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Can a Decoy Affect Consumer's Decision Process? A Case on Multi-Stage Decision Making Model

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Abstract

A decoy is an object which supposedly has an advantage. When a decision making was still in process, could a decoy influence and alter the decision? Particularly did it influence universal set, retrieval set, consideration set and choice? The study purported to explore the effect of a decoy in multi-stage decision making when the process was still lasting. A sample consisting of 125 graduate and post-graduate students was withdrawn through judgment and convenience technique. Data submitted by questionnaires, employing Likert scale, ranging from 1= completely disagree to 5= completely agree. An Amos 22.0 and SPSS 21.0 were exercised to analyze data. The finding showed that there was an effect of a decoy on universal set and retrieval set. In addition, there was an influence of retrieval set on consideration set and consideration set on choice.

Keywords: *universal set, retrieval set, consideration set, choice.*

1. Introduction

A decoy is an interesting alternative that leads a decision making be more difficult (Herne, 1997; Wikipedia, 2013). The study of Hedgcock and Rao (2009) find that an existence of a decoywill give a trouble in existing decision making. Supposed the decision is going to take a particular alternative between two, but the decision thenshould be further considered when a decoy is arising. However, Hedgcock and Rao donot clarifywhat kind of decision making is, and how.

Studies denote that a decision might change under particular situation. Firstly, studies of Simonson, 1989; Simonson & Tversky, 1992; Huber, Payne& Puto,1982; Huber & Puto,1983; Ratneshwar, Shocker & Stewart, 1987; Kardes *et al*.,1989;Lehman& Pan, 1994; Sivakumar. &Cherian, 1995;Lianxi *et al.*, 1996;Doyle *et al*.1999; Kim & Hasher, 2005; Kohler, 2007;Santosa (2009a; 2011; 2015a); Won, 2012; Howes *et al.*, 2016;Gluth*et al.*, 2017). The decision making refers to cognitive learning theory model (CLT), complex decision making model CDM) and theory of planned behavior (TPB). These researches proclaim that the change of decision is under control of attraction effect.

Secondly, studies of Simonson, 1989; Pan & Lehman, 1993; Lehman & Pan, 1994; Simonson &Tversky, 1992, Herne, 1997; Santosa, 2003; 2005; 2006; 2009a; Dhar & Simonson, 2003; Pechtl, 2009; Lichters *et al.,* 2016; Shideler & Pierce, 2016; Godinho *et al.*, 2016; Pinger *et al.,* 2016; Bhatia & Mullet, 2016. The decision making refers as well to cognitive learning theory model (CLT), complex decision making model CDM) and theory of planned behavior (TPB). These researches declare that the change of decision is under control of compromise effect.

Thirdly, studies of Martin, Seta & Crelia (1990); Sherman *et al*. (1978); Carpenter & Nakamoto

(1989); Sujan & Bettman (1989); Herr, Sherman & Fazio (1983); Strack, Schwarz &Gschneidinger (1985); Herr (1986; 1989); Lombardi, Higgins &Bargh (1987); Manis, Nelson &Shedler (1988); Shimp, Stuart & Engle (1991); Lynch, Chakravarti & Mitra (1991); Meyers-Levy &Sternthal (1993); Bickart (1993); Lehmann & Pan (1994); Raghunathan & Irwin (2001); Ghoshal *et al (*2012); Santosa (2006; 2009a). The decision making also refers to cognitive learning theory model (CLT), complex decision making model CDM) and theory of planned behavior (TPB). These researches pronounce that the change of decision is under control of assimilation/categorization effect.

