International Journal of Business Economics and Management Research
Vol. 7, Issue 12, December 2016 Impact Factor: 4.963 ISSN: (2229-4848)
www.skirec.org Email Id: skirec.org@gmail.com

The Impacts of Domain Knowledge and Personal Traits on Decoy Effects

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Abstract

The aim of this study is to investigate how consumers react to decoy effect. Decoy effect is a phenomenon that an option added increases the favorable perceptions of similar, but superior, items in the choice set, which indicates that the preference of people can be changed by adding a decoy option. We then want to realize the impact of those factors on decoy effects, and the intensity of effects.

We employed quota-sampling method and classified the sample by districts in Taiwan and we collected 404 valid questionnaires by web and finished designed sample structure in spring 2016. Empirical results of this study show that domain knowledge and self-confidence significantly attenuates the intensity of decoy effect. We inference that experts do not need to refer the information provided by choice set, and high self-confidence people more likely to trust their own experience in nature.

Key words: decoy effect, attraction effect, domain knowledge, personal traits, decision making
JEL code: M21, M31, M37, M00, D30.

The Impacts of Domain Knowledge and Personal Traits on Decoy Effects

1. Introduction

The aim of this study is to investigate how consumers react to decoy effect; we want to realize the impact of those factors on decoy effects, and the intensity of effects. Decision making happens everywhere and every day. People often experience conflict about how much of one attribute (e.g., price) to trade off in favor of another (e.g., quality). It is critical to make a right choice because the decision you made can be manipulated. People are usually uncertain about the exact consequences of our actions and it may depend on the weather or the state of the economy. That is to say, people's preference can be affect by different circumstances. And, consumer behavior and decision making are interesting subjects not only for their practical uses in marketing, but also for the contributions they bring to the literature of how people choose. Understanding behavior is a better way to design offers than guesswork (Helgadóttir, 2015).

The needs of people are various and unique. To meet the needs, researchers believe that the various sorts and varieties of selection can satisfy more widely of needs. One such assumption is the regularity principle (Luce & Duncan, 1977), which asserts that the addition of a new option to the choice set should not increase the probability of choosing any of the original options. However, the study of has different theory, that is, context effects (Huber, Payne, & Puto, 1982; Huber & Puto, 1983).

We face them many times a day since there is always a context to choose from. In a fast food restaurant, we choose between the single, double, or triple cheeseburger. In an electronics store, we may balance processor speed and weight when we buy a laptop. Every day, our choices are subject to the joint influence of the available alternatives. Not just the alternatives themselves, but also the context provided by the choice set influences what we choose. We choose products that stand out, represent a compromise, or are relatively better than the alternatives (Huber *et al.*, 1982).

Decoy effect is one kind of context effect, refers to the phenomenon that an option added increases the favorable perceptions of similar, but superior, items in the choice set (Bateman, 2008). The added item (decoy) provides a worse trade-off with a similar (target) product, which makes the target item look relatively better, shifting preferences to the target. Context effects are defined as the finding that consumer's choices are influenced by the context that surrounds us, context can also refer as environmental factors in broad sense, but in narrow sense this study used, context effect refers to the composition of the choice set may affect the decision (Doyle, O'Connor, Reynolds, & Bottomley, 1999). Decoy effect also called "attraction effect" or "asymmetric dominance effect" (Health, 1995).

Reference price refers to how much consumers expect to pay for a good in relation to other competitors and the previously advertised price (Ratchford, 2001). Memories of past prices, which consumers have paid in the past for similar products, determine the reference price for a product. Reference prices can be external or internal to memory (Kivetz & Netzer, & Srinivasan, 2004). The Anchoring effect was first theorized by Tversky & Kahneman (1986), they contended that people frequently form estimates by starting with a given, easily available reference value, which could be arbitrary and adjusting from that value. As estimate, therefore, would be "imprinted" to that value. As for Arbitrary coherence, occurs when we are exposed to a price for something and that price sort of sticks (coheres) in our minds. The price can be (and often is) arbitrary, hence the term, but once the price is out there and gets stuck into our heads, we come to expect that price to be the price, and we value things based on this original, somewhat arbitrary set point (Ariely, 2003)..

