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Research article

อิทธิพลของเทคนิคการจัดแสงในการถ่ายภาพ ต่อการรับรู้มิติและรูปทรงของกล้ามเนื้อและความงามทางกายภาพ: มุมมองของชายรักชาย

Sculpting Light: The Impact of Photographic Lighting on the Perception of Musculature and Physical Aesthetics Through the Homo Gaze

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บทคัดย่อ

งานวิจัยนี้ศึกษาผลของเทคนิคการจัดแสงในการถ่ายภาพที่มีผลต่อการรับรู้รูปร่างและความงามทางกายภาพ ผ่านมุมมองของชายรักชาย โดยมีกลุ่มตัวอย่างเป็นชายที่เปิดเผยตัวตนว่าเป็นชายรักชาย 350 คนในกรุงเทพมหานคร ผู้วิจัยใช้เทคนิคการจัดแสง 3 แบบ ได้แก่ แสงแยกและเติม (Split Fill Lighting) แสงเรมบรันด์ร่วมกับโฟมดำ (Rembrandt Lighting with Black Foam) และแสงแยกจากด้านบนโดยไม่มีการเติมแสง (Top Split Lighting without Fill) เพื่อประเมินผลต่อการรับรู้ทางสายตาของรูปร่าง 3 ประเภท คือ เอนโดมอร์ฟ (Endomorph) เอกโตมอร์ฟ (Ectomorph) และเมโซมอร์ฟ (Mesomorph) ผู้เข้าร่วมวิจัยประเมินความชัดเจนของกล้ามเนื้อในภาพด้วยมาตรวัดแบบมีโครงสร้าง 3 ประเภท การศึกษานี้ใช้วิธีวิจัยแบบผสมผสาน (Mixed Methods) ทั้งการสำรวจเชิงปริมาณและการสัมภาษณ์เชิงลึก ผลการวิจัยพบว่า การจัดแสงมีผลอย่างมีนัยสำคัญต่อการรับรู้เกี่ยวกับกล้ามเนื้อและมาตรฐานความงามในชุมชนเกย์ โดยแสงเรมบรันด์ร่วมกับโฟมดำได้รับความนิยมมากที่สุดในการเน้นรายละเอียดของกล้ามเนื้อ นอกจากนี้ยังชี้ให้เห็นถึงบทบาทสำคัญของแสงในงานศิลปะการถ่ายภาพและการออกแบบ ซึ่งส่งผลต่อการอภิปรายในประเด็นสุนทรียศาสตร์ (Aesthetics) ของการรับรู้ทางสายตา การศึกษานี้ยังเน้นย้ำถึงความสำคัญของมาตรฐานความงามที่หลากหลายและการพัฒนาการสื่อสารทางสายตา เพื่อประโยชน์ทั้งในด้านองค์ความรู้ด้านสุนทรียศาสตร์ และในเชิงพาณิชย์ โดยนำเสนอข้อมูลเชิงกลยุทธ์สำหรับการเข้าถึงตลาดที่มีความหลากหลาย

คำสำคัญ: การจัดแสงในการถ่ายภาพ มุมมองของชายรักชาย มิติและรูปทรงกล้ามเนื้อ สุนทรียศาสตร์ การสื่อสารด้วยภาพ

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Abstract

This study explores the impact of photographic lighting on perceptions of musculature and physical aesthetics through the homo gaze among 350 openly gay men in Bangkok. Employing three advanced lighting setups— split and fill, Rembrandt with black foam, and split overhead non-fill— this research methodically assesses how different lighting conditions influence visual perceptions across three body types: endomorph, ectomorph, and mesomorph. Participants rated muscular definition in images using a structured scale: defined, less defined, or unchanged. A comprehensive mixed-methods approach, integrating quantitative surveys and qualitative interviews, captures detailed emotional and aesthetic reactions. The findings demonstrate that lighting not only significantly alters perceptions of musculature but also shapes broader beauty standards within the gay community. By illustrating the crucial role of lighting in photographic art and design, this study contributes to visual culture discourses. It underscores the importance of inclusive aesthetic standards and the enhancement of visual communication for commercial purposes, offering strategic insights for engaging diverse markets.

Keywords: Photographic Lighting, Homo Gaze, Muscular Perception, Inclusive Aesthetics, Visual Communication

1. Introduction

The intersection of visual aesthetics and cultural identity significantly shapes how individuals perceive beauty, making it a critical area of study within contemporary aesthetics and cultural studies. Spehar et al. (2015) highlighted the significant role of an observer's visual sensitivity in shaping their aesthetic preferences, suggesting that aesthetic experiences are deeply influenced by both perceptual mechanisms and the viewer' s cultural context. Building upon this insight, this research investigates how photographic lighting affects the perception of musculature and physical aesthetics through the homo gaze among openly gay men in Bangkok—a demographic often overlooked in visual aesthetics research. The focus on gay men is crucial, as preliminary reviews suggest that their aesthetic preferences are distinctly influenced by unique socio-cultural dynamics. This study addresses the significant research gap by exploring these preferences more deeply.

The choice of this specific topic stems from the need to understand how varying lighting conditions can shape aesthetic judgments differently within marginalized communities, particularly among gay men, who may experience visual stimuli in ways that are culturally and contextually distinct. Employing theories such as the 'homo gaze,' which postulates that gay men possess a unique perspective that influences their perceptions of beauty and attractiveness, this research aims to provide insights into the complex interactions between visual sensitivity, aesthetic appreciation, and cultural identity as influenced by photographic art and design. Additionally, it leverages Calvelhe's (2013) framework, which underscores the transformative potential of visual culture in art education and how it shapes, reinforces, or challenges cultural identities, particularly within marginalized communities.

