

The Psychology of Color in Marketing: How Visual Elements Affect Consumer Perception

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Abstract: This research examines the profound impact of color psychology on consumer perception and behaviour in marketing contexts. Through analysis of both quantitative survey data (n=285) and qualitative focus group insights, this study identifies significant relationships between color choices and consumer responses across different product categories and demographic segments. Findings reveal that color influences brand recognition by up to 80%, affects purchase intent differently across gender and cultural lines, and significantly impacts emotional associations with brands. The research demonstrates that while certain color associations remain consistent (blue with trust, red with excitement), contextual factors including product category, target demographics, and cultural background significantly moderate these effects. Results suggest marketers should implement strategic color frameworks that consider both universal color psychology principles and contextual variables for optimal consumer engagement. This integrated approach to visual marketing elements provides a scientific foundation for more effective marketing strategies.

Keywords: colour psychology, consumer behaviour, visual marketing, brand perception, emotional response

INTRODUCTION

In the increasingly competitive marketplace, brands continuously seek effective methods to differentiate their offerings and forge meaningful connections with consumers. Among the various marketing tools available, visual elements—particularly color—have emerged as crucial factors in shaping consumer perception and influencing purchasing behaviour (Labrecque & Milne, 2012). Color is not merely decorative but serves as a powerful communication mechanism that operates on both conscious and subconscious levels, potentially affecting brand recognition, emotional response, and purchase decision-making (Singh, 2006).

The significance of color in marketing stems from its ability to elicit specific psychological and physiological responses in viewers. Research indicates that consumers typically make initial judgments about products within 90 seconds of interaction, with 62-90% of that assessment based solely on color (Singh, 2006). Moreover, color can increase brand recognition by up to 80% and enhance readership by 40% (Morton, 2010). These statistics underscore the critical role color plays in marketing effectiveness.

While previous research has established foundational understandings of color psychology, gaps remain in comprehending how these effects vary across different marketing contexts, product categories, and consumer demographics. The relationship between color and consumer perception is not uniform but rather contextually

dependent and culturally influenced (Aslam, 2006). Additionally, the mechanisms through which color influences purchasing decisions remain incompletely understood, with conflicting theories regarding whether emotional associations, cognitive processing, or cultural conditioning predominate.

This research aims to address these gaps by investigating the multidimensional relationship between color and consumer perception through both quantitative and qualitative methodologies. Specifically, the study examines:

1. How different colours affect brand perception across varied product categories
2. The relationship between color preferences and consumer demographic factors
3. The mechanisms through which color influences purchasing intent
4. Contextual variables that moderate color effects in marketing settings

By analysing these dimensions, this study contributes to a more nuanced understanding of color psychology in marketing contexts, providing evidence-based insights for practitioners while advancing theoretical frameworks in consumer psychology.

LITERATURE REVIEW

Theoretical Foundations of Color Psychology

The study of color psychology draws from multiple

disciplines including cognitive psychology, neuroscience, and anthropology. Elliot and Maier's (2012) colour-in-context theory propose that color effects are not absolute but rather dependent on context and associations learned through experience. This contrasts with earlier approaches that suggested universal, biologically-based responses to color stimuli (Crozier, 1999).

From a neurophysiological perspective, Labrecque et al. (2013) documented how color perception activates specific neural pathways, potentially triggering emotional responses before cognitive processing occurs. This automatic processing explains why color can elicit immediate emotional reactions that influence consumer judgment before conscious evaluation.

Color Effects on Brand Perception

Research consistently demonstrates that color significantly impacts brand perception. Hynes (2009) found that color accounted for up to 60% of acceptance or rejection of a product, while Bottomley and Doyle (2006) identified relationships between color appropriateness and brand personality dimensions. Blue tones generally convey competence and reliability, while red evokes excitement and passion (Aaker, 1997; Labrecque & Milne, 2012).

The concept of "color-brand personality congruence" has emerged as particularly significant, with studies showing that alignment between brand personality and color associations strengthens consumer preference and loyalty (Labrecque & Milne, 2012). For example, the consistency of Coca-Cola's red branding reinforces its energetic, bold personality, while IBM's blue palette supports its perception as trustworthy and corporate.

