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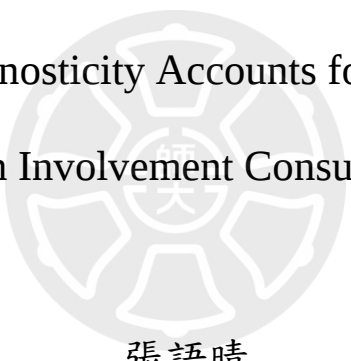
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Master's Thesis

論點診斷性如何影響高涉入消費者的偏誤修正

How Argument Diagnosticity Accounts for Bias Correction to
High Involvement Consumers



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Abstract

The ELM model developed by Petty and Cacioppo has been used in consumer behavior research for many years to explain how people form and change their opinions and attitudes towards a target.

This study aims to find why there is no mention of bias correction in the high involvement of people in the ELM model. Furthermore, we explored a new moderator of argument diagnosticity in this study, and the strong diagnosticity argument was defined as being relevant to the true merit of the target and making consumers more likely to judge the product. The manipulation of high involvement situations and the comparison of four different argument qualities with strong and weak argument diagnosticity under two endorser conditions were employed. Bias corrections will occur when there is weak argument diagnosticity, indicating the argument diagnosticity is a crucial factor.

Keywords : Elaboration likelihood model, Bias correction theory, Argument diagnosticity, Argument quality

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CHAPTER 1 INTRODUCTION

1.1 Study Motivation

In today's competitive market, because the company's marketing strategy depends on consumer behavior and decisions, meeting the needs of consumers is even more important. Therefore, the process of thinking about how consumers make decisions from the perspective of consumers is an ability that professional managers need to have.

In 1983, ELM model was published by Petty and Cacioppo. ELM model introducing how people process stimuli to change their attitude has been widely used in the fields of psychology and marketing. ELM model explains that high involvement people process all information through a central route, including arguments and cues. The ELM model indicates high involvement people process argument and cue; however, high involvement people are not affected by cue when they finally make a decision. Chiu(2019) research proposes a new concept in the field of consumer attitudes, that is, argument diagnosticity. Chiu (2019) has suggested that because people focus on processing arguments when they are high in both involvement and argument diagnosticity, people tend not engage in bias correction. On the contrary, in the situation of high involvement and low argument diagnosticity, bias correction is more likely to occur.

In the case of high involvement and high argument diagnosticity, high involvement people process cues and arguments at the same time. Chiu (2019) has argued that there is no bias correction in high involvement and argument diagnosticity conditions. However, it is unclear when high involvement people only process arguments and ignore cues in this situation or if the result is the same as high involvement process cues will eventually generate bias correction.

In this study, we combine the past literature related to argument diagnosticity to counter argue both ELM's viewpoint that high involvement people are not influenced by cues when people extensively process information and Chiu's study (2019) that high-involvement people receive strong arguments tend not to engage in bias correction. In our experiment, we manipulate argument quality with different degrees of. The argument diagnosticity can be categorized into high and low levels. The argument with high argument diagnosticity facilitates consumers to easily judge the quality of the product and be the high argument relevant to the true merit of the target. Low argument diagnosticity, in contrast to high argument diagnosticity, cannot easily judge the quality of the product and are not arguments relevant to the true merit. Furthermore, we manipulate multiple arguments and single arguments to represent the number of arguments and observe whether the number of arguments affects the likelihood of bias correction for high-involvement people or not. Last but not least, we try to find out whether customers in high involvement will correct their attitude when they make an essential decision by manipulating the experiment. Furthermore, our study believes no matter in strong or weak argument quality, bias correction will more likely happen on people with high involvement and then amend the causal relationship between the research logic and the previous study.

1.2 Study Purpose

In our study, we go beyond Chiu's conception of argument diagnosticity by modifying her inadequacies. Using experimental design to explore whether high-involvement individuals have bias correction when they process the strong or weak argument quality and high or low argument diagnosticity. According to ELM, high-involvement people are not affected by cue in the way they process information, but we believe that high involvement also processes cue depending on the number of true merit messages they receive. To make the study more comprehensive, we redefine

independent variables and add additional hypotheses. This study aims to prove the following:

1. No matter what the situation is, as long as individuals process low argument diagnosticity, they will generate bias corrections.
2. People with high involvement will still be influenced by the cue depending on what kind of argument they process.
3. Argument quality and argument diagnosticity are different concepts.

1.3 Study Framework

This study uses argument diagnosticity as a moderator, manipulating biases and arguments to design experiments. A pretest will be conducted to test the validity of the argument, and then a questionnaire will be used for the main experiment.

This research consists of six chapters:

Chapter1. Introduction

This chapter describes the research background and motivation, research purpose, and research structure.

Chapter2. Literature review

Discuss the relevant literature on ELM, Argument Diagnosticity, and Bias Correction.

Chapter 3. Proposed theory and hypotheses

A theoretical framework and research hypotheses derived from previous literature are used.

Chapter 4. Research methods

The experimental design followed the research hypothesis and the data was collected via questionnaire.

Chapter 5. Results

SPSS statistical software was used for data analysis to verify the research hypotheses of this study.

Chapter 6. Conclusions and Recommendations

Conclusions are drawn from the results obtained in the previous chapter, and research contributions and recommendations are stated.



CHAPTER 2 LITERATURE REVIEW

2.1 Elaboration Likelihood Model (ELM)

Nowadays, ELM (Petty & Cacioppo1982) models have been used in the fields of psychosocial, marketing, marketing, and consumer behavior analysis for about 40 years. The objectives of this research are to determine how the impact of consumer involvement in the thinking and decision-making process influences the attitudes of consumers towards the target and how individuals can be persuaded to change their attitudes.

According to the ELM (Petty & Cacioppo1982), people will process stimulate to make their decision or change the previous attitudes. In the study, lots of factors are used in the study. First of all, ELM applies the previous study variable and emphasizes one of two distinct routes to attitude change. One is called central route which means a person will change attitude because diligent consideration of information and feelings is central to the true merit. And the other is called peripheral route which occurs when a person processes a cue that is irrelevant to the true merit. Secondly, the other variable is introduced in ELM called involvement. The level of involvement depends on individual motivation and ability. According to the concept of involvement, mostly high involvement messages have greater personal relevance and consequences than low involvement messages. Because of greater personal relevance and consequences, high involvement people have more motivation than low involvement people. In other words, because high involvement people are more afraid of the risk of failure than low involvement people, the quality of the argument has a greater impact in high involvement conditions. If individual has more need for cognition (Petty & Cacioppo1982) to satisfy their demand, the more motivation they have. Ability represents whether the individual has enough knowledge to judge the target. In short, high involvement person has more motivation and ability to process

information than low involvement. Thirdly, two variables that are often used in the field of persuasive messages and also be introduced in the ELM model called argument and cue. The of arguments is the information highly related to target characteristics. In addition, an argument can be divided into strong and weak argument quality. Strong argument quality means individuals generate positive thoughts when they process messages and vice versa. On the contrary, cues represent information not relevant to the target such as endorsers or background music.

We knew the ELM model is 2 (involvement: high or low)×2 (argument quality: strong or weak)×2 (cue: celebrity or non-celebrity status) factorial design. According to manipulating the experimental variables, ELM measure several results to prove their hypothesis. Involvement is a moderator to influence the result of dependent variables. According to the field of consumer behavior research, only individuals with high motivation and ability can process large quantities and high quality information. Thus, the ELM illustrate high involvement people can process all information and make a decision by central route. Conversely, the person with low involvement adopt the peripheral route and process cues to form the decision.

However, the elaboration likelihood model didn't explain people process information by both central and peripheral routes no matter what they are high or low involvement, it's just depend on different weights to determine the amount of percentage used (see Figure1). Because of high motivation and ability, the individual with high involvement can evaluate the target through processing all information such as argument and cue by using a more central route and less peripheral route. In contrast, because individuals don't have the motivation and ability to process information deeply, they process target-irrelevant messages such as cues to make a decision by using more the peripheral route and less central route.

In conclusion, the ELM point out peripheral cues are more essential than issue-relevant argument in low involvement situation, however, the opposite is true for high levels of involvement. Depending on the persuasion situation, Petty and Wegner's generous conceptions hold that an individual forming an attitude is a concept on a continuum. Different persuasion variables help to determine the route. How individuals control their use of central or peripheral routes, as well as motivation and ability, is determined by using the right kind of argument and cue. As a result, forming different continuums of attitude has different antecedents and consequences

2.2 Argument Quality

As noted earlier, there is an important variable in our study, called Argument Quality, from a typical ELM study regarding persuasion. In the field of consumer behavior and persuasion communication, argument quality was a factor that numerous researchers used.

Typically, persuasive information contains (implicitly or explicitly) arguments that support the advocated position. These elements may differ in number, content, and order in the message, etc. One particularly notable way in which message variables may differ is quality. This means that a given argument can be either a normatively good argument (a strong-quality argument) or a normatively poor argument (a weak-quality argument). The purpose of an ELM study is to change the level of argument quality used in persuasive communication to determine whether certain variables of argument structure increase or decrease argument processing. To explain more specifically, some individuals received "Strong" arguments, while others received "Weak" arguments. One particularly notable way in which message variables may differ is quality. Argument quality is defined empirically, "Strong" arguments are those that process favorable thoughts and create positive attitudes when they are instructed to think about them, and contrarily, "Weak" arguments are those that

process unfavorable thoughts and create negative attitudes. Under baseline conditions, manipulating argument quality in combination with some other variables may be able to determine if this variable contributes to enhanced or reduced argument processing.

2.3 Correction Theory

According to social judgment theory, individuals attempt to assess the true merit or close reality of target characteristics based on prior knowledge or experience when faced with a new, complicated problem. Because customers encounter numerous information every day and lack the knowledge to take the complex problem, they try to find out biases in order to make an accurate decision. Advertisers, for instance, manipulate consumers to create biases about products. As the result, customers would do well to figure out these potential biasing agents and others, then approach true merit to find the right answer. The study of the Flexible Correction Model (Wegner & Petty 1997) has become an important aspect of social judgment theory. However, there are limitations and procedures involved when individuals correct themselves and change their attitude.

Different types of correction models have been extensively studied over the past few decades. The context effect should be considered first, before we discuss bias correction theory (Leonard L. Martin 1986). Individuals' impressions of targets can be significantly influenced by their context. The context effect in Set/Reset Model (Martin, Leonard L1986) can be divided into two different effects: the assimilation effect and the contrast effect. When dealing with an ambiguous target, one's representation will initially include some positive and negative aspects. Then, the context primes the thoughts associated with it, some of which may overlap with the representation of the target. When the impression of the target person shifts toward a context person, that is, context reactions can be mistaken for reactions to the target, this is called the assimilation effect(setting). On the contrary, the impression of target

person moving away from that of the context person and reactions to context are “partialled” out of reactions to target called the contrast effect. In the case of contextual stimuli activating incoming stimulus information, assimilation occurs if the information and the concept match each other, with contrast in the opposite case. According to researchers, these effects may be attributed to the activation of concepts in memory that occurs without awareness.

A Flexible Correction Model (Wegener & Petty 1997) is derived from the naive theory of correction. At what point does bias correction occur in individuals? The concept of bias correction may occur depending on different situations. There are, however, three conditions that must be met for bias correction to occur. (1) Individuals with motivation and ability may recognize bias and be aware of it. (2) According to the naive theory, an individual will form a personal concept and their own perspective when bias occurs. (3) Individuals not only need to have sufficient motivation and ability, but they also need to have enough cognitive resources (Petty and Wegener 1999).

According to the Flexible Correction Model (Wegener & Petty 1997), bias correction differs in magnitude and direction across judgment targets, perceivers, and situations. Motivation and abilities to identify bias vary by potential source of individual and situation. Firstly, Individuals who are unmotivated or unable to search for potential sources of bias will base their assessment of the target's characteristics on their initial reaction to it. However, if the perceiver is motivated and able to search for sources of bias, they are likely to evaluate some salient factors in the judgment setting, including those that are internal and external to the perceiver. That is, in cases where a perceiver believes that a bias is operating, regardless of the accuracy or inaccuracy of the thought, then correction is dependent on the level of motivation and ability to engage in theory-based correction. Furthermore, within the context effect

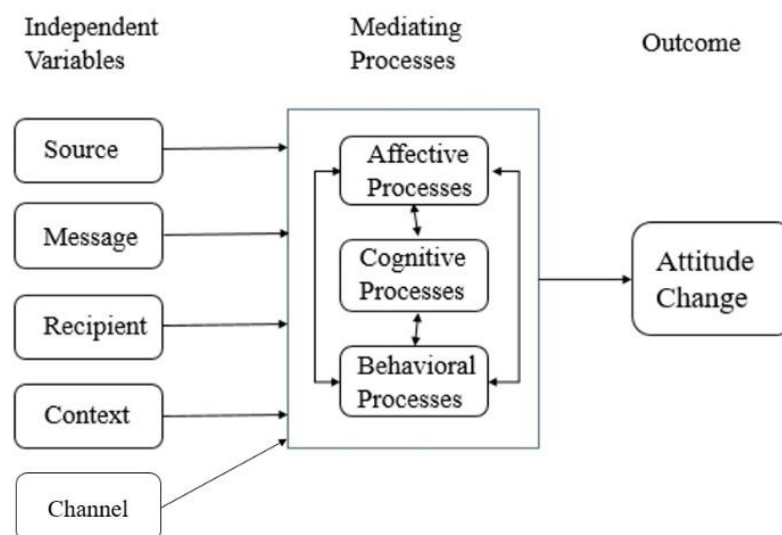
domain, a factor can make the target's initial reactions more similar to reactions to the biasing context, make the target's initial reactions less similar to reactions to the biasing context, or have no effect. As a result of perceptions of bias, corrections are made. In other words, corrections are designed to eliminate perceived bias rather than remove actual bias.

2.4 Multiple Roles

Although two routes have been introduced in the persuasion field from ELM since the 1980s, it is not fulfilled from the perspective of the ELM concept. As an example, ELM only uses several variables to fulfill one of its postulate roles. However, an important problem in the field of persuasion is the lack of knowledge about how and when the source, message, recipient, context, and channel variables influence attitude change (see Figure1). But Petty and Cacioppo (1986a, 1986b) introduced the notion of multiple roles for an attitude change in the persuasion field.

Figure 1

General Mediating Process on Attitude Change (adapted from Petty & Wegener, 1998)



Defining and operationalizing the construct is necessary before talking about how many of the typical source, message, recipient, and context variables are manipulated in the accumulative persuasion research. Cacioppo and Petty (1983) categorized variables that influence attitude change into four categories as follow:

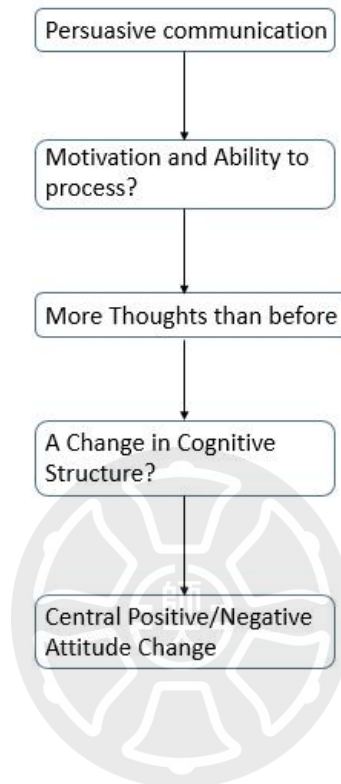
1. By serving as persuasion argument,
2. By serving as peripheral cues,
3. By affecting the extent or direction of elaboration,
4. By the biases that people generate in the process of processing information.

In other word, the individual may play multiple roles in the context of different conditions to process the persuasion message, then, influence the changes in the individual's attitude to target.

As we explained earlier, the main construct of ELM is the elaboration continuum. Petty and Wegener (1999) intended to find out how motivated and capable people are to assess and elaborate the central attributes of a person. According to the framework of ELM, the more motivated and able individuals are to evaluate the central merits of the target, the more possible they scrutinize all information effortfully. On the contrary, in low end situations, information scrutiny is reduced. Change in attitudes can, however, be influenced by low effort information scrutiny or other processes using fewer resources and so on (see Figure 2). Additionally, multiple roles mention that some variables that are treated as peripheral cues may be regarded as central arguments in certain circumstances.

Figure 2

The Process in ELM Persuasion (adapted from Petty & Wegener, 1999)



Depending on the elaboration continuum, variables either serve as cues at the low end or are used as arguments or biased information processing at the high end. In other words, variables can play a variety of roles along the elaboration continuum, which means that any peripheral cue can have a greater, a lower, a reversed, or the same impact as the likelihood of elaboration increases, depending on whether it serves as a peripheral cue.

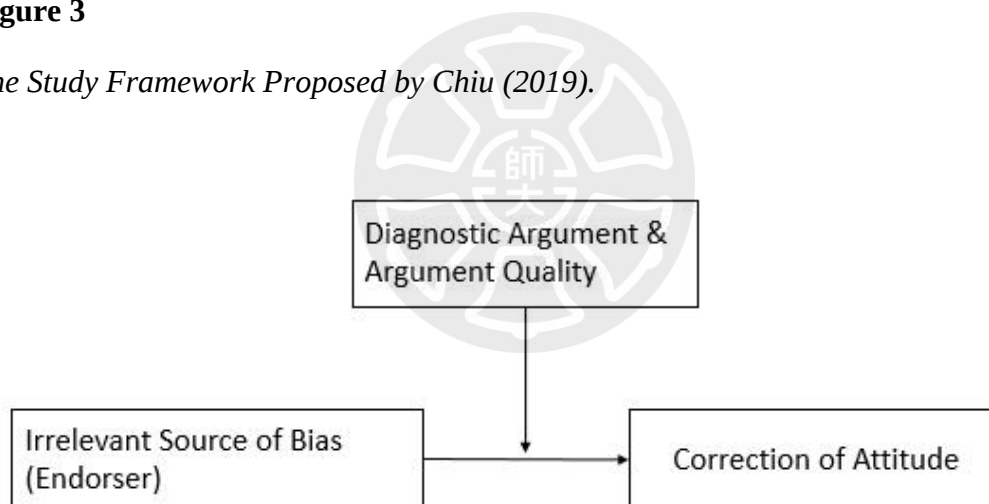
2.5 Argument Diagnosticity

Our study aims to contribute to revising Chiu's (2019) research and experimental design as one of the principal objectives of this study. The purpose of Chiu's study is to discover why the ELM model has not mentioned any bias correction for people with high involvement, and after that, argument diagnosticity is inserted into the

entire study to be the key factor. Argument Diagnosticity is determined by whether a product can be judged as good or bad to the true merits of consumers and argument is relevant to the true merit or not. A argument diagnosticity with strong/weak/neutral argument quality as a moderating variable influences the correction of attitude changes among participants by manipulating whether the endorser is attractive or average. In short, by using an advertisement, the moderator will manipulate the participants to see if there is a bias correction. (see Figure 3). Specifically, she aims to identify if the correcting behavior will be performed by manipulating argument diagnosticity, and if so, whether the argument diagnosticity is the key factor for distinguishing.

