

## MEASURING COGNITIVE DISSONANCE- AN INFERENCE FROM PSYCHOLOGY AND MARKETING

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**Abstract:** Cognitive dissonance is an uncomfortable psychological state that an individual experiences when there is an inconsistency between the cognitions which are actions, attitude or beliefs. Such an uncomfortable state motivates the individual to opt for ways to reduce it. Cognitive dissonance- a theory of psychology has been applied in many areas of study including marketing. The current paper aims to analyze the measures of with which dissonance has been measured in psychology as well as marketing to present a comprehensive view of the construct of cognitive dissonance. The researcher has examined more than 35 landmark research studies since the inception of the theory in 1957 to 2014. The measurement of dissonance has been segregated on the basis of experiment based studies and operational measures. Through experimental studies the dissonance has been measured based on forced choice, induced compliance, attitude change or information seeking. The operational measures have also been used by developing scales of measurement based on dimensions such as correctness of decision, psychological discomfort, right choice of store, emotional dimension, wisdom of purchase, concern over deal, reassess purchase and many more. However, some of the measures are either overly dependent on a certain dimension or are trivial and manipulated.

### **Introduction**

The theory of cognitive dissonance as propounded by Festinger (1957) states that individual undergo a conflict when choosing between alternatives if they have inconsistent cognitions. This dissonance evokes psychological discomfort. People just like hunger want to get rid of this discomfort and does opt for ways to overcome cognitive dissonance and achieve consonance. Therefore, the construct of cognitive dissonance has been studied in two different perspectives- one through the lens of dissonance arousal i.e. how and why dissonance occurs and the other through the lens of dissonance motivation i.e. what behavioral actions are driven by dissonance to overcome it.

Cognitive dissonance being a psychological construct has been applied in various fields to understand human behavior. The study primarily aims at understanding the measurement of cognitive dissonance in psychology as it is the genesis of the theory and the area of marketing. The

researcher thoroughly examined more than 35 landmark research papers from the inception of the theory in 1957 to 2014 from psychology as well as marketing. The main aim of the present study is to collate the literature on measurement of dissonance from psychology and marketing together to present a better understanding of the measures of dissonance. Initially the construct of cognitive dissonance for a long period of time was only restricted to psychology. The initial studies to understand the presence of dissonance among people were based on experiments on control groups and focus groups. These studies were majorly based on studying the change in the attitude of people in situations where they have to make decisions between alternatives or take actions against their beliefs.

Gradually, the emphasis shifted from experiments to operational measures for measuring dissonance. Many factors measuring cognitive dissonance and post-purchase dissonance were studied such as desirability, attitude, correctness of decision, right brand, right store, calm vs tense, support, emotional, wisdom of purchase, concern over the deal, reassess purchase and many more. However, too much reliance on certain factors, incomprehensible items of the scale are certain concerns which must be taken into consideration for further studies. There is also a need to develop an all-encompassing scale which can be applied in any field of study for measuring cognitive dissonance with little modifications. And considering the present digital era of marketing there is a need for a scale which can measure dissonance among traditional shoppers as well as online shoppers.

### **Background**

The theory of cognitive dissonance, identified as a crucial concept in social psychology by Aronson (1969), originated from Leon Festinger's (1957) initial exploration. Festinger investigated a small group convinced that a flood would destroy the Earth, observing the reactions of group members, especially those deeply committed who sacrificed their homes and jobs. Festinger's theory posits that when an individual simultaneously holds conflicting cognitions, such as beliefs about themselves, their behavior, and their environment, it creates an unpleasant state known as cognitive dissonance. Dissonance can manifest in the relationship between cognitions and evoke emotional discomfort. According to Hunt (1970), cognition refers to the information an individual has about themselves, their behavior, and their surrounding environment. Aronson (1969) characterizes dissonance as a negative impact on an individual's self-concept resulting from their own contradictory behavior, also describing it as a mental state arising from unfulfilled expectations.

