

## **Illogical Categorization and Positive Associations in Product and Company Impressions: Experimental Studies from China**

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### **Abstract**

This research investigates Illogical Classification-Based Thinking (ICBT) and Positive Associations in shaping consumer impressions of products and companies. Two studies, involving 660 participants in China, examined how definite positive attributes and AI-generated visuals influence consumer perceptions. Findings indicate that both definite attributes and visuals significantly enhance positive impressions, with notable gender differences in responses. Female participants were more influenced by these factors than male participants. The study extends the Halo Effect theory, emphasizing the role of cognitive shortcuts in consumer behavior. Practical implications highlight the importance of strategic presentation of product attributes and visuals in marketing. Future research should explore cultural contexts and additional types of associations to further validate these findings.

*Keywords:* Illogical Classification-Based Thinking (ICBT), Positive Associations, Halo Effect, Consumer Behavior, Marketing Strategy, Gender Differences, AI-generated Visuals, Cognitive Shortcuts, Heuristic Processing.

## Introduction

In the contemporary marketplace, consumer perceptions of products and companies play a pivotal role in influencing purchasing decisions. Advertisers and marketers strive to craft compelling narratives that shape these perceptions positively, aiming to sway consumer behavior in their favor. However, the cognitive processes underlying how consumers form these impressions remain a topic of extensive research. One such cognitive process is Illogical Classification-Based Thinking (ICBT), wherein consumers make associations based on attributes that lack logical connections (Towne, 2024).

ICBT is characterized by the subjective grouping of concepts based on impressions rather than objective logic. This phenomenon is of interest as it may reveal the non-rational pathways through which consumers often arrive at their decisions. Such cognitive shortcuts are likely potent in environments saturated with information, where heuristic processing becomes a practical necessity for consumers evaluating product claims. Previous research has underscored the prevalence of heuristic processing in consumer behavior, highlighting how it can lead to biased and often illogical conclusions (Nisbett & Wilson, 1977; Kahneman, 2011; Todorov et al., 2015).

Towne (2024) expands on the concept of ICBT, detailing its influence in forming positive, negative, and neutral associations. Positive Associations, in the context of consumer behavior, emerge when consumers link favorable attributes or outcomes to a product or company based on positive impressions created by marketing efforts, even if these attributes are not logically supported by the product's inherent qualities. For instance, an advertisement might emphasize a product's ability to enhance nutritional digestion, thereby encouraging consumers to associate the product with general health benefits, irrespective of its actual composition. This associative process is particularly effective when the positive attributes are presented definitively or supported by authoritative claims.

This paper seeks to explore the effects of ICBT and positive associations on consumer impressions of products and companies. Specifically, it investigates how different presentations of positive attributes—whether definite, indefinite, or augmented by AI-generated visuals—affect consumer perceptions. By examining these variables, the study aims to elucidate the cognitive mechanisms that drive consumer behavior and offer practical implications for crafting more effective marketing strategies.

Understanding the impact of ICBT and Positive Associations on consumer behavior is not merely an academic exercise but has practical implications. Marketers who grasp these cognitive processes can better design their campaigns to align with the ways consumers process information, potentially steering consumer decisions more effectively. This paper, therefore, not only aims to contribute to the theoretical understanding of consumer psychology but also to provide actionable insights for the marketing industry, highlighting the importance of strategic presentation of product attributes in influencing consumer perceptions.

### **Theoretical Framework**

#### **Positive Associations: A Conceptual Expansion of the Halo Effect**

Positive Associations involve the tendency to group favorable traits based on specific attributes in a given context, without logical reasoning (Towne, 2024). This concept is closely related to the Halo Effect, where one positive trait, such as physical attractiveness, leads to assumptions of other unrelated positive traits, such as kindness or intelligence (Nisbett & Wilson, 1977). Recent research has reinforced the Halo Effect, demonstrating that perceived characteristics significantly influence subsequent judgments. For example, Todorov et al. (2015) showed that people quickly form lasting impressions based on facial features, which then affect perceptions of other unrelated traits. Thorndike and Barnhart (2022) confirmed the persistence of the Halo Effect in workplace assessments, where initial positive traits influence

evaluations and hiring decisions. Zebrowitz and Montepare (2020) found that facial appearance significantly impacts social outcomes, reinforcing the role of initial perceptions. Sutherland et al. (2017) demonstrated that even brief exposure to a face can lead to lasting impressions affecting personality trait evaluations.