The multi-stage decision making which is popularized by Kardes *et al.* (1993) is one of several decision making models developed in customer behavior theories. Studies on customer behavior indicate that the model is not so popular. In fact, though concerning with multi-stage decision making, the version is different. For instances, Johnson, Busemeyer and Jerome (2001), Bruyn & Lilien (2008); Tamosaitiene & Zavadskas. (2013); Mousavi. Ebrahimnejad. Moghaddam and Amiri. (2013), they likely develop their own model. So, the multi-stage model employed on their studies is different from one to another and so is Kardes *et al.* (1993) version. As a matter of fact, studies employing Kardes *et al.* (1993) model are not many. There are two studies of Santosa which each explores context effect (2009a) and high low product (2021) on multi-stage decision making.

Referring to the factors which have power to change the decision, an interesting question then arises, can a decoy which is not classified to those factors, have a capability to alter a decision? This question is obviously the aim of the study. This study is likely different to others in some aspects, such as, the decoy is supposedly free of attraction, compromise and assimilation/categorization effect. Secondly, the decision making model is multi-stage model.

2. Literature Review and Hypotheses

2.1. Multi-stage Decision Making Model (Kardes *et al.* 1993)

While cognitive learning theory model and complex decision making model refer to cognitive, attitudinal and behavioral approach, multi-stage model is developed on memorial based. The idea is firstly founded by Shocker *et al.* (1991) and popularized by Kardes *et al.* (1993). The model consists of 4 steps which is sequential, that are universal set, retrieval set, consideration set and choice. Actually some researches such as Alba & Chattopadhyay, 1985, 1986; Alba & Hutchinson, 1987; Brown & Wildt, 1992; Hauser & Wernerfelt, 1990; Lehman & Pan, 1994; Nedungadi, 1990; Pan & Lehmann, 1993; and Robert & Lattin, 1991 have the same idea about memory based. However, they likely focus on consideration set. The concept of memory based decision making itself denotes to decision making which deduced from information saved on memory (Lynch & Srull in Kardes, 2002).

The universal set consists of all brands that are available in the market place. Not all brands are successful to be retrieved. It might happen as a consumer is not so familiar with the brands, and they are stored in long-term memory, in which they are difficult to be recovered. So, the retrieval set consequently is smaller than the first. The process later on is screening, selecting and squeezing in consideration set. Alternatives are evaluated and revised to be a little bit option. The option that is successful considered, is the choice (Fig.1).

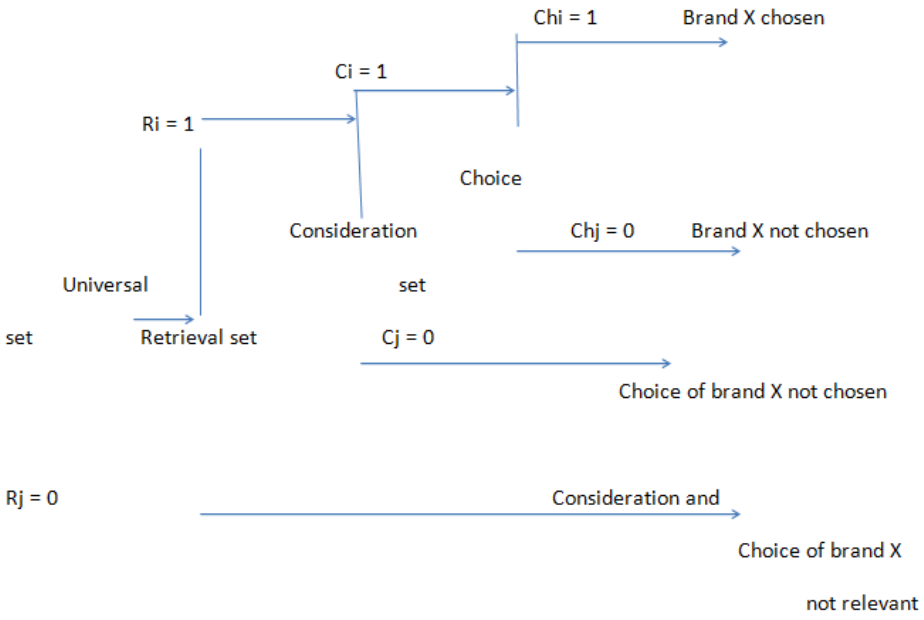

Figure 1 Kardes *et al.*'s Multi-Stage Model

Source: Kardes *et al.* Brand Retrieval, Consideration Set, Composition, Consumer Choice, and the Pioneering Advantage. *Journal of Consumer Research*. 20. June. 1993. p. 64