Festinger noted that individuals may struggle to rationalize inconsistencies, leading to psychological discomfort if attempts at achieving consistency fail. Cognitive dissonance, according to Festinger, results from inconsistencies between attitudes and actual behavior, inducing an uncomfortable psychological state that motivates individuals to reduce the dissonance, analogous to how hunger drives actions to alleviate hunger. Harmon et al. (2009) asserted on Festinger's perspective, stating that the discomfort of dissonance motivates individuals to seek consonance and reduce the psychological discomfort. However, Brehm and Cohen (1962) argued that inconsistency's motivational impact is significant only when tied to a behavioral commitment.

Bem (1967) challenged the original theory, proposing the concept of self-perception, suggesting that dissonance arises from a threat to the self-concept, compelling individuals to alter their beliefs or behavior.

Consumer behavior, as defined by Loudon and Bitta (1993), encompasses the decision-making process and physical actions individuals undertake when evaluating, acquiring, using, or disposing of goods and services. Various classical conceptual models, such as the Engel-Blackwell-Kollat Model (1968) and Howard Sheth Model (1969, cited in Friedman, 1988), outline the consumer decision-making process from the pre-purchase stage to post-purchase behavior. These stages often lead to indecision and confusion, resulting in cognitive dissonance. The theory of cognitive dissonance, rooted in psychology, has been widely applied to diverse research fields, notably in consumer behavior. Oliver (1997) extended the application of cognitive dissonance throughout the entire purchase decision process, labeling the pre-purchase phase as apprehension, escalating through the decision process, and reaching its peak in the post-purchase phase, labeled as the gamma stage. Straits (1964) emphasized the importance of understanding a dissonant consumer, stating it is more crucial for manufacturers and companies than understanding a decision-making consumer.

Cohen and Goldberg (1970) argued that cognitive dissonance theory might not fully encompass all consumer decision-making, serving inadequately as a general theory. Salzberger and Koller (2005) identified dissonance as a crucial factor leading to the formation of satisfaction, with about 10% of respondents likely to develop significant dissonance requiring targeted marketing activities. Egan (2007) pointed out that cognitive dissonance in marketing terms is likely to occur post-purchase, especially in high-cost and emotionally charged purchases.

Schiffman et al. (2013) emphasized the significance of post-purchase dissonance in marketing strategies, stating that it compels individuals to alleviate unpleasant feelings resulting from conflicting thoughts. Sweeney et al. (2000) criticized Festinger's (1957) definition of cognitive dissonance, arguing that it did not clearly distinguish between cognitive and emotional elements. Cooper (2007) affirmed that inconsistency between expectations and actual experiences invokes a state of cognitive dissonance characterized by emotional perplexity, agitation, and dissatisfaction. Harmon-Jones et al. (2011) and Brown-Wright et al. (2013) described cognitive dissonance as a psychologically uncomfortable state motivating individuals to reduce dissonance by altering attitudes, beliefs, and behaviors. A study on consumer durable purchases in Australia identified three distinct segments: high-dissonance, low-dissonance, and concerned-about-needing-the-purchase segments.

### **Measurement of Dissonance**

Cooper and Fazio (1984) distinguish dissonance into two components: dissonance arousal, addressing how and why dissonance arises, and dissonance motivation, focusing on what drives individuals to reduce or resolve dissonance and attain consonance. They further assert that cognitive changes associated with cognitive dissonance are primarily driven by dissonance motivation. Understanding the literature on measurement of dissonance the researcher has observed that the measurement has been done considering the construct of cognitive dissonance

with two different definitions. One definition focuses on how and why the dissonance is aroused and the measurement is thus done from that perspective and other definition focuses on the changes in the cognitions driven by inconsistencies that is dissonance motivation thus the measurement is done accordingly. The measurement can also be segregated on the basis of experimental or an operational dissonance measure. The study considers the second segregation, thus dividing this section into dissonance measurement based on experiment and based on operational measures.

### **Measurement of dissonance based on Experiments**

In discussing the origins of cognitive dissonance, Festinger (1957) identifies two situations in which dissonance may arise. First, it can be triggered by the occurrence of a new event or the awareness of new information that conflicts with existing knowledge or opinions. Second, in the absence of new information or events, dissonance may arise due to the nuanced nature of situations where behaviors exhibit a mix of contradictions. These cognitions related to new events, new information, or unclear situations demand contradictory behavior when inconsistent with existing knowledge, beliefs, and opinions, leading to cognitive dissonance.

