

DECOY EFFECT, COGNITIVE LOAD, AND POSITIVE EMOTION ON PURCHASE INTENTION: IPHONE 14 CASE STUDY

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ABSTRACT

Understanding the psychological factors that influence consumer behavior is essential for enhancing purchase intentions. This study examines the impact of positive emotion as a mediator between purchase intention and cognitive load, also known as the decoy effect. Utilizing a quantitative methodology, data were collected using a questionnaire and analyzed with the PLS-SEM technique using SmartPLS. A purposive sampling method yielded 129 respondents, all of whom used an iPhone 14, for this study. The findings indicate that the decoy effect and cognitive load have a significant impact on purchase intention when mediated by positive emotion. These results underscore the importance of minimizing cognitive load and leveraging the decoy effect in marketing practices.

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INTRODUCTION

Consumer behavior refers to the process by which a person evaluates their need to purchase, evaluate, or dispose of products or services (Di Crosta et al., 2021). This process is influenced by various economic, social, and psychological factors (Kotler, 1968). One of the psychological factors that plays a crucial role in shaping consumer preferences and decisions is emotion, which often guides choices and evaluations (Zhou & Tong, 2022; Al-Aziz & Metawie, 2022; Pelegrín-Borondo et al., 2020). Understanding these factors and behaviors is essential for marketers seeking

to tailor strategies to meet consumer needs (Yunus, 2023; Cai, 2023), change consumer demands (Arenas-Gaitán et al., 2019), and improve profit or sales (Zhao et al., 2021; Zhang, 2022). As consumer preferences evolve, continuous research is necessary for businesses to adapt their strategies and effectively influence their target consumers, particularly in light of current technological advancements (Malter et al., 2020).

Over the years, the analysis of consumer behavior has evolved, incorporating multiple theoretical frameworks to understand further the interplay between rational and emotional

decision-making processes. These theories explore both rational and emotional aspects, some of which include the Theory of Planned Behavior (e.g., Widayat et al., 2021; Amoako et al., 2020; Moon, 2021; Yarimoglu & Gunay, 2019), Kotler-Armstrong Theory (Rusliani et al., 2022), and Prospect Theory (Sung et al., 2023; Wu et al., 2020; Leung & Cai, 2021). Researchers emphasize the importance of integrating multiple theories in the study of consumer behavior (Zhang, 2020; Jayawardena et al., 2022), which aims to capture the complexity of consumer behavior from various perspectives. These theories and frameworks provide valuable tools for understanding the complex nature of consumer behavior, particularly in its psychological aspects. One such psychological aspect is cognitive load, which plays a crucial role in influencing a person's emotions (Guo et al., 2022; Mehrotra & Gunalakshmi, 2020).

Cognitive load refers to how much load is imposed on a person's cognitive system when performing a particular task (Guo et al., 2022; Mehrotra & Gunalakshmi, 2020; Skulmowski & Xu, 2021). This psychological aspect can make decision-making more difficult (Liu et al., 2020; McCarty et al., 2021), leading consumers to rely on heuristics as a shortcut to decision-making (Brunyé et al., 2018). The decoy effect can cause one such heuristic or shortcut. The decoy effect is a phenomenon that happens when an inferior option is added to a set of options as a "decoy," making other options seem more favorable (Huber et al., 1982). The decoy effect highlights the complex interplay between psychological aspects (Marini & Paglieri, 2019) and economic aspects (Dumbalska et al., 2020) in influencing consumer behavior. One of the cases where the decoy effect has shown significant effects is with the iPhone 14 (Jin et al., 2024). Apple introduced the iPhone 14 series with four variants, which include the iPhone 14, iPhone 14 Plus, iPhone 14 Pro, and iPhone 14 Pro Max. The decoy effect is achieved by setting up the iPhone 14 Pro variant as the "decoy," which has a price

range similar to the iPhone 14 Pro Max but with a smaller screen size and battery (Jalan, 2023). This case highlights how the decoy effect can influence consumer behavior, specifically in the tech industry.