Figure 3

The Study Framework Proposed by Chiu (2019).



The result of the research implies consumers can generate product evaluation when the product argument is a high argument diagnosticity, regardless of whether it is strong, neutral, or weak. Due to the fact that a argument diagnosticity refers to the central merit of a target and can easily influence consumers when judging products, high involvement consumers can easily develop product evaluation based on the argument and won't be affected by the bias (e.g. endorser). Further, high involvement

people will be aware that the endorser is irrelevant to their target product, so they may perceive the attractive endorser as a bias that influences product evaluations and thereby corrects their overall assessment. However, when the product argument is a low argument diagnosticity, that is the argument quality is neutral and cannot make consumers generate any thought (equal to no thought) through the judgmental process, the individual will correct the overall evaluation as met bias (endorser which irrelevant with the target product).



CHAPTER 3 PROPOSED THEORY AND HYPOTHESES

3.1 Proposed Theory

In the ELM model, no matter how strong or weak the argument is, there is sufficient information to judge the quality of the product and argument relevant to merit, that is, high argument diagnosticity, so there will be no bias correction. As a result, we extended our study to analyze whether argument diagnosticity in the ELM model and bias correction are the main determinants of bias correction. The main purpose of this study is to go beyond Chiu's research by showing how bias correction occurs in the ELM model and using argument diagnosticity as moderators in high involvement situations, as well as finding bias correction also occurs when argument quality is strong.

The Elaborate Likelihood Model suggests that people with high involvement process not just argument and central merits but also peripheral cues. That is, high involvement individuals would process both arguments and cues during the information processing process, only in terms of the extent of influence. The ELM suggests, however, that peripheral cues will not influence the decision of high involvement people. For instance, high involvement people consider whether an attractive endorser is associated with the central merits of the product, and if they find a relation, the attractive source can be viewed as a persuasive argument. On the contrary, they wouldn't consider the attractive endorsers as a persuasion message if it's unrelated to central merits because high involvement people will focus on the central argument.

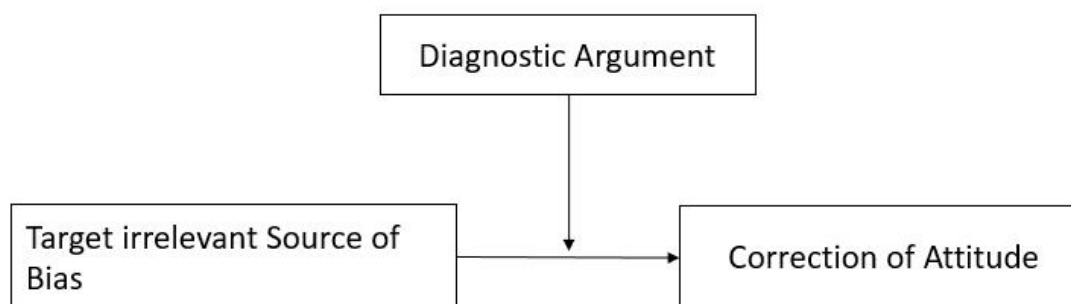
As we explained earlier, the bias correction theory may occur when individuals have the motivation and the ability to process bias. Furthermore, individuals with extremely high involvement more easily discover bias and make bias corrections when product arguments fail to generate consumer evaluation. Absolutely, the

concept in Chiu's study also confirmed that someone in high involvement will correct the attitude because of insufficient arguments. Furthermore, we want to discover whether bias will exist as long as an argument exists? Or the bias correction has always existed and is only affected by weight. Our study will use the argument diagnosticity, argument quality to be the moderator, and then find out what it is the key factor of the difference between the ELM model and previous studies about bias correction.

In our study, we will extend Chiu's study by adding more conditions into the research process. Consistent with Chiu's research, we also serve the argument diagnosticity as a moderator and categorize it into a high and low argument diagnosticity. However, before we consider the argument diagnosticity, we divided argument quality into three conditions, which are strong, natural, and weak. To find out if biased messages will be corrected when injected into high involvement people's minds, we manipulate the argument quality mix argument diagnosticity. Figure 4 describes the study framework, and the participants will be manipulated by the moderator of the argument diagnosticity and other variables through an advertisement, finding whether there would generate a bias correction.

Figure 4

Theoretical Framework

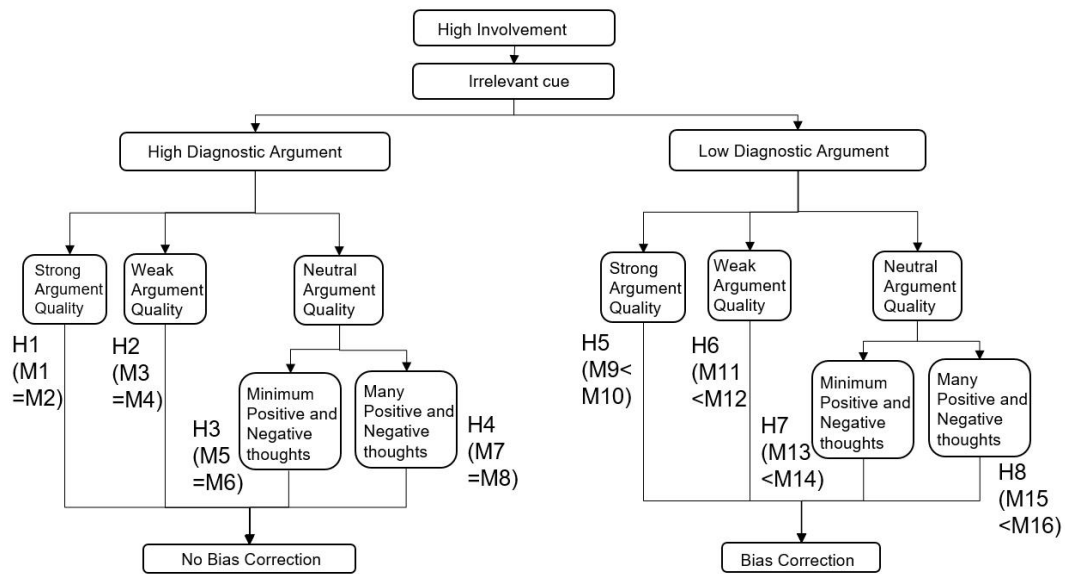


3.2 Hypothesis

In the market, individuals will process a lot of information before making purchasing decisions. In Chiu's study, she has only emphasized one situation which is a high involvement individual and low argument diagnosticity with neutral argument quality with fewer thoughts will lead to bias correction. In Chiu's study framework, another point of contention is that she defines low argument diagnosticity as neutral arguments with minimum thoughts. However, the definition of neutral argument does not only mean minimum thoughts, but can also generate many positive and negative thoughts. We hypothesized eight cases to demonstrate whether there was a bias correction since we wanted to make her research more comprehensive. Figure 5 shows that argument quality is divided into strong, neutral, and weak argument qualities, in which the neutral argument redistribution will generate many positive and negative thoughts and minimum positive and negative thoughts. Each condition of argument quality will mix with the high and low argument diagnosticity of the argument. A product's attitude to strong, weak, and neutral argument quality will differ, and the product's evaluation of strong argument quality is relatively positive; weak argument quality is relatively negative; neutral argument quality is relatively neutral.

Figure 5

Study Hypothesis Structure



Firstly, in the scenario, no matter how strong, weak, or neutral the Argument Quality is, it will meet High and Low Argument diagnosticity. Thence, eight hypotheses are as follows:

The individual won't correct bias because they have sufficient motivation and ability in order to easily judge the product after people in high involvement process arguments with high argument diagnosticity and bias simultaneously, and make accurate decisions eventually. When the mean of the attractive endorser is equal to the mean of the average endorser, represent bias correction is less likely to occur. On the contrary, when the mean of the average endorser would be better than the attractive endorser, bias correction is more likely to occur.

Therefore, we propose the following hypothesis:

Hypothesis 1: In the situation of high involvement, high argument diagnosticity, strong argument quality, and high bias awareness, bias correction is less likely to

occur. We expect the mean of the attractive endorser will equal to the mean of the average endorser ($M1=M2$).

Hypothesis 2: In the situation of high involvement, high argument diagnosticity, weak argument quality, and high bias awareness, bias correction is less likely to occur. We expect the mean of the attractive endorser will equal to the mean of the average endorser ($M3=M4$).

Research by Chiu suggests that neutral argument quality is directly correlated with producing minimum positive and negative thoughts. However, I divide neutral argument quality into generating many or minimum positive and negative thoughts. Therefore, neutral argument quality can be differentiated into high and low argument diagnosticity.

Hypothesis 3: In the situation of high involvement, high argument diagnosticity, neutral argument quality with minimum positive and negative thoughts, and high bias awareness, bias correction is less likely to occur. We expect the mean of the attractive endorser will equal to the mean of the average endorser ($M5=M6$).

Hypothesis 4: In the situation of high involvement, high argument diagnosticity, neutral argument quality with many positive and negative thoughts, and high bias awareness, bias correction is less likely to occur. We expect the mean of the attractive endorser will equal to the mean of the average endorser ($M7=M8$).

The individual will correct bias because they have sufficient motivation and ability to awareness cue when they process arguments with low argument diagnosticity and

bias simultaneously, and make accurate decisions which lead to bias correction eventually.

Hypothesis 5: In the situation of high involvement, low argument diagnosticity, strong argument quality, and high bias awareness, bias correction is more likely to occur. We expect the mean of the average endorser would be better than the attractive endorser. ($M9 < M10$)

Hypothesis 6: In the situation of high involvement, low argument diagnosticity, weak argument quality, and high bias awareness, bias correction is more likely to occur. We expect the mean of the average endorser would be better than the attractive endorser. ($M11 < M12$)

As mentioned earlier, I divided neutral argument quality into generating many or minimum positive and negative thoughts. Each situation will encounter high and low argument diagnosticity.

Hypothesis 7: In the situation of high involvement, low argument diagnosticity, neutral argument quality with minimum positive and negative thoughts, and high bias awareness, bias correction is more likely to occur. We expect the mean of the average endorser would be better than the attractive endorser. ($M13 < M14$)

Hypothesis 8: In the situation of high involvement, low argument diagnosticity, neutral argument quality with many positive and negative thoughts, and high bias awareness, bias correction is more likely to occur. We expect the mean of the average endorser would be better than the attractive endorser. ($M15 < M16$)

According to the following hypothesis, firstly, we assume that variables other than argument diagnosticity will be independent of bias correction, and only argument diagnosticity will influence whether bias correction occurs or not. Secondly, high involvement participants with a low argument diagnosticity eventually will have bias correction whose direction will be opposite the original direction.



CHAPTER 4 RESEARCH METHODOLOGY

4.1 Overview

Specifically, the aim of this study is to go beyond Chiu's research by showing how bias correction occurs in the ELM model and how argument diagnosticity as moderators in high involvement situations, as well as to find bias correction also occurs when argument quality is strong. Chiu's (2019) study predicted that high involvement consumers would correct their biases. Moreover, consumers with high involvement will evaluate targets by cues (e.g. endorsers) when the argument is low argument diagnosticity. As a result, before we conduct the main experiment to verify the above assumptions, we first perform a pretest to find the appropriate arguments.

4.2 Pretest

Purpose and Design

In the pretest, the purpose is to determine the quality and argument diagnosticity of the product argument that will be used in the main experiment.

In order to allow participants in the main experiment to make an appropriate judgment, the high and low argument diagnosticity is categorized into four different argument qualities, high diagnosticity argument includes strong argument quality, neutral argument quality (with minimum and many thoughts to participants), and weak argument quality; and low diagnosticity argument also categorized into same four different argument qualities. The questionnaire contains 12 questions in total. Furthermore, participants are expected to answer the question for evaluate the correlation, appropriate and attractive level of both attractive and average endorsers from the selected endorsers at the end of the pretest. Our study used “Desk lamp” as a target product. In addition, we collected product arguments from advertisements and Desk lamp packages on the internet and on blogs.

The Research subject was selected randomly from the campus of NTNU, 22 students were asked to give an evaluation of 20 product arguments which included six questions. The purpose of these six questions is to measure the attitude toward the product argument, which includes the measurement of argument diagnosticity and argument quality. The first three sentences use to measure argument diagnosticity and the last three sentences use to measure argument quality. Eventually, use the selected arguments in the main experiment. “(1) Can you judge the quality of the desk lamp based on the following statement appearing in an advertisement? (2) Do you think the following sentence accurately describes the advantages and disadvantages of the desk lamp as it appears in the advertisement? (3) When you read the following sentence in the article on desk lamps, do you think it accurately expresses the pros and cons of the product? (4) How will you feel if you see the following sentence in the desk lamp advertisement? Will you have positive thoughts, negative thoughts, or no thoughts? (5) When you see this sentence in an advertisement for a desk lamp, it means there is content of positive description, negative description, or no feeling for you. (6) Will you have a positive impression, a negative impression, or no feeling if you see this sentence in the desk lamp advertisement?” are the questions that assess argument diagnosticity and argument quality. The scale is anchored from -3 to 3 points for all questions. As well as the first six questions, the questionnaire includes the last six questions that measure the relevance, appropriateness, and attractiveness of endorsers and target products. For measuring the extent of relevance included the extent of relevance, suitability, and appropriateness; and for measuring the extent of attractiveness included the extent of attractiveness, favorability, and impression. The scale of these questions is all anchored from -3 to 3 points.

Results

The pretest research is designed to identify an argument appropriate for eight conditions, including 1. high argument diagnosticity and strong argument quality, 2. high argument diagnosticity and weak argument quality, 3. low argument diagnosticity and strong argument quality, 4. low argument diagnosticity and weak argument quality, 5. high argument diagnosticity and neutral argument with generating minimum positive & negative thoughts, 6. high argument diagnosticity and neutral argument with generating many positive & negative thoughts, 7. low argument diagnosticity and neutral argument with generating minimum positive & negative thoughts, 8. low argument diagnosticity and neutral argument with generating many positive & negative thoughts. For each condition, there will be five arguments, and we will choose three of the five arguments that we think are feasible for the main experiment. The scale is anchored from -3 to 3 points for all questions. We put the data in SPSS to analyze the following results.

Table 1

Means and Cronbach α of Argument

Product Argument	Cronbach's α		Mean	
	Argument diagnosticity	Argument Quality	Argument diagnosticity	Argument Quality
The LED desk lamp uses a patented filter that filters UV rays and protects the eyes. (此款 LED 檯燈使用專利濾光片，能過濾紫外線並且保護眼睛。)	0.71	0.89	1.75	2.27
Using beehive optical technology, the light is uniform without glare and ghosting, which can reduce eye fatigue.	0.6	0.9	1.74	2.29

(使用蜂巢式光學科技，光線均勻無眩光、無疊影，可減少眼睛疲勞。)

The LED desk lamp has an energy label, and its longevity is 20 times longer than the ordinary traditional desk lamp.	0.68	0.86	1.56	2.27
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(LED 檯燈具有節能標章，壽命為一般傳統檯燈 20 倍長。)

This LED desk lamp uses a "Silver Alloy Cement Line", which can greatly improve the illumination brightness.	0.69	0.9	1.33	2.17
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(此款 LED 檯燈封裝時使用「銀合金接合線」，可以大幅度提升照射亮度。)

The irradiation range is increased by 50% with innovative wide-angle rectangular light technology.	0.69	0.94	1.48	2.21
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(創新廣角矩形光技術，照射範圍增加 50%。)

This LED desk lamp has an anti-UV filter, but in order to achieve a complete anti-UV effect, the brightness of the desk lamp will be significantly lower than that of other desk lamps without a UV filter function.	0.73	0.94	1.29	0.03
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(此款 LED 檯燈有抗紫外線濾光片，但為達到完整防紫外線效果，會使檯燈亮度大幅較其他無過濾紫外線功能的檯燈不足。)

Table lamps using LED bulbs light at a single point, and the waste heat generated is also concentrated at one point, which easy to causes the problem of not being able to dissipate heat. (使用 LED 燈泡的檯燈是單點發光，產生的廢熱也集中在一點，容易產生無法散熱的問題。)	0.82	0.98	0.97	-0.79
The longer the LED desk lamp is lit, the faster the phosphor in the light source decays. As a result, the light in the blue light that is in contact with the human eye is likely to become stronger and stronger, thereby causing damage to the human eye. (LED 檯燈點燈的時間越長，光源中的螢光粉衰減越快，結果易導致人眼接觸的藍光波段的光照越來越強烈，從而對人眼造成傷害。)	0.72	0.99	1	-0.85
In order to pursue brightness, LED desk lamps will increase the intensity of blue light. Blue light is visible light and is easy to directly damage the retina of the human eye. (LED 檯燈為了追求亮度，會增加藍光強度，藍光為可見光易直接傷害人眼視網膜。)	0.8	0.99	0.88	-1.26
The color rendering of the LED desk lamp is low, so the color displayed under the	0.75	0.99	0.86	-1.02

illumination is not as real as that of the general lamp, which is easy to cause visual errors, which will affect the optic nerve and cause fatigue.

