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The Influence of the Lighting Scheme on the Perception of a Premium Product in Subject Photography

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Abstract

This article examines how different lighting schemes can affect the perception of a premium product in subject photography. In particular, key types of lighting, such as hard and soft light, contour light, fill light, and others, are being investigated, as well as their effect on the visual perception of various materials, textures, and shapes. Special attention is paid to techniques and light modifiers that allow you to control glare, shadows, and contrast to create a premium effect. Practical examples of photographing various categories of goods are given, vividly demonstrating how the choice of a lighting scheme can evoke associations from ”budget” to ”premium” perception in the viewer. The article also describes typical errors in the setting of light, which can reduce the perception of the value of the product. In addition, the relationship between the lighting scheme and the overall brand strategy is shown: how lighting can help convey the key values of a brand. The practical value of this work lies in the fact that it provides photographers, marketers, and brand managers with specific recommendations on the use of light, which will help strengthen the premium positioning of the product on a visual level.

Keywords: subject photography, lighting scheme, premium product perception, light modifiers, visual branding, commercial photography

Relevance of the study

In today’s world, where visual communication is becoming increasingly important in marketing and branding, the relevance of this research is undeniable. In conditions of high competition and abundance of information on the Internet, product photography plays a key role in attracting the attention of consumers and shaping their perception of the value of the product.

This is especially true for the subject photography of premium products, where the visual design directly affects the buyer’s willingness to invest in them. The light scheme is one of the most effective perception management tools. It can emphasize the quality of materials, highlight design details, and create the right emotional atmosphere.

In practice, many photographers and marketers are faced with the task of choosing the right lighting scheme. Non-obvious solutions can reduce the perception of a premium product, even if the product itself is of high quality. However, despite the importance of this topic, there has so far been no systematic data on how different lighting schemes affect the perception of ”premium”. This study fills this gap by offering evidence-based recommendations for photographers and brand managers.

The purpose of the study

The purpose of this study is to study and scientifically substantiate how different lighting schemes can create a sense of premium and high-value goods within the framework of subject photography.

In today's world, visual content has become a key tool for brand positioning. Light is no longer just necessary for an object to be visible, but also performs a complex psychological function, determining the status of a product in the eyes of consumers.

Materials and research methods

An integrated approach was taken in the materials and research methods used, including the analysis of professional photography in the luxury segment and conducting a series of controlled photos of the same object - a bottle of perfume - using various types of lighting equipment, such as pulsed light sources, soft boxes with hard edges, strip boxes, and reflectors with different textures.

The methodological basis of the study was a comparative analysis and expert survey of a group of respondents who evaluated the photos on a scale of aesthetic appeal and value. The results showed that the lighting scheme has a significant influence on the perception of premium products in photography.

The use of low-contrast schemes with soft, filled shadows is often associated with mass-market products, while "premium" lighting is characterized by a balanced mix of deep shadows and accentuated highlights that emphasize the texture of materials like glass, metal, or leather. A cut-off pattern that creates volume and emphasizes the edges of an object, such as the use of contour lighting or gradient highlights using frosted frames, directly correlates with the perceived quality and exclusivity of a composition.

Skilled manipulation of the intensity, direction, and temperature of lighting allows for artificially increasing the perceived value of a product, transforming it from a utilitarian object to a desired item through the visual language of luxury.

The results of the study

The history of research on the relationship between the lighting scheme and the perception of product premium in subject photography begins with early advertising illustrations that appeared at the beginning of the 20th century. It was then that innovative photographers, such as Edward Steichen, began to apply the principles of theatrical lighting to commercial objects. During this period, there was an understanding that dramatic shadows and directional light could turn an ordinary object into a status symbol. This meant the transition from a simple documentary fixation of the product to the creation of its mythologized image.

By the middle of the century, with the development of the glossy magazine industry and the advent of color photography, the attention of researchers and practitioners focused on studying the physics of glare. The works of Irwin Penn and other masters clearly demonstrated that the purity and shape of the light spot on the surface of an object are directly read by the viewer as an indicator of the quality of the material.