As shown in Fig. 1, not all products available in the market captured and stored in consumers' memory, in which only few successfully retrieved. If particular product does not appear in the retrieval set, it will not be emerged in the consideration set. That means it is impossible to be a choice. In other word, a particular product that is not successfully retrieved is irrelevant with consideration and choice. On the other hand, a particular product that appears in the retrieval set does not assure be considered, likewise be chosen. As a consequence, a choice is a particular product that is successfully retrieved and considered.

2.2 Hypotheses

Hypotheses that will be exercised in this study are as follows:

H1:	There is an effect of decoy on universal set
H2;	There is an effect of decoy on retrieval set
H3:	There is an effect of decoy on consideration set
H4:	There is an effect of decoy on choice
H5:	There is an effect of universal set on retrieval set
H6:	There is an effect of retrieval set on consideration set

H7:	There is an effect of consideration set on choice

2.3. Research Model

Based on the hypotheses proposed, a research model could be drawn as at Fig. 2.

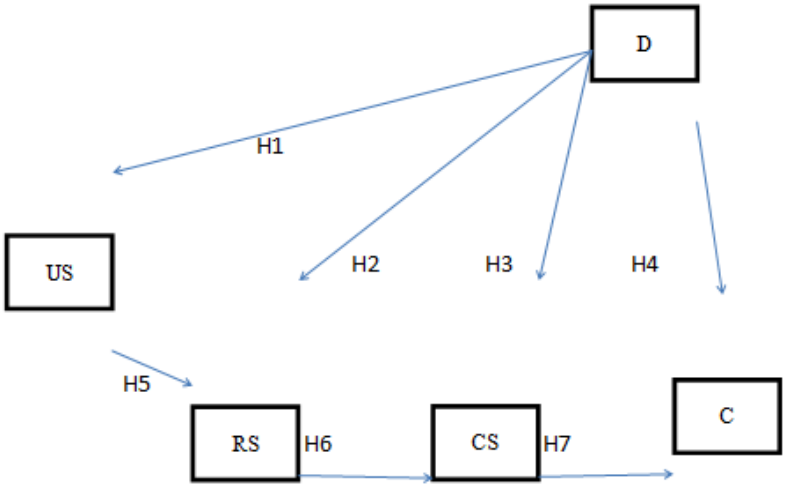

Figure 2 Research Model

US	:	Universal set
RS	:	Retrieval set
CS	:	Consideration set
C	:	Choice
D	:	Decoy

3. Methods

A sample iswithdrawn through convenience and judgment technique (Cooper & Schindler, 2008). Data collected by questionnaires, distributed to respondents who whether have bought a printer or are familiar with printer brands. In addition, during the study is carried out they pursue graduate or post-graduate program. After being examined based on data completion, 125 questionnaire forms are successfully admitted out of 130 forms (96.15% response rate), which supposed meet the sample adequacy (Ghozali, 2008; Hair *et al.*, 2019) and liable to be further administered. The Likert scale is

operated corresponding to a five-point scale ranging from 1 (= completely disagree) to 5 (= completely agree). Data are analyzed by employing Amos 22.0.

4. Analysis and Result

a Test of Validity

Identifying factor loading of indicators a confirmatory factor analysis (CFA) is employed (Fig3, Fig 4). The result is as follows:

The confirmatory factor analysis of US and RS produces output as follows: factor loadings of indicators US1, US2, US3. RS1, RS2 and RS3 are valid, since they are more than 0.4 (Ferdinand, 2006) (Table 1). The CFA of CS, C and D generates factor loadings of CS1, CS3, CS4, CS5, C2, C3, and C4. C5, D1, D2, D4, D5 and D7 are valid since they are over than 0.4. On the contrary indicators CS2, CS6, C1, C6, C7, D3 and D8 are not valid (Ferdinand, 2006) (Table 1).