Cultural and Demographic Variations

Color perceptions exhibit significant cultural variations. Madden et al. (2000) surveyed respondents across eight countries, finding that while some color associations showed cross-cultural consistency (blue universally associated with high quality), others varied dramatically. For instance, white signifies purity in Western contexts but mourning in some Eastern cultures (Aslam, 2006).

Demographic factors also influence color preferences and associations. Ellis and Ficek (2001) identified gender differences in color preferences, with women generally favouring colours in the red-purple spectrum while men preferred blue-green tones. Age cohorts similarly display different color associations, with generational differences potentially reflecting shifting cultural norms and marketing exposure (Tofle et al., 2004).

Color in Marketing Contexts

The effectiveness of color in marketing contexts appears highly dependent on appropriateness for the product category. Kauppinen-Räsänen and Luomala (2010) found that unexpected colours attracted attention but could undermine perceived suitability, particularly for established product categories with strong color conventions. This suggests a tension between novelty (attention-grabbing) and appropriateness (message

congruence) that marketers must navigate.

Digital marketing introduces additional complexities, with Sable and Akcay (2010) demonstrating that screen-based color perception differs from physical color viewing, potentially altering consumer responses in online shopping contexts. The proliferation of digital marketing channels necessitates understanding these medium-specific color effects.

Despite substantial research, gaps remain in understanding the interactive effects of multiple variables on color perception, including how product category, brand positioning, consumer demographics, and cultural factors collectively moderate color impacts. This study addresses these gaps through a multi-method approach examining these complex interactions.

METHODOLOGY

Research Design

This study employed a mixed-methods approach to comprehensively examine the relationship between color and consumer perception. The research design integrated:

1. A quantitative survey assessing color preferences, associations, and purchase intentions across diverse consumer segments
2. Qualitative focus groups exploring the subjective experiences and reasoning behind color-based consumer responses
3. A controlled experiment measuring actual behavioural responses to colour variations in simulated purchase environments

This triangulated approach enabled both statistical analysis of color effects and rich contextual understanding of the mechanisms driving those effects.

Participants and Sampling

For the quantitative survey, participants (n=285) were recruited using stratified random sampling to ensure representation across demographic variables including gender (53% female, 45% male, 2% non-binary), age (18-65 years, M=34.2, SD=12.4), educational background, and cultural origin. Participants were drawn from three geographical regions (North America, Europe and Asia) to capture cultural variations in colour perception.

Focus group participants (n=42) were selected using purposive sampling to represent diverse demographic profiles while ensuring participants had recent purchasing experience across multiple product categories. Seven focus groups with 6 participants each were conducted. For the experimental phase, participants (n=120) were randomly assigned to control and experimental conditions in a controlled laboratory setting.

Data Collection Instruments

The quantitative survey comprised:

- Demographic questionnaire
- Standardized color association scales adapted from Labrecque and Milne (2012)
- Product category-specific color preference items

- Purchase intention measures using 7-point Likert scales
- Brand perception items measuring dimensions of trust, quality, excitement, and sophistication

Focus groups employed a semi-structured discussion guide exploring:

- Conscious and unconscious responses to brand colours
- Reasoning behind color preferences for specific product categories
- Cultural and personal associations with different color schemes
- Perceived relationship between color and product attributes

The experimental phase utilized:

- Identical product packaging with systematically varied color schemes
- Eye-tracking technology to measure visual attention
- Post-exposure purchase intention measures
- Implicit association tests to measure unconscious color-attribute connections

Data Analysis

Quantitative data were analysed using SPSS 27.0. Analyses included:

- Descriptive statistics for color preferences and associations
- ANOVA testing for demographic differences in color responses
- Multiple regression modelling to identify predictive relationships between color preferences and purchase intentions
- Factor analysis to identify underlying dimensions of color-based perception

Qualitative data underwent thematic analysis using NVivo software, identifying recurring patterns and conceptual relationships in participant responses. The coding scheme was developed iteratively, with initial codes derived from the literature review and refined based on emerging patterns in the data.

Experimental data were analysed using both parametric statistical tests for purchase intention measures and specialized analysis of eye-tracking metrics to quantify attention patterns.

