

Effects of Affinity, WOM, and EWOM on Decision Making:

**Study on impact of subjective affinity to WOM provider
to WOM and EWOM influence on decision making
in different consumer behavior phases**

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Introduction

Recently the Internet communication environment has dramatically developed, and the Internet has become an indispensable tool for daily life in current Japan. These days, the Internet is used not only for information, but also for online shopping. E-commerce is becoming very popular.

About consumer purchase behavior, information about product characteristics, properties, and functions has long been important decision making factors. Recently, role of WOM (word-of-mouth) and EWOM (electronic word-of-mouth) has been increased. For example, when we buy a textbook and we cannot choose by appearance, WOM have been increasingly used these days, because we often ask opinions (WOMs) from acquaintances as third-party. Very recently, EWOM have been increasingly used through decision making by referring to online reviews (EWOMs) at e-commerce sites such as Amazon.com.

Due to such social progress mentioned above, it is important to clarify how WOM and EWOM influence consumer purchase behavior. For example, we are increasingly referring to external information such as WOM and EWOM for decision making. However, we often become further confused by gaining contradicting WOMs and EWOMs. It is not clear about how WOM and EWOM influence consumer purchase behavior in such situations. Though there are recent studies about WOM and EWOM influence on consumer behavior, few past studies focused on subjective affinity to WOM provider, except for comparison of compromise effect by affinity to WOM provider (Chuang, Cheng & Hsu, 2012).

However, I consider that consumers have to rely on external information when they cannot decide by product characteristics, properties, and functions and that affinity might influence decision making as a last push under such circumstances. In contexts that external information especially WOM and EWOM become important factors, clarification of WOM and EWOM effect on purchase decision making is needed.

This study started from a hypothesis that affinity might become a last push for decision making when consumers could not decide by product characteristics, properties, and functions. This study clarified through researches that degree of WOM and EWOM influence decision making might vary

in relation with decision maker's subjective affinity to WOM provider. This study also considers social implications of gained results.

Considering gained results from researches, this study proposes decisional process models for some consumer behavior phases as follows:

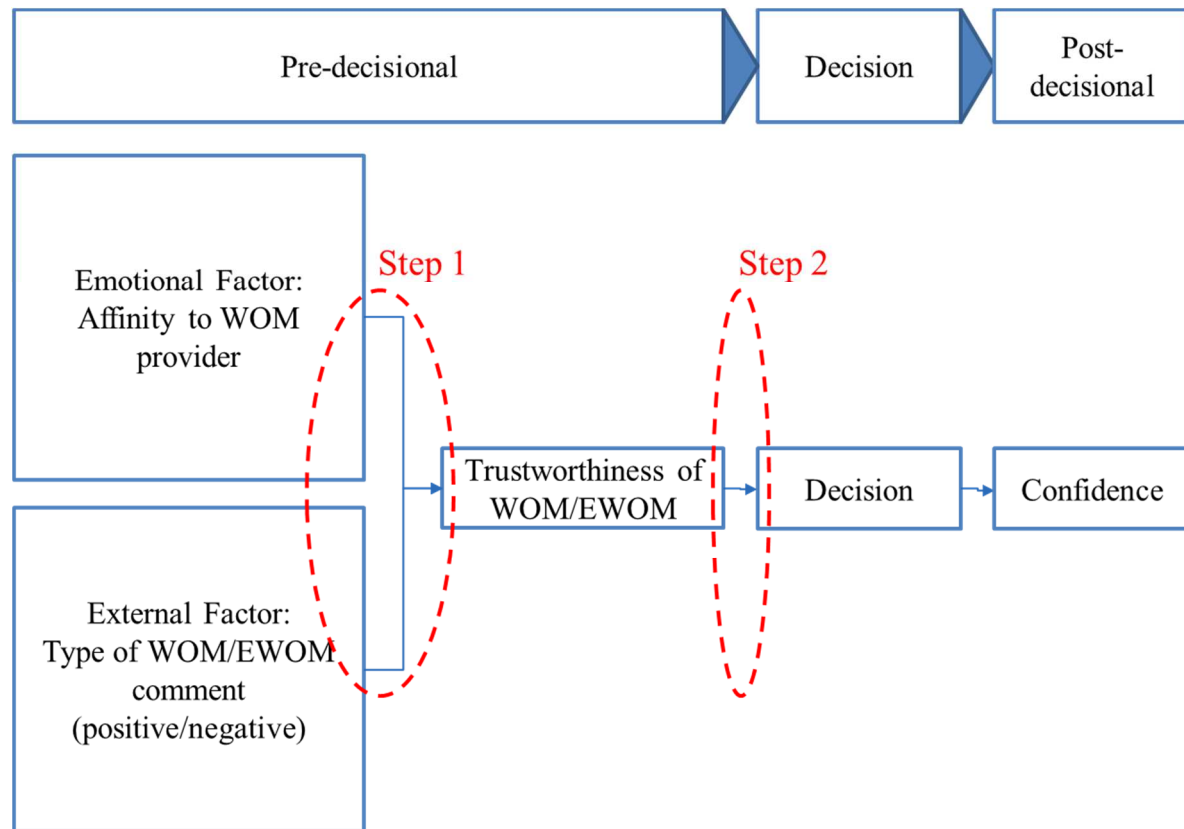


Fig.Intro-1. Decisional process for Search Phase

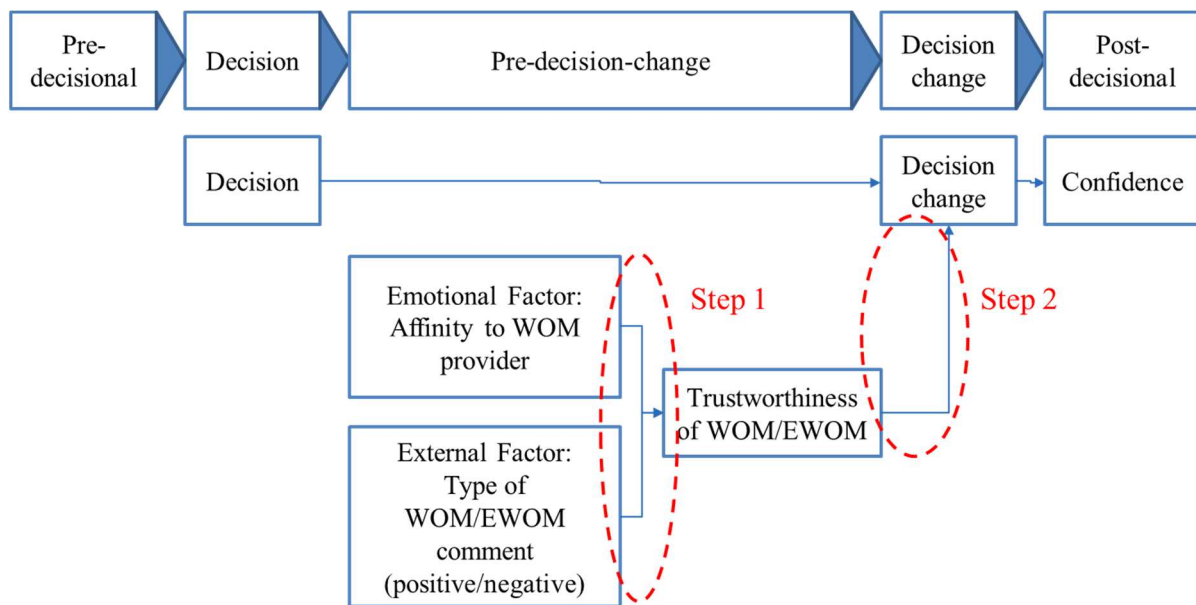


Fig.Intro-2. Decision change process for Comparison/Examination phase

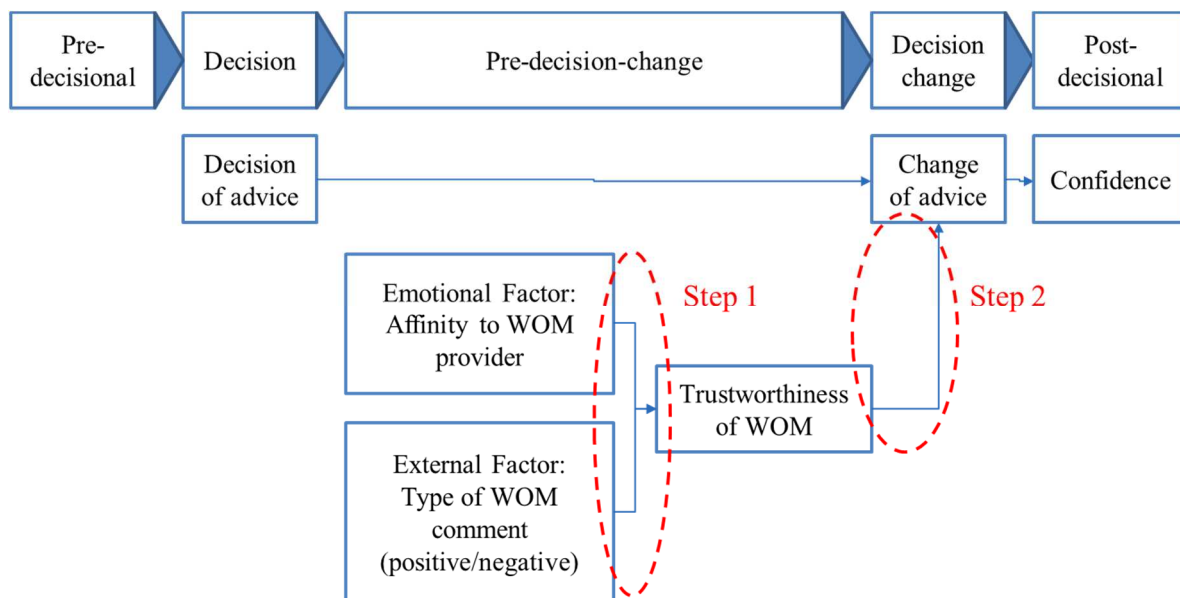


Fig.Intro-3. Decision change process about product advice for Share phase

Structure of this study is as follows:

Part 1. Consumer behavior and influential factors on decision making

Chapter 1. Consumer behavior

I briefly introduce how consumer behavior models have changed, and consider consumer behavior models and phases that relate to WOM and EWOM. As the background of AISCEAS model (Tsuyuki, 2007), e-commerce has become so developed that consumer behavior model had to change. Newly created phases include “Search”, “Comparison/Examination”, and “Share”. WOM and EWOM influence these phases.

Chapter 2. Contradiction with expected utility theory and decision making

I briefly introduce past studies about influence on decision making, especially those about contradiction with expected utility theory. First, past studies about compromise effect revealed that subjective affinity to WOM provider influences degree of WOM influence on decision making. Second, past studies about attraction effect might indicate that WOM and EWOM might influence decision making by giving positive or negative impression on products in order to change charm of products.

Chapter 3. WOM and EWOM influence

I briefly introduce past studies about WOM and EWOM. First, there are various past studies about WOM, including some studies in relation with subjective affinity to WOM provider. Second, there are various past studies about EWOM, but few studies focused on subjective affinity to EWOM provider. Moreover, very few studies focused on situations that both WOM and EWOM existed and contradicted with each other.

Part 2. WOM and EWOM influence on decision making in Search Phase

Chapter 4. Search Phase of consumer behavior

I briefly introduce past studies in relation with Search Phase of consumer behavior. Chuang et al. (2012) studied WOM influence on compromise effect, and also studied about difference of influence

by different affinity to WOM provider. Cheung and Thadani (2012) constructed general model about EWOM. I consider that WOM and EWOM as external information might influence decision making, and that degree of influence might vary by degree of subjective affinity to WOM provider.

Chapter 5. Research 1 Influence of subjective affinity in Search Phase

This research revealed that WOM and EWOM influenced decision making when both WOM and EWOM exist and contradict with each other, and that degree of influence varied by subjective affinity to WOM provider. First, this research revealed that WOM and EWOM trustworthiness significantly varied by subjective affinity to WOM provider. Second, this study revealed that WOM and EWOM trustworthiness significantly varied by whether WOM and EWOM comments were positive or negative. Next, this study revealed that WOM and EWOM trustworthiness related to decision results.

Chapter 6. Research 1' Application to decision makings inconsistent with WOM and EWOM trustworthiness

In Research 1, most decision makers adopted opinions of WOM or EWOM with higher trustworthiness. However, some decision makers adopted opinions of WOM or EWOM with lower trustworthiness. This research revealed that proportion of decision makers adopting opinions with lower trustworthiness can vary by subjective affinity to WOM provider. As for decision makers who scored higher trustworthiness to EWOM than WOM, this study revealed that proportion of decision makers adopting opinions with lower trustworthiness significantly varied by subjective affinity to WOM provider. On the other hand, as for decision makers who scored higher trustworthiness to WOM than EWOM, no significant result was found.

Part 3. WOM and EWOM influence on decision making in Comparison/Examination Phase

Chapter 7. Comparison/Examination Phase of consumer behavior

I briefly introduce past studies in relation with Comparison/Examination Phase of consumer behavior, especially those about decision change. Lange and Krahe (2014) studied information format influence on choice deferral about computer purchase. The study proved Communication

approach that consumers analyze with a perspective of dialogue between seller and buyer. Though very few studied focused on WOM and EWOM influence, I consider that subjective affinity to WOM provider might influence degree of WOM and EWOM influence, similar in Search Phase.

Chapter 8. Research 2 Influence of subjective affinity in Comparison/Examination Phase

Also in decision change situation, this research revealed that WOM trustworthiness varied by subjective affinity to WOM provider, influencing on decision making. This research set a situation that decision makers made decisions without any external information such as WOM and EWOM, and that decision makers were provided WOM contradicting their decisions right before. First, this research revealed that subjective affinity to WOM provider related to proportion of decision change by adopting WOM opinion. Next, this research revealed that subjective affinity to WOM provider significantly influenced WOM trustworthiness. Then, this research revealed that WOM trustworthiness related to proportion of decision change by adopting WOM opinion.

Chapter 9. Research 3 Application to cases with multiple WOMs or EWOMs

In the same situation with Research 2 except for multiple WOMs or EWOMs instead of single WOM, this research revealed that WOM trustworthiness varied by subjective affinity to WOM provider, influencing on decision making. First, this research revealed that subjective affinity to WOM provider related to proportion of decision change by adopting WOM or EWOM opinion. Next, this research revealed that subjective affinity to WOM provider significantly influenced WOM trustworthiness. Then, this research revealed that WOM or EWOM trustworthiness related to proportion of decision change by adopting WOM or EWOM opinion.

Part 4. WOM influence on decision making in Share Phase

Chapter 10. Share Phase of consumer behavior

I briefly introduce past studies in relation with Share Phase of consumer behavior, especially those about decision change. Jeong and Jang (2011) empirically examined which restaurant experiences trigger customers to engage in positive EWOM. The results suggested factors including satisfactory restaurant experiences with service employees and a superior atmosphere, factors that

might be relevant with subjective affinity. Though very few studies focused on WOM and EWOM influence, I consider that subjective affinity to WOM provider might influence degree of WOM influence, similar in Search Phase and Comparison/Examination Phase.

Chapter 11. Research 4 Influence of subjective affinity in Share Phase

Also in decision change situation, this research revealed that WOM trustworthiness varied by subjective affinity to WOM provider, influencing on decision making. This research set a situation that decision makers made decisions without any external information such as WOM and EWOM, and that decision makers were provided WOM contradicting their decisions right before. First, this research revealed that subjective affinity to WOM provider related to proportion of decision change by adopting WOM opinion. Next, this research revealed that subjective affinity to WOM provider significantly influenced WOM trustworthiness. Then, this research revealed that WOM trustworthiness related to proportion of decision change by adopting WOM opinion.

Part5. Hearing from working and retired adults

Chapter 12. Research 5 Hearing from working and retired adults

The largest limitation of Research 1, Research 1', Research 2, Research 3, and Research 4 was that participants of all these researches were university students. I conducted a hearing from working and retired adults. Hearing from working and retired adults indicated that their perspectives toward WOM and EWOM might be very similar to those of university students. The results implied that affinity might be an important factor for decision making for adults. Even among adults, affinity might influence degree of trustworthiness, and degree of trustworthiness might influence decision making. Especially, working and retired adults regarded EWOM as objective and they prioritized EWOM when they wanted to gather many opinions. On the other hand, most participants regarded WOM as more trustworthy than EWOM.

Part 6. General discussion and conclusion**Chapter 13. General discussion and conclusion**

I consider that impact of subjective affinity to WOM provider to WOM and EWOM influence decision making in Search Phase, Comparison/Examination Phase, and Share Phase of consumer behavior. Also, I consider implications, limitations, and future directions.

Part 1. Consumer behavior and influential factors on decision making

Chapter 1. Consumer behavior

In marketing studies, many models explaining consumer behavior have been made for a long time (Itoku, 2014). The oldest model was “AID” model developed by Lewis in 1889. In 1990, Lewis improved his AID model and published “AIDA” model. AIDA model considered consumer behavior as that people have “Attention” to products, “Interest” in the products, “Desire” to have the products, and make purchase “Action” as a result. In 1920s, Hall, an American economist, proposed AIDMA model in his “The Advertising Handbook”, and AIDMA model (Itoku, 2014) is now well known as a classic consumer behavior model. AIDMA model was proposed because printed advertisements were becoming the main media for product information instead of salespeople. Because printed advertisements became popular, consumers did not buy immediately when they gain product information from salespeople. The model considered that a process of “retention of memory” was necessary. As a result, AIDMA model proposed that consumer behavior consists of “Attention”, “Interest”, “Desire”, “Memory”, and “Action” processes. Many people practiced this model by repeatedly showing commercial messages to achieve consumer attention, interest, and memory, so that consumers would buy the products. AIDMA model is widely utilized for index of advertisement effect measurement among advertising companies and marketing research companies these days.

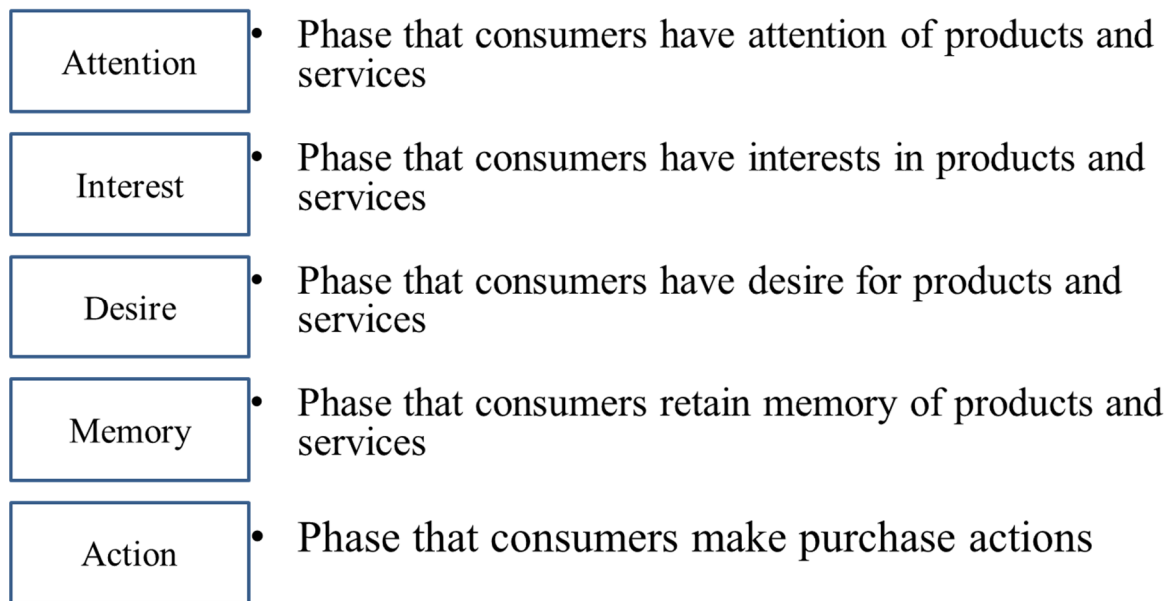


Fig.1-1. Phases of AIDMA Model

However, nearly 100 years have passed since AIDMA model was proposed. Consumer behavior models in those days can no longer fully work even in these days. Mass media have drastically evolved through introduction of TV and radio. Moreover, spread of new media such as the Internet and mobile phones has drastically changed communication environments. Shopping style has much changed through introduction of convenience stores and e-commerce. Considering these changes, it is clear that AIDMA model is not sufficient for explaining current consumer behaviors (Itoku, 2014).

Along with such marketing environment changes, various models have been proposed. In Japan, Dentsu announced “AISAS” model in 2005. This model is developed for broadband Internet period, when the overall network environment changed from narrowband.

Spread of the Internet has made much influence on consumer purchase behavior. Past studies revealed that Internet users have many active contacts with information sources such as the Internet and magazines, and that they have more candidates for product purchase than non-users (Shimizu, 2004). On the other hand, Internet users are more likely to reject buying specific products. This fact indicates that the Internet has changed information search activities of consumers.

In addition, AIDMA model does not consider influence of information from others (Ikeda, Kobayashi & Shigemasu, 2004). Instead of AIDMA, AISAS model is supported (Hamaya, 2007; Morioka, 2007; Miyata & Ikeda, 2008). AISAS model consists of “Attention”, “Interest”, “Search”,

“Action”, and “Share” phases. “Search” (searching by the Internet) and “Share” (sharing information by posting feelings to the Internet) indicate that the Internet influences consumer purchase behavior and that consumers actively behave.

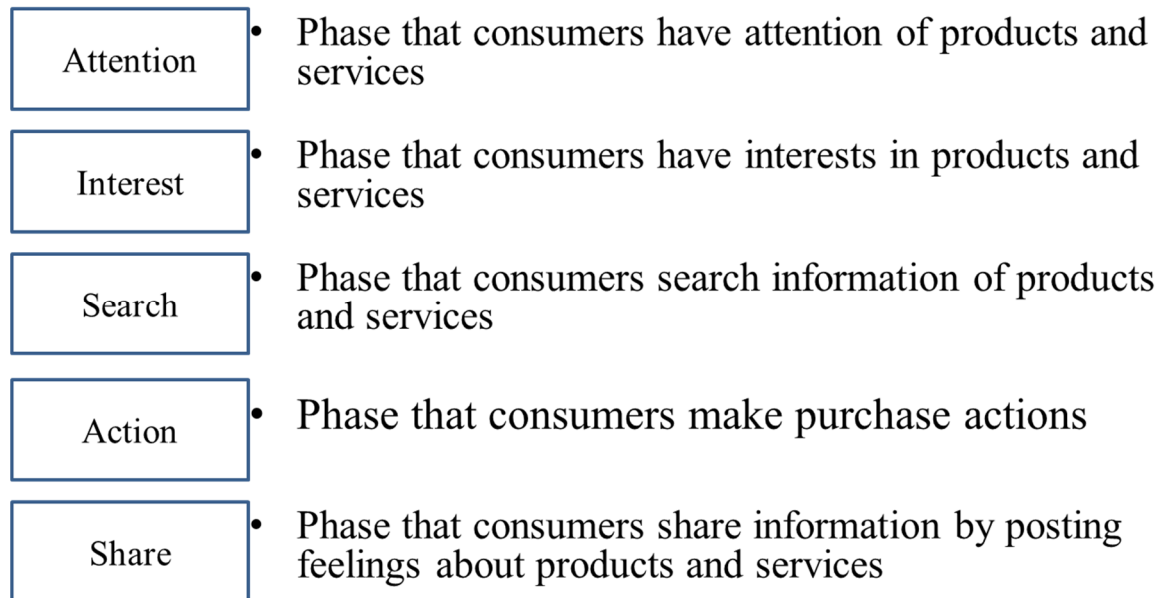


Fig.1-2. Phases of AISAS Model

Also, AISAS model indicates that people who are highly likely to purchase discuss about products and services on conversations (by oral or Internet communications), blogs, and comparison websites. This fact indicates that AISAS model takes WOM and EWOM effect into consideration.

Recently, AISCEAS model, a new consumer behavior model, was proposed by Amviy Communication (<http://www.amviy.jp/aisceas/index.html>) (Tsuyuki, 2007). AISCEAS model explains that users have “Attention” to products and services, have “Interest” to them, start “Search” by the Internet, make “Comparison” and “Examination” by comparison websites, and make “Action” at the websites, then “Share” degree of satisfaction about products or shops with other users at blogs and SNS. This model indicates that the Internet has spread to consumer purchase behavior.

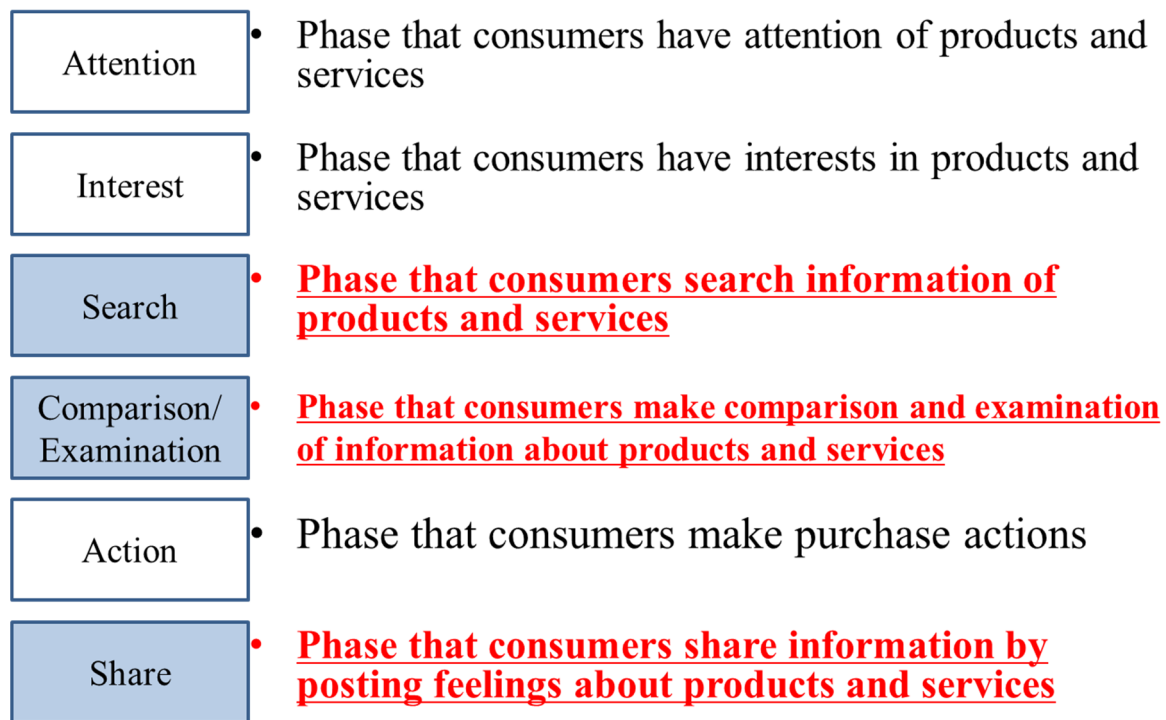


Fig.1-3. Phases of AISCEAS Model

Especially, EWOM and product evaluation has become increasingly important. Consumer Generated Media such as “word-of-mouth websites” and “charisma consumers” enhanced influence of consumer opinion and evaluation in the society (Miyata & Ikeda, 2008). Hamaoka (2006) revealed that consumers prioritize information at show windows first and at “word-of-mouth websites” next, indicating that consumers want evaluation information based on real experience. Different from one-sided information from companies, information from consumers contains negative information about products. Information from consumers is becoming more important because consumers can gain more realistic information (Shimizu, 2013).

Considering such marketing environment changes, this study chooses AISCEAS model for considering consumer behavior these days. Due to development of e-commerce, AISCEAS model has changed from the classic AIDMA model. New phases are “Search”, “Comparison/ Examination”, and “Share”, and these phases can be influenced by WOM and EWOM. Though WOMs and EWOMs might influence “Attention” and “Interest” phases, especially if WOMs and EWOMs were transmitted without basis on user experience of WOM and EWOM providers, this study excluded “Attention” and “Interest” phases from the scope. It was because influence of WOM and EWOM

without basis on user experience might be limited, compared with influence of WOM based on user experience in “Share” phase.

Chapter 2. Contradiction with expected utility theory and decision making

Concerning approach to consumer behavior, many studies from marketing and ergonomic perspectives have been conducted for long. On the other hand, fewer studies from human relation perspectives have been conducted so far. Though past studies about WOM and EWOM influence exist, few studies directly focused on human relations, except for comparison of WOM influence by affinity to WOM provider (Chuang et al., 2012).

However, I consider that consumers have to rely on external information when they cannot decide by product characteristics, properties, and functions and that affinity might influence decision making as a last push under such circumstances. In contexts that external information especially WOM and EWOM become important factors, it is necessary for clarifying WOM and EWOM effect on purchase decision making. This study starts from a hypothesis that affinity might become a last push for decision making when consumers could not decide by product characteristics, properties, and functions.

In such situations that affinity significantly influences decision making, it is difficult for consumers to make rational decision makings only by product characteristics, properties, and functions. Thus I consider that consumers are more likely to make “irrational” decision makings, contradicting expected utility theory.

This study focuses on phenomena contradicting expected utility theory. Most actual purchase situations require consumers to make multi-attribute decision, through selecting a product from choices with multiple attributes such as properties, price, and quality. Recently, some context effects, phenomena contradicting rational decision standards by expected utility theory, were found about multi-attribute decision making. Typical phenomena are compromise effect (Simonson, 1989) and attraction effect (Huber, Payne & Puto, 1982) in decision makings with two attributes and trinary choices.

For example, please imagine that there were two products in the same category (e.g. automobiles). These products were contrastive in strengths and shortcomings in two attributes, price and performance. Product A had high price and high performance, while product B had low price and low performance. Each attribute value was set so that consumer choice ratios of A and B were almost

equal. In the two context effects mentioned above, choice ratios of A and B are changed by adding the third choice with manipulated attribute values referring to A and B.

2.1. *Compromise effect*

In the example mentioned above, please imagine that the third choice (product C) was added. Product C positions just in the middle of A and B about the attributes. Compromise effect means the phenomenon that choice ratio of C becomes the highest, while decreasing choice ratios of A and B. The fact that the middle choices are likely to be selected if added is well known and applied for set menus of sushi bars and restaurants. However, expected utility of A, B, and C should be equivalent from rational decision standard, and choice ratios of A, B, and C should be the same. Therefore, this phenomenon contradicts expected utility theory.

For example, Sherman (2013) introduced an illustrative example in a website, asking participants to decide which of two models of digital camera they would prefer to purchase: a model with basic features for \$199, or a more full-featured model for \$499:

| | | | |
|--|-------|--|------|
| <p style="text-align: center;"><i>Canon PowerShot</i></p> <hr/> <p>Product Features</p> <ul style="list-style-type: none"> •2.31-megapixel resolution •2x digital zoom •1.75" LCD screen with magnification for previewing photos •8MB internal flash memory; CompactFlash memory card expansion slot for additional memory •Automatic focus, exposure and image controls •USB connection directly to PC or Mac <p>Price: \$199</p> | \$199 |  | ~50% |
| <p style="text-align: center;"><i>Minolta DiMAGE S304</i></p> <hr/> <p>Product Features</p> <ul style="list-style-type: none"> •3.34-megapixel CCD for high-resolution images •3x optical/2x digital zoom •1.8" color TFT LCD monitor and real-image zoom viewfinder •High-performance autofocus and autoexposure •Simple menus displayed on LCD monitor •USB interface for easy connection to PC or Mac •16MB CompactFlash card included <p>Price: \$499</p> | \$499 |  | ~50% |

Fig.2-1. Product information and adoption rates in a binary choice scenario (Sherman, 2013)

The participants evenly divided their choices between these two cameras. If a third, deluxe model priced at \$799 was introduced into the mix, however, the subjective experience for the prospective consumer becomes more complex, and the selection of a compromise option becomes more attractive:



Fig.2-2. Product information and adoption rates in a trinary choice scenario (Sherman, 2013)

The introduction of the deluxe option made the compromise choice more attractive, with a significant majority of 57% choosing the \$499 camera, and the remaining participants divided between the basic and deluxe models. Such research has established that when confronted with a range of choices, consumers will either choose a compromise option, or defer making a choice.

An applied study of compromise effect (Chuang et al., 2012) examined WOM influence compromise effect. Also, the study examined difference of WOM influence by cases with different subjective affinity to WOM provider.

Thus, past studies about compromise effect revealed that subjective affinity to WOM provider influences degree of WOM influence on decision making. This study focuses on effect of affinity on WOM influence and conducts researches.

2.2. *Attraction effect*

In the example mentioned above, please imagine that the third choice (product D) was added. Product D positioned slightly inferior to A about both attributes. Attraction effect means the phenomenon that choice ratio of A is increased by adding D. It is known that attracted choices are likely to be selected, if adding a third choice as a decoy to attract a specific choice. However, expected utility of A and B should be equivalent from rational decision standard and choice ratios of A and B should be the same. Therefore, this phenomenon contradicts expected utility theory.

For example, Sentient Decision Science (2014) introduced an illustrative example in a website, making participants imagine the following scenario:

“You are choosing between two high-end toasters:

Toaster A (which has two slots, both wide enough for bagels, and costs \$49)

Toaster B (which has four slots, all wide enough for bagels and costs \$89)”

“Assume these toasters are equal on every other dimension. Which would you choose? This is a classic choice scenario in consumer decision making where there is no dominated option. One option is better on number of slots and one is better on price. Assume in this scenario that 50% of consumers choose Toaster A and 50% choose Toaster B.”

“Now consider a slightly different scenario where the choice set includes a third Toaster, call it Toaster C.”

“Toaster C has two slots, it costs \$49, but it is not wide enough for bagels.”

“In this scenario, Toaster C is a dominated option. It is dominated by Toaster A, because it is equal on all other attributes but inferior on the slot width. What are the chances you would choose C? Probably close to zero. How Does the Attraction Effect Work?”

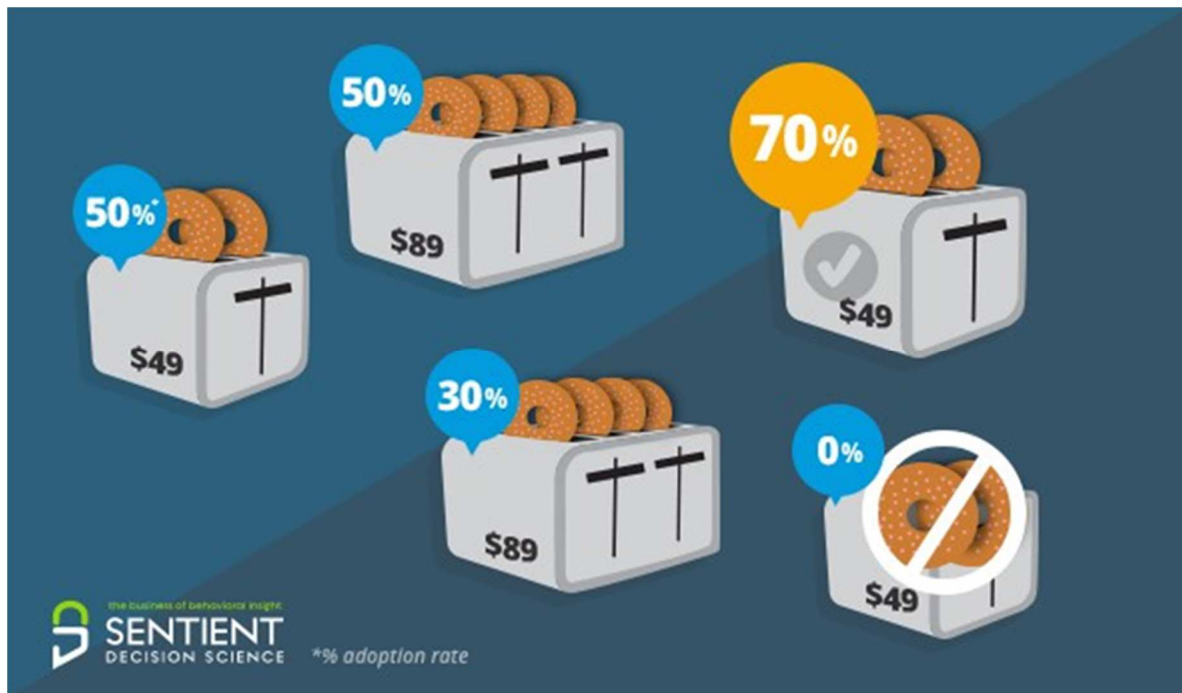


Fig.2-3. Product information and adoption rates in a binary choice scenario and a trinary choice scenario (Sentient Decision Science, 2014)

The author concluded that a choice set that included a dominated option actually produced an attraction effect toward the Toaster A, even though practically no one chose Toaster C. The preference for Toaster A increased disproportionately. The inclusion of a dominated alternative that was closer to Toaster A essentially stole share from Toaster B, resulting in choice shares such as 70% for Toaster A and 30% for Toaster B.

Past studies about attraction effect revealed that a proposed decoy choice influenced decision making by changing charm of products, through indirectly giving positive impressions to a specific choice. Thus, past studies about attraction effect might indicate that WOM and EWOM might influence decision making by directly giving positive or negative impression on products in order to change charm of products.

This study focuses on effect of WOM and EWOM comments (positive or negative) on WOM and EWOM influence and conducts researches.

Chapter 3. WOM and EWOM influence

When we make decisions, we tend to be influenced by external information. We often ask others opinions before making decisions. We make different decisions, depending on various conditions. For example, we are likely to choose a different lunch menu in a different climate and weather condition. In addition, we are not always rationally influenced by external information. Degree of influence can vary, depending on information form or information source.

Especially, opinions of others have great influence. For example, adolescent peer network position influences their purchase activities (Gentina & Bonsu, 2013). People tend to spend more due to higher “hedonic values” when the shopping companion is a friend, compared with the cases when the shopping companion is a family or when shopping alone (Borges, Chebat & Babin, 2010). Furthermore, communion-oriented people tend to change donation amount whether a friend is front of them or not (Kurt, Inman & Argo, 2011).

As the Internet spread, importance of “word-of-mouth communication” in marketing had rapidly increased. According to Sugitani (2009), WOM means “human communication among consumers about purchase of products and services”, and its effectiveness has been pointed out by many researches. The biggest reason of its effectiveness is that WOM can easily gain trustworthiness from consumers because WOMs are usually provided by consumers with actual user experiences. Different from advertisements, no interest relation exists between information providers and products. That is why consumers tend to highly evaluate the product and buy if a WOM refers to excellent characteristics of a product. Morioka (2007) referred to data implying that customers value WOMs more than advertisements or articles, as in Fig. 3-1. Customers joining Internet communities also value EWOMs more than advertisements or articles.