This study is particularly significant because it not only fills an existing gap in the visual aesthetics literature by focusing on a group that is rarely the subject of such studies but also enhances our understanding of how cultural and aesthetic values are interconnected and expressed among gay men in Bangkok. The utilization of the 'homo gaze' as a theoretical lens allows for a nuanced exploration of how gay men perceive, process, and respond to visual stimuli, particularly in relation to their own identities and within the broader cultural and social contexts.

2. Research Objectives

2.1 Objective 1: Analyze the Impact of Lighting Techniques on Muscular Perception: Assess the influence of various photographic lighting setups—split and fill, Rembrandt with black foam, and split overhead non-fill—on the visual perception of male musculature among gay men.

2.2 Objective 2: Explore Emotional Responses to Lighting Variations: Investigate how changes in lighting affect emotional and aesthetic responses within the gay community.

2.3 Objective 3: Assess Cultural and Aesthetic Impacts: Determine how these lighting techniques influence cultural identity and aesthetic standards among gay men.

3. Theoretical Framework

3.1 Theoretical Framework Introduction

This section elucidates the theoretical framework via a detailed flowchart, delineating the methodological approach utilized to investigate the impact of photographic lighting on musculature perception among gay men. The flowchart (Figure 1) systematically maps the study's progression from an initial survey to the final preference assessment, articulating each investigative phase:

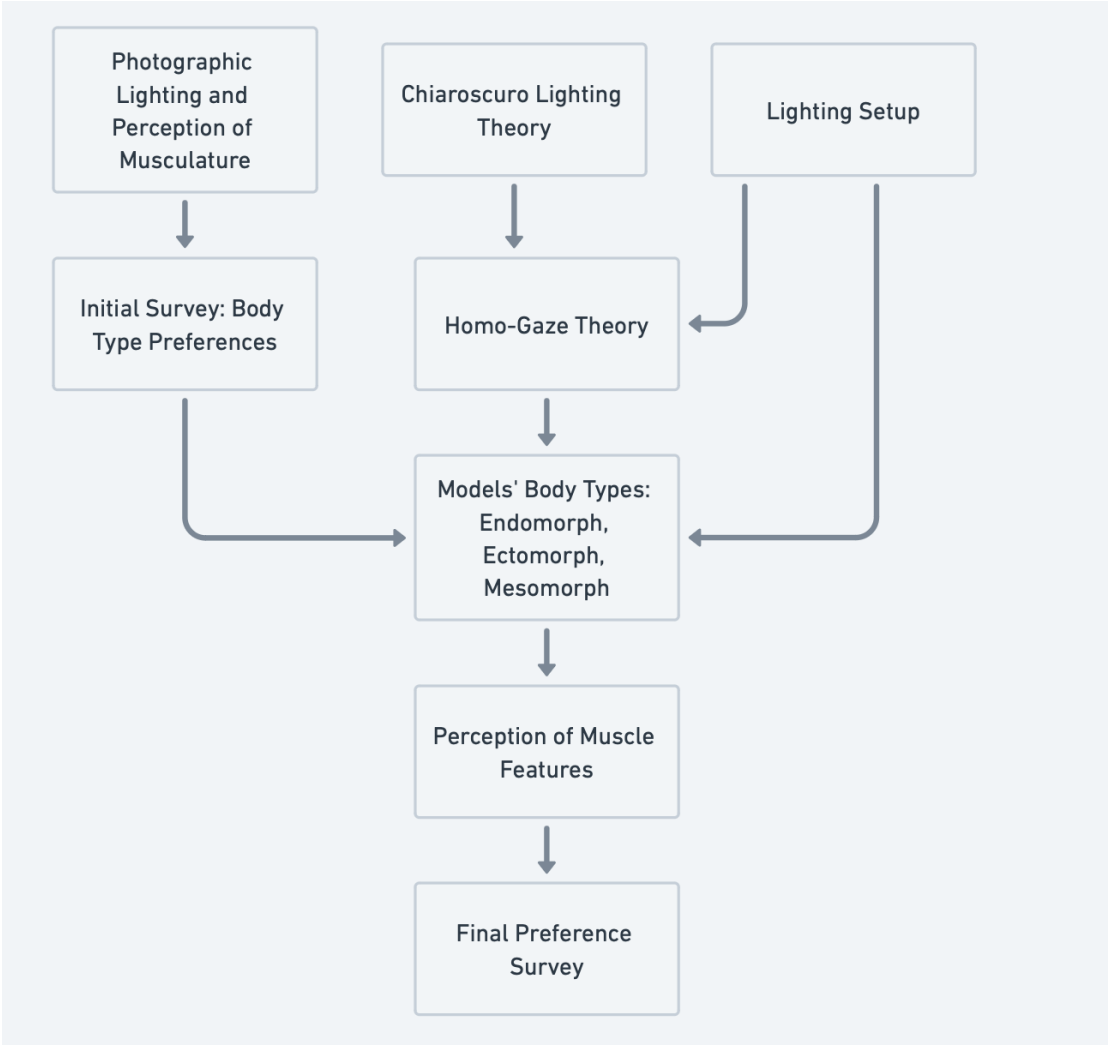


Figure 1 Methodological Framework of the Study on Lighting's Impact on Musculature Perception Among Gay Men

3.2 Chiaroscuro Lighting Theory

Chiaroscuro, derived from the Italian words for "light" and "dark," is a painting technique developed during the Renaissance that utilizes strong tonal contrasts to model three-dimensional objects on a two-dimensional surface. This method dramatically enhances the perception of depth, volume, and form through light and shadow interplay (Zavagno & Massironi, 2006).

Implementing Chiaroscuro lighting requires strategic placement of light sources and shadows to create high contrast within the photographic frame. This is typically achieved by using directional lighting—such as a single light source angled to cast pronounced shadows and highlight key features of the subject. Reflectors and diffusers may also be used to control the spread and softness of shadows, allowing for meticulous manipulation of light and dark contrasts. Such setups not only sharpen the delineation of the subject but also infuse the composition with a sense of depth and drama reminiscent of Renaissance art.