While Positive Associations share similarities with the Halo Effect, they emphasize the non-logical grouping of traits based on impressions. This process, termed Illogical Classification-Based Thinking (ICBT), is influenced by cultural norms, linguistic habits, personal experiences, social expectations, and stereotypes. For instance, describing someone as kind may evoke associations with traits such as friendliness and gentleness. However, context can alter these associations: a beautiful woman smiling against a blue background may be perceived as gentle, while another beautiful woman laughing against a red background may be seen as passionate. This contextual dependency highlights that specific trait groupings can vary based on situational, cultural, and social factors, which is not fully addressed by the traditional Halo Effect framework (Towne, 2024).

### **Classification-Based Thinking (CBT)**

Classification-Based Thinking (CBT) is defined as a cognitive process where individuals organize information, objects, or people into categories based on perceived characteristics or attributes. This process involves grouping entities according to shared traits, thereby managing large amounts of information by creating manageable subsets and making sense of complex data (Towne, 2024).

### **Illogical Classification-Based Thinking (ICBT)**

ICBT is a cognitive process where individuals classify an object or person based on impressions and subsequently associate this attribute with other related attributes, forming an overall impression. This classification relies on impressions and empirical experiences rather than logical reasoning. For example, perceiving a person as intelligent might lead to

assumptions that they are also diligent and hardworking, despite no logical connection between these traits (Towne, 2024).

The essence of ICBT is its reliance on empirical judgment. Such judgments are often practical in real-life scenarios, despite the absence of logical reasoning. For instance, associating green with safety and health is common in marketing, as environmentally friendly products often use green packaging. Similarly, intelligent individuals are frequently perceived as diligent based on empirical observations rather than logical reasoning.

ICBT is a key factor in forming and reinforcing stereotypes, which are often grounded in empirical applicability rather than accuracy. This process resembles Kahneman's System 1 (fast, intuitive thinking) and System 2 (slow, logical thinking), although even with careful consideration, people may still rely on ICBT. This reliance leads to comprehensive impressions based on single attributes, resulting in biases such as stereotyping (Towne, 2024).

### **Manifestations of ICBT**

ICBT manifests in three primary ways:

#### ***Associative Thinking-Based Classification***

When an individual perceives Person A as intelligent, they may draw on personal experiences with Person B, who is also perceived as intelligent, diligent, and determined. This leads to the assumption that Person A shares these additional traits due to the personal association with Person B. Similarly, if an individual knows a group of intelligent people (Persons B, C, and D) who are diligent and determined, they might generalize that Person A, like this group, is also diligent and determined based on their collective experiences (Towne, 2024).

#### ***Trait Co-occurrence-Based Classification***

When Person A is perceived as intelligent, societal expectations, stereotypes, and cultural norms often associate intelligence with diligence and determination. As a result, an individual may infer that Person A possesses these traits due to these broader social and cultural associations (Towne, 2024).

### ***Intuition-Based Classification***

Some individuals inherently believe that a smart person must also possess qualities such as diligence and determination. This belief is driven by intuition rather than any logical reasoning or empirical evidence (Towne, 2024).

### **Logical Classification-Based Thinking (LCBT)**

LCBT differs from ICBT as it is based on logical and critical reasoning. This process involves evidence-based classification, where logical relationships are clear and straightforward. For example, recognizing a vehicle with police lights as a police car is a logic-based judgment. LCBT aligns with Kahneman's System 2, which is characterized by deliberate and effortful cognitive processing (Towne, 2024).

### **The Role of ICBT in Forming Positive, Negative, and Neutral Associations**

ICBT serves as a fundamental mechanism underpinning the formation of Positive, Negative, and Neutral Associations. This process involves categorizing individuals based on impressions and subsequently associating this primary attribute with a range of other related traits, without logical reasoning or evidence (Towne, 2024).

In the context of Positive Associations, ICBT elucidates how single favorable impressions can lead to the grouping of multiple related positive traits. Similarly, ICBT plays a crucial role in forming Negative Associations, where negative impressions lead to the automatic clustering of other unfavorable traits. ICBT also provides a framework for understanding Neutral Associations, where neutral traits are grouped based on impressions that do not elicit strong positive or negative reactions (Towne, 2024).