According to the study of Bearden (2001), self-confidence is defined as the extent to which an individual feels capable and assured with respect to his or her marketplace decisions and behaviors. Bearden also claim that consumer self-confidence reflects one's perceived ability to make effective consume decisions and protect oneself from being misled, deceived or being treated unfairly (Hellén, 2011) Thus, through the external behavior of consumers, self-confidence can also provide a

relatively stable characteristic of self-esteem (Blascovich & Tomaka, 1991).

Self-confident people also tend to ask for a product demonstration, relying on past personal experience, trying the product before buying, or reading the information on the package (Locander & Hermann, 1979). Self-confident people are also considered they have faith in their decision, rarely influenced by others (Wood & Stagner, 1994). Cohen, Stotland, & Wolfe (1955) in their work on individual differences in cognitive motivation, identified a "need for cognition" which they defined as "the individual's need to organize his experience meaningfully", the need to structure relevant situations in meaningful, integrated ways, and "need to understand and make reasonable the experiential world."

Several researchers have considered need for cognition as a person's reactions to demands for effortful thinking in a variety of situations (Cacioppo, Petty, & Morris, 1983; Cacioppo & Petty, 1984). Specifically included items describing a variety of situations in which people could choose to garner information, analyze available evidence, abstract from past experiences. Past research revealed that people high in need for cognition tended to prefer the complex to the simple task whereas people low in need for cognition tended to prefer the simple to the complex task. It also indicates that high in need for cognition individuals are more likely to extract information from and think about externally provided message arguments than low need for cognition individuals (Cacioppo *et al.*, 1983).

In the study of Cacioppo *et al.* (1983), has classified message processing to "make a single selection from a number of options" and to "make an evaluation on each option." Previous research also found that high need for cognition individuals tend to change their optimal in-store purchase decisions because they tend to react to a promotion signal; conversely, low need for cognition individuals remain their choice whether the amount of price reduction offered or not (Mantel & Kardes, 1999). Finally, we defined domain knowledge as valid knowledge or experience in specialized domain field used for consumer decision. Such experience is knowledge in a particular decision making skill, which you have gained because you have done that before (Luo & Toubia, 2015).

In short, there are four aims of our study as follows: (1) To verify how personal traits (self-confidence, need of cognition) affect decoy effect. (2) To verify the relationship between age and decoy effect. (3) To verify the relationship between domain knowledge and decoy effect. (4) To provide the reasoning relationship between different theories. Figure 1 is research framework.

(Figure 1 is here)

2. Literature Review and Hypothesis Setting

In rational choice theories of decision making, irregular choice has been demonstrated in university students using both hypothetical and concrete options (Huber *et al.*, 1982; Tversky & Kahneman, 1986). Inconsistency across similar problems can, for example, result in very great costs to a decision maker, in one demonstration A, B, C corresponded respectively to six dollars in cash, an elegant pen, and a not-so-elegant pen (Simonson & Tversky, 1992). In these circumstances, the proportion of people choosing B was significantly greater in the three alternative group than in the two-alternative group, implying a violation of regularity on the part of many participants (Kim & Hasher, 2005).

At the work of Lichtenstein and Slovic (1973) has shown with both undergraduate students and adult gamblers. It is widely thought that inconsistencies arise in the absence of well-established or preexisting preferences that then allow people to construct them on each occasion. As a result, minor changes in wording of a problem or in alternatives to select from can lead to differences in preferences and so inconsistencies in choice across variants of the same problem (e.g., Payne, Bettman, & Johnson, 1993; Slovic, 1995). As an example, individuals' preferences are known to vary within the exact same set of options when they make a choice (e.g., between Gamble A, 10% chance of earning $ 90, and Gamble B, 90% chance of earning $10), compared to when they make a judgement (e.g., how much would you pay for each of these gambles?). People in the choice

condition are likely to choose Gamble B whereas people in the judgement condition are likely to value Gamble A more highly (e.g., Slovic, 1995). This phenomenon, called preference reversal, is one example of inconsistency in decision making (Kim & Hasher, 2005).