(LED 檯燈平均顯色指數較低，因此在照射下顯示的顏色沒有一般燈真實，容易造成視覺的誤差，對視神經會有影響，容易讓人疲勞。)

The LED desk lamp once appeared in the video of the Internet celebrity Mrs. Science, but she recently got into a scandal of suspected illegal drugs.	0.93	0.85	-1.55	-0.53
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(此款 LED 檯燈曾經出現在網紅理科太太影片中，但他近期惹上疑似業配違禁藥品風波。)

The LED desk lamp was once endorsed by Liu Yihao, but he recently broke out in a scandal and the reputation of his celebrity has fallen.	0.94	0.86	-1.62	-0.45
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(此款 LED 檯燈曾經是劉以豪代言的，但他最近爆出醜聞，形象殞落。)

The LED desk lamp was launched in cooperation with the cartoon character Kobito, but most people think Kobito is ugly.	0.93	0.83	-1.77	-0.45
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(此款 LED 檯燈與卡通角色屁桃合作推出，但大部分的人覺得屁桃醜。)

The well-known illustrator Duncan once drew a four-	0.91	0.8	-1.45	-0.12
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frame cartoon with this LED lamp as the background of the story, but everyone don't want to pay for it.

(知名插畫家當肯曾經以這個 LED 檯燈為故事背景畫了一個四格漫畫，但大家不買單。)

Because the lamp is black, it is not suitable to take a picture of the lamp in a dark room.	0.88	0.8	-1.12	-0.36
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(因為檯燈是黑色的，若要在黑暗的房間幫檯燈拍一張照不合適。)

This LED desk lamp cooperates with the cute Japanese cartoon Kobito.	0.88	0.86	-1.33	0.44
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(此款 LED 檯燈與超可愛的日本人氣卡通屁桃聯名合作推出。)

The LED desk lamp was featured in a video by Mrs. Science, a well-known and well-educated internet celebrity.	0.95	0.83	-0.80	1.06
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此款 LED 檯燈有出現在知名知識型網紅且擁有高學歷背景的理科太太影片中。

The LED desk lamp is endorsed by Liu Yi hao, a warm sunshine man.	0.95	0.81	-1.14	1.05
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(此款 LED 檯燈是陽光暖男劉以豪代言的。)

The well-known illustrator Duncan once drew a humorous and funny four-frame cartoon with this LED	0.92	0.73	-1.18	0.92
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**lamp as the background of
the story.**

(知名插畫家當肯曾經以這個
LED 檯燈為故事背景畫了一個
幽默又搞笑的四格漫畫。)

With soft sunlight, it is very suitable for taking a series of photos for the desk lamp. (若有搭配著柔和的日光，很 適合幫檯燈拍一組照片。)	0.9	0.8	-0.56	0.92
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Note. Argument selected in the main experiment are boldfaced.

We divide all arguments into four parts for different situations to analyze, and choose the arguments that Cronbach's α and Mean are relatively appropriate with. For the situation of high argument diagnosticity with strong argument quality, Cronbach's alpha for all five arguments is about 0.7, except for the argument "Using beehive optical technology, the light is uniform without glare and ghosting, which can reduce eye fatigue." which is relatively low. Therefore, we choose three of four arguments with relatively high mean as the arguments used in the main experiment. For the situation of high argument diagnosticity with weak argument quality, Cronbach's alpha for all arguments is greater than 0.7. Therefore, we choose three mean of arguments with relatively low argument quality. For the situation of low argument diagnosticity with weak argument quality, Cronbach's alpha for all arguments is greater than 0.8 and the mean of the argument diagnosticity also corresponds to the low argument diagnosticity. Therefore, we choose three mean of arguments with relatively low argument quality. For the situation of low argument diagnosticity with strong argument quality, we use the same criteria to filter out three suitable arguments.

A further discovery is that the mean of argument quality in "This LED desk lamp has an anti-UV filter, but in order to achieve a complete anti-UV effect, the brightness of the lamp will be significantly lower than that of other desk lamps without a UV filter function." =0.03, and the mean of argument diagnosticity in this argument =1.29. This means that the argument is a neutral argument quality containing both positive and negative arguments, however, the argument is high argument diagnosticity simultaneously. We can determine if positive and negative arguments have the same attribute in this argument, and participants will generate a minimum of thoughts. In contrast, if it's a different attribute, participants will generate many thoughts. To determine the four conditions of the neutral argument, we manipulate this situation.

Table 2

One-Sample T-test of product argument

Product Argument	Mean	Std. Dev.	t	p
The LED desk lamp was featured in a video by Mrs. Science, a well-known and well-educated internet celebrity. 此款 LED 檯燈有出現在知名知識型網紅且擁有高學歷背景的理科太太影片中。	-0.8030	1.88466	-1.999	0.059

Based on Table 2, (1) Shows $p > 0.05$ and no significant difference. (2) This sentence is unsuitable for a low-argument argument diagnosticity because $\text{mean} = -0.8$. (3) Because of the large standard deviation, there is a big difference between people who think they have a diagnosis and those who don't. Consequently, we revise the original argument to "The LED desk lamp was once liked by Tsai Gray, the two-year-old son of Internet celebrity 蔡阿嘎. (此款 LED 檯燈曾經被網紅蔡阿嘎的兩歲兒

子蔡桃貴喜歡過。)", because of the relevance between Mts. Science and desk lamps lead to the result in Table2.

Table 3

Means of endorsers

	Mean	N	Std. Dev
Yu Sheng-relevant	-1.64	22	1.5
Yu Sheng-suitability	-0.14	22	1.86
Yu Sheng-appropriateness	-0.05	22	1.73
Yu Sheng-attractiveness	-0.41	22	1.65
Yu Sheng-favorability	0.05	22	1.46
Yu Sheng-positive or negative images	0.91	22	1.85

Even though Yu Sheng (宥勝) was chosen in Chiu's experiment and we want to keep him, we ask participants questions about him as well. As for the celebrity endorser, the chosen one is with a suitable mean and will be used in the main experiment. The Cronbach's α of endorser relevance and attractiveness are 0.85 and 0.908, greater than 0.8. As Table 3. shows, it can be seen that the correlation between Yu Sheng (宥勝) and desk lamps is small. Besides, it can be seen that the correlation between desk lamps and Yu Sheng (宥勝) is less than 0. Therefore, Yu-Sheng continues to be selected as the celebrity endorser in the experiment and as a bias in main experiment influence factor. Table 3. also shows the means of the extent of the attractiveness of the selected endorser, Yu Sheng (宥勝). As the result, the demonstration indicated that Yu Sheng(宥勝) is an attractive endorser.

4.3 Main Experiment

Participants and Design

The main experiment includes three independent variables, which are “product argument quality”, “endorser” and “diagnosticity argument”. Endorser consists of two levels, product argument quality consists of four levels, and product diagnosticity

argument has two levels. The endorser is divided into attractive and average endorsers; Product argument quality is divided into strong, weak, and neutral argument quality, with neutral argument quality being divided into producing many positive and negative thoughts, and producing fewer positive and negative thoughts; Product diagnosticity argument divided into a high and low level. The experiment design is shown in Table 4. The experiment is a 2 (Endorser) x2 (Argument diagnosticity) x(4 product argument quality) between-participants factorial design, and there are 16 groups. The research participant is 18 to 25 years old people, and expect to recruit at least 480 people. To collect the results, an online questionnaire is used. Participants are divided into 16 groups and randomly assigned to one of the questionnaires, and each group needs at least 30 participants. The dependent variable in the experiment is "The attitude of the overall product evaluation".

Table 4

Experiment design

High diagnosticity argument					Low diagnosticity argument			
	Strong argument quality		Weak argument quality		Neutral argument quality		Neutral argument quality	
	Many thoughts		Minimum thoughts		Many thoughts		Minimum thoughts	
Attractive	Situation 1(M1)	Situation 3(M3)	Situation 5(M5)	Situation 7(M7)	Situation 9(M9)	Situation 11(M11)	Situation 13(M13)	Situation 15(M15)
Average	Situation 2(M2)	Situation 4(M4)	Situation 6(M6)	Situation 8(M8)	Situation 10(M10)	Situation 12(M12)	Situation 14(M14)	Situation 16(M16)

Experiment Procedure

An online questionnaire was used for the design of the experiment, which included the manipulation of independent variables, fictional advertising, and corresponding questions. Additionally, the online questionnaire measured the dependent variables.

Since my research is to go beyond Chiu's study, I have revised her online questionnaire in my experiment. This research pretends to investigate the cognitive and reading ability of students. This online questionnaire has a description of our experiment on the cover, and the rest of the information is below. Starting from the next page, participants would see three articles or advertisements chosen from online articles or magazines on the market randomly. Follow the questions sequentially and answer them one by one without looking ahead. Since there is no right answer, please feel free to express your feelings honestly. Then, we will draw 20 gift certificates to encourage students to complete the questionnaire. A short description of an extracted article from the American Marketing Journal will appear on the next page following the introduction on the cover. After reading the article, the participants were asked to answer the question corresponding to it. This article focused on the endorsement factor of unobjective product evaluation, which can help participants to be aware of bias and make the necessary adjustments when doing the target advertising. To prevent the participant from speculating about the true purpose of the experiment, the questionnaire is divided into two parts: the stuffed article and the target article. This is done to prevent them from speculating the true purpose of the experiment, thereby, creating the Demand Effect. The stuffed article was taken from an online blog and selected for categories not related to desk lamps, the selected product is cake. Furthermore, the other purpose of the stuffed article is to manipulate questions to remind the participants that they need to read the article carefully in the next target article. After each participant answers a stuffed article of the question, they are asked to fill in the questionnaire. Specifically, the questionnaire is intended to assess the consumer's attitude towards the product in the article.

For the second target article, a fictional desk lamp brand article of sharing product is shown, which called "Light Baby". A short introduction about the target article is

given before the participants read the actual article, which includes manipulation of involvement. According to this product, participants pretend to be students who just had laser eye surgery and need to buy a new desk lamp in time for their final exam. Next, read the manipulated argument article. (see Table 5) After reading the target article, the participants are asked to do the correlating questions about this product, the content of the questions is to investigate the evaluation of the target product and involvement. After filling in the questionnaire, a sentence will be shown to thank the participants. Finally, ask the participant to fill in their school mailbox to ensure that the participant is a student.

Table 5

The arguments about desk lamps in the article

Description of eight condition	Product argument
High argument diagnosticity and strong argument quality	最近我常常在工作用電腦一整天後覺得眼睛疲勞，想著到底是問題出在哪？ 結果我發現是因為剛好檯燈壞掉了，剛好看到 FB 友人分享這個 LED 檯燈，馬上把他買回家！今天就來跟大家分享使用本檯燈的心得： 光寶寶 LED 檯燈因為是用專利濾光片，所以能過濾紫外線並且可以保護眼睛~ 重點是這款 LED 檯燈具有節能標章，壽命為一般傳統檯燈 20 倍長，這對我熱愛環保的人很重要~ 對了！它透過創新廣角矩形光技術，照射範圍增加 50%，這功能超適合我的啦！ 今天就先介紹到這邊啦，我們下週見！
High argument diagnosticity and weak argument quality	最近我常常在工作用電腦一整天後覺得眼睛疲勞，想著到底是問題出在哪？ 結果我發現是因為剛好檯燈壞掉了，剛好看到 FB 友人分享這個光寶寶 LED 檯燈，馬上把他買回家！ 今天就來跟大家分享使用本檯燈的心得： 如果讓 LED 檯燈長時間點著燈，光源中的螢光粉會衰減越快，結果容易導致人眼接觸的藍光波段的光照越來越強烈，最後對人眼造成傷害！ 光寶寶 LED 檯燈為了追求亮度，增加了藍光強度，藍光為可見光容易直接傷害人的視網膜。

另外，LED 檯燈平均顯色指數較低，因此在照射下顯示的顏色沒有一般燈真實，容易造成視覺的誤差，對視神經會有影響，容易讓人疲勞。
今天就先介紹到這邊啦，我們下週見！

Low argument

diagnosticity and

strong argument

quality

最近我常常在工作用電腦一整天後覺得眼睛疲勞，想著到底是問題出在哪？
結果我發現是因為剛好檯燈壞掉了，剛好看到 FB 友人分享這個光寶寶 LED 檯燈，馬上把他買回家！
今天就來跟大家分享使用本檯燈的心得：
這款光寶寶 LED 檯燈曾經被網紅蔡阿嘎的兩歲兒子蔡桃貴喜歡過唷~
而且檯燈曾經是陽光暖男劉以豪代言的！
另外，知名插畫家當肯曾經以這個 LED 檯燈為故事背景畫了一個幽默又搞笑的四格漫畫喔~
今天就先介紹到這邊啦，我們下週見！

Low argument

diagnosticity and

weak argument

quality

最近我常常在工作用電腦一整天後覺得眼睛疲勞，想著到底是問題出在哪？
結果我發現是因為剛好檯燈壞掉了，剛好看到 FB 友人分享這個光寶寶 LED 檯燈，馬上把他買回家！
今天就來跟大家分享使用本檯燈的心得：
其實光寶寶的 LED 檯燈曾經出現在網紅理科太太影片中，但他近期惹上疑似業配違禁藥品風波了~
另外，過去光寶寶的 LED 檯燈曾經是劉以豪代言的，但他最近爆出醜聞，結果形象殞落了！
而且最後要說的是，光寶寶 LED 檯燈與卡通角色屁桃合作推出，但其實大部分的人覺得屁桃醜。
今天就先介紹到這邊啦，我們下週見！

High argument

diagnosticity and

neutral argument

with generating

minimum positive

& negative

thoughts

最近我常常在工作用電腦一整天後覺得眼睛疲勞，想著到底是問題出在哪？
結果我發現是因為剛好檯燈壞掉了，剛好看到 FB 友人分享這個 LED 檯燈，馬上把他買回家！
今天就來跟大家分享本檯燈的心得分享：
光寶寶 LED 檯燈有抗紫外線專利濾光片，但為達到完整防紫外線效果，會使檯燈亮度大幅較其他無過濾紫外線功能的檯燈不足。
今天就先介紹到這邊啦，我們下週見！

High argument diagnosticity and neutral argument with generating many positive & negative thoughts	最近我常常在工作用電腦一整天後覺得眼睛疲勞，想著到底是問題出在哪？ 結果我發現是因為剛好檯燈壞掉了，剛好看到 FB 友人分享這個 LED 檯燈，馬上把他買回家！今天就來跟大家分享本檯燈的心得分享： 光寶寶 LED 檯燈具有節能標章，壽命為一般傳統檯燈 20 倍長。 但是這款檯燈平均顯色指數較低，因此在照射下顯示的顏色沒有一般燈真實，容易造成視覺的誤差，對視神經會有影響，容易讓人疲勞。 另外檯燈還有一個優點，使用創新廣角矩形光技術，照射範圍增加 50%。 只是可惜的是 LED 檯燈沒有藍光濾片，會增加藍光強度，藍光為可見光易直接傷害人眼視網膜。 今天就先介紹到這邊啦，我們下週見！
Low argument diagnosticity and neutral argument with generating minimum positive & negative thoughts	最近我常常在工作用電腦一整天後覺得眼睛疲勞，想著到底是問題出在哪？ 結果我發現是因為剛好檯燈壞掉了，剛好看到 FB 友人分享這個 LED 檯燈，馬上把他買回家！今天就來跟大家分享本檯燈的心得分享： 就我所知，這款光寶寶 LED 檯燈過去曾經是陽光暖男劉以豪代言的，但他最近爆出醜聞，形象殞落了，希望這個風波趕快落幕~ 今天就先介紹到這邊啦，我們下週見！
Low argument diagnosticity and neutral argument with generating many positive & negative thoughts	最近我常常在工作用電腦一整天後覺得眼睛疲勞，想著到底是問題出在哪？ 結果我發現是因為剛好檯燈壞掉了，剛好看到 FB 友人分享這個 LED 檯燈，馬上把他買回家！今天就來跟大家分享本檯燈的心得分享： 這款光寶寶 LED 檯燈曾經被網紅蔡阿嘎的兩歲兒子蔡桃貴喜歡過，整天抱著不放。而且知名插畫家當肯曾經以這個檯燈為故事背景畫了一個幽默又搞笑的四格漫畫~ 但是！光寶寶 LED 檯燈曾經出現在網紅理科太太影片中，只是她近期惹上疑似業配違禁藥品風波了！而且曾經幫光寶寶檯燈代言的劉以豪最近爆出醜聞，形象殞落，希望風波趕快落幕~ 今天就先介紹到這邊啦，我們下週見！

Independent Variables

Endorser. When people are low involved, endorsers would be seen as simple acceptance and cues, according to Petty and Cacioppo's ELM model (1984). However, it can be treated as target arguments, when people are in high involvement. Therefore, the attractiveness of endorsers will influence the overall evaluation of a product.

There are two endorsers in the target article, one is an attractive celebrity endorser, Yu-Sheng (宥勝), and the other is a fictional average endorser, Ben. Since Yu Sheng (宥勝) has not endorsed any desk lamp advertisement before, the public's perception of his image is also relatively unrelated to his appearance. The pretest results indicate that participants perceive Yu-Sheng to have a low relationship with the desk lamp. In addition, the advertisements for desk lamps seldom use endorsers, so it is not easy for people to think that the two endorsers are related to desk lamps. All these factors are taken into account to prevent the participants from doubting the truth of the fictional brand in order to generate a bias correction.

Product Argument. The product argument is selected by a pretest. For the high argument diagnosticity, the product argument includes “The LED desk lamp uses a patented filter that filters UV rays and protects the eyes. (LED 檯燈使用專利濾光片，能過濾紫外線並且保護眼睛。)”, “The LED desk lamp has an energy label, and its longevity is 20 times longer than the ordinary traditional desk lamp. (LED 檯燈具有節能標章，壽命為一般傳統檯燈 20 倍長。)”, “The irradiation range is increased by 50% with innovative wide-angle rectangular light technology. (創新廣角矩形光技術，照射範圍增加 50%。)” has relatively high argument diagnosticity and quality means of the attitude of product evaluation. On the other hand, the product argument includes “The longer the LED desk lamp is lit, the faster the phosphor in the light source decays. As a result, the light in the blue light that is in contact with the

human eye is likely to become stronger and stronger, thereby causing damage to the human eye. (LED 檯燈點燈的時間越長，光源中的螢光粉衰減越快，結果易導致人眼接觸的藍光波段的光照越來越強烈，從而對人眼造成傷害。)", "In order to pursue brightness, LED desk lamps will increase the intensity of blue light. Blue light is visible light and is easy to directly damage the retina of the human eye. (LED 檯燈為了追求亮度，會增加藍光強度，藍光為可見光易直接傷害人眼視網膜。)", "The color rendering of the LED desk lamp is low, so the color displayed under the illumination is not as real as that of the general lamp, which is easy to cause visual errors, which will affect the optic nerve and cause fatigue. (LED 檯燈顯色度較低，因此在照射下顯示的顏色沒有一般燈真實，容易造成視覺的誤差，對視神經會有影響，容易讓人疲勞。)" has a relatively low quality mean but a high argument diagnosticity mean of the attitude of product evaluation.