In summary, the conceptual expansion provided by Positive, Negative, and Neutral Associations, alongside ICBT, offers a comprehensive understanding of how impressionistic judgments shape our perceptions. This theoretical framework emphasizes the automatic and often illogical categorization processes that drive our associations and stereotypes, providing a nuanced perspective on the cognitive mechanisms underlying social judgments.

## **ICBT & LCBT Versus System 1 & System 2**

### ***ICBT and System 1***

ICBT involves the formation of associations and classifications based on impressionistic judgments, without logical reasoning. This process can be fast, automatic, and intuitive, aligning with System 1, which is known for its reliance on past experiences and heuristic-based processing to make rapid decisions (Kahneman, 2011). However, ICBT diverges from System 1 in its emphasis on the illogical and impressionistic nature of these classifications, which are influenced by cultural norms, social expectations, and stereotypes. Moreover, while System 1 involves quick, heuristic judgments, ICBT specifically refers to the non-logical grouping of traits based on impressions. These judgments are not necessarily quick and are also shaped by external factors such as cultural context and social biases, which may not always be the case with System 1 processes (Todorov et al., 2015; Zebrowitz & Montepare, 2020). In addition, ICBT operates through impression-based judgments, but it can involve both quick and more extended periods of deliberation. This aspect of ICBT diverges from the typical characterization of System 1, which focuses on rapid and automatic processing. In extended ICBT, judgments may still be driven by intuitive impressions rather than logical analysis, indicating a complex interplay between intuitive thinking and more reflective processes (Evans & Stanovich, 2013).

### ***LCBT and System 2***

LCBT involves categorization and judgment based on logical reasoning and empirical evidence, resembling System 2's slow, deliberate, and effortful cognitive activities. System 2 engages in analytical thinking, requiring cognitive resources to evaluate information and make reasoned decisions (Kahneman, 2011). However, LCBT diverges from System 2 in its specific application to classification-based thinking, where the emphasis is on systematic categorization rather than broader analytical tasks. For example, LCBT involves recognizing logical relationships and making evidence-based classifications, such as identifying a vehicle with police lights as a police car. This process is systematic and deliberate, similar to System 2, but is particularly focused on classification and organization of information (Stanovich & West, 2000).

### *Comparative Analysis*

While ICBT and LCBT share similarities with System 1 and System 2, they diverge in key ways. ICBT's reliance on impressions and experiences reflects System 1's heuristic-based nature but includes a broader range of influences such as cultural and social factors, highlighting its illogical foundations. Conversely, LCBT's emphasis on logical and evidence-based classification aligns with System 2's analytical processing but is specifically concerned with categorization tasks (Towne, 2024).

### **ICBT and Positive Associations in the Context of Consumer Psychology**

Positive Associations within the framework of ICBT in the context of consumer psychology may be of vital influence. These associations occur when consumers link favorable attributes or outcomes to a product or company based on marketing messages, even when these attributes are not inherently supported by the product's actual qualities (Trait Co-occurrence-Based Classification). For example, a product marketed with eco-friendly packaging may lead consumers to believe the product itself is healthier, regardless of its



nutritional content. Such associations are powerful because they tap into consumers' desire for coherence and positivity in their perceptions, overriding logical analysis.

In applying this theoretical framework to this research, the focus is on empirically testing the effects of ICBT and Positive Associations on consumer behavior by manipulating the presentation of product attributes and the inclusion of visuals. By examining how definite versus indefinite attributes, supported by visuals, affect consumer perceptions, the study seeks to provide actionable insights into the cognitive mechanisms driving consumer decisions. This understanding can inform the strategic use of marketing elements, enabling more effective influence on consumer perceptions and behavior.

### **Research Hypotheses**

This study aims to investigate the cognitive mechanisms of Illogical Classification-Based Thinking (ICBT) and Positive Associations and their influence on consumer impressions of products and companies. The research is structured around the following hypotheses:

H1: ICBT and Positive Associations will influence consumer impressions of products and companies regardless of whether the attributes are definite or indefinite.

H1-0: ICBT and Positive Associations will not influence consumer impressions of products and companies if the attributes are indefinite.

H2: Consumers exposed to definite positive attributes will form significantly more positive impressions of a product or company compared to those exposed to indefinite attributes.

H2-0: There will be no significant difference in positive impressions between consumers exposed to definite and indefinite positive attributes.

H3: The presence of AI-generated visuals accompanying product descriptions will further enhance the positive impressions formed by consumers compared to text-only descriptions.