Counter intuitively, the study of Mao (2012) has shown that the attraction effect is more pronounced for consumers who rely heavily on intuitive reasoning in judgment and decision making. In contrast, the attraction effect is equally pronounced for consumers who rely more and those who rely less on rational thinking.

Consumer choices that exhibit systematic dependencies on the alternatives in the choice set violate two assumptions underlying traditional random utility models (RUM). First, such choices are inconsistent with the Independence of Irrelevant Alternatives (IIA) assumption that the relative preference between two options does not depend on the presence of other options (Luce & Duncan, 1977). Second, such choices violate the regularity assumption that enlarging the choice set cannot increase the choice share of an option. The regularity principle is applicable only if adding the third product (like Cheerios) does not provide new information about the original options. Thus, the switch from Corn Flakes to Wheaties cannot be faulted if the introduction of Cheerios provides evidence of a nutritional defect in Corn Flakes.

Previous work indicated that older people's choice performance can be wiser than that of younger people (Tentoria, Oshersonb, Hasherc, & May, 2001). We contrasted two possible interpretations: a general view that suggests that older adults are generally more skilled or experienced at making decisions than younger people and a domain-specific expertise view that suggests that older people are more skilled decision makers only in domains in which they have greater knowledge (Kim & Hasher, 2005).

However, researches on aging-related changes in decision making report mixed results. Some decision-making skills decline with age, while others remain unchanged or improve. Because fluid cognitive ability (e.g., reasoning, problem solving) deteriorates with age, older adults should perform worse on decision-making tasks that tap fluid cognitive ability (Shafir, Waite, & Smith, 2002). However, the performance on some decision-making tasks may require experience, which increases with age. On those tasks, older adults should perform at least as well as younger adults. These two patterns emerged in correlations between age and component tasks of adult decision-making competence (A-DMC), after controlling for fluid cognitive ability, age becomes a proxy for experience. These results suggest that experience plays no role in performing the first set of tasks, and some role in performing the second set of tasks (Trueblood, 2013). Although not all decision-making tasks showed age-related declines in performance, older adults perceived themselves as worse decision makers. Self-ratings of decision-making competence were related to fluid cognitive ability and to decision-making skills that decreased with age but not to decision-making skills that increased with age (De Bruin, Parker, & Fischhoff, 2012).

In many situations, people make estimates by starting from an initial value that is adjusted to yield the final answer. The initial value, or starting point, may be anchored in their mind, this defined as anchoring effect. The anchoring effect (Tversky & Kahneman, 1986) refers to the adjustment a decision maker carries out based on information presented to him. For example, if a person must make a decision about whether the guy is taller or shorter than 180 cm, he will use the figure of 180cm as a reference point in coming to make a conclusion. Behavioral scientists call the numerical figure that people use to make decisions an anchor.

The reference price effect (Kalyanaram & Winer, 1995) can be defined as any price in relation to which other prices are seen. Reference prices can be external or internal to memory. External reference prices can be provided to consumers through channels such as advertising, catalog listings, and consumer price guides. Internal reference prices are those stored in the consumer's memory. When buying goods consumers give importance to comparing the price of the good with a "reference price" the price that they would usually expect to pay or the price they think the goods is

worth using all previous data.