Psychological aspects, such as the decoy effect and cognitive load, not only influence consumer behavior but can also indirectly affect consumers' purchase intentions (Xu et al., 2021). Purchase intention refers to a consumer's likelihood to purchase products based on various cultural (Peña-García et al., 2020), marketing (Moslehpour et al., 2021), and psychological factors (Rausch & Kopplin, 2020; Wang et al., 2021) that influence their decision-making process. Purchase intention is a key indicator for measuring potential sales in businesses, since it often directly translates to potential sales for a business (Pandey & Srivastava, 2016). When consumers are faced with high cognitive load levels, low levels of positive emotions, or exposure to the decoy effect, their behavior towards products might change (Bujisic et al., 2024). Consumers' purchase intention can also act as a bridge between their initial interest in a product and also their purchase decision, which can be affected by various factors such as perceived benefit, trust, and brand image (Komalasari et al., 2021).

Despite the recent growing interest in the decoy effect (Li et al., 2019; Bujisic et al., 2024), a significant research gap remains regarding the application of the decoy effect in the tech industry, particularly in the case of the iPhone 14. While numerous studies have explored the decoy effect in different contexts, such as hospitality (e.g., Bujisic et al., 2024), restaurants (e.g., Wu et al., 2020; Xu et al., 2021), and health (e.g., Li et al., 2019), only one has examined the impact on the rapidly evolving tech industry (Jin et al., 2024). The lack of research is significant as the decoy effect has been shown to improve sales by up to 41% (Wedell & Pettibone, 1996), highlighting its potential importance. Building on this foundation, this research aims to investigate the relationship between the decoy effect, cognitive load, emotions,

and purchase intention. Specifically, this research will focus on positive emotions, which are more likely to engage potential consumers rather than creating barriers in decision-making. By examining how the decoy effect interacts with other aspects of consumer behavior, this research aims to fill the gaps in existing literature.

LITERATURE REVIEW

Prospect Theory

Prospect Theory, developed by Kahneman and Tversky (1979), is a model that describes the process of decision-making under risk. The prospect theory highlights how consumers make choices based on specific preference points, while also evaluating the risk factor from the available options. These concepts are relevant in the study of the decoy effect because consumers with no prior knowledge of a product tend to have a higher degree of risk avoidance (Wu et al., 2020), which might influence their decision when faced with the decoy effect. However, the application of the prospect theory on the decoy effect has not been fully explored. This research aims to bridge the gap by integrating the Prospect Theory, and to provide deeper understanding on the dynamics of the decoy effect.

Hypotheses Development

Cognitive Load to Positive Emotion and Purchase Intention

Cognitive load refers to the amount of load that is imposed on a person's cognitive system while performing a particular task (Skulmowski & Xu, 2021). Previous research has shown that cognitive load can have a negative influence on emotions (Guo et al., 2022; Mehrotra & Gunalakshmi, 2020). Moreover, a high cognitive load can also lead to increased difficulty in decision-making (Liu et al., 2020; McCarty et al., 2021). Given the adverse effects of cognitive load on emotions and how it can make decision-making more difficult, cognitive load might also hinder

the potential purchase intention of a consumer. Based on these findings, two hypotheses for this study can be drawn, which are:

H1a: There is a negative relationship between cognitive load and positive emotion.

H1b: There is a negative relationship between cognitive load and purchase intention.

Decoy Effect to Positive Emotion and Purchase Intention

The decoy effect refers to the phenomenon where an inferior option is added to a set of options as a "decoy," to make other options seem more favorable (Huber et al., 1982). Prior research has indicated that the decoy effect can improve a product's favorability by up to 41% (Wedell & Pettibone, 1996). Furthermore, the decoy effect has significant effects towards consumers' favorability towards products in various sectors (Bujisic et al., 2024; Xu et al., 2021; Li et al., 2019). With prior research indicating that the decoy effect has significant effects towards product's favorability, this can also lead to increased purchase intention among the products. Moreover, the decoy effect has been shown to influence consumers' risk perception (Wu et al., 2020). This finding might also lead to a change in consumers' emotions towards a product. With these findings, two hypotheses for this study can be concluded, that is:

H2a: There is a positive relationship between decoy effect and positive emotion.