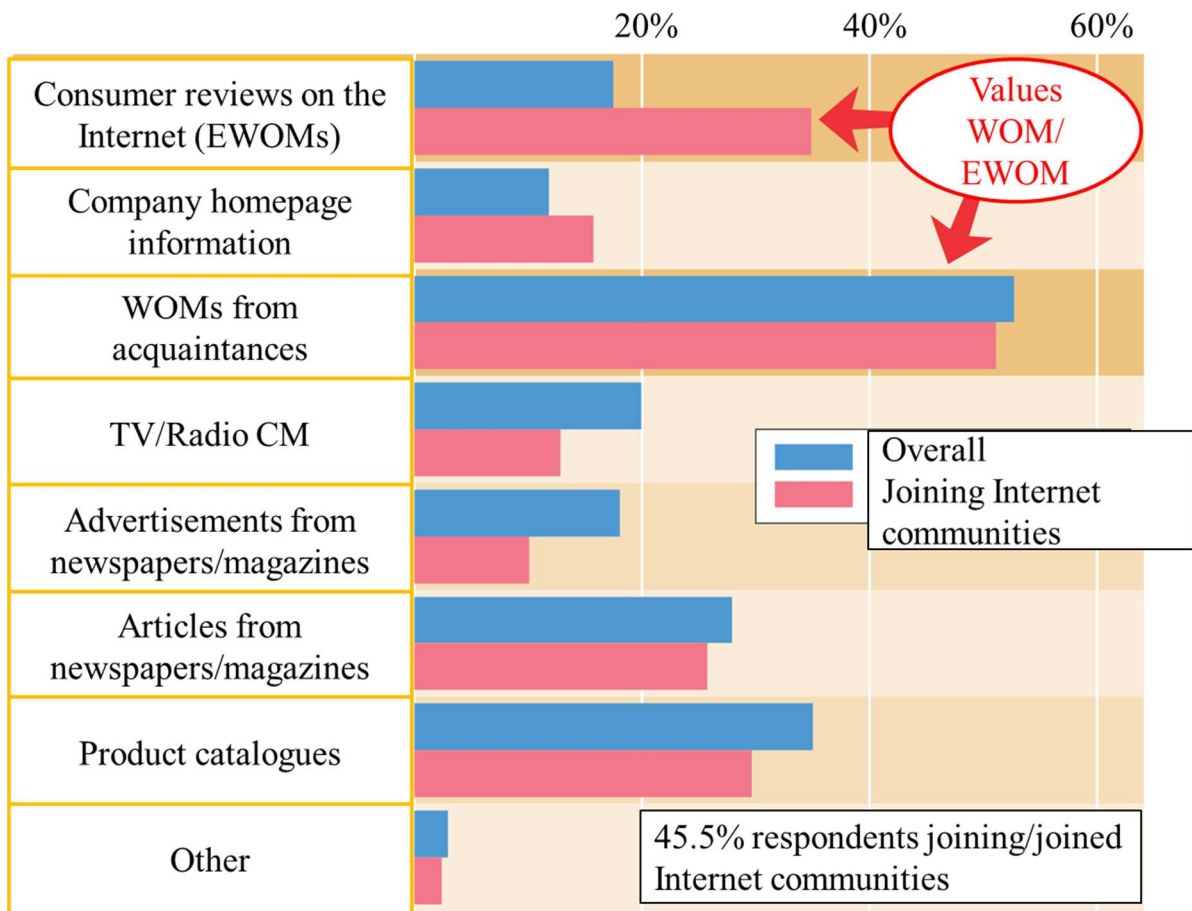


Fig. 3-1. Information that customers value at purchasing products (Morioka, 2007) ¹

3.1. Literature review about WOM and EWOM

Many researches have been conducted about how WOM influences decision making (e.g. Wangenheim & Bayón, 2004; Derbaix & Vanhamme, 2003; Hennig-Thurau, Gwinner, Walsh & Gremler, 2004; Murray, 1991). According to Sugitani (2009), past researches can be categorized into two stances.

First stance is to regard WOM as a new type of information, conducting researches focusing on occurrence conditions and influence. For example, consumers more tend to make product selections

¹ Respondents: 459 males and females from 20 to 69 years old living in 30km metropolitan area
Source: Nikkei Research Institute of Industry and Markets "Research about Internet communities" (May 2005)

depending on WOM information when consumers did not have enough information for product selection and purchase probably had risks (Cox, 1967; Engel, Blackwell & Miniard, 1995). The higher the involvement with product, the more consumers tend to utilize and provide WOMs (Sugitani, 2009). Negative WOMs are more effective than positive WOMs (Herr, Kardes & Kim, 1991).

Second stance is that focus on relationships and networks among consumers providing WOMs. Network analysis theory explain strength of relations among consumers by the concept of “social ties”. The theory describes characteristics of interpersonal networks through analyzing numbers, density and distance of social ties. The theory considers process how information spreads. For example, weak social ties (ties among acquaintances with limited chance of contact) accelerates product information spread to other interpersonal networks, while strong social ties (families and close friends) have influence in decision making (Brown & Reingen, 1987).

According to Sugitani (2009), most WOM related researches until 1990s focused on WOM from conversations with family and friends, while many WOM related researches since late 1990s focused on EWOM. Sugitani (2009) proposed three characteristic differences between WOM and EWOM.

First, WOM communication exists in limited interpersonal relationships, such as families, friends, and acquaintances. On the other hand, EWOM communication exists in all genres of people, regardless of area, age, sex, and nation.

Second, EWOM has “retrieval performance”. So far, we could not gain WOM when we did not find a person with user experience of the product. On the other hand, we can easily explore EWOMs with user experience on the Internet. Also we can find products that might fit to us through reading EWOMs written by providers with similar profiles to us.

Third, EWOM has few communication cues that are utilized in WOM communications. Traditional WOMs were targeted at close interpersonal relationships and mostly provided by face-to-face or telephone. On the other hand, EWOMs are provided by characters. EWOM communication bases on written characters and nonverbal cues such as facial expressions and voice tones are not transmitted to counterparts. It is very contrastive with face-to-face conversations that we can interpret messages with various information such as facial expressions, voice tones, gestures, and atmospheres of the place.

For an example of relatively recent WOM researches, compromise effect has been demonstrated that people tend to select the middle option in a trinary choice with inadequate information (e.g. Simonson, 1989; Dhar, Nowlis & Sherman, 2000; Simonson & Nowlis, 2000; Lin, HsiuJu, & Shih-Chieh, 2006). The compromise effect causes decision making influenced by WOM of a friend or a family member (Chuang et al., 2012). Their findings included several points. People are more likely to follow the WOM of family members, even where they have weak family ties. Also, family cohesiveness and peer cohesiveness have significant influence on the decision-making process. WOM influences behavior decision making, especially when the WOM is extreme. WOM effect on compromise effect is a function of decision uncertainty, such that the WOM effect on the compromise effect is weak when decision uncertainty is low rather than high. Consumers have a lower compromise effect when they receive a WOM from a family member rather than from a stranger. People are likely to follow suggestions from people in highly cohesive family and peer groups to the same extent. However, in less cohesive groups, suggestions from peers are less likely to be adopted than suggestions from family members. In addition, different perceived risks have different correlations with WOM influence and WOM spread (Lin & Fang, 2006).

Also, there are many researches about how EWOM affect decision making (e.g. Basuroy, Suman, Chatterjee & Ravid, 2003; Chevalier & Mayzlin, 2006; Liu, 2006). For example, increased volume of positive or negative EWOMs (number of ratings) strengthens positive or negative preference of participants for movies (Khare, Labrecque & Asare, 2011). The presence of a conflicting aggregated rating will decrease review credibility and diagnosticity via its negative effect on consumers' product-related attributions of the review (Qiu, Pang & Lim, 2012). The impact of online review valence is moderated by consumer expertise (Zou, Yu & Hao, 2011). The credibility of Web sites and EWOM messages can be damaged in the long run if all of the EWOM messages are positive (Doh & Hwang, 2009). Customer know-how exchange impacts customer perceptions of product value and likelihood to recommend the product, but does not influence customer repurchase intentions (Gruen, Osmonbekov, & Czaplewski, 2006). Tie strength, trust, normative and informational influence are positively associated with users' overall EWOM behavior, whereas a negative relationship was found with regard to homophile (Chu & Kim, 2011). The impact of negative EWOM on the EWOM effect is greater for experience goods than for search goods (Park & Lee, 2009).

Moreover, key factors related to the major elements of the social communication literature were identified and an integrative framework explaining the impact of EWOM communication on consumer behavior was built (Cheung & Thadani, 2012). The integrative framework is composed of five essential components – communicators, stimuli, receivers, responses and contextual factor. Communicators consist of expertise, trustworthiness, and attribution. Stimuli consist of argument quality, valence, sidedness, and volume. Receivers consist of involvement and prior knowledge. Responses consist of information usefulness, EWOM credibility, EWOM adoption, attitude, purchase intention, and purchase. Contextual factor consists of platform.

As introduced above, there are various past studies about WOM, including some studies in relation with subjective affinity to WOM provider. There are various past studies about EWOM, but few studies focused on subjective affinity to EWOM provider. In addition, very few studies focused on situations that both WOM and EWOM existed and contradicted with each other.

3.2. Purchase conditions with WOM, EWOM and affinity

We always make numerous purchase decisions every day, and both WOM and EWOM are available for the products to choose in many cases. We often get perplexed with contradicting WOM and EWOM comments. For example, imagine that we had to choose product A or product B. WOM directly or indirectly recommended product A, but EWOM directly or indirectly recommended product B. We often get still more confused about the decision due to contradicting WOM and EWOM comments. Specifically, when hospitals need to introduce a newest model of expensive medical appliances such as fMRI and CT scanner, they usually gather EWOMs for major newest models, also gathering WOMs from others if possible. WOM and EWOM vary by product categories. According to Miyata and Ikeda (2008), WOM communication with significant others are often utilized in product categories with potential consumption and usage in common, such as leisure, travel and audio-visual equipment. On the other hand, communication with independent others matters in product categories requiring professional knowledge such as personal computers and in restaurants.

In addition, we often have to change our purchase decisions due to newly gained external information just before the purchase actions. For example, imagine that we have to choose product A

or product B, but we could not gain any WOM or EWOM at first. We decided to choose product A without referring to WOM or EWOM, and we were about to purchase product A. Then we suddenly gained WOM or EWOM that directly or indirectly recommended product B. We often get perplexed with the judgment whether we should change our decisions or not.

If participants behaved rationally, they would make purchase decisions only by absolute product information such as prices and technical specifications. They would not be influenced by whether the information source is WOM or EWOM. They would not be influenced by whether the WOM or EWOM comment is positive or negative. According to Miyata and Ikeda (2008), negative feedback (e.g. negative WOM comment) is a type of advice. Advices can damage feelings of counterparts because advice contains the fact that adviser does not evaluate the counterpart. Miyata and Ikeda (2008) revealed that negative feedback from significant others highly tended to damage feelings of counterparts, while negative feedback from independent others did not. Evaluation and utility of negative feedback from independent others were higher than those from significant others. According to Miyata and Ikeda (2008), it was because people could accept negative feedback from independent others independently from emotions and relationships, just because the advisers were independent.

Also, if participants behaved rationally, they would not be influenced by whether the affinity to the person who provided WOM is high or low. On the other hand, results from past researches (e.g. Chuang et al., 2012) indicated that affinity might be a significant factor for purchase decision making, and that affinity might become significant in decision making conditions with contradicting WOM and EWOM as well. Also, affinity might become significant in decision change conditions with contradicting WOM or EWOM right after first decision without referring to any external information.

3.3. Hypotheses of this study

For this study, I examine three situations for three phases of consumer behavior in AISCEAS model. I propose three models for decisional processes in Search Phase, Comparison/Examination Phase, and Share Phase.

As for Search Phase, I examine a situation that both WOM and EWOM exist, contradicting with each other. I hypothesized psychological processes about purchase decision making as in Fig.3-2. In

the first step, affinity as an emotional factor influences degree of trustworthiness to WOM or EWOM comments. Degree of trustworthiness for participants varies, depending on opinion sources with different degrees of affinity. In the second step, the influenced degree of trustworthiness to WOM or EWOM comments influences decision making of participants.

Also, the magnitude of WOM effect and EWOM effect might vary, depending upon conditions. Because participants become more confused and skeptical about WOM and EWOM, degree of trustworthiness might decrease, when WOM and EWOM have different direction of comment (positive, negative), comparing with when both WOM and EWOM positively or negatively comment. When both WOM and EWOM are positive or negative, participants might be able to compare WOM and EWOM comments easier. On the other hand, when WOM is positive and EWOM is negative, or vice versa, participants need to interpret which comment directly or indirectly support which product, before judging adoption of WOM or EWOM.

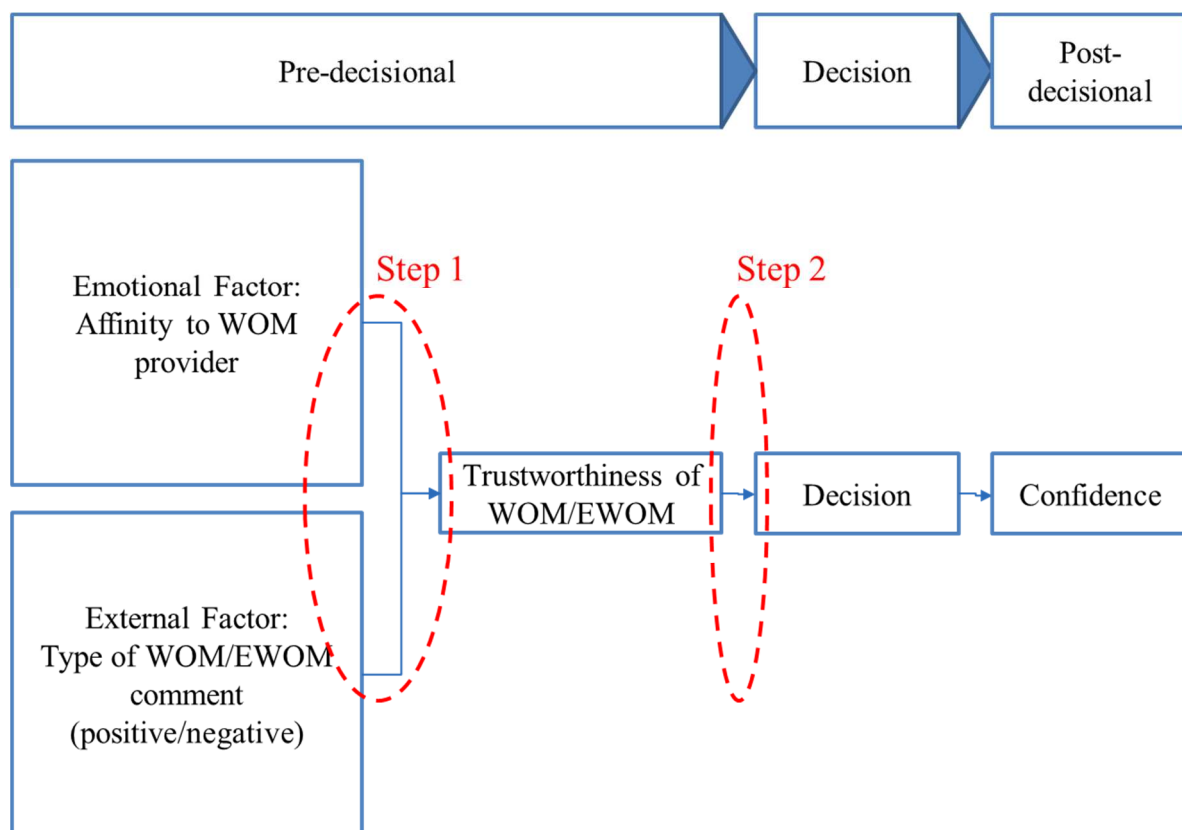


Fig.3-2. Decisional process for Search Phase

As for Comparison/Examination phase, I examine a decision change situation that decision makers gain contradicting WOM or EWOM right after they decided without referring to any external information, and that they have to decide to change their decision or not. I hypothesized psychological processes about purchase decision change as in Fig.3-3. In the first step, affinity as an emotional factor influences degree of trustworthiness to WOM or EWOM comments. Degree of trustworthiness for participants varies, depending on opinion sources with different degrees of affinity. In the second step, the influenced degree of trustworthiness to WOM or EWOM comments influences decision change of participants.

Also, the magnitude of WOM effect or EWOM effect might vary, depending upon conditions. Because participants became confused about suddenly appeared WOM or EWOM, and valence of comment (positive, negative) might make different impressions to products, influencing WOM effect or EWOM effect.

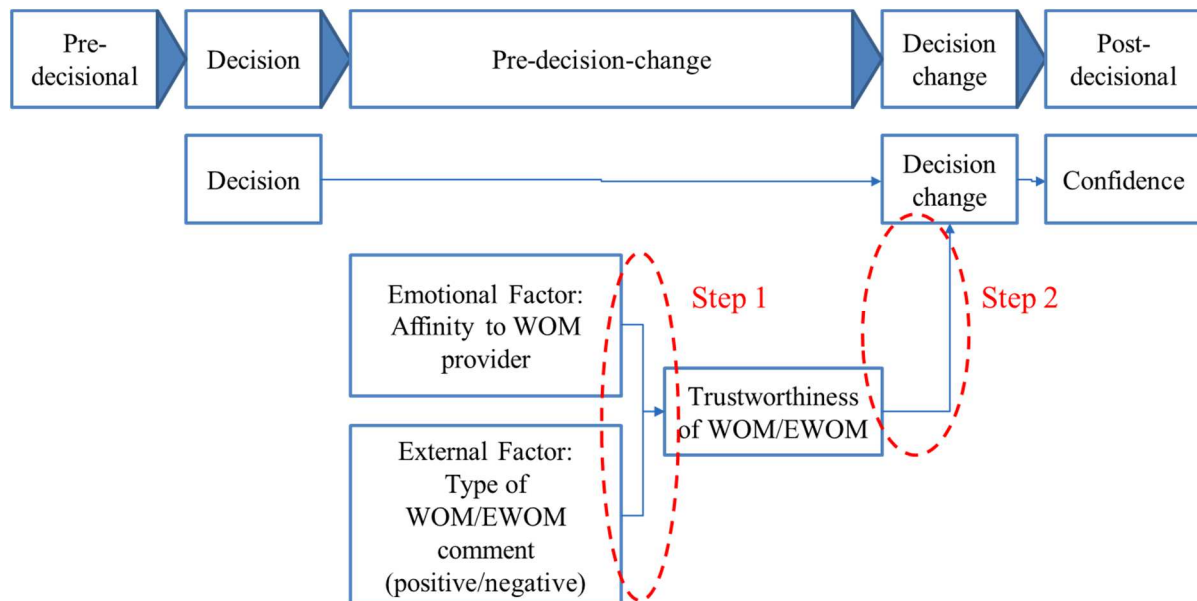


Fig.3-3. Decision change process for Comparison/Examination phase

As for Share phase, I examine a decision change situation that decision makers gain contradicting WOM right after they decided without referring to any external information, and that they have to decide to change their decision or not. I hypothesized psychological processes about purchase decision change as in Fig.3-4. In the first step, affinity as an emotional factor influences degree of

trustworthiness to WOM comments. Degree of trustworthiness for participants varies, depending on opinion sources with different degrees of affinity. In the second step, the influenced degree of trustworthiness to WOM comments influences decision change of participants about product advice.

Also, the magnitude of WOM effect might vary, depending upon conditions. Because participants became confused about suddenly appeared WOM, and valence of comment (positive, negative) might make different impressions to products, influencing on WOM effect.

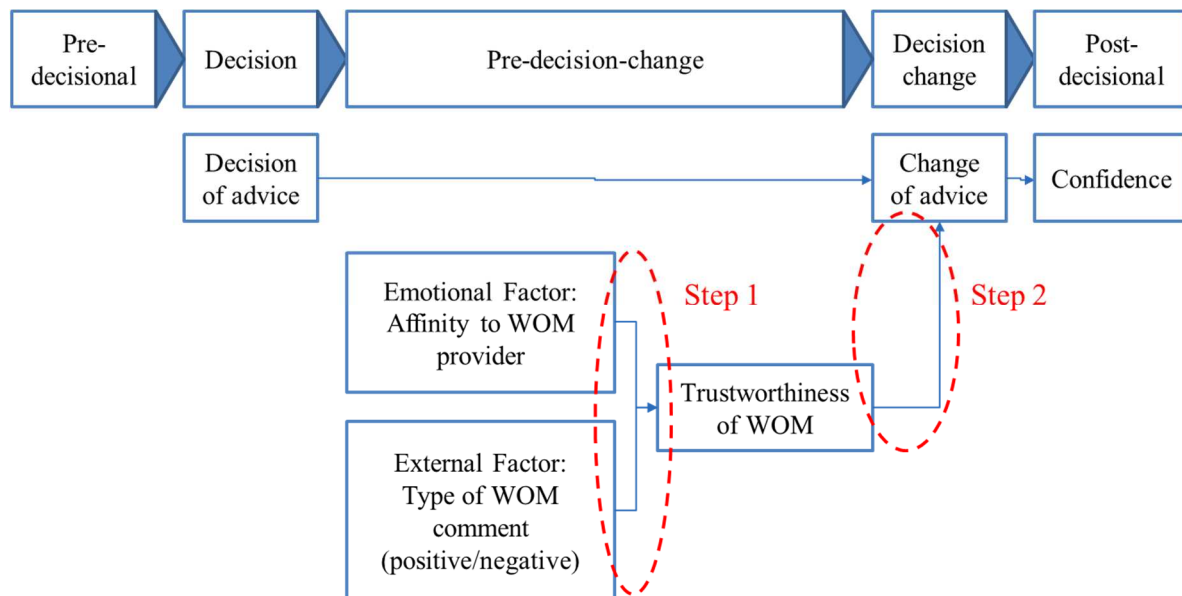


Fig.3-4. Decision change process about product advice for Share phase

Part 2. WOM and EWOM influence on decision making in Search Phase

Chapter 4. Search Phase of consumer behavior

4.1. Past WOM and EWOM studies in relation with Search Phase

Morioka (2007) referred to data implying that customers value WOMs more than advertisements or articles, as in Fig. 4-1. Customers joining Internet communities also value EWOMs more than advertisements or articles. Considering many customers join Internet communities such as Facebook, LINE, Twitter, and other BBS these days, WOMs and EWOMs are very important factors influencing current consumers.

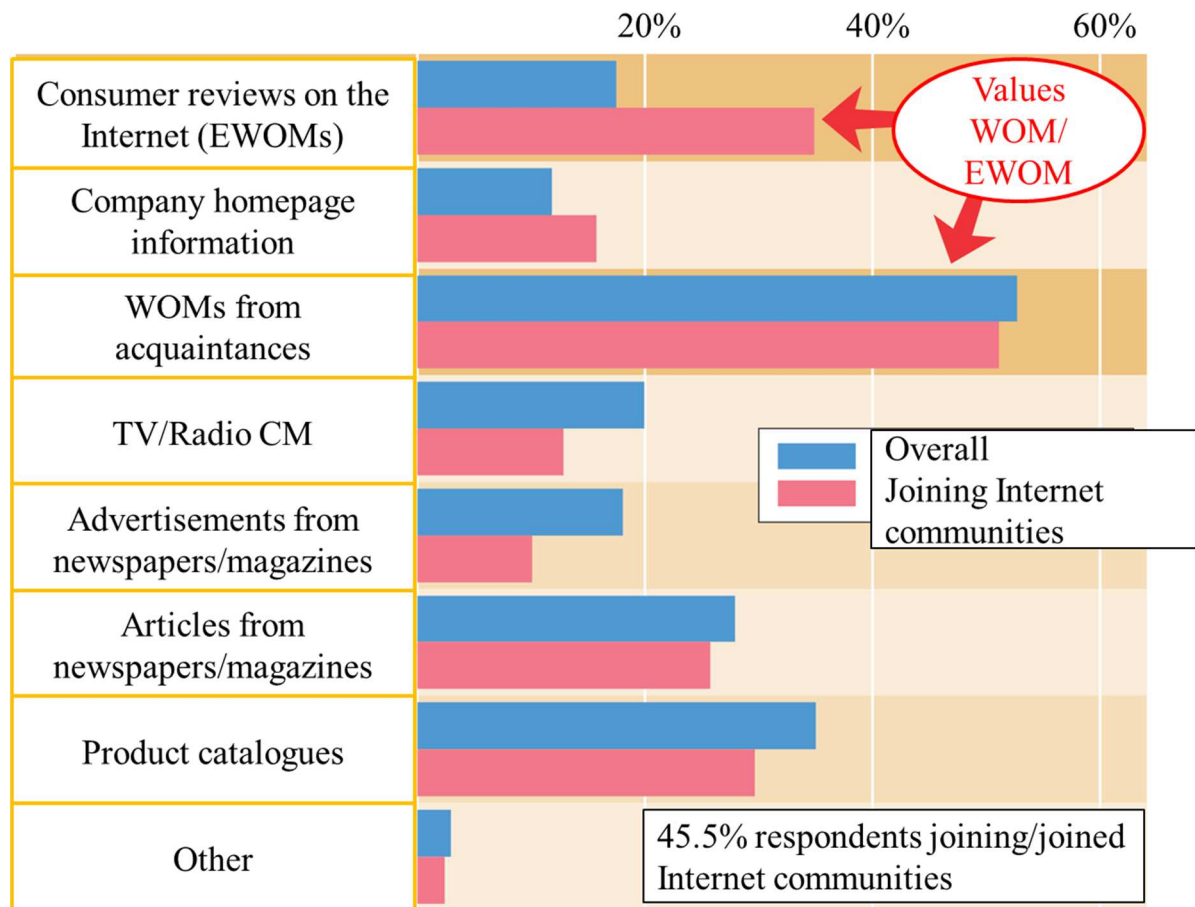


Fig. 4-1. Information that customers value at purchasing products (Morioka, 2007) ²

² Respondents: 459 males and females from 20 to 69 years old living in 30km metropolitan area
Source: Nikkei Research Institute of Industry and Markets "Research about Internet communities" (May 2005)

Many WOM studies have been conducted, and most of them can be categorized into discussions in Search Phase in AISCEAS model. For example, a study about WOM influence on compromise effect revealed that people are more likely to follow the WOM of family members, even where they have weak family ties (Chuang et al., 2012).

Table 4-1. Compromise effect under uncertainty and suggestions (Chuang et al., 2012)

| Uncertainty | High | | | | | | | | |
|-------------------|---------------|----------------------|------------|--------|----------------------|------------|----------|----------------------|------------|
| | No suggestion | | | Family | | | Stranger | | |
| Suggestion | Binary | Trinary | ΔP | Binary | Trinary | ΔP | Binary | Trinary | ΔP |
| | P(B;A) | P _C (B;A) | (%) | P(B;A) | P _C (B;A) | (%) | P(B;A) | P _C (B;A) | (%) |
| Product/share (%) | (%) | (%) | | (%) | (%) | | (%) | (%) | |
| Wax machine | 41 | 81 | 40 | 33 | 18 | -15 | 38 | 67 | 29 |
| Dehumidifier | 48 | 75 | 27 | 33 | 36 | 3 | 50 | 70 | 20 |
| Generator | 80 | 75 | -5 | 47 | 48 | 1 | 75 | 73 | -2 |
| Average | 56 | 77 | 21 | 38 | 34 | -4 | 54 | 70 | 16 |

| Uncertainty | Low | | | | | | | | |
|-------------------|---------------|----------------------|------------|--------|----------------------|------------|----------|----------------------|------------|
| | No suggestion | | | Family | | | Stranger | | |
| Suggestion | Binary | Trinary | ΔP | Binary | Trinary | ΔP | Binary | Trinary | ΔP |
| | P(B;A) | P _C (B;A) | (%) | P(B;A) | P _C (B;A) | (%) | P(B;A) | P _C (B;A) | (%) |
| Product/share (%) | (%) | (%) | | (%) | (%) | | (%) | (%) | |
| Wax machine | 48 | 57 | 9 | 41 | 48 | 7 | 46 | 56 | 10 |
| Dehumidifier | 55 | 59 | 4 | 43 | 49 | 6 | 49 | 58 | 9 |
| Generator | 59 | 63 | 4 | 51 | 59 | 8 | 50 | 57 | 7 |
| Average | 54 | 60 | 6 | 45 | 52 | 7 | 48 | 57 | 9 |

Note. P (B; A) denotes the probability of choosing B in a binary choice set. P_C (B; A) denotes the probability of choosing B in a trinary choice set. ΔP denotes the difference in the probability of choosing B between a binary and a trinary choice set.

Table 4-2. Compromise effect under group cohesion (Chuang et al., 2012)

Compromise effect under group cohesion.

| Group cohesion | Low | | | | | |
|----------------|-----------------------------|--|------------------------|-----------------------------|--|------------------------|
| | Family | | | Peer | | |
| | Binary set P(B;A) (%) | Trinary set P _C (B;A) (%) | ΔP_{fl} (%) | Binary set P(B;A) (%) | Trinary set P _C (B;A) (%) | ΔP_{pl} (%) |
| Wax machine | 23 | 26 | 3 | 30 | 26 | -4 |
| Dehumidifier | 53 | 30 | -24 | 40 | 37 | -3 |
| Generator | 57 | 33 | -23 | 68 | 64 | -4 |
| Average | 44 | 29 | -16 | 46 | 42 | -4 |

| Group cohesion | High | | | | | |
|----------------|-----------------------------|--|------------------------|-----------------------------|--|------------------------|
| | Family | | | Peer | | |
| | Binary set P(B;A) (%) | Trinary set P _C (B;A) (%) | ΔP_{fh} (%) | Binary set P(B;A) (%) | Trinary set P _C (B;A) (%) | ΔP_{ph} (%) |
| Wax machine | 23 | 32 | 9 | 17 | 31 | 14 |
| Dehumidifier | 27 | 36 | 9 | 33 | 36 | 2 |
| Generator | 57 | 48 | -9 | 65 | 59 | -6 |
| Average | 36 | 39 | 3 | 38 | 42 | 2 |

Note. P(B; A) denotes the probability of choosing B in a binary choice set. P_C(B; A) denotes the probability of choosing B in a trinary choice set. ΔP_{fl} , ΔP_{pl} , ΔP_{fh} , and ΔP_{ph} denotes the difference in the probability of choosing B between a binary and a trinary choice set in each condition of group level and group cohesion.

Their findings included several points. People are more likely to follow the WOM of family members, even where they have weak family ties. Also, family cohesiveness and peer cohesiveness have significant influence on the decision-making process. WOM influences behavior decision making, especially when the WOM is extreme. WOM effect on compromise effect is a function of

decision uncertainty, such that the WOM effect on the compromise effect is weak when decision uncertainty is low rather than high. Consumers have a lower compromise effect when they receive a WOM from a family member rather than from a stranger. People are likely to follow suggestions from people in highly cohesive family and peer groups to the same extent. However, in less cohesive groups, suggestions from peers are less likely to be adopted than suggestions from family members.

I focused on the effect of affinity on degree of WOM influence, indicated from the study mentioned above. Affinity might influence influential power of WOM, leading to influence on purchase decision making.

Also, many EWOM studies have been conducted recently, and most of them can be categorized into discussions in Search Phase in AISCEAS model. For example, key factors related to the major elements of the social communication literature were identified and an integrative framework explaining the impact of EWOM communication on consumer behavior was built (Cheung & Thadani, 2012). The integrative framework consists of five essential components – communicators, stimuli, receivers, responses and contextual factor. Communicators consist of expertise, trustworthiness, and attribution. Stimuli consist of argument quality, valence, sidedness, and volume. Receivers consist of involvement and prior knowledge. Responses consist of information usefulness, EWOM credibility, EWOM adoption, attitude, purchase intention, and purchase. And, contextual factor consists of platform.

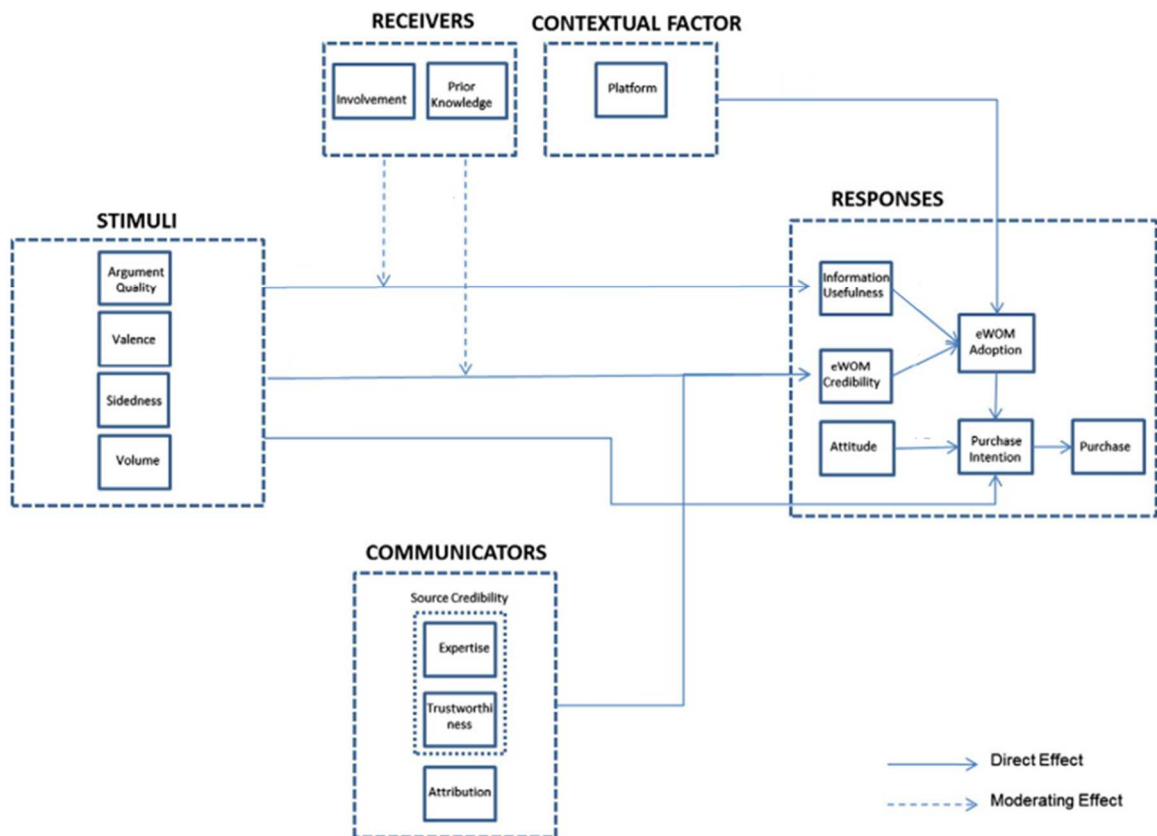


Fig.4-2. An integrative framework of the impact of EWOM communication (Cheung & Thadani, 2012)

I focused on communicators (trustworthiness and attribution) and stimuli (valence) in the model mentioned above. As for trustworthiness, I examined WOM and EWOM trustworthiness. As for attribution, I compared the cases with WOM providers with different affinity, and compared the cases with WOM and EWOM. As for valence, I examined two types of WOM and EWOM comment (positive, negative).

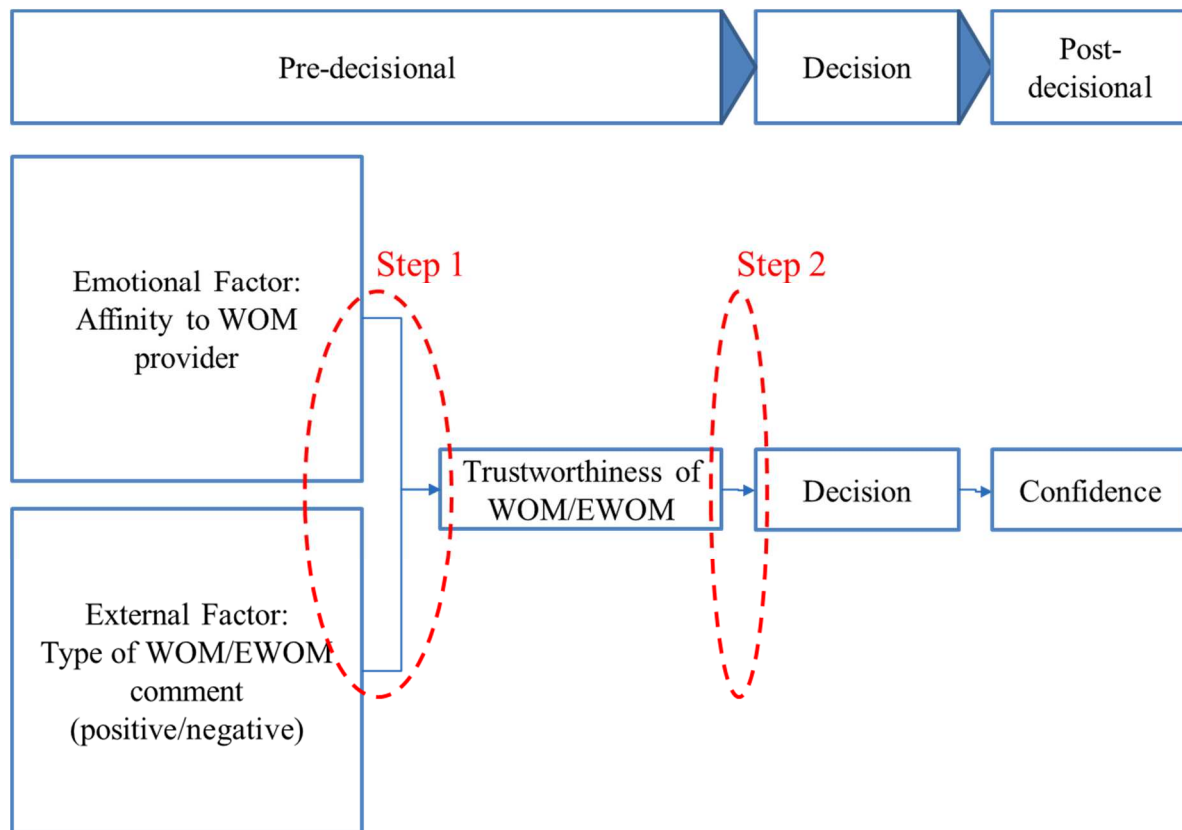


Fig.4-3. Decisional process for Search Phase

4.2. Important constructs of this study

Consumers would gather and decide by external information such as WOM and EWOM if it was hard to decide by products themselves. When they decide based on external information, they have to evaluate the importance of external information. The importance usually depends on quality and trustworthiness of information, but consumers often face situations that they can only gain low quality WOMs and EWOMs, just saying good or bad. In such situation, I considered that consumers usually evaluate WOMs and EWOMs only by trustworthiness, and that they would adopt most trustworthy opinion. For example, I considered that consumers usually adopt more trustworthy EWOM rather than less trustworthy WOM, and vice versa.

Type of WOM and EWOM comment might influence WOM and EWOM trustworthiness, even if quality of information was low. For example, in a binary choice situation between product A and B, a positive WOM to product A directly supports product A, and a negative WOM to product B indirectly supports product A. Logically, a positive WOM to product A and a negative WOM to product B are

equivalent in this binary choice. However, consumers might feel different trustworthiness from these WOMs. For example, a positive WOM might be more trustworthy than negative WOM for many consumers, and vice versa.