In the 1970s and 1980s, research in this field shifted to the level of cognitive psychology and marketing. Scientists began to study the concept of "visual complexity" and its relation to the perception of luxury. It was found that multi-layered lighting schemes that create deep shadows and micro-contrasts require more processing time from the brain. Subconsciously, this is perceived as a sign of the complexity, rarity, and, consequently, high cost of the product.

With the advent of the digital age and the advent of 3D visualization technologies, mathematical modeling

of the behavior of light on various surfaces has enriched the history of studying the issue. This made it possible to identify specific patterns, such as a gradient transition in glare or clear contour light, which are now recognized as universal codes of ”premium.”

Color temperature plays an equally important role. Warm light with a color temperature of 2700-3000K evokes associations with traditions and handicrafts. Cold light with a color temperature of over 5000K highlights modernity and technology. Neutral light with a color temperature of 4000-5000K ensures accurate color reproduction and is perceived as a professional standard.

The direction of the light also plays an important role in creating an emotional mood. Side lighting highlights texture and adds depth to the image; contour light creates a spectacular halo and highlights contours; and combined lighting, combining key, fill-in, and accent sources, allows you to find the perfect balance between detail and artistic expression. The interaction of light with the background also plays a significant role: a dark background with directional lighting gives the image drama and emphasizes its exclusivity, while a light or gradient background gives the image lightness and purity, enhancing the feeling of impeccable style.

Controlling glare and reflections using diffusers, polarizing filters or the ”black room” method helps to avoid visual artifacts that can reduce the perception of quality [4]. Finally, consistent use of a single lighting scheme within the framework of brand communication creates a recognizable visual language that translates the values of stability, reliability, and high standards (Fig. 1).

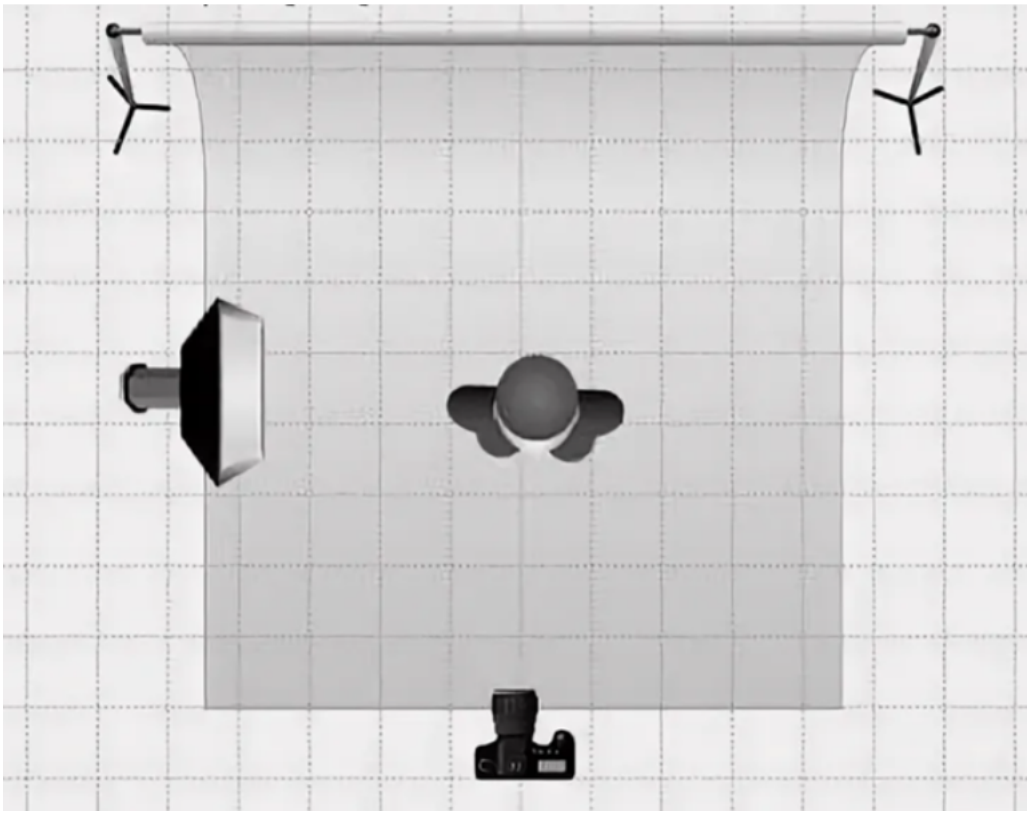

Figure 1. Separate lighting [1]