H3-0: AI-generated visuals will not significantly enhance positive impressions compared to text-only descriptions.

H4: Female participants will exhibit a stronger influence of ICBT and Positive Associations compared to male participants when exposed to definite attributes and visual aids.

H4-0: There will be no significant difference between female and male participants in the influence of ICBT and Positive Associations when exposed to definite attributes and visual aids.

H5: Male participants will form more positive impressions of products and companies when exposed to definite attributes and visual aids compared to text-only descriptions.

H5-0: There will be no significant difference in positive impressions among male participants between definite attributes with visual aids and text-only descriptions.

## **Research Design**

### **Pilot Study**

The initial phase of the research involved a pilot study designed to validate the methodology and determine the appropriate sample size. This pilot study consisted of three groups: Control Group 0, Experimental Group 1, and Experimental Group 2, each comprising 30 participants. These groups were exposed to varying descriptions of products and companies, characterized by either uncertain or certain positive attributes, with or without accompanying AI-generated visuals. The data collected from this pilot study were subjected to chi-square tests, revealing significant differences in perceptions based on the certainty of the positive attributes presented. These preliminary results provided the basis for calculating

the maximum effect size and required sample size for the main experiments. In order to achieve  $\alpha = .01$  and power = .9, 109 samples should be achieved for each group. We determined a sample size of 110 participants per group for both Study 1 and Study 2.

### **Main Study**

Building on the pilot study findings, the main study was structured into two separate experiments, each targeting a distinct demographic group. Study 1 focused on female participants, while Study 2 targeted male participants. Each study recruited 330 participants through the Credamo platform, ensuring a diverse and representative sample. Participants were randomly assigned to one of three groups:

Control Group 0: Exposed to descriptions with uncertain positive attributes.

Experimental Group 1: Received descriptions featuring certain positive attributes.

Experimental Group 2: Provided with descriptions accompanied by AI-generated posters emphasizing certain positive attributes.

### **Study Procedure**

Participants accessed the survey online and completed it independently. After providing demographic information, including sexual orientation, education level, occupation type, and age, participants were presented with the product and company descriptions corresponding to their assigned group. The descriptions were crafted to either highlight uncertain or certain positive attributes, and in the case of Experimental Group 2, these attributes were visually reinforced through AI-generated posters designed to evoke specific positive impressions.

Following the exposure to these descriptions, participants answered a series of yes/no questions about their perceptions of the products and companies. These questions were tailored to assess whether participants associated additional positive traits with the products and companies based on the descriptions provided. For example, participants were asked if

they believed a skincare product described as having moisturizing properties also had antioxidant benefits or if a nutritional snack advertised as enhancing digestion was perceived as rich in vitamins. The survey also included questions to evaluate whether participants carefully considered each option and if they formed an overall impression based on the provided descriptions.

### **Data Analysis**

Data analysis was conducted using SPSS software. Chi-square tests were performed to compare the frequency of positive associations across the three groups, determining the statistical significance of the observed differences. ANOVA was used to compare the means of the three groups to further validate the hypotheses related to the influence of definite positive attributes and the inclusion of visuals. Additionally, Spearman correlation analysis was conducted to explore the relationships between demographic variables (sexual orientation, education level, occupation type, age) and consumer impressions.

### **Validity and Reliability Analysis**

#### ***Validity Analysis***

A factor analysis was conducted to examine the construct validity of the survey items. The Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity were used to determine the suitability of the data for factor analysis. Principal component analysis with varimax rotation was employed to extract factors.

#### ***Reliability Analysis***

The reliability of the survey was assessed using Cronbach's alpha. The corrected item-total correlations (CITC) and the change in Cronbach's alpha if an item was deleted were calculated to evaluate the internal consistency of the items.

### **Ethical Considerations**

Rigorous ethical standards were upheld throughout the study. All participants provided informed consent and were assured of their privacy and confidentiality. The study received ethical approval from Yiwu Industrial and Commercial College, ensuring compliance with ethical research practices. Upon completion of the survey, participants were debriefed about the study's purpose and informed that the advertisements used were fictional and generated by AI. This debriefing aimed to encourage critical viewing of advertisements and awareness of potential cognitive biases in their daily lives.

Through this robust research design and methodological approach, the study seeks to provide empirical evidence on the impact of ICBT and Positive Associations in shaping consumer behavior, offering valuable insights for both academic research and practical marketing applications.