For the low argument diagnosticity, the product argument includes "The LED desk lamp once appeared in the video of the Internet celebrity Mrs. Science, but she recently got into a scandal of suspected illegal drugs. (LED 檯燈曾經出現在網紅理科太太影片中，但他近期惹上疑似業配違禁藥品風波。)", "The LED desk lamp was once endorsed by 劉以豪, but he recently broke out in a scandal and destroy his image. (LED 檯燈曾經是劉以豪代言的，但他最近爆出醜聞，形象殞落。)", "The LED desk lamp was launched in cooperation with the cartoon character Kobito, but most people think Kobito is ugly. (LED 檯燈與卡通角色屁桃合作推出，但大部分的人覺得屁桃醜。)" has relatively low argument diagnosticity and quality means of the attitude of product evaluation. On the other hand, the product argument includes "The LED desk lamp was once liked by 蔡桃貴, the two-year-old son of Internet celebrity 蔡阿嘎. (LED 檯燈曾經被網紅蔡阿嘎的兩歲兒子蔡桃貴喜歡過。)", "The LED desk lamp is endorsed by Liu Yi-hao, a warm sunshine man. (LED

檯燈是陽光暖男劉以豪代言的。) ”, “The well-known illustrator DunKen once drew a humorous and funny four-frame cartoon with this LED lamp as the background of the story. (知名插畫家當肯曾經以這個 LED 檯燈為故事背景畫了一個幽默又搞笑的四格漫畫。) ” has relatively low argument diagnosticity but high quality means of the attitude of product evaluation.

With the neutral argument, we combine one sentence of high argument quality with one sentence of low argument quality, both of these sentences are high argument diagnosticity or low argument diagnosticity. Furthermore, we control the argument that a sentence is all the same attribute will generate fewer ideas. In contrast, the argument that a sentence is all the different attributes will generate more ideas. The eight condition product arguments are put in the target article for the main experiment.

Dependent Variables

Attitude. Participants are asked to fill out the corresponding questions after reading a fictional article in an attractive or average blog about the target product, Light Baby. The main purpose of these questions is to measure the attitude towards the target product argument. There are four kinds of attitude problems, including quality problems, preference problems, purchase intentions, and product evaluation problems, using a scale from -3 to 3 points. The definition of each point equal to -3 = “Negative evaluation (持負面評價)”, “The quality is very bad (品質非常差)”, “Very disliked (非常不喜歡)”, “Buying is impossible (非常不可能購買)”. 3 includes “Positive evaluation (持正面評價)”, “The quality is very good (品質非常好)”, “Very liked (非常喜歡)”, “Definitely will buy (非常可能購買).”

Manipulation Check

Involvement. After receiving manipulation, we ask three questions to measure the degree of involvement of our subjects to ensure they are in high involvement. The

measurement scale is from -3 to 3 points. -3 includes “Not very concentrated (非常不專注)”, “Not very careful (非常不仔細)”, “Not thinking carefully (沒有謹慎思考)”. 3 includes “Very concentrated (非常專注)”, “Very careful (非常仔細)”, and “Thinking carefully (有謹慎思考)”.

Argument Quality. The strength of argument quality is determined by positive or negative thoughts an individual generates when he or she perceives an argument (Petty & Cacioppo, 1986). When individuals evaluate the target, the strong argument will lead to positive thoughts, the weak argument will lead to negative thoughts, and the neutral argument will result in neutral thoughts which means generating no thoughts or generating positive and negative thoughts at the same time. For the product arguments quality evaluated in our target article, there are three questions anchored from -3 to 3 points. All three questions also are asked in the pretest experiment. -3 includes “Convince not at all” (完全不具說服力), “Very negative expression”(完全負面表達), “Generating lots of negative thoughts” (產生非常多負面想法). 3 includes “Very convincing” (非常具有說服力), “Very positive expression” (非常能夠正面表達), “Generating lots of positive thoughts” (產生非常多正面想法).

Quality of Article Content. As part of the questionnaire, we measure the participants' opinions on the content of the product-sharing article. The question includes measuring credibility, fairness, and professionalism. The participants need to do three questions to evaluate the quality of the article content. The scale is from -3 to 3 points. -3 includes “Extremely unbelievable” (完全不可信), “Extremely unfair” (完全不公平), and “Extremely unprofessional ” (完全不專業). 3 includes “Extremely believable” (完全可信), “Extremely fair” (完全公正), and “Extremely professional” (完全專業).

Attractiveness of Endorser. To manipulate the endorser of our target article we use two standard. The first is to use the attractive celebrity endorser Yu Sheng (宥勝), and the second is to use an unknown average endorser Ben. The participants need to do four questions to evaluate the attitude of endorsers. All three questions also are asked in the pretest experiment. The scale is from -3 to 3 points. -3 includes “Very not attractive” (非常不具吸引力), “Very unfavorable” (非常不具有好感), “Very disliked (only in the first experiment)” (非常不喜歡), “Very unfamiliar” (非常不熟悉), “Very untrustworthy” (非常不值得信賴). 3 includes “Very attractive” (非常具有吸引力), “Very favorable” (非常具有好感), “Very liked ” (非常喜歡), “Very familiar” (非常熟悉), “Very trustworthy” (非常值得信賴).

Relevance of Endorser. In the experiment, three questions are asked to measure the relevance of attractive or average endorsers. All three questions also are asked in the pretest experiment. The scale is from -3 to 3 points. -3 includes “Highly irrelevant” (高度不相關), “Very unsuitable” (非常不適合), and “Very appropriate ” (非常不貼切). 3 includes “Highly relevant” (高度相關), “Very suitable” (非常適合), “Very inappropriate” (非常貼切).

Argument Diagnosticity. The classification of argument diagnosticity is included in product arguments. The argument with high argument diagnosticity facilitates consumers to easily judge the quality of the product and be the high argument relevant to the true merit of the target. The argument diagnosticity can be categorized into a strong argument diagnosticity and a weak argument diagnosticity. Both the high and low argument diagnosticity includes strong argument quality, neutral argument, and weak argument quality. There are three questions to measure the argument diagnosticity in the experiment. All three questions also are asked in the pretest experiment. The scale is from -3 to 3 points. -3 includes “Completely

impossible to judge the quality of the lamp.” (完全無法判斷檯燈的好壞),
“Completely unable to fully express the pros and cons of the product.” (完全不能充分表現產品優劣), “A description that is completely unable to fully express the pros and cons of the product.” (完全不能夠完整表現產品優劣的敘述). 3 includes
“Completely possible to judge the quality of the lamp.” (完全可以判斷檯燈的好壞),
“Completely able to fully express the pros and cons of the product.” (完全能充分表現產品優劣), “A description that is completely able to fully express the pros and cons of the product.” (完全能夠完整表現產品優劣的敘述).



CHAPTER 5 RESEARCH RESULT

5.1 Manipulation Check

For the following questions, What do you think is the difference between consumers' responses to the two items in the above question if an attractive endorser or an average endorser is invited for a product advertisement? Please write down the reasons you think(請問您覺得產品廣告請知名人物代言或素人代言，為何會對上題中兩項消費者的反應造成差異?請寫上您認為的原因), we collected 500 samples and classified all of them into 10 factors, as shown in Table 5. There were 489 participants who mentioned the difference was because of celebrity endorsement. In addition, people who mentioned celebrity endorsement was 98%, which is the majority.

Table 6

Number of statistics-question 1-1

Reason	Amount
Impact (Celebrity effect, the celebrity endorser has more influence power.	79
Credibility (People trust celebrity endorser and think they have more credibility.)	177
Reputation (Celebrity endorser has reputation.)	41
Attractiveness (Celebrity is more attractive.)	55
Persuasive (Product endorsed by the celebrity is more persuasive.)	17
Identity (People want to become like a celebrity.)	19
Image (Deep impression of the celebrity.)	64
Exposure (Product endorsed by the celebrity can increase the exposure rate.)	15

Familiarity	22
(Celebrity is more familiar to the people.)	
Other (not related to endorser)	11
Total	500

For the following questions, Do you think the reasons you wrote in the above question will make consumers have an unobjective bias towards the product? 請問您認為您上題所寫的原因是否會讓消費者對產品產生不客觀的偏誤?, Table 6 shows that more people believe endorsements will lead to unobjective product evaluations. There are 93.2% of participants who believe "Yes, it will cause product evaluation to be unobjective." and 6.8% who believe "No, it will not cause product evaluation to be unobjective.". The percentage of answering yes is relatively high.

Table 7

Frequency distribution table-question 1-2

	Frequency	Percent	Valid Percent	Cumulative Percent
No, it will not cause product evaluation unobjective	34	6.8	6.8	6.8
Yes, it will cause product evaluation unobjective	466	93.2	93.2	100
Total	500	100	100	

For the following questions, After reading the article, do you think that when the price, service, and quality of the products in the two stores are exactly the same, what will be the result of consumers' evaluation and purchase of the products if they are not affected by bias? 閱讀完文章後，您認為當兩家賣場產品的售價、服務、品質皆一模一樣時，若在不受到偏誤影響的情況下，消費者對產品的評價與購買量會呈現什麼結果?, the expecting answer is “The same” , participants who answer “The same” means they have a high possibility of correcting their bias. Table 12.

shows that the percentage of answers “The same (都一樣)” is 34%, “Attractive endorsers” is 63.8%, and “Average endorsers” is 2.2%. However, the answer of the participants didn't meet our expectations. The results show that the respondents who answered “Attractive endorsers” for the majority, which indicates that maybe the participants are not successfully manipulated by the article, may lead to unsuccessful subsequent experiments. To ensure that the results were as accurate as possible, we selected 170 participants who would correct the bias and analyze again them in the following. This may be the reason why the correction effect in the subsequent analysis results is not significant.

Table 8

Frequency distribution table-question 1-3

	Frequency	Percent	Valid Percent	Cumulative Percent
Not be influenced by the endorser	170	34	34	34
It is higher on attractive endorsers	319	63.8	63.8	97.8
It is higher on average endorsers	11	2.2	2.2	100
Total	500	100	100	

For the following questions, After reading the findings in the article, if you enter a store endorsed by a well-known person, should you revise your evaluation of the product even without realizing that your evaluation of the product was influenced by the endorsement of a well-known person? 在您閱讀完文章中的發現後，若您進入一個以知名人物代言的賣場，即使在未意識到自己對產品的評價受到知名人物代言的影響下，您是否應當要修正您對產品的評價?, Based on Table 8 reveals that more people anticipate changing their primary evaluation of the product after

reading the articles. Accordingly, 68.4% of the participants answered "Yes" and 31.6% answered "No". It can be seen from the data that at least 68.4% of the participants may make corrections in the following test because the percentage of yes answers is relatively high.

Table 9

Frequency distribution table-question 1-4

	Frequency	Percent	Valid Percent	Cumulative Percent
No	158	31.6	31.6	31.6
Yes	342	68.4	68.4	100
Total	500	100	100	

Involvement

An experiment needs to ensure the participant's involvement is high. There are three questions in our experiment to check the extent of involvement of our subjects. The research and analysis show that the measurement scale has good reliability (Cronbach's $\alpha=0.882$), which shows high consistency. As a result, the participants' responses can be averaged as an indicator of analysis. We manipulated all subjects to be high involvement participants. It can be seen from Table 9 that the degree of involvement is generally greater than the median value of between -3 and 3. The mean of these three questions is 1.2209 which is more than 0. In addition, the means of each product argument are also more than 0.

Table 10

One Sample Test-the manipulation check of Involvement

	N	Mean	Std. Dev.	t	df	Sig.
Involvement	501	1.2209	1.23216	22.178	500	0.000

Table 11*The univariate analysis-the manipulation check of Involvement*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Modified model	26.257 ^a	23	1.142	0.743	0.801
Intercept	667.445	1	667.445	434.427	0.000
Endorser	3.242	1	3.242	2.110	0.147
Argument Diagnosticity	6.558	1	6.558	4.268	0.039
Argument quality	0.302	2	0.151	0.098	0.906
Order	1.399	1	1.399	0.911	0.340
Endorser * Argument Diagnosticity	0.617	1	0.617	0.402	0.527
Endorser * Argument quality	5.782	2	2.891	1.882	0.153
Endorser * Order	0.017	1	0.017	0.011	0.916
Argument Diagnosticity * Argument quality	4.719	2	2.359	1.536	0.216
Argument Diagnosticity * Order	0.332	1	0.332	0.216	0.642
Argument quality * Order	1.018	2	0.509	0.331	0.718
Endorser * Argument Diagnosticity * Argument quality	0.887	2	0.443	0.289	0.749
Endorser * Argument Diagnosticity * Order	2.081	1	2.081	1.354	0.245
Endorser * Argument quality * Order	0.587	2	0.293	0.191	0.826
Argument Diagnosticity * Argument quality * Order	3.143	2	1.572	1.023	0.360
Endorser * Argument Diagnosticity * Argument quality * Order	0.524	2	0.262	0.171	0.843
Error	732.853	477	1.536		
Total	1505.889	501			
Corrected total	759.11	500			

Table 12*Descriptive statistics table-the manipulation check of involvement*

Argument diagnosticity	Mean	Std. Dev.	95% Confidence interval	
			Upper bound confidence limit	Lower bound confidence limit
Low argument diagnosticity	1.344	0.083	1.182	1.507
Strong argument diagnosticity	1.102	0.083	0.938	1.265

It can be seen from the Table 10 that the argument diagnosticity has a significant impact on involvement ($p=0.039<0.05$). The means of a high argument diagnosticity is lower than a low argument diagnosticity. The participants who expressed low argument diagnosticity were more attentive than those who expressed high argument diagnosticity. The possible reason is that when randomly assigning the number of samples, it can't control the number of sample distributions between the two conditions.

Argument quality

A strong argument, weak argument, and neutral argument are the four standards used in the experiment to manipulate the arguments quality. In the experiment, there are three questions to measure the strength of the product argument perceived by the participant. Based on the reliability of the three questions ($\alpha=0.88$), we can conclude that these three questions measure the quality of the argument very consistently. According to the Univariate Analysis as Table 12. shows that the strength between different product arguments quality has significant difference ($F=55.292$, $p=0.000 < 0.05$). Under the manipulation of the argument quality, the p-value of the endorser ($F=3.128$, $p=0.078<0.05$) is close to significant, indicating that the endorser interferes with the argument quality. We expect the order effect to only influence attitude.

Basically, every factor should not affect argument quality except attitude, but in this order, it is obvious that order also interferes with argument quality or other factors. But we observed that Argument Quality was significant for Endorser and for Order, probably due to random assignment of results.

Table 13

The univariate analysis-the manipulation check of Argument quality

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Modified model	231.881 ^a	23	10.082	7.321	0.000
Intercept	15.805	1	15.805	11.476	0.001
Endorser	4.307	1	4.307	3.128	0.078
Argument Diagnosticity	9.676	1	9.676	7.026	0.008
Argument quality	152.292	2	76.146	55.292	0.000
Order	4.082	1	4.082	2.964	0.086
Endorser * Argument Diagnosticity	1.897	1	1.897	1.377	0.241
Endorser * Argument quality	3.535	2	1.768	1.284	0.278
Endorser * Order	0.723	1	0.723	0.525	0.469
Argument Diagnosticity * Argument quality	19.253	2	9.627	6.990	0.001
Argument Diagnosticity * Order	3.804	1	3.804	2.763	0.097
Argument quality * Order	0.730	2	0.365	0.265	0.767
Endorser * Argument Diagnosticity * Argument quality	5.265	2	2.632	1.911	0.149
Endorser * Argument Diagnosticity * Order	0.172	1	0.172	0.125	0.724
Endorser * Argument quality * Order	4.649	2	2.324	1.688	0.186
Argument Diagnosticity * Argument quality * Order	8.129	2	4.065	2.951	0.053

Endorser * Argument_					
Diagnosticity *	0.554	2	0.277	0.201	0.818
Argument_quality * Order					
Error	654.148	475	1.377		
Total	901.667	499			
Corrected total	886.030	498			

Table 14

Descriptive statistics table-the manipulation check of Argument quality-Endorser

Endorser	Mean	Std. Dev.	95% Confidence interval	
			Upper bound confidence limit	Lower bound confidence limit
Average	-0.288	0.079	-0.444	-0.131
Attractive	-0.09	0.078	-0.244	0.064

Table 13 is used to analyze the main effect of argument quality. The mean of attractive endorser (M=-0.09) is evaluated better than Average (M=-0.288). The better the attractive endorser, the better the argument quality. Overall, if an attractive endorser writes a blog sharing post, the argument quality will be better than that of an average endorser.

Table 15

Descriptive statistics table-the manipulation check of Argument quality-Argument diagnosticity

Argument diagnosticity	Mean	Std. Dev.	95% Confidence interval	
			Upper bound confidence limit	Lower bound confidence limit
Low argument diagnosticity	-0.377	0.079	-0.492	-0.182
High argument diagnosticity	-0.041	0.079	-0.196	0.114

Overall, as we can see in Table 14, under the condition that the argument quality remains the same, the high argument diagnosticity will be evaluated better than those with low argument diagnosticity.