RESULTS

Demographic Influences on Color Preferences

Analysis revealed significant demographic variations in color preferences and associations. Gender emerged as a particularly influential factor, with female respondents showing stronger preferences for purple (M=5.8, SD=1.2) and red (M=5.4, SD=1.3) compared to male respondents (purple: M=4.2, SD=1.5; red: M=4.6, SD=1.4), $F(1,283) = 12.44, p < .001$. Age cohorts also displayed distinct patterns, with younger consumers (18-25) showing greater acceptance of vibrant, unconventional colours for traditionally conservative product categories such as financial services and healthcare.

Cultural background significantly influenced color associations, particularly regarding white, red, and black. Asian respondents associated white with mourning (64%) compared to Western respondents who predominantly associated it with purity (78%), $\chi^2(2, N=285) = 42.63, p < .001$.

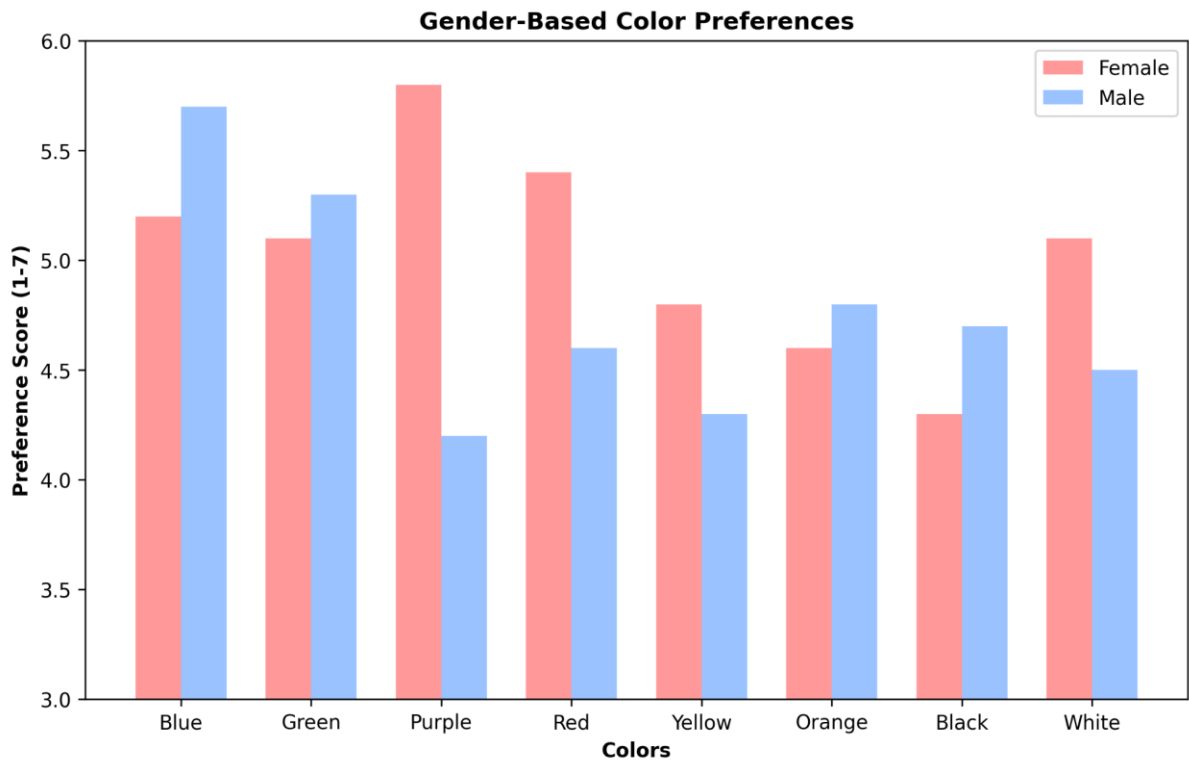


Figure 1: Gender-based color preferences across eight primary colors showing significant differences, particularly for purple

and red tones.

Product Category Effects

Color appropriateness varied significantly by product category, with strong conventions identified for certain categories. Table 1 illustrates the relationship between perceived color appropriateness and product categories.

