condition above illustrates that when auditors receive a long series of information presented on a step by step (sequential), they tend to weigh more information early than the next information. The longer the belief of information received by the auditor, the greater the disclosure pattern given by the auditor in making the decision. So it can be said

Table 9
Test of Hypothesis 2d

	N	Average/Mean	Stand. Dev	t-Test (Sig 2-Tailed)
Sequential (negative - positive)				
Audit decision who received presentation format:				
Visualization	14	181.14	6.826	10.166(0.000)
Non-visualization	13	136.38	14.891	

* Significant at α=5%.

Table 10
Test of Hypothesis 2e

	N	Average	Std. Dev	Sig
Group 1	16	84.88	8.981	0.921
Group 2	14	182.29	17.700	0.017*
Group 3	13	73.31	7.565	0.424
Group 4	12	95.75	19.928	0.088
Group 5	15	85.00	8.775	0.329
Group 6	14	181.14	6.826	0.032*
Group 7	14	69.93	9.177	0.054
Group 8	13	136.38	14.891	0.592

* Significant at α=5%.

that the long series information can reduce the effect of habit in decision making by the auditor. Such a condition illustrates that auditors in performing audit assignments receive not only belief in short series but auditors may also receive complex evidence presented in long series sequences. The complexity of information received by the auditor makes them focus more on the initial information they receive, compared to the next information. Therefore, the sequence of long series can mitigate the effects of reviews or premature effects occur.

Hypothesis 2

Hypothesis 2a states that individuals who received series of positive-negative sequence-length information on simultaneous presentation show an audit decision in the greater confidence revision of the visualization presentation format versus the audit decision in the revised belief in the non-visual format. Tests on this hypothesis, tested by using independent t-test can be seen in Table 6.

Based on the statistical test, it shows that in the series of positive-negative sequence, the average revision of belief by way of simultaneous presentation in the visualization format is 84.88. It is greater than the revision of belief by way of simultaneous presentation in non-visualized format of 73.31. The result of independent t-test in group with negative series sequence-negative sequence on simultaneous presentation shows that there is significant difference on SPI assessment decision (p = 0.001). The result shows that there is a primacy effect because the format of information presented visually on the simultaneous presentation of the positive-negative long-series sequence is greater than the presentation in non-visual format. Thus, hypothesis 2a is statistically supported.

Hypothesis 2b states that individuals who received the negative-sequence negative sequence-long sequence information indicate an audit decision in greater belief revision in the visualization presentation format than the audit decision in the revised belief in the non-visual format. The test of hypothesis 2b was done by using independent t-test, which can be seen in Table 7.

The test results show that on the negative-sequence negative series information, the average revision of beliefs in simultaneous presentation mode with visualization format is 85.00. This is greater than the average revision of belief in the non-visualized format of 69.93. The result shows that there is a significant difference (p = 0.000) in the group receiving the negative-sequence negative series sequence information on the simultaneous presentation method. The result also shows that a primacy effect is not a reviewer, since the negative-sequence long- sequence information on simultaneous presentation with visualization format is greater than the presentation in a non-visual format.

Statistically, it can be concluded that the SPI assessment decisions on simultaneous presentation methods presented with visualization format in both positive - negative and negative - positive sequences experienced a primacy effect rather than a reviewer effect. This condition explains when the auditors receive evidence with long information and is presented with a set of evidence (simultaneous) in visual format, they will weigh the initial information larger than the next information. This study contradicts previous research by Hogarth and Einhorn (1992), Pinsker (2007), Ayuananda and Utami (2015) stating that individuals who receive information by simultaneous presentation revise their beliefs after all the evidence is received. This happens because the information with long series and presented simultaneously in visualization and non-visualization format make the auditor give more assessment on the initial information they receive.

Hypothesis 2c states that individuals who received sequence-negative sequence- long sequence information indicate an audit decision in the greater confidence revision with the visualization presentation format versus the audit decision in the revised belief in the non-visual format. The test on this hypothesis was done by using independent t-test that can be seen in Table 8.