The adaptation of Chiaroscuro in digital media has evolved significantly, leveraging computational models to create visual effects that manipulate viewer perception. Sauvaget and Boyer (2010) highlighted how these techniques could be utilized to focus viewer attention, enhance spatial understanding, and evoke specific emotional responses by emulating this dramatic contrast in digital images.

This study builds upon the traditional principles of Chiaroscuro by investigating their impact in photographic settings, particularly for enhancing the definition of musculature through lighting. Employing high-contrast lighting setups akin to Chiaroscuro aims to accentuate the physical form and texture, thus deepening the viewer's emotional and aesthetic engagement.

While the Human Visual System (HVS) is complex and integral to understanding how visual stimuli are processed, this research draws on conceptual insights from the HVS rather than implementing specific HVS models directly. Ann McNamara's research on visual perception in realistic image synthesis has provided a technological framework that underscores the importance of aligning perceptual visual qualities with physical light properties to achieve realism in computer graphics (McNamara, 2001). Insights into tone mapping and its application in visual perception further refine our approach, enabling the simulation of natural light interactions with surfaces, which enhances the three-dimensionality and material comprehension of the observed subjects. This approach aligns with the broader goals of Chiaroscuro—not only to depict light and shadow but also to enrich the viewer's visual and emotional experience.

By conceptually integrating Chiaroscuro principles with modern computational methods and insights from the study of the HVS, this research offers a nuanced examination of how lighting affects perception. It bridges historical artistic practices with contemporary digital photography, providing a comprehensive understanding of the visual stimuli's impact on aesthetic appreciation and psychological responses without the direct application of complex HVS strategies, but rather building upon these principles in a feasible way.

3.3 Homo-gaze Theory

The concept of "Homo-gaze" describes the unique visual perspective of gay men, shaped by their cultural, personal, and socio-sexual experiences. This gaze influences how they perceive and interpret visual stimuli across various mediums, such as art, film, and photography. "Homo-gaze" emphasizes the cultural influence on perceptions of beauty and identity, highlighting features that resonate within the gay community, including depictions of male beauty and nuances of gay identity.

3.3.1 Cultural and Aesthetic Sensitivities: The Homo-gaze reflects a complex interplay of aesthetics informed by the broader cultural context and historical portrayals of homosexuality and masculinity. Lanzieri and Hildebrandt (2011) explored how hegemonic masculinity shaped gay male attraction towards muscular and athletic men, pointing towards a socio-culturally constructed ideal of male aesthetics that was internalized within the gay community.

3.3.2 Influence of Visual Sensitivity on Aesthetic Preferences: Spehar et al. (2015) demonstrated that visual sensitivity significantly impacted aesthetic preferences, suggesting that the Homo-gaze might prioritize elements of visual culture that aligned with homosexual aesthetics. This sensitivity enhanced engagement with visual elements that affirm or challenge gay men's sense of identity and community.

3.3.3 The Role of Photography in Queer Identity Construction: As explored in Snider's work on transgender photographer Loren Cameron ("You Make Me Feel Like a Natural Transgendered Person"), photography served as a powerful medium for exploring and expressing queer identities. Cameron's work used the body as a canvas to challenge and redefine notions of gender and sexuality, exemplifying how the Homo-gaze interacted with and is shaped by artistic expression.

3.3.4 Influence of Media on Cultural Identity: The portrayal of gay relationships in Thai Boys' Love (BL) narratives, although offering visibility, often features idealized and misrepresentative depictions, which impact cultural identity perceptions among viewers. Michaels et al. (2024) has discussed how these portrayals resonate differently with gay men and heterosexual women, affecting their understanding and acceptance of gay identities. This media influence underscores the complex relationship between visual representations and cultural identity within the gay community, relevant to the study's exploration of how aesthetic elements like lighting influence perception. Snider (2005) explored the intersection of photography and cultural identity, particularly focusing on how transgender photography challenged and reconstructed societal norms about gender and identity. In "You Make Me Feel Like a Natural Transgendered Person," Snider discussed how images of transgender bodies not only reflected but also actively constructed queer identities, underscoring the powerful role of visual aesthetics in shaping and expressing cultural identities. This analysis is particularly relevant to our exploration of how lighting in photography influences cultural perceptions within the gay community (Snider, 2005).

3.3.5 Technical Aspects and Construction of Visual Narratives: Sauvaget and Boyer (2010) illustrated how technical elements in art, like lighting and composition, could enhance features that cater to the gay aesthetic. These techniques were crucial in shaping how gay men were visually represented, influencing the perception and reception of these images within and beyond the gay community.

3.3.6 Integrating New Research: Studies by Lanzieri and Hildebrandt (2011) and Snider provided a deeper understanding of how the Homo-gaze functions within the context of hegemonic masculinity and queer identity construction. They highlighted the intersection of gender, sexuality, and visual culture, offering a richer comprehension of how gay men perceived and were influenced by visual representations.

4. Research Methodology

4.1 Research Design

This research employed a mixed-methods approach to explore how photographic lighting affected the perception of musculature and physical aesthetics within the gay male community in Bangkok. The methodology integrated both quantitative and qualitative data, enabling a comprehensive analysis of the visual impact of lighting techniques on emotional and aesthetic responses.