Table 1: Mean Ratings of Color Appropriateness by Product Category (Scale 1-7)

Product Category	Blue	Green	Red	Yellow	Black	White	Purple	Orange
Financial Services	6.2	5.1	3.2	2.8	5.7	5.9	3.1	2.6
Food & Beverage	4.3	5.6	5.9	5.7	3.1	4.8	3.6	5.8
Healthcare	5.9	5.3	3.4	2.9	2.3	6.2	4.1	3.2
Luxury Goods	5.3	4.1	5.6	4.2	6.4	5.9	5.7	3.8
Technology	6.1	4.8	4.5	3.6	5.8	5.4	3.9	3.7
Eco-friendly Products	4.8	6.7	3.1	4.9	2.5	5.3	3.7	4.5

Notably, financial services showed strong appropriateness associations with blue (M=6.2, SD=0.9) and black (M=5.7, SD=1.1), while eco-friendly products were strongly associated with green (M=6.7, SD=0.8). The experimental phase confirmed these findings, with purchase intention significantly lower when products featured colours inconsistent with category conventions (t(118)=4.87, p<.001).

Focus group data revealed that these associations stemmed from both functional expectations and learned conventions. One participant noted: "I associate blue with banks because it feels secure and professional, but I'd be suspicious of a bank using bright orange or red—it wouldn't feel trustworthy" (Female, 42).

Color and Emotional Response

Different colours consistently evoked distinct emotional responses that influenced brand perception. Blue predominantly triggered associations with trust (74% of participants) and competence (68%), while red evoked excitement (71%) and energy (76%). Green was strongly associated with health (82%) and environmental responsibility (88%).

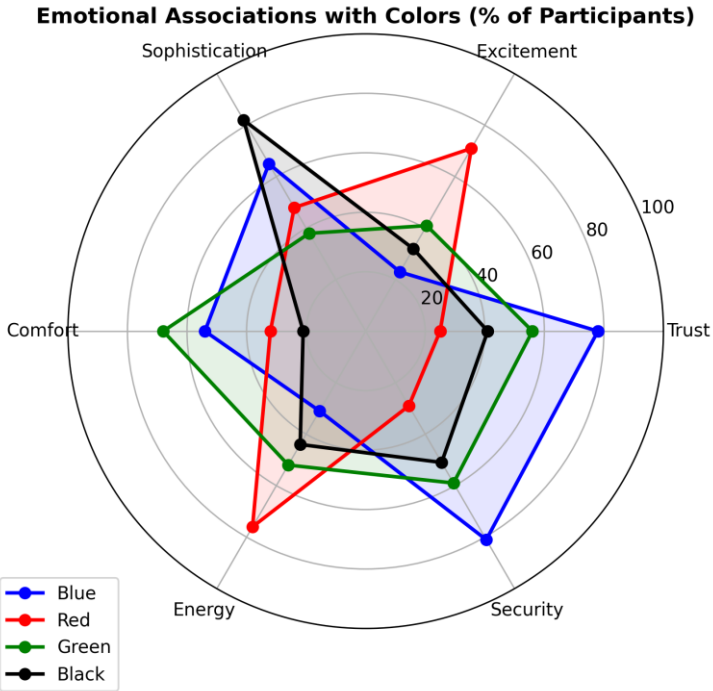


Figure 2: Radar chart showing emotional associations with four primary colours, demonstrating distinct emotional profiles for each color.

These emotional associations directly influenced brand perception. Regression analysis identified significant relationships between color-evoked emotions and key brand perception metrics. Trust-evoking colours (primarily

blue) positively predicted perceived quality ($\beta=0.58$, $p<.001$) and likelihood to recommend ($\beta=0.47$, $p<.001$). Excitement-evoking colours (primarily red) predicted perceptions of innovation ($\beta=0.51$, $p<.001$) but showed a negative relationship with perceived reliability ($\beta=-0.32$, $p<.01$).

Focus group participants articulated these connections explicitly: "When I see blue in a healthcare logo, I immediately feel more at ease. It gives me a sense that they're professional and trustworthy" (Male, 35). This supports the theory that color operates through emotional pathways that subsequently influence cognitive brand assessments.

Contextual Moderation of Color Effects

The research confirmed that contextual factors significantly moderate color effects. A 3 (color: blue, red, green) \times 3 (product category: technology, food, healthcare) factorial ANOVA revealed a significant interaction effect on purchase intention, $F(4,276)=14.32$, $p<.001$, $\eta^2=0.17$. This interaction indicated that the influence of color on purchase intention depends on product category context.