Affinity to WOM provider as an emotional factor might influence WOM and EWOM trustworthiness. For example, consumers might feel WOM from a close friend more trustworthy than WOM from an ordinary friend. They might feel EWOM less trustworthy when they gain a contradicting WOM from a close friend. Though there might be other emotional factors, I considered that affinity is a very fundamental and important emotion, making significant differences in past studies, for example in compromising effect (Chuang et al., 2012).

In addition, I considered that affinity to WOM provider might make the last push to decision making, when it is hard to decide even by external information. I considered that consumers would want to rely on emotional factors when they could not clearly decide even from external information.

Affinity to WOM provider as the last push to decision making might cause illogical outcomes, because decisions by the last push from affinity are not based on logic. Consumers usually adopt the most trustworthy opinion, but sometimes do not. I named these occasional phenomena as “Contradiction”. I considered that emotional factors such as affinity might cause these illogical outcomes.

I considered that pre-decisional factors such as affinity to WOM provider, type of WOM and EWOM comment, trustworthiness of WOM and EWOM, and “Contradiction” might influence post-decisional confidence. Consumers might feel less confident when it was hard to decide even by external information. I considered that they feel less confident especially when they made “Contradictions” influenced by the last push from affinity.

Chapter 5. Research 1 Influence of subjective affinity in Search Phase³

I conducted an experiment to examine a situation that both WOM and EWOM exist, conflicting with each other. This experiment compared WOM and EWOM influence on purchase decision making in high and low affinity conditions when WOM conflicted with EWOM. Participants had to select from product A or product B, with information only about WOM comment (positive or negative), EWOM comment (positive or negative), and affinity to WOM provider (high or low). The results suggested psychological processes that affinity influences degree of trustworthiness as an emotional factor, and that influenced degree of trustworthiness influences decision making of participants. The results were contrastive between high affinity conditions and low affinity conditions. WOM comment and EWOM comment become important factors for decision making only when affinity to WOM provider is high.

5.1. Purpose of this experiment

I intended to directly compare WOM and EWOM effects on purchase decision making. We always make numerous purchase decisions every day, and both WOM and EWOM are available for the products to choose in many cases. We often get perplexed with conflicting WOM and EWOM comments. For example, WOM directly or indirectly recommends product A, but EWOM directly or indirectly recommends product B. We often get still more confused about the decision due to conflicting WOM and EWOM comments. Especially, when hospitals need to introduce a newest model of expensive medical appliances such as fMRI and CT scanner, they usually gather EWOMs for major newest models, also gathering WOMs from others if possible. Thus I intended to challenge comparing WOM and EWOM influence on purchase decision making. For making the comparison clearer, I especially focused on trustworthiness and purchase from many factors mentioned in the integrative framework of EWOM (Cheung & Thadani, 2012).

I intended to analyze in which conditions EWOM outperform WOM most, and vice versa. If participants behaved rationally, they would make purchase decisions only by absolute product

³ This chapter consists of reviewed and reorganized contents based on Eguchi and Yamashita (2015) and Eguchi and Yamashita (2016a).

information such as prices and technical specifications. They would not be influenced by whether the information source is WOM or EWOM. They would not be influenced by whether the WOM or EWOM comment is positive or negative. Also, they would not be influenced by whether the affinity to the person who provided WOM is high or low. On the other hand, results from past researches (e.g. Chuang et al., 2012) indicated that affinity might be a significant factor for purchase decision making, and I considered that affinity might become significant also in conditions with conflicting WOM and EWOM. In this experiment, I made conditions that WOM comment conflicts with EWOM comment, and I observed which comment participants adopt for making decisions in each condition. The conditions included the conditions with different affinity to the WOM provider.

For clearer comparison of WOM and EWOM influence, I intended to exclude the influence of internal motivation, such as preference, of participants. According to EWOM studies, EWOMs (number of ratings) strengthens positive or negative preference of participants (Khare et al., 2011). According to studies on the compromise effect (e.g. Chuang et al., 2012; Simonson, 1989), when people are uncertain about his preference due to insufficient information or knowledge regarding the consequences of buying behavior, people tend to act on the basis of information provided by a reference group. Thus I controlled the situation by making participants imagine that they were perplexed because both products looked extremely similar.

I hypothesized a two-step psychological process about how affinity influences decision making. In the first step, affinity as an emotional factor influences degree of trustworthiness to WOM or EWOM comments. Degree of trustworthiness for participants varies, depending on opinion sources with different degrees of affinity. In the second step, the influenced degree of trustworthiness to WOM or EWOM comments influences decision making of participants. We usually adopt the most trustworthy opinion, when we gain multiple and conflicting opinions. I intended to verify the hypothetical process above in this experiment.

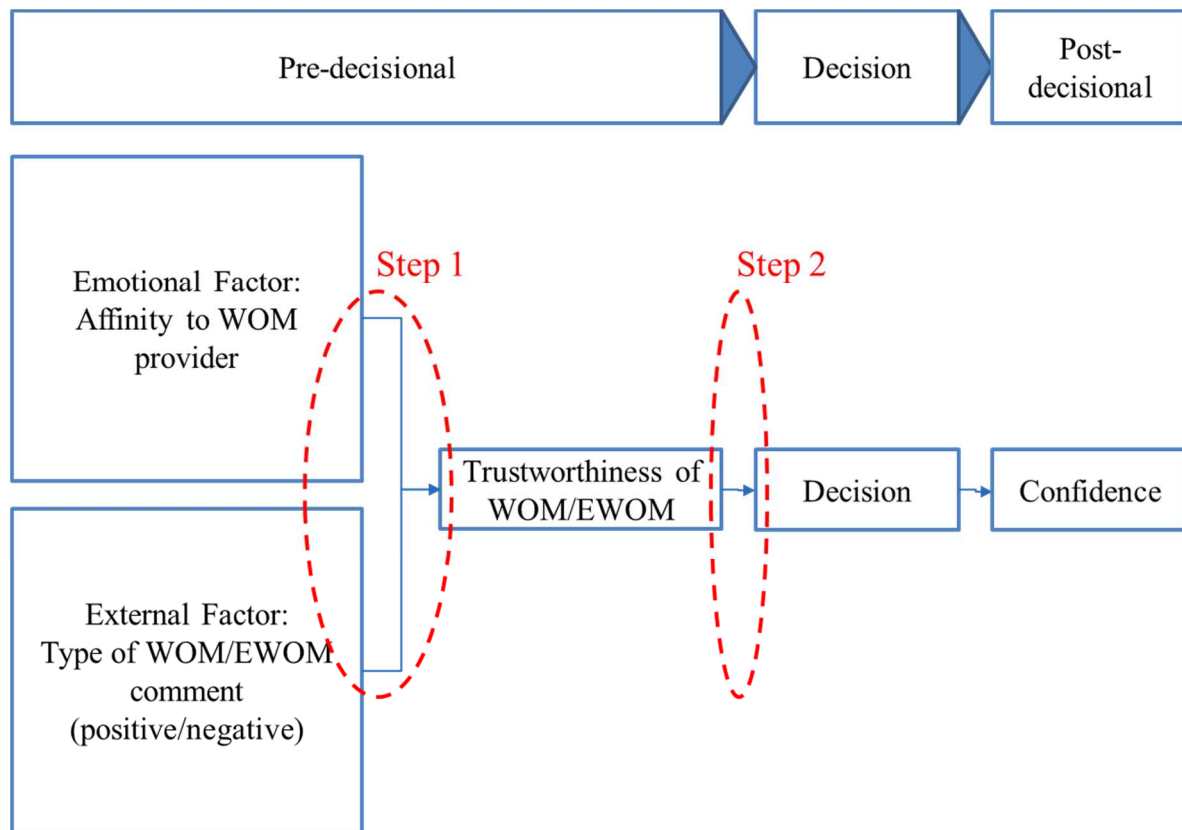


Fig.5-1. Decisional process

I considered that the magnitude of WOM effect and EWOM effect might vary, depending upon conditions. Because participants become more confused and skeptical about WOM and EWOM, degree of trustworthiness might decrease, when WOM and EWOM have different direction of comment (positive, negative), comparing with when both WOM and EWOM positively or negatively comment. When both WOM and EWOM are positive or negative, participants might be able to compare WOM and EWOM comments easier. On the other hand, when WOM is positive and EWOM is negative, or vice versa, participants need to interpret which comment directly or indirectly support which product, before judging adoption of WOM or EWOM.

I also considered that degree of confidence about decision making might vary, depending upon conditions. Degree of confidence might decrease when WOM or EWOM is negative, due to increased uneasiness of participants caused by negative impression of products to participants, comparing with the conditions when WOM or EWOM is positive. When WOM or EWOM is positive, participants might be promoted by the positive information, causing the degree of

confidence higher. On the other hand, when WOM or EWOM is negative, participants might be depressed by the negative information, resulting in lower degree of confidence.

In addition, I considered that participants might need different EWOM volumes to trust, depending on trustworthiness of EWOMs. Specifically, when EWOM trustworthiness is lower, participants might need many EWOMs to consider that EWOMs are trustworthy. On the other hand, when EWOM trustworthiness is higher, participants might need limited number of EWOMs to consider that EWOMs are trustworthy.

5.2. Research hypotheses

First, I intended to verify that affinity influences degree of trustworthiness. I considered that degrees of WOM trustworthiness and EWOM trustworthiness might be different in conditions with different affinity. Thus I intended to analyze how degrees of WOM trustworthiness and EWOM trustworthiness change in conditions with different affinity to the WOM provider (a friend or a close friend).

Second, I intended to verify that degree of trustworthiness influences decision making of participants. When participants have to choose product A or product B, percentage of participants for each option might change in conditions with different degrees of WOM trustworthiness and EWOM trustworthiness. Thus I intended to analyze relations among degree of WOM trustworthiness, degree of EWOM trustworthiness and result of decision making (purchase product A or product B).

Third, I intended to analyze how degrees of WOM trustworthiness and EWOM change in conditions that WOM (a comment by a friend or a close friend) conflicts with EWOM (online review rating). I considered that degrees of WOM trustworthiness and EWOM vary, depending upon conditions. I intended to analyze in which conditions WOM trustworthiness become higher or lower, and in which conditions EWOM trustworthiness become higher or lower.

Fourth, I measured degree of confidence because I considered that degree of confidence about decision making might vary, depending upon conditions. I intended to analyze how degree of confidence changes in conditions with different WOM comments (positive or negative) and EWOM comments (positive or negative).

Fifth, I measured necessary numbers of EWOMs for participants to trust, because I considered that participants need different EWOM volumes to trust, depending on trustworthiness of EWOM. I intended to analyze how EWOM volumes to trust change in conditions with different EWOM trustworthiness.

On the basis of the hypothesized two-step psychological process about how affinity influences decision making, I constructed following hypotheses:

H1. When affinity to the friend is higher, trustworthiness of WOM from the friend becomes significantly higher (based on the first step of the hypothetical process).

H2. Trustworthiness of WOM and trustworthiness of EWOM are closely related to decision making by participants (based on the second step of the hypothetical process).

5.3. Method

5.3.1. Participants

Eighty-three participants joined the experiment. Participants included 81 undergraduates, a graduate student, and a professor from Tokyo Metropolitan University. The mean age was 20.76 years ($SD = 6.37$, range: 19-61). Forty-five participants were female, and thirty-eight participants were male. The experiment took about 20 minutes by making participants answer the questionnaire. All participants attended a psychology class in the university, and they joined the experiment as a part of a lecture in the class.

5.3.2. Experimental design and questionnaire

The questionnaire requested participants to imagine situations that they had to purchase either of product A or product B, and that they were perplexed because both products looked extremely alike. I controlled the conditions by limiting information of participants only about WOM (positive or negative), EWOM (positive or negative), and affinity (high or low), as in the Appendix.

I made participants imagine a situation that they have worked in a company for several years since they graduated. In the situation, participants had to buy an industrial machine for business reasons of their company. Although participants were able to select from product A and product B, both products looked extremely alike. A close friend or a friend as the WOM provider directly

supported product A by recommending product A, or indirectly supported product A by not recommending product B. I made participants imagine that the WOM provider had little knowledge and no experience about the products, and that they knew the fact. On the other hand, online reviews in online shopping sites as the EWOM provider directly supported product B through positive ratings to product B (4.0/5.0 on average), or indirectly supported product B through negative ratings to product A (2.0/5.0 on average). I made participants imagine that there was no useful information in the review comments.

I set the product categories as industrial wax machines, industrial electric generators, industrial large dehumidifiers, and industrial large humidifiers, so that participants would decide without any stereotype for the products. These expensive machines were for industrial use, and participants were unlikely to have any prior purchase experience or stereotype for such expensive products. For clear comparison of WOM and EWOM influence, I intended to exclude the influence of internal motivation, such as preference, of participants.

The questionnaire prepared 8 patterns of conditions (2 [affinity: high, low] x 2 [WOM comment: positive, negative] x 2 [EWOM comment: positive, negative]) as in Table 5-1. The questionnaire prepared two patterns of order of conditions, and equal numbers of copies were printed for each pattern. The two patterns of copies were randomly distributed to participants.

Table 5-1. Conditions used in the experiment

| Affinity | WOM | EWOM | Condition |
|----------|----------------------------|-------------------------------------|-----------|
| | Comment | Comment | No. |
| High | Positive to product A (+A) | Positive to product B (+B, 4.0/5.0) | 1 |
| | | Negative to product A (-A, 2.0/5.0) | 5 |
| | Negative to product B (-B) | Positive to product B (+B, 4.0/5.0) | 7 |
| | | Negative to product A (-A, 2.0/5.0) | 3 |
| Low | Positive to product A (+A) | Positive to product B (+B, 4.0/5.0) | 2 |
| | | Negative to product A (-A, 2.0/5.0) | 6 |
| | Negative to product B (-B) | Positive to product B (+B, 4.0/5.0) | 8 |
| | | Negative to product A (-A, 2.0/5.0) | 4 |

The first pattern of order of condition (WOM comment – EWOM comment - affinity) was “1. Positive to product A – Positive to product B – A close friend, 2. Positive to product A – Positive to

product B – A friend, 3. Negative to product B – Negative to product A – A close friend, 4. Negative to product B – Negative to product A – A friend, 5. Positive to product A – Negative to product A – A close friend, 6. Positive to product A – Negative to product A – A friend, 7. Negative to product B – Positive to product B – A close friend, 8. Negative to product B – Positive to product B – A friend”.

The other pattern of order of condition (WOM comment – EWOM comment - affinity) was “7. Negative to product B – Positive to product B – A close friend, 8. Negative to product B – Positive to product B – A friend, 5. Positive to product A – Negative to product A – A close friend, 6. Positive to product A – Negative to product A – A friend, 3. Negative to product B – Negative to product A – A close friend, 4. Negative to product B – Negative to product A – A friend, 1. Positive to product A – Positive to product B – A close friend, 2. Positive to product A – Positive to product B – A friend”.

I considered that effect of one WOM might be much larger than that of one EWOM. For making comparison of WOM effect and EWOM effect easier, I defined 10 online review ratings as EWOM, and defined one comment from a friend as WOM.

I controlled that WOM always conflicted with EWOM in all the conditions. I made that WOM directly or indirectly recommended product A, and that EWOM directly or indirectly recommended product B. Concerning WOM, the friend said “I recommend product A” (positive to product A [+A]), otherwise the friend said “I do not recommend product B” (negative to product B [-B]). The positive WOM comment directly recommended product A, and the negative WOM indirectly recommended product A. Concerning EWOM, I defined average rating score for positive EWOM as 4.0/5.0 and that for negative EWOM as 2.0/5.0. I adopted a rating method that 5.0/5.0 is the maximum rating and 1.0/5.0 is the minimum. The rating on product B was 4.0/5.0 (positive to product B [+B]), otherwise the rating on product A was 2.0/5.0 (negative to product A [-A]). The positive EWOM comment directly recommended product B, and the negative EWOM indirectly recommended product B. To simplify discussion, I discussed two patterns of conflict between WOM and EWOM altogether. One pattern was that both WOM and EWOM comments were positive or negative, recommending different products. The other pattern was that both WOM and EWOM comments referred to the same product, though types of comments were opposite. Concerning affinity, I defined “high” for “a close friend (with whom participants meet and talk once a week)” and “low” for “a friend (with whom participants meet and talk once in two months)”. Though frequency of meeting with WOM provider

might not always correlate with subjective affinity to WOM provider, I included this trait in affinity definition so that participants could more easily imagine “a close friend” or “a friend”, because I did not mention any other characteristics of WOM provider. As the premise, the questionnaire requested participants to imagine situations that they had been working several years after graduation, even though participants were students. For comparing affinity clearer, I chose “a close friend” and “a friend” for defining affinity, instead of “a boss” or “a colleague”. As for “a boss”, I considered that hierarchical authority of “a boss”, instead of affinity, might influence decision making. As for “a colleague”, I considered that we usually expect some user experience or knowledge from colleagues when we ask them for WOMs.

For each condition in Table 5-1, I requested participants to answer for five items as follows:

- (1) Trustworthiness of WOM (0-10: 0 = “not trustworthy at all” to 10 = “perfectly trustworthy”)
- (2) Trustworthiness of EWOM (0-10: 0 = “not trustworthy at all” to 10 = “perfectly trustworthy”)
- (3) Which product to buy (0 = “product A” or 1 = “product B”)
- (4) Confidence of the decision (0-10: 0 = “not confident at all” to 10 = “perfectly confident”)
- (5) EWOM volume that the participant thinks necessary to trust

Through these questions above, I intended to measure degree of WOM trustworthiness, degree of EWOM trustworthiness, choice of products as decision result, degree of confidence, and EWOM volume that the participant thinks necessary to trust.

5.4. Results and discussion

First, I examined whether affinity influences decision making or not. Second, I examined whether WOM trustworthiness vary by affinity or not. Next, I analyzed how WOM trustworthiness varied by each condition. Then, I analyzed how EWOM trustworthiness varied by each condition. Also, I examined whether degree of trustworthiness influences decision making or not. Besides, I analyzed how degrees of confidence varied by each condition. In addition, I analyzed correlation between EWOM trustworthiness and necessary EWOM volumes for participants to trust. I found results of decision making for each condition as in Table 5-2.

Table 5-2. Relationship between conditions and reaction (decision making)

| Type of Information | | | Reaction | | | | |
|---------------------|---------------|---------------|-----------|----------|-----------|--------------|-----------|
| WOM | | EWOM | Selection | | | Confidence | |
| Affinity | Comment | Comment | Product | <i>N</i> | Ratio (%) | Rating value | |
| | | | | | | <i>M</i> | <i>SD</i> |
| High | Positive to A | Positive to B | A | 29 | 34.9 | 5.66 | 1.93 |
| | | | B | 54 | 65.1 | 6.09 | 1.72 |
| | | Negative to A | A | 40 | 48.2 | 5.78 | 1.64 |
| | | | B | 43 | 51.8 | 5.74 | 1.66 |
| | Negative to B | Positive to B | A | 44 | 53.0 | 5.14 | 1.97 |
| | | | B | 39 | 47.0 | 5.72 | 1.93 |
| | | Negative to A | A | 36 | 43.4 | 5.22 | 1.79 |
| | | | B | 47 | 56.6 | 6.02 | 1.54 |
| Low | Positive to A | Positive to B | A | 16 | 19.3 | 5.69 | 2.24 |
| | | | B | 67 | 80.7 | 6.03 | 1.60 |
| | | Negative to A | A | 18 | 21.7 | 5.11 | 1.84 |
| | | | B | 65 | 78.3 | 5.75 | 1.77 |
| | Negative to B | Positive to B | A | 22 | 26.5 | 4.64 | 1.94 |
| | | | B | 61 | 73.5 | 5.52 | 1.97 |
| | | Negative to A | A | 23 | 27.7 | 4.87 | 1.69 |
| | | | B | 60 | 72.3 | 5.82 | 1.67 |

5.4.1. WOM and EWOM trustworthiness

I intended to analyze how WOM trustworthiness and EWOM trustworthiness vary in high affinity conditions and low affinity conditions. First, I checked whether EWOM trustworthiness was higher than WOM trustworthiness or not. I considered that the results in high affinity conditions and those in low affinity conditions might be different. Second, I examined that WOM trustworthiness varied, depending upon affinity. Based on the first step of my hypothetical process, degrees of WOM trustworthiness might vary between high affinity conditions and low affinity conditions.

Means and *SDs* of WOM trustworthiness for all the conditions were summarized in Table 5-3. Means and *SDs* of EWOM trustworthiness for all the conditions were summarized in Table 5-4.

Table 5-3. WOM trustworthiness

| Type of Information | | | Trustworthiness | |
|---------------------|---------------|---------------|---------------------|-----------|
| WOM | | EWOM | WOM trustworthiness | |
| Affinity | Comment | Comment | Rating value | |
| | | | <i>M</i> | <i>SD</i> |
| High | Positive to A | Positive to B | 5.10 | 2.00 |
| | | Negative to A | 5.37 | 1.96 |
| | Negative to B | Positive to B | 5.23 | 1.93 |
| | | Negative to A | 5.64 | 1.85 |
| Low | Positive to A | Positive to B | 3.96 | 1.76 |
| | | Negative to A | 4.18 | 1.93 |
| | Negative to B | Positive to B | 4.12 | 1.89 |
| | | Negative to A | 4.22 | 1.73 |

Table 5-4. EWOM trustworthiness

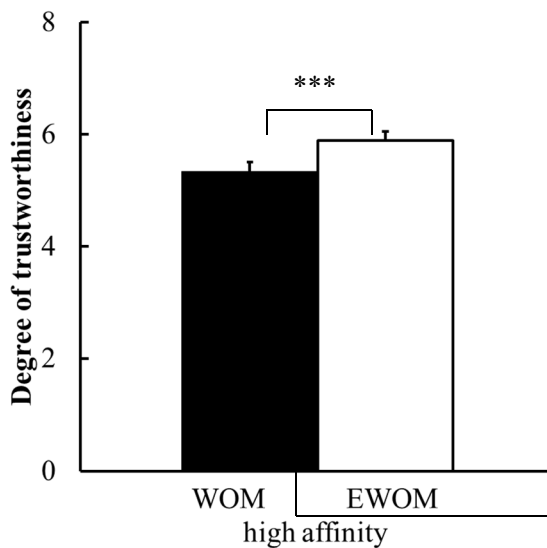
| Type of Information | | | Trustworthiness | |
|---------------------|---------------|---------------|----------------------|-----------|
| WOM | | EWOM | EWOM trustworthiness | |
| Affinity | Comment | Comment | Rating value | |
| | | | <i>M</i> | <i>SD</i> |
| High | Positive to A | Positive to B | 6.11 | 1.82 |
| | | Negative to A | 5.67 | 1.91 |
| | Negative to B | Positive to B | 5.72 | 1.86 |
| | | Negative to A | 6.07 | 1.62 |
| Low | Positive to A | Positive to B | 6.11 | 1.62 |
| | | Negative to A | 5.95 | 1.72 |
| | Negative to B | Positive to B | 5.81 | 1.84 |
| | | Negative to A | 6.02 | 1.73 |

First, I conducted two *t* tests to analyze significance of difference on degree of trustworthiness of WOM and EWOM, separately for high affinity conditions and low affinity conditions. Both in high and low affinity conditions, *t* tests revealed significant differences between WOM trustworthiness and EWOM trustworthiness as in Fig.5-1 and Fig.5-2, $t(662) = -3.853$, $t(662) = -13.426$, $ps < .001$, respectively. The results indicated that trustworthiness of 10 EWOMs were significantly higher than that of one WOM, both in high affinity and in low affinity conditions.

Second, I conducted another *t* test to check significance of difference in WOM trustworthiness between high affinity and low affinity conditions. WOM trustworthiness was significantly higher in high affinity conditions as shown in Fig.5-2 and Fig.5-3, $t(662) = 8.313$, $p < .001$. The results

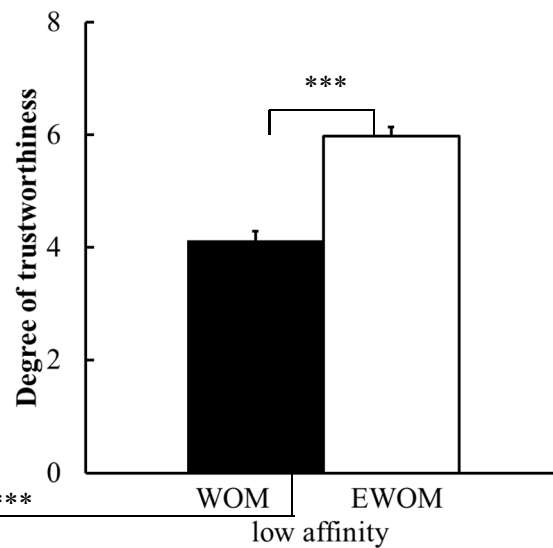
indicated that WOM trustworthiness varied by different affinity conditions, as the first step of my hypothetical process suggested. Thus, the results supported H1.

In addition, I conducted another t test to check significance of difference in EWOM trustworthiness between high affinity and low affinity conditions. I found no significant results, $t(662) = -.570, p = .569$.



Note. *** $p < .001$

Fig. 5-2. Trustworthiness in high affinity



Note. *** $p < .001$

Fig. 5-3. Trustworthiness in low affinity

5.4.2. Degree of WOM trustworthiness

I intended to analyze how WOM trustworthiness vary by difference in affinity (high, low), WOM (positive, negative), and EWOM (positive, negative). On the basis of the results from 4.1 that WOM trustworthiness significantly varied by affinity, I considered that WOM trustworthiness might vary by difference in WOM comment and EWOM comment, in addition to difference in affinity. I conducted 2-dimensional (WOM comment [positive, negative] x EWOM comment [positive, negative]) ANOVAs on degree of WOM trustworthiness, separately for high affinity conditions and low affinity conditions.

Concerning high affinity conditions, I found a significant result only from the main effect of EWOM comment as shown in Fig. 5-4, $F(1,82) = 7.756, p < .01$. WOM trustworthiness was significantly higher when the EWOM comment was negative. On the other hand, I found no

significant result from the main effect of WOM comment ($F(1,82) = 1.275, p = .262$), or from WOM comment x EWOM comment interaction ($F(1,82) = .262, p = .610$). Concerning low affinity conditions, I did not find any significant results from the main effect of WOM comment ($F(1,82) = .461, p = .499$), from the main effect of EWOM comment ($F(1,82) = 1.380, p = .243$), or from WOM comment x EWOM comment interaction ($F(1,82) = .250, p = .618$).

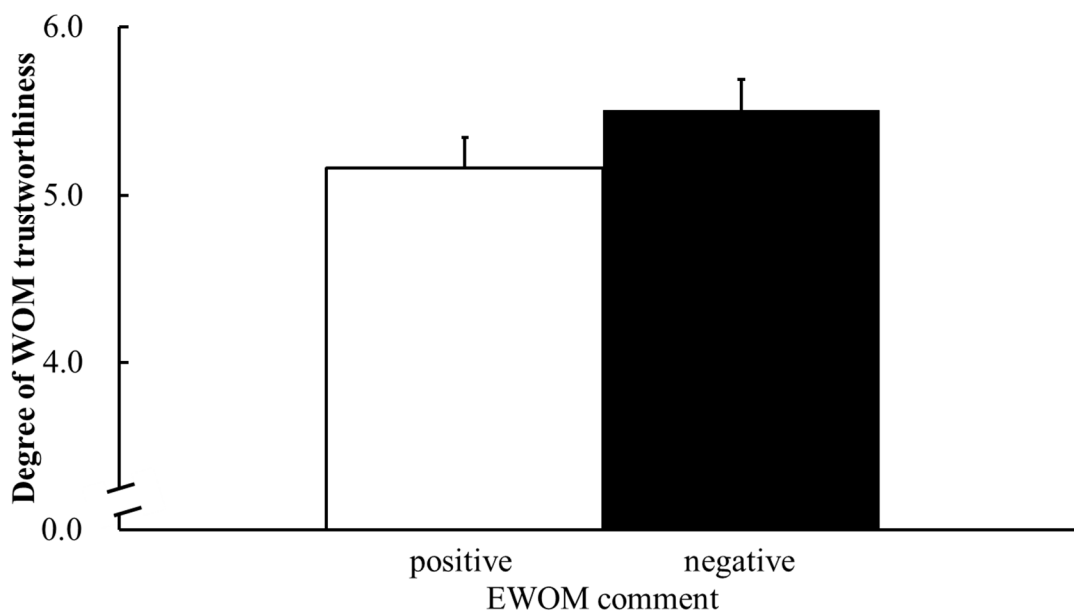


Fig. 5-4. WOM trustworthiness in high affinity

The results indicated that only EWOM comment influenced WOM trustworthiness only when affinity was high. When affinity was low, EWOM comment had no significant influence on WOM trustworthiness. Difference in WOM comment had no significant influence on WOM trustworthiness, both in high affinity and low affinity conditions.

5.4.3. Degree of EWOM trustworthiness

I intended to analyze how EWOM trustworthiness vary by difference in affinity (high, low), WOM (positive, negative), and EWOM (positive, negative). On the basis of the results from 5.4.2 that WOM trustworthiness varied by EWOM comment in high affinity, I considered that EWOM

trustworthiness might vary by difference in WOM comment and EWOM comment, in addition to difference in affinity. I conducted 2-dimensional (WOM comment [positive, negative] x EWOM comment [positive, negative]) ANOVAs on degree of EWOM trustworthiness, separately for high affinity conditions and low affinity conditions.

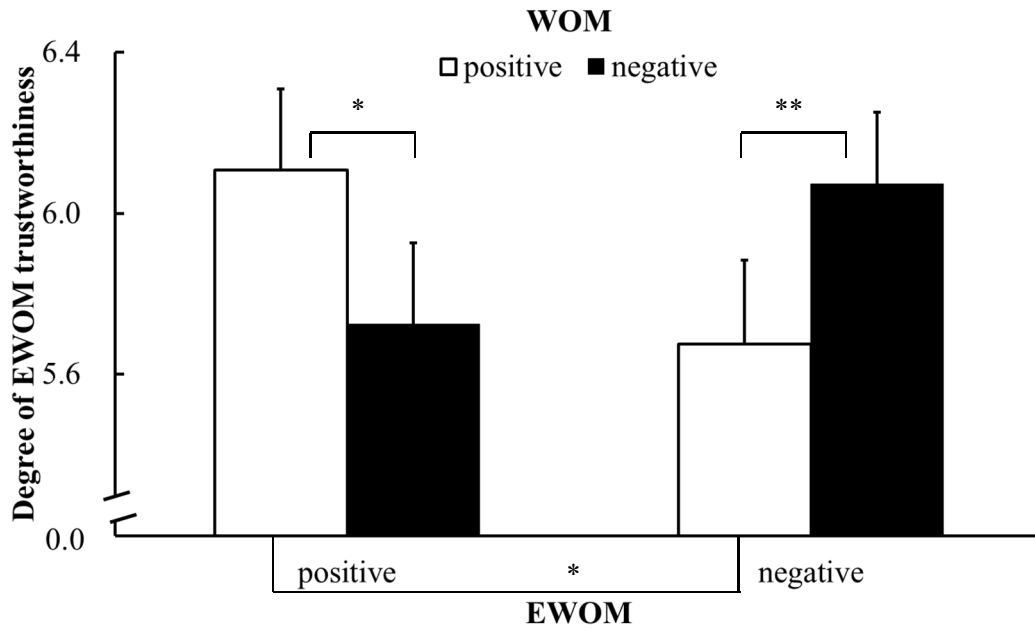
Concerning high affinity conditions, I found a significant result only from WOM comment x EWOM comment interaction, $F(1,82) = 12.800, p < .001$. I did not find any significant results from the main effect of WOM comment ($F(1,82) = .003, p = .957$) or from the main effect of EWOM comment ($F(1,82) = .058, p = .810$). Concerning low affinity conditions, I found a marginally significant result only from WOM comment x EWOM comment interaction, $F(1,82) = 2.882, p = .093$. I did not find any significant results from the main effect of WOM comment ($F(1,82) = 1.851, p = .177$) or from the main effect of EWOM comment ($F(1,82) = .029, p = .866$).

Concerning WOM x EWOM interaction in high affinity conditions, I found following results as in Fig.5-5. When EWOM was positive, EWOM trustworthiness was significantly higher when WOM comment was positive ($F(1,82) = 5.017, p < .05$). When EWOM was negative, EWOM trustworthiness was significantly higher when WOM comment was negative ($F(1,82) = 8.158, p < .01$). When WOM was positive, EWOM trustworthiness was significantly higher when EWOM comment was positive ($F(1,82) = 4.502, p < .05$). When WOM was negative, EWOM trustworthiness was marginally significantly higher when EWOM comment was negative ($F(1,82) = 2.837, p = .096$).

Concerning WOM comment x EWOM comment interaction in low affinity conditions, I found following results as in Fig.5-6. When EWOM was positive, EWOM trustworthiness was significantly higher when WOM comment was positive ($F(1,82) = 4.023, p < .05$). When EWOM was negative, I found no significant results about EWOM trustworthiness ($F(1,82) = .331, p = .567$). Also, I found no significant results about EWOM trustworthiness when WOM was positive ($F(1,82) = .574, p = .451$) or when WOM was negative ($F(1,82) = 1.046, p = .309$).

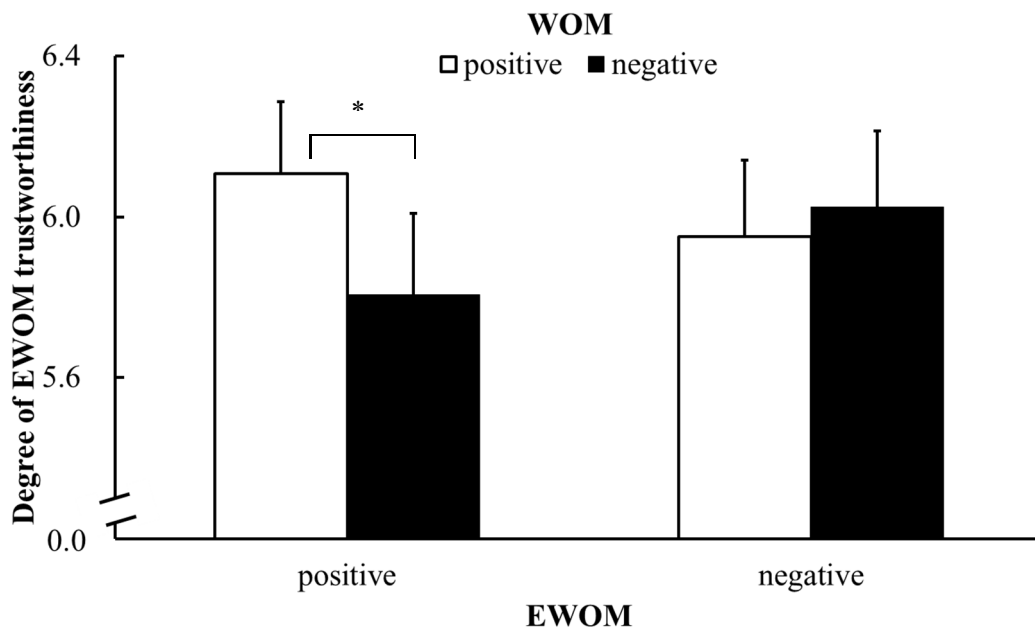
The results indicated that EWOM trustworthiness in high affinity was significantly higher when both WOM and EWOM were positive or negative. When one was positive and the other was negative, EWOM trustworthiness in high affinity became significantly lower. In low affinity

conditions, the results indicated that EWOM trustworthiness might increase when both WOM and EWOM were positive.



Note. * $p < .05$, ** $p < .01$

Fig. 5-5. EWOM trustworthiness in high affinity



Note. * $p < .05$

Fig.5-6. EWOM trustworthiness in low affinity

5.4.4. Decision making and trustworthiness

I examined that degree of trustworthiness influences decision making. Based on the second step of the hypothetical process, trustworthiness of WOM and trustworthiness of EWOM might be closely related to decision making by participants. Percentage of product choices might vary by WOM trustworthiness and EWOM trustworthiness.

I conducted a logistic regression analysis for verifying the relation among WOM trustworthiness, EWOM trustworthiness and decision making (product A or B). I found that decision making (selection of product A or product B) was strongly influenced by WOM and EWOM trustworthiness, and that the model showed significance ($\chi^2(2,664) = 309.798$, *Nagelkerke* $R^2 = .515$, WOM trustworthiness: *Standardized* $\beta = -0.978$, $SE = 0.083$, *Wald* = 138.619, *OR* = 0.376, $p < .001$; EWOM trustworthiness: *Standardized* $\beta = 0.696$, $SE = 0.079$, *Wald* = 77.974, *OR* = 2.006, $p < .001$). In this model, I put decision values as 0 for selecting product A and 1 for selectin product B. WOM trustworthiness values and EWOM trustworthiness values vary from 0 to 10. The results examined the second step of the hypothetical process, and supported H2.

To prove my two-step hypotheses about affinity and decision making, I intended to deny direct influence of affinity to decision making, while verifying indirect influence of affinity to decision making. To examine possible direct correlation between affinity and decision making (product A or B), I conducted a logistic regression analysis between affinity and decision making (product A or B). I found that decision making (product A or B) was weakly influenced by affinity ($\chi^2(1,664) = 33.130$, *Nagelkerke* $R^2 = 0.067$, affinity: *Standardized* $\beta = 0.958$, $SE = 0.170$, *Wald* = 31.908, *OR* = 2.608, $p < .001$). The fact indicated that affinity directly or indirectly influenced decision making, and that another factor other than affinity might be the key influencer to decision making.

For examining correlation among affinity, WOM trustworthiness, EWOM trustworthiness and decision making (product A or B), I conducted a logistic regression analysis among affinity, WOM trustworthiness, EWOM trustworthiness and decision making (product A or B). Based on my hypotheses, *Standardized* β of affinity would be smaller than that of results from logistic regression between affinity and decision making ($\beta = 0.958$). If WOM trustworthiness and EWOM trustworthiness were the key influencers to decision making, *Standardized* β absolute values of

WOM trustworthiness and EWOM trustworthiness would be larger than *Standardized β* absolute value of affinity.

I found that decision making (product A or B) was influenced by WOM trustworthiness, but the influence from affinity was insignificant ($\chi^2(3,664) = 313.753$, *Nagelkerke* $R^2 = 0.520$, affinity: *Standardized β* = 0.435, *SE* = 0.219, *Wald* = 3.950, *OR* = 1.545, $p < .05$; WOM trustworthiness: *Standardized β* = -0.953, *SE* = 0.084, *Wald* = 129.050, *OR* = 0.386, $p < .001$; EWOM trustworthiness: *Standardized β* = 0.702, *SE* = 0.079, *Wald* = 78.222, *OR* = 2.019, $p < .001$). The fact indicated that WOM trustworthiness and EWOM trustworthiness were the key influencers to decision making due to its largest *Standardized β* , because *Standardized β* absolute value of affinity was smaller than those of WOM trustworthiness and EWOM trustworthiness. In addition, *Standardized β* of affinity was 0.435, smaller than that of results from logistic regression between affinity and decision making ($\beta = 0.958$).