Modern neuromarketing studies using eye tracking confirm observations that have been known for a long time: people’s gaze lingers longer on objects with pronounced three-dimensionality, achieved through a complex black-and-white pattern. This has made the lighting scheme the main visual pricing tool in the advertising industry.

It is worth noting that modern technologies in subject photography demonstrate the transition from classical lighting methods to high-tech hybrid solutions, where physical light is closely intertwined with digital simulation to achieve maximum premium effect [2].

One of the key technologies today is the use of LED panels with dynamic control via DMX protocols. This allows photographers to create ultra-precise gradient transitions and ”running” highlights on surfaces made of polished metal or glass, which is especially typical for Apple products or expensive watch brands.

The use of robotic systems to control the position of the camera and light (motion control) allows you to create perfect repeating lighting patterns. Thanks to this, dozens of exposures can be superimposed on each other to obtain a flawless composite image in which each facet of the product is illuminated by an individually selected light source.

Virtual studios and lighting technologies based on HDRI cards are actively used in automotive and jewelry photography. These maps are designed specifically to simulate an ”atmosphere of luxury.” For example, they can reproduce reflections of modernist architecture or the soft light of twilight, which is subconsciously associated with a certain lifestyle [3].

Another modern example is the use of lighting schemes that create the illusion of ”natural imperfection.” This effect is achieved with the help of gobo masks and frost frames, which create soft shadows, as if from invisible windows or foliage. Today, this style is perceived as a sign of environmental friendliness and ”quiet luxury,” in contrast to the aggressive studio gloss of the last decade.

Artificial intelligence and neural network rendering technologies, such as CGI and 3D photography, make the premium visual code more sophisticated. They create light accents on microtextures of materials that cannot be created in reality, but which are very important for creating a sense of the product’s super-value in the digital space (Table 1).

Table 1. Artificial intelligence technologies in photography

No.	Technology	Characteristic
1	Image Editing	Automatic photo enhancement. AI can automatically adjust brightness, contrast, and color balance to enhance photos. Background replacement. Algorithms can accurately isolate objects from the background and replace it with another background.
2	Creating Images	Generative models. The AI can create original images or illustrations based on the set parameters. For example, you can use GAN (Generative Adversarial Networks) to create new images. Super resolution. AI can increase the resolution of images, adding details and improving the quality.
3	Analysis and classification	Classification of photos. AI can recognize and classify objects in photographs, which is useful for organizing photo collections. Image search. AI allows you to find appropriate images based on certain criteria.
4	Filters and effects	AI-powered filters. The apps utilize AI to generate unique artistic effects and filters that can be applied to photos.
5	Portrait enhancement	Retouching. AI can automatically improve skin tone, remove imperfections, and add makeup to portraits. Emotion analysis. AI can analyze facial expressions in photos and suggest ways to improve them to convey desired emotions.
6	Photography using drones	AI uses algorithms to guide and control drones, allowing for better and more creative camera angles and shots.
7	Process automation	AI systems can automate various aspects of a photographer's work, such as planning shoots, managing colors, and post-processing images.

Modern technologies transform the lighting scheme from a simple technical aspect into a complex attention management tool. Each photon in this scheme is aimed at emphasizing the exclusivity and technological superiority of the product.

However, there are some problems in the sphere of the influence of lighting schemes on the perception of premium goods. First, it is the growing gap between the technical perfection of the image and its emotional authenticity in the eyes of the modern consumer. One of the main difficulties is hyperrealism, which arises from the excessive use of CGI technologies and complex compositing. The perfectly cleaned lighting scheme makes the product so flawless that it begins to be perceived as artificial. This causes the viewer to subconsciously distrust and the effect of the ”sinister valley” in commercial graphics.