The core concepts of these two theories are very similar. In the reference price theory the internal reference price they memorized is where the value imprinted. These theories indicated that people do not know how much things are worth to them, an anchor helps them decide. Once a value is set, people are good at setting relative values. Therefore, decoy effect can be theorized by such, when you add a new decoy option, it will also set an anchor in your mind when you first facing the choice set, the anchor will becomes your reference point (price), and once anchor was set, you will use that reference point to evaluate the other. The results of Hess & Queen (2013) support the notion that older adults are adaptive decision makers and that factors other than age may be more important determinants of performance in situations where knowledge can be used to support performance.

The domain specific knowledge can also considered experience as anchor point, internal reference price. It will be memorized and can help people make a decision. If people have a firmly anchor point, it is difficult to change them by the new anchor, external reference price, which is the decoy option we added. That is, we purpose the H1 and H2 hypothesis as follows:

H1: As age growing, influence of decoy effect attenuates.

H2: Domain knowledge negatively influences decoy effect.

Consumer self-confidence is defined as the extent to which an individual feels capable and assured with respect to his or her marketplace decisions and behaviors (Bearden, 2001). According to the study of Locander & Hermann (1979), "self-confident people tend to ask for a product demonstration, relying on past personal experience, trying the product before buying, or reading the information on the package." This quote also implied that the self-confident people tend to make a estimation by internal reference price in their mind, instead of external reference price, as previously mentioned, internal reference price can also considered as an anchor in people's mind. Self-confident people are considered to have faith in their decision, rarely influenced by others (Wood & Stagner, 1994). It also confirms that self-confident people are more likely to reference to their own experience rather than external factors.

This study measure the extent of self-confidence by whether people are confident with the decisions they made or not. Therefore, we make the following inference: Since self-confident people are more certain on their own judgment, and less susceptible to external factors influence, hence we assume that the decision relatively unaffected by added decoy option, therefore, the decoy effect will be less obvious. That is, we purpose the H3 hypothesis as follows:

H3: Self-confidence negatively influences decoy effect.

The literature studied by Cacioppo *et al.* (1983) indicates that "the extent of individuals" need for cognition is the main reason which affects individuals to processing message. This study further inference that when high in need for cognition individuals facing different price information, they tend to ponder the content of information, observe the details and properties of product more clearly. The study of Mantel & Kardes (1999) indicates that "in preference judgments," they are more likely to have the attribute information accessible from memory and more likely to engage in attribute-based processing than are their low need for cognition counterparts. Thus, it appears that message elaboration and need for cognition can shape the decision process by influencing how information is encoded, stored in memory, and used in making a preference judgment." This also confirms our contention.

Previous research also found that not only the amount of information search differs, but also searching ways is different in decision making (Cacioppo *et al.*, 1983). To make a single choice, high need for cognition individuals searching for a relatively large amount of information, and the search way will be the attributes comparison between different options. When individuals with high in need

for cognition want to evaluate each option, they will think the attributes of each option in order to make an overall evaluation. We can simply sum up by this assertion, self-confident individuals tend to refer the internal experiences more, while high in need for cognition individuals tend to refer external information more.

In this study, we require consumers to make a single choice in multiple options. The high need for cognition individuals will consider each attribute of options carefully to make an overall judgment; this makes them easily affected by the decoy effect, namely intensifying decoy effect. On the contrary, according to the study of (Mantel & Kardes, 1999), one with low on the need for cognition will be less likely to use attribute-based processing during preference formation, and thus will be less likely to be influenced by the direction of comparison. That is, we purpose the H4 hypothesis as follows:

H4: Need for cognition positively influences decoy effect.

3. Methodology

This study distinguishes variable need for cognition into two groups, high in need for cognition and low in need for cognition, to verify whether personal traits (self-confidence and need for cognition) and domain knowledge will influence decoy effect or not. This study also verifies the intensity of effects and the causality between variables and results. We will also provide a theorized reasoning process for how it works. Note that there are many classification ways of personal traits, however, this study choose self-confidence and need for cognition to discuss in depth, because researcher consider these two personal traits can obviously influence decoy effect.