5.4.5. Degree of confidence

For analyzing post-decisional influence, I intended to analyze how degrees of confidence vary by difference in affinity (high, low), WOM (positive, negative), and EWOM (positive, negative). On the basis of the results from 5.4.2 and 5.4.3 that degree of trustworthiness varied by affinity, WOM comment, and EWOM comment, I considered that degree of confidence might also vary by difference in affinity, WOM comment, and EWOM comment. I conducted a 3-dimensional (affinity [high, low] x WOM comment [positive, negative] x EWOM comment [positive, negative]) ANOVA on degree of confidence.

I found a significant result from the main effect of WOM comment ($F(1,82) = 9.411$, $p < .01$). I found a marginally significant result from the main effect of EWOM comment ($F(1,82) = 3.695$, $p = .058$). I did not find significant results from the main effect of affinity ($F(1,82) = .755$, $p = .387$), or from any interactions (WOM comment x EWOM comment: $F(1,82) = .000$, $p = 1.000$; WOM comment x affinity: $F(1,82) = .314$, $p = .577$; EWOM comment x affinity: $F(1,82) = .294$, $p = .589$; WOM comment x EWOM comment x affinity: $F(1,82) = .574$, $p = .451$).

Degree of confidence was significantly higher when WOM was positive ($F(1,82) = 9.411, p < .01$) as in Fig. 5-7. Degree of confidence was marginally significantly higher when EWOM was positive ($F(1,82) = 3.695, p = .058$) as in Fig. 5-8.

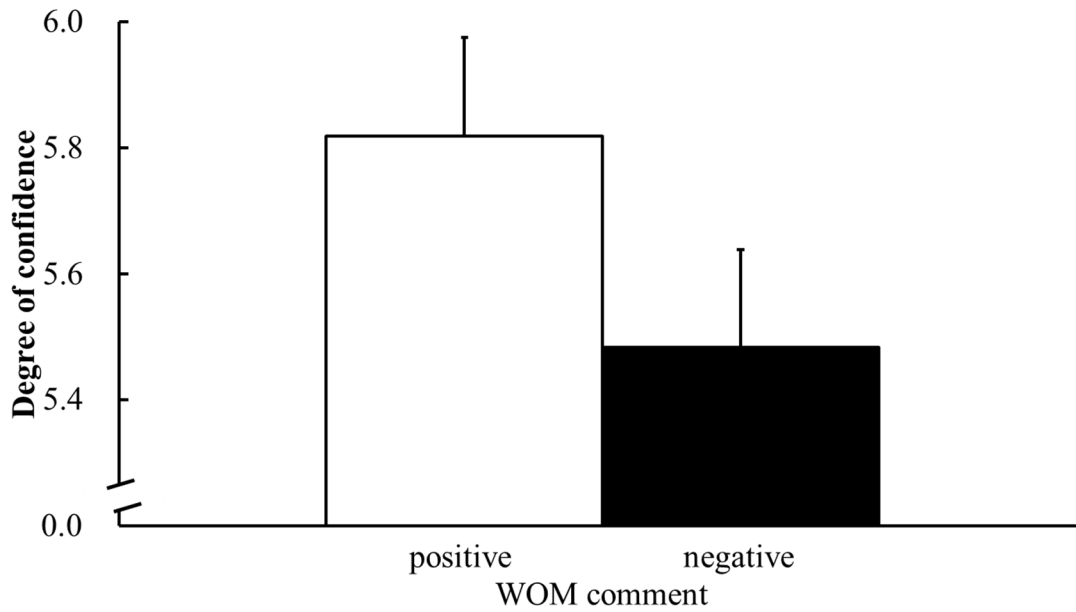


Fig.5-7. Confidence by difference in WOM comment

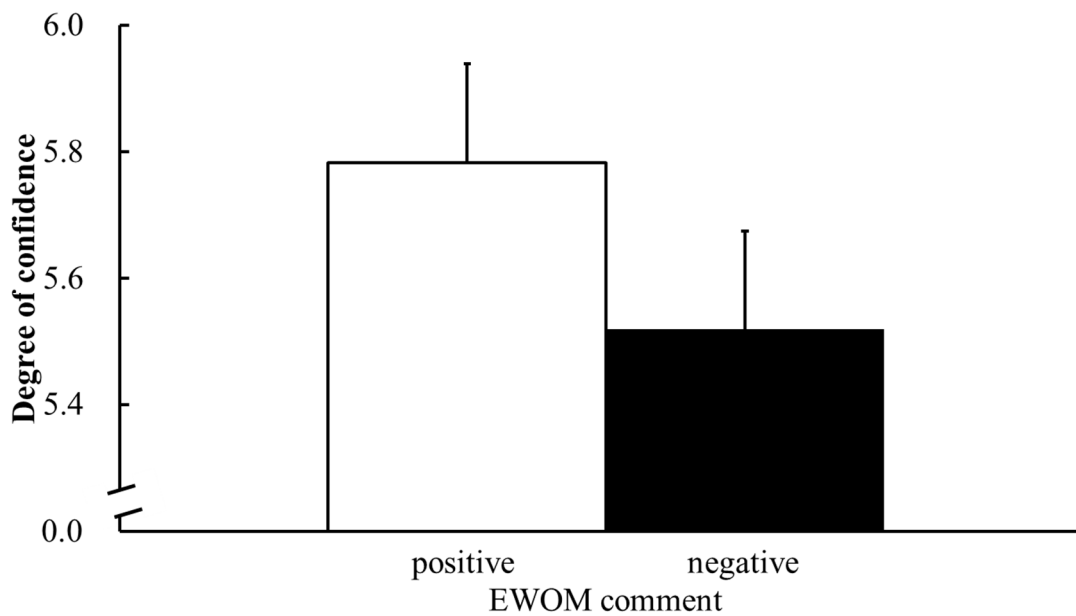


Fig.5-8. Confidence by difference in EWOM comment

The results indicated that WOM comment and EWOM comment influenced degree of confidence. Degree of confidence significantly increased when WOM was positive, regardless of difference in EWOM (positive, negative) and affinity (high, low). Also, degree of confidence marginally significantly increased when EWOM was positive, regardless of difference in WOM (positive, negative) and affinity (high, low).

5.4.6. EWOM volumes and trustworthiness

I intended to analyze the relation between EWOM trustworthiness and necessary EWOM volumes for participants to trust. I considered that necessary EWOM volumes for participants to trust vary when EWOM trustworthiness varies.

I conducted a regression analysis on necessary EWOM volumes for participants to trust with trustworthiness of EWOM. I excluded participants who answered the same EWOM volumes for all conditions as abnormality. I also excluded participants who answered EWOM volumes that were not within +/- 3 *SD* range from the average as abnormality. I found that necessary EWOM volumes for participants to trust negatively and moderately correlated with trustworthiness of EWOM with significance ($r = -.408$, EWOM trustworthiness: *Standardized* $\beta = -.408$, $t = -8.054$, $p < .001$). The results indicated that EWOM trustworthiness ($M = 6.00$, $SD = 1.698$) influenced necessary EWOM volumes ($M = 21.13$, $SD = 13.645$) for participants to trust.

In relation with the results above, I intended to analyze the influence of WOM, EWOM and affinity on necessary EWOM volumes for participants to trust. I conducted two 2-dimensional (WOM comment [positive, negative] x EWOM comment [positive, negative]) ANOVAs on necessary EWOM volumes to trust, separately for high and low affinity conditions. I did not find any significant results from ANOVA for high affinity (WOM comment: $F(1,34) = .035$, $p = .853$; EWOM comment: $F(1,34) = .277$, $p = .602$; WOM comment x EWOM comment: $F(1,34) = .060$, $p = .808$) or from ANOVA for low affinity (WOM comment: $F(1,39) = .331$, $p = .568$; EWOM comment: $F(1,39) = 1.369$, $p = .249$; WOM comment x EWOM comment: $F(1,39) = .015$, $p = .902$).

5.5. General Discussion

5.5.1. Summary of results

Results from this experiment supported both of my hypotheses about how affinity influences decision making. These results supported my hypothetical two-step psychological process.

The results from 5.4.1 revealed that affinity significantly influenced WOM trustworthiness, as the first step of my hypothetical process suggested. WOM trustworthiness became significantly higher when affinity was higher. As I had anticipated, 10 EWOMs suggested significantly higher degree of trustworthiness than that of one WOM. Considering that WOM provider had no prior user experience and little product knowledge and that EWOM providers had some user experiences and product knowledge at least, influence of affinity remained significant even in a disadvantageous situation to affect.

The results from 5.4.4 revealed that WOM trustworthiness and EWOM trustworthiness significantly influenced decision making results (selection of product A or product B), as the second step of my hypothetical process suggested. These facts supported my hypothesis of two-step psychological process about how affinity influences decision making. Affinity influenced degree of trustworthiness, and degree of trustworthiness influenced decision making of participants.

The results from 5.4.2 and 5.4.3 revealed that WOM comment (positive, negative) or EWOM comment (positive, negative) did not significantly influence WOM trustworthiness in low affinity conditions. The results from 5.4.2 and 5.4.3 also revealed that WOM comment (positive, negative) or EWOM comment (positive, negative) marginally significantly influenced EWOM trustworthiness in low affinity conditions. I considered that EWOM influence on decision making became overwhelming because WOM influence on decision making became insignificant in low affinity conditions. Consequently WOM trustworthiness did not significantly change regardless of WOM comment and EWOM comment. On the other hand, EWOM trustworthiness changed marginally significantly when both WOM comment and EWOM comment were positive. I considered that WOM comment and EWOM comment might have more influence on EWOM trustworthiness than on WOM trustworthiness, because EWOM influence on decision making became greater than that of WOM. Also, comparison of WOM comment and EWOM comment might become the easiest for participants when both WOM and EWOM were positive. Because positive comments directly supported products, participants might compare easier than when negative WOM and EWOM indirectly supported products. Still more, participants might become more confused and skeptical

about WOM and EWOM when WOM was positive and EWOM were negative, or vice versa. These results were different from those from high affinity conditions.

In high affinity conditions, degree of EWOM trustworthiness significantly changed, depending upon WOM comment (positive, negative) and EWOM comment (positive, negative). Degree of EWOM trustworthiness was significantly higher when both WOM and EWOM were positive, and when both WOM and EWOM were negative. On the other hand, degree of WOM trustworthiness significantly changed, depending only upon EWOM. I considered that the difference of results by affinity was because WOM influence on decision making became significant only in high affinity conditions. Similarly in low affinity conditions, I considered that WOM comment and EWOM comment might have more influence on EWOM trustworthiness than on WOM trustworthiness, because overall EWOM trustworthiness became significantly higher than overall WOM trustworthiness. Consequently I found significant results from WOM comment x EWOM comment interaction on EWOM trustworthiness and the main effect of EWOM comment on WOM trustworthiness. Concerning WOM trustworthiness, I considered that only the main effect of EWOM comment became significant because trust to a friend with high affinity did not significantly vary whether the comment was positive or negative. In addition, it was because EWOM influence on decision making were greater than those of WOM. Concerning EWOM trustworthiness, I considered that participants might become more confused and skeptical about WOM and EWOM when WOM was positive and EWOM were negative, or vice versa.

The results from 5.4.5 indicated that WOM comment and EWOM comment influenced degree of confidence. Degree of confidence significantly increased when WOM was positive, regardless of difference in EWOM (positive, negative) and affinity (high, low). Also, degree of confidence marginally significantly increased when EWOM was positive, regardless of difference in WOM (positive, negative) and affinity (high, low). I considered that positive WOM comment promoted emotion of participants and that negative WOM comment depressed emotion of participants. Concerning EWOM, similar emotional mechanisms to those of WOM comment might function, but I considered that the emotional mechanisms might have larger effect when participants received the comment through direct personal communication, rather than when participants acquired the comment through written information.

The results from 5.4.6 suggested that necessary EWOM volumes for participants to trust negatively and moderately correlate with EWOM trustworthiness. I considered that participants might need many EWOMs to trust, when EWOM trustworthiness is lower. On the other hand, when EWOM trustworthiness is higher, participants might need limited number of EWOMs to trust.

I understand that some limitations exist in this experiment. First, 10 reviewers of the EWOMs are strangers but at least know something about the product through user experience, although the friend as WOM provider has little knowledge and no user experience. Notwithstanding the fact, WOM trustworthiness of a close friend in high affinity conditions suggested a relatively close level with EWOM trustworthiness. In future experiments I might be able to prepare and verify different conditions with that trustworthiness of WOM and 10 EWOMs are closer. Second, the results might vary by frequency of E-Commerce usage. I might be able to find significant results in future experiments through categorizing participants by frequency of E-Commerce usage. Third, difference among participants might exist in how they recognize rating scores as positive or negative. I might be able to check this issue in future experiments. Fourth, the situation and the conditions for participants were not real for them. According to Luo (2005), the effect of imagining a social presence on purchase behavior can be similar to the effect of a real presence, indicating that the WOM provider and EWOM provider do not necessarily have to be physically present for the effect to be realized.

5.5.2. Implications

The results implied that affinity is an important factor for decision making. Affinity is a factor of trustworthiness, and degree of trustworthiness is a factor for decision making. The results were contrastive between high affinity conditions and low affinity conditions. Affinity to the WOM provider matters, even if WOM provider has no prior user experience and little product knowledge and 10 EWOM providers have some user experiences and product knowledge at least. Sellers can check whether significant others of target customers provide WOMs contradicting existing EWOMs. Sellers are less likely to convince target customers with such WOMs. For example, CT scanner makers would be less likely to sell CT scanners to target hospitals with related institutions that had introduced CT scanners of competitors. On the other hand, sellers can try approaching significant others of target customers so that they will provide WOMs to target customers, when sellers have few

EWOMs for their evidence to promote products or services. For example, CT scanner makers can consider promotion measures such as cash back by sales through recommendation, so that existing customers would recommend their products to related institutions. Customers and buyers should care that sellers might approach to significant others for them.

In low affinity conditions, WOM comment (positive or negative) and EWOM comment (positive or negative) are not important factors for decision making. Although EWOM trustworthiness marginally significantly changed when both WOM and EWOM are positive, I did not find significant results about WOM trustworthiness or EWOM trustworthiness. When affinity is low, participants might care only 10 EWOMs, disregarding one contradicting WOM. When target customers cannot receive WOMs other than low affinity acquaintances, sellers probably can convince customers with 10 EWOMs. For example, CT scanner makers can consider promotion measures such as sales discount through posting review comments, so that existing customers would contribute to EWOM increase. Customers and buyers should care that sellers might prepare many EWOMs to manipulate customers and buyers.

In high affinity conditions, EWOM comment (positive, negative) and WOM comment (positive, negative) are important factors for decision making. EWOM comment influences WOM trustworthiness and EWOM trustworthiness, and WOM comment influences EWOM trustworthiness. When sellers can research which products WOMs directly or indirectly support in advance, sellers can maximize EWOM trustworthiness by providing positive EWOMs against positive WOMs, and by providing negative EWOMs against negative WOMs. When sellers do not know whether WOMs are positive or negative, sellers can minimize WOM trustworthiness by providing negative EWOMs. For example, CT scanner makers can promote existing customers to comment comparing their products and competitor products, so that their comments can clarify both strengths of their products and weaknesses of competitor products. Buyers and customers should care more about negative EWOMs than positive EWOMs in general. In niche or luxurious markets that sellers probably conduct beforehand researches about profiles of buyers or customers, buyers and customers should care about positive EWOMs contradicting positive WOMs and negative EWOMs contradicting negative WOMs.

In addition, I believe that these implications might be helpful in advising companies owned by friends for protecting their customers. These companies are suffering from numerous positive and negative EWOMs by competitors.

Appendix of Chapter 5

An example of situation in the questionnaire

You have worked in a company for several years since you graduated. For business reasons of your company, you have to buy industrial wax machine. Although you can select from product A and product B, you were perplexed because both products looked extremely alike.

A close friend (with whom you meet and talk once a week) said, "I recommend product A". However, the friend has little knowledge and no experience about the products, and you know the fact.

When you watched online shopping sites (e.g. Amazon and Kakaku.com), you found online reviews that are positive to product B (4.0/5.0 on average). However, there is no useful information in the comments.

Chapter 6. Research 1': Application to decision makings inconsistent with WOM and EWOM trustworthiness⁴

In Research 1, most decision makers adopted opinions of WOM or EWOM with higher trustworthiness. However, some decision makers adopted opinions of WOM or EWOM with lower trustworthiness. I conducted a new research to examine that proportion of decision makers adopting opinions with lower trustworthiness might vary by subjective affinity to WOM provider.

This research analyzed how affinity to WOM provider influences purchase decision making in high and low affinity conditions when WOM contradicted EWOM. Participants had to select from product A or product B, with information only about WOM comment (positive or negative), EWOM comment (positive or negative), and affinity to WOM provider (high or low). I focused on participants who made decisions contradicting their evaluation of WOM and EWOM trustworthiness. The results suggested psychological processes that affinity directly influences decision making as an emotional factor, sometimes causing contradictive decisions. Among participants who evaluated EWOM more trustworthy, degree of affinity made significant differences in ratios of contradictive decisions by adopting WOM.

6.1. Purpose of this study

As mentioned above, many researches about WOM effect have been conducted (e.g. Chuang et al., 2012; Lin & Fang, 2006). Also, many researches about EWOM effect have been conducted (e.g. Cheung & Thadani, 2012; Qiu et al., 2012; Khare et al., 2011).

I intended to find out how personal factors influence decisions when both WOM and EWOM are available. We always make numerous purchase decisions every day, and both WOM and EWOM are available for the products to choose in many cases. We often get perplexed with contradicting WOM and EWOM comments. For example, WOM directly or indirectly recommends product A, but EWOM directly or indirectly recommends product B.

⁴ This chapter consists of reviewed and reorganized contents based on Eguchi and Yamashita (in press).

In most cases we evaluate WOM trustworthiness and EWOM trustworthiness, adopt the comment with higher trustworthiness, and buy the product following the comment. However, we sometimes choose the product that the adopted comment does not recommend. I considered that personal factors such as affinity to WOM provider distort decisions, not only influencing evaluation of WOM trustworthiness and EWOM trustworthiness.

6.1.1. Focus on WOM and EWOM trustworthiness

I considered that consumers would gather and decide by external information such as WOM and EWOM if it was hard to decide by products themselves. When they decide based on external information, they have to evaluate the importance of external information. The importance usually depends on quality and trustworthiness of information, but consumers often face situations that they can only gain low quality WOMs and EWOMs, just saying good or bad. In such situation, I considered that consumers usually evaluate WOMs and EWOMs only by trustworthiness, and that they would adopt most trustworthy opinion. For example, I considered that consumers usually adopt more trustworthy EWOM rather than less trustworthy WOM, and vice versa.

6.1.2. Focus on type of WOM and EWOM comment

I considered that type of WOM and EWOM comment might influence WOM and EWOM trustworthiness, even if quality of information was low. For example, in a binary choice situation between product A and B, a positive WOM to product A directly supports product A, and a negative WOM to product B indirectly supports product A. Logically, a positive WOM to product A and a negative WOM to product B are equivalent in this binary choice. However, consumers might feel different trustworthiness from these WOMs. For example, a positive WOM might be more trustworthy than negative WOM for many consumers, and vice versa.

6.1.3. Focus on affinity to WOM provider

I considered that affinity to WOM provider as an emotional factor might influence WOM and EWOM trustworthiness. For example, consumers might feel WOM from a close friend more trustworthy than WOM from an ordinary friend. They might feel EWOM less trustworthy when they

gain a contradicting WOM from a close friend. Though there might be other emotional factors, I considered that affinity is a very fundamental and important emotion, making significant differences in past studies, for example in compromising effect (Chuang et al., 2012).

In addition, I considered that affinity to WOM provider might make the last push to decision making, when it is hard to decide even by external information. I considered that consumers would want to rely on emotional factors when they could not clearly decide even from external information.

6.1.4. Focus on “Contradiction”

Also, I considered that affinity to WOM provider as the last push to decision making might cause illogical outcomes, because decisions by the last push from affinity are not based on logic. I considered that consumers usually adopt the most trustworthy opinion, but sometimes do not. I named these occasional phenomena as “Contradiction”. I considered that emotional factors such as affinity might cause these illogical outcomes.

6.1.5. Focus on confidence

I considered that pre-decisional factors such as affinity to WOM provider, type of WOM and EWOM comment, trustworthiness of WOM and EWOM, and “Contradiction” might influence post-decisional confidence. Consumers might feel less confident when it was hard to decide even by external information. I considered that they feel less confident especially when they made “Contradictions” influenced by the last push from affinity.

6.1.6. Hypothesized psychological processes

I hypothesized psychological processes about purchase decision making as in Fig.6-1. In the first step, affinity as an emotional factor influences degree of trustworthiness to WOM or EWOM comments. Degree of trustworthiness for participants varies, depending on opinion sources with different degrees of affinity. In the second step, the influenced degree of trustworthiness to WOM or EWOM comments influences decision making of participants. In the third step, participants usually adopt the most trustworthy opinion, but sometimes do not. I named these occasional phenomena as

“Contradiction”, and considered that personal factors such as affinity to WOM provider might influence the ratio of causing “Contradiction”. I intended to verify the third step in this study.

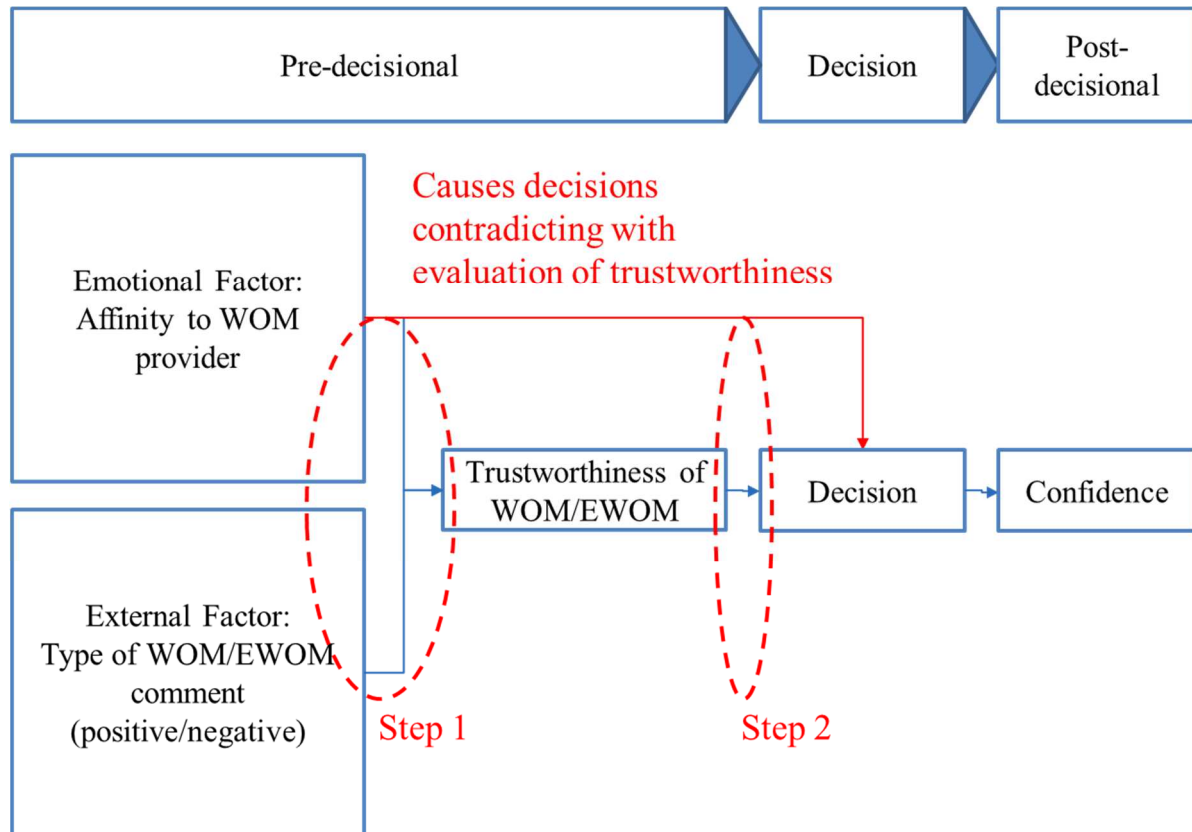


Fig.6-1. Decisional Process

6.1.7. Ratio of “Contradiction”

I considered that the ratio of “Contradiction” might vary, depending upon the evaluation of WOM and EWOM trustworthiness as well as upon affinity to WOM provider. If participants adopted WOM even if they evaluated WOM less trustworthy, affinity to WOM provider might make significant difference. On the other hand, if participants adopted EWOM even if they evaluated EWOM less trustworthy, significant reasons of “Contradiction” might be different from affinity to WOM provider, because they had already evaluated WOM as more trustworthy, regardless of affinity to WOM provider.

In addition, I considered that the ratio of “Contradiction” might vary, depending upon the conditions about WOM and EWOM. For example, participants who evaluate EWOM more

trustworthy might be more likely to adopt WOM when EWOM is negative than when EWOM is positive, because negative comments decrease confidence of participants, increasing the uneasiness of participants.

6.1.8. Degree of confidence

I also considered that degree of confidence about decision making might vary, depending upon conditions about “Contradiction”, in addition to affinity to WOM provider, WOM comment, and EWOM comment. Degree of confidence might decrease when participants cause “Contradiction”. Degree of confidence might decrease when WOM or EWOM is negative, due to increased uneasiness of participants caused by negative impression of products to participants, comparing with the conditions when WOM or EWOM is positive. When WOM or EWOM is positive, participants might be promoted by the positive information, causing the degree of confidence higher. On the other hand, when WOM or EWOM is negative, participants might be depressed by the negative information, resulting in lower degree of confidence.

6.1.9. Conditions of WOM and EWOM comment

In this study, I made conditions that WOM comment contradicted EWOM comment, and I observed which product participants chose and how they evaluated WOM trustworthiness and EWOM trustworthiness. I considered that conditions with contradicting WOM and EWOM would cause more decisions contradicting evaluation of trustworthiness. The conditions included the conditions with different affinity to the WOM provider.

6.1.10. Situation controlling

For comparing WOM and EWOM trustworthiness clearer, I intended to exclude the influence of internal motivation, such as preference, of participants. According to EWOM studies, EWOMs (number of ratings) strengthens positive or negative preference of participants (Khare et al., 2011). According to studies on the compromise effect (e.g. Chuang et al., 2012; Simonson, 1989), when people are uncertain about his preference due to insufficient information or knowledge regarding the consequences of buying behavior, people tend to act on the basis of information provided by a

reference group. Thus I controlled the situation by making participants imagine that they were perplexed because both products looked extremely alike.

6.1.11. Supplemental study

Based on the findings of this study, I intended to confirm in a supplemental study that my setting of positive and negative rating values in this study were appropriate. I examined how many participants recognized 4.0/5.0 as positive and 2.0/5.0 as negative.

6.2. Research hypotheses

First, I intended to verify that affinity influences ratio of causing “Contradiction”. I considered that influence of affinity to WOM provider on ratios of “Contradiction” might vary, depending upon the evaluation of WOM and EWOM trustworthiness. In addition, I considered that the ratio of “Contradiction” might vary, depending upon the conditions about WOM and EWOM. Thus I intended to analyze how ratios of causing “Contradiction” change in conditions with different affinity to the WOM provider (a friend or a close friend).

Second, I measured degree of confidence because I considered that degree of confidence about decision making might vary, depending upon conditions. Thus I analyzed degree of confidence with different conditions about “Contradiction”, affinity to WOM provider, WOM comments (positive or negative), and EWOM comments (positive or negative).

On the basis of the hypothesized psychological process about how affinity influences ratio of causing “Contradiction”, I constructed following hypotheses:

H1. Among participants who adopt WOM, percentage of participants with “Contradiction” becomes significantly higher when affinity to WOM provider is higher

H2. Among participants who adopt EWOM, percentage of participants with “Contradiction” becomes significantly higher when affinity to WOM provider is higher

H3. Among participants who adopt WOM, degree of confidence becomes significantly lower among participants with “Contradiction”

H4. Among participants who adopt EWOM, degree of confidence becomes significantly lower among participants with “Contradiction”

6.3. Method

6.3.1. Participants

Eighty-three participants joined the experiment. Participants included 81 undergraduates, a graduate student, and a professor from Tokyo Metropolitan University. The mean age was 20.76 years ($SD = 6.37$, range: 19-61). Forty-five participants were female, and thirty-eight participants were male. The experiment took about 20 minutes by making participants answer the questionnaire. All participants attended a psychology class in the university, and they joined the experiment as a part of a lecture in the class.

6.3.2. Experimental design and questionnaire

The questionnaire requested participants to imagine situations that they had to purchase either of product A or product B, and that they were perplexed because both products looked extremely alike. I controlled the conditions by limiting information of participants only about WOM (positive or negative), EWOM (positive or negative), and affinity (high or low), as in the Appendix.

I made participants imagine a situation that they have worked in a company for several years since they graduated. In the situation, participants had to buy an industrial machine for business reasons of their company. Although participants were able to select from product A and product B, both products looked extremely alike. A close friend or a friend as the WOM provider directly supported product A by recommending product A, or indirectly supported product A by not recommending product B. I made participants imagine that the WOM provider had little knowledge and no experience about the products, and that they knew the fact. On the other hand, online reviews in online shopping sites as the EWOM provider directly supported product B through positive ratings to product B (4.0/5.0 on average), or indirectly supported product B through negative ratings to product A (2.0/5.0 on average). I made participants imagine that there was no useful information in the review comments.

I set the product categories as industrial wax machines, industrial electric generators, industrial large dehumidifiers, and industrial large humidifiers, so that participants would decide without any stereotype for the products. These machines were for industrial use, and participants (undergraduate

students and people majoring in psychology) were unlikely to have any prior purchase experience or stereotype for the products. For comparing WOM and EWOM influence clearer, I intended to exclude the influence of internal motivation, such as preference, of participants.

The questionnaire prepared 8 patterns of conditions (2 [affinity: high, low] x 2 [WOM comment: positive, negative] x 2 [EWOM comment: positive, negative]) as in Table 6-1.

Table 6-1. Conditions used in the experiment

| WOM | | EWOM | Condition |
|----------|----------------------------|-------------------------------------|-----------|
| Affinity | Comment | Comment | No. |
| High | Positive to product A (+A) | Positive to product B (+B, 4.0/5.0) | 1 |
| | | Negative to product A (-A, 2.0/5.0) | 5 |
| | Negative to product B (-B) | Positive to product B (+B, 4.0/5.0) | 7 |
| | | Negative to product A (-A, 2.0/5.0) | 3 |
| Low | Positive to product A (+A) | Positive to product B (+B, 4.0/5.0) | 2 |
| | | Negative to product A (-A, 2.0/5.0) | 6 |
| | Negative to product B (-B) | Positive to product B (+B, 4.0/5.0) | 8 |
| | | Negative to product A (-A, 2.0/5.0) | 4 |

I considered that effect of one WOM might be much larger than that of one EWOM. For making comparison of WOM effect and EWOM effect easier, I defined 10 online review ratings as EWOM, and defined one comment from a friend as WOM.

I controlled that WOM always contradicted EWOM in all the conditions. I made that WOM directly or indirectly recommended product A, and that EWOM directly or indirectly recommended product B. Concerning WOM, the friend said “I recommend product A” (positive to product A [+A]), otherwise the friend said “I do not recommend product B” (negative to product B [-B]). The positive WOM comment directly recommended product A, and the negative WOM indirectly recommended product A. Concerning EWOM, I defined average rating score for positive EWOM as 4.0/5.0 and that for negative EWOM as 2.0/5.0. I adopted a rating method that 5.0/5.0 is the maximum rating and 1.0/5.0 is the minimum. The rating on product B was 4.0/5.0 (positive to product B [+B]), otherwise the rating on product A was 2.0/5.0 (negative to product A [-A]). The positive EWOM comment directly recommended product B, and the negative EWOM indirectly recommended product B. Concerning affinity, I defined “high” for “a close friend (with whom participants meet and talk once

a week)” and “low” for “a friend (with whom participants meet and talk once in two months)”. As the premise, the questionnaire requested participants to imagine situations that they had been working several years after graduation, even though participants were students.

For each condition in Table 1, I requested participants to answer for five items as follows:

- (1) Trustworthiness of WOM (0-10: 0 = “not trustworthy at all” to 10 = “perfectly trustworthy”)
- (2) Trustworthiness of EWOM (0-10: 0 = “not trustworthy at all” to 10 = “perfectly trustworthy”)
- (3) Which product to buy (0 = “product A” or 1 = “product B”)
- (4) Confidence of the decision (0-10: 0 = “not confident at all” to 10 = “perfectly confident”)
- (5) EWOM volume that the participant thinks necessary to trust

Through these questions above, I intended to measure degree of WOM trustworthiness, degree of EWOM trustworthiness, choice of products as decision result, degree of confidence, and EWOM volume that the participant thinks necessary to trust.

I defined “Contradiction” as the cases that participants adopted less trustworthy opinion. First category consists of participants who adopted EWOM though they evaluated WOM more trustworthy. Second category consists of participants who adopted WOM though they evaluated EWOM more trustworthy. For participants who evaluated WOM and EWOM equally trustworthy, I defined that they did not cause any “Contradiction”.

6.4. Results and Discussion

First, I examined whether the ratio of “Contradiction” vary depending upon affinity and evaluation of WOM and EWOM trustworthiness. Then, I examined whether the ratio of “Contradiction” vary depending upon the conditions about WOM and EWOM. Also, I analyzed how confidence vary, depending upon conditions about “Contradiction”, affinity to WOM provider, WOM comments (positive or negative), and EWOM comments (positive or negative).

I found results of decision making for each condition as in Table 6-2, Fig. 6-2-1, Fig. 6-2-2, and Fig.6-2-3.

Table 6-2. Relationship between conditions and overall reaction

| Type of information | | | Reaction | | | | | | | | |
|---------------------|---------------|---------------|-----------|----------|-----------|---------------------|-----------|----------------------|-----------|--------------|-----------|
| WOM | | EWOM | Selection | | | WOM trustworthiness | | EWOM trustworthiness | | Confidence | |
| Affinity | Comment | Comment | Product | <i>N</i> | Ratio (%) | Rating value | | Rating value | | Rating value | |
| | | | | | | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| High | Positive to A | Positive to B | A | 29 | 34.9 | 6.62 | 1.16 | 5.55 | 1.65 | 5.66 | 1.90 |
| | | | B | 54 | 65.1 | 4.28 | 1.85 | 6.41 | 1.82 | 6.09 | 1.70 |
| | Negative to B | Negative to A | A | 40 | 48.2 | 6.33 | 1.77 | 5.00 | 1.84 | 5.78 | 1.62 |
| | | | B | 43 | 51.8 | 4.49 | 1.66 | 6.30 | 1.72 | 5.74 | 1.64 |
| | | Positive to B | A | 36 | 43.4 | 6.22 | 1.93 | 4.86 | 1.92 | 5.22 | 1.77 |
| | | | B | 47 | 56.6 | 4.47 | 1.51 | 6.38 | 1.50 | 6.02 | 1.52 |
| Negative to A | A | 44 | 53.0 | 6.36 | 1.64 | 5.75 | 1.60 | 5.14 | 1.95 | | |
| | B | 39 | 47.0 | 4.82 | 1.71 | 6.44 | 1.55 | 5.72 | 1.91 | | |
| Low | Positive to A | Positive to B | A | 16 | 19.3 | 5.81 | 1.13 | 5.44 | 1.12 | 5.69 | 2.17 |
| | | | B | 67 | 80.7 | 3.52 | 1.58 | 6.27 | 1.67 | 6.03 | 1.59 |
| | Negative to B | Negative to A | A | 18 | 21.7 | 5.89 | 1.73 | 4.78 | 1.81 | 5.11 | 1.79 |
| | | | B | 65 | 78.3 | 3.71 | 1.69 | 6.28 | 1.53 | 5.75 | 1.75 |
| | | Positive to B | A | 23 | 27.7 | 5.61 | 1.74 | 4.91 | 1.86 | 4.87 | 1.65 |
| | | | B | 60 | 72.3 | 3.55 | 1.60 | 6.15 | 1.70 | 5.82 | 1.66 |
| Negative to A | A | 22 | 26.5 | 5.50 | 1.64 | 5.32 | 1.69 | 4.64 | 1.90 | | |
| | B | 61 | 73.5 | 3.75 | 1.50 | 6.28 | 1.66 | 5.52 | 1.96 | | |

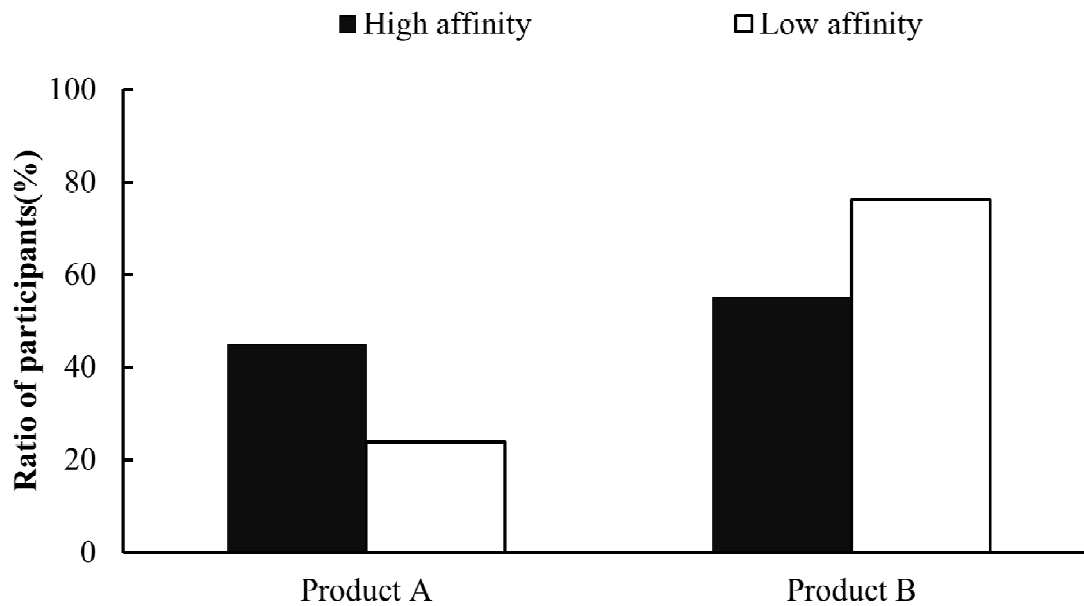


Fig. 6-2-1. Selection of product

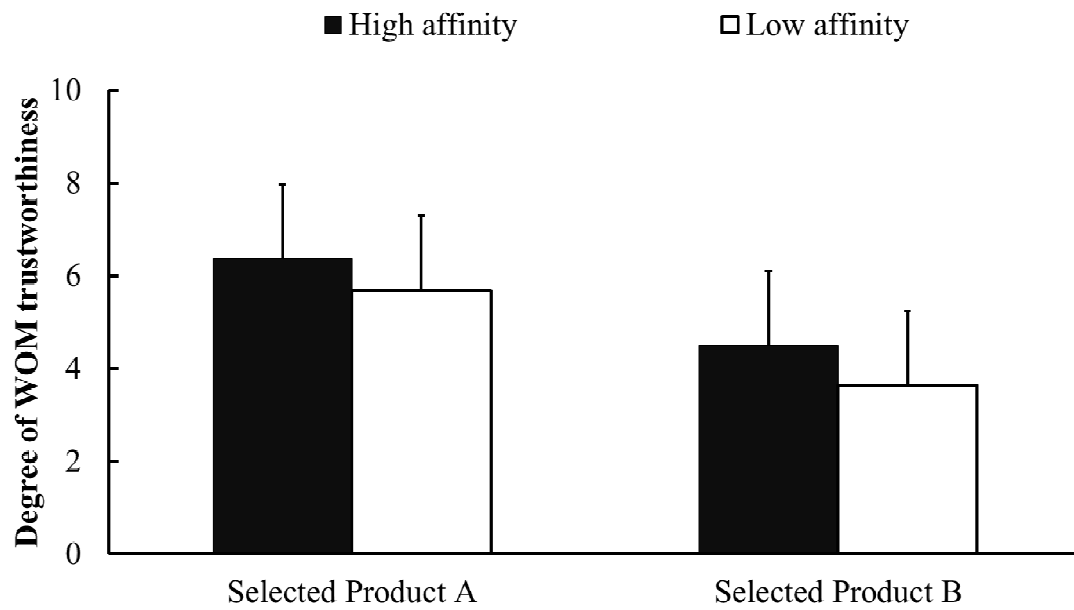


Fig. 6-2-2. WOM trustworthiness

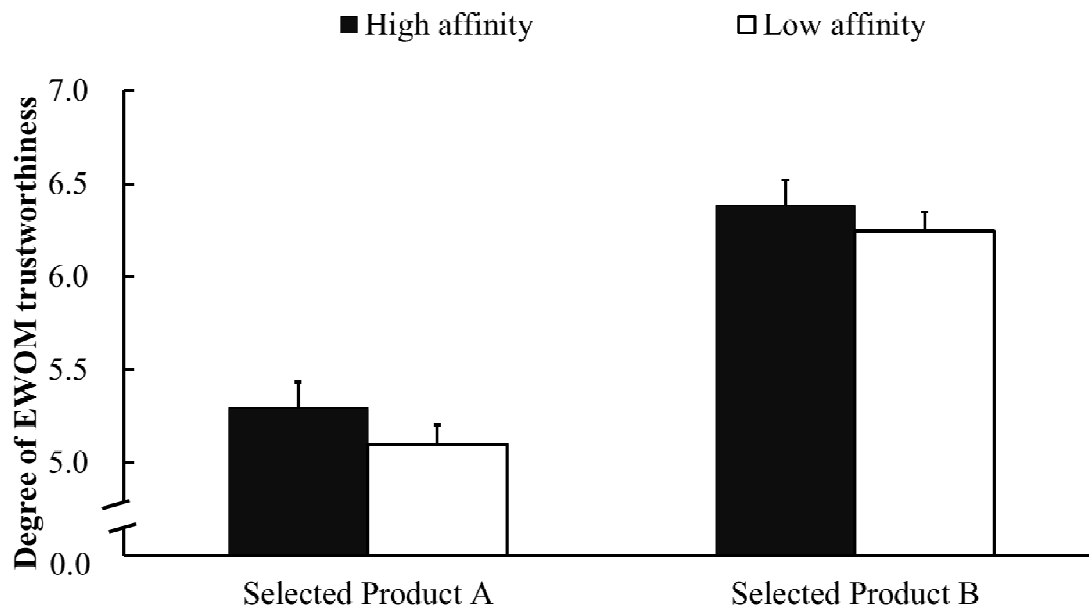


Fig. 6-2-3. EWOM trustworthiness

I found results of “Contradiction” for each condition as in Table 6-3. I excluded the results of participants who evaluate WOM and EWOM equally trustworthy from Table 6-3.