#### *Measurement based on Free Choice Paradigm*

Brehm (1956) conducted the initial Free Choice experiment, where participants were tasked with making either an easy decision, where the alternatives were distinctly different in attractiveness, or a challenging decision, where the alternatives were closely matched in attractiveness. The findings revealed that following an easy decision, no observable attitude changes occurred towards the alternatives. However, after making a difficult decision, there was a development of a negative attitude towards the rejected alternatives and a slightly positive attitude towards the chosen alternative. Thus the existence of dissonance was identified with the change in attitude in a difficult decision situation.

#### *Measurement based on Belief-Disconfirmation Paradigm*

Festinger *et. al.* (1956) studied a group which was of the belief that a flood is going to immerse the continent. Group members who were together held on to their faith. However, the ones who were alone could not maintain their belief. After the disconfirmation of the belief about the flood the members started the attempt to convert others' religion. Though, there were very little attempts to do so before the disconfirmation. They did so to make others believe their beliefs so that it would add some consonant cognitions to their belief. This is known as the belief-disconfirmation paradigm. The attempt to change other's beliefs to achieve consonance was considered as a measure of existence of dissonance.

#### *Measurement based on Induced/Forced Compliance*

When an individual's pre-existing attitude is inconsistent with his behavior and actions it is likely to be a state of dissonance. Festinger and Carlsmith (1959) conducted an experiment involving college students who were instructed to inform unsuspecting peers that a dull task was interesting. Two groups were offered different incentives (\$1 or \$20) to make this counter-attitudinal statement. The study introduced the induced compliance paradigm, asserting that inconsistency among cognitions and varying incentive levels contribute to dissonance arousal. However,

Chapanis and Chapanis (1964) argued that more than the \$20 incentive, the offer could be perceived as a bribe, triggering "evaluation apprehension" in participants, fearing judgment by psychologists. Aronson and Carlsmith (1963) identified forbidden-toy paradigm; a variant of the induced-compliance paradigm. They conducted an experiment by giving young children an opportunity to play with toys and were also threatened for playing with the attractive toys by severe and mild punishment. Later, when they were asked to evaluate the attractive toy, children threatened with severe punishment evaluated the toy more positively than children threatened with mild punishment.

Nel, Helmreich, and Aronson (1969) challenged the induced compliance concept, suggesting that inconsistency alone is insufficient for dissonance arousal; instead, it requires behavior threatening one's self-esteem. Cooper and colleagues (Cooper & Worchel, 1970; Cooper, Zanna & Goethals, 1974; Cooper & Fazio, 1984) conducted experiments to elucidate the conditions necessary for cognitive dissonance arousal. They questioned how participants in Festinger and Carlsmith's (1959) experiment experienced dissonance if inconsistency alone was insufficient. Cooper & Fazio (1984) further questioned if making a counter-attitudinal statement privately, where no one is listening, would arouse dissonance. They proposed that for dissonance to occur, there must be a result or product from the behavior against attitude, and this product should be the occurrence of an aversive event—something undesirable or against one's self-interest. Therefore, they suggest that without an aversive event following a counter-attitudinal behavior, cognitive dissonance would not be aroused.

Dissonance is evaluated by analyzing the readership of Chevrolet advertisements among both Chevrolet owners and non-owners, with owners more inclined to seek information that aligns with their purchasing decisions (Engel, 1963). Furthermore, dissonance has been explored by investigating the attitudes of both smokers and non-smokers regarding the connection between smoking and lung cancer (Kassarjian and Cohen, 1965). Another study, conducted by Loscuito and Perloff (1967), revealed that individuals tended to rate the selected record album as more desirable and the unchosen alternative as less desirable when presented with two similarly appealing record albums.

### **Measurement of dissonance based on Operational Measures**

In the above experimental studies, participants were compelled to adhere to instructions, primarily either through coercion or inducements. Additionally, the conditions under which these experiments took place have been described as contrived, inconsequential, or unrelated to marketing concerns (Cohen and Goldberg, 1970; Oshikawa, 1970; Oliver, 1997). Also, the majority of these investigations share a commonality in that the factors being examined were manipulated to align with the desired decision outcome. Oliver (1997) contended that in applying the theory of cognitive dissonance (particularly to consumer behavior), it is essential to create a practical measure for assessing dissonance.