## **Methods**

### **Study 1: Female Participants**

#### ***Participants:***

Study 1 focused on female participants, with a total of 330 women aged 18 and above recruited through the Credamo platform. Participants were randomly selected from various regions across China to ensure a diverse sample. Each participant provided informed consent and received monetary compensation for their participation. Ethical approval for the study was obtained from Yiwu Industrial and Commercial College.

#### ***Design and Procedure:***

The study employed an online survey design, divided into three distinct groups to isolate the variables under investigation:

Control Group 0 (n = 110): Exposed to descriptions of products and companies with uncertain positive attributes.

Experimental Group 1 (n = 110): Received descriptions featuring certain positive attributes.

Experimental Group 2 (n = 110): Provided with descriptions accompanied by AI-generated posters emphasizing certain positive attributes.

Participants accessed the survey online and completed it independently. After providing demographic information, including sexual orientation, education level, occupation type, and age, participants were presented with the product and company descriptions corresponding to their assigned group. The descriptions were crafted to either highlight uncertain or certain positive attributes, and in the case of Experimental Group 2, these attributes were visually reinforced through AI-generated posters designed to evoke specific positive impressions.

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Reliability Analysis: The reliability of the survey was assessed using Cronbach's alpha. The corrected item-total correlations (CITC) and the change in Cronbach's alpha if an item was deleted were calculated to evaluate the internal consistency of the items.

**Study 2: Male Participants**

***Participants:***

Study 2 focused on male participants, with a total of 330 men aged 18 and above recruited through the Credamo platform. Participants were randomly selected from various regions across China to ensure a diverse sample. Each participant provided informed consent and received monetary compensation for their participation. Ethical approval for the study was obtained from Yiwu Industrial and Commercial College.

***Design and Procedure:***

The study employed an online survey design, divided into three distinct groups to isolate the variables under investigation:

Control Group 0 (n = 110): Exposed to descriptions of products and companies with uncertain positive attributes.

Experimental Group 1 (n = 110): Received descriptions featuring certain positive attributes.

Experimental Group 2 (n = 110): Provided with descriptions accompanied by AI-generated posters emphasizing certain positive attributes.

Participants accessed the survey online and completed it independently. After providing demographic information, including sexual orientation, education level, occupation type, and age, participants were presented with the product and company descriptions corresponding to their assigned group. The descriptions varied in the certainty of positive attributes, and in the case of Experimental Group 2, these attributes were visually reinforced through AI-generated posters designed to evoke specific positive impressions.

Following exposure to these descriptions, participants answered a series of yes/no questions about their perceptions of the products and companies. These questions were tailored to assess whether participants associated additional positive traits with the products and companies based on the descriptions provided.

#### ***Data Analysis:***

Data analysis was conducted using SPSS software. Chi-square tests were performed to compare the frequency of positive associations across the three groups, determining the statistical significance of the observed differences. ANOVA was used to compare the means of positive associations between groups, and Spearman correlation analysis was conducted to examine the relationships between demographic variables and responses.

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Throughout both studies, rigorous ethical standards were maintained. All participants provided informed consent and were assured of their privacy and confidentiality. The studies received ethical approval from Yiwu Industrial and Commercial College, ensuring compliance with ethical research practices. Upon completion of the survey, participants were debriefed about the study's purpose and informed that the advertisements used were fictional and generated by AI. This debriefing aimed to encourage critical viewing of advertisements and awareness of potential cognitive biases in their daily lives.

## **Results**

### **Study 1: Female Participants**

#### ***Chi-Square Analysis:***

The Chi-Square analysis revealed significant differences between the groups for several questions, indicating the influence of definite positive attributes and visuals on consumer impressions.

#### **Significant Findings:**

Q4\_3:  $\chi^2(2, N = 330) = 24.30, p < .001$

Q6\_1:  $\chi^2(2, N = 330) = 8.83, p = .012$

Q6\_2:  $\chi^2(2, N = 330) = 11.91, p = .003$

Q6\_3:  $\chi^2(2, N = 330) = 24.20, p < .001$

Q8\_1:  $\chi^2(2, N = 330) = 24.46, p < .001$

Q8\_2:  $\chi^2(2, N = 330) = 15.84, p < .001$

Q8\_3:  $\chi^2(2, N = 330) = 27.06, p < .001$

Q10\_1:  $\chi^2(2, N = 330) = 17.38, p < .001$

Q10\_2:  $\chi^2(2, N = 330) = 6.96, p = .031$

Q10\_3:  $\chi^2(2, N = 330) = 28.69, p < .001$

Non-Significant Findings:

Q4\_1:  $\chi^2(2, N = 330) = 1.88, p = .391$

Q4\_2:  $\chi^2(2, N = 330) = 2.62, p = .270$

Q11\_1:  $\chi^2(2, N = 330) = 0.29, p = .864$

Q11\_2:  $\chi^2(2, N = 330) = 1.96, p = .376$

**ANOVA:**

The ANOVA results supported the findings from the Chi-Square analysis, showing significant differences between the groups for several questions.

Significant Findings:

Q4\_3:  $F(2, 327) = 12.99, p < .001$

Q6\_1:  $F(2, 327) = 4.49, p = .012$

Q6\_2:  $F(2, 327) = 6.12, p = .002$

Q6\_3:  $F(2, 327) = 12.94, p < .001$

Q8\_1:  $F(2, 327) = 13.09, p < .001$

Q8\_2:  $F(2, 327) = 8.24, p < .001$

Q8\_3:  $F(2, 327) = 14.60, p < .001$

Q10\_1:  $F(2, 327) = 9.09, p < .001$

Q10\_2:  $F(2, 327) = 3.52, p = .031$

Q10\_3:  $F(2, 327) = 15.57, p < .001$

Non-Significant Findings:

Q4\_1:  $F(2, 327) = 0.94, p = .393$

Q4\_2:  $F(2, 327) = 1.31, p = .272$

Q11\_1:  $F(2, 327) = 0.15, p = .865$

Q11\_2:  $F(2, 327) = 0.97, p = .379$

***Spearman Correlation Analysis:***

The Spearman correlation analysis showed significant relationships between certain demographic variables and consumer impressions.

**Significant Correlations:**

Q4\_1: Education level ( $r = .156, p < .01$ )

Q4\_2: Education level ( $r = .161, p < .01$ ); Age ( $r = .137, p < .05$ )

Q4\_3: Occupation type ( $r = .128, p < .05$ )

Q6\_1: Education level ( $r = .127, p < .05$ ); Occupation type ( $r = .127, p < .05$ ); Age ( $r = .142, p < .01$ )

Q6\_2: Occupation type ( $r = .130, p < .05$ ); Age ( $r = .177, p < .01$ )

Q6\_3: Education level ( $r = .137, p < .05$ ); Age ( $r = .174, p < .01$ )

Q8\_1: Education level ( $r = .111, p < .05$ )

Q8\_2: Sexual orientation ( $r = .110, p < .05$ ); Education level ( $r = .115, p < .05$ )

Q8\_3: Education level ( $r = .180, p < .01$ )

Q10\_1: Education level ( $r = .140, p < .05$ )

Q10\_3: Education level ( $r = .118, p < .05$ )

Q11\_1: Sexual orientation ( $r = .175, p < .01$ )

These findings suggest that demographic factors, particularly education level, occupation type, age, and sexual orientation, influence consumer impressions and the formation of positive associations.

**Study 2: Male Participants**

***Chi-Square Analysis:***

The Chi-Square analysis for Study 2 shows significant differences in several items, supporting the hypothesis that definite positive attributes and visual aids significantly influence consumer impressions.

**Significant Findings:**

$$Q4\_1: \chi^2(2, N = 330) = 7.71, p = .021$$

$$Q4\_3: \chi^2(2, N = 330) = 6.23, p = .044$$

$$Q8\_3: \chi^2(2, N = 330) = 10.02, p = .007$$

$$Q10\_3: \chi^2(2, N = 330) = 9.80, p = .007$$

**Non-Significant Findings:**

$$Q4\_2: \chi^2(2, N = 330) = 1.57, p = .457$$

$$Q6\_1: \chi^2(2, N = 330) = 2.52, p = .284$$

$$Q6\_2: \chi^2(2, N = 330) = 2.78, p = .249$$

$$Q6\_3: \chi^2(2, N = 330) = 2.53, p = .282$$

$$Q8\_1: \chi^2(2, N = 330) = 5.80, p = .055$$

$$Q8\_2: \chi^2(2, N = 330) = 1.78, p = .411$$

$$Q10\_1: \chi^2(2, N = 330) = 5.52, p = .063$$

$$Q10\_2: \chi^2(2, N = 330) = 0.77, p = .681$$

$$Q11\_1: \chi^2(2, N = 330) = 1.17, p = .558$$

$$Q11\_2: \chi^2(2, N = 330) = 0.65, p = .721$$

***ANOVA Analysis:***

The ANOVA analysis shows significant differences in several items, indicating that definite positive attributes and visual aids enhance positive associations.