Table 6-3. Relationship among conditions, trustworthiness and confidence

| Type of information | | | Contradiction | | | | | Reaction | | | | | | |
|---------------------|----------|----------|---------------|---|-----------|----------|-----------|---------------------|----------|----------------------|----------|--------------|------|------|
| WOM | | EWOM | Contradiction | Information with higher trustworthiness | Selection | | | WOM trustworthiness | | EWOM trustworthiness | | Confidence | | |
| Affinity | Comment | Comment | | | Product | <i>N</i> | Ratio (%) | Rating Value | | Rating Value | | Rating Value | | |
| | | | | | | | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | |
| High | Positive | Positive | Yes | WOM | B | 0 | 0.0 | - | - | - | - | - | - | |
| | | | No | EWOM | A | 5 | 9.8 | 6.20 | 0.98 | 7.60 | 0.80 | 5.80 | 1.94 | |
| | | Negative | Yes | WOM | A | 16 | 100.0 | 7.13 | 1.05 | 4.75 | 1.52 | 6.25 | 1.75 | |
| | | | No | EWOM | B | 46 | 90.2 | 4.24 | 1.75 | 6.74 | 1.48 | 6.26 | 1.66 | |
| | Negative | Positive | Yes | WOM | B | 4 | 13.3 | 5.50 | 1.50 | 4.25 | 1.30 | 5.25 | 0.43 | |
| | | | No | EWOM | A | 7 | 17.5 | 4.57 | 2.19 | 7.29 | 1.48 | 5.86 | 1.36 | |
| | | | Yes | WOM | A | 26 | 86.7 | 6.92 | 1.44 | 4.15 | 1.46 | 5.92 | 1.80 | |
| | | | No | EWOM | B | 33 | 82.5 | 4.18 | 1.60 | 6.70 | 1.59 | 5.94 | 1.77 | |
| | | Negative | Yes | WOM | B | 4 | 14.8 | 6.00 | 1.00 | 3.75 | 1.48 | 5.25 | 1.09 | |
| | | | No | EWOM | A | 4 | 9.3 | 4.25 | 2.95 | 6.25 | 1.79 | 5.00 | 1.41 | |
| | | | Yes | WOM | A | 23 | 85.2 | 6.87 | 1.57 | 4.39 | 1.99 | 5.65 | 1.46 | |
| | | | No | EWOM | B | 39 | 90.7 | 4.18 | 1.39 | 6.72 | 1.18 | 6.26 | 1.48 | |
| | Low | Positive | Positive | Yes | WOM | B | 0 | 0.0 | - | - | - | - | - | - |
| | | | | No | EWOM | A | 4 | 6.3 | 5.00 | 0.71 | 7.00 | 0.71 | 5.00 | 2.45 |
| | | | | Yes | WOM | A | 8 | 100.0 | 6.63 | 0.99 | 4.88 | 0.78 | 6.63 | 1.87 |
| | | | | No | EWOM | B | 59 | 93.7 | 3.34 | 1.43 | 6.46 | 1.54 | 6.08 | 1.68 |
| Negative | | | Yes | WOM | B | 2 | 15.4 | 6.00 | 0.00 | 4.50 | 0.50 | 5.50 | 0.50 | |
| | | | No | EWOM | A | 3 | 5.6 | 4.33 | 0.94 | 6.67 | 0.94 | 4.00 | 1.41 | |
| | | | Yes | WOM | A | 11 | 84.6 | 6.64 | 1.37 | 4.18 | 1.59 | 5.64 | 1.72 | |
| | | | No | EWOM | B | 51 | 94.4 | 3.22 | 1.54 | 6.55 | 1.58 | 5.94 | 1.88 | |
| Negative | | Positive | Yes | WOM | B | 2 | 13.3 | 4.00 | 1.00 | 1.50 | 0.50 | 4.00 | 1.00 | |
| | | | No | EWOM | A | 5 | 8.9 | 4.20 | 1.83 | 6.20 | 1.47 | 5.40 | 2.24 | |
| | | | Yes | WOM | A | 13 | 86.7 | 6.31 | 1.43 | 4.31 | 1.90 | 4.85 | 1.46 | |
| | | | No | EWOM | B | 51 | 91.1 | 3.31 | 1.55 | 6.47 | 1.47 | 6.04 | 1.63 | |
| | | Negative | Yes | WOM | B | 4 | 36.4 | 5.75 | 1.30 | 4.50 | 1.12 | 6.25 | 1.48 | |
| | | | No | EWOM | A | 4 | 7.7 | 4.75 | 2.17 | 7.25 | 1.09 | 4.50 | 2.60 | |
| | | | Yes | WOM | A | 7 | 63.6 | 6.57 | 1.05 | 4.57 | 1.59 | 5.71 | 1.48 | |
| | | | No | EWOM | B | 48 | 92.3 | 3.38 | 1.36 | 6.69 | 1.57 | 5.58 | 2.10 | |

Also, I conducted a supplemental study to examine minimum rating values that participants regarded positive and maximum rating values that participants regarded negative. The supplemental study examined minimum rating values that participants regarded positive and maximum rating values that participants regarded negative. Participants included 75 undergraduates from Tokyo Metropolitan University. The mean age was 19.79 years ($SD = 0.99$, range: 19-23). Thirty-seven participants were female, thirty-six participants were male, and two participants did not disclose their gender. The experiment took about 5 minutes by making participants answer the questionnaire. All participants attended a psychology class in the university, and they joined the experiment as a part of a lecture in the class.

The questionnaire requested participants to answer the minimum scores (from 1.0/5.0 to 5.0/5.0) that they regard the score as positive and want to buy the product recommended. It also requested

participants to answer the maximum scores (from 1.0/5.0 to 5.0/5.0) that they regard the score as negative and want not to buy the product criticized. In addition, it requested participants to answer how many times a month they do e-commerce.

We examined minimum rating values that participants regarded positive as in Fig. 6-3-1 and maximum rating values that participants regarded negative as in Fig. 6-3-2. As for positive rating values, 68.0% of participants answered that 4.0/5.0 was the minimum rating value to regard positive, and 81.3% of participants regarded 4.0/5.0 as positive. As for negative rating values, 50.7% of participants answered that 2.0/5.0 was the maximum rating value to regard negative, and 86.7% of participants regarded 2.0/5.0 as negative. These results indicated that the settings of positive and negative score in this study were appropriate.

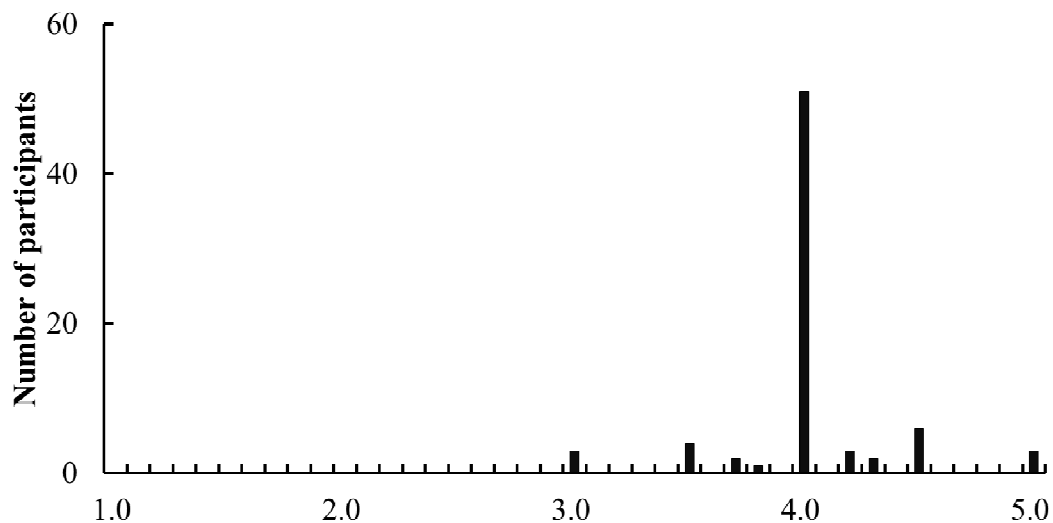


Fig. 6-3-1. Minimum rating score that participants regard positive

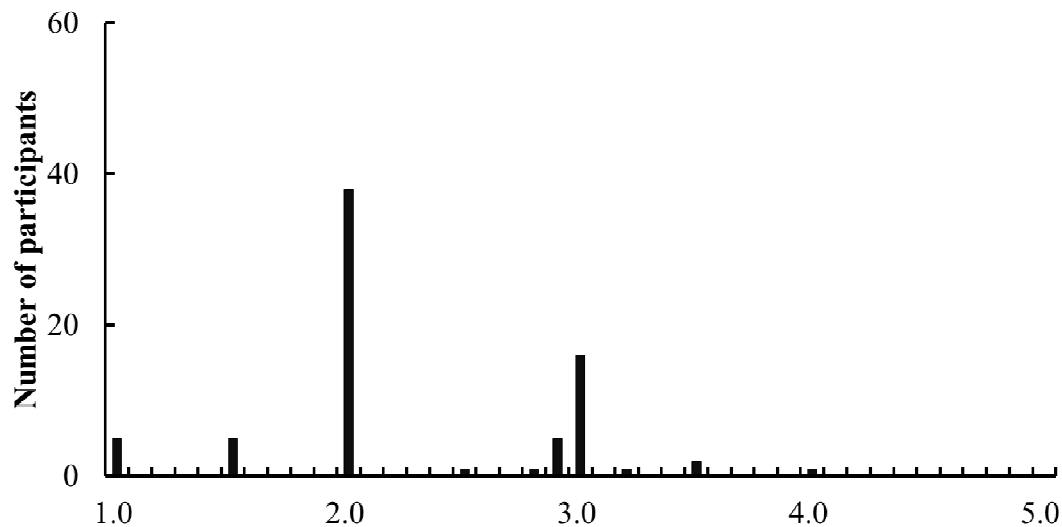


Fig. 6-3-2. Maximum rating score that participants regard negative

6.4.1. WOM and EWOM trustworthiness

I analyzed how degrees of WOM trustworthiness vary by difference in affinity (high, low), WOM (positive, negative), and EWOM (positive, negative). I conducted a 3-dimensional (affinity [high, low] x WOM comment [positive, negative] x EWOM comment [positive, negative]) ANOVA on degree of WOM trustworthiness. I found a significant result from the main effect of affinity ($F(1,664) = 68.966, p < .001$). When affinity was high, WOM trustworthiness ($M = 5.334$) was significantly higher than when affinity was low ($M = 4.120$). I did not find any other significant results from this ANOVA (WOM comment: $F(1,664) = 1.020, p = .313$; EWOM comment: $F(1,664) = 2.925, p = .088$; WOM comment x EWOM comment: $F(1,664) = .000, p = .984$; affinity x WOM comment: $F(1,664) = .123, p = .726$; affinity x EWOM comment: $F(1,664) = .408, p = .523$; affinity x WOM comment x EWOM comment: $F(1,664) = .187, p = .665$).

Then I conducted the same method of ANOVAs for the cases with and without “Contradiction”. From the ANOVA for the cases with “Contradiction”, I found no significant result (affinity: $F(1,59) = .726, p = .398$; WOM comment: $F(1,59) = .670, p = .417$; EWOM comment: $F(1,59) = .038, p = .847$; WOM comment x EWOM comment: $F(1,59) = 1.128, p = .293$; affinity x WOM comment: $F(1,59) = .052, p = .821$; affinity x EWOM comment: $F(1,59) = 1.618, p = .209$; affinity x WOM

comment x EWOM comment: $F(1,59) = .000, p = .988$). From the ANOVA for the cases without “Contradiction”, I found a significant result from the main effect of affinity ($F(1,605) = 71.784, p < .001$). When affinity was high, WOM trustworthiness ($M = 5.365$) was significantly higher than when affinity was low ($M = 4.066$). I did not find any other significant results from this ANOVA (WOM comment: $F(1,605) = 1.325, p = .250$; EWOM comment: $F(1,605) = 3.423, p = .065$; WOM comment x EWOM comment: $F(1,605) = .050, p = .823$; affinity x WOM comment: $F(1,605) = .298, p = .585$; affinity x EWOM comment: $F(1,605) = 1.395, p = .238$; affinity x WOM comment x EWOM comment: $F(1,605) = .272, p = .602$).

Also, I analyzed how degrees of EWOM trustworthiness vary by difference in affinity (high, low), WOM (positive, negative), and EWOM (positive, negative). I conducted a 3-dimensional (affinity [high, low] x WOM comment [positive, negative] x EWOM comment [positive, negative]) ANOVA on degree of WOM trustworthiness. I found a significant result from the interaction WOM comment and EWOM comment ($F(1,664) = 4.430, p < .05$). When both WOM and EWOM were positive, EWOM trustworthiness ($M = 6.108$) was marginally significantly higher ($p = .078$) than when EWOM was positive but WOM was negative ($M = 5.765$). I did not find any other significant results from this ANOVA (affinity: $F(1,664) = .325, p = .569$; WOM comment: $F(1,664) = .156, p = .693$; EWOM comment: $F(1,664) = .002, p = .965$; affinity x WOM comment: $F(1,664) = .192, p = .661$; affinity x EWOM comment: $F(1,664) = .069, p = .793$; affinity x WOM comment x EWOM comment: $F(1,664) = .556, p = .456$).

Then I conducted the same method of ANOVAs for the cases with and without “Contradiction”. From the ANOVA for the cases with “Contradiction”, I found a significant result from the main effect of WOM ($F(1,59) = 4.322, p < .05$) and the interaction of WOM comment and EWOM comment ($F(1,59) = 5.368, p < .05$). When WOM was positive, EWOM trustworthiness ($M = 6.645$) was significantly higher ($p < .05$) than when WOM was negative ($M = 5.524$). When both WOM and EWOM were positive, EWOM trustworthiness ($M = 7.300$) was significantly higher ($p < .01$) than when EWOM was positive but WOM was negative ($M = 4.929$). I did not find any other significant results from this ANOVA (affinity: $F(1,59) = .559, p = .458$; EWOM comment: $F(1,59) = .012, p = .913$; affinity x WOM comment: $F(1,59) = .026, p = .872$; affinity x EWOM comment: $F(1,59) = .003, p = .953$; affinity x WOM comment x EWOM comment: $F(1,59) = .068, p = .795$). From the

ANOVA for the cases without “Contradiction”, I found no significant result (affinity: $F(1,605) = .839, p = .360$; WOM comment: $F(1,605) = .050, p = .823$; EWOM comment: $F(1,605) = .064, p = .800$; WOM comment x EWOM comment: $F(1,605) = 2.442, p = .119$; affinity x WOM comment: $F(1,605) = .292, p = .589$; affinity x EWOM comment: $F(1,605) = .165, p = .685$; affinity x WOM comment x EWOM comment: $F(1,605) = .484, p = .487$).

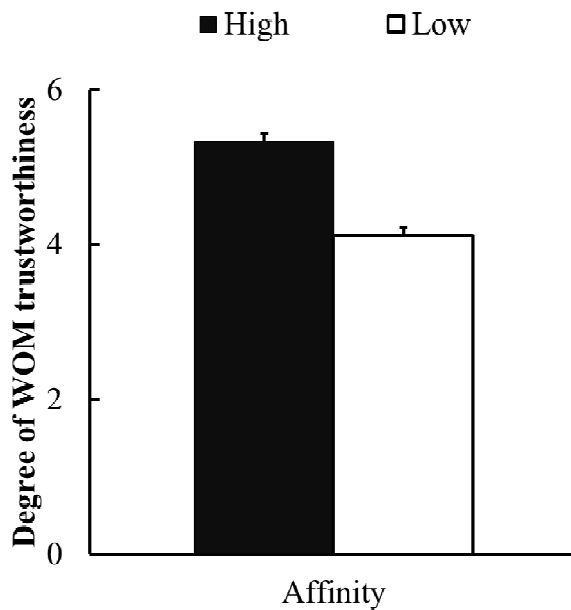


Fig. 6-4-1. Main effect of affinity on WOM trustworthiness

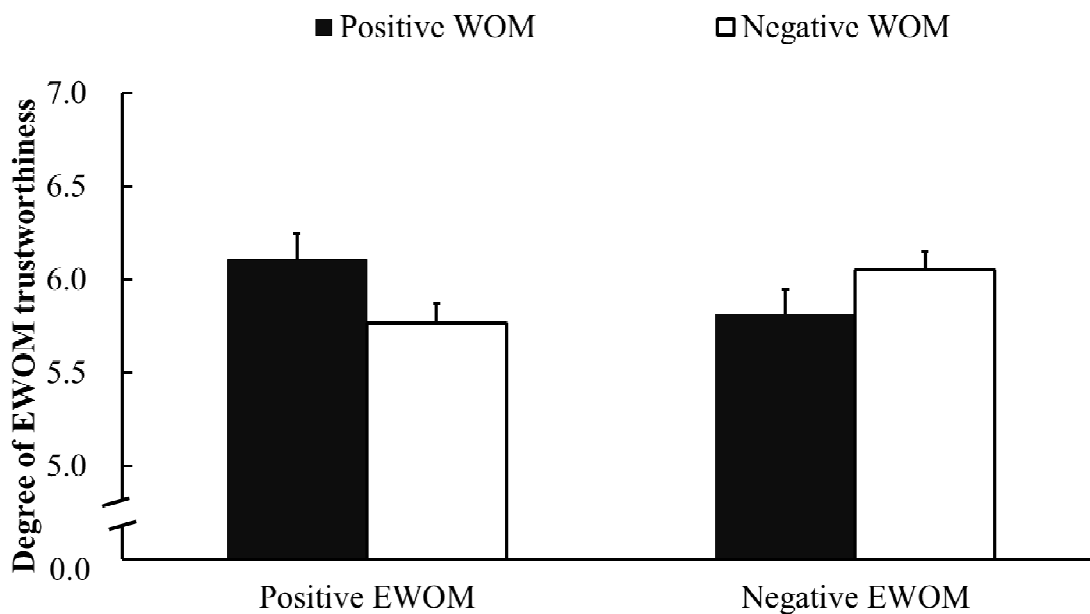


Fig. 6-4-2. Interaction of WOM comment and EWOM comment on EWOM trustworthiness

6.4.2. Trustworthiness and ratio of “Contradiction”

I intended to examine whether the ratio of “Contradiction” vary depending upon affinity and evaluation of WOM and EWOM trustworthiness. First, I compared ratios of “Contradiction” by affinity among participants who evaluated WOM higher and those who evaluated EWOM higher.

I conducted two chi-square analyses for participants who evaluated WOM higher and those who evaluated EWOM higher. Among participants who evaluated WOM higher, I found no significant result ($\chi^2(1,144) = .892, p = .431$). Ratios of “Contradiction” were 11.3% for high affinity and 17.0% for low affinity. On the other hand, among participants who evaluated EWOM higher, ratio of “Contradiction” was significantly higher ($\chi^2(1,396) = 5.129, p < .05$) in high affinity (14.0%) than in low affinity (7.1%). These results supported H2, but did not support H1.

Then I intended to examine whether the ratio of “Contradiction” vary depending upon the conditions about WOM and EWOM. I compared ratios of “Contradiction” when WOM was positive, when WOM was negative, when EWOM was positive, and when EWOM was negative.

I conducted four chi-square analyses for participants who evaluated EWOM higher. When EWOM was negative, ratio of “Contradiction” was significantly higher ($\chi^2(1,183) = 6.992, p < .05$) in high affinity (19.5%) than in low affinity (6.6%). When WOM was positive, ratio of “Contradiction” was marginally significantly higher ($\chi^2(1,208) = 3.200, p = .091$) in high affinity (13.2%) than in low affinity (6.0%). I found no significant result when WOM was negative ($\chi^2(1,188) = 2.059, p = .167$) and when EWOM was positive ($\chi^2(1,213) = .275, p = .627$). These results indicated that participants who evaluated EWOM more trustworthy were more influenced by affinity when EWOM was negative. These results also indicated that participants who evaluated EWOM more trustworthy were possibly more influenced by affinity when WOM was positive.

Also, I conducted four chi-square analyses for participants who evaluated EWOM higher, changing conditions about WOM (positive, negative) and EWOM (positive, negative). When EWOM was negative and WOM was positive, ratio of “Contradiction” was marginally significantly higher ($\chi^2(1,94) = 3.449, p = .091$) in high affinity (17.5%) than in low affinity (5.6%). When both EWOM and WOM were negative, ratio of “Contradiction” was marginally significantly higher ($\chi^2(1,89) = 3.596, p = .068$) in high affinity (21.6%) than in low affinity (7.7%). I found no significant result when both EWOM and WOM were positive ($\chi^2(1,114) = .463, p = .511$) and when EWOM was positive and

WOM was negative ($\chi^2(1,99) = .004, p = 1.00$). These results indicated that participants who evaluated EWOM more trustworthy were possibly more influenced by affinity when EWOM was negative, regardless of WOM comments.

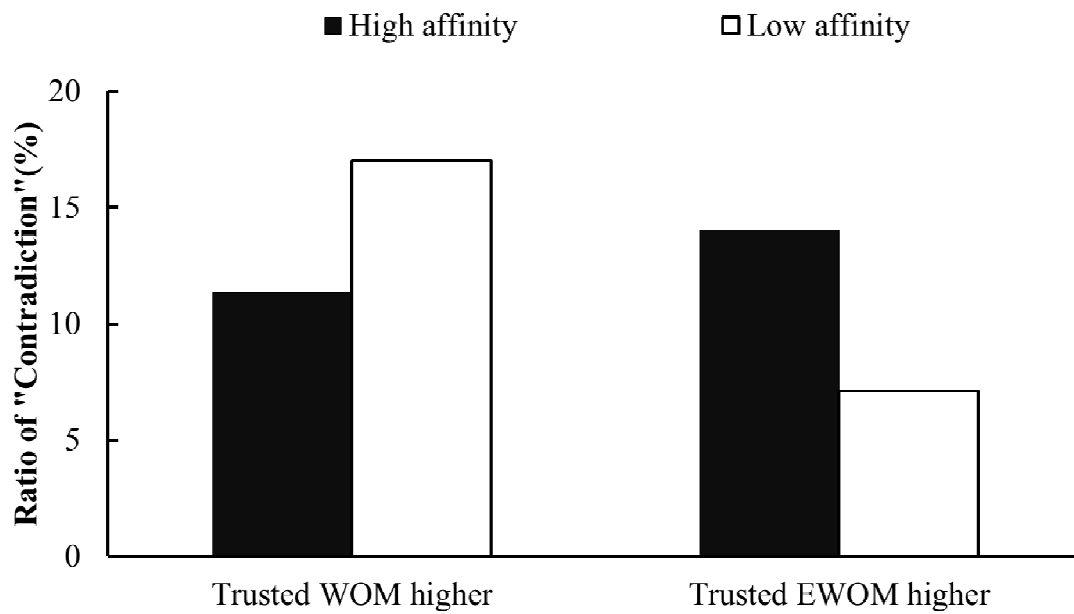


Fig. 6-5-1. Ratio of "Contradiction"

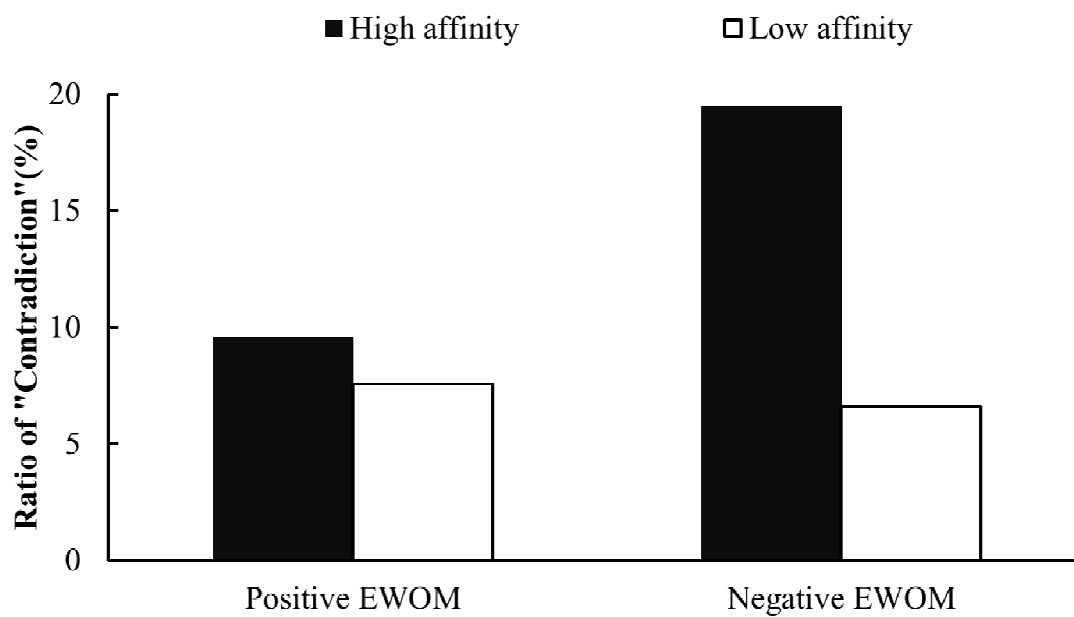


Fig. 6-5-2. Ratio of "Contradiction" among participants who trusted EWOM higher

6.4.3. Degree of Confidence

I intended to analyze how degrees of confidence vary by difference in “Contradiction” (no, yes), affinity (high, low), WOM (positive, negative), and EWOM (positive, negative). I conducted two 4-dimensional (Contradiction [no, yes] x affinity [high, low] x WOM comment [positive, negative] x EWOM comment [positive, negative]) ANOVAs on degree of confidence. One ANOVA was for participants who evaluated WOM higher, and the other was for participants who evaluated EWOM higher.

As for ANOVA for participants who evaluated WOM higher, I did not find any significant results (Contradiction: $F(1,144) = .455, p = .501$; affinity: $F(1,144) = .178, p = .674$; WOM: $F(1,144) = .168, p = .682$; EWOM: $F(1,144) = .872, p = .352$; Contradiction x affinity: $F(1,144) = .008, p = .929$; Contradiction x WOM: $F(1,144) = .525, p = .470$; Contradiction x EWOM: $F(1,144) = .850, p = .358$; affinity x WOM: $F(1,144) = .204, p = .652$; affinity x EWOM: $F(1,144) = .291, p = .591$; WOM x EWOM: $F(1,144) = 2.620, p = .108$; Contradiction x affinity x WOM: $F(1,144) = .016, p = .899$; Contradiction x affinity x EWOM: $F(1,144) = .096, p = .758$; Contradiction x WOM x EWOM: not available; affinity x WOM x EWOM: $F(1,144) = 1.119, p = .292$; Contradiction x affinity x WOM x EWOM: not available). On the other hand, as for ANOVA for participants who evaluated EWOM higher, I found a significant result from the main effect of “Contradiction” ($F(1,396) = 11.167, p < .001$) as in Fig. 6-6. I did not find any other significant results from this ANOVA (affinity: $F(1,396) = .968, p = .326$; WOM: $F(1,396) = .734, p = .392$; EWOM: $F(1,396) = 2.597, p = .108$; Contradiction x affinity: $F(1,396) = .161, p = .689$; Contradiction x WOM: $F(1,396) = .279, p = .597$; Contradiction x EWOM: $F(1,396) = .396, p = .530$; affinity x WOM: $F(1,396) = 1.557, p = .213$; affinity x EWOM: $F(1,396) = .129, p = .720$; WOM x EWOM: $F(1,396) = .252, p = .616$; Contradiction x affinity x WOM: $F(1,396) = 2.421, p = .121$; Contradiction x affinity x EWOM: $F(1,396) = .157, p = .692$; Contradiction x WOM x EWOM: $F(1,396) = .064, p = .801$; affinity x WOM x EWOM: $F(1,396) = .112, p = .738$; Contradiction x affinity x WOM x EWOM: $F(1,396) = .334, p = .564$). The results supported H4, but did not support H3.

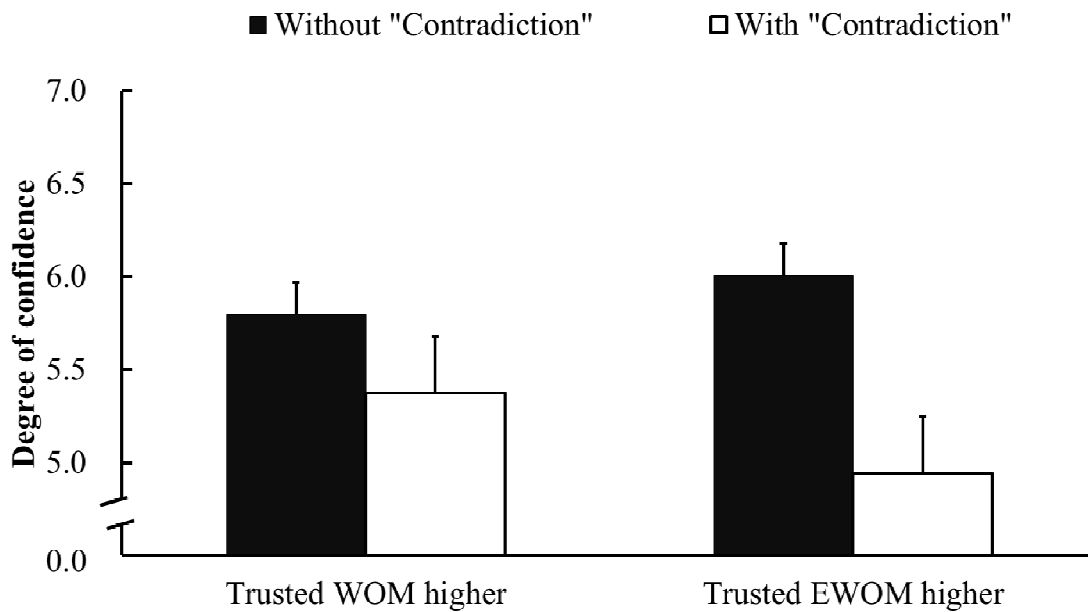


Fig. 6-6. Main effect of “Contradiction” on degree of confidence

6.4.4. Limitation

Overall, the findings of this study supported H2 and H4 as I had anticipated. On the other hand, conditions about WOM (positive, negative) and EWOM (positive, negative) made significant differences only among participants who evaluated EWOM higher and when EWOM was negative. It could be because my setting of positive (4.0/5.0) and negative (2.0/5.0) rating values in this study were not appropriate.

6.5. General Discussion

6.5.1. Summary of results

Results from this study verified that affinity influences ratio of causing “Contradiction”. Influence of affinity on ratios of “Contradiction” varied, depending upon the evaluation of WOM and EWOM trustworthiness. The results supported H2, verifying influence of affinity among participants who evaluated EWOM higher. On the other hand, the results did not support H1. The results indicated that if participants adopted EWOM even if they evaluated EWOM less trustworthy, significant reasons of “Contradiction” might be different from affinity to WOM provider. I considered that it was because they regarded quantity of comments as an important decision making factor.

Results from this study also verified that influence of affinity on ratios of “Contradiction” varied depending upon the conditions about WOM and EWOM. The results indicated that participants who evaluated EWOM more trustworthy were more influenced by affinity when EWOM was negative than when EWOM was positive. I considered that it was because negative EWOM comments increased uneasiness, causing more “Contradiction”. The results also indicated that participants who evaluated EWOM more trustworthy were possibly more influenced by affinity when WOM was positive than when WOM was negative. I considered that it was because positive WOM comments might look more attractive than negative WOM comments in decreasing uneasiness.

As for confidence, results from this study verified that degree of confidence about decision making varied depending upon “Contradiction”, when participants evaluated EWOM more trustworthy. The results supported H4, but did not support H3. The results indicated that if participants adopted EWOM even if they evaluated EWOM less trustworthy, significant reasons of confidence might be different from “Contradiction” or other conditions, might be because they regarded quantity of comments as an important decision making factor.

Results from the supplemental study indicated that the settings of positive (4.0/5.0) and negative (2.0/5.0) in this study rating values was appropriate. Over 80% of participants regarded 4.0/5.0 as positive and 2.0/5.0 as negative. In addition, 21.3% of participants answered 3.0/5.0 as maximum negative rating value, making 3.0/5.0 as the second most answered value. I am going to analyze difference in results between those who answered 2.0/5.0 and 3.0/5.0 in another paper.

I understand that some limitations exist in this experiment. First, the results might vary by frequency of E-Commerce usage. I might be able to find significant results in future experiments through categorizing participants by frequency of E-Commerce usage. Second, the situation and the conditions for participants were not real for participants. According to Luo (2005), the effect of imagining a social presence on purchase behavior can be similar to the effect of a real presence, indicating that the WOM provider and EWOM provider do not necessarily have to be physically present for the effect to be realized.

6.5.2. Implications

The results from this study implied that affinity directly influences decision making in addition to evaluation of trustworthiness of WOM and EWOM, sometimes causing contradicting decisions. When affinity to WOM provider is higher and people evaluated EWOM more trustworthy, people are more likely to adopt WOM. Especially, when EWOM comments are negative, affinity to WOM provider makes significant differences. Sellers can check whether significant others of target customers provide WOMs contradicting existing EWOMs. Seller can gather positive EWOMs, considering the risks of contradicting WOMs from significant others of target customers. Positive EWOMs are more desirable than negative EWOMs, in order to prevent target customers from adopting WOMs with less trustworthiness. Customers and buyers who regard EWOM trustworthy should care about positive EWOMs prepared by sellers, rather than negative EWOMs.

On the other hand, when people adopt EWOM even though they evaluate WOM more trustworthy, affinity to WOM provider is not a significant factor. Sellers can enhance EWOM trustworthiness, such as through increasing quantity and quality of EWOMs. Customers and buyers should care when sellers prepare too many EWOMs or EWOMs with outstanding quality.

The results from the supplemental study implied that 4.0/5.0 is the critical point to be recognized as positive by over 80% of customers, and 2.0/5.0 is the critical point to be recognized as negative by over 80% of customers. In addition, over 20% of conservative customers regard even 3.0/5.0 as negative.

If sellers want to gather positive EWOMs for their products, they can try gathering 5.0/5.0 and 4.0/5.0 comments so that the average rating value can exceed 4.0/5.0. On the other hand, negative EWOMs for competitor products will not be effective to over 80% of customers unless the average rating value becomes below 2.0/5.0. However, negative EWOMs for competitor products will be effective to over 20% of customers if the average rating value becomes below 3.0/5.0.

Customers and buyers should suspect customer manipulation when sellers prepare too many high rating (4.0/5.0 or over) EWOMs. Also, customers and buyers should suspect negative campaigns among competitive sellers when they find too many low rating (2.0/5.0 or below) EWOMs. I believe that these implications might be helpful in advising companies owned by friends for protecting their

customers. These companies are suffering from numerous positive and negative EWOMs by competitors.

Appendix of Chapter 6

An example of situation in the questionnaire

You have worked in a company for several years since you graduated. For business reasons of your company, you have to buy industrial wax machine. Although you can select from product A and product B, you were perplexed because both products looked extremely alike.

A close friend (with whom you meet and talk once a week) said, "I recommend product A". However, the friend has little knowledge and no experience about the products, and you know the fact.

When you watched online shopping sites (e.g. Amazon and Kakaku.com), you found online reviews that are positive to product B (4.0/5.0 on average). However, there is no useful information in the comments.