Eye-tracking data from the experimental phase further demonstrated context-dependent attention patterns. Unexpected colours (those incongruent with category norms) received 43% more visual attention (measured by dwell time) but resulted in 28% lower purchase intention scores compared to category-congruent colours, suggesting that novelty captures attention but may undermine purchase confidence.

The moderating role of brand positioning also emerged as significant. For brands positioned as innovative disruptors, unconventional color choices enhanced purchase intent (+18% compared to traditional colours), while the same unconventional colours reduced purchase intent for brands positioned as reliable market leaders (-24%).

DISCUSSION

Theoretical Implications

The findings support and extend Elliot and Maier's (2012) color-in-context theory by demonstrating that color effects in marketing settings are neither universal nor arbitrary but rather systematically influenced by contextual factors including product category, brand positioning, consumer demographics, and cultural background. The significant interaction effects identified suggest that these contextual variables do not merely add noise to color effects but fundamentally alter how colours influence consumer perception.

The results challenge simplistic, prescriptive approaches to color in marketing that recommend specific colours for universal effects (e.g., "use blue to build trust"). Instead, they support a more nuanced theoretical framework in which color operates through both:

1. Relatively stable psychological mechanisms (e.g., the physiological arousal produced by red)
2. Contextually-dependent learned associations that vary across product categories and cultures

The strong product category effects align with schema congruity theory (Mandler, 1982), suggesting that colours become associated with product category schemas, with congruent colours facilitating fluent processing while incongruent colours create cognitive dissonance. The exception for disruptive brand positioning supports the theory that moderate schema incongruity can be beneficial when it aligns with brand messaging (Meyers-Levy & Tybout, 1989).

Practical Implications

For marketing practitioners, these findings suggest several concrete guidelines:

1. **Product Category Alignment:** Color selection should begin with an understanding of category conventions, particularly for established product categories with strong color associations. Deviation from these norms should be strategic rather than arbitrary.
2. **Target Demographic Consideration:** Gender, age, and cultural background significantly influence color responses, necessitating color palettes appropriate for the specific target audience. International brands should be particularly attentive to cultural variations in color meaning.
3. **Brand Positioning Congruence:** Color should align with overall brand positioning—established brands emphasizing reliability may benefit from conventional, trust-evoking colours, while disruptive brands may leverage unexpected colours to signal innovation.
4. **Emotional Strategy Integration:** Colours should be selected based on the specific emotional response brands wish to evoke, with conscious alignment between color-triggered emotions and desired brand associations.

These findings support implementing a strategic color framework that balances universal color psychology principles with contextual factors rather than relying on prescriptive color recommendations.

Limitations and Future Research Directions

While this study advances understanding of color psychology in marketing, several limitations should be acknowledged. First, the experimental conditions necessarily simplified the complex visual environments of real-world marketing, isolating color from other design elements like typography and imagery that may interact with color effects. Future research should examine these interaction effects in more naturalistic settings.

Second, while the sample included cultural diversity, more extensive cross-cultural research is needed to fully map cultural variations in color perception, particularly for emerging markets underrepresented in color psychology research.

Additionally, the study focused primarily on immediate perceptual and emotional responses rather than long-term brand building effects of consistent color usage.

Longitudinal research examining how color associations develop and change over time would provide valuable insights into strategic color management.

Finally, the accelerating shift toward digital marketing environments raises questions about how screen-based color perception might differ from physical color viewing. Future research should specifically address how digital contexts modify color effects and whether findings from physical marketing contexts translate to digital environments.

CONCLUSION

This research demonstrates that color significantly influences consumer perception and behaviour through complex psychological mechanisms that operate in contextually-dependent ways. The findings confirm that colours consistently evoke specific emotional responses that impact brand perception, but these effects are systematically moderated by product category expectations, brand positioning, and consumer demographics.

For marketers, the implications are clear: effective use of color requires moving beyond simplistic color prescriptions toward strategic frameworks that account for both universal psychological principles and contextual variables specific to target markets and product categories. By approaching color as a strategic rather than merely aesthetic choice, marketers can leverage this powerful visual element to enhance brand communication, emotional engagement, and ultimately, consumer action.

The psychology of color in marketing remains a rich area for ongoing research, particularly as digital environments evolve and global markets become increasingly interconnected. By continuing to investigate how visual elements affect consumer perception across these changing contexts, researchers can provide valuable insights that bridge the gap between color theory and effective marketing practice.

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