The decoy effect is typically measured by comparing the relative shares of choice alternatives between the core and the extended sets. Thus, if $\mathrm{P(A;B)}$ is the share of A relative to option B in a selection made from the set {A, B}, then $\mathrm{P_C(A;B)}$ is the share of A relative to B and C in options made from the set {A, B, C}, where

$$\mathrm{P_c(A;B)} = \frac{\mathrm{P(A;B,C)}}{\mathrm{P(A;B,C)+P(B;A,C)}} \qquad (1)$$

Consistent with prior research, the decoy effect is measured in terms of the changes in the relative share associated with adding a decoy alternative to the choice set, as given by

$$\Delta\mathrm{P_A} = \mathrm{P_C(A;B)} - \mathrm{P(A;B)} \qquad (2)$$

$\mathrm{i.e.,}\Delta\mathrm{P_A}$ represents decoy effect, which means after adding decoy option, the shares change from selection B made to selection A made. $\mathrm{P(A;B)}$ is the share of A relative to option B in a selection made from the set {A, B}, and $\mathrm{P_C(A;B,C)}$ is the share of A relative to B and C in options made from the set {A, B, C}. The measurement is according to the researches of Simonson (2003) and Chernev (2004). This measure was used to examine differences after adding the decoy option (Hedgcock & Rao, 2009). In the study of decoy effect, it is to be noted that the choice set with two alternatives called core set, and the choice with three alternatives is called extended set.

As to domain knowledge ratings, as an approximate index of domain-specific expertise, we assessed knowledge about decision domains for a subset of participants using four questions. These were adopted from (Mitchell & Dacin, 1996; Mishra, Umesh, & Stem, 1993; Ratneshwar, Shocker, & Stewart, 1987; Sen, 1998).

In data collection and sampling design, before carrying out a formal questionnaire in this study, we have employed a pre-test to conduct to make sure that the validness of measurement was adapted for the study. Our main survey area is whole Taiwan by web questionnaire. Our study employs quota-sampling method and classifies the sample by districts in Taiwan. We then distribute 426 formal questionnaires and proposed designed sample structure.

For research design, to calculate the decoy effect, this study should use within-subjects study. There will be a problem, if subjects do questionnaire with both core set and extended set continuously. This is because that the similarity of choice set and avoid of cognitive dissonance, it will make subjects insist to choose same option no matter how options change. This caused the error

in calculation of decoy effect.

In order to avoid problem of common method variance, one kind of error in quantitative research, this study uses between-subjects study instead. This way demands more samples and the classification of questionnaire, but it can avoid the problem of common method variance and decrease the questions of subjects have to answer. It will increase the accuracy they answered, too.

The design of questionnaire is separate all individuals to two sample sets, core set and extended set, each of them will answer same questionnaire except this question: case in the internet access charge for different rates (Table 1). Amongst, this price is adopted from Chunghwa Telecom's pricing, only program A is a little bit expensive in the real world, to make it more attractive in core set and to make decoy effect more pronounced in comparison. In reality, program B of extended set does not exist.

(Table 1 is here)

4. Empirical Results

Demographic data was categorized as gender, age, area, education level and income level. We send out 426 questionnaires and we collect 404 valid questionnaires as our formal test sample in spring 2016. From Table 2, it presents the percentage of male and female are respectively 53.2 percent and 46.8 percent. The age is mostly located at 21-30 years old which occupies 54.7 percent. As for the region, the north region gets the largest portion 53.5 percent, and then the south region gets 26.0 percent.

(Table 2 is here)

One-way ANOVA was used to examine if there is difference between levels of factors. The factors are the demographic elements this study discussed before, which are gender, age, area. Here, we find that three p-values (0.779, 0.312, 0.557) are larger than 0.05 and we conclude that there are no difference exists between decoy effect and three types of factor.