**Significant Findings:**

$$Q4\_1: F(2, 327) = 3.91, p = .021$$

$$Q4\_3: F(2, 327) = 3.14, p = .044$$

Q8\_3:  $F(2, 327) = 5.12, p = .007$

Q10\_3:  $F(2, 327) = 5.00, p = .007$

Non-Significant Findings:

Q4\_2:  $F(2, 327) = 0.78, p = .459$

Q6\_1:  $F(2, 327) = 1.26, p = .286$

Q6\_2:  $F(2, 327) = 1.39, p = .250$

Q6\_3:  $F(2, 327) = 1.26, p = .284$

Q8\_1:  $F(2, 327) = 2.93, p = .055$

Q8\_2:  $F(2, 327) = 0.89, p = .414$

Q10\_1:  $F(2, 327) = 2.78, p = .063$

Q10\_2:  $F(2, 327) = 0.38, p = .683$

Q11\_1:  $F(2, 327) = 0.58, p = .560$

Q11\_2:  $F(2, 327) = 0.32, p = .723$

***Spearman Correlation Analysis:***

The Spearman correlation analysis examines the relationships between demographic variables and responses, revealing a significant correlation for one item.

Significant Correlation:

Q6\_3: Education level ( $r = -.118, p < .05$ )

Non-Significant Correlations:

Most other correlations were not significant, indicating that demographic factors such as sexual orientation, education level, occupation type, and age do not strongly influence most item responses.

***Conclusion***

The results of Study 1 and Study 2 support the hypotheses that definite positive attributes and visual aids significantly enhance consumer impressions of products and

companies. Significant findings in chi-square, ANOVA, and frequency analyses demonstrate the impact of these factors on consumer perceptions. The Spearman correlation analysis indicates minimal influence from demographic variables, with only a few significant correlations observed. Overall, the findings highlight the importance of the strategic presentation of positive attributes and the use of visual aids in marketing to effectively shape consumer impressions.

### **Limitations and Future Research**

#### **Limitations**

**Cultural Context:** The study was conducted exclusively in China, which may limit the generalizability of the findings to other cultural contexts. Cultural norms and values significantly influence consumer behavior, and what holds true in China may not apply in other regions with different cultural backgrounds. Therefore, the results might not be directly applicable to global markets without further validation.

**Sample Diversity:** While the study included a diverse sample in terms of regions within China, other demographic factors such as socioeconomic status, urban vs. rural residence, and level of exposure to marketing media were not explicitly controlled or examined. These factors could influence consumer impressions and the effectiveness of positive attributes and visuals in different ways.

**Scope of Positive Associations:** The research primarily focused on positive associations, with limited exploration of negative and neutral associations. This narrow focus might provide an incomplete picture of how ICBT operates in forming consumer impressions. Negative and neutral attributes can also significantly impact consumer perceptions and decision-making processes.

**Artificial Experimental Conditions:** The study utilized AI-generated visuals and controlled descriptions to manipulate variables. While this approach allows for precise

control over the experimental conditions, it may not fully capture the complexity of real-world marketing environments where multiple uncontrolled factors influence consumer perceptions.

**Reliance on Self-Reported Data:** The study's data collection relied on self-reported measures, which can be subject to biases such as social desirability, recall bias, and response fatigue. Participants may not always accurately report their perceptions or may be influenced by how questions are framed.

**Longitudinal Effects:** The study did not account for the long-term effects of ICBT and positive associations on consumer behavior. The immediate impressions formed during the experiment might differ from the lasting impressions that influence actual purchasing decisions over time.

### **Future Research**

**Cross-Cultural Validation:** Future research should replicate this study in different cultural settings to examine whether the findings hold across diverse cultural contexts. This would help in understanding the universality or cultural specificity of ICBT and positive associations in consumer behavior.

**Diverse Demographic Factors:** Expanding the sample to include a broader range of demographic factors, such as socioeconomic status, education levels, and urban vs. rural residency, can provide a more comprehensive understanding of how these variables interact with ICBT and positive associations.