Part 3. WOM and EWOM influence on decision making in Comparison/Examination Phase

Chapter 7. Comparison/Examination Phase of consumer behavior

In Part 2, I conducted Research 1 and Research 1', but both studies focused on Search Phase in AISCEAS model. In Part 3, I focus on Comparison/Examination Phase of consumer behavior. Especially, I focus on decision change situations because Comparison/Examination Phase might have significant influence on decision making.

In relation with Comparison/Examination Phase of consumer behavior, several studies were conducted about online shopping sites for comparison. Also, some studies were conducted about decision change.

Gupta and Harris (2010) conducted a laboratory experiment to examine the effects of EWOM on consumer consideration time and choice of an experience product. Specifically, they manipulated the number of consumer recommendations and the optimality of the recommended product in a realistic online shopping environment as in Fig. 7-1 and Fig. 7-2. The results indicated that EWOM is likely to result in more time considering the recommended product. For consumers more motivated to process information, EWOM recommendations lead to more time spent on the choice task overall. Further, consumers with less motivation to process information make suboptimal decisions based on EWOM recommendations. Consumers with high motivation to process information are willing to accept recommendations and switch from declared attribute preferences, but choose only optimal products.

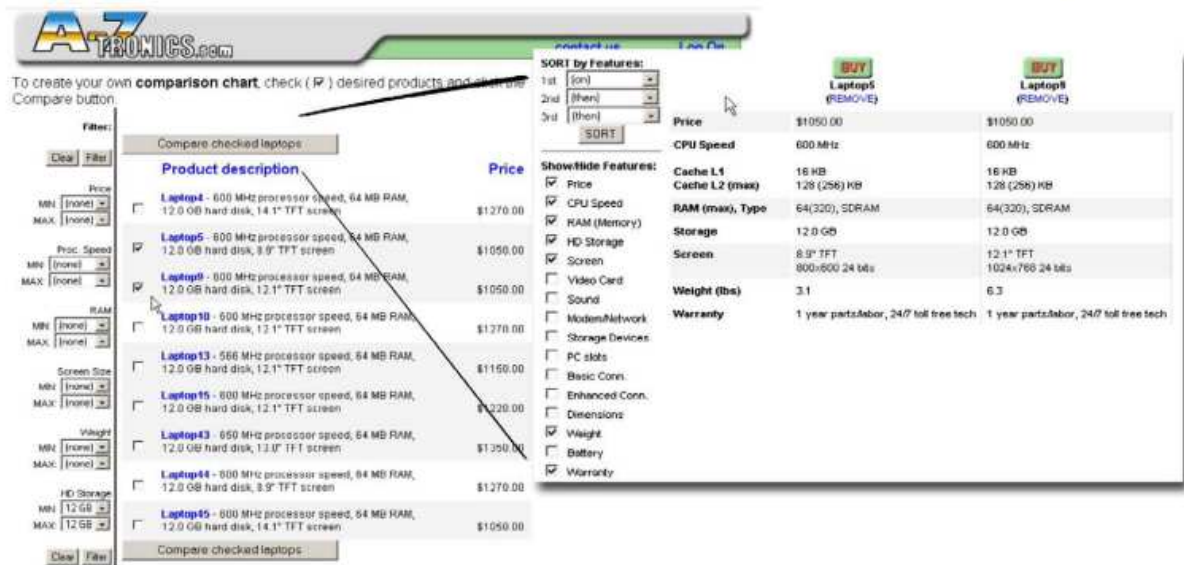
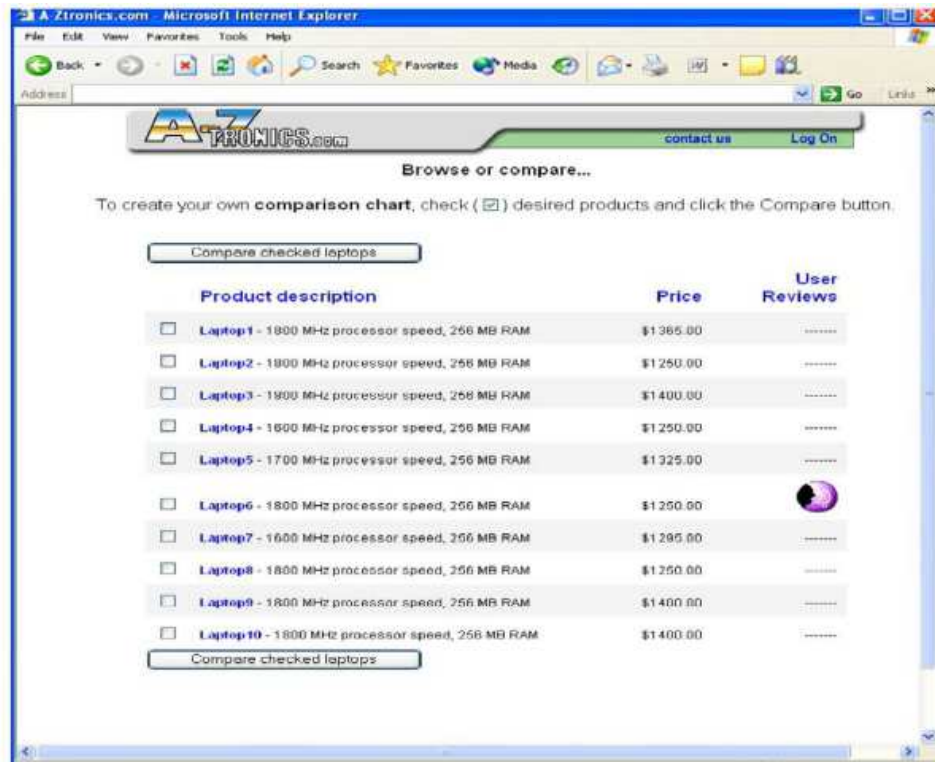


Fig. 7-1. Illustrative screenshots of website interface and interactive information management tools

(Gupta & Harris, 2010)⁵

⁵ These diagrams were meant to only illustrate the layout, interface and interactive information tools provided in their experiment. The laptops and attributes shown were only illustrations and did not represent the laptops and attributes used in their experiment.

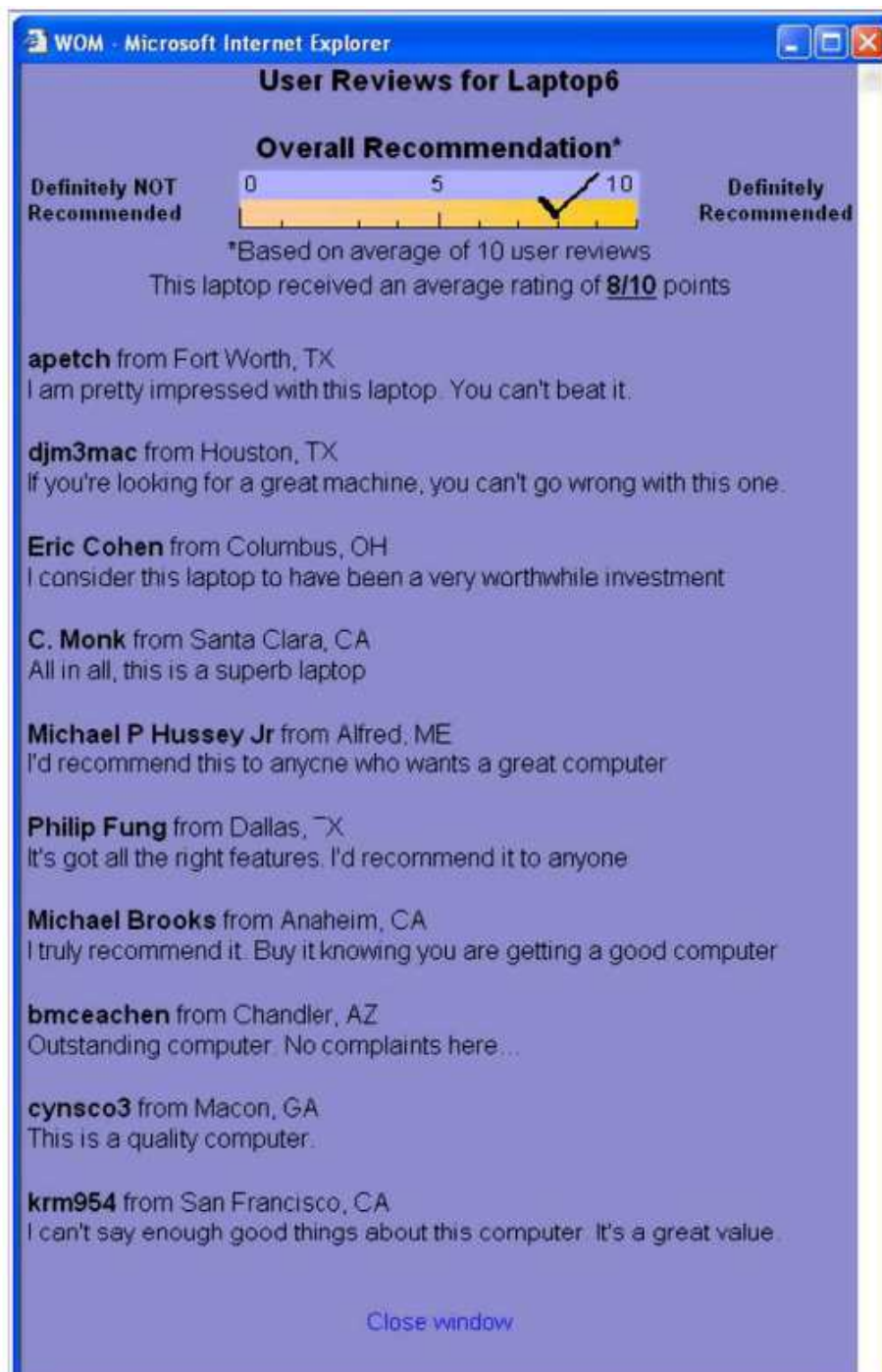


Fig. 7-2. Screenshot of EWOM recommendations (Gupta & Harris, 2010)

Lange and Krahe (2014) studied information format influence on choice deferral about computer purchase. Three studies examined the effect of information form on choice deferral in consumer choice and explored the moderating role of knowledge about the product domain. Two theoretical approaches were contrasted: (1) The process approach predicting that choice deferral varies as a

function of information form, and (2) the communication approach predicting an interaction of information form and domain-specific knowledge. Participants were presented with different laptops described in an absolute (e.g. “300 GB hard disc”), evaluative-numerical (e.g. “hard disc with 30 out of 100 points in an expert rating”) or evaluative-verbal (e.g. “bad hard disc”) information form, and they could choose to buy one of the laptops or defer. Domain-specific knowledge was also assessed.

Table 7-1. Absolute information (Lange & Krahe, 2014)

| | Laptop 1 | Laptop 2 |
|--------------|---|---|
| Processor | Core i3-330 M with 3 MB Cache (1066 MHz) and 2.13 GHz | Core 2 Duo SU7300 with 3 MB L2-Cache (800 MHz) and 1.30 GHz |
| Memory | 2048 MB DDR3 with 1066 MHz | 2048 MB DDR3 with 1066 MHz |
| Graphics | Mobility Radeon HD 4330 | Mobility Radeon HD 4650 |
| Hard disc | 320 GB with 5400 rpm | 400 GB with 5400 rpm |
| Battery life | Up to 7 h | Up to 7 h |

| | Laptop 3 | Laptop 4 |
|--------------|---|-----------------------------|
| Processor | Core 2 Duo SU9400 with 3 MB L2-Cache (800 MHz) and 1.40 GHz | Core 2 Duo T5800 with 2 GHz |
| Memory | 4096 MB DDR3 with 1066 MHz | 2048 MB DDR3 with 1066 MHz |
| Graphics | GeForce GT 330 M | GeForce G 310 M |
| Hard disc | 400 GB with 5400 rpm | 320 GB with 5400 rpm |
| Battery life | Up to 4 h | Up to 8 h |

Table 7-2. Eval-numerical information (Lange & Krahe, 2014)

| | Laptop 1 | Laptop 2 |
|--------------|----------|----------|
| Processor | 90 | 51 |
| Memory | 38 | 38 |
| Graphics | 45 | 80 |
| Hard disc | 50 | 57 |
| Battery life | 80 | 80 |

| | Laptop 3 | Laptop 4 |
|--------------|----------|----------|
| Processor | 56 | 78 |
| Memory | 73 | 38 |
| Graphics | 78 | 57 |
| Hard disc | 57 | 50 |
| Battery life | 47 | 87 |

Table 7-3. Eval-verbal information (Lange & Krahe, 2014)

| | Laptop 1 | Laptop 2 |
|--------------|-------------|-------------|
| Processor | Very good | Fair |
| Memory | Fairly poor | Fairly poor |
| Graphics | Fair | Good |
| Hard disc | Fair | Fair |
| Battery life | Good | Good |

| | Laptop 3 | Laptop 4 |
|--------------|----------|-------------|
| Processor | Fair | Good |
| Memory | Good | Fairly poor |
| Graphics | Good | Fair |
| Hard disc | Fair | Fair |
| Battery life | Fair | Very good |

According to Lange and Krahe (2014), in a communication process between the seller and the buyer, the seller has to convey the necessary information to the buyer in a comprehensible way, depending on the buyer's needs. For a sound decision, buyers need two different kinds of information, namely the attributes of a product (e.g. 2048 MB DDR3 with 1066 MHz) and an evaluation of their quality (e.g. fairly poor). Absolute, eval-verbal, and eval-numerical values do not convey both kinds of information at the same time. Whereas absolute values only describe the

attribute of the product, eval-verbal and eval-numerical values only contain information about its quality. Whether or not a given form of information will lead to more or less choice deferral depends on the fit between the information provided and the prior knowledge of the buyer.

They thought that people with much prior knowledge about the product in question are able to infer its quality from the absolute values provided and then have all the information they need for a sound decision. For people with little prior knowledge, absolute information is not enough for making a sound decision because they cannot infer what the information means in terms of the quality of the product. They considered that absolute information might increase the odds of choice deferral in people with little prior knowledge. Conversely, eval-numerical and eval-verbal values might provide information about product quality but might not facilitate an unambiguous inference about the attribute. For instance, there might be more than one hard disc corresponding to an eval-verbal value of “very good”. For people with little prior knowledge this might not matter because they might not look for absolute information. However, people with much prior knowledge would like to know about the absolute attributes and would be more likely to defer when they only had eval-numerical or eval-verbal information.

They considered the communication approach as that people are more or less equipped to understand the information provided in a specific form. Absolute values might fit people with much prior knowledge more than people with less prior knowledge, whereas the reverse might be true for eval-numerical and eval-verbal values. Hence, it might be predicted that for absolute values deferral probability might increase as prior knowledge decreases, whereas for eval-numerical and eval-verbal values deferral probability might increase with higher prior knowledge.

In their Study 1, evaluative-numerical and evaluative-verbal values led to more deferral in people with high domain-specific knowledge. The pattern for evaluative-numerical and evaluative-verbal values was replicated for a different information organization in their Study 2. Their Study 3 showed that absolute values led to more deferral the less knowledgeable participants were and demonstrated that domain-specific knowledge and deferral were unrelated when absolute and evaluative-verbal values were presented in combination. In sum, the results supported the communication approach and have methodological implications for decision research and theoretical implications for understanding choice deferral in real-life decisions.

Their study in decision change proved communication approach that consumers analyze with a perspective of dialogue between seller and buyer. Though very few studies focused on WOM and EWOM influence, I consider that subjective affinity to WOM provider might influence degree of WOM and EWOM influence, similar in Search Phase. Especially in decision change situations, Comparison/Examination Phase might have significant influence on decision making as in Fig. 7-3. If consumers take communication approach and analyze products and external information with a perspective of dialogue between seller and buyer, WOM and EWOM might influence decision making. In the perspective of the dialogue, subjective affinity to WOM provider might influence WOM and EWOM influence.

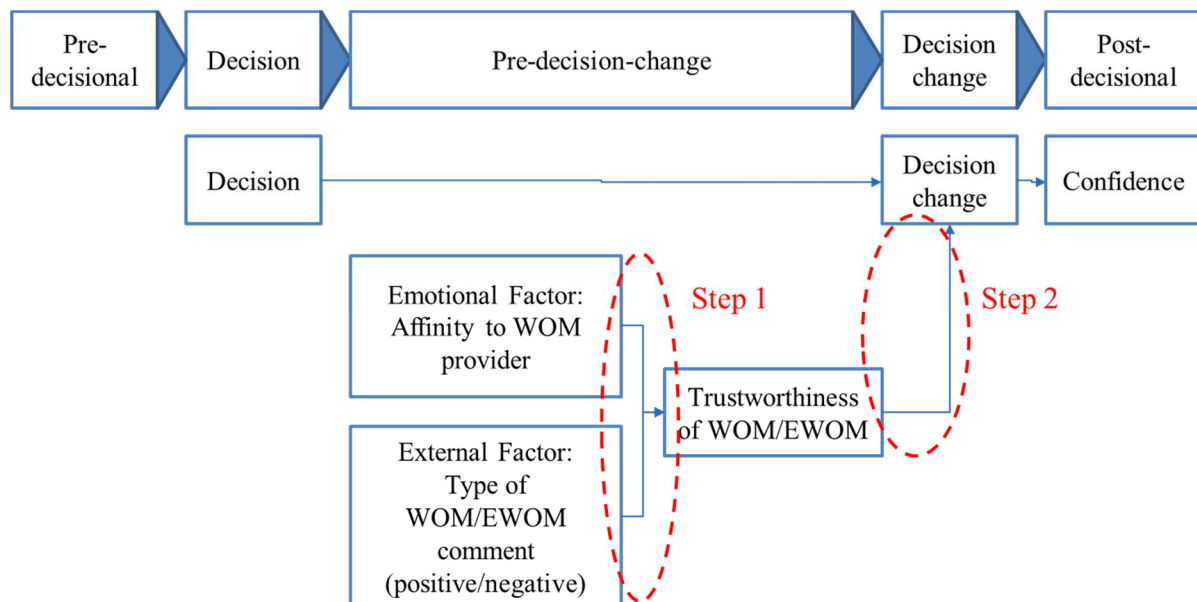


Fig.7-3. Decision change process for Comparison/Examination phase

Chapter 8. Research 2 Influence of subjective affinity in Comparison/Examination Phase⁶

Research 1 and Research 1' revealed the processes that affinity influences degree of trustworthiness as an emotional factor, and that influenced degree of trustworthiness influences decision making of participants. Research 2 examined existence of the same processes when we change decisions. I intended to compare the ratios of participants who changed decisions influenced by WOM. I intended to make situations that participants received conflicting WOM just after they had made decision of binary choice without any external influence. The results might support that the same psychological processes exist when we change decisions.

8.1. Purpose of present study

In Research 1, I revealed the processes that affinity influences degree of trustworthiness as an emotional factor, and that influenced degree of trustworthiness influences decision making of participants.

I intended to examine if the same processes exist when we change decisions. Affinity to WOM provider might influence degree of trustworthiness as an emotional factor. Also, influenced degree of trustworthiness might influence decision making of participants. Specifically, different affinity to WOM provider might result in different ratios of participants who change decisions.

For comparing affinity influence clearer, I intended to exclude the influence of internal motivation, such as preference, of participants. Same as Research 1 and Research 1', I controlled the situation by making participants imagine that they were perplexed because both products looked extremely alike. Also, I controlled the situation that participants cannot compare the WOM with any other WOM.

⁶ This chapter consists of reviewed and reorganized contents based on Eguchi and Yamashita (2016b).

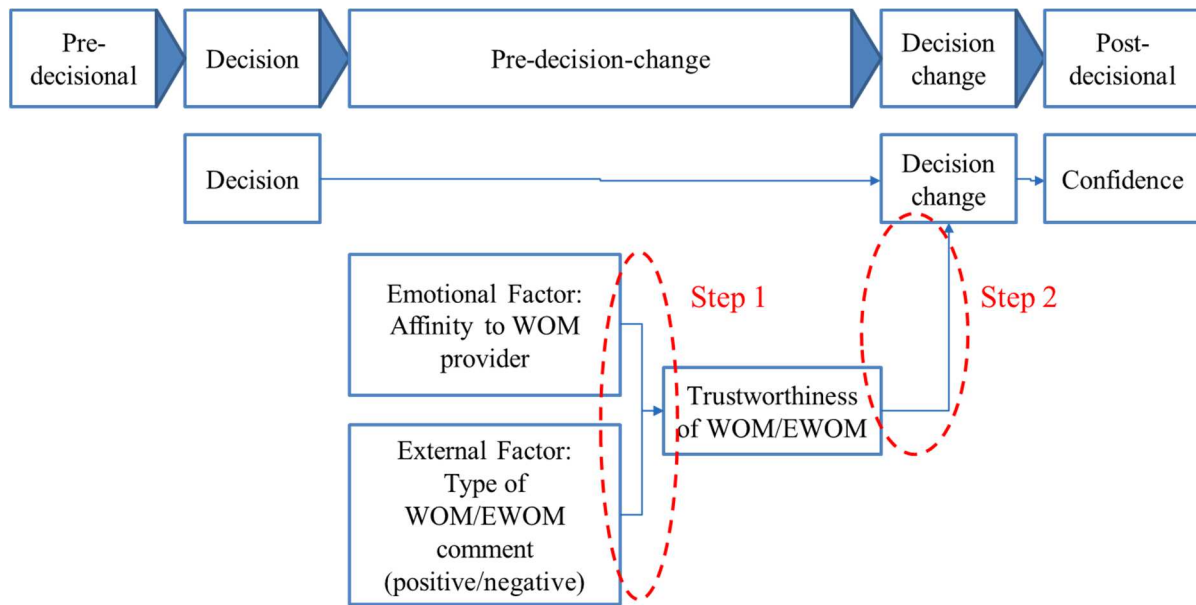


Fig.8-1. Decision change process

8.2. Research hypotheses

First, I intended to verify that affinity influences degree of trustworthiness to WOM provider. I analyzed relations between affinity to WOM provider and trustworthiness to WOM provider.

Second, I intended to verify that degree of trustworthiness influences decision making of participants. I analyzed relations between WOM trustworthiness and result of decision making.

Third, I intended to compare the magnitude of effect on degree of trustworthiness by preparing conditions that WOM contradicted the decision of participants. I considered that the magnitude of effect might vary, depending upon conditions.

In addition, I measured degree of confidence because I considered that degree of confidence about decision making might vary depending upon conditions.

I constructed two hypotheses as follows:

H1: If affinity to WOM provider is higher, trustworthiness of WOM provider is significantly higher

H2: Trustworthiness of WOM is closely related to decision making by participants

On the other hand, I did not construct any hypothesis about type of WOM comment (positive or negative) and about degree of confidence among participants. I intended to analyze the effects of conditions above without any hypothesis.

8.3. Method

8.3.1. Participants

Ninety-three participants joined the experiment. Participants were undergraduate and graduate students from Tokyo Metropolitan University. Fifty-one participants were female, and forty-two participants were male. The experiment took about 20 minutes by making participants answer the questionnaire.

8.3.2. Experimental design and questionnaire

Same as Research 1 and Research 1', the questionnaire requested participants to imagine situations that they had to purchase either of product A or product B, and that they were perplexed because both products looked extremely alike. I controlled the conditions by excluding information of participants, other than WOM (comment from WOM provider) and affinity (affinity to the WOM provider), as in the Appendix. For comparing situations clearer, I controlled situations that participants could not compare the WOM with any other WOM.

I set the product categories as industrial wax machines and industrial electric generators, so that participants would decide without any stereotype for the products. These machines were for industrial use, and participants (undergraduate students taking a psychology class) were unlikely to have any prior purchase experience or stereotype for the products. For comparing WOM influence clearer, I intended to exclude the influence of internal motivation, such as preference, of participants.

The questionnaire prepared 6 patterns of conditions (3 (affinity) x 2 (WOM comment)) as in Table 8-1. In addition to high affinity case (a close friend as the WOM provider) and low affinity case (a friend as the WOM provider), I prepared another higher affinity cases (a family as the WOM provider).

Table 8-1. Conditions used in the experiment

| Affinity | WOM | | Condition |
|----------------|----------------------------|--|-----------|
| | Comment | | No. |
| A close friend | Positive to product B (+B) | | 1 |
| | Negative to product A (-A) | | 4 |
| A friend | Positive to product B (+B) | | 2 |
| | Negative to product A (-A) | | 5 |
| A family | Positive to product B (+B) | | 3 |
| | Negative to product A (-A) | | 6 |

The questionnaire had two patterns of order of conditions, and equal numbers of copies were printed for each pattern. The two patterns of copies were randomly distributed to participants. The first pattern of order of condition (comment - affinity) was “1. Positive to product B – A close friend, 2. Positive to product B – A friend, 3. Positive to product B – A family, 4. Negative to product A – A close friend, 5. Negative to product A – A friend, and 6. Negative to product A – A family”. The other pattern of order of condition (comment - affinity) was “4. Negative to product A – A close friend, 5. Negative to product A – A friend, 6. Negative to product A – A family, 1. Positive to product B – A close friend, 2. Positive to product B – A friend, and 3. Positive to product B – A family. I set the product categories as industrial wax machines when the comment was Positive to product B and as industrial electric generators when the comment was Negative to product A.

For comparing the magnitude of effect, I intended to compare the ratios of participants who changed decisions influenced by WOM. I considered that the ratios vary by the magnitude of effect, and that the magnitude of effect might vary by affinity and comment.

In every condition, I made that participants once decided to select product A, and that WOM directly or indirectly recommended product B. As for WOM, WOM provider said “I recommend product B” (Positive to product B (+B)), otherwise WOM provider said “I do not recommend product A” (Negative to product A (-A)). The positive WOM comment directly recommended product B, and the negative WOM indirectly recommended product B.

As for affinity, I defined “a close friend (with whom participants meet and talk once a week)”, “a friend (with whom participants meet and talk once in two months)” and “a family (with whom participants meet and talk once in two months)”. As the premise, the questionnaire requested

participants to imagine situations that they had been working several years after graduation, even though participants were students.

For each condition in Table 8-1, I requested participants to answer for four following questions:

- (1) Trustworthiness of WOM (0-10: 0 = “not trustworthy at all” to 10 = “perfectly trustworthy”)
- (2) Which product to buy (0 = “product A” and 1 = “product B”)
- (3) Confidence of the decision (0-10: 0 = “not confident at all” to 10 = “perfectly confident”)
- (4) Reason of why the participant selected product B (if the participant did so)

8.4. Results

8.4.1. Choice of products

My primary focus was on whether participants change their decision from selecting product A to B, or they maintain their decision of selecting product A. My secondary focus was on whether percentages of participants changing their decision would be significantly influenced by conditions such as difference in affinity and difference in comment. I found results of decision making for each condition as in Table 8-2. The results showed that percentages of participants with decision change were over 60% when WOM provider was a family (63.4% when the comment was positive to product A and 60.2% when the comment was negative to product B), while the ratios were less than 40% when WOM provider was a friend (34.4% when the comment was positive to product A and 33.3% when the comment was negative to product B).

Table 8-2. Relationship between conditions and reaction (decision making)

| Type of information | | Reaction | | | | |
|---------------------|---------------|-----------|----------|-----------|--------------|-----------|
| WOM | | Selection | | | Confidence | |
| Affinity | Comment | Product | <i>N</i> | Ratio (%) | Rating value | |
| | | | | | <i>M</i> | <i>SD</i> |
| A close friend | Positive to A | A | 42 | 45.2 | 6.38 | 1.53 |
| | | B | 51 | 54.8 | 6.12 | 1.73 |
| | Negative to B | A | 49 | 52.7 | 6.12 | 1.80 |
| | | B | 44 | 47.3 | 5.85 | 1.61 |
| A friend | Positive to A | A | 61 | 65.6 | 6.39 | 1.61 |
| | | B | 32 | 34.4 | 5.44 | 1.98 |
| | Negative to B | A | 62 | 66.7 | 6.24 | 1.71 |
| | | B | 31 | 33.3 | 5.60 | 2.13 |
| A family | Positive to A | A | 34 | 36.6 | 6.79 | 1.35 |
| | | B | 59 | 63.4 | 7.29 | 1.97 |
| | Negative to B | A | 37 | 39.8 | 6.30 | 1.96 |
| | | B | 56 | 60.2 | 7.23 | 1.88 |

To verify correlation between affinity and decision making (product A or B), I conducted a logistic regression analysis between affinity and decision making (product A or B). I found that decision making (product A or B) was weakly influenced by affinity ($\chi^2(1,558) = 8.956$, *Nagelkerke* $R^2 = 0.021$, affinity: *Standardized* $\beta = 0.204$, $p < .01$). The fact indicated that affinity directly or indirectly influenced decision making, and that another factor other than affinity might be the key influencer to decision making. The result might support H1 and H2.

8.4.2. Trustworthiness of WOM

Based on my H1, affinity might influence WOM trustworthiness, causing significant difference by different affinity to WOM provider. Mean and *SD* of WOM trustworthiness for all the conditions are summarized in Table 8-3. The result showed that WOM trustworthiness were over 6.0/10.0 when WOM provider was a family ($M = 6.60$ when the comment was positive to product A and $M = 6.42$ when the comment was negative to product B), while the values were nearly 2 points lower when WOM provider was a friend ($M = 4.52$ when the comment was positive to product A and $M = 4.44$ when the comment was negative to product B).

Table 8-3. WOM trustworthiness

| WOM | | WOM trustworthiness | |
|----------------|---------------|---------------------|-----------|
| Affinity | Comment | Rating value | |
| | | <i>M</i> | <i>SD</i> |
| A close friend | Positive to A | 5.71 | 1.74 |
| | Negative to B | 5.28 | 2.04 |
| A friend | Positive to A | 4.52 | 1.79 |
| | Negative to B | 4.44 | 2.03 |
| A family | Positive to A | 6.60 | 2.26 |
| | Negative to B | 6.42 | 2.31 |

To verify the correlation between affinity and WOM trustworthiness, I conducted a 2-dimensional (affinity (a close friend, a friend, a family) x WOM comment (positive, negative)) ANOVA on WOM trustworthiness. I found significance about the main effect of affinity ($F(2,91) = 63.685, p < .001$) as in Fig 8-2. I did not find any other significant results (WOM comment: $F(1,92) = 2.727, p = .102$; affinity x WOM comment: $F(2,91) = 2.370, p = .099$).

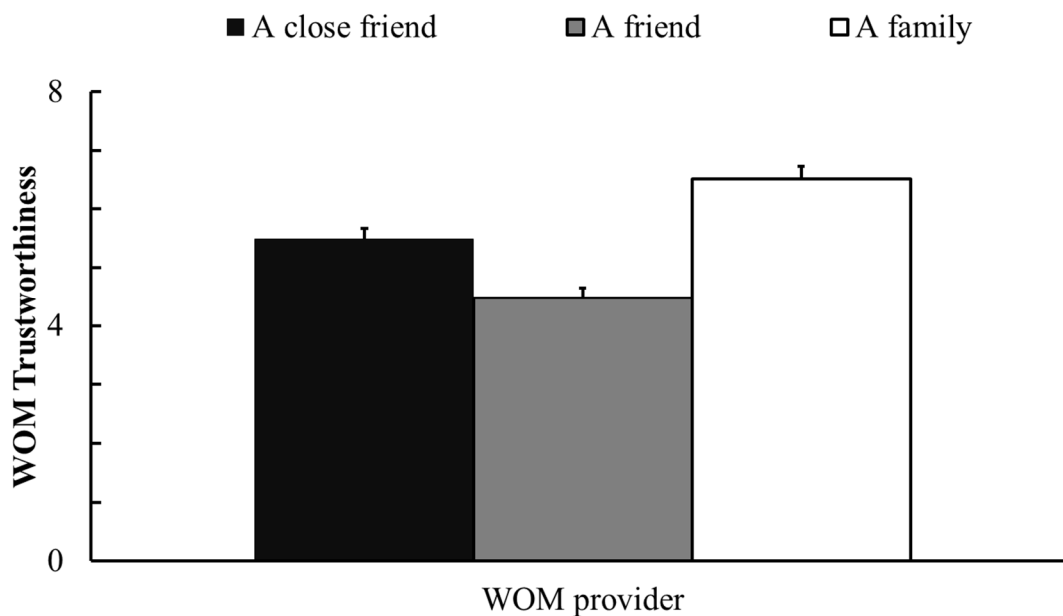


Fig. 8-2. Main effect of affinity

The fact indicated that difference in affinity significantly influences decision making. A family case showed significantly higher WOM trustworthiness than that of a close friend case, and a close friend case showed significantly higher WOM trustworthiness than that of lower affinity case (a friend). The results might support H1.

8.4.3. Decision making and trustworthiness of WOM

To prove my two-step hypotheses about affinity and decision making, I intended to verify both H1 and H2. Based on my H2, WOM trustworthiness might be related to decision making (product A or B).

For verifying correlation between WOM trustworthiness and decision making (product A or B), I conducted a logistic regression analysis between WOM trustworthiness and decision making (product A or B). I found that decision making (product A or B) was influenced by WOM trustworthiness, and that the model was convincing enough ($\chi^2(1,558) = 151.206$, Nagelkerke $R^2 = 0.317$, Trustworthiness: *Standardized* $\beta = 0.571$, $p < .001$). The fact indicated that WOM trustworthiness significantly influenced decision making. Higher WOM trustworthiness brought higher probability to change decisions. The results might support H2.

8.4.4. Decision making, affinity and trustworthiness of WOM

To prove my two-step hypotheses about affinity and decision making, I intended to deny direct influence of affinity to decision making, while verifying indirect influence of affinity to decision making. Based on the results at 8.4.1, another factor other than affinity might be the key influencer to decision making. If WOM trustworthiness was the key influencer to decision making, it would support my hypotheses.

For examining correlation among affinity, WOM trustworthiness and decision making (product A or B), I conducted a logistic regression analysis among affinity, WOM trustworthiness and decision making (product A or B). Based on my hypotheses, *Standardized* β of affinity would be smaller than that of results at 8.4.1 ($\beta = 0.204$). If WOM trustworthiness was the key influencer to decision making, *Standardized* β of WOM trustworthiness would be larger than *Standardized* β of affinity.

I found that decision making (product A or B) was influenced by WOM trustworthiness, but the influence from affinity was insignificant ($\chi^2(2,558) = 151.250$, Nagelkerke $R^2 = 0.317$, Trustworthiness: *Standardized* $\beta = 0.569$, $p < .001$; affinity: *Standardized* $\beta = 0.017$, $p = .834$). The fact indicated that WOM trustworthiness was the key influencer to decision making due to its largest *Standardized* β , and that affinity did not directly influence decision making due to its insignificance at logistic regression. In addition, *Standardized* β of affinity was 0.017, smaller than that of results at 8.4.1 ($\beta = 0.204$). The results might support H1 and H2.

8.5. Discussion

The results at 8.4.2 suggested that different degree of affinity brought significantly different degree of WOM trustworthiness. The results at 8.4.3 suggested that decision making was significantly influenced by WOM trustworthiness. These facts might support my hypotheses about psychological processes that “affinity”, an emotional factor, influences degree of trustworthiness, and that influenced degree of trustworthiness influences decision making of participants. The processes might work when we change decisions.

On the other hand, the results still remained possibilities that affinity might directly influence decision making. The results at 8.4.1 suggested weak relation ($\beta = 0.204$) between affinity and decision making. However, the results at 8.4.4 suggested weaker ($\beta = 0.017$) and insignificant ($p = .834$) relation between affinity and decision making, if modelled in WOM trustworthiness together.

8.6. Future direction

As a limitation of this experiment, most participants were young people and are used to make online purchase decision making. In future experiments I might be able to gain different results from older participants.

As an implication, the higher the subjective affinity to WOM provider, consumers more tend to adopt WOM comments and change decisions, even if they had once made decisions. Results of this experiment might be applied to customer approaches utilizing WOMs and EWOMs. On the other hand, we can instruct customers about cleverer consumer behavior anticipating corporate approaches utilizing WOMs and EWOMs. In addition, I believe that these implications might be helpful in

advising companies owned by friends for protecting their customers. These companies are suffering from numerous positive and negative EWOMs by competitors.

Appendix of Chapter 8

An example of situation in the questionnaire

You have worked in a company for several years since you graduated. For business reasons of your company, you have to buy industrial wax machine. Though you can select from product A and product B, you were perplexed because both products looked extremely alike. However, you decided to select product A.

Just after that, a close friend (with whom you meet and talk once a week) said, “I recommend product B”. However, the friend has little knowledge and no experience about the products, and you know the fact.

When you watched online shopping sites (e.g. Amazon and Kakaku.com), you found no online review or comment about product A or product B.

Chapter 9. Research 3 Application to cases with multiple WOMs or EWOMs⁷

Research 1, Research 1' and Research 2 revealed the processes that affinity influences degree of trustworthiness as an emotional factor, and that influenced degree of trustworthiness influences decision making of participants. In Research 3, I examined the same processes for decision change, comparing the ratios of participants who changed decisions influenced by WOMs or EWOMs. I intended to make situations that participants received conflicting WOM or EWOM just after they had made decision of binary choice without any external influence. The results might support that the same psychological processes exist when we change decisions. In addition, positive comments brought significantly higher degree of trustworthiness than negative comments did.

9.1. Purpose of present study

In Research 2, I focused on comparing only single WOM influence on decision change, adding another type of WOM provider, so that I do not need to consider about multiple source effect (e.g. Harkins & Petty, 1981a; Harkins & Petty, 1981b; Harkins & Petty, 1987; Moore & Reardon, 1987; Lee, 2004). I prepared another questionnaire to the participants of Research 2, in order to discuss multiple WOM influence and multiple EWOM influence on decision change.

In this study, I intended to confirm that the same psychological processes exist in decision change even when the WOMs or the EWOMs were brought by multiple providers, not only when participants were given single WOM. In addition, I intended to directly compare WOM and EWOM influence on decision change. I intended to confirm that even weak affinity can influence decision change. In the data from Research 2, I defined affinity conditions as “a close friend (with whom participants meet and talk once a week)”, “a friend (with whom participants meet and talk once in two months)” and “a family (with whom participants meet and talk once in two months)”. “A friend” has the weakest affinity, but participants clearly have no affinity to EWOM providers, anonymous online reviewers.

⁷ This chapter consists of reviewed and reorganized contents based on Eguchi and Yamashita (2016c).

Research 2 revealed the processes that affinity might influence degree of trustworthiness as an emotional factor, and that influenced degree of trustworthiness might influence decision change of participants, when we change decisions.

I intended to examine if the same processes exist when participants receive multiple WOMs or EWOMs. Affinity to WOM providers might influence degree of trustworthiness as an emotional factor while participants have no affinity to EWOM providers. Also, influenced degree of trustworthiness might influence decision change of participants. Specifically, multiple WOM case and multiple EWOM case might result in different ratios of participants who change decisions.

For comparing affinity influence clearer, I intended to exclude the influence of internal motivation, such as preference, of participants. Same as Research 2, I controlled the situation by making participants imagine that they were perplexed because both products looked extremely alike. Also, I controlled the situation that participants cannot compare the WOMs or EWOMs with any other WOMs or EWOMs.