Bell (1967) first developed a dissonance measure by studying 234 new car purchasers by conducting personal interviews of consumers within a week of making the purchase. The consumers were asked questions like "Did you make the right decision?" about their purchase. No

validity of the scale was reported. Hunt (1970) in his study used post-purchase anxiety as the measure of dissonance experienced by the consumers. He also developed a scale for measuring post-purchase dissonance with questions such as, “Did you buy the right brand?” and “Did you shop at the right store?” No attempt to validate Hunt’s scale were reported. Menasco & Hawkins (1978) conducted interviews of 73 consumers within a week of their purchases of appliances. They developed a scale to measure post-purchase dissonance with items like, “I feel calm”, “I feel tense”. They concluded that post-purchase dissonance occurs due to anxiety and anxiety is highly correlated with decision difficulty.

Kargaonkar and Moschis (1982), in their examination of the impacts of cognitive dissonance, expectations, and product performance on product evaluation, introduced a four-dimensional scale for dissonance measurement. These dimensions include uncertainty in choice, a propensity to avoid negative information about the chosen option, a tendency to gather positive information about the chosen option, and an inclination to justify the decision by discussing it with others who made a similar choice. They defined the cognitive dissonance construct within the framework of assimilation and contrast theory, suggesting that if consumers experience dissonance, they attempt to assimilate by adjusting their product evaluation to align with their pre-existing expectations.

Montgomery & Barnes (1993) developed a Post-purchase Dissonance Scale (POSTDIS) with 10 items divided into two factors which are:

-Correctness of Decision

1. I feel that I will be happy with the purchase I just made.
2. I’m sure that I will be happy with the way this product performs.
3. I’m comfortable with the purchase decision I’ve just made.
4. I’m uneasy about the purchase decision that I just made.
5. I’m confident that I’ve made the right choice when I purchased this product.
6. I would probably purchase this product again in the future.
7. I feel that I got a good deal when I purchased this product.
8. This product would probably do a job of meeting my important needs.

-Support

9. I’ll probably talk to my friends or family to ask them if they think I’ve made a wise choice with my purchase.
10. I would probably pick up a copy of Consumer Reports to make sure the product or brand I just bought received high ratings.

They validated the scale by estimating construct validity, predictive validity and content validity. For construct validity they conducted confirmatory factor analysis and exploratory alpha factoring. For predictive validity multiple regression was assessed. For testing reliability they applied coefficient alpha which came out to be 0.84. They also developed a shorter version of scale with 8 items which has a reliability of 0.88. 35% of the variance was accounted by two factors “correctness of decision” and “support”. According to the predictors of dissonance comprises of stores visited, frequency of purchase, purchase expectations, consumer’s self-confidence and the

ease with which salespersons influence consumers. They concluded that consumer's self-confidence is the most important predictor of post-purchase dissonance.

Elliot and Devine (1994) devised a three-item scale to assess dissonance, grounded in the belief that, as conceptualized by Festinger (1957), the examination of dissonance should involve an exploration of psychological discomfort. Several other studies adopted a paper-and-pencil approach, utilizing these items to gauge dissonance within the context of their respective investigations. For instance, Olsen (2008) examined overreaction; and Hasan and Nasreen (2014) measured the post-purchase dissonance on the basis of two items "think about your purchase" and "reassess the purchase".

Sweeney et. al. (2000) developed a multi-dimensional scale with 22 items divided into 3 dimensions for measuring cognitive dissonance. Initially through qualitative study they generated 100 items which after psychometric and semantic validation done in two stages eventually became a 22 item scale. However, they later agreed that certain items sounded repetitive and developed a shorter version of their scale in 2006 with 12 items. The 3 dimensions and their items are:

-Emotional

- I felt frustrated
- I was in despair
- I was depressed
- I felt sick
- I felt hollow

-Wisdom of Purchase

- I really need this product
- I should have bought anything at all
- I have made the right choice
- I have done the right thing in buying this product

-Concern over the Deal

- I'd been fooled
- They had spun me a line
- There was something wrong with the deal I got.