The result of the test on hypothesis 2c, stated that the group that received the positive-negative sequence- long series information, the average revision of belief in the sequential presentation mode with visualization format of 182.29 is greater than the average revision of belief in the non-visualized format of 95.75. The result indicates that there is a significant difference in the SPI assessment decision ($p = 0.000$) in the group receiving the positive-negative sequence- long sequence information on the sequential mode of presentation. The result shows that there is a primacy effect because the information presented visually in sequential sequence of the positive-negative long-sequence is greater than the presentation in a non-visual format.

Hypothesis 2d states that individuals who received negative sequence-positive sequence-long sequence information indicate an audit decision with greater belief revision of the visualization presentation format versus the audit decision in the revised belief in the non-visual format. The test of this hypothesis was carried out by using independent t-test can be seen in Table 9.

The result of the test on hypothesis 2d states that the group receiving the negative-sequence negative long- sequence information, the average revision of beliefs on the mode of sequential presentation with visualization format of 181.14 is greater than the average revision of belief in the non-visualized format of 136.38. This test result indicates that there is a significant difference in the SPI assessment decision ($p = 0.000$) in the group receiving the negative-sequence-negative series sequence. This suggests that there is a primacy effect because the information presented visually on the sequential representation of the negative long-series sequence- the positive revision of the belief is greater than the presentation in a non-visual format.

This indicates that, when the individual receives the information presented sequentially (step by step) in the visualization and non-visualized format with the information presented is the long series of positive-negative and negative-positive sequence, then the individual gives a higher initial assessment than the final judgment. This study is in contrast to the findings of Pinsker (2011) that states that there is no primacy effect but a reviewer effect on information presented in long series. However, this study supports the research by Hogarth and Einhorn (1992), finding the effect of the reviewer decreases when the information presented is a long series of information. In other words, there is a primacy effect in the sequence of long series that is presented gradually (sequentially) with the visualization format.

Then, the format used in this study is the visualization format, with the results indicating that the visualization format and the long-series sequence can reduce the current effect that is often experienced by an auditor. This study supports the findings of Tang et al (2014) which provide empirical evidence that decision makers who receive financial information presented in a visual format allow one to obtain better information and make more accurate decisions.

The final hypothesis is hypothesis 2e, that the group receiving the positive-negative sequence-long sequence information and the presentation format of visualization by sequential representation experienced the highest-priority effect of the other group. This is stated in Table 10

It shows that the group—who received the positive-negative sequence-long sequence information in the mode of sequential presentation with visualization format—proved an average of 182.29 higher than the other group. The results of this test indicate that there is a significant effect on the audit decision ($p = 0.017$) for the group receiving long-

sequence information in a sequential representation with visual format (group 2). Thus, it can be statistically concluded that the SPI assessment decisions on the presentation of the visual format, presented sequentially with the sequence of positive-negative long series experienced the highest primacy effect.

The primacy effect occurs when the auditor weighs the initial information bigger than the next one. The same information but presented in different ways makes the judgment different. On the positive sequence information - negative and presented with visual format on sequential presentation, the SPI assessment decision becomes higher than the presentation in non-visual format. Such a condition explains that the visualization format can reduce the effect of the reviewer; in this case the primary effects occur.

The result of H2e is supported statistically. The groups that received positive-negative sequence-long sequence information and visualization formats in sequential presentation mode experienced a premature effect. This is accompanied by the evidence that the subject weighed the initial information higher than the next one. For that reason, this study supports Tang et al. (2014) who found that it also provides empirical evidence that decision makers receiving financial information presented in a visual format allow individual to get better information and make decisions that are more accurate.