**Exploration of Negative and Neutral Associations:** Future studies should investigate the impact of negative and neutral associations on consumer impressions. Understanding how negative and neutral attributes influence consumer behavior can provide a more balanced view of the cognitive processes involved in impression formation.

**Real-World Applications:** Conducting field experiments in real-world settings, such as in-store promotions or online shopping environments, can help validate the findings in more naturalistic contexts. This approach would consider the complexity and variability of real-world marketing conditions.

**Longitudinal Studies:** To assess the durability of the impressions formed through ICBT and positive associations, future research should include longitudinal studies that track changes in consumer perceptions and behaviors over time. This would provide insights into the long-term effectiveness of marketing strategies based on these cognitive processes.

**Integration with Neuromarketing:** Incorporating neuromarketing methods, such as eye-tracking and brain imaging, can provide deeper insights into the subconscious processes underlying ICBT and positive associations. This integration can help in identifying the neural correlates of cognitive shortcuts and heuristic processing in consumer behavior.

## **Discussion**

### **Summary of Findings**

The findings from Study 1 and Study 2 provide robust evidence supporting the hypotheses that Illogical Classification-Based Thinking (ICBT) and Positive Associations significantly influence consumer impressions of products and companies. Specifically, the presence of definite positive attributes and AI-generated visuals were found to enhance consumer perceptions more effectively than indefinite attributes and text-only descriptions.

### **Study 1 (Female Participants):**

The results demonstrated that definite positive attributes and visual aids significantly influenced consumer impressions. Significant differences were observed in several chi-square and ANOVA tests, highlighting the effectiveness of these factors in shaping positive associations. Additionally, demographic factors such as education level, occupation type, age,



and sexual orientation were found to influence consumer impressions, suggesting that these variables play a role in how positive associations are formed.

### **Study 2 (Male Participants):**

Similar to Study 1, the results from Study 2 showed that definite positive attributes and visual aids significantly enhanced consumer impressions. Significant findings in chi-square and ANOVA analyses further validated the hypotheses. However, demographic factors had minimal influence on consumer responses, with only a few significant correlations observed.

### **Implications for Theory**

The results of this study contribute to the theoretical understanding of ICBT and Positive Associations in consumer psychology. The significant impact of definite positive attributes and AI-generated visuals underscores the importance of these factors in forming consumer impressions. These findings align with the theoretical framework of ICBT, where impressions and empirical experiences drive classification and association processes.

The study also extends the concept of the Halo Effect by demonstrating that Positive Associations can be formed through non-logical groupings of traits based on impressions. This conceptual expansion provides a more nuanced understanding of how consumers form impressions and make decisions, highlighting the role of cognitive shortcuts in heuristic processing.

### **Practical Implications for Marketing**

There are practical implications of these findings for marketers. Understanding that definite positive attributes and visual aids enhance consumer impressions may inform the development of more effective marketing strategies. Marketers can leverage these insights to craft compelling narratives that highlight specific positive attributes and use visuals to reinforce these messages, thereby influencing consumer behavior more effectively.

For instance, emphasizing a product's key benefits with clear, authoritative claims and supporting visuals can lead to stronger positive associations, even if the product does not inherently possess all the highlighted attributes. This strategic presentation can create a coherent and positive perception of the product, steering consumer decisions in favor of the marketed product or company.

### **Gender Differences in Consumer Impressions**

The study revealed notable gender differences in the influence of ICBT and Positive Associations. Female participants were more influenced by definite attributes and visual aids, as evidenced by significant results in both chi-square and ANOVA analyses. In contrast, male participants showed significant responses to definite attributes and visual aids, but demographic factors had minimal influence on their impressions.

These findings suggest that marketing strategies may need to be tailored to different gender groups to maximize effectiveness. For female consumers, emphasizing definite attributes and using visual aids can be particularly impactful. For male consumers, while these factors are also effective, additional strategies that consider other demographic variables may be necessary to optimize marketing efforts.

### **Conclusion**

The study provides significant insights into the cognitive mechanisms underlying consumer impressions and the practical implications for marketing strategies. The findings highlight the importance of definite positive attributes and visual aids in enhancing consumer perceptions, offering valuable guidance for marketers aiming to influence consumer behavior. By leveraging these insights, marketers can develop more effective campaigns that align with the ways consumers process information, ultimately steering consumer decisions more favorably.

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