H2b: There is a positive relationship between decoy effect and purchase intention.

Positive Emotion and Purchase Intention

Positive emotions encompass a range of reactions in a person, including excitement, happiness, and interest. Prior research has found that a higher level of positive emotion can lead to higher

purchase intention from consumers (Al-Aziz & Metawie, 2022). Positive emotions can also enhance consumers' perceived product quality, leading to more favorable purchasing decisions (Wang et al., 2019). Moreover, positive emotions tend to enhance loyalty (Cachero-Martínez & Vazquez-Casielles, 2021), which further encourages consumers to make a purchase commitment. Several studies have also suggested that consumers are more inclined to make impulsive purchases when experiencing positive emotions, up to 20.4% (Muharsih et al., 2023; Alvarado et al., 2020). Based on these findings, it can be concluded that positive emotions may also influence purchase intention before affecting a consumer's purchase decision. A hypothesis can be formed from the following information:

H3: There is a positive relationship between positive emotion and purchase intention.

Cognitive Load and Decoy Effect on Purchase Intention through Positive Emotion

Previous studies have analyzed the impact of the decoy effect on consumers' purchasing behavior (Wedell & Pettibone, 1996; Bujisic et al., 2024; Xu et al., 2021; Li et al., 2019). Additionally, past literature underlined the importance of emotions as a mediating variable in consumer behavior study (Cachero-Martínez & Vazquez-Casielles, 2021; Zhou & Tong, 2022). Furthermore, cognitive load has been shown to affect emotions negatively (Guo et al., 2022; Mehrotra & Gunalakshmi, 2020). However, the mediating impact of emotions in the context of the decoy effect remains understudied. The impact of emotions on the favorability of the product choices presented in the decoy effect has also yet to be researched. This suggests that emotions might serve as a mediator when consumers are faced with the decoy effect. Moreover, decoy effect and cognitive load might also have a significant effect on purchase intention when mediated by positive

emotions. Therefore, we developed the following hypotheses:

H4a: Positive emotion significantly mediates the relationship between cognitive load and purchase intention.

H4b: Positive emotion significantly mediates the relationship between decoy effect and purchase intention.

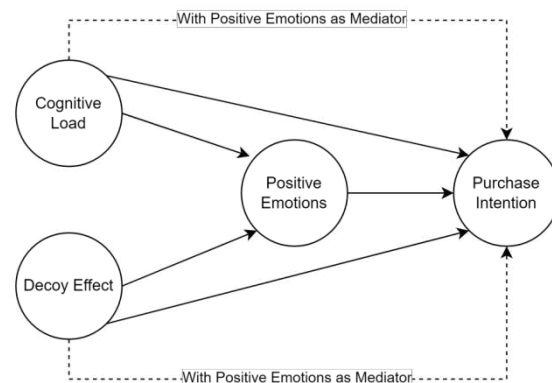


Figure 1. Research Model

RESEARCH METHOD

Research Design

This study employs a quantitative approach, utilizing cross-sectional data to examine the relationships between the variables specified in the hypotheses (Spector, 2019). This study employed Partial Least Squares Structural Equation Modeling (PLS-SEM) using the SmartPLS software. PLS-SEM was used due to the predictive context of this paper and the small sample size present in this study. We aimed for a minimum sample size of 70, calculated by multiplying the highest number of indicators on a variable by 10 (Hair et al., 2014). The sample included iPhone 14 users who wanted to purchase an iPhone and was collected as data. The study population consisted of everyone in Indonesia who has an iPhone. Purposive sampling was used due to an already existing purpose for the study, and to improve the accuracy of the data in fulfilling the research objectives (Campbell et al., 2020).

Data Collection Method

This study employs a questionnaire to collect data from the selected sample. A questionnaire is a tool used to collect primary and cross-sectional data related to a research topic (Taherdoost, 2022). The questionnaire was distributed through an online medium, specifically social media. The social media chosen for this study is WhatsApp and Instagram. WhatsApp and Instagram were used to ensure a broader scope and reach a larger number of potential participants. The questionnaire was designed to be completed within a short timeframe to reduce respondent fatigue. The questionnaire also uses concise language and precise wording to reduce ambiguity.