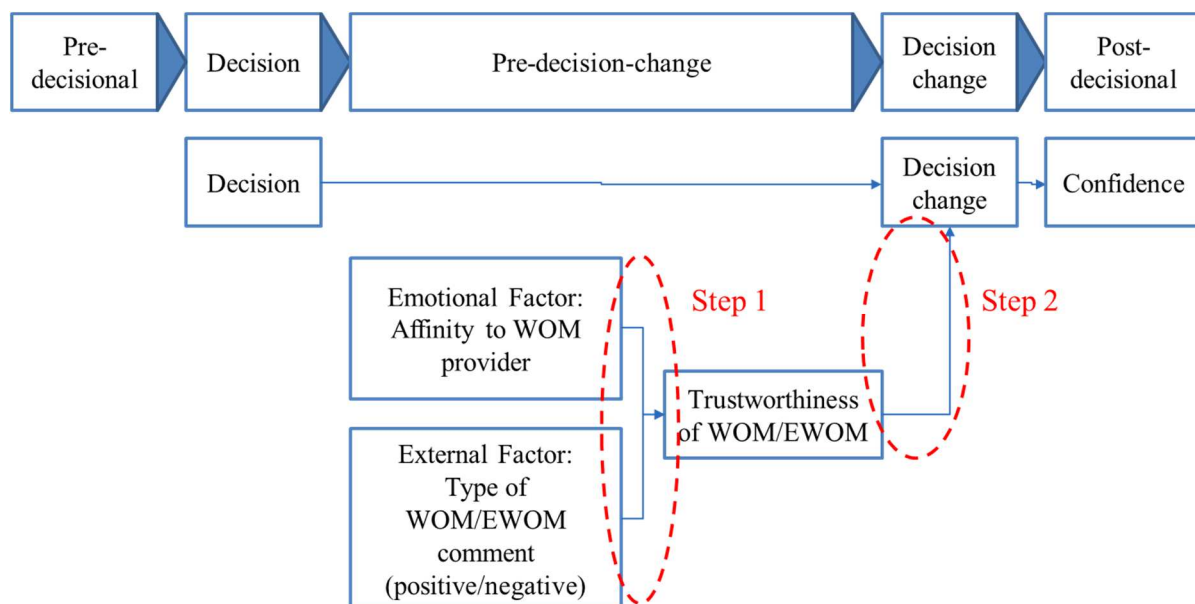


Fig.9-1. Decision change process

9.2. Research hypotheses

First, I intended to verify that affinity to WOM providers influence degree of trustworthiness to WOM or EWOM providers. I analyzed relations between affinity to WOM providers and trustworthiness to WOM or EWOM providers. Next, I intended to verify that degree of

trustworthiness influences decision change of participants. I analyzed relations between WOM or EWOM trustworthiness and result of decision change.

Then, I intended to compare the magnitude of effect on degree of trustworthiness by preparing conditions that WOMs or EWOMs contradicted the decision of participants. I considered that the magnitude of effect might vary, depending upon conditions. In addition, I measured degree of confidence because I considered that degree of confidence about decision change might vary depending upon conditions.

I constructed two hypotheses as follows:

H1: Trustworthiness of WOMs is significantly higher than that of EWOMs

H2: Trustworthiness of WOMs and that of EWOMs are closely related to decision change by participants

On the other hand, I did not construct any hypothesis about type of comment (positive or negative) by WOMs or EWOMs and about degree of confidence among participants. I intended to analyze the effects of conditions above without any hypothesis.

9.3. Method

9.3.1. Participants

Ninety-three participants joined the experiment. They were undergraduate and graduate students from Tokyo Metropolitan University, same as the case for Research 2. Fifty-one participants were female, and forty-two participants were male. The experiment took about 20 minutes by making participants answer the questionnaire.

9.3.2. Experimental design and questionnaire

I requested participants to imagine situations that they had to purchase either of product A or product B, and that they were perplexed because both products looked extremely alike. The questionnaire controlled the conditions by excluding information of participants, other than WOMs or EWOMs (comment from WOM or EWOM providers), as in the Appendix. I controlled situations that participants could not compare the WOMs or EWOMs with any other WOMs or EWOMs.

I set the product categories as industrial wax machines and industrial electric generators, so that participants would decide without any stereotype for the products. The questionnaire prepared 4 patterns of conditions (2 (type of information) x 2 (comment)) as in Table 9-1. I defined WOMs as WOMs from “2-3 friends (with whom participants meet and talk once in two months)” and EWOMs as “10 online reviews at an online shopping site (e.g. Amazon.com and Kakaku.com)”.

Table 9-1. Conditions used in the experiment

| Type of information | Comment | Condition |
|----------------------------|----------------------------|------------------|
| WOMs | Positive to product B (+B) | 1 |
| WOMs | Negative to product A (-A) | 3 |
| EWOMs | Positive to product B (+B) | 2 |
| EWOMs | Negative to product A (-A) | 4 |

As the premise, I requested participants to imagine situations that they had been working several years after graduation, even though participants were students. In every condition, I made that participants once decided to select product A, and that WOM or EWOM directly or indirectly recommended product B. WOM or EWOM providers commented “I recommend product B” (Positive to product B (+B)), otherwise WOM or EWOM providers commented “I do not recommend product A” (Negative to product A (-A)). The positive WOM or EWOM comment directly recommended product B, and the negative WOM or EWOM comment indirectly recommended product B.

The questionnaire had two patterns of order of conditions, and equal numbers of copies were printed for each pattern. The two patterns of copies were randomly distributed to participants. The first pattern of order of condition (comment – type of information) was 1. Positive to product B – WOMs, 2. Positive to product B – EWOMs, 3. Negative to product A – WOMs, and 4. Negative to product A – EWOMs. The other pattern of order of condition (comment – type of information) was 4. Negative to product A – EWOMs, 3. Negative to product A – WOMs, 2. Positive to product B – EWOMs, and 1. Positive to product B – WOMs. I set the product categories as industrial wax

machines when the comment was Positive to product B and as industrial electric generators when the comment was Negative to product A.

As I did in Research 2, I intended to compare the ratios of participants who changed decisions influenced by WOM. I considered that the ratios vary by the magnitude of effect, and that the magnitude of effect might vary by affinity and comment.

For each condition in Table 9-1, the questionnaire requested participants to answer for four following questions:

- (1) Trustworthiness of WOM or EWOM (0-10: 0 = “not trustworthy at all” to 10 = “perfectly trustworthy”)
- (2) Which product to buy (0 = “product A” and 1 = “product B”)
- (3) Confidence of the decision (0-10: 0 = “not confident at all” to 10 = “perfectly confident”)
- (4) Reason of why the participant selected product B (if the participant did so)

9.4. Results

9.4.1 Choice of products

I focused on whether percentages of participants changing their decision from product A to B would be significantly influenced by conditions such as difference in affinity and difference in comment. I found results of decision change for each condition as in Table 9-2. The results showed that percentages of participants with decision change were about 80% for WOMs (80.6% when the comment was negative to product A and 79.6% when the comment was positive to product B), larger than those for EWOMs (76.3% when the comment was negative to product A and 68.8% when the comment was negative to product B).

Table 9-2. Relationship between conditions and reaction (decision change)

| Type of information | Comment | Product | N | Ratio |
|---------------------|---------------|---------|----|-------|
| WOMs | Positive to B | A | 19 | 20.4% |
| WOMs | Positive to B | B | 74 | 79.6% |
| WOMs | Negative to A | A | 18 | 19.4% |
| WOMs | Negative to A | B | 75 | 80.6% |
| EWOMs | Positive to B | A | 29 | 31.2% |
| EWOMs | Positive to B | B | 64 | 68.8% |
| EWOMs | Negative to A | A | 22 | 23.7% |
| EWOMs | Negative to A | B | 71 | 76.3% |

To analyze correlation between type of information and decision change (product A or B), I conducted a logistic regression analysis between type of information and decision change (product A or B). I found that decision change (product A or B) was weakly influenced by type of information ($\chi^2(1,372) = 2.927$, Nagelkerke $R^2 = 0.012$, affinity: *Standardized $\beta = 0.140$, $p = .089$*). The fact indicated that affinity to WOM provider might directly or indirectly influence decision change, and that another factor other than affinity might be the key influencer to decision change. The result might support H1 and H2.

9.4.2 Trustworthiness of WOM

As I stated on H1, affinity to WOM provider might influence WOM trustworthiness, causing significant difference from EWOM trustworthiness. Mean and *SD* of WOM trustworthiness and EWOM trustworthiness for all the conditions are summarized in Table 9-3. The result showed that WOM trustworthiness were over 6.7/10.0 ($M = 7.23$ when the comment was positive to product B and $M = 6.76$ when the comment was negative to product A), while the EWOM trustworthiness were below 6.7/10.0 ($M = 6.61$ when the comment was positive to product B and $M = 6.12$ when the comment was negative to product A).

Table 9-3. WOM and EWOM trustworthiness

| Type of information | Comment | Trustworthiness | |
|---------------------|---------------|-----------------|-----------|
| | | <i>M</i> | <i>SD</i> |
| WOMs | Positive to B | 7.23 | 1.61 |
| WOMs | Negative to A | 6.76 | 2.00 |
| EWOMs | Positive to B | 6.61 | 1.71 |
| EWOMs | Negative to A | 6.12 | 1.82 |

To analyze the correlation between affinity and WOM trustworthiness, I conducted a 2-dimensional (type of information (WOM, EWOM) x comment (positive, negative)) ANOVA on Trustworthiness. I found significance about the main effect of type of information ($F(1,92) = 14.069$, $p < .001$) and about the main effect of comment ($F(1,92) = 14.871$, $p < .001$). I did not find significant results for interaction of type of information and comment ($F(1,92) = .010$, $p = .919$).

The fact indicated that not only type of information but also type of comment significantly influenced decision change, while Research 2 about single WOM with different affinity found only affinity to WOM provider significantly influenced decision change. WOM showed significantly higher trustworthiness than EWOM did, and positive comments showed significantly higher trustworthiness than negative comments did. The results might support H1.

9.4.3. Decision change and trustworthiness

As I stated on H2, WOM trustworthiness and EWOM trustworthiness might be related to decision change (product A or B). For analyzing correlation between trustworthiness and decision change (product A or B), I conducted a logistic regression analysis between trustworthiness and decision change (product A or B).

I found that decision change (product A or B) was moderately influenced by trustworthiness ($\chi^2(1,372) = 37.561$, Nagelkerke $R^2 = 0.144$, trustworthiness: *Standardized β* = 0.419, $p < .001$). The fact indicated that WOM trustworthiness and EWOM trustworthiness significantly influenced decision change. Higher trustworthiness brought higher probability to change decisions. The results might support H2.

9.4.4. Decision change, affinity and trustworthiness

To prove my two-step hypotheses about affinity and decision change, I intended to deny direct influence of affinity to decision change, while verifying indirect influence of affinity to decision change. Based on the results at 9.4.1, another factor other than affinity to WOM providers might be the key influencer to decision change. Based on the results at 9.4.2, trustworthiness could be the key influencer to decision change. If trustworthiness was the key influencer to decision change, it would support my hypotheses.

For examining correlation among type of information, trustworthiness and decision change (product A or B), I conducted a logistic regression analysis among type of information, trustworthiness and decision change (product A or B). Based on my hypotheses, *Standardized β* of type of information should be smaller than that of results at 9.4.1 ($\beta = 0.140$). If trustworthiness was the key influencer to decision change, *Standardized β* of trustworthiness should be larger than *Standardized β* of type of information.

I found that decision change (product A or B) was influenced by trustworthiness, but the influence from type of information was insignificant ($\chi^2(1,372) = 38.173$, Nagelkerke $R^2 = 0.147$, trustworthiness: *Standardized β* = 0.411, $p < .001$; type of information: *Standardized β* = 0.068, $p = .435$). The fact indicated that trustworthiness was the key influencer to decision change due to its largest *Standardized β* , and that affinity did not directly influence decision change due to its insignificance at logistic regression. In addition, *Standardized β* of affinity was 0.068, smaller than that of results at 9.4.1 ($\beta = 0.140$). The results might support H1 and H2.

9.5. Discussion

The results at 9.4.2 suggested that affinity to WOM providers brought significantly higher degree of trustworthiness than EWOM trustworthiness. Participants had affinity to their friends as WOM providers, while they had no affinity to anonymous online reviewers as EWOM providers. The results at 9.4.3 suggested that decision change was significantly influenced by trustworthiness. These facts might support my hypotheses about psychological processes that “affinity”, an emotional factor,

influences degree of trustworthiness, and that influenced degree of trustworthiness influences decision change of participants.

The results still remained possibilities that affinity might directly influence decision change. The results at 9.4.1 suggested weak relation ($\beta = 0.140$) between affinity and decision change. However, the results at 9.4.4 suggested weaker ($\beta = 0.068$) and insignificant ($p = .435$) relation between affinity and decision change, if modelled in WOM trustworthiness together.

In addition, the results at 9.4.2 also suggested that positive comments brought significantly higher degree of trustworthiness than negative comments did. On the contrary, Research 2 about single WOM with different affinity found only affinity to WOM provider significantly influenced decision change. For only multiple WOMs and EWOMs, type of comments might become a significant factor to influence trustworthiness of the comments, while type of comment was an insignificant factor for trustworthiness of single WOM.

As a limitation of this experiment, I compared different number of WOMs (2-3 friends) and EWOMs (10 online reviews). I considered that most consumers might regard 2-3 online reviews as insufficient, and that people rarely can acquire WOMs from 10 friends.

As an implication, customers more tend to change decisions when customers gain WOMs with subjective affinity to WOM providers, rather than when customers gain EWOMs without subjective affinity to EWOM providers. As another implication, customers more tend to change decisions when customers gain positive comments than when they gain negative comments. This implication applies to both when customers gain WOMs and when customers gain EWOMs.

Results of this experiment might be applied to customer approaches utilizing WOMs and EWOMs. On the other hand, we can instruct customers about cleverer consumer behavior anticipating corporate approaches utilizing WOMs and EWOMs. In addition, I believe that these implications might be helpful in advising companies owned by friends for protecting their customers. These companies are suffering from numerous positive and negative EWOMs by competitors.

Appendix of Chapter 9

An example of situation in the questionnaire

You have worked in a company for several years since you graduated. For business reasons of your company, you have to buy industrial wax machine. Though you can select from product A and product B, you were perplexed because both products looked extremely alike. However, you decided to select product A.

Just after that, you found positive reviews (4.0/5.0 on average) for product B at an online shopping site (e.g. Amazon.com and Kakaku.com). However, the reviewers have little knowledge and no experience about the products, and you know the fact.

You also tried to get some comments from your friends and family, but all of them told that they did not know.

Part 4. WOM influence on decision making in Share Phase

Chapter 10. Share Phase of consumer behavior

In Part 2, I conducted Research 1 and Research 1' to study on Search Phase in AISCEAS model. In Part 3, I conducted Research 2 and Research 3 to study on Comparison/Examination Phase of consumer behavior, focusing on decision change situations because Comparison/Examination Phase might have significant influence on decision making.

In Part 4, I conducted Research 4 to study on Share Phase. As for Share Phase, several studies have been conducted about EWOM in information sharing (e.g. Chu & Kim, 2011), and most of these studies focused on tourism (e.g. Yoo & Gretzel, 2008; Jeong & Jang, 2011).

For example, Yoo and Gretzel (2008) examined about what motivates consumers to write online travel reviews. A web-based survey using an online consumer panel was conducted to investigate consumers' motivations to write online travel reviews. Measurement scales to gauge the motivations to contribute online travel reviews were developed and tested. The results indicate that online travel review writers are mostly motivated by helping a travel service provider, concerns for other consumers, and needs for enjoyment/positive self-enhancement. Venting negative feelings through postings is clearly not seen as an important motive. Motivational differences were found for gender and income level. Implications of the findings for online travel communities and tourism marketers are discussed.

Table 10-1. Factor Loadings and Reliability Test for the Motivation Measurement Model (Yoo & Gretzel, 2008)

| Motivation Construct | Mean | Factor Loadings | Eigenvalue | % of Variance | Reliability |
|--|------|-----------------|------------|---------------|-----------------|
| Enjoyment/positive self-enhancement | 4.2 | | 4.46 | 29.7 | $\alpha = 0.87$ |
| I enjoy it | | 0.80 | | | |
| I want to share my travel experience with others | | 0.79 | | | |
| It allows me to relive my trips | | 0.77 | | | |
| It allows me to reflect on the trip after returning home | | 0.75 | | | |
| I feel good when I can tell others about my trip successes | | 0.75 | | | |
| I can tell others about a great experience | | 0.73 | | | |
| I want to help others by sharing my own positive experiences | | 0.61 | | | |
| Venting negative feelings & collective power | 2.8 | | 2.74 | 18.3 | $\alpha = 0.73$ |
| If a company harms me, I will harm the company | | 0.80 | | | |
| I want to take vengeance upon a travel service provider | | 0.79 | | | |
| I believe travel service providers are more accommodating when I publicize matters | | 0.65 | | | |
| One has more power together with others than writing a single letter of complaint | | 0.60 | | | |
| Concerns for other consumers | 4.2 | | 1.59 | 10.6 | $r = 0.62$ |
| I want to save others from having the same negative experience as me | | 0.82 | | | |
| I want to warn others of bad services | | 0.77 | | | |
| Helping the company | 4.5 | | 1.08 | 7.2 | $r = 0.54$ |
| If I am satisfied with a travel service provider I want to help it be successful | | 0.85 | | | |
| Good travel service providers should be supported | | 0.81 | | | |

For another example, Jeong and Jang (2011) empirically examined which restaurant experiences trigger customers to engage in positive EWOM, where the quality of restaurant service (food quality, service quality, atmosphere, and price fairness) is the antecedent of EWOM communication. The results of this study suggest that (1) restaurants' food quality positively influences customers to spread positive EWOM, motivated by their desire to help the restaurant; (2) satisfactory restaurant experiences with service employees triggered positive EWOM, motivated by the need to help the restaurant or to express positive feelings; (3) a superior atmosphere in restaurants elicited positive EWOM motivated by a concern for others; and (4) price fairness in restaurants did not drive restaurant customers toward EWOM. The results from the study about information sharing through EWOM mentioned above suggested emotional factors, and subjective affinity as an emotional factor might possibly make significant differences in information sharing.

Table 10-2. Constructs and measurement items (Jeong & Jang, 2011)

| Constructs | Measurement items |
|--|--|
| Restaurant experiences (5-point Likert scale: 1 = strongly disagree, 5 = strongly agree) | |
| Food quality | The restaurant served tasty food. The food presentation is visually attractive. |
| Service quality | The food was served at the appropriate temperature. The restaurant servers provided attentive services. The restaurant is dependable and consistent. |
| Atmospherics | The restaurant had friendly and helpful employees. The restaurant employees were neat and well dressed. The restaurant dining areas were thoroughly clean. |
| Price fairness | The interior design of the restaurant was visually appealing. I think the price of the restaurant is reasonable. |
| Positive eWOM motives (5-point Likert scale: 1 = strongly disagree, 5 = strongly agree) | |
| Concern for others | I want to help others with my own positive restaurant experience. I want to give others the opportunity to have a good restaurant experience. |
| Express positive feelings | This way I can express my joy about a good restaurant experience. I felt good when I can tell others about my great restaurant experience. |
| Help restaurants | I am so satisfied with the restaurant experience that I want to help the restaurant to be successful. In my opinion, good restaurant companies should be supported. |

Table 10-3. Results of confirmatory factor analysis (Jeong & Jang, 2011)

| Variables (Cronbach's α) | Standardized loading | t-Statistic | p-Value | Construct reliability | AVE |
|--|----------------------|-------------|---------|-----------------------|-------|
| Restaurant experiences | | | | | |
| Food quality (0.653) | | | | 0.820 | 0.604 |
| The restaurant served tasty food | 0.611 | | | | |
| The food presentation was visually attractive | 0.666 | 6.890 | <0.001 | | |
| The food was served at the appropriate temperature | 0.600 | 6.439 | <0.001 | | |
| Service quality (0.730) | | | | 0.813 | 0.593 |
| The restaurant servers provided attentive services | 0.642 | | | | |
| The restaurant is dependable and consistent | 0.669 | 7.457 | <0.001 | | |
| The restaurant had friendly and helpful employees | 0.773 | 8.122 | <0.001 | | |
| Atmosphere (0.764) | | | | 0.838 | 0.633 |
| The restaurant employees were neat and well dressed | 0.750 | | | | |
| The restaurant dining areas were thoroughly clean | 0.747 | 8.870 | <0.001 | | |
| The interior design of the restaurant was visually appealing | 0.671 | 8.232 | <0.001 | | |
| Positive eWOM motives | | | | | |
| Concern for others (0.852) | | | | 0.892 | 0.805 |
| I want to help others with my own positive restaurant experience | 0.887 | | | | |
| I want to give others the opportunity to have a good restaurant experience | 0.838 | 11.597 | <0.001 | | |
| Express positive feelings (0.710) | | | | 0.808 | 0.683 |
| This way I can express my joy about a good restaurant experience | 0.875 | | | | |
| I feel good when I can tell others about my great restaurant experience | 0.631 | 7.652 | <0.001 | | |
| Help company (0.731) | | | | 0.801 | 0.670 |
| I am so satisfied with the restaurant experience that I want to help the restaurant to be successful | 0.827 | | | | |
| In my opinion, good restaurant companies should be supported | 0.701 | 7.184 | <0.001 | | |

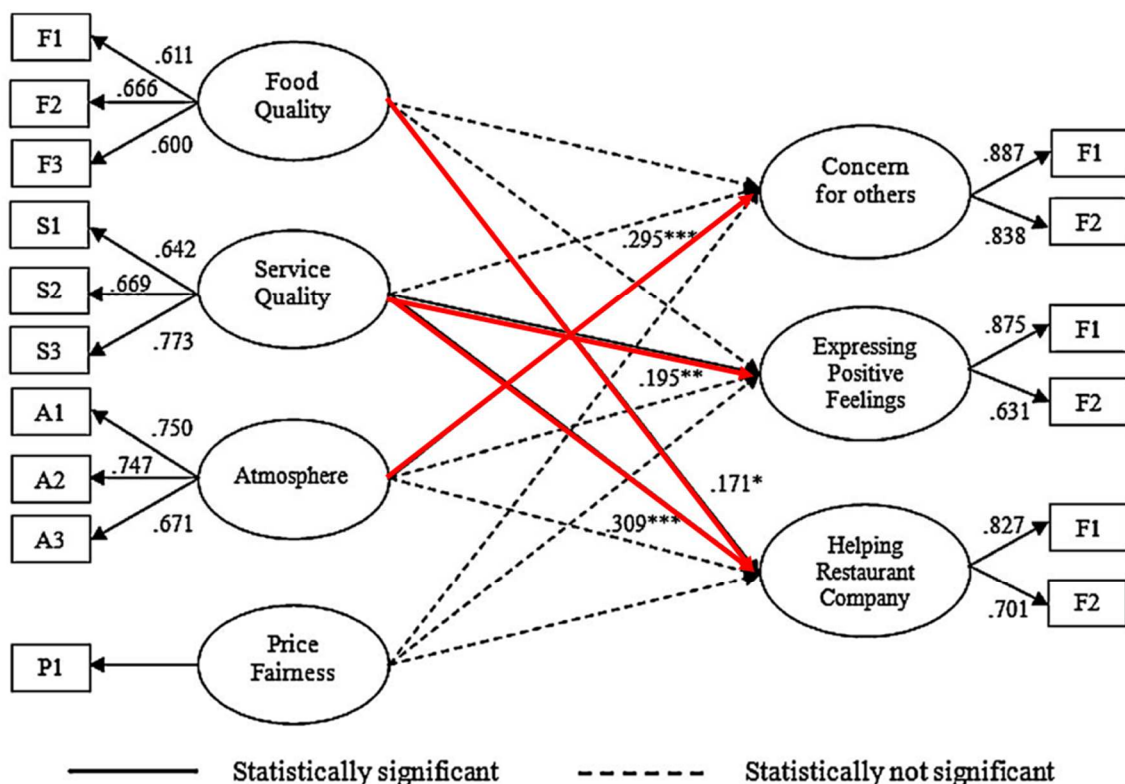
Note: Goodness of fit index: $\chi^2 = 128.952$, d.f. = 79, p-value <0.001, normed $\chi^2 = 1.719$, GFI = 0.921, CFI = 0.948, IFI = 0.950, TLI = 0.892, RMSEA = 0.060.

Table 10-4. Results of the structural model (Jeong & Jang, 2011)

| Path | Standardized Estimate | t-Statistic | p-Value | Relationship |
|---|-----------------------|-------------|----------|-----------------|
| Concern for others ← Food | 0.031 | 0.383 | 0.702 | Not significant |
| Expressing positive feelings ← Food | 0.047 | 0.548 | 0.583 | Not significant |
| Helping company ← Food | 0.171 | 1.967 | 0.049** | Significant |
| Concern for others ← Service | 0.001 | 0.007 | 0.994 | Not significant |
| Expressing positive feelings ← Service | 0.195 | 1.774 | 0.076* | Significant |
| Helping company ← Service | 0.309 | 3.194 | 0.001*** | Significant |
| Concern for others ← Atmosphere | 0.295 | 2.904 | 0.004*** | Significant |
| Expressing positive feelings ← Atmosphere | 0.127 | 1.242 | 0.214 | Not significant |
| Helping company ← Atmosphere | 0.093 | 0.897 | 0.370 | Not significant |
| Concern for others ← Price | 0.744 | 1.008 | 0.313 | Not significant |
| Expressing positive feelings ← Price | 0.893 | 1.005 | 0.315 | Not significant |
| Helping company ← Price | 0.508 | 0.989 | 0.323 | Not significant |

| | Structural model | Cut-off value |
|----------------------|--|---|
| Model fit statistics | Chi-square = 155.193 d.f. = 79 p-Value < 0.001 Normed chi square = 1.964 GFI = 0.917 CFI = 0.929 IFI = 0.932 TLI = 0.892 RMSEA = 0.069 | 1.0-3.0 > 0.90 > 0.90 > 0.90 > 0.90 < 0.08: good fit |

*** p < 0.01.
** p < 0.05.
* p < 0.1.



Note: ***p < .01, **p < .05, *p < .1

Fig. 10-1. Results of the structural model (Jeong & Jang, 2011)

Their study revealed that restaurant customers were motivated to disseminate EWOM by a desire to help the restaurant or to express positive feelings, as a result of good service. An enjoyable dining experience with excellent service provided by restaurant employees encourages customers' altruistic behavior toward the restaurant company and arouses a psychological tension in customers to share their good experience with other people in an online environment. Service quality was found to be the most important factor among the four restaurant experience attributes for producing positive EWOM communication because it triggered two different motivations to contribute positive EWOM. They concluded that managers should devote maximum effort and resources to training employees, especially ones working in front of the house. The host/hostess, cashiers, servers and other service employees who are part of the service encounter should be able to provide consistent and high quality service to customers and to anticipate customer needs. These facts indicated that emotional experiences make psychological tensions in motivating positive EWOM sharing. Subjective affinity as an emotional factor might also become psychological tensions in information sharing.

Their study also revealed that customers' pleasant experiences with the atmosphere of a restaurant serve as motivation to spread positive EWOM due to concern for others. In the context of the MR model, this finding was related to the perceived quality of the surrounding space, including the attractiveness of the interior design and décor of the restaurant, a clean environment, and neat and well-dressed employees. These elements stimulate restaurant customers' emotional state, thus affecting customers' post-dining behaviors, including writing positive EWOM. In addition to feelings of pleasure, customers' altruistic emotions related to giving others an opportunity to experience a good restaurant atmosphere were also stimulated by superior ambience and physical environment. By ensuring that these two factors are strong, restaurant managers may elicit positive EWOM communication, which can directly help the restaurant achieve customer loyalty and create a positive image. These facts indicated that emotional experiences significantly motivated positive EWOM sharing. Subjective affinity as an emotional factor might also become psychological tensions in information sharing.

They proposed various implications from results. Restaurant managers can derive useful managerial implications for promoting online marketing from the results that customers are motivated to articulate positive EWOM by restaurant experiences with superior food, service, and

atmospheric aspects. While these results may seem intuitive, restaurants deal with thousands of factors in making their restaurants places customers want to go and to recommend, so defining those few factors that can have the greatest impact on motivating customers to write EWOM can help restaurants make effective decisions.

According to them, managers could also hold special events to encourage customers to write positive EWOM on restaurants' websites, such as providing a sample of a new or bestselling menu item to customers and requesting them to leave a EWOM message about their experience on the website. Conducting a "Who's My Best Server?" event may also help customers recognize the restaurant's emphasis on good service. A manager could ask customers to recognize the best server on their restaurants' website and give an explanation for their rating. Managers may also want to institute an incentive program to ensure that employees understand that the restaurant values their good service. With this incentive program, employees will try to give their best service to their customers, and, as a result, customers will leave more positive EWOM about the restaurant's services.

In addition, they concluded that managers can even emphasize their restaurant's ambiance through a photography or painting competition among customers. The winning pictures would be used to promote the restaurant online and in marketing materials, and all or some could be posted in the restaurant itself. This kind of promotion would allow the restaurant to demonstrate to potential customers the superior quality of atmosphere of the restaurant from its customers' perspective.

On the other hand, very few studies have focused on psychological processes about how consumers with user experience might be influenced by external information such as WOM and EWOM. Though very few studied focused on WOM influence, I consider that subjective affinity to WOM provider might influence degree of WOM influence, similar in Search Phase and Comparison/Examination Phase. Especially in decision change situations about product recommendation, WOM might have significant influence on decision making.

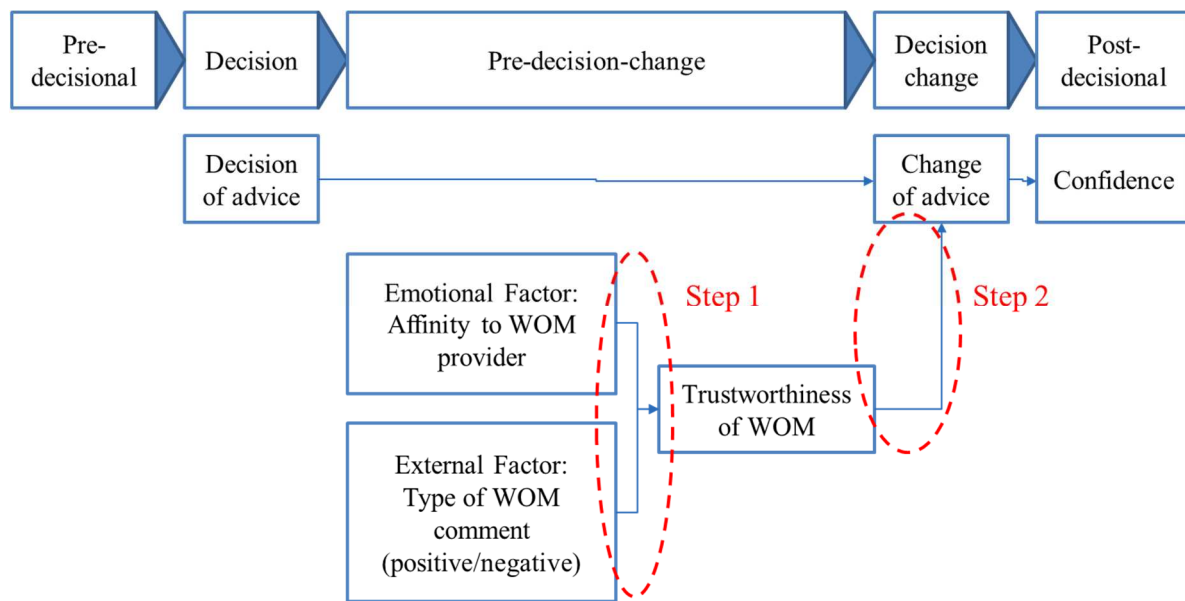


Fig.10-2. Decision change process about product advice for Share phase

Chapter 11. Research 4 Influence of subjective affinity in Share Phase⁸

Research 1, Research 1', Research 2 and Research 3 revealed the processes that affinity influences degree of trustworthiness as an emotional factor, and that influenced degree of trustworthiness influences decision making of participants. In Research 4, I examined the same processes for decision change, comparing the ratios of participants who changed decisions about product recommendations influenced by WOM with different affinity to WOM provider. I intended to make situations that participants received conflicting WOM just after they had made decision about product recommendation from binary choice without any external influence. The results might support that the same psychological processes exist when we change decisions.

11.1. Purpose of present study

Research 2 revealed the processes in decision change that affinity influences degree of trustworthiness as an emotional factor, and that influenced degree of trustworthiness influences decision making of participants.

I intended to examine if the same processes exist when we share information to others after we bought and used products. Without any other external information, we will probably make advices simply based on our user experiences. However, if we face a WOM contradicting our user experiences, we might change our advices to others. Affinity to WOM provider might influence degree of trustworthiness as an emotional factor. Also, influenced degree of trustworthiness might influence decision making of participants. Specifically, different affinity to WOM provider might result in different ratios of participants who change decisions.

For comparing affinity influence clearer, I intended to exclude the influence of internal motivation, such as preference, of participants. I controlled the situation by making participants imagine that it was hard to judge, considering strengths and weaknesses of both products. Also, I controlled the situation that participants cannot compare the WOM with any other WOM.

⁸ This chapter consists of reviewed and reorganized contents based on Eguchi and Yamashita (submitted).

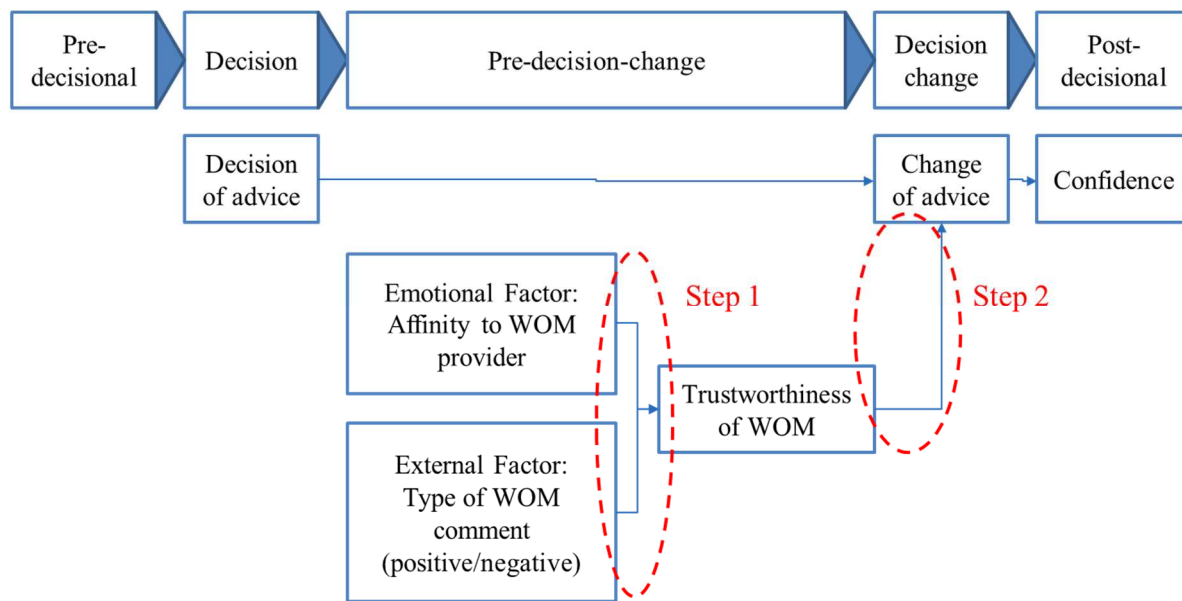


Fig.11-1. Decision change process

11.2. Research hypotheses

I intended to verify that affinity influences degree of trustworthiness to external WOM provider. I analyzed relations between affinity to WOM provider and trustworthiness to WOM provider. Next, I intended to verify that degree of trustworthiness influences decision making of participants. I analyzed relations between WOM trustworthiness and result of decision making. Then I intended to compare the magnitude of effect on degree of trustworthiness by preparing conditions that WOM contradicted user experiences of participants. I considered that the magnitude of effect might vary, depending upon conditions. In addition, I measured degree of confidence because I considered that degree of confidence about decision making might vary depending upon conditions.

Same as Research 2, I constructed two hypotheses as follows:

H1: If affinity to WOM provider is higher, trustworthiness of WOM provider is significantly higher

H2: Trustworthiness of WOM is closely related to decision change about product recommendation by participants

Same as Research 2, I did not construct any hypothesis about type of WOM comment (positive or negative) and about degree of confidence among participants. I intended to analyze the effects of conditions above without any hypothesis.

11.3. Method

11.3.1. Participants

Eighty-six participants joined the experiment. Participants were undergraduate and graduate students from Tokyo Metropolitan University. Forty-five participants were female, forty participants were male, and one participant did not answer the gender. The experiment took about 20 minutes by making participants answer the questionnaire.

11.3.2. Experimental design and questionnaire

As I did Research 2 and Research 3, the questionnaire requested participants to imagine situations that they had to recommend product A or product B to a friend asking them, and that they once decided to recommend product A, though it was hard to judge, considering strengths and weaknesses of both products. I controlled the conditions by excluding information of participants, other than WOM (comment from external WOM provider) and affinity (degree of affinity to the WOM provider), as in the Appendix. I controlled situations that participants could not compare the WOM with any other WOM.

I set the product category as newest models of mobile phone, so that participants (undergraduate students taking a psychology class) were very likely to have enough user experiences for making advices to others. In order that participants would decide without any stereotype for the products, I intended to exclude the influence of internal motivation, such as preference, of participants. In the Appendix, I controlled the situation by mentioning “judging from your user experience so far”, because setting purchase experience for both products was unrealistic, while I intended to imply user experience for both products and imply probable purchase experience of one product at least.

The questionnaire prepared 6 patterns of conditions (3 (affinity) x 2 (WOM comment)) as in Table 11-1. Same as Research 2, I prepared high affinity case (a close friend as the WOM provider), low affinity case (a friend as the WOM provider), and highest affinity case (a family as the WOM provider).

Table 11-1. Conditions used in the experiment

| WOM | | Condition |
|----------------|----------------------------|-----------|
| Affinity | Comment | No. |
| A close friend | Positive to product B (+B) | 1 |
| | Negative to product A (-A) | 4 |
| A friend | Positive to product B (+B) | 2 |
| | Negative to product A (-A) | 5 |
| A family | Positive to product B (+B) | 3 |
| | Negative to product A (-A) | 6 |

Same as Research 2, the questionnaire had two patterns of order of conditions, and equal numbers of copies were printed for each pattern. The two patterns of copies were randomly distributed to participants. The first pattern of order of condition (comment - affinity) was “1. Positive to product B – A close friend, 2. Positive to product B – A friend, 3. Positive to product B – A family, 4. Negative to product A – A close friend, 5. Negative to product A – A friend, and 6. Negative to product A – A family”. The other pattern of order of condition (comment - affinity) was “4. Negative to product A – A close friend, 5. Negative to product A – A friend, 6. Negative to product A – A family, 1. Positive to product B – A close friend, 2. Positive to product B – A friend, and 3. Positive to product B – A family”.