However, a lot of scales lack basis or framework of assumption. For instance scales like that of Montgomery & Barnes (1993) had no evidence to believe that the feelings they used to assess the "correctness of decision" represent dissonance. Also, the items of the factor "support" are majorly related to dissonance reduction and not dissonance existence. Scale like that of Sweeney et. al. (2000) which is widely used in consumer behavior lacks the ease of understanding for the consumers. It is also too much dependent on the emotional/psychological dimension of the post-purchase dissonance construct that it lacks the practical aspect of the construct which is more relatable to the current consumers. There is still a need to have an all-encompassing scale to measure post-purchase dissonance which can be applied to measure dissonance among individuals

in field of study with certain modifications. Such a scale should be more relatable and easy to understand for consumers. From the marketing point of view considering the current era of digital marketing it should be such which can be used to measure dissonance among traditional as well as online shoppers.

**Table 1- Measures of Cognitive Dissonance in Psychology and Marketing**

S.No.	Year	Author	Measures
1.	1956	Brehm	Experiment on Free Choice
2.	1956	Festinger et. al.	Experiment on Belief-disconfirmation
3.	1959	Festinger & Carlsmith	Experiment on Induced Compliance
4.	1963	Carlsmith	Experiment on Forbidden-toy paradigm
5.	1963	Engel	Experiment based on Seeking Information
6.	1965	Kassarjian and Cohen	Attitude of users and non-users
7.	1967	Loscuito and Perloff	Desirability after making the choice
8.	1967	Bell	“Did you make the right decision?”
9.	1970	Hunt	Post-purchase anxiety
10.	1978	Menasco & Hawkins	“I feel calm”, “I feel tense”
11.	1982	Kargaonkar & Moschis	uncertainty in choice, avoid negative information about the chosen option, tendency to gather positive information about the chosen option, inclination to justify the decision by discussing it with others who made a similar choice
12.	1993	Montgomery & Barnes	Correctness of decision, Support
13.	1994	Elliot and Devine	Psychological discomfort
14.	2000	Sweeney et. al.	Emotional, Wisdom of Purchase, Concern over the deal
15.	2003	Stone	self-standard/self-esteem
16.	2008	Olsen	Overreaction
17.	2014	Hasan & Nasreen	“Think about your purchase”, “Reassess the purchase”.

**Conclusion**

The exploration of cognitive dissonance, as articulated by Cooper and Fazio (1984), has been multifaceted, delving into the components of dissonance arousal and dissonance motivation. The dissection of dissonance measurement further underscores the complexity of this psychological



phenomenon, with distinctions made between experimental and operational measures. Experimental studies, such as those examining free choice paradigms, belief-disconfirmation paradigms, and induced/forced compliance, reveal the nuanced nature of dissonance arousal. From Brehm's (1956) initial free choice experiment to Festinger et al.'s (1956) belief-disconfirmation paradigm, each study highlights the conditions under which dissonance emerges, emphasizing the role of conflicting cognitions in driving attitudinal changes.

However, the operational measures of cognitive dissonance, particularly in consumer behavior contexts, has introduced practical challenges. While Bell (1967), Hunt (1970), Menasco & Hawkins (1978), and others have attempted to measure post-purchase dissonance through personal interviews and anxiety scales, the field lacks a standardized, universally accepted measure. Several scales, such as Kargaonkar and Moschis' (1982) four-dimensional scale, Montgomery & Barnes' (1993) POSTDIS, three-dimensional scale by Sweeney et. al. (2000) have contributed valuable insights. Yet, criticisms regarding construct validity and applicability persist, with some scales overly reliant on emotional dimensions and lacking evidence to link feelings to dissonance existence.

The journey to a comprehensive and widely applicable dissonance measurement scale continues. Despite the advancements made by Sweeney et al. (2000) in developing a multi-dimensional scale, challenges remain in ensuring the scale's simplicity, relevance, and adaptability for both traditional and online shoppers. In this evolving landscape, the pursuit of an encompassing measure for post-purchase dissonance persists. Future research should strive to bridge the gap between theoretical understanding and practical application, providing a tool that not only captures the intricacies of cognitive dissonance but is also applicable in any area under study with few modifications. In marketing the scale of measurement should align with the everyday experiences of consumers, fostering a deeper comprehension of the post-purchase decision-making process and in this digital era it should be able to capture dissonance among traditional shoppers as well as online shoppers.

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