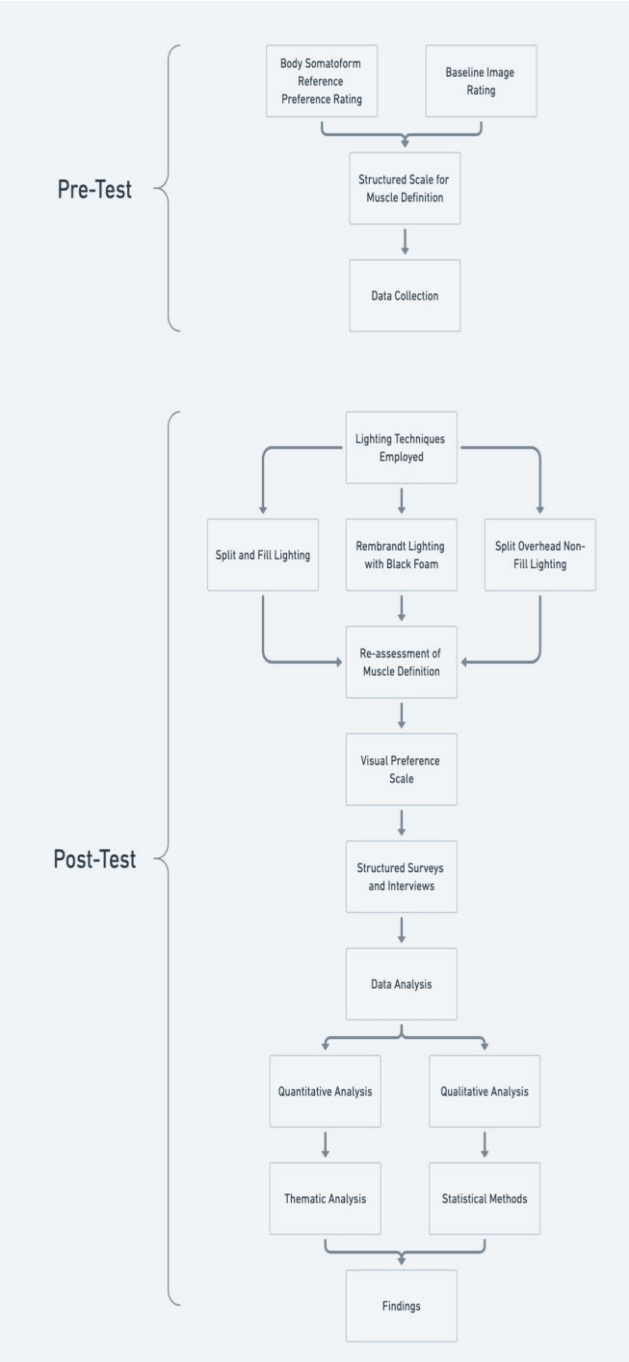


Figure 2 Research Methodology Flowchart

4.1.1 The sample consisted of 350 openly gay men from diverse occupational backgrounds in Bangkok, representing a broad range of ages, professions, and body types. All 350 participants completed structured surveys designed to provide a comprehensive quantitative analysis of how different lighting setups affected the perception of musculature.

From within this group, 50 participants were purposively selected for in-depth interviews. These participants were chosen based on their ability to provide diverse and insightful responses, with the aim of achieving data saturation—the point at which additional interviews did not yield new themes or significant insights. The decision to focus on 50 participants ensured that the qualitative data were both rich and manageable, allowing for a deep exploration of the emotional and aesthetic impacts of lighting while maintaining the robustness of the analysis.

4.1.2 Sampling Technique: The researcher employed purposive sampling to achieve a balanced representation of body types classified as endomorph, ectomorph, and mesomorph among the 350 participants. For the in-depth interviews, participants were chosen based on their ability to provide profound personal insights into the interaction between lighting and musculature perception, ensuring diversity in responses and enhancing the study's depth.

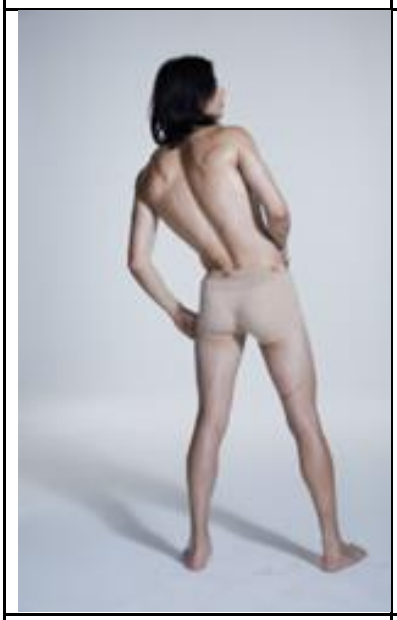
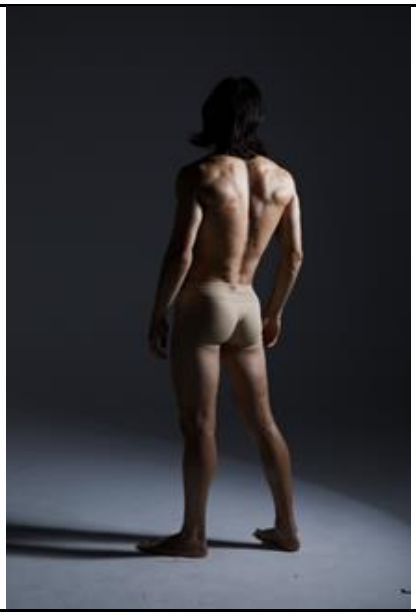
4.1.3 Lighting Techniques Employed: Participants were exposed to three distinct photographic lighting setups to examine their effects on muscle perception:

1) Split and Fill Lighting: Balances light and shadow on the subject's body to subtly emphasize muscle definition.

2) Rembrandt Lighting with Black Foam: Enhances contrast and depth around muscle curves using a strategic placement of light and shadows.

3) Split Overhead Non-Fill Lighting: Creates stark contrasts and deep shadows to starkly accentuate muscular features.