Research Instrument

This study aims to accurately measure the relationships between the variables by employing a six-point Likert scale, which, alongside the eleven-point Likert scale, follow normal distributions from Kolmoforov-Smirnov and Shapiro-Wilk statistics (Leung, 2011). One of the measured independent variables is cognitive load, which refers to the amount of mental effort required by an individual when performing a particular task (Skulmowski & Xu, 2021). This study utilized six cognitive load items, which were adopted from Leppink et al. (2013) and Ouwehand et al. (2021). The decoy effect refers to the phenomenon where an inferior option is added to a preexisting set of options as a "decoy" to skew consumer perceptions (Huber et al., 1982). This study incorporated five decoy effect items from Hashem and Al-Zyoud (2020). Positive emotions refer to reactions induced by a person, including excitement, happiness, and interest (Al-Aziz & Metawie, 2022). This study employed seven out of ten items derived from Watson et al. (1988) on positive emotions. Lastly, purchase intention refers to the degree to which a consumer is willing to purchase a product

(Peña-García et al., 2020). This study employed seven items regarding purchase intention derived from Ferdinand (2002).

RESULT AND DISCUSSION

Demographic Characteristics

This questionnaire, employed for this study, was completed by 129 respondents, and the respondents were compiled based on their status, gender, age, education, and income. According to the compilation in Table 1, 49.6% of the respondents are male, while the other 50.4% are female. This study was predominantly comprised of respondents who are aged 25-34, with 51.9% of the respondents being aged 25-34, 34.1% of the respondents being aged 18-24, 12.4% of the respondents being aged 35-44, 0.8% being 45-55 years old, and the remaining 0.8% being above 55 years old. Out of the respondents, 55% were at least undergraduates, while the other 45% had not reached the undergraduate degree. Regarding the respondent's job occupation, the majority (53.5%) of the respondents were private employees, 10.9% were still enrolled in education, while the remaining 35.6% held other job occupations. Based on income level, 8.5% of the respondents earn less than Rp3,000,000, while the majority (41.1%) earn between Rp3,000,000 and Rp5,999,999. and the other 50.4% of the respondents are spread across the income range between Rp6,000,000 and Rp15,000,000.

Table 1. Demographic Characteristics

Profile	n	%
<i>Gender</i>		
Male	64	49.6
Female	65	50.4
Total	129	100
<i>Age</i>		
18-24	44	34.1
25 - 34	67	51.9
35 - 44	16	12.4
45 - 55	1	0.8
Above 55	1	0.8
Total	129	100
<i>Education</i>		

Junior High School	2	1.6
High School Diploma	44	34.1
Undergraduate	12	9.3
Master's Degree	68	52.7
Total	3	2.3
Occupation	129	100
Private Employee	69	53.5
Student	14	10.9
Civil Servant	17	13.2
Freelance	12	9.3
Housewife	3	2.3
Entrepreneur	14	10.9
Total	129	100
Income		
< Rp 3.000.000	11	8.5
Rp 3.000.000 - Rp 5.999.999	53	41.1
Rp 6.000.000 - Rp 9.999.999	40	31.0
Rp 10.000.000 - Rp 15.000.000	12	9.3
>Rp 15.000.000	13	10.1
Total	129	100

Source: Author(s) own compilation

Validity and Reliability

A preliminary study involving 129 respondents was conducted to test the research instruments, including validity and reliability tests. The validity test is used to assess whether the methodology employed in a study effectively measures what it aims to measure (Shuttleworth, 2019). The validity test conducted uses outer loading value as a measurement, with a specified threshold of 0.7. Meanwhile, the reliability test is used to determine the consistency and reliability of the test, and determine if consistent and reliable outcomes occur (Sugiyono, 2020). The reliability test conducted in this study uses Cronbach's alpha as a measurement, with a specified threshold of 0.7 (Sugiyono, 2017). Table 2 below shows that each variable has a Cronbach's alpha value greater than 0.7, and each dimension of the variable has an outer loading value above 0.7, indicating their validity and reliability for this study. Moreover, Figure 2 also provides additional

details about the validity and reliability test using SmartPLS.