For comparing the magnitude of effect, I intended to compare the ratios of participants who changed decisions influenced by WOM. I considered that the ratios vary by the magnitude of effect, and that the magnitude of effect might vary by affinity and comment. In every condition, I made that participants once decided to recommend product A, and that WOM directly or indirectly recommended product B. As for WOM, WOM provider said “I recommend product B” (Positive to product B (+B)), otherwise WOM provider said “I do not recommend product A” (Negative to product A (-A)). The positive WOM comment directly recommended product B, and the negative WOM indirectly recommended product B.

As for affinity, I defined “a close friend (with whom participants meet and talk once a week)”, “a friend (with whom participants meet and talk once in two months)” and “a family (with whom participants meet and talk once in two months)”, as I did in Research 2.

For each condition in Table 11-1, I requested participants to answer for four following questions:

(1) Trustworthiness of WOM (0-10: 0 = “not trustworthy at all” to 10 = “perfectly trustworthy”)

(2) Which product to recommend (0 = “product A” and 1 = “product B”)

(3) Confidence of the decision (0-10: 0 = “not confident at all” to 10 = “perfectly confident”)

In addition, I asked supplemental questions to participants prior to the questionnaire. I requested participants to answer how many times a month they do e-commerce, the minimum scores (from 1.0/5.0 to 5.0/5.0) that they regard the score as positive and want to buy the product recommended, and the maximum scores (from 1.0/5.0 to 5.0/5.0) that they regard the score as negative and want not to buy the product criticized.

11.4. Results

11.4.1. Recommendation of products

My primary focus was on whether participants change their decision from recommending product A to B, or they maintain their decision of recommending product A. My secondary focus was on whether percentages of participants changing their decision would be significantly influenced by conditions such as difference in affinity and difference in comment. I found results of decision making for each condition as in Table 11-2. The results did not show very distinctive difference in percentages of participants with decision change, though relatively higher when WOM provider was a family and relatively lower when WOM provider was a friend. For example, 27.9% was the decision change ratio when WOM provider was a close friend and WOM comment was positive, but I found the same ratio when WOM provider was a friend and WOM comment was negative.

Table 11-2. Relationship between conditions and reaction (decision making)

| Type of information | | Reaction | | | | |
|---------------------|---------------|-----------|----------|-----------|--------------|-----------|
| WOM | | Selection | | | Confidence | |
| Affinity | Comment | Product | <i>N</i> | Ratio (%) | Rating value | |
| | | | | | <i>M</i> | <i>SD</i> |
| A close friend | Positive to B | A | 62 | 72.1 | 6.50 | 1.45 |
| | | B | 24 | 27.9 | 6.17 | 1.03 |
| | Negative to A | A | 51 | 59.3 | 6.18 | 1.64 |
| | | B | 35 | 40.7 | 6.11 | 1.24 |
| A friend | Positive to B | A | 72 | 83.7 | 6.42 | 1.51 |
| | | B | 14 | 16.3 | 5.29 | 1.53 |
| | Negative to A | A | 62 | 72.1 | 6.37 | 1.52 |
| | | B | 24 | 27.9 | 5.71 | 1.59 |
| A family | Positive to B | A | 56 | 65.1 | 6.30 | 1.72 |
| | | B | 30 | 34.9 | 6.57 | 1.58 |
| | Negative to A | A | 58 | 67.4 | 6.17 | 1.39 |
| | | B | 28 | 32.6 | 6.71 | 1.41 |

To verify correlation between affinity and decision making (product A or B), I conducted a logistic regression analysis between affinity and decision making (product A or B). I found that decision making (product A or B) was not influenced by affinity ($\chi^2(1,516) = .007$, Nagelkerke $R^2 < .001$, affinity: *Standardized* $\beta = -0.010$, $p = .935$). The fact indicated that affinity at least did not directly influence decision making, and that another factor other than affinity might be the key influencer to decision making. The result might support H1 and H2, because the possibility of indirect influence of affinity still remained.

11.4.2. Trustworthiness of WOM

Based on my H1, affinity might influence WOM trustworthiness, causing significant difference by different affinity to WOM provider. Mean and *SD* of WOM trustworthiness for all the conditions are summarized in Table 11-3. The result showed that WOM trustworthiness was over 4.63/10.0 when WOM provider was a friend (both when the comment was positive and negative), while the values were over 1 point higher in most of other conditions.

Table 11-3. WOM trustworthiness

| WOM | | WOM trustworthiness | |
|----------------|---------------|---------------------|-----------|
| Affinity | Comment | Rating value | |
| | | <i>M</i> | <i>SD</i> |
| A close friend | Positive to B | 5.52 | 1.77 |
| | Negative to A | 5.74 | 1.62 |
| A friend | Positive to B | 4.63 | 1.80 |
| | Negative to A | 4.63 | 1.71 |
| A family | Positive to B | 5.83 | 2.11 |
| | Negative to A | 6.00 | 1.80 |

To verify the correlation between affinity and WOM trustworthiness, I conducted a 2-dimensional (affinity (a close friend, a friend, a family) x WOM comment (positive, negative)) ANOVA on WOM trustworthiness. I found significance about the main effect of affinity ($F(2,84) = 51.992, p < .001$) as in Fig. 11-2. I did not find any other significant results (WOM comment: $F(1,85) = 1.131, p = .291$; affinity x WOM comment: $F(2,84) = .702, p = .498$).

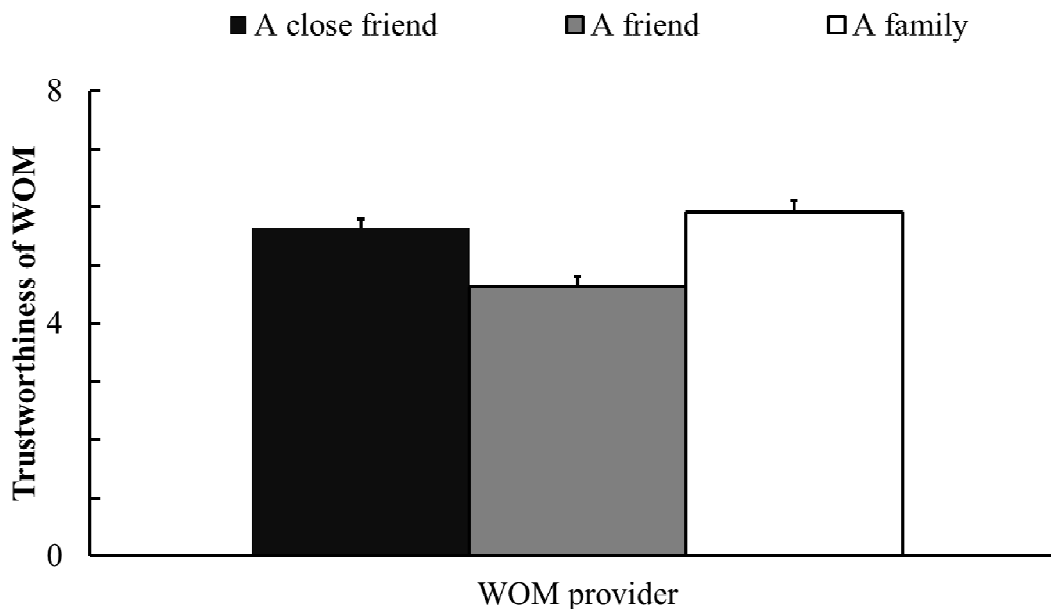


Fig. 11-2. Main effect of affinity

The fact indicated that difference in affinity significantly influences WOM trustworthiness about product recommendation. “A family” case showed significantly higher WOM trustworthiness than

that of “a friend” case. Similarly, “a close friend” case showed significantly higher WOM trustworthiness than that of “a friend” case. I could not find significant difference in WOM trustworthiness between “a family” case and “a close friend” case ($p = .241$). The results might support H1.

11.4.3. Decision making and trustworthiness of WOM

In order to examine my two-step hypotheses about affinity and decision making, I intended to examine H2 as well. Based on my H2, WOM trustworthiness might be related to decision making about product recommendation (product A or B).

For verifying correlation between WOM trustworthiness and decision making (product A or B), I conducted a logistic regression analysis between WOM trustworthiness and decision making (product A or B). I found that decision making (product A or B) was influenced by WOM trustworthiness, and that the model was convincing enough ($\chi^2(1,516) = 79.779$, Nagelkerke $R^2 = 0.203$, trustworthiness: *Standardized* $\beta = 0.545$, $p < .001$). The fact indicated that WOM trustworthiness significantly influenced decision making about product recommendation. Higher WOM trustworthiness brought higher probability to change decisions. The results might support H2.

11.5. Discussion

The results at 11.4.2 suggested that different degree of affinity brought significantly different degree of WOM trustworthiness. The results at 11.4.3 suggested that decision making about product recommendation was significantly influenced by WOM trustworthiness. These facts might support my hypotheses about psychological processes that “affinity”, an emotional factor, influences degree of trustworthiness, and that influenced degree of trustworthiness influences decision making of participants. The processes might work in decision change about how to make product recommendations to others.

11.6. Future direction

First limitation of this experiment is that the products in the imaginary situation are newest mobile phone models, instead of industrial machines mentioned in Research 1, Research 1', Research 2 and

Research 3. I changed product category for Research 4, in order to make the information sharing situation realistic enough. Most participants were undergraduate students, and information sharing of industrial machines would have been too unrealistic for them. They could easily imagine their user experiences in mobile phones instead. To exclude influence of stereotypes, I controlled the situation in the questionnaire, not implying specific mobile phone models or makers at all. In future experiments I might be able to gain different results from other products.

Second limitation of this experiment is that participants might hesitate to advise conflicting things in front of WOM providers with affinity. This hesitation might make affinity influence decision change about information sharing. However, I considered that this hesitation might not occur unless WOM providers were socially superior to participants, such as “a boss” and “a parent”. The results at 11.4.2 did not show significant difference in WOM trustworthiness between “a close friend” and “a family”. The fact indicated that this hesitation might not influence decision change about information sharing.

As an implication, customers more tend to adopt WOM comments and change contents of product recommendation even if they had once decided about which product to recommend, when subjective affinity to WOM providers are high. Results of this experiment might be applied to customer approaches utilizing WOMs and EWOMs. On the other hand, we can instruct customers about cleverer consumer behavior anticipating corporate approaches utilizing WOMs and EWOMs. In addition, I believe that these implications might be helpful in advising companies owned by friends for protecting their customers. These companies are suffering from numerous positive and negative EWOMs by competitors.

Acknowledgements

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Appendix of Chapter 11

An example of situation in the questionnaire

A friend wanted to buy a mobile phone in a newest model, and asked you whether you recommend product A or product B, judging from your user experience so far. You thought that you would recommend product A to others rather than product B, though it was hard to judge, considering strengths and weaknesses of both products.

When asked from the friend mentioned above, a close friend (with whom you meet and talk once a week) as the third party said, "I recommend product B". However, the friend has little knowledge and no experience about the products, and you know the fact.

When you watched online shopping sites (e.g. Amazon and Kakaku.com), you found no online review or comment about product A or product B.

Part5. Hearing from working and retired adults

Chapter 12. Research 5 Hearing from working and retired adults⁹

The largest limitation of Research 1, Research 1', Research 2, Research 3, and Research 4 was that participants of all these researches were university students. I conducted a hearing from working and retired adults. Hearing from working and retired adults indicated that their perspectives toward WOM and EWOM might be very similar to those of university students. The results implied that affinity might be an important factor for decision making for adults. Even among adults, affinity might influence degree of trustworthiness, and degree of trustworthiness might influence decision making. Especially, working and retired adults regarded EWOM as objective and they prioritized EWOM when they wanted to gather many opinions. On the other hand, most participants regarded WOM as more trustworthy than EWOM. If I could conduct same researches to working and retired adults, it would be highly likely to have similar outcomes to those from university students.

12.1. Purpose of this hearing

Sales activity itself is human interaction, inseparable from psychological factors. So far I have conducted some researches on WOM and EWOM influence in purchase decision making.

Because participants of all these studies were university students, I intended to reconfirm these tendencies by conducting a brief hearing research to adults. If the outcomes of these studies above did not result from generation specialty or not from lack of working experience, I can acquire hearing results from working or retired adults indicating similarity to results from students so far.

I intended to explore the possibility if proposed models might also apply to working and retired adults. I intended to confirm the possibility of the first step that affinity as an emotional factor might influence degree of trustworthiness to WOM or EWOM comments. I also intended to confirm the possibility of the second step that the influenced degree of trustworthiness to WOM or EWOM comments might influence decision making of participants. In addition, I intended to confirm if working and retired adults might be influenced by EWOM without subjective affinity to EWOM

⁹ This chapter consists of reviewed and reorganized contents based on Eguchi and Yamashita (2016d).

provider (e.g. online reviews), because research questionnaire results indicated that students were strongly influenced by EWOMs.

12.2. Method

I conducted a hearing research to eight people. Five participants were female, and three participants were male. Six participants were working people in their thirties, and two participants were retired people in their sixties. The hearing research took about 20 minutes.

Through the hearing, I asked participants in which situation they refer to WOM, in which situation they refer to EWOM, in which points WOM outperforms EWOM, and in which points EWOM outperforms WOM.

Also, about situation when WOM and EWOM contradict with each other, I asked participants in which situation they prioritize WOM than EWOM, what kind of WOM they can prioritize, in which situation they prioritize EWOM than WOM, and what kind of EWOM they can prioritize.

12.3. Results and discussion

Results from this hearing indicated that working and retired adults also strongly influenced by EWOM. All participants told us that they always started with searching for EWOM when they did not have much product knowledge. Five participants in their thirties regarded this action as “minimum requirement routine work in business”. All participants regarded EWOM as objective and helpful for reasonable decision making. A participant in his thirties said, “I cannot live without e-commerce in my single life, because I need daily shopping while I must process works. Therefore, many singles like me are naturally influenced by EWOMs.”

Hearing results indicated high evaluation to objectiveness and multi-sidedness of EWOM. All participants prioritized EWOM than WOM when they needed to gather many opinions. Most participants prioritized EWOM when WOM was one-sided. A participant in her sixties said, “EWOMs give us not only positive side information but also thoughts from various viewpoints. EWOMs never unnecessarily adjust nuances, considering our feelings.” And she said, “I prioritize EWOM than WOM when I want to gather many opinions rather than few opinions that might be one-sided. Another participant in her thirties said, “EWOM is better than WOM as objective information

for decision making. Especially, I often refer to negative EWOMs.” And she said, “I prioritize EWOM than WOM when I can only one-sided WOMs, just positive WOMs or negative WOMs.”

Interestingly, all participants evaluated objectiveness and multi-sidedness of EWOM, even though they were fully aware of EWOM manipulations by some companies. All participants replied that they judged EWOMs with a premise that some companies wrote good reviews in major online review sites, behaving as if they had been normal customers. A participant in her thirties said, “I always check EWOMs with a premise that I would definitely write good reviews in major online review sites as if I were a normal customer, if I were the seller of the product. However, EWOMs contain much information. I can refer to various opinions from EWOMs.”

On the other hand, working and retired adults pointed out affinity to WOM provider as the reason of trusting WOM. Most participants regarded WOM as more trustworthy than EWOM. Some participants told us that it was because WOM provider had close relationship with the participant and probably commented based on understanding of the participant’s personality. Majority of participants prioritized WOM than EWOM when WOM provider was trustworthy for them. A participant in her thirties prioritized WOM than EWOM regardless of WOM trustworthiness.

12.4. Implications

The results implied that affinity was an important factor for decision making, not only among young students but also among working and retired adults. Similar to conducted researches on university students, affinity might influence degree of trustworthiness, and degree of trustworthiness might influence decision making, even among working and retired adults.

Because working and retired adults regarded EWOM as objective and prioritized EWOM when they wanted to gather many opinions, it is highly likely that 10 EWOM would have bigger influence on decision making than what 1 WOM would have, same as the results of conducted researches with university students. On the other hand, working and retired adults might prioritize 1 WOM from a high affinity WOM provider, same as university students did. Majority of participants prioritized WOM than EWOM when WOM provider was trustworthy for them.

Results of this experiment might be applied to customer approaches utilizing WOMs and EWOMs. Sellers might be able to apply implications mentioned in the researches in this papers to

even working and retired adults. On the other hand, we should instruct wide range of customers about cleverer consumer behavior anticipating corporate approaches utilizing WOMs and EWOMs. Not only young students but also working and retired adults should be more prepared about corporate approaches utilizing WOMs and EWOMs. Interestingly, most working and retired adults have already recognized that companies often manipulate customers utilizing WOMs and EWOMs. In addition, I believe that these implications might be helpful in advising companies owned by friends for protecting their customers. These companies are suffering from numerous positive and negative EWOMs by competitors.

Appendix of Chapter 12

Hearing questions

Please imagine a situation that you are going to buy something. Please remember if you refer to WOM from people around you (e.g. friends, close friends, families). Please also remember if you refer to EWOM such as online reviews.

1. In what kind of situations do you refer to WOMs from people around you?
(Please let us know your free comments if any)

2. In what kind of situations do you refer to EWOMs from people around you?
(Please let us know your free comments if any)

3. In which points do you think WOM better than EWOM?
(Please let us know your free comments if any)

4. In which points do you think EWOM better than WOM?
(Please let us know your free comments if any)

Situation A: You were searching for information about the product you wanted to buy. As a result, you gained both WOM and EWOM, but WOM comment conflicted with EWOM comment. Please consider which you prioritize, WOM or EWOM.

5. In what kind of situations do you prioritize WOM than EWOM? What kind of WOM you would prioritize than EWOM?

6. In what kind of situations do you prioritize EWOM than WOM? What kind of EWOM you would prioritize than WOM?

Part 6. General discussion and conclusion

Chapter 13. General discussion and conclusion

13.1. General discussion

Main purposes of this study were to examine WOM and EWOM influence on decision making and to examine influence of subjective affinity to WOM provider on WOM and EWOM influence.

This study examined two situations for two phases of consumer behavior in AISCEAS model. As for Search Phase, this study examined a situation that both WOM and EWOM exist, contradicting with each other. As for Comparison/Examination phase, this study examined a decision change situation that decision makers gain contradicting WOM or EWOM right after they decided without referring to any external information, and that they have to decide to change their decision or not.

As for the Search Phase situation, Research 1, suggested that the hypothesized psychological processes about purchase decision making as in Fig.13-1 might exist.

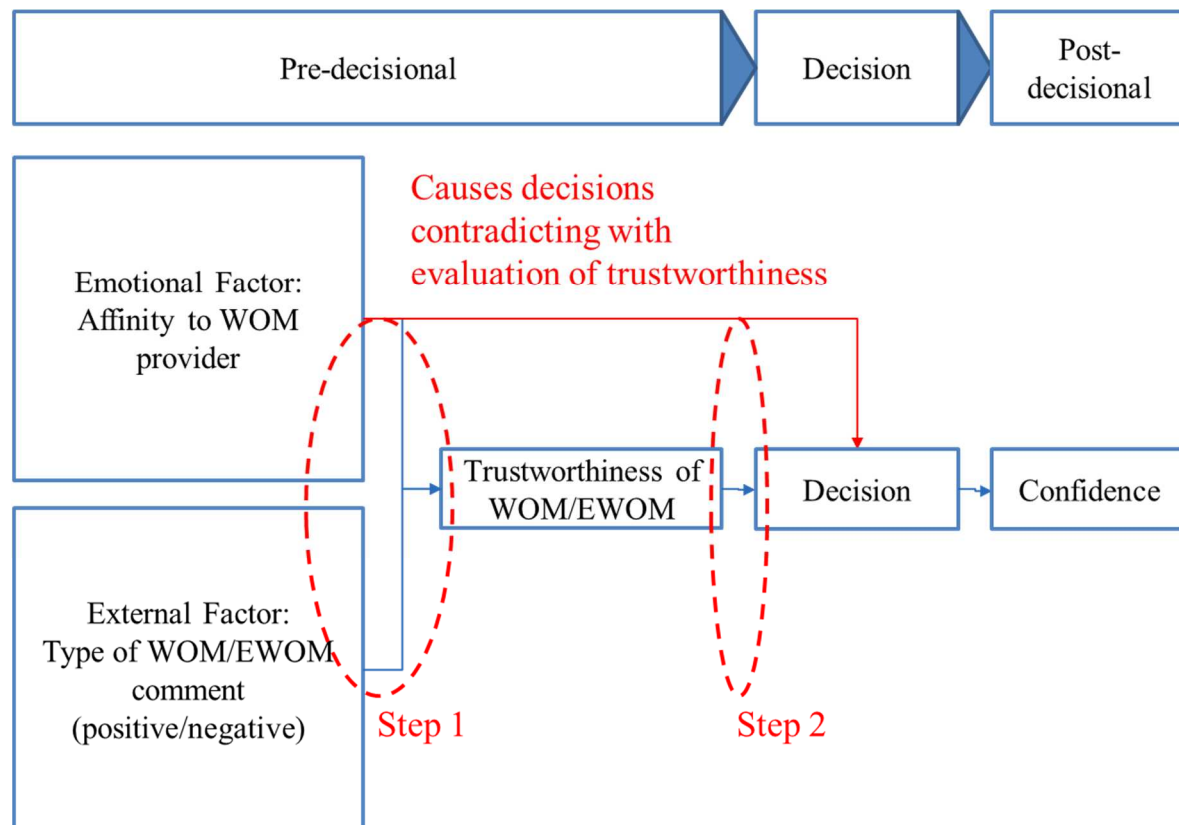


Fig.13-1. Decisional process for Search Phase

In the first step, affinity as an emotional factor influences degree of trustworthiness to WOM or EWOM comments. Degree of trustworthiness for participants varies, depending on opinion sources with different degrees of affinity. In the second step, the influenced degree of trustworthiness to WOM or EWOM comments influences decision making of participants. Also, the magnitude of WOM effect and EWOM effect might vary, depending upon conditions.

In addition, participants usually adopt the most trustworthy opinion, but sometimes do not. I named these occasional phenomena as “Contradiction” in Research 1’. The results of Research 1’ suggested psychological processes that affinity directly influences decision making as an emotional factor, causing “Contradiction” sometimes. Among participants who evaluated EWOM more trustworthy, degree of affinity made significant differences in ratios of contradictory decisions by adopting WOM.

As for the Comparison/ Examination Phase situation, Research 2 and Research 3 suggested that the hypothesized psychological processes about purchase decision change as in Fig.13-2 might exist.

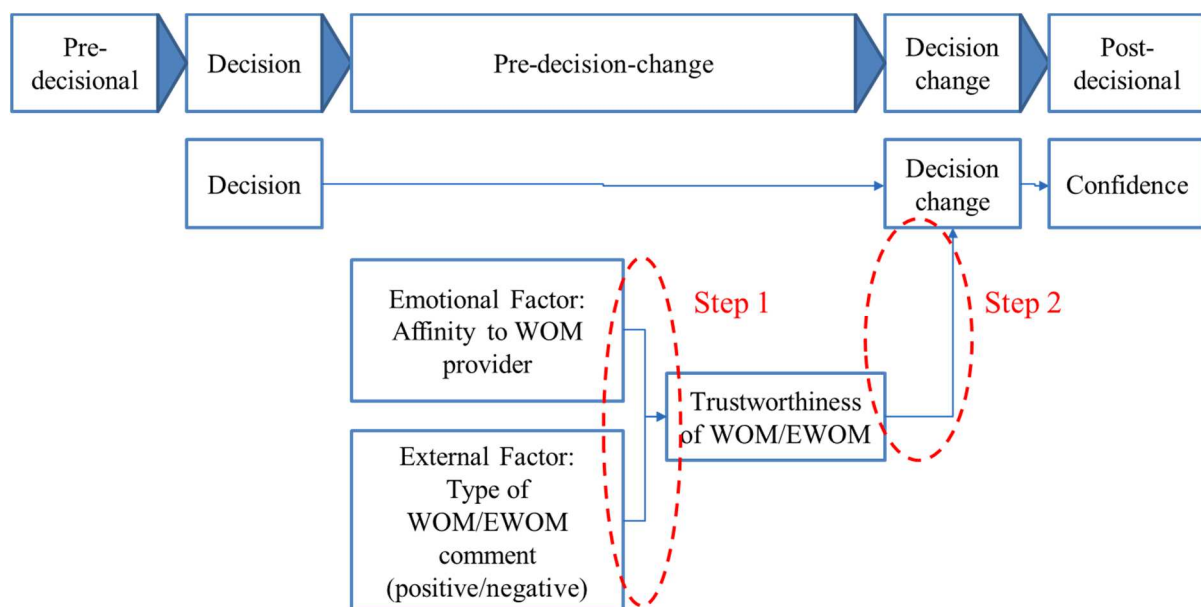


Fig.13-2. Decision change process for Comparison/Examination phase

In the first step, affinity as an emotional factor influences degree of trustworthiness to WOM or EWOM comments. Degree of trustworthiness for participants varies, depending on opinion sources

with different degrees of affinity. In the second step, the influenced degree of trustworthiness to WOM or EWOM comments influences decision change of participants. Also, the magnitude of WOM effect or EWOM effect might vary, depending upon conditions. Both when affinity to WOM provider was changed (Research 2) and when external information was WOMs or EWOMs (Research 3), the results indicated that the same processes might exist.

As for the Share Phase situation, Research 4 suggested that the hypothesized psychological processes about purchase decision change as in Fig.13-3 might exist.

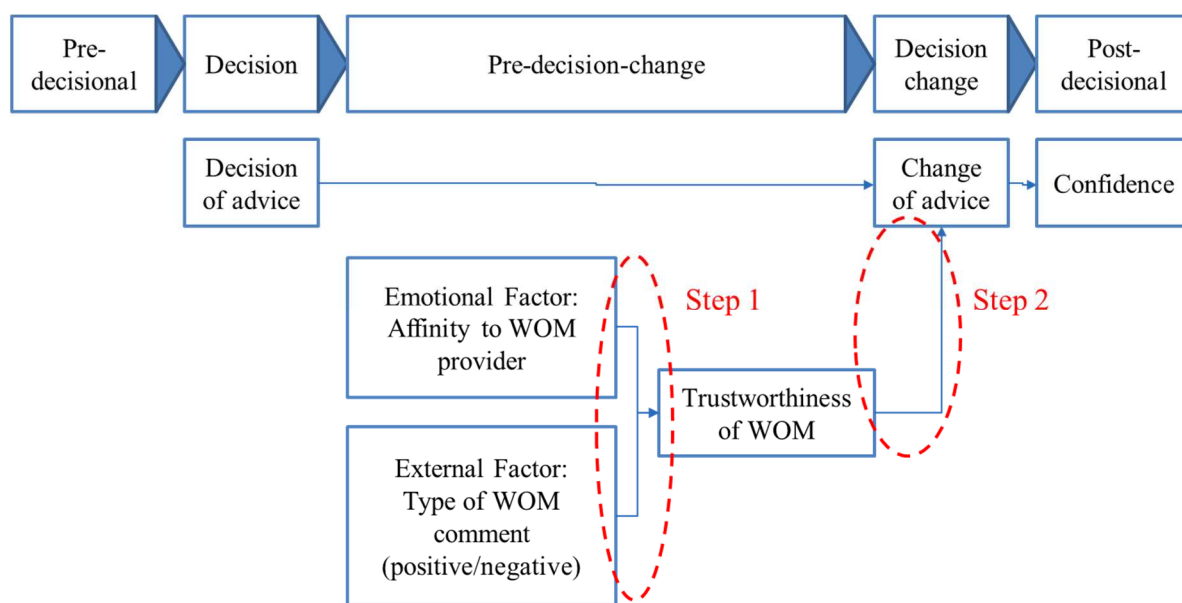


Fig.13-3. Decision change process about product advice for Share phase

In the first step, affinity as an emotional factor influences degree of trustworthiness to WOM comments. Degree of trustworthiness for participants varies, depending on opinion sources with different degrees of affinity. In the second step, the influenced degree of trustworthiness to WOM comments influences decision change of participants.

Therefore, this study suggests things as in below. In a situation that both WOM and EWOM exist and contradict with each other (Search Phase), WOM and EWOM might influence decision making. Subjective affinity to WOM provider might influence degree of WOM and EWOM influence. In addition, subjective affinity to WOM provider might influence ratios of decision makers who adopt less trustworthy opinion they evaluated.

In a decision change situation (Comparison/Examination Phase), subjective affinity to WOM provider might influence WOM trustworthiness, and WOM trustworthiness might influence decision making. In addition, when the external information for the decision change situation was WOMs or EWOMs, subjective affinity to WOM provider might influence WOM trustworthiness, making significant difference in decision making.

In a decision change situation about product recommendation (Share Phase), subjective affinity to WOM provider might influence WOM trustworthiness, and WOM trustworthiness might influence decision making.

13.2. Implications

Results from this study can be applied for consumer approaches using WOM and EWOM. On the other hand, consumers can behave cleverer by anticipating such marketing approaches. I believe that these implications might be helpful in advising companies owned by friends for protecting their customers. These companies are suffering from numerous positive and negative EWOMs by competitors. I believe these companies should have chances to instruct their customers about customer manipulation technics utilizing WOMs and EWOMs.

Results from Research 1 imply things as in below. First, sellers can check whether significant others of target customers provide WOMs contradicting existing EWOMs. Sellers are less likely to convince target customers with such WOMs. Also, sellers can try approaching significant others of target customers so that they will provide WOMs to target customers, when sellers have few EWOMs for their evidence to promote products or services. Customers and buyers should care that sellers might approach to their significant others.

Second, when target customers cannot receive WOMs other than low affinity acquaintances, sellers probably can convince customers with many EWOMs. Customers and buyers should suspect customer manipulation when they find too many EWOMs at a specific seller. Third, when sellers can research which products WOMs directly or indirectly support in advance, sellers can maximize EWOM trustworthiness by providing positive EWOMs against positive WOMs, and by providing negative EWOMs against negative WOMs. In niche or luxurious markets that sellers can probably specify significant others of target customers, customers and buyers should care positive EWOMs

contradicting positive WOMs and negative EWOMs contradicting negative WOMs. Fourth, when sellers do not know whether WOMs are positive or negative, sellers can minimize WOM trustworthiness by providing negative EWOMs. Customers and buyers should care more about negative EWOMs than positive EWOMs in general.

Results from Research 1' imply things as in below. First, when affinity to WOM provider is higher and people evaluated EWOM more trustworthy, people are more likely to adopt WOM. Especially, when EWOM comments are negative, affinity to WOM provider makes significant differences. Sellers can check whether significant others of target customers provide WOMs contradicting existing EWOMs.

Second, seller can gather positive EWOMs, considering the risks of contradicting WOMs from significant others of target customers. Positive EWOMs are more desirable than negative EWOMs, in order to prevent target customers from adopting WOMs with less trustworthiness. Customers and buyers who regard EWOMs trustworthy should care when they find too many positive EWOMs.

On the other hand, when people adopt EWOM even though they evaluate WOM more trustworthy, affinity to WOM provider is not a significant factor. Sellers can enhance EWOM trustworthiness, such as through increasing quantity and quality of EWOMs. Customers and buyers should care when they find too many EWOMs or EWOMs with outstanding quality.

As for online review rating (5.0/5.0 as the maximum score and 1.0/5.0 as the minimum score), 4.0/5.0 is the critical point to be recognized as positive by over 80% of customers, and 2.0/5.0 is the critical point to be recognized as negative by over 80% of customers. In addition, over 20% of conservative customers regard even 3.0/5.0 as negative.

If sellers want to gather positive EWOMs for their products, they should try gathering 5.0/5.0 and 4.0/5.0 comments so that the average rating value will exceed 4.0/5.0. On the other hand, negative EWOMs for competitor products will not be effective to over 80% of customers unless the average rating value becomes below 2.0/5.0. However, negative EWOMs for competitor products will be effective to over 20% of customers if the average rating value becomes below 3.0/5.0. Customers and buyers should care about one-sided EWOM ratings, for example when they find too many high rating or low rating EWOMs.

Results from Research 2 imply that the higher the consumer's subjective affinity to WOM provider, the higher the probability of decision change by adopting WOM, even if the customer had already decided once. Customers and buyers should remind that sellers might approach to their significant others as potential WOM providers for decision change.

Results from Research 3 imply that probability of decision change increases when the consumer gains WOMs that the consumer subjectively feels affinity to WOM providers, compared with the case when the consumer gains EWOMs that the consumer does not feel affinity to EWOM providers. Customers and buyers should remind that sellers might approach to their significant others or friends as potential WOM providers for decision change. The results also imply that probability of decision change is higher when the consumer gains multiple positive comments, than when the consumer gains multiple negative comments. This phenomenon applies to both WOMs and EWOMs. Customers and buyers should care in decision change when they find too many positive EWOMs or suddenly incoming positive WOMs.

Results from Research 4 imply that higher consumer's subjective affinity to WOM provider might lead to higher probability of decision change about product recommendation by adopting WOM, even if the customer had already decided about which product to recommend once. Customers and buyers should care that sellers might approach to their significant others to fortifying WOM providers and EWOM providers who are beneficial to a specific seller.

13.3. Limitations

These researches have some limitations. For example, I adopted very similar methods for some researches because I wanted to show that similar psychological processes might be applicable to multiple phases in consumer purchase behavior. For all researches mentioned above, I made participants imagine decision making or decision change in imaginary situations. Moreover, I made participants imagine multiple situations at one time, though I prepared 2 patterns of situation orders for each research. Participants might make decisions or decision changes influenced by decisions at previous imaginary situations. Participants might unconsciously compare imaginary situations to adjust their decision makings or decision changes. In future studies I might be able to fortify results by gathering new participants for the same questionnaires conducted in researches mentioned above.

As for comparison of conditions, some factors were not exactly opposite. First, positive WOM and EWOM comments directly recommended specific products, but negative WOM and EWOM comments superficially discouraged specific products, not directly recommending specific products. Second, scores of positive EWOMs (4.0/5.0) and negative EWOMs (2.0/5.0) were recognized as positive and negative for majority of participants, but answer distributions were not exactly same. Though 81.3% of participants regarded 4.0/5.0 as positive and 86.7% of participants regarded 2.0/5.0 as negative in the supplemental study of Research 1', maximum negative scores were more dispersed. Third, to simplify comparison of conditions, I made situations that both WOM providers and EWOM providers had no knowledge or experience about the products. However, participants might unconsciously expect some user experience and knowledge about products, especially the case of EWOM providers. It is pretty uncommon that all EWOMs do not contain any useful information based on user experience and product knowledge. In the hearing mentioned above, participants often decide by referring to WOMs and EWOMs with some useful information. Fourth, WOMs and EWOMs were not exactly opposite concepts, and specific images of WOM and EWOM might vary by each participant.

As for decisional process, I excluded some possibilities to simplify the analyses. First, in decision change situations, I made participants to select product A or product B and excluded choice deferral option. In real situations, we often postpone decisions and do not answer immediately. To simplify the analyses, I excluded this option from researches mentioned above. In addition, I had discussed only decision change situations for Comparison/Examination Phase and Share Phase. In future studies, I would like to analyze different situations in Comparison/Examination Phase and Share Phase. Second, I made situations that participants could not gain any EWOMs beforehand, for Comparison/Examination Phase and Share Phase. Considering the hearing results from working and retired adults that they usually start by EWOM gathering when they consider buying something, it is pretty uncommon that consumers do not gain any EWOM beforehand. In future studies, I would like to analyze the decision change situation with incoming WOM contradicting EWOMs beforehand.

If I had analyzed affinity by factors, results of researches mentioned above might have been more robust. I could have analyze results utilizing "degree of affinity", for example. As for affinity, I prepared 3 cases: "a close friend (with whom participants meet and talk once a week)", "a friend

(with whom participants meet and talk once in two months)” and “a family (with whom participants meet and talk once in two months)”. Though I made the distinction between “a close friend” and “a friend” as frequency to meet and talk with, frequency was not the sole factor of affinity. Though we generally meet and talk more with a close friend than a friend, we sometimes have close friends with whom we have not communicate for years and with whom we have maintained affinity as close friends. Though I prepared “a family” as WOM provider with higher affinity than “a friend”, I have not scrutinized why we generally have more affinity to “a family” than to “a friend”. In addition, degree of affinity to “a close friend” and “a family” might be contrastive depending on participants.

Results from the researches mentioned above might depend on product traits such as product categories, price ranges, and online and offline availability. I focused on affinity to WOM provider, instead of focusing on difference by gender, generation, or frequency of e-commerce actions. It was because I wanted to focus on an emotional factor in decision making, but other emotional factors might also play important roles in decision making and decision change. In future studies, I might be able to analyze such differences. For comparing WOM and EWOM influence clearer, I excluded cases of requiring WOMs by showing or referring to existing EWOMs. Such cases are becoming common these days, and I might be able to analyze this matter in future.

13.4. Conclusion

As mentioned in *13.1*, this study suggests things as in below. In a situation that both WOM and EWOM exist and contradict with each other (Search Phase), WOM and EWOM might influence decision making. Subjective affinity to WOM provider might influence degree of WOM and EWOM influence. In addition, subjective affinity to WOM provider might influence ratios of decision makers who adopt less trustworthy opinion they evaluated.

In a decision change situation (Comparison/Examination Phase), subjective affinity to WOM provider might influence WOM trustworthiness, and WOM trustworthiness might influence decision making. In addition, when the external information for the decision change situation was WOMs or EWOMs, subjective affinity to WOM provider might influence WOM trustworthiness, making significant difference in decision making.

In a decision change situation about product recommendation (Share Phase), subjective affinity to WOM provider might influence WOM trustworthiness, and WOM trustworthiness might influence decision making.

As mentioned in 13.2, results from this study can be applied for consumer approaches using WOM and EWOM. On the other hand, consumers can behave cleverer by anticipating such marketing approaches. For example, significant others of target customers can be important if they provide WOMs contradicting existing EWOMs. When sellers do not know whether WOMs are positive or negative, sellers can minimize WOM trustworthiness by providing negative EWOMs. Also, seller can gather positive EWOMs, considering the risks of contradicting WOMs from significant others of target customers. On the other hand, consumers and buyers should anticipate such actions by sellers.

The higher the consumer's subjective affinity to WOM provider, the higher the probability of decision change by adopting WOM, even if the customer had already decided once. Also, probability of decision change increases when the consumer gains WOMs that the consumer subjectively feels affinity to WOM providers, compared with the case when the consumer gains EWOMs that the consumer does not feel affinity to EWOM providers. In addition, higher consumer's subjective affinity to WOM provider might lead to higher probability of decision change about product recommendation by adopting WOM, even if the customer had already decided about which product to recommend once.

As for online review rating (5.0/5.0 as the maximum score and 1.0/5.0 as the minimum score), 4.0/5.0 is the critical point to be recognized as positive by over 80% of customers, and 2.0/5.0 is the critical point to be recognized as negative by over 80% of customers.

I am willing to apply knowledge from this study to real corporate management at my company and at companies that my friends and acquaintances manage. For example, I might be able to help these companies when they suffer from competitors manipulating consumer emotions by abusively using WOMs and EWOMs. Hopefully I will be able to gain further business and psychological knowledge about WOM and EWOM.

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