Visual Presentation of Lighting Setups: To provide a visual reference of the lighting techniques employed, the following images represent each setup applied to three different body types. These images serve as a crucial aid in understanding the specific conditions under which participant perceptions were gauged:

Test 1	Test 2	Test 3
		
Ectomorph (Split Fill)	Ectomorph (Rembrandt)	Ectomorph (Chiaroscuro)
		
Mesomorph (Split Fill)	Mesomorph (Rembrandt)	Mesomorph(Chiaroscuro)

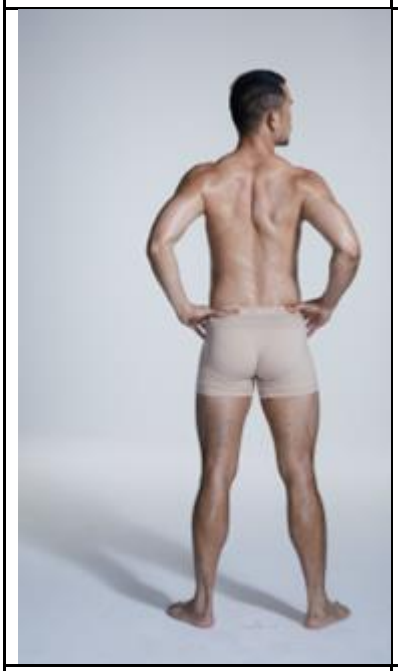
Test 1	Test 2	Test 3
		
Endomorph (Split Fill)	Endomorph (Rembrandt)	Endomorph (Chiaroscuro)

Figure 3 Visual Representation of Lighting Techniques on Different Body Types

4.1.4 Data Collection Instruments: Structured Scale for Muscle Definition: Participants first assessed muscle clarity in baseline images without specialized lighting (pre-test). After exposure to the three lighting conditions (post-test), subjects re-rated the muscle definition on a scale of 1 (less defined) to 3 (more defined).

4.1.5 Visual Preference Scale**:** After exposure to the three different lighting conditions, all 350 survey participants rated their visual preference for each image on a scale from 1 (least preferred) to 3 (most preferred), providing quantitative data on aesthetic preferences. Additionally, 50 participants from this group were further engaged in in-depth interviews to explore the qualitative aspects of their preferences.

4.1.6 Surveys and Interviews**:** Structured surveys were administered to all 350 participants to gather quantitative data on their initial and post-exposure reactions to different lighting setups.

The survey consisted of **20 questions**, covering the following key areas:

Muscle Definition Perception:

Participants rated the clarity of muscle definition in baseline images (pre-test) and after exposure to the three lighting conditions (post-test) on a 3-point scale (1 = less defined, 2 = unchanged, 3 = more defined).

Attractiveness Rating:

Participants rated the attractiveness of the models under each lighting condition using a 5-point Likert scale (1 = very unattractive, 5 = very attractive).

Emotional Response:

Multiple-choice questions gauged emotional responses to each lighting condition, with options ranging from "calm" to "intense."

Lighting Preference:

Participants were asked to choose their preferred lighting setup for each body type (endomorph, ectomorph, and mesomorph) based on aesthetic appeal.

Perception of Authenticity:

Participants rated how "natural" they felt the lighting setups were on a scale from 1 (very artificial) to 5 (very natural).

From this group, 50 participants were purposively selected for in-depth interviews to provide qualitative insights into the emotional and aesthetic impacts of the lighting. This dual approach allows for a robust analysis, capturing both broad patterns through the surveys and deep, nuanced understanding through the interviews.

4.2 Experimental Design

The pre-test involved participants rating a baseline image without specialized lighting techniques. For the post-test, the same participants viewed the same model under the three different lighting setups and re-assessed muscle definition and visual preference.

4.3 Data Analysis

4.3.1 Quantitative Analysis: Quantitative data from the 350 surveys were analyzed using descriptive and inferential statistics, including ANOVA, to compare perception scores across different lighting techniques and body types. Qualitative data from the 50 interviews underwent thematic analysis to extract deeper insights into emotional and aesthetic reactions, providing a complementary narrative to the statistical findings. This combination of methods offers a comprehensive view of how lighting influences perception and aesthetic judgment within the gay community.

4.3.2 Qualitative Analysis: Interview transcripts underwent thematic analysis to extract common themes related to emotional and aesthetic reactions. This analysis provided qualitative insights that complemented the quantitative data, offering a deeper understanding of how different lighting setups influenced participants' perceptions and emotional responses.

4.3.3 Statistical Methods: Descriptive statistics summarized the survey data, providing an overview of the responses. Repeated measures ANOVA was specifically employed to assess the effect of lighting on the perception of muscle definition and visual preference across different body types and lighting setups. Additionally, Chi-square tests were conducted to analyze the relationships between the body types and different lighting techniques in terms of attractiveness and alignment with beauty standards. These statistical methods evaluated the consistency and variability of responses, highlighting how specific lighting conditions influenced aesthetic judgments and emotional responses within the studied community.

5. Results

This section presents the results from the quantitative analysis based on the data collected concerning the impact of different photographic lighting techniques on perceptions of musculature and aesthetics.

5.1 Analysis of the Impact of Lighting Techniques on Muscular Perception. (Objective One)

The study analyzed how three different lighting setups—Split and Fill, Rembrandt with Black Foam, and Split Overhead Non-Fill—affected participants' perceptions of muscular definition across three body types: endomorph, ectomorph, and mesomorph.

ANOVA Results:

The ANOVA results indicated significant effects of lighting on muscular definition perception ($F(2, 1047) = 23.46$, $p < .001$). This suggests that different lighting setups can distinctly enhance or diminish the visibility of muscular features. (See figure 4)