Additionally, we employ Cronbach's α to judge the reliability of the questionnaire. If the composite reliability is larger than 0.6, it indicates an acceptable fit of the data. We compute that the Cronbach's α of domain knowledge, self-confidence, need for cognition are 0.907, 0.722, and 0.862, respectively. As to the five construct within self-confidence, they are 0.824 (personal outcomes decision making), 0.807 (information acquisition), 0.716 (consideration-set formation), 0.780 (persuasion knowledge), and 0.723 (marketplace interfaces), respectively. All of them pass our criteria of reliability analysis, so we can conclude our measurement holds internal consistency.

Furthermore, we can conduct independent-sample T test to examine whether there is attraction or not in this study. We can compute that F statistics is 67.695 and Significant level is 0.000, which is smaller than 0.005, thus, we conclude that the decoy effect has significantly emerged. Next, we can capture the intensity of decoy effects from Table 3. we can find that there are 27.6 percent people's preference has been changed if we add the decoy option. Thus, we can compute that the decoy effect as the change in their preference, and it can be viewed as people are affected by the decoy effect.

(Table 3 is here)

We further employ binary logistic regression to examine if the variables influences decoy effects or not. Table 4 lists the results. Dependent variable Y is divided into "choose A" and "choose C;" independent variable χ are DK (domain knowledge), SC (self-confidence), NC (need for cognition) and age (6-point scale anchored by "not agree at all" and "Strongly agree"), respectively. The decoy effects can be examined by the cross interaction item, such as DK*set to capture how domain knowledge influences decoy effects. From Table 4, we can find out that domain knowledge and self-confidence has significant effect on decoy effects.

(Table 4 is here)

Previous likelihood chi-square test can only test the significance of independent variable and this study uses the following equation to test the direction and intensity of effects.

$$Y = \beta_0 + \beta_1\chi_1 + \beta_1^{'}D\chi_1 + \beta_2\chi_2 + \beta_2^{'}D\chi_2 + \beta_3\chi_3 + \beta_3^{'}D\chi_3 + \beta_4\chi_4 + \beta_4^{'}D\chi_4 \quad (3)$$

Where $Y = \text{Option selected}$, $\chi_1 = \text{Domain Knowledge}$, $\chi_2 = \text{Self Confidence}$, $\chi_3 = \text{Need for cognition}$, $\chi_4 = \text{age}$, $D = \text{Dummy Variable(Set)}$.

Based on our study, we have found out that two of four Independent variables have significant effect on decoy effects; namely, Domain knowledge and self confidence will significantly attenuate the intensity of decoy effect. This study further examines their strength on decoy effect reduction (Table 5). It shows that high domain-knowledge people are less affected by the decoy effect if we divide all the samples into two groups by the median of its independent variable. It also shows that self-confident people are less affected by the decoy effect than non-confident people. We have also found out that DK has stronger decoy effect reduction, 8% low DK versus 16% high DK, than that of SC, 12% non-confident versus 18% self-confident.

(Table 5 is here)

5. Discussion and Conclusion

This study focuses on the question: What makes the decoy effect stronger? What makes it go away? Here is the following result. For hypothesis 1**,** the hypothesis 1 is rejected due to lack of evidence. However, it does not vital in this study, because age can be viewed as a proxy variable for experience, knowledge, etc. After all, variable age lack of substantial meaning, this study also shows the result in contrast with previous researchers' conclusion: influence of age on decoy effect is not significant.

For hypothesis 2, the hypothesis 2 is not rejected so we can conclude that domain knowledge significantly attenuates the intensity of decoy effect. We have found that when the decoy option is presented, domain knowledge attenuates the beneficial effect of an asymmetrically dominated decoy on consumers' preference for the target.

The findings of this study suggest that experts are able to make better sense than novices of the implications of each item of attributes information for choice. This is because that the novices are more likely to refer the information provided by choice set and thus making a decision by comparison. On the contrary, experts can draw on their category-specific knowledge structures to better visualize the useful experience corresponding to each item and then evaluate the options' overall desirability independent of the choice. This is consistent with Ratneshwar *et al.* (1987) and Sen (1998) finding that when all subjects possess a relatively high level of knowledge about a product category, such as beer, information does not stimulate them to change their choice.