Table 16

Descriptive statistics table-the manipulation check of Argument quality

Argument quality	Mean	Std. Dev.	95% Confidence interval	
			Upper bound confidence limit	Lower bound confidence limit
Weak argument quality	-0.97	0.108	-1.182	-0.758
Neutral argument quality	-0.202	0.074	-0.348	-0.057
Strong argument quality	0.605	0.104	0.401	0.81

Table 17

Descriptive statistics table-the manipulation check of Argument quality-Order

Order	Mean	Std. Dev.	95% Confidence interval	
			Upper bound confidence limit	Lower bound confidence limit
Quality question first	-0.093	0.079	-0.249	0.063
Positive and negative question first	-0.285	0.078	-0.439	-0.131

The effect of order in argument quality, overall, the condition of quality question asked first be higher than the mean of positive and negative question first. (see Table 16)

Figure 6

Three-way interaction pattern of Argument quality-average endorser

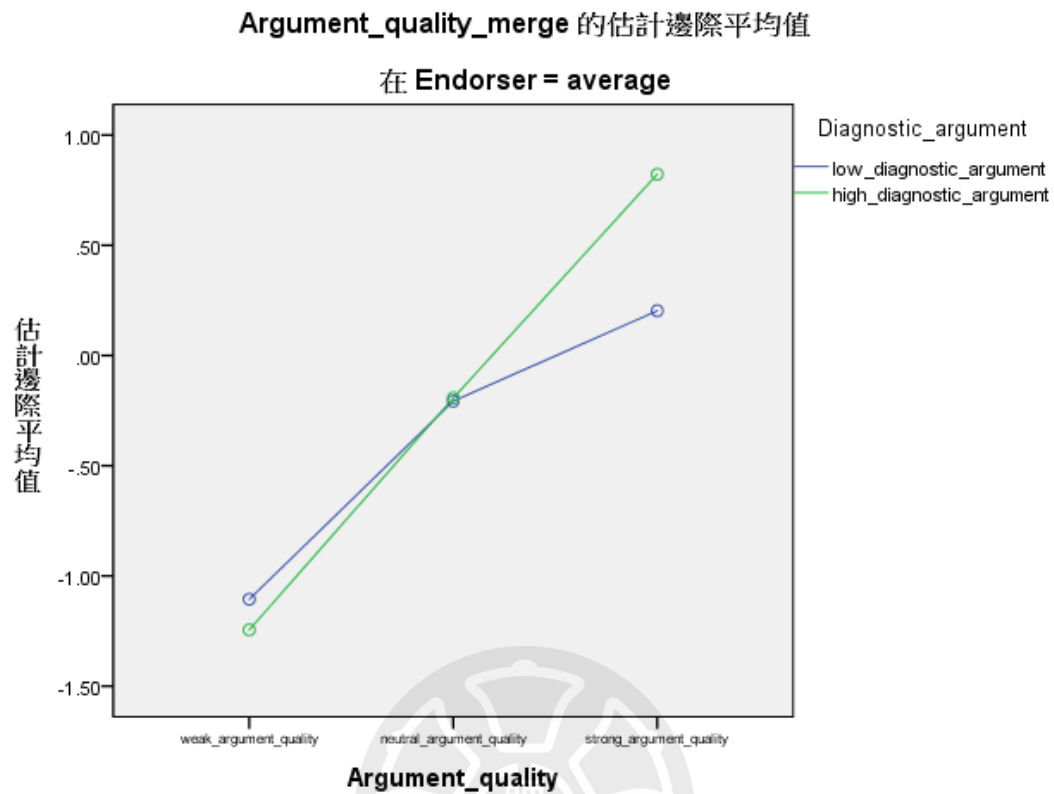
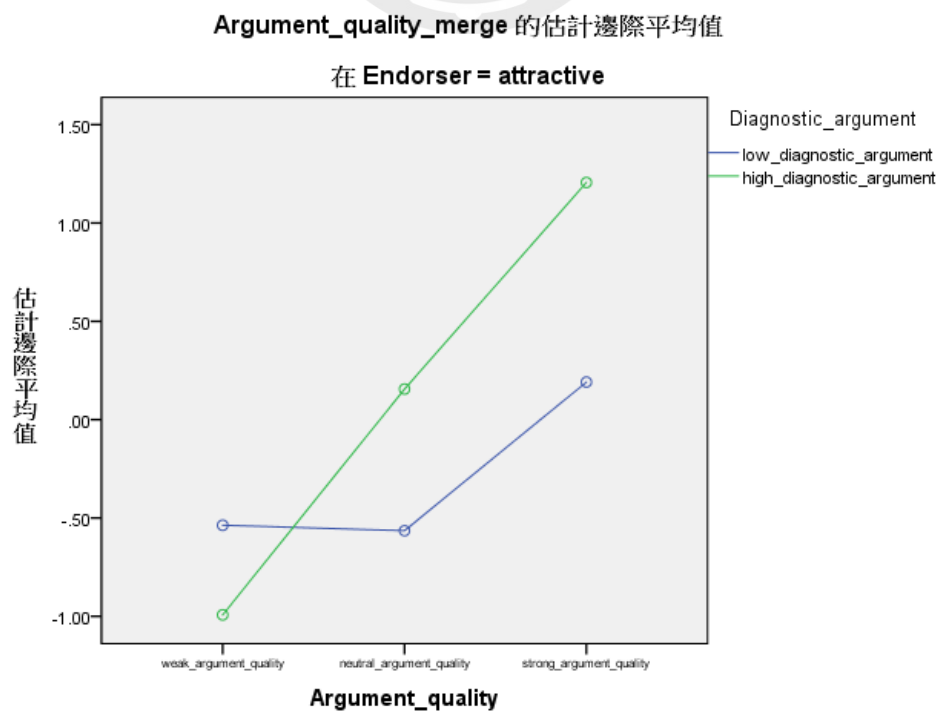


Figure 7

Three-way interaction pattern of Argument quality-attractive endorser



We expect the overall average of attractive endorsers to be higher than average endorsers under all conditions. It can be seen from Figure 6&7 that the overall high argument diagnosis average of attractive endorsers is higher than that of average endorsers. Furthermore, it can be found from the Figure that the value of the argument quality will be affected by the argument diagnosis, and the higher the argument diagnosis, the stronger the argument quality. It can be seen that argument diagnosticity is moderate to interfere with argument quality. Because of the similar liner, low argument diagnosticitys are less affected by argument diagnosticity in average endorsers but are more affected by attractive endorsers.

Table 18

Posteriori test-the manipulation check of argument quality

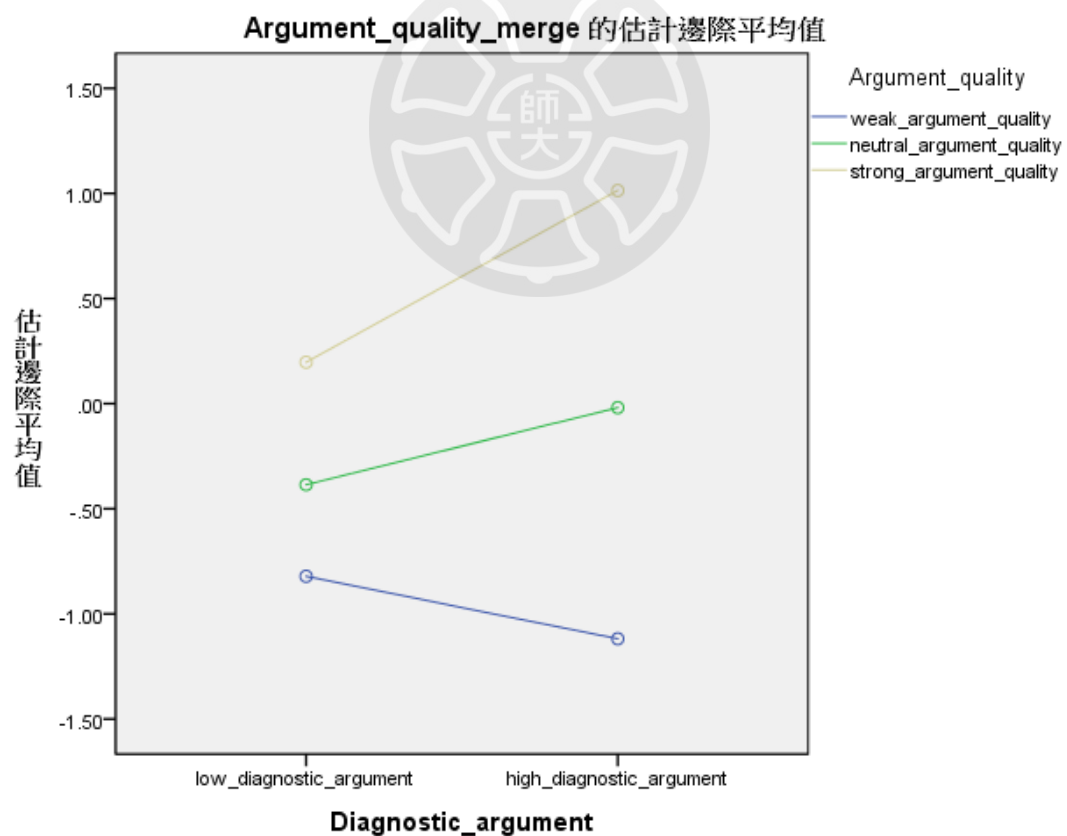
	(I)Argument quality	(J)Argument quality	Mean Difference (I-J)	Sig.
Tukey HSD	Weak argument quality	Neutral argument quality	-0.7622	0.000
		Strong argument quality	-1.5839	0.000
	Neutral argument quality	Weak argument quality	0.7622	0.000
		Strong argument quality	-0.8217	0.000
	Strong argument quality	Weak argument quality	1.5839	0.000
		Neutral argument quality	0.8217	0.000
Bonferroni	Weak argument quality	Neutral argument quality	-0.7622	0.000
		Strong argument quality	-1.5839	0.000

Neutral argument quality	Weak argument quality	0.7622	0.000
	Strong argument quality	-0.8217	0.000
Strong argument quality	Weak argument quality	1.5839	0.000
	Neutral argument quality	0.8217	0.000

It can be seen from the Table 17 that the manipulation of argument quality is very successful. What we manipulated is as expected, the value of strong argument is greater than neutral argument, and neutral argument is greater than weak argument.

Figure 8

Two-way interaction pattern of Argument Diagnosticity & Argument quality



For the main effect, the check of argument quality was more distinct in the case of high argument diagnosticity than with low argument diagnosticity, making the two-way interaction more significant. In the case of high argument diagnosticity, the evaluation of argument quality is better, and make the overall evaluation is improved. On the whole, the quality of arguments with high argument diagnosticity is greater than that with low argument diagnosticity. Figure 8 shows that the difference in low diagnosis is not significant. The insignificant argument quality may be due to the argument diagnosticity interference of arguments. The insignificant difference between low argument diagnosticity and argument quality may be due to our manipulation, and we want our attitude manipulation to be influenced by argument diagnosticity rather than argument quality.

Table 19

Posteriori test-the manipulation check of argument quality with low argument diagnosticity

	(I)Argument quality	(J)Argument quality	Mean Difference (I-J)	Sig.
Tukey HSD	Weak argument quality	Neutral argument quality	-0.4365	0.042
		Strong argument quality	-1.025	0.000
	Neutral argument quality	Weak argument quality	0.4365	0.042
		Strong argument quality	-0.5885	0.003
	Strong argument quality	Weak argument quality	1.025	0.000
		Neutral argument quality	0.5885	0.003
Bonferroni	Weak argument quality	Neutral argument quality	-0.4365	0.048

	Strong argument quality	-1.025	0.000
Neutral argument quality	Weak argument quality	0.4365	0.048
	Strong argument quality	-0.5885	0.003
Strong argument quality	Weak argument quality	1.025	0.000
	Neutral argument quality	0.5885	0.003

Because we found significant differences in argument diagnosticity and argument quality ($p=0.001<0.05$), there were still significant differences between low argument diagnosticity and argument quality detected by TukeyHSD and Bonferroni's Posteriori test.

Quality of Article Content

There are three standards in the experiment to manipulate the quality of article content, including believable, fair, and professional, these three questions have high reliability ($\alpha=0.897$). In the Anova Table, only argument diagnosticity and Article quality are significant.

Table 20

The univariate analysis-measure of quality of article content

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Modified model	140.336 ^a	23	6.102	2.950	0.000
Intercept	135.979	1	135.979	65.749	0.000
Endorser	1.926	1	1.926	0.931	0.335
Argument Diagnosticity	78.001	1	78.001	37.715	0.000
Argument quality	1.230	2	0.615	0.297	0.743
Order	0.424	1	0.424	0.205	0.651
Endorser * Argument Diagnosticity	1.662	1	1.662	0.804	0.370

Endorser * Argument quality	2.208	2	1.104	0.534	0.587
Endorser * Order	1.086	1	1.086	0.525	0.469
Argument Diagnosticity * Argument quality	8.026	2	4.013	1.940	0.145
Argument Diagnosticity * Order	5.744	1	5.744	2.777	0.096
Argument quality * Order	2.085	2	1.043	0.504	0.604
Endorser * Argument Diagnosticity * Argument quality	0.443	2	0.222	0.107	0.898
Endorser * Argument Diagnosticity * Order	4.593	1	4.593	2.221	0.137
Endorser * Argument quality * Order	5.186	2	2.593	1.254	0.286
Argument Diagnosticity * Argument quality * Order	0.281	2	0.141	0.068	0.934
Endorser * Argument Diagnosticity * Argument quality * Order	2.308	2	1.154	0.558	0.573
Error	986.515	477	2.068		
Total	1288.111	501			
Corrected total	1126.852	500			

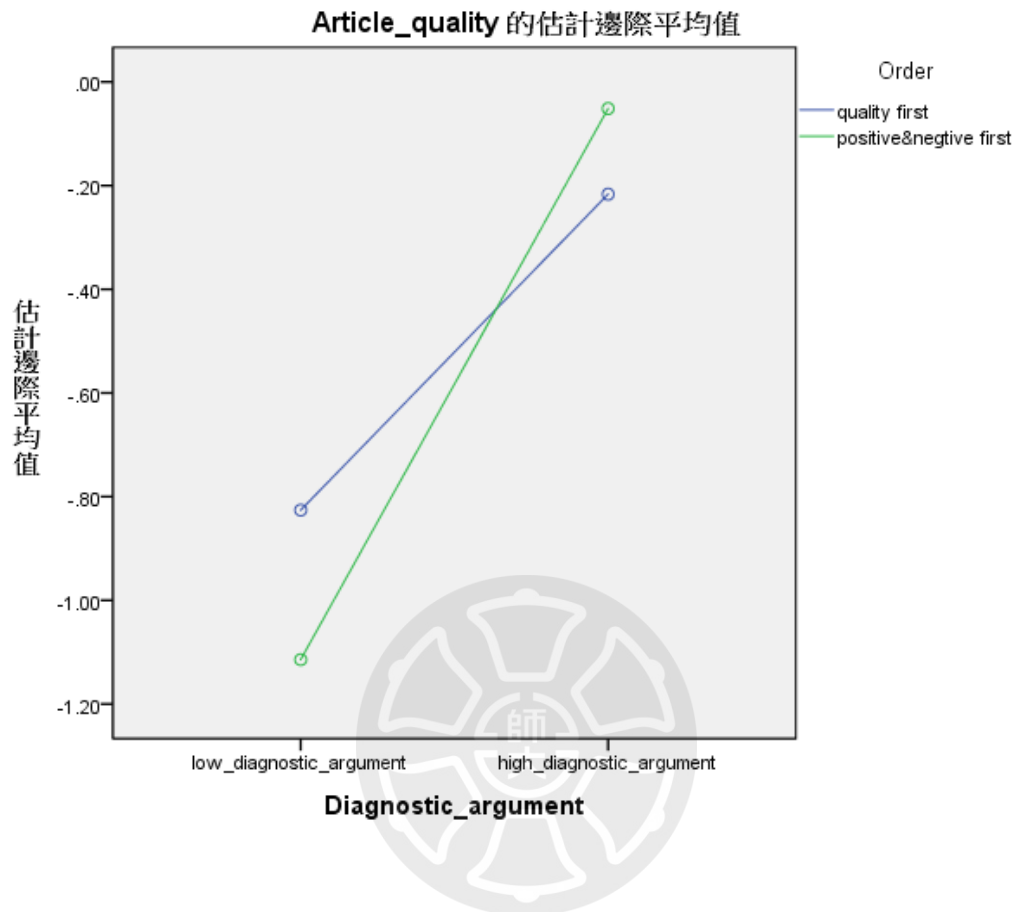
Table 21

Descriptive statistics table-measure of quality of article content

Argument diagnosticity	Mean	Std. Dev.	95% Confidence interval	
			Upper bound	Lower bound
			confidence	confidence
			limit	limit
Low argument diagnosticity	-0.97	0.096	-1.159	-0.781
High argument diagnosticity	-0.134	0.097	-0.324	0.056

Figure 9

Two-way interaction pattern-quality of article content-Argument Diagnosticity & Order



According to the analysis of the graph, although the Anova analysis shows that the argument diagnosticity and order are significantly different, the mean of high argument diagnosticity is high, and the mean of low argument diagnosticity is low, which still conforms to our expectations.

Attractiveness of Endorser

An attractive celebrity endorser and an unknown average endorser are used in the experiment to manipulate the endorser. The question to measure the extent of attractiveness are attractiveness, favorability, familiarity, and reliability; these four questions have high reliability ($\alpha=0.876$). As Table 22 shows, the attractive endorser

($M=0.259$) is more attractive than the average endorser ($M=-0.869$); and Table 21 shows that there is a significant difference between the two endorsers ($F=91.007$, $p=0.000$). Indicates that we have a successful manipulation.