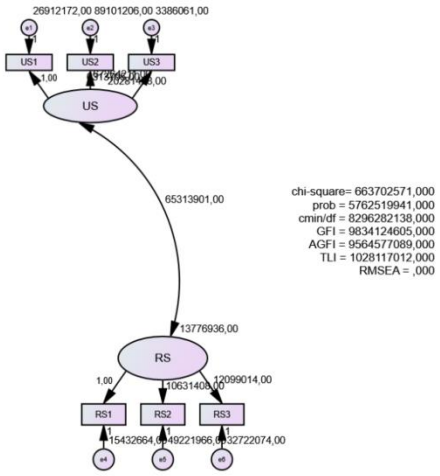

Figure 3 CFA of US and RS

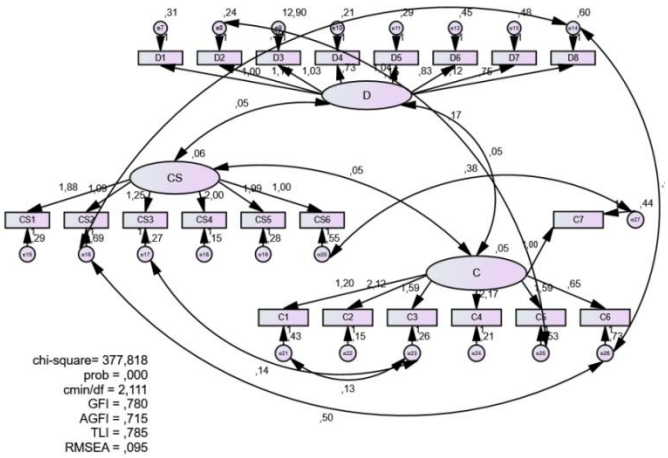

Figure 4 CFA of CS, C and D

Table 1 Factor Loading of US1, US2, US3, RS1, RS2, RS3, CS1, CS2, CS4, CS5, CS6, C1, C1, C2, C3, C4, C4, C5, C7, D1, D2, D3, D4, D5, D6, D7, D8

Indicator	Factor Loading	Cut-off	Criteria
US1	0.656	0,4	Valid
US2	0.712	0,4	Valid
US3	0.439	0,4	Valid
RS1	0.618	0,4	Valid
RS2	0.490	0,4	Valid
RS3	0.687	0,4	Valid
CS1	0,643	0,4	Valid
CS2	0,299	0,4	Not Valid
CS3	0,498	0,4	Valid
CS4	0,780	0,4	Valid
CS5	0,672	0,4	Valid
CS6	0,306	0,4	Not Valid
C1	0,391	0,4	Not Valid

C2	0,783	0,4	Valid
C3	0,584	0,4	Valid
C4	0,740	0,4	Valid
C5	0,450	0,4	Valid
C6	0,173	0,4	Not Valid
C7	0,327	0,4	Not Valid
D1	0,565	0,4	Valid
D2	0,659	0,4	Valid
D3	0,108	0,4	Not Valid
D4	0,516	0,4	Valid
D5	0,592	0,4	Valid
D6	0,427	0,4	Valid
D7	0.523	0,4	Valid
D8	0,346	0,4	Not Valid

Source: Amos output

B. Test of Reliability

Employing Cronbach's alpha test, the result shows that variables US, RS, CS, C and D more than 0.6. So they are justified as reliable (Ghozali, 2011) (Table 2).

Table 2 Reliability of Variables

Variables	Cronbach's α	Cut-off Point	Justification
US	0.698	0.6	Reliable
RS	0.604	0.6	Reliable
CS	0.744	0.6	Reliable
C	0.675	0.6	Reliable
D	0.705	0.6	Reliable

Source: Data analysis.