For hypothesis 3, the hypothesis 3 is not rejected either; we can conclude that self-confidence significantly attenuates the intensity of decoy effect. An explanation for the better performance shown here by self-confident people than non-confident people might be self-confident people are more likely to refer the experience from themselves rather than external information provided by choice set, which means external information is relatively meaningless to them. This study finds that self-confidence helps counteract decoy effect,

For hypothesis 4, the hypothesis 4 is rejected, here is the probable explanations: the original inference is that high in need for cognition tends to make more effort and research before a decision made, and it will make them more easier to fall into the trap, but actually that might just one kind of characteristics of those who gets high score in scale of need for cognition, researcher conjecture that people high in need for cognition might also have characteristics will make them thinking more logical, not only just compare the attributes of the options, but also wonder that how much value does it worth to pay.

Last but not the least, according to the empirical results of our research, these studies arrange

the main finding and address the follow suggestions in this section for further researches. Decision making can be different from involvement. The time you spend and the attention you pay might depend on how big the decision is. Considering involvement is one kind of decision factor, it sounds reasonable to influence decision bias.

To dig into the relationship between domain knowledge and decoy effect, this study showed different results comparison with previous researches. Moreover, knowing what makes it happened might have some interesting findings. Since inferences about subjects' decision processes were drawn from their information acquisition ways, further research might be directed to numerically define how close the option to be to make subjects feel alike. Furthermore, the intensity of decoy effect might differ on same individual towards different industries? Previous studies have shown that existence and direction of decoy effect are consistent, here quoted from Mishra *et al.* (1993) "The overall results were consistent across product classes studied, which included beer, cars, and TV sets." This study was restrained by the time restriction, and we only collected 404 questionnaires. Under the situation of enough time, 600 to 1000 questionnaires could effectively decrease the bias happened. Additionally, this study's subjects are mainly sampling from age between 20 and 30, which is different from the overall population structure. As a consequence, this study somehow cannot entirely represent the whole population.

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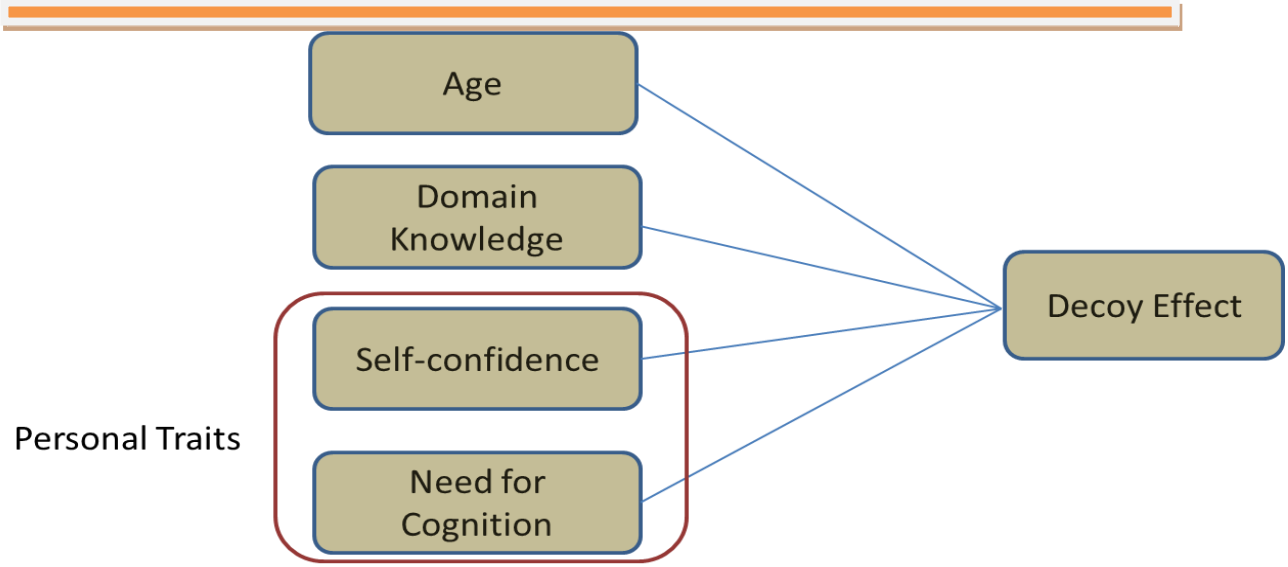