Table 22

The univariate analysis-the manipulation check of attractiveness

Source	Type III	df	Mean	F	Sig.
	Sum of		Square		
	Squares				
Modified model	197.925a	23	8.605	5.536	0
Intercept	41.283	1	41.283	26.556	0
Order	2.235	1	2.235	1.438	0.231
Endorser	141.476	1	141.476	91.007	0
Argument diagnosticity	7.358	1	7.358	4.733	0.03
Argument quality	1.716	2	0.858	0.552	0.576
Order * Endorser	2.908	1	2.908	1.871	0.172
Order * Argument diagnosticity	5.057	1	5.057	3.253	0.072
Order * Argument quality	2.179	2	1.09	0.701	0.497
Endorser * Argument diagnosticity	1.16	1	1.16	0.746	0.388
Endorser * Argument quality	3.757	2	1.878	1.208	0.3
Argument diagnosticity * Argument quality	2.792	2	1.396	0.898	0.408
Order * Endorser * Argument diagnosticity	0.489	1	0.489	0.315	0.575
Order * Endorser * Argument quality	0.452	2	0.226	0.145	0.865
Order * Argument diagnosticity * Argument quality	1.881	2	0.94	0.605	0.547
Endorser * Argument diagnosticity * Argument quality	3.404	2	1.702	1.095	0.335
Order * Endorser * Argument diagnosticity * Argument quality	0.915	2	0.457	0.294	0.745
Error	739.971	476	1.555		
Total	982	500			
Corrected total	937.895	499			

The high correlation between argument diagnosis and attractiveness is because if the arguments conveyed by bloggers or endorsers are highly related to the true merit of the product, it will increase the favorability and reliability of bloggers, the opposite will reduce the favorability and reliability of bloggers. Furthermore, because our manipulations are shared through a blogger's product articles, the participant will evaluate the blogger base on their arguments.

The Table 21 illustrates that attractiveness is highly significant with the mean of high argument diagnosticity, but has low significance with argument quality. Therefore, it can be inferred from this consequence that the mean of high argument diagnosticity and argument quality are different concepts.

Table 23

Descriptive statistics table-the manipulation check of attractiveness-endorser

Endorser	Mean	Std. Dev.	95% Confidence interval	
			Upper bound confidence limit	Lower bound confidence limit
Average	-0.869	0.085	-1.035	-0.703
Attractive	0.259	0.083	0.097	0.422

Table 24

Descriptive statistics table-the manipulation check of attractiveness-argument diagnosticity

Argument diagnosticity	Mean	Std. Dev.	95% Confidence interval	
			Upper bound	Lower bound
			confidence	confidence
			limit	limit
Low argument diagnosticity	-0.433	0.083	-0.597	-0.27
High argument diagnosticity	0.176	0.084	-0.341	0.011

As Table 23 shows, argument diagnosticity also have a significant difference between high and low argument diagnosticity ($F=4.733$, $p=0.03<0.05$). Table 23 show low argument diagnosticity ($M=-0.433$) is more attractive than high argument diagnosticity ($M=-0.869$).

Relevance of Endorser

As the endorser is divided into an attractive endorser and an average endorser in the experiment, the question to measure the extent of relevance are relativity, suitability, and appropriateness; these three questions have high reliability ($\alpha=0.845$). It can be seen from the Table 24 that the relevance is highly significant with endorser ($F=18.771$, $p=0.000<0.05$) and argument diagnosticity ($F=21.837$, $p=0.000<0.05$).

Table 25*The univariate analysis-the manipulation check of relevance*

Source	Type III	df	Mean	F	Sig.
	Sum of		Square		
	Squares				
Modified model	123.507	23	5.37	2.981	0
Intercept	151.409	1	151.409	84.053	0
Order	1.345	1	1.345	0.747	0.388
Endorser	33.814	1	33.814	18.771	0
Argument diagnosticity	39.336	1	39.336	21.837	0
Argument quality	7.493	2	3.747	2.08	0.126
Order * Endorser	0.98	1	0.98	0.544	0.461
Order * Argument diagnosticity	2.058	1	2.058	1.142	0.286
Order * Argument quality	0.57	2	0.285	0.158	0.854
Endorser * Argument diagnosticity	1.662	1	1.662	0.923	0.337
Endorser * Argument quality	2.112	2	1.056	0.586	0.557
Argument diagnosticity * Argument quality	0.614	2	0.307	0.17	0.843
Order * Endorser * Argument diagnosticity	0.818	1	0.818	0.454	0.501
Order * Endorser * Argument quality	9.705	2	4.852	2.694	0.069
Order * Argument diagnosticity * Argument quality	1.684	2	0.842	0.467	0.627
Endorser * Argument diagnosticity * Argument quality	6.859	2	3.43	1.904	0.15
Order * Endorser * Argument diagnosticity * Argument quality	2.981	2	1.49	0.827	0.438
Error	857.443	476	1.801		
Total	1175.222	500			
Corrected total	980.95	499			

Similar to the manipulation of attractiveness, the highly significant between argument diagnosis and relevance is because if the arguments conveyed by bloggers or endorsers are highly related to the true merit of the product, it will increase the

relativity of bloggers, the opposite will reduce the relativity of bloggers. Furthermore, because our manipulations are shared through a blogger's product articles, the participant will evaluate the blogger base on their arguments.

Table 26

Descriptive statistics table-the manipulation check of relevance-endorser

Endorser	Mean	Std. Dev.	95% Confidence interval	
			Upper bound confidence limit	Lower bound confidence limit
Average	-0.308	0.091	-0.487	-0.129
Attractive	-0.859	0.089	-1.034	0.685

Table 27

Descriptive statistics table-the manipulation check of relevance-endorser

Argument diagnosticity	Mean	Std. Dev.	95% Confidence interval	
			Upper bound confidence limit	Lower bound confidence limit
Low argument diagnosticity	-0.881	0.090	-1.057	-0.705
High argument diagnosticity	-0.286	0.090	-0.464	-0.109

Figure 10

Three-way interaction pattern -Relevance of Endorser –Endorser & Argument diagnosticity & Argument quality -Average

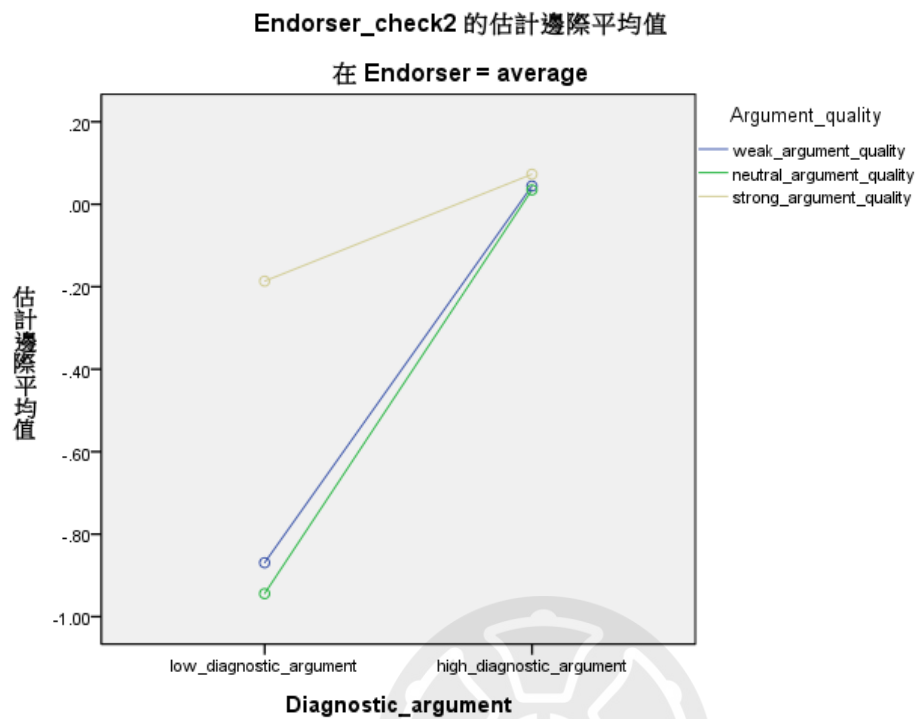
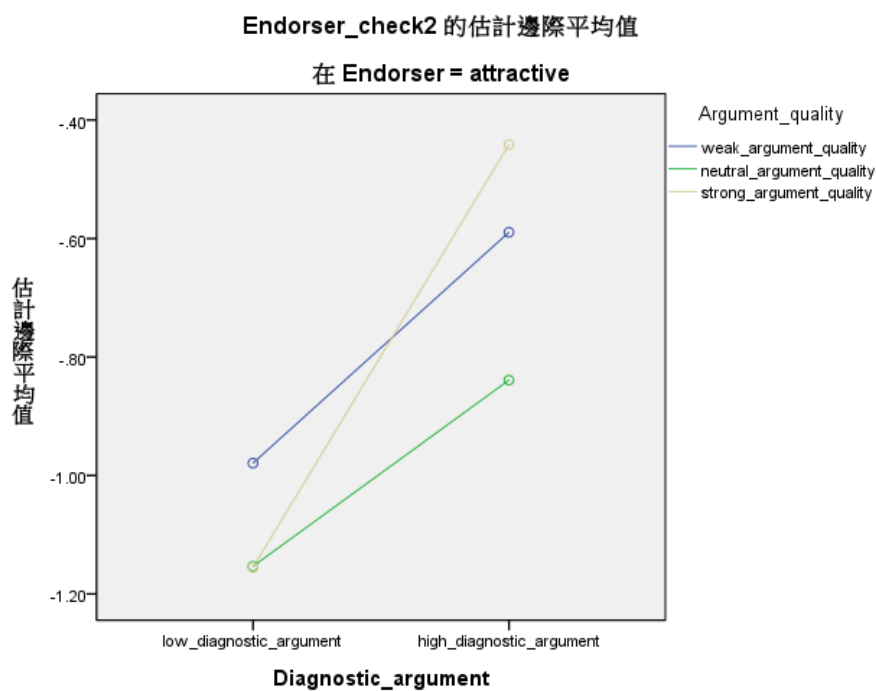


Figure 11

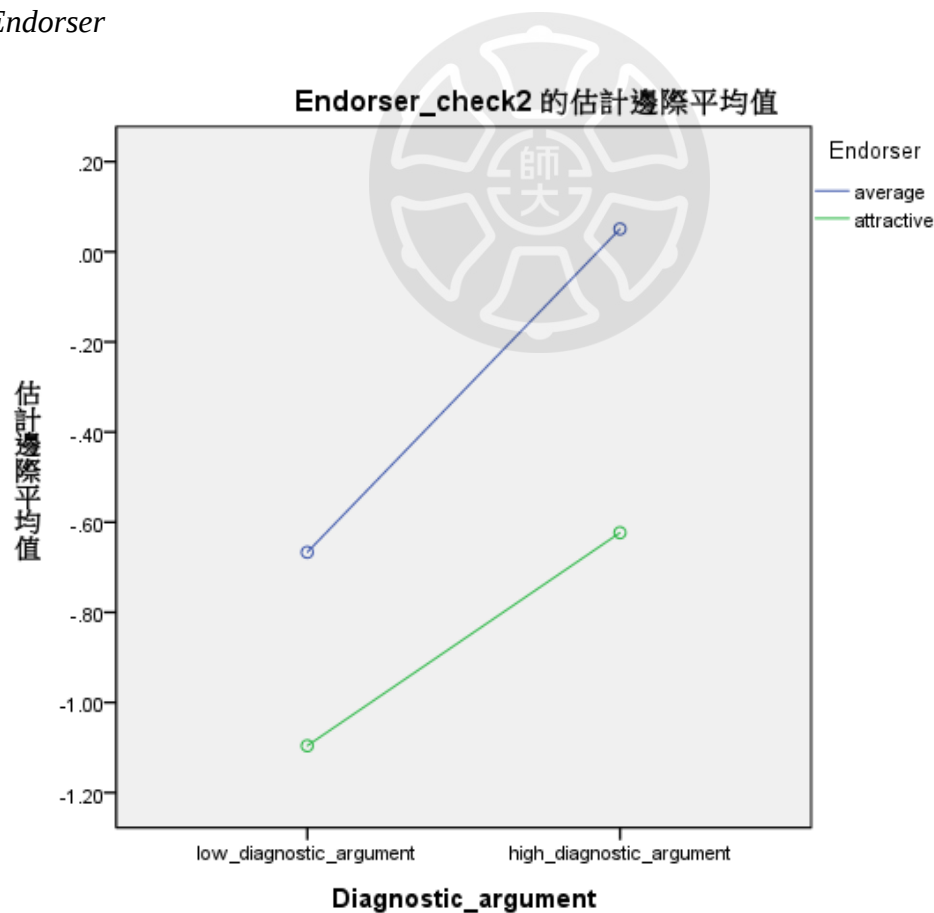
Three-way interaction pattern -Relevance of Endorser –Endorser & Argument diagnosticity & Argument quality -Attractive



The relevance is relatively high in the average endorser of strong argument quality and relatively low in the attractive endorser, that is, the relevance of strong argument quality is raised in low argument diagnosticity conditions. Indicating that the argument of average bloggers talking about desk lamps is positive will make the participant consider that the relevance of average bloggers to desk lamps is high. Overall, the impact of argument diagnosticity on relevance is high, and argument quality is low, but except for strong argument quality. The possible reason is the result of our manipulation.

Figure 12

Two-way interaction pattern -Relevance of Endorser - Argument diagnosticity & Endorser



A special point to consider is that attractive relevance is lower in argument diagnosticity situations. we originally consider that the attractive endorser would be more relevant to the product than the average endorser. However, the results show the opposite, possibly the participant will correct the attractive endorser to make the relevance lower.

Figure 13

Three-way interaction pattern -Relevance of Endorser –Endorser & Order & Argument quality- Quality

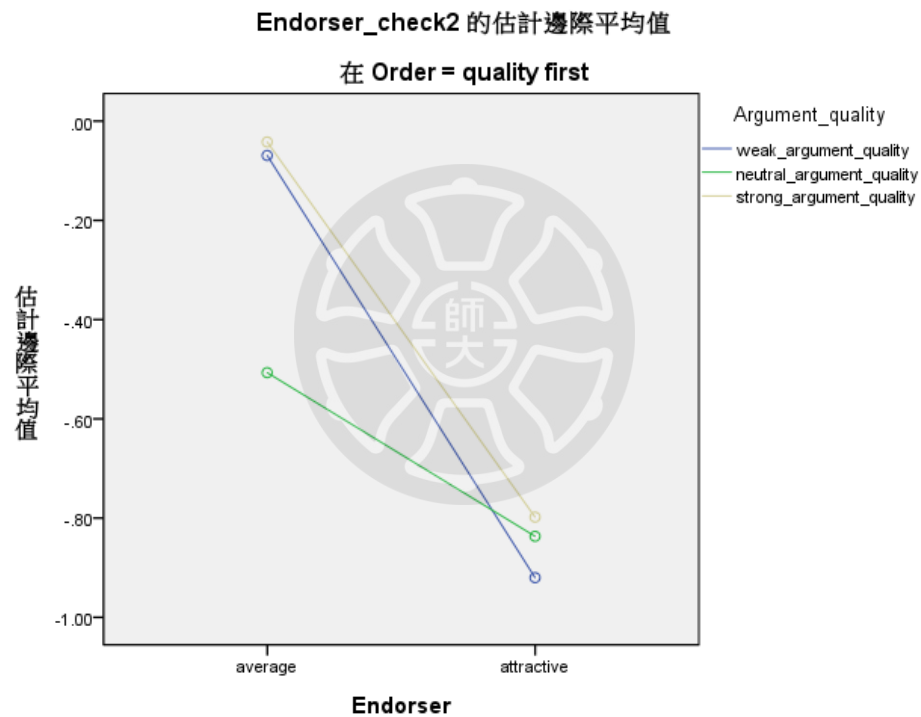
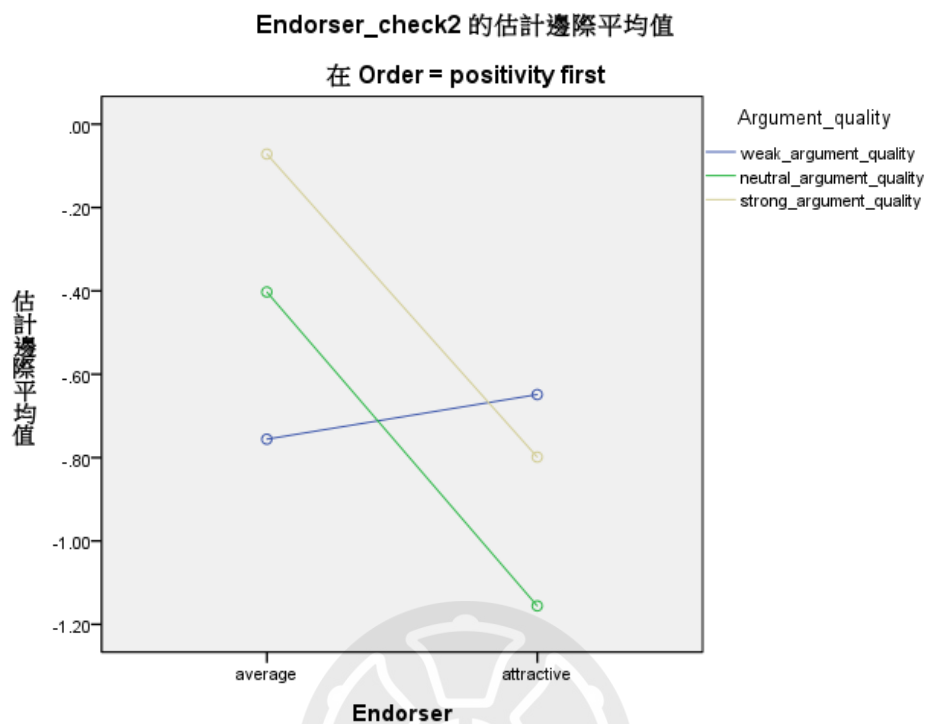


Figure 14

Three-way interaction pattern -Relevance of Endorser –Endorser & Order & Argument quality- Positivity



According to Table 24, the three-way interaction between order, endorser, and argument diagnosticity is significant. From Figure 13 & Figure 14, it can be seen that the significance is caused by the difference in weak argument quality between two different order effects. The slope of the weak argument in the quality first is larger than that of positivity first. This may be due to the random distribution of data.

Argument Diagnosticity

There are three questions to measure the strength of argument diagnosticity, and they have high reliability ($\alpha=0.948$), which shows high consistency. Therefore, the participant's answers can be averaged as an indicator of analysis.