C. Test of Hypotheses

Firstly, a model of structural equation modeling (SEM) is drawn. Its indicators likely meet a goodness of fit criteria (Figure 5).

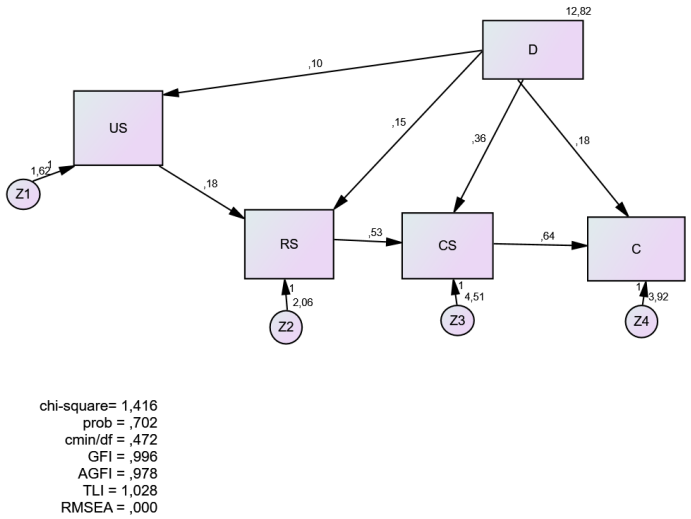

Figure 5 The SEM Model

Table 3 Regression Weight among Variables

			Estimate	S.E	C.R	P	Label
US	<---	D	0.097	0.032	3.037	0.002	par_1
RS	<---	D	0.146	0.037	3.928	***	par_2
RS	<---	US	0.184	0.101	1.817	0.069	par_5
CS	<---	D	0.360	0.057	6.262	***	par_3
CS	<---	RS	0.525	0.131	4.000	***	par_6
C	<---	D	0.182	0.061	2.996	0.003	par_4
C	<---	CS	0.641	0.079	8.141	***	par_7

Source: Data Analysis

The influences of D to US, RS, CS and C are significant (p = 0.002; p = 0.000; p=0.000; p=0.003). Likewise, the influences of US to RS (p= 0.069), RS to CS (p = 0.000), CS to C (p = 0.000). The probability

of US to RS is more than 0.05, but under 0.10; since it is allowed to stretch the base of significance to be 0.10 the influence of US to RS is consequently included to be significant as well (Table 3). Accordingly H1, H2, H3, H4, H5, H6 and H7 are supported.

4. Discussion

The influences of D to US, RS, CS and C are significant. It is in accordance with what has been hypothesized. Actually, the formulation of the hypotheses is based on idea that the decoy looks like something forgotten, but always shadows during the decision process.

The significant effects of US to RS, RS to CS and CS to C are in line with the theory of Kardes *et al.* (1993). In addition, they support Santosa's finding (2021) as well.

5. Conclusion and Implication

The multi-stage decision making is really a multi-step of making a decision. It denotes to the strength of memory, since the decision does not detach from whatever stored in memory. A brand that will be a choice is initialized in universal set, in which it is successfully retrieved. The potential choice is likely powerful and enables to control the consideration. However, it looks clear that the choice and other alternatives come from within. When a new alternative come from outside, in which it has a power as well to be taken into account, the real choice might be different from origin.

The finding likely gives a way to marketers in selling their product. Companies should always be aware to watch any motion in market. Any new product introduced from competitors should be always monitored, what the strength of the product, how its sale, how its pricing strategy, how its promotion strategy, etc. It is suggested that the marketing department has a special chamber of competing intelligence. It inevitable develops intense cooperation with R & D department, which is ready to launch a superior product. Eventhough the market has been directed to always regard to focal products, a particular superior product might change the consideration.

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