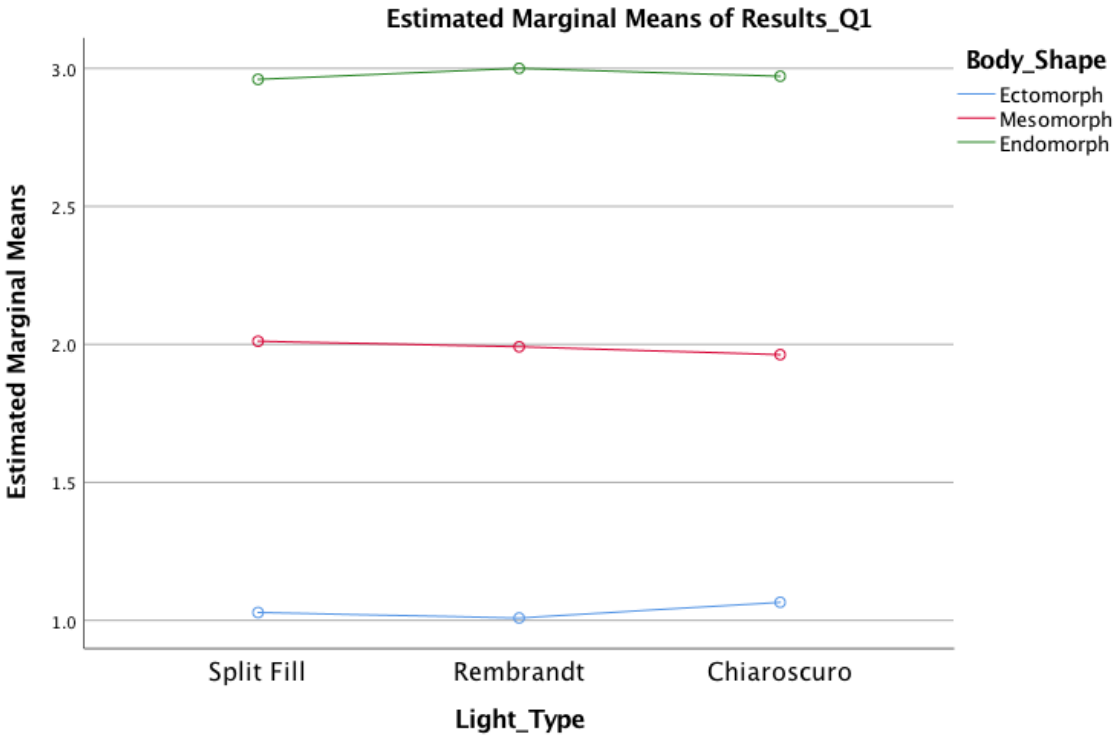


Figure 4 Average ratings of muscle definition clarity between different body types under three distinct lighting conditions.

5.2 Analysis of Attractiveness and Visual Preferences (Objective 2)

This section addresses the direct emotional impact of various lighting setups on individual perceptions of attractiveness. By measuring how participants rated the attractiveness of images under

different lighting conditions, the study sought to uncover which setups elicit the strongest positive emotional responses and why. This directly engaged with personal aesthetic preferences and emotional reactions to visual stimuli. The study revealed that participants overwhelmingly favored the Rembrandt with Black Foam lighting due to its enhancement of musculature and overall aesthetic appeal. This preference indicated that specific lighting conditions could significantly influence emotional responses, directly affecting how attractiveness was perceived by individuals within the gay community in Bangkok.

Chi-Square Test Results:

The chi-square test showed significant differences in attractiveness ratings across the lighting conditions ($\chi^2(2, N = 1050) = 36.89, p < .001$). This highlights a clear preference for certain lighting conditions over others in terms of enhancing perceived attractiveness. (See figure 2)

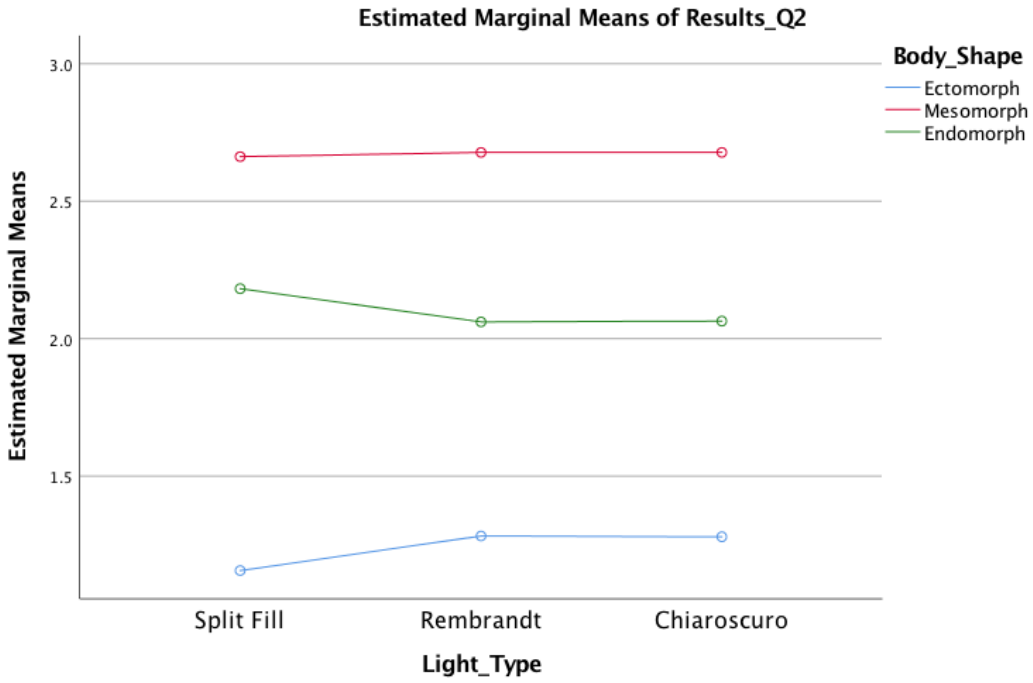


Figure 5 Average ratings of attractiveness assessed from different body types under three distinct lighting conditions.