Table 28

The univariate analysis-the manipulation check of argument diagnosticity

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Modified model	354.605 ^a	23	15.418	7.104	0.000
Intercept	73.852	1	73.852	34.028	0.000
Endorser	0.546	1	0.546	0.252	0.616
Argument Diagnosticity	238.271	1	238.271	109.784	0.000
Argument quality	3.019	2	1.510	0.696	0.499
Order	5.239	1	5.239	2.414	0.121
Endorser * Argument Diagnosticity	1.127	1	1.127	0.519	0.471
Endorser * Argument quality	0.202	2	0.101	0.047	0.954
Endorser * Order	5.336	1	5.336	2.459	0.118
Argument Diagnosticity * Argument quality	11.450	2	5.725	2.638	0.073
Argument Diagnosticity * Order	1.411	1	1.411	0.650	0.420
Argument quality * Order	2.251	2	1.125	0.518	0.596
Endorser * Argument Diagnosticity * Argument quality	4.487	2	2.243	1.034	0.357
Endorser * Argument Diagnosticity * Order	0.014	1	0.014	0.007	0.935
Endorser * Argument quality * Order	13.991	2	6.995	3.223	0.041
Argument Diagnosticity * Argument quality * Order	0.723	2	0.361	0.166	0.847
Endorser * Argument Diagnosticity * Argument quality * Order	0.269	2	0.134	0.062	0.940
Error	1035.262	477	2.170		
Total	1476.222	501			
Corrected total	1389.867	500			

From the above table, we can find that all the significant results conform to our expectations, except that the three-way interaction of Endorser*Argument quality*Order is significant ($p=0.041<0.05$). However, through the analysis of the following pictures, the results conform to expectations.

Table 29

Descriptive statistics table-the manipulation check of Argument Diagnosticity

Argument diagnosticity	Mean	Std. Dev.	95% Confidence interval	
			Upper bound confidence limit	Lower bound confidence limit
Low argument diagnosticity	-1.138	0.098	-1.331	-0.944
High argument diagnosticity	0.324	0.099	0.13	0.518

Table 30

Descriptive statistics table-the manipulation check of Argument Diagnosticity

Argument quality	Mean	Std. Dev.	95% Confidence interval	
			Upper bound confidence limit	Lower bound confidence limit
Weak argument quality	-0.519	0.134	-0.783	-0.256
Neutral argument quality	-0.403	0.093	-0.586	-0.220
Strong argument quality	-0.298	0.131	-0.555	-0.041

Figure 15

Three-way interaction pattern of argument diagnosticity- Argument Diagnosticity & Argument quality & Order- Quality

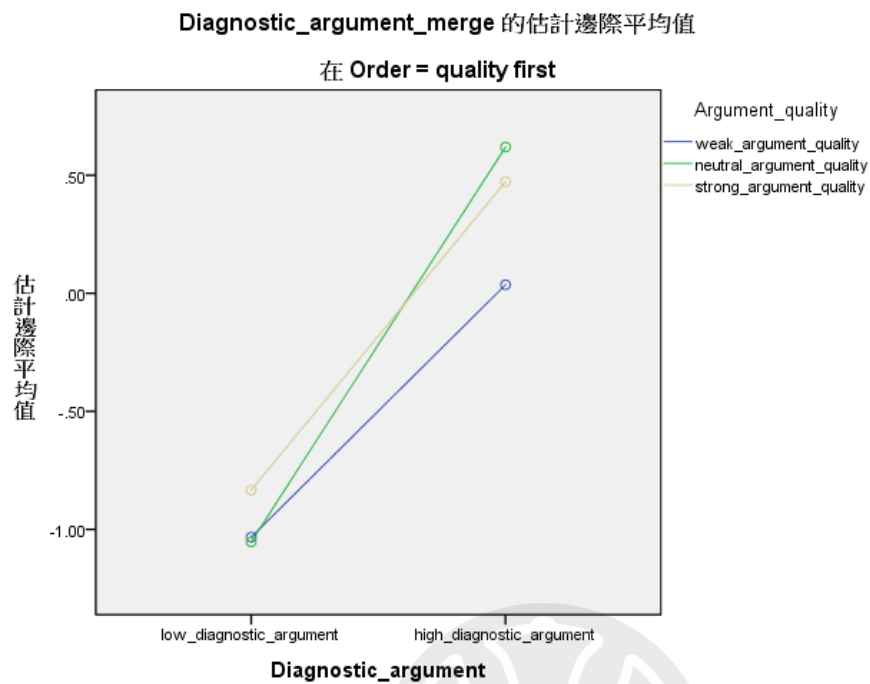
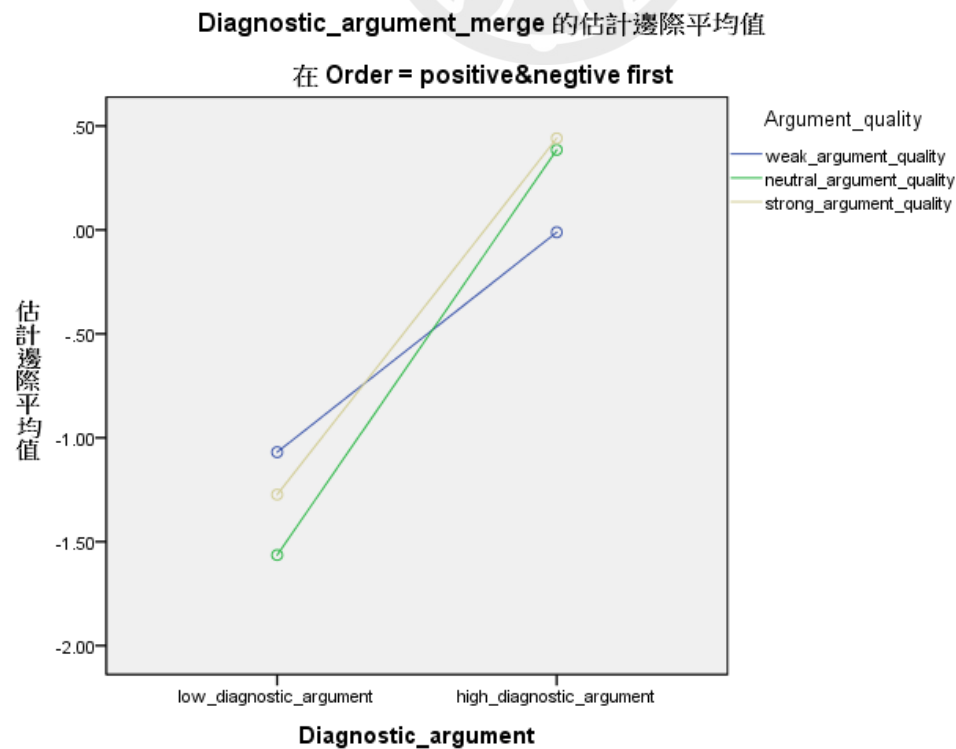


Figure 16

Three-way interaction pattern of argument diagnosticity- Argument Diagnosticity & Argument quality & Order- Positivity



In the above two figures, the results demonstrate that the mean of a low-argument diagnosis is low, whereas the mean of a high-argument diagnosis is high, as we expected. From the analysis of the above results, the manipulation of the argument diagnosticity is successful.

5.2 Dependent Variables Measures

Attitude of the Experiment

In order to measure the participant's attitude toward the product, there are four questions: evaluation, quality, likability, and purchase intention. The reliability of these four questions is excellent (Cronbach's $\alpha=0.932$), which implies that they are highly consistent. Therefore, the participant's answers can be averaged as an indicator of analysis.

Through Table 27 of Anova analysis we see both the interaction of Argument diagnosticity and Argument quality and Argument quality have the significant difference. We also have the order of manipulating quality and positive and negative question in the experiment, but the results show that the effect of order is not significant.

Table 31

The univariate analysis-the manipulation check of Attitude

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Modified model	144.972 ^a	23	6.303	4.546	0.000
Intercept	8.568	1	8.568	6.180	0.013
Endorser	3.102	1	3.102	2.237	0.135
Argument Diagnosticity	0.182	1	0.182	0.131	0.717
Argument quality	73.329	2	36.665	26.445	0.000

Order	0.641	1	0.641	0.463	0.497
Endorser * Argument Diagnosticity	2.182	1	2.182	1.574	0.210
Endorser * Argument quality	2.902	2	1.451	1.046	0.352
Endorser * Order	0.012	1	0.012	0.009	0.925
Argument Diagnosticity * Argument quality	39.225	2	19.612	14.146	0.000
Argument Diagnosticity * Order	0.318	1	0.318	0.229	0.632
Argument quality * Order	0.094	2	0.047	0.034	0.967
Endorser * Argument Diagnosticity * Argument quality	6.409	2	3.204	2.311	0.100
Endorser * Argument Diagnosticity * Order	0.132	1	0.132	0.095	0.758
Endorser * Argument quality * Order	3.311	2	1.655	1.194	0.304
Argument Diagnosticity * Argument quality * Order	7.880	2	3.940	2.842	0.059
Endorser * Argument Diagnosticity * Argument quality * Order	0.054	2	0.027	0.019	0.981
Error	661.335	477	1.386		
Total	813.333	501			
Corrected total	806.306	500			

From Table 28, it can be seen that the three mean of the low argument diagnosticity are not significantly different, but the three mean of the high argument diagnosticity are very different. Representing argument diagnosticity would make the performance of argument quality more significant.

Table 32*Descriptive statistics table-measure of attitude*

Argument diagnosticity	Argument quality	Mean	Std. Dev.	95% Confidence interval	
				Upper bound confidence limit	Lower bound confidence limit
Low argument diagnosticity	Weak argument quality	-0.292	0.151	-0.589	0.005
	Neutral argument quality	-.069	0.104	-0.274	0.136
	Strong argument quality	0.006	0.148	-0.286	0.297
High argument diagnosticity	Weak argument quality	-1.087	0.152	-1.386	-0.788
	Neutral argument quality	-0.182	0.106	-0.391	0.027
	Strong argument quality	0.793	0.147	0.503	1.083

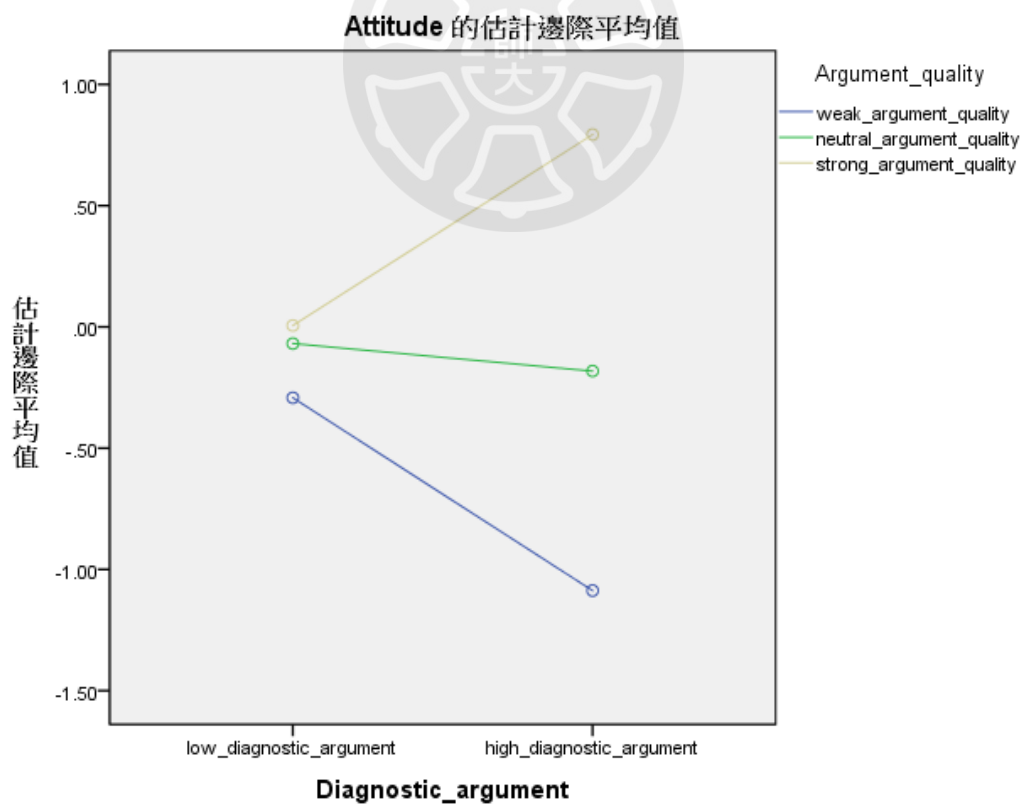
Table 33*Posteriori test-the manipulation check of attitude*

	(I)Argument quality	(J)Argument quality	Mean Difference (I-J)	Sig.
Tukey HSD	Weak argument quality	Neutral argument quality	-0.5458	0.000
		Strong argument quality	-1.0919	0.000
	Neutral argument quality	Weak argument quality	0.5458	0.000
		Strong argument quality	-0.5460	0.000
	Strong argument quality	Weak argument quality	1.0919	0.000

		Neutral argument quality	0.5460	0.000
Bonferroni	Weak argument quality	Neutral argument quality	-0.5458	0.000
		Strong argument quality	-1.0919	0.000
	Neutral argument quality	Weak argument quality	0.5458	0.000
		Strong argument quality	-0.5460	0.000
	Strong argument quality	Weak argument quality	1.0919	0.000
		Neutral argument quality	0.5460	0.000

Figure 17

The attitude of target product- Argument Diagnosticity & Argument quality



As we can see from figure17, there is a significant interaction between argument diagnosticity and argument quality. Comparing three point of mean of strong, neutral, and weak argument, we can see that there are significant differences among the three. In the case of low argument diagnosticity, there is almost no difference among the three, which means that there is almost no difference in strong argument, weak argument, and neutral argument in the case of low argument diagnosticity and indicate attitude has no significant influence on argument quality. This result is contrary to the theory of ELM. Here we find the important moderater, which is argument diagnosticity. On the contrary, in the case of a high argument diagnosticity, the evaluation of the strong argument is much higher than that of the neutral argument, and the evaluation of the neutral argument is much higher than that of the weak argument. There is a significant gap between the three. Such a significant difference comes from high argument diagnosticity and the explanation of attitudes by argument quality actually comes from the interference of argument diagnosticity. Indicates that in a low argument diagnosticity situation, no matter the quality of the argument is strong, neutral or weak, it is not enough to explain the attitude of the high involvement participants.

Figure 18

The attitude of target product- Argument Diagnosticity & Argument quality & Order- Quality first

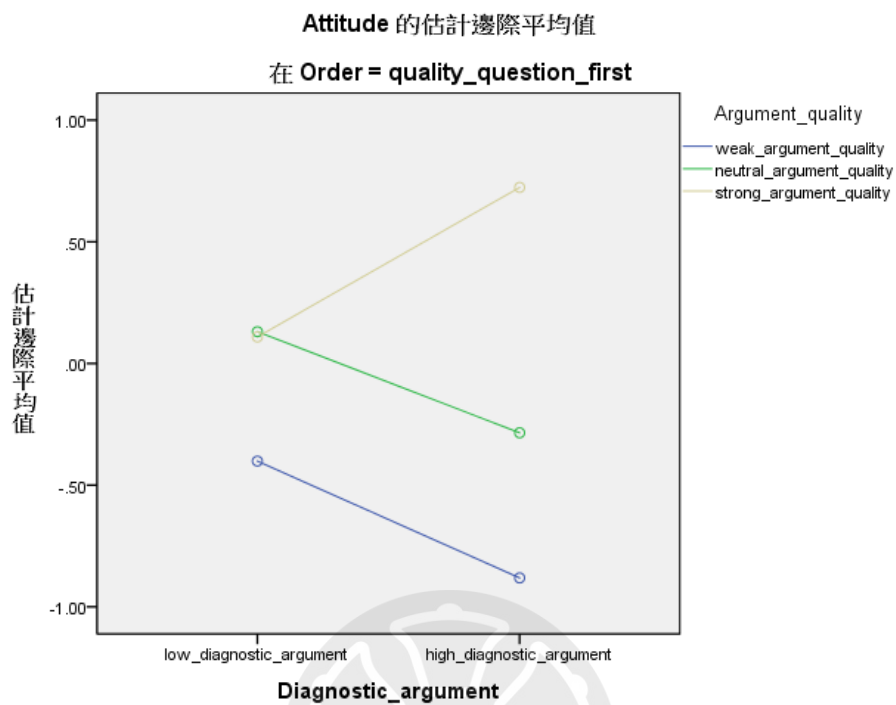
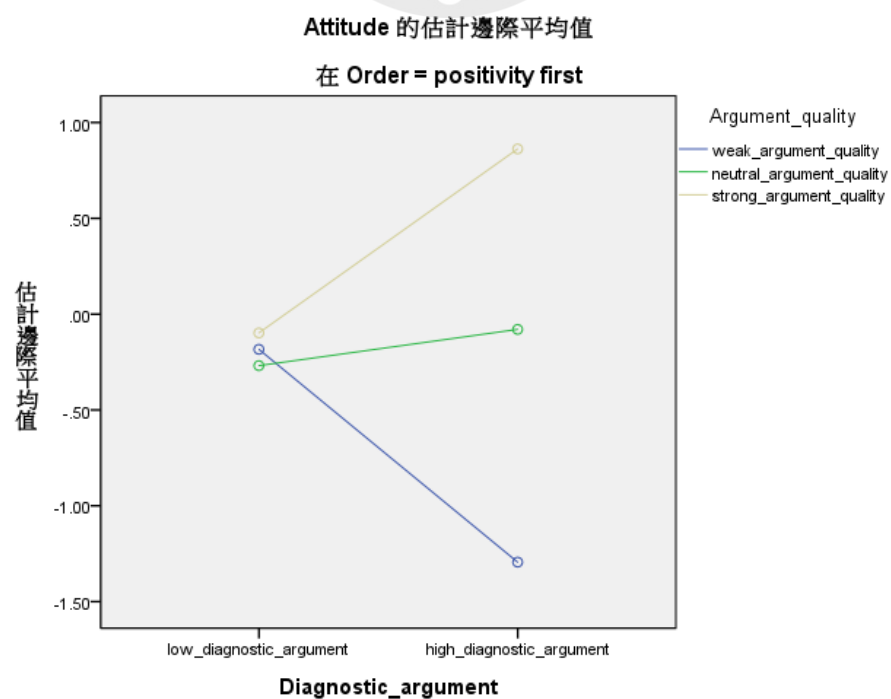


Figure 19

The attitude of target product- Argument Diagnosticity & Argument quality & Order- positivity first



Different two-way interaction in the two conditions, that is, how the two-way interaction will change in two different cases of order (quality questions or positive and negative questions are asked first). The greater the difference between these two conditions, the more significant it is. It can be seen from Figure 19 that the weak argument line becomes smoother and the neutral argument line changes from a positive slope to a negative slope, resulting in a more significant effect of the three-way interaction of argument quality, argument diagnosticity, and order. Therefore, it can be more certain that if the argument quality is to be distinguished by the argument diagnosticity, the effect of asking the positive and negative first in the experiment will be more significant than the effect of asking the quality first.