Table 2. Summary of Validity Test & Reliability Test

Variable	Items	Outer Loading	Cronbach's Alpha
Cognitive Load	CL1	0.716	0.710
	CL2	0.729	
	CL3	0.848	
Decoy Effect	DE1	0.728	0.826
	DE2	0.728	
	DE4	0.778	
	DE5	0.800	
	DE6	0.799	
	DE6	0.799	
Emotion	E1	0.845	0.916
	E2	0.858	
	E3	0.779	
	E4	0.847	
	E5	0.824	
	E6	0.878	
Purchase Intention	PI1	0.913	0.873
	PI2	0.925	
	PI6	0.840	

Source: Author(s) own compilation

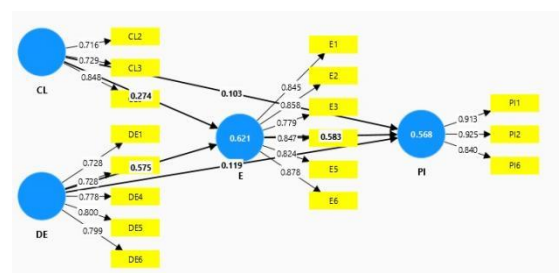


Figure 2. Validity and Reliability Test

Hypotheses Testing

The hypothesis testing in this study was conducted using the T-test, which can be applied to each of the relationships between the variables (Sugiyono, 2020). This method of T-Test uses the T-Table value as a threshold, and this study uses 1,98 as the

threshold for the T-Test. The threshold of 1.98 is determined using a metric of 129 respondents and a 0.05 significance level. The threshold of 0.05 is also used to measure the p-value to indicate whether a hypothesis is confirmed (I & Fisher, 1926). From the results in Table 3, it is apparent that all relationships, except for the cognitive load towards purchase intention and the decoy effect towards purchase intention, are valid. Other than that, the path coefficient value indicates the strength of each relationship between variables, with higher values indicating a stronger significance between the measured variables. The benchmarks for strength include values of 0.1 or less, indicating a weak influence, values between 0.3 and 0.5, indicating a moderately significant influence, and values above 0.5, indicating an immensely significant influence (Mohamed et al., 2018).

The results presented in Table 3 provide a comprehensive understanding of the relationships between the variables and their significance towards this research. The analysis indicated that the relationships between cognitive load and purchase intention, as well as between the decoy effect and purchase intention, are insignificant. This conclusion was drawn based on T-Values below 1,98 and p-values exceeding 0.05, leading to the rejection of hypotheses H1b and H2b. In contrast, all other hypothesized relationships turned out to be valid, with T-values exceeding 1,98 and p-values below 0.05. These results support the validity of hypotheses H1a, H2a, H3, H4a, and H4b, highlighting the critical role of positive emotion as a mediating variable.

Table 3. Hypotheses Test Results

Path Coefficient	Standard deviation (STDEV)	T Statistics	P values
CL -> E	0.274	3.694	0.000
CL -> PI	0.103	1.046	0.296
DE -> E	0.575	7.116	0.000
DE -> PI	0.119	1.072	0.284
E -> PI	0.583	4.317	0.000

Mediating			
CL -> E -> PI	0.160	2.772	0.006
DE -> E -> PI	0.335	3.311	0.001

Source: Author(s) own compilation

F² Test

The F² test evaluates the impact of specific independent variables on dependent variables. This test provides deeper insight into the interplay and relationship between specific constructs, measured using thresholds of 0.02, 0.15, and 0.35, which represent small, medium, and significant effects, respectively (Purwanto & Sudargini, 2021). The F² test was conducted in this research and is presented in Table 4 below. The value of 0.460 for decoy effect and positive emotion indicated that the decoy effect is a construct that has a large influence towards positive emotion. Furthermore, the value of 0.299 for positive emotion and purchase intention also shows a large influence from positive emotion towards purchase intention.