Figure 1 Research Framework

Table 1 Core Set and Extended Set

Core set	Download/Upload	Internet access charge	Circuit fee	Total$
A	20M/5M	$365	$375	$740
B	60M/20M	$459	$476	$935
Extended set	Download/Upload	Internet access charge	Circuit fee	Total$
A	20M/5M	$540	$200	$740
B	40M/8M	$726	$200	$926
C	60M/20M	$935	free	$935

Table 2 Demographic Characteristics of the Sample

Characteristics	Definition	Count	Percentage (%)	Cumulative Percentage (%)
Gender	Female	215	53.2	53.2
	Male	189	46.8	100.0
Age	Below 20 years-old	126	31.2	31.2
	21-30years-old	221	54.7	85.9
	31-40years-old	30	7.2	93.1
	Above 41 years-old	27	6.9	100
Area	North region	216	53.5	53.5
	Middle region	68	16.8	70.3
	South region	105	26.0	96.3
	East region	11	2.7	99.0
	Outlying islands	4	1.0	100.0
Total		404	100	100.0

Table 3 Decoy Effect Calculation

Set	Choose A	Choose B(C in Extended)	Choose A%	Choose B%(C in Extended)	Decoy Effect
Core(AB)	97	91	51.6%	48.4%	27.6%
Extended(ABC)	52	164	24%	76%	

Table 4 Likelihood Chi square Test: Binary Logistic Regression

Variable	Constructions	β	Wald	Sig.
Age*Set		-.018	.970	.325
DK*Set		-.629	11.099	.001***
SC*Set		4.981	4.909	.027**
	Personal Outcomes Decision Making*set	-2.245	7.164	.007**
	Information Acquisition*set	-.965	2.116	.146
	Consideration-Set Formation*set	-.593	1.392	.238
	Persuasion Knowledge*set	-.662	3.690	.055
	Marketplace Interfaces*set	-.376	1.126	.289
NC*Set		.199	.700	1.220
Intercept		1.146	52.573	.000

Table 5 Likelihood Chi square Test—Full Model

Variables	β	S.E.	Wald	df	Sig.
Intercept (β_0)	.570	.868	.431	1	.511
Domain Knowledge (β_1)	-.168	.186	.816	1	.366
Self Confidence (β_2)	-.450	.290	2.400	1	.121
SCMpodm	-1.272	.879	2.092	1	.148
SCia	-1.210	.732	2.731	1	.098
SCcsf	-.878	.458	3.672	1	.055
SCpk	-.572	.396	2.094	1	.148
SCmi	-.569	.319	3.176	1	.075
Need for cognition (β_3)	-.154	.260	.349	1	.555
Age (β_4)	-.015	.018	.694	1	.405
Domain Knowledge (β'_1)	-.454	.269	2.849	1	.091
Self-confidence (β'_2)	-.366	.361	1.026	1	.311
SCpodm	-2.183	.842	6.719	1	.010
SCia	-.909	.673	1.826	1	.177
SCcsf	-.550	.518	1.127	1	.288
SCpk	-.636	.351	3.283	1	.070
SCmi	-.353	.354	.996	1	.318

Need for cognition (β_3')	4.356	2.276	3.664	1	.056
Age(β_4')	-.002	.026	.004	1	.951