5.3 Assessment of Cultural and Aesthetic Impacts: Alignment with Beauty Standards (Objective 3)

Building on the individual preferences identified in Objective 2, this section examines how these preferences align with or diverge from established cultural beauty standards within the gay community in Bangkok. It assesses whether the favored lighting setups (as identified in Objective 2) also support or challenge the cultural norms and identity constructs within the community. This section connects individual preferences to collective cultural patterns, highlighting the role of visual aesthetics in cultural identity formation. Further analysis showed that the Rembrandt with Black Foam lighting not only aligned with

individual preferences but also adhered to the broader beauty standards of the gay community in Bangkok. This alignment suggested that such lighting techniques are culturally resonant, reflecting and potentially reinforcing cultural norms and identities through visual aesthetics.

Post-Hoc Tests:

Post-hoc comparisons indicated that the Rembrandt with Black Foam lighting was particularly effective in aligning with beauty standards, receiving the highest alignment ratings from participants. This was statistically significant compared to the other two conditions, suggesting that this lighting setup might be particularly beneficial in contexts where alignment with specific beauty standards is crucial.

The statistical analyses from this study underscored the substantial impact that lighting techniques can have on the perception of physical aesthetics, particularly within the context of photography geared towards the gay community. The significant results from ANOVA, chi-square tests, and post-hoc analyses collectively demonstrated that lighting not only affected how muscularity was perceived but also influenced attractiveness ratings and alignment with beauty standards. These findings provided a robust basis for understanding the complex interplay between lighting, perception, and aesthetic appreciation. (See figure 3)

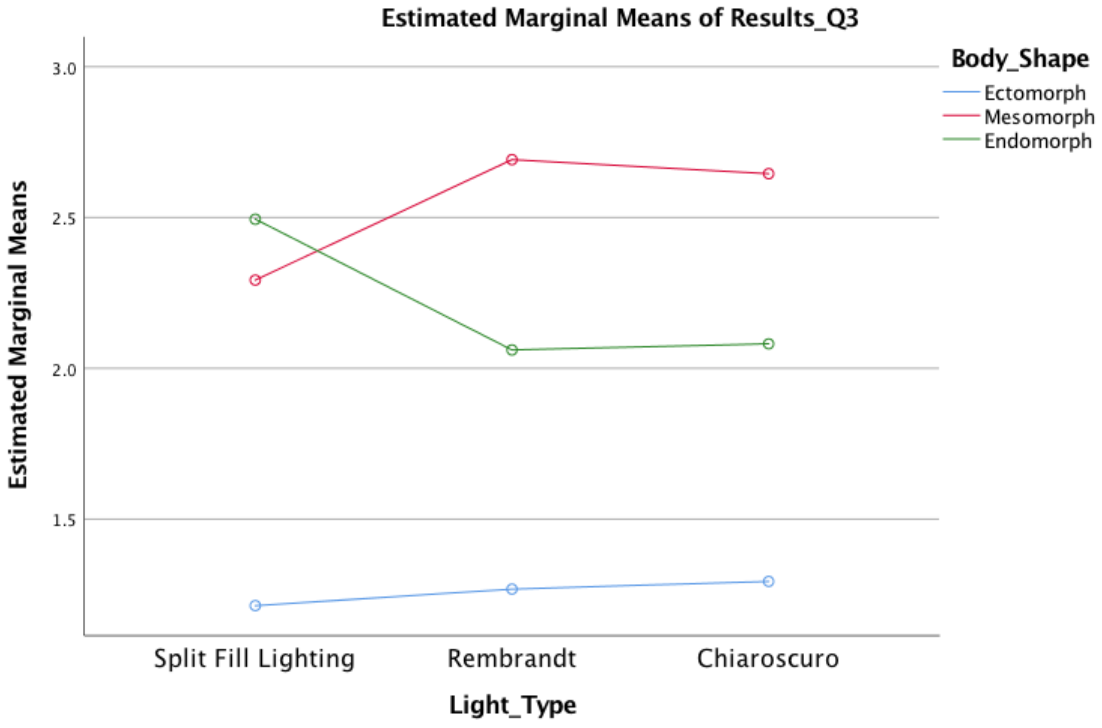


Figure 6 Average Ratings of Alignment with Beauty Standards by Body Type and Lighting Conditions

The table was constructed to summarize the significance of body types and lighting techniques according to the research objectives, which included muscle definition clarity, attractiveness, and alignment with the beauty standards of the gay community (See Table 1). It was observed that the endomorph body type displayed the clearest muscle definition under any lighting condition. The mesomorph body type was

considered the most attractive regardless of the lighting used. Additionally, the endomorph body type aligned with beauty standards when using Split-fill lighting, while the mesomorph standard of beauty was best achieved with Rembrandt lighting.

Table 1 Summary of Body Shape Selection Based on Type of Lighting and Research Questions

	Split-Fill Lighting	Rembrandt Lighting	Chiaroscuro Lighting
A. Ectomorph	Least muscular visibility, least attractive, least alignment with beauty standards		
B. Mesomorph	Most attractive, highest alignment with beauty standards	Most attractive, highest alignment with beauty standards	Most attractive, highest alignment with beauty standards
C. Endomorph	Highest muscular definition, highest alignment with beauty standards	Highest muscular definition	Highest muscular definition

These findings not only underscore the impact of lighting on muscular perception (Objective 1) and emotional responses (Objective 2) but also extend to the broader implications for cultural identity within gay culture. By shaping perceptions of beauty and attractiveness, lighting techniques like Rembrandt with Black Foam play a pivotal role in how physical aesthetics are interpreted and internalized, influencing cultural identity and standards. This aligns with Objective 3, demonstrating that visual aesthetics go beyond mere technical manipulation and are deeply intertwined with cultural expressions and identity construction within specific communities, particularly within gay culture.

5.4 Thematic Analysis of In-Depth Interviews

Following the statistical analysis of the survey data, qualitative data from in-depth interviews were thematically analyzed to deepen the understanding of the impact of lighting on perceptions of musculature and aesthetics. This analysis aimed to contextualize the quantitative findings and provide richer insights into participants' experiences and perceptions under different lighting conditions.