Table 4. F² Test Results

	CL	DE	E	PI
CL			0.104	0.012
DE			0.460	0.012
E				0.299
PI				

Source: Author(s) own compilation

Influence Analysis on Latent Variables

After analyzing each hypothesis and the relationship between variables, this study measures the significance and influence of latent variables and measured variables. In this research, the test was done by measuring R² values, which are compiled in Table 5 below. The R² value represents the degree to which independent variables influence the dependent variable (Sugiyono, 2020). Positive emotion has an R² value of

0.621, which explains how the variables in this study, which affect emotion (e.g., decoy effect and cognitive load), account for 62.1% of the variance in emotion. Moreover, the value of 0.568 for purchase intention means that 56.8% of the variance in purchase intention is explained by the variables in this research collectively.

Table 5. R² Values

	R-square	R-square adjusted
E	0.621	0.615
PI	0.568	0.558

Source: Author(s) own compilation

Discussion

The results from the PLS-SEM analysis conducted using SmartPLS revealed that positive emotion has a significant mediating effect on purchase intention. Specifically, the results indicated that the effect of positive emotions as a mediator is highly significant when compared to the relationship without positive emotions as a mediator. These findings align with the hypothesis posited in this study and are consistent with previous studies on the effect of emotions as a mediator (Cachero-Martínez & Vazquez-Casielles, 2021; Zhou & Tong, 2022). Additionally, the results also support the prospect theory, which suggests that consumers evaluate options based on specific preference points, while also evaluating associated risks (Kahneman & Tversky, 1979). This highlights how emotions might interplay with the process of evaluating risk by consumers.

Although positive emotion significantly mediates the relationship of decoy effect, cognitive load, and purchase intention, the data also indicated that neither cognitive load nor decoy effect directly influences purchase intention. This finding contradicts hypotheses H1b and H2b, which propose a direct link between cognitive load, decoy effect, and purchase intention. This result provides new insights

into the role of positive emotion as a mediator between cognitive load and decoy effect towards purchase intention. Previous studies have shown that cognitive load can negatively affect emotion (Guo et al., 2022; Mehrotra & Gunalakshmi, 2020), which aligns with our findings and helps explain the absence of a direct link between cognitive load and purchase intention. Similarly, past research also demonstrated how the decoy effect can influence consumer favorability toward products (Bujisic et al., 2024; Xu et al., 2021; Li et al., 2019), which may also be mediated by positive emotion.

CONCLUSIONS

As the analysis of consumer behavior evolves, the importance of various marketing strategies remains essential. This study investigated the significance of the decoy effect towards the purchase intention of the iPhone 14, with positive emotion as a mediator. The findings highlight that positive emotion has a significant mediating effect, demonstrating that the decoy effect and cognitive load do not directly affect purchase intention without this mediation. However, while the strength of the decoy effect and emotion is notable, it is crucial to acknowledge the potential impact of other factors beyond the scope of this research. Future research should investigate additional factors beyond the scope of this study, while also exploring alternative marketing techniques. While this experiment focused on the mediating effect of positive emotion towards the iPhone 14, similar studies need to be conducted across different products as well.

Managerial Implications

The findings of this study highlight the significant role of positive emotions in influencing consumers' purchase intentions, particularly in mediating the decoy effect and cognitive load. Managers should prioritize strategies that minimize cognitive load in marketing and positioning efforts,

while also evoking positive emotional responses in consumers. Moreover, managers can also adapt the decoy effect as a marketing strategy to evoke positive emotion. For instance, marketing strategies should minimize the number of product options at a time to reduce cognitive load. Furthermore, using the decoy effect as a marketing strategy can help consumers feel like they are getting more value from a product purchase. These implications can be beneficial for businesses in the technology industry and other similar markets.

Limitations and Future Research

The reliability of the data in this study may be impacted by the small sample size and the specific grouping of participants, which could restrict the generalizability of the findings for broader contexts. Moreover, several variables not examined within the scope of this study may have a significant impact on purchase intention. Future research should consider exploring other predictor variables to broaden the scope of this study. Furthermore, future studies should examine different products within the technology industry or across other market sectors to strengthen and validate the findings of this research.

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