Another complication is that the perception of luxury may vary from culture to culture and context to context. For example, universal ”premium light” codes such as deep shadows and bright highlights may work well in the European market, but in eastern cultures, they may seem gloomy or not expressive enough. In eastern cultures, gold and precious metals traditionally require bright lighting that floods everything around.

Technological progress can also lead to the problem of ”visual inflation”. Affordable powerful lighting equipment and software filters allow medium-sized brands to copy the aesthetics of luxury, blurring the boundaries between the elite and the mass market. As a result, premium brands are forced to look for more and more complex and expensive ways to stand out visually.

Another technical issue is the color rendering and dynamic range on different display devices. For example, a lighting scheme designed by a photographer to convey the subtlest nuances of skin texture or satin sheen on a professional monitor may completely lose its ”premium” properties when viewed on a low-contrast budget

smartphone. As a result, the image may become an expressionless gray spot.

Finally, there is the ethical issue of manipulating consumer expectations. When expertly exposed lighting hides real flaws in materials or assembly, creating a false sense of high quality, this can lead to customer disappointment and lower trust in the brand's visual communications in general.

We believe that in order to solve the problems related to the influence of lighting schemes on the perception of premium, it is necessary to move from purely technical perfection to a strategy of "controlled realism" and adaptability.

To overcome the effect of artificiality and distrust of hyper-realistic images, leading studios are introducing a technique for adding organic imperfections to ideal lighting schemes. They use physical filters, gobo masks with the texture of natural obstacles, and preserve microscopic defects in the material. This restores tactile authenticity to the product and evokes an emotional response from consumers.

To avoid visual inflation and copying of luxury style by the mass market, brands develop unique author's light autographs. They are not created using standard softboxes but using unique reflectors, Fresnel lenses, and complex optical attachments, which allows for the creation of a unique pattern that is difficult to repeat automatically.

Cultural variability of perception is also taken into account: brands create several lighting options for the same product for different regions. For example, for the Western market, the emphasis is on deep chiaroscuro modeling, and for the Asian market, on high - key schemes that emphasize the purity of color and the brilliance of every detail.

To solve the technical problem of light distortion on users' screens, strict image preparation standards for HDR displays have been introduced. In addition, machine learning algorithms were used that optimize contrast and shadow detail depending on the characteristics of the output device. Thanks to this, the images retain their "premium" appearance in all conditions.

Finally, the solution to ethical issues and the problem of deceived expectations lies in honest visualization. Light should not be used to hide flaws, but to exaggerate the real advantages of the product, such as hand stitching or the natural grain of the material. This transforms photography from a manipulation tool into a quality proof tool. This systematic approach makes it possible to transform working with light from a simple craft into a powerful brand management tool capable of maintaining exclusivity status even in an oversaturated digital market.

Conclusions

The analysis of the effect of lighting on the perceived value of a product in product photography shows that lighting is not simply a technical tool for capturing an object but rather a full-fledged means of visual communication that directly influences the viewer's perception of the product's high quality and status.

Properly selected lighting allows you to focus on the main characteristics of premium products: impeccable quality, thoughtful details, exclusivity, and aesthetic value. The high contrast created by controlled shadows and highlights adds volume and materiality to objects, highlighting texture and geometry. This is especially true for products with reflective surfaces, such as glass, polished metal, and crystal, where the play of light highlights the complexity of processing and sophistication of design. On the other hand, soft, diffused lighting with smooth transitions of light and shadow creates an atmosphere of sophistication, minimalism, and restrained luxury, which corresponds to the philosophy of many luxury brands.

Thus, in product photography, the lighting scheme becomes an important element of branding. It not only accurately conveys the physical characteristics of the product but also encodes its meaning, evoking emotions

in the audience that are associated with premium - from admiration to the desire to possess. The proper use of these techniques makes it possible to strengthen the market position of the product, increase its perceived value, and strengthen the brand's identity in the minds of consumers.

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