5.3 Tests of Hypothesis

We have to confirm whether the hypothesis is bias corrected or not. If bias correction does not occur, neither average nor attractive will lead to attitude correction, so there will be no difference in the evaluation of the two, mainly due to the argument diagnosticity. Therefore, it is necessary to compare the attitudes of the two and whether the mean will be equal or not to determine whether a bias correction will occur or not. We assume that all highly argument diagnosticitys will have a bias correction.

Test of Hypothesis 1

Hypothesis 1: In the situation of high involvement, high argument diagnosticity, strong argument quality and high bias awareness, bias correction is less likely to occur.

Table 29 and Table 30 show, that Hypothesis1 ($F=2.862$, $p=0.096>0.05$) is almost near significant for the high involvement with strong argument quality and argument diagnosticity, the average evaluation of attitude of an attractive endorser ($M=1.02$) is higher than the average endorser ($M=0.567$), which also indicates that no

matter whether the product endorsement is an attractive or an average endorser, the evaluation of attitude is positive. therefore, the hypothesis is confirmed, but the subject's attitude to evaluating the product attractive endorser is higher than the average endorser. Since the high involvement consumers can evaluate the product by a strong argument, which has sufficient diagnosticity so that the correction effect does not occur.

Table 34

The univariate analysis-measure of hypotheses1

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Endorser	3.27	1	3.27	2.862	0.096
Order	0.309	1	0.309	0.27	0.605

Table 35

Descriptive statistics table-tests of hypotheses1

Endorser	Mean	Std. Dev.	95% Confidence interval	
			Upper bound confidence limit	Lower bound confidence limit
Average	0.567	0.195	0.176	0.957
attractive	1.02	0.183	0.653	1.386

Test of Hypothesis 2

Hypothesis 2: In the situation of high involvement, high argument diagnosticity, weak argument quality and high bias awareness, bias correction is less likely to occur.

Table 32 shows, for Hypothesis 2, the average evaluation of the attitude of an attractive endorser ($M=-1.019$) is higher than the average endorser ($M=-1.156$), which means it is no difference between the attitude of the two endorsers. Then we used the pairwise comparisons of Univariate analysis to check the significance of two endorser conditions, as Table 31 shows, there is no difference between the two endorsers for the subjects to evaluate the product ($F=1.141$, $p=0.758>0.05$). Since the high involvement consumers can evaluate the product by the weak argument, so that the correction effect is not occurred.

Table 36

The univariate analysis-measure of hypotheses2

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Endorser	0.278	1	0.278	1.141	0.708
Order	2.545	1	2.545	1.296	0.26

Table 37

Descriptive statistics table-tests of hypotheses2

Endorser	Mean	Std. Dev.	95% Confidence interval	
			Upper bound	Lower bound
			confidence	confidence
			limit	limit
Average	-1.156	0.256	-1.668	-0.643
Attractive	-1.019	0.256	-1.533	-0.506

Test of Hypothesis 3

Hypothesis 3: In the situation of high involvement, high argument diagnosticity, neutral argument quality with minimum positive and negative thoughts and high bias awareness, bias correction is less likely to occur.

Table 34 shows, for Hypothesis 3, the average evaluation of the attitude of an attractive endorser ($M=0.299$) is higher than the average endorser ($M=-0.099$), which means it is almost no difference between the attitude of the two endorsers. After using pairwise comparisons of Univariate analysis for two endorser conditions, Table 33 shows that there is no significant difference between the two endorsers ($F=2.497$, $p=0.12>0.05$). As a result of the high level of involvement, consumers can evaluate the product using an argument that has sufficient diagnosticity and can generate both good and bad thoughts to form an evaluation of the product so as to avoid the correction effect.

Table 38

The univariate analysis-measure of hypotheses3

Source	Type III	df	Mean	F	Sig.
	Sum of		Square		
	Squares				
Endorser	2.413	1	2.413	2.497	0.120
Order	0.157	1	0.157	0.162	0.689

Table 39

Descriptive statistics table-tests of hypotheses3

Endorser	Mean	Std. Dev.	95% Confidence interval
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			Upper bound confidence limit	Lower bound confidence limit
Average	-0.099	0.177	-0.453	-0.254
Attractive	0.299	0.18	-0.061	-0.659

Test of Hypothesis 4

Hypothesis 4: In the situation of high involvement, high argument diagnosticity, neutral argument quality with many positive and negative thoughts and high bias awareness, bias correction is less likely to occur.

As we can see for Hypothesis 4 in Table 36, the average evaluation of the attitude of an attractive endorser ($M=-0.357$) is higher than the average endorser ($M=-0.583$), which means it is almost no difference between the attitude of the two endorsers. After using pairwise comparisons of Univariate analysis for two endorser conditions, Table 35 shows that there is no significant difference between the two endorsers ($F=2.497$, $p=0.12>0.05$). As a result of the high level of involvement, consumers can evaluate the product using an argument that has sufficient diagnosticity and can generate both good and bad thoughts to form evaluation of the product no matter it minimum or many thoughts they generate so as to avoid the correction effect.

Table 40

The univariate analysis-measure of hypotheses4

Source	Type III	df	Mean	F	Sig.
	Sum of		Square		
	Squares				

Endorser	13.664	1	0.79	0.348	0.558
Order	4.583	1	4.583	2.015	0.161

Table 41

Descriptive statistics table-tests of hypotheses4

Endorser	Mean	Std. Dev.	95% Confidence interval	
			Upper bound confidence limit	Lower bound confidence limit
Average	-0.583	0.267	-1.117	-0.05
Attractive	-0.357	0.276	-0.090	-0.195

Test of Hypothesis 5

Hypothesis 5: In the situation of high involvement, low argument diagnosticity, strong argument quality and high bias awareness, bias correction is more likely to occur.

In Hypothesis 5, we expect the attitude of attractive endorsers will be lower than that of average endorsers. The results show no significant difference, but there is a tendency to confirm the hypothesis. The possible reason is that the participant's involvement is not high enough, which leads to the influence of the attractive pulling force, so the correction effect is not significant. Table 37 shows, that although Hypothesis 5 ($F=2.862$, $p=0.096>0.05$) didn't confirm, it's almost near significant and correction direction confirm our expectation for the high involvement with strong argument quality and low argument diagnosticity, the average evaluation of attitude of an attractive endorser ($M=0.037$) is higher than the average endorser ($M=-0.025$), which indicates that attractive evaluation worst than average endorser. Therefore, the

hypothesis is not confirmed, because we can't control the participant's involvement completely.

Table 42

The univariate analysis-measure of hypotheses5

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Endorser	0.061	1	0.61	0.055	0.816
Order	0.073	1	0.673	0.599	0.442

Table 43

Descriptive statistics table-tests of hypotheses5

Endorser	Mean	Std. Dev.	95% Confidence interval	
			Upper bound confidence limit	Lower bound confidence limit
Average	0.037	0.195	-0.354	0.427
Attractive	-0.025	0.182	-0.39	0.399

Test of Hypothesis 6

Hypothesis 6: In the situation of high involvement, low argument diagnosticity, weak argument quality and high bias awareness, bias correction is more likely to occur.

In Hypothesis 6 we can discover that the attitude evaluation of attractive endorsers will be better than average endorsers. The results ($F=0.559$, $p=0.075>0.05$) didn't confirm the hypothesis and show no significant difference. However, the

difference from hypothesis 5 is that the correction direction of hypothesis 6 does not meet our expectations. There is a possible reason that similar to hypothesis 5, the participant's involvement is insufficient, resulting in the influence of the attractive pulling force, so the correction effect is not significant. Therefore, the hypothesis is not confirmed, because we can't control the participant's involvement completely.

Table 44

The univariate analysis-measure of hypotheses6

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Endorser	0.721	1	0.721	0.559	0.075
Order	0.538	1	0.538	0.416	0.521

Table 45

Descriptive statistics table-tests of hypotheses6

Endorser	Mean	Std. Dev.	95% Confidence interval	
			Upper bound	Lower bound
			confidence	confidence
			limit	limit
Average	-0.557	0.208	-0.973	-0.14
Attractive	-0.028	0.205	-0.437	-0.382

Test of Hypothesis 7

Hypothesis 7: In the situation of high involvement, low argument diagnosticity, neutral argument quality with minimum positive and negative thoughts and high bias awareness, bias correction is more likely to occur.

No significant difference was found in Hypothesis 7 and the hypothesis was not confirmed, but there is a tendency for it to be confirmed. Participant involvement is not high enough, which results in the attractive pulling force influencing the correction effect. Table 41 shows, that although Hypothesis 7 ($F=2.862$, $p=0.096>0.05$) didn't confirm, it's almost near significant and the correction direction confirms our expectation for the high involvement with neutral argument quality with minimum thoughts and low argument diagnosticity, the mean of the average endorser's attitude evaluation ($M=0.137$) is higher than the attractive endorser's attitude evaluation ($M=-0.393$), which indicates that the average evaluation is higher than the attractive endorsement. Therefore, the hypothesis is not confirmed, because we can't control the participant's involvement completely, or the sample size is too small.

Table 46

The univariate analysis-measure of hypotheses7

Source	Type III	df	Mean	F	Sig.
	Sum of		Square		
	Squares				
Endorser	4.407	1	4.407	3.439	0.069
Order	0.652	1	0.652	0.509	0.479

Table 47

Descriptive statistics table-tests of hypotheses7

Endorser	Mean	Std. Dev.	95% Confidence interval	
			Upper bound	Lower bound
			confidence	confidence
			limit	limit
Average	0.137	0.2	-0.265	0.538
Attractive	-0.393	0.203	-0.8	0.014

Test of Hypothesis 8

Hypothesis 8: In the situation of high involvement, low argument diagnosticity, neutral argument quality with many positive and negative thoughts and high bias awareness, bias correction is more likely to occur.

The result of Hypothesis 8 was just like Hypothesis 7 and the hypothesis was not confirmed, but there is a tendency for it to be confirmed. the reason possible be participant involvement is not high enough, which results in the attractive pulling force influencing the correction effect. Table 43 shows, that although Hypothesis 8 ($F=0.854$, $p=0.359>0.05$) didn't confirm, it's almost near significant and the correction direction confirms our expectation for the high involvement with neutral argument quality with many thoughts and low argument diagnosticity, the average evaluation of attitude of an average endorser ($M=-0.122$) is lower than the attractive endorser ($M=0.11$), which indicates that average evaluation is worse than attractive endorser. As a result, the hypothesis cannot be confirmed because we cannot control the participants' involvement completely, or the sample size is too small.

Table 48

The univariate analysis-measure of hypotheses8

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Endorser	0.871	1	0.871	0.854	0.359
Order	5.721	1	5.721	5.606	0.021

Table 49

Descriptive statistics table-tests of hypotheses8

Endorser	Mean	Std. Dev.	95% Confidence interval	
			Upper bound confidence limit	Lower bound confidence limit
Average	0.11	0.171	-0.232	0.452
Attractive	-0.122	0.184	-0.491	0.247

In conclusion, high involvement participants didn't have bias correction in high argument diagnosticity situations, and Hypotheses 1 to 4 all meet our expectations. In the case of low argument diagnosticity, although none of Hypotheses 5 to 8 confirms what we expected, most of the direction is correct. We consider that the reason for no bias correction in the case of low argument diagnosticity is due to insufficient involvement or the failure of participants to generate bias awareness.

5.4 Additional analysis

Questions 1-3 showed that only 170 participants had the possibility of bias correction. Therefore, we tried to exclude participants who would not correct for bias. Than, we selected and reanalyze participants who not only answered "Not be

influenced by the endorser" in questions 1-3 but also "Yes" in questions 1-4.

Unfortunately, the results cannot be displayed because the sample size is too small.

For example, the sample size of hypothesis 1 in table 45 is too small to analyze the data and no significant ($p=0.705>0.05$).

Table 50
Between factor of hypothesis 1

		值標籤	N
Endorser	.00	average	3
	1.00	attractive	8
Argument_diagnosticity	1.00	High argument diagnosticity	11
Argument_quality	1.00	Strong argument quality	11
Order	.00	quality first	3
	1.00	positivity first	8

Table 51
The univariate analysis- hypothesis 1

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Modified model	6.342 ^a	3	2.114	1.361	0.331
Intercept	1.950	1	1.950	1.256	0.299
Endorser	0.241	1	0.241	0.155	0.705
Argument Diagnosticity	0.000	0			
Argument quality	0.000	0			
Order	0.412	1	0.412	0.265	0.622
Endorser * Argument Diagnosticity	0.000	0			
Endorser * Argument quality	0.000	0			
Endorser * Order	4.309	1	4.309	2.775	0.140
Argument Diagnosticity *	0.000	0			
Argument quality					
Argument Diagnosticity * Order	0.000	0			
Argument quality * Order	0.000	0			
Endorser * Argument Diagnosticity * Argument quality	0.000	0			

Endorser * Argument	0.000	0	
Diagnosticity * Order			
Endorser * Argument quality *	0.000	0	
Order			
Argument Diagnosticity *	0.000	0	
Argument quality * Order			
Endorser * Argument	0.000	0	
Diagnosticity * Argument quality			
* Order			
Error	10.870	7	1.553
Total	22.556	11	
Corrected total	17.212	10	



CHAPTER 6 GENERAL DISCUSSION

6.1 General Discussion

Previous research on argument diagnosticity, including Chiu's, has been only partially successful. Thankfully, the results of our research were successful. Although some hypotheses are not confirmed, we have proved through experiments that argument diagnosticity and argument quality are two different concepts and definitions. We define high argument diagnosticity facilitates consumers to easily judge the pros and cons of the product and be the high argument relevant to the true merit of the target. Regardless of whether the argument quality of the product argument is strong, neutral, or weak, our research indicates that consumers can generate product evaluations when it is a high argument diagnosticity. With high consumer involvement, product evaluation can be generated by product arguments without bias (e.g. endorser). When the product argument is strong, the product attitude of the participants will be positive; when the product argument is weak, the product attitude of the participants will be negative; and when the product argument is neutral, the product attitude of the participants will be neutral, which means the product argument can make consumers generate good and bad thoughts and form a neutral attitude.

On the contrary, we define low argument diagnosticity be the low argument relevant to the true merit of the target. Even low argument diagnosticity can have strong argument quality, neutral argument quality, and weak argument quality. When the product argument has low argument diagnosticity, which cannot get consumers to generate any thought through the judgmental process, then those who are high involvement will carefully review the information through the central route and realize the endorser has no relevance to the product they are evaluating, thereby correcting their overall evaluation. Therefore, in a low argument diagnosticity

situation, bias correction leads the overall product evaluation of the average endorser will be better than the attractive endorser.

6.2 Academic Contribution and Managerial Implication

Firstly, in the previous research, Chiu's (2019) research extended and redefined Lo's (2017) research to develop the concept of argument diagnosticity in the consumer field and give its meaning of it to new academic terminology. The argument with high argument diagnosticity in Chiu's (2019) study means that the strong, weak, and neutral argument that can make consumers generate lots of good and bad thoughts and form a neutral attitude, is defined as the strong argument diagnosticity; and the neutral argument that can make consumers generate equal to no thought is the weak argument diagnosticity. But we modified Chiu's (2019) definition of argument diagnosticity, redefining that an argument diagnosticity is an argument that is highly relevant to the central merit. Moreover, we reconstruct the theoretical framework and modify the illogical parts to redefine the hypothesis.

Secondly, during the study, the argument diagnosticity was found indeed would influence the product evaluation of high involvement consumers and definitely separate argument diagnosticity and quality clearly. Because the high argument diagnosticity can lead to high involvement consumers generating product evaluations, the correction effect will not occur. The correction effect will only occur when the argument diagnosticity is low, which means low involvement customers need to form the product evaluation by the other information that is unrelated to the product central merit.

Overall, we found that high argument diagnosticity can make high involvement consumers generate thoughts and then form a product attitude without bias correction; low argument diagnosticity will make high involvement consumers correct cues which generated biases to form attitudes toward products. To apply this concept in

marketing, we highly suggest that companies should be aware of the product messages that are presented in their advertising so that consumers don't lose interest in the product.

6.3 Limitation and Future Research

There are some manipulated variables whose results should not be significant but are close to significant, such as the effect of argument quality on endorser; other values of manipulated variables are both in the wrong direction and not significant, such as endorser relevance manipulation. Furthermore, the possible reason for the hypothesis that the hypothesis is not confirmed also comes from the incorrect experimental design. For example, the participants should correct the bias so that the attitude evaluation of average endorsers will be better than attractive endorsers, but the experimental results show that the hypothesis is not confirmed. The above-mentioned significance of experimental manipulation does not totally conform to our expectations due to incomplete experimental design.

We attribute this situation to 1. The insignificant manipulation may come from the insufficient sample size, therefore, in future research, firstly, we suggest that the samples of the questionnaire need to be increased, so that the correction effect may present more significance. 2. Because the questionnaire was collected online and participants filled in the questionnaire online, we could not control the accuracy of the environment and choose accurate participants, which would cause random sample errors. 3. Because the way we manipulate the participants in high involvement is to ask the participants to assume that they have just undergone surgery on their eyes and need to buy a new desk lamp to answer the follow-up questions for the main experimental. This kind of manipulation cannot guarantee high involvement for every participant. 4. Due to the urgency of time, the results of the pretest didn't fully meet expectations, which influenced the manipulation of the subsequent main experiment.

Therefore, future research can conduct pretest experiments several times before deciding on the main experimental arguments, which might have more significant results. Because the results of this pretest experiment are not significant, we should do more pretest experiment to make the results more significant before proceeding with the analysis of the main experiment. Therefore, researchers need to be more aware of those points in future research, since the experiment product and the participants or other factors may influence the research of our results.



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