Table 2 Thematic Analysis of In-Depth Interviews

Theme	Participant Quotes	Analysis	Aim
Enhancement of Muscular Definition	"It really brought out the details and added depth to the muscles." "I could see the contours more clearly."	Rembrandt lighting setup was consistently mentioned as enhancing muscle definition, aligning with quantitative findings.	**Objective 1:** Analyze the impact of lighting techniques on muscular perception.
Emotional Impact of Lighting	"Captivating but a bit intimidating." "It felt overpowering."	Split Overhead Non-Fill lighting elicited more intense emotional responses but was not as highly rated for attractiveness.	**Objective 2:** Explore emotional responses to lighting variations.
Perceived Naturalness and Authenticity	"More natural and less forced." "It didn't alter the real look, which made it more genuine."	Split and Fill lighting was preferred for its natural look, supporting quantitative preferences for authenticity.	**Objective 2:** Explore emotional responses to lighting variations.
Alignment with Beauty Standards	"It perfectly hits the sweet spot between being dramatic and authentic." "Enhances beauty without going overboard."	Rembrandt lighting was seen as best aligning with contemporary beauty standards within the gay community.	**Objective 3:** Assess cultural and aesthetic impacts, particularly alignment with beauty standards.

Themes Identified:

5.4.1 Enhancement of Muscular Definition: Participants frequently mentioned that the Rembrandt with Black Foam lighting made muscular features more pronounced and visually appealing. Quotes such as, "It really brought out the details and added depth to the muscles," and "I could see the contours more clearly, it was quite dramatic," align with the quantitative finding where this lighting setup was preferred for highlighting muscular definition. Participants described this effect as making the images more striking and attractive.

5.4.2 Emotional Impact of Lighting: The interviews revealed that lighting significantly influences emotional responses. Many participants felt that the Split Overhead Non-Fill lighting created a more dramatic and intense mood, described as "captivating but a bit intimidating," and "it felt like it was too much, almost overpowering." This emotional response correlates with the lower preference ratings for this

lighting setup in the survey, indicating that while impactful, it may not always align with perceptions of attractiveness.

5.4.3 Perceived Naturalness and Authenticity: A common theme across the interviews was the preference for lighting that felt natural and authentic. The Split and Fill lighting was often described as "more natural" and "less forced," with comments like, "It didn't alter the real look, which made it more genuine," and "I prefer lighting that doesn't feel like it's trying too hard." This preference for naturalness supports the survey results, where this lighting condition was favored for not altering the inherent traits of the subjects excessively.

5.4.4 Alignment with Beauty Standards: Participants discussed their views on how each lighting setup aligned with contemporary beauty standards within the gay community. The thematic analysis showed a strong preference for the Rembrandt with Black Foam setup, as it was perceived to enhance desirable features while maintaining a balance between drama and reality. Remarks such as, "It perfectly hits the sweet spot between being dramatic and authentic," and "It enhances the beauty without going overboard," support the statistical data indicating this lighting as most aligned with beauty standards.

The thematic analysis of the in-depth interviews provides qualitative support for the quantitative results obtained from the surveys. It highlights the nuanced ways in which different lighting setups can enhance or detract from the perception of musculature, influence emotional responses, and align with or deviate from accepted beauty standards. These findings enrich the understanding of the potent role lighting plays in photographic representations of beauty and aesthetics, particularly within the gay community. This analysis not only corroborates the statistical evidence but also adds depth to the overall interpretation of how lighting impacts aesthetic judgments, bringing the human experience to the forefront through vivid participant testimonies.

6. Results and Discussions

6.1 Discussion of Results

The findings of this study significantly enrich the understanding of how photographic lighting influences visual perceptions of musculature and aesthetics within the gay community, corroborating and extending existing theoretical frameworks posited by Zavagno & Massironi (2006) and Sauvaget & Boyer (2010). This research highlights the profound influence of lighting on enhancing muscular definition and aligning with perceived beauty standards, offering a nuanced view of how technical elements in photography can influence cultural aesthetics.

The study's alignment with prior research, particularly the works of Spehar et al. (2015), underscores the complex interplay between an individual's visual sensitivity and their cultural context. These dynamics shape aesthetic preferences, suggesting that lighting not only affects perception but also elicits varied emotional responses. This aligns with Calvelhe's (2013) discussion on the role of arts in identity formation among marginalized communities, affirming the relevance of these findings within contemporary social contexts.

6.1.1 Preference Consistency Across Lighting Types: The persistent preference for mesomorph body types across various lighting settings indicates a potentially deep-seated aesthetic bias within the gay community, suggesting that certain physical ideals may be deeply embedded within cultural norms, transcending the influence of variable lighting.

6.1.2 Impact of Chiaroscuro Lighting: The effectiveness of Chiaroscuro lighting in digital photography underscores its potential for modern visual marketing and art, enhancing the three-dimensional perception of subjects and enriching viewer experience significantly. This finding highlights the technique's adaptability and relevance in contemporary visual practices.

6.1.3 Cultural Reflections: The study's results also reflect broader cultural preferences and demonstrate the significant impact of visual media on prevailing beauty standards. These insights provide valuable context on how societal perceptions of beauty are not merely passive reflections but actively shape and reinforce aesthetic and cultural norms.

6.2 Recommendations for Practice and Future Research

For Industry Professionals: The study encourages the adoption of effective lighting techniques, such as Rembrandt and Chiaroscuro lighting, to maximize aesthetic appeal in visual media. These techniques are particularly recommended for their ability to enhance desirable features and align with contemporary beauty standards.

For Future Research: Further exploration into the effects of lighting across different segments of the LGBTQ+ community is recommended, as well as studies incorporating a diverse array of social identities to expand the applicability and relevance of the findings.

Educational Implications: There is a strong advocacy for integrating advanced lighting techniques into art and design curricula. Educators are encouraged to equip students with the necessary skills to utilize lighting effectively, preparing them for the challenges and opportunities in modern visual arts and media.

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