Finally, this study also explains that when the auditor receives information gradually (sequentially) with the visual format on positive information and then followed by negative information, the decision given by the auditor is greater in the visual format than the non-visual format. Such a condition indicates that the format presented visually can reduce the habit of making decisions so that the decisions taken become more accurate. Practically, in audit assignments, an auditor not only receives evidence in narrative form but may also receive information or evidence based on visual information (video).

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

There are some generalizations. First, there is a prime effect on audit decision making when information is presented in sequential pattern, that is, by long series of positive sequences - negative or negative - positive sequences. This is indicated by the average of the audit decisions on how the sequential representation that is greater than in the way of simultaneous presentation in both positive-negative and negative-positive sequences.

Second, there is also a prime effect in audit decision making when information is presented in visualization format that is presented simultaneously or sequentially. This is shown in the average of audit decisions on the visual presentation format that is greater than the audit decision in non-visual format.

Third, there is a prime effect in audit decision making when information is presented in long series sequence of positive-negative (negative-positive) on sequential or simultaneous presentation. This study was conducted with two distinct groups divided into visual and non-visual groups with long information that required high concentration on participants to absorb all information because there was no repetition in the assignment. However, this can be anticipated by keeping the conditions around remain calm.

The limitation is that this study only uses individual strategies in reviewing information, but bias effects mitigation can be done simultaneously using group discussion strategies to improve the accuracy of a decision. By doing so, the group discussions can strengthen auditor decision making so that it can make it more accurate.

This study provides the implications for the theory of belief revision in which the people in making decisions tend to be influenced by the evidence factor that is the order of evidence presented in different ways and formats. It can supports the previous research by Jones et al 1968; Hogarth and Einhorn 1992; and the Pinsker 2011 who hold the argument stating that the information presented with a sequence of long-series of information (40 sequences of evidence) is positive-negative and negative-positive in the way of step-by-step presentation (sequential). Then, the primacy effect is not a reviewer effect on decision making by the audit. Thus, the decisions taken become more accurate. The condition proves that long series information can be a way to mitigate reviewer bias on audit decisions.

This study provides empirical evidence that the revision model of belief presented in visual format with a long-sequence of series results in an auditor's decision to be more accurate. Decision-makers who receive information regarding internal control systems in a visual format allow a person to get better information and make more accurate decisions.

The finding contributes to: 1) KAP (Public Accountant Office) in order to provide training to senior or junior auditors in completing the review results and checking the financial statements in audit decision making to make it more accurate. 2) The external auditor should consider the presenta-

tion of information in a visual format because it has the potential to reduce the bias that may impact on more accurate audit decisions.

REFERENCES

Almilia, LS 2010, 'Pengaruh Order Effect dan Pola Pengungkapan dalam Pengambilan Keputusan Investasi', *Paper presented in Simposium Nasional Akuntansi XIII*, Purwokerto.

Asare, SK 1992, 'The Auditor's Going-Concern Decision: Interaction of Task Variables and the Sequential Processing of Evidence', *The Accounting Review*, Vol. 67 (2), 379-393.

Asthon, RH and J Kennedy, 2002, 'Eliminating Recency with Self-Review: The Case of Auditors' "Going Concern" Judgments', *Journal of Behavioral Decision Making*, 15 (3): pages 221–231.

Ashton, AH and RH Ashton, 1988, 'A Sequential Belief Revision in Auditing', *The Accounting Review*, October, 623-641.

Ayuananda, TI and I Utami, 2015, 'Urutan, Cara dan Bentuk Informasi: Pengujian Eksperimental Efek Resensi dan Keputusan Audit', *Paper presented in Simposium Nasional Akuntansi XVII*, Medan.

Balsara, NJ, Chen, G and Zheng, C 2007, 'An Examination of the Random Walk Model and Technical Trading Rules', *Journal of Business & Economics*, Vol. 46 (2), 43-63.

Bamber, EM, RJ Ramsay and RM Tubbs, 1997, 'An Examination of the Descriptive Validity of the Belief-Adjustment Model and Alternative Attitude to Evidence in Auditing', *Accounting, Organizations and Society*, Vol. 22: 249 – 268.

Bazerman, 1994, *Judgment in Managerial Decision Making*, New York: Willey & Sons Inc.

Hogarth, RM and HJ Einhorn, 1992, 'Order effect in belief updating: the belief – adjustment model', *Cognitive Psychology*, Vol. 24: 1-55.

Haryanto, 2012, 'Debiasing audit judgment: Akuntanbilitas dan tipe pembuat keputusan', *Jurnal Ilmiah Akuntansi dan Humanika*, Vol. 2 (1).

Jones, EE, L Rock, KG Shaver, GR Goethals and LM Ward, 1968, 'Pattern of performance and ability attribution: An unexpected primacy effect', *Journal of Personality and Social Psychology,* 10 (4): 317–340.

Kennedy, J 1993, 'Debiasing Audit Judgment with Accountability: A Framework and Experimental Results', *Journal of Accounting Research*, Vol. 31 (2): 231- 245.

Messier, W and Tubbs, R 1994, 'Mitigating Recency Effects in Belief Revision: The Impact of Audit Experience and the Review Process', *Auditing: A Journal of Practice & Theory*, 13 (Spring): 57-72.

Nahartyo, E and Utami, I 2015, *Panduan praktis riset eksperimen*, PT Indeks, Jakarta.

Nasution, D and Supriyadi, 2007, 'Pengaruh Urutan Bukti, Gaya Kognitif dan Personalitas terhadap Proses Revisi Keyakinan', *Simposium Nasional Akuntansi X*, Makasar (July).

O'Donnell, E and JD Perkins, 2011, 'Assessing Risk with Analytical Procedures: Do Systems-Thinking Tools Help Auditors Focus on Diagnostic Patterns?', *Auditing: A Journal of Practice & Theory*, 30 (4), 273-283.

Pinsker, R 2007, 'Long Series of Information and Nonprofessional Investors' Belief Revision', *Behavioral Research in Accounting*, 19, 197–214.

Pinsker, R 2011, 'Primacy or Recency? A Study of Order Effects when Nonprofessional Investors are Provided A Long Series of Disclosures', *Behavioral Research in Accounting*, 23, 161-183.

Ricchiute, DN 1984, 'An Empirical Assessment of the Impact of Alternative Task Presentation Modes on Decision-Making Research in Auditing', *Journal of Accounting Research*, 22(1): 341-350.

Senge, P 1990, *The Fifth Discipline: The Art and Practice of The Learning Organization*, New York, NY: Doubleday/Currency.

Suartana, IW 2007, 'Upaya Meningkatkan Kualitas Pertimbangan Audit Melalui Self Review: Kasus Going Concern', *Simposium Nasional Akuntnasi X*, Makasar (July).

Tang, F, TJ Hess, JS Valacich and JT Sween, 2014, 'The Effect of Visualization and Interactivity on Calibration in Financial Decision Making', *Behavioral Research in Accounting*, Vol. 26 (1), 25-58.

Trotman, KT and A Wright, 1996, 'Recency Effects: Task Complexity, Decision Mode and Task-Specific Experience', *Behavioral Research in Accounting*, Vol. 8. 175-195.

Tubbs, RM, WF Meisser and WR Knechel, 1990, 'Recency Effects in the Auditor's Belief-Revision Process', *The Accounting Review*, 65 (2), 452-460.

Tuttle B, M Coller and FG Burton, 1997, 'An Examination of Market Efficiency: Information Order Effects in A Laboratory Market', *Accounting Organization and Society*, 22: 89-103.

Utami, I and S Wijono, 2014, 'Study In Decision Making Model on Information Presentation By Clients' Management: Experimental Test on Halo and Recency Effect', *Journal of Economics, Business & Accountancy Ventura*, 17 (2), Augusts, 293-302.