Application of Emotional Design in the Instinctual Layer of Baby Brand Official Websites

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In an era dominated by high technology, there is an increasing need for environments rich in emotional design. The emotive design of websites has become a highlight in modern web development, where an aesthetically pleasing appearance can significantly enhance the usability of a website. This paper delves into the innovative practices at the instinctual layer of baby brand official websites. A multitude of visual elements come together to form the overall appearance of these web pages, with each element's appearance being determined by its color, shape, and arrangement. Through a literature-based theoretical analysis, this study captures the fundamental principles of emotive design concerning these visual elements, focusing on color, shape, and composition. It also consolidates relevant theories to suggest innovative enhancements based on existing designs, presenting new trends in baby brand website design that create a highly emotive online environment for users.

Keywords: brand official website, visual elements, emotional design

Introduction: Research Background and Objectives

In this digital age, the pervasive nature of web media in our everyday lives is undeniable, ranging from desktop computers to mobile smartphones, and from smart home devices to various portable electronics. We are privileged with unprecedented access to information, swiftly, and conveniently. This shift has profoundly transformed how we interact with the world—our engagement with machines now far exceeds face-to-face human interaction. In every domain, be it work, life, or entertainment, technological devices have gradually superseded personal interactions, a phenomenon that cannot be overlooked. Within such a technology-driven context, the inherent human desire for emotional exchange has become particularly pronounced.

Post the COVID-19 pandemic, consumers have increasingly gravitated towards online shopping, while the declining birthrate due to socio-economic factors has led to new consumer needs in the baby product market. Economic reports from 2022-2023 indicate that new parents, gradually recovering from economic challenges, tend to prefer brands that offer emotional value and comprehensive services. In this backdrop, the design and optimization of baby brand official websites become critical.

From the perspective of product evolution, a product's life cycle is typically divided into four stages: introduction, growth, maturity, and decline. As a product, websites from their inception have seen developers and users focusing primarily on functionality implementation and optimization. However, a truly mature

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product should not only be a collection of functions but also a carrier of both material benefits and spiritual value. A successful website, while meeting fundamental functional needs, should also be emotionally engaging to cater to the increasingly complex emotional needs of people. Today, as websites evolve through their life cycle, especially entering a growth phase marked by rapid technological advancements and maturation, the potential for emotional expression on websites has significantly expanded. At this stage, technology is no longer a limitation; instead, it serves as a powerful support for website innovation. An increasing number of websites, emerging like bamboo shoots after a spring rain, start to differentiate themselves with unique spiritual content and emotional value, which become key to standing out in the competition. Therefore, current website design should not only ensure functionality and usability but also give greater emphasis to emotional design and expression. Only then can websites attract and retain users, create unique brand emotional bonds, and facilitate the smooth transition from growth to maturity. This is not just a trend in design, but a necessary path for websites to mature.

Theoretical Background: The Instinctive Level of Emotional Design

Dr. Donald A. Norman, a renowned cognitive psychologist, once stated, "Attractive things work better" (2013, p. 26). This remark profoundly reveals the intrinsic connection between artistry and functionality in web design. In this information-saturated era, our lives are closely intertwined with the internet. We rely on websites to accomplish a variety of tasks: accessing news, social interaction, career development, gaming, life logging, e-commerce, enjoying music, watching movies, and so on. These activities have their distinct operation methods, involving a series of complex interactions, not only directly between users and websites but also including the devices used for operations, the network transmission environment, and the backend systems. Any problem in this interaction chain could lead to a failed user experience. When attempts fail, the instinctive reaction is often to try harder. However, with computers and networks, simple repetition is unlikely to yield different results. The correct approach is to seek new ways to solve problems.

And emotions play a crucial role in this process, with negative emotions often focusing one's attention on problem details rather than seeking a broad range of solutions. In contrast, positive emotions can stimulate our creativity and problem-solving abilities. Therefore, if a website has an attractive aesthetic interface that can win users' favor and stimulate their positive emotions, it will enhance their pleasurable experience during use. Such pleasurable emotional experiences can boost users' loyalty to the website, reduce the occurrence of operational errors, and enhance users' problem-solving abilities. The usability of the website is thus enhanced, as users are more willing to explore and utilize its various functions within a pleasant emotional experience. In summary, the aesthetic appeal of a website complements its usability, with aesthetics not only being about visual pleasure but also relating to the overall quality and efficiency of the user experience.

In Donald A. Norman's groundbreaking book *Emotional Design*, he ingeniously categorizes design into three distinct levels: visceral, behavioral, and reflective. He delves into the crucial nature of the visceral level, highlighting that this level precedes human consciousness and thought, forming the stage where we intuitively react to a design. At this visceral level, aesthetic elements of design—such as shape, color, texture, and touch—play a pivotal role. They instantaneously elicit sensory responses, thereby shaping our initial impression of a product. These instinctual reactions are nearly universal, transcending the boundaries of different cultures and backgrounds.

Visceral design is concerned with how a product immediately interacts with the senses and captures attention without the need for deep contemplation. In the realm of web design, the appearance is composed of a myriad of visual elements—graphics, colors, layouts, animations, and more. These elements are not arrayed haphazardly but are meticulously crafted to provoke a positive emotional response from users, making them feel pleased and engaged right from the start. It is these elements, designed to trigger visceral responses, that form the emotional foundation of user interaction with the webpage. They not only breathe life into the website but also engage in an initial emotional dialogue with users without a word. Thus, the visceral level of design occupies a critical place in crafting a successful and appealing website, laying the groundwork for the other levels of user experience—the behavioral and reflective.

Case Study

Selection of Cases

According to Naver Datalab's 2023 report on baby brand official website visits, the following figure shows that BabyBjorn, Ergobaby, and Konny are currently the brands with the highest search volume in the Korean market. As for the mode of visit, 93% is through mobile web search. Therefore, this analysis will select the mobile interface design of these three brands for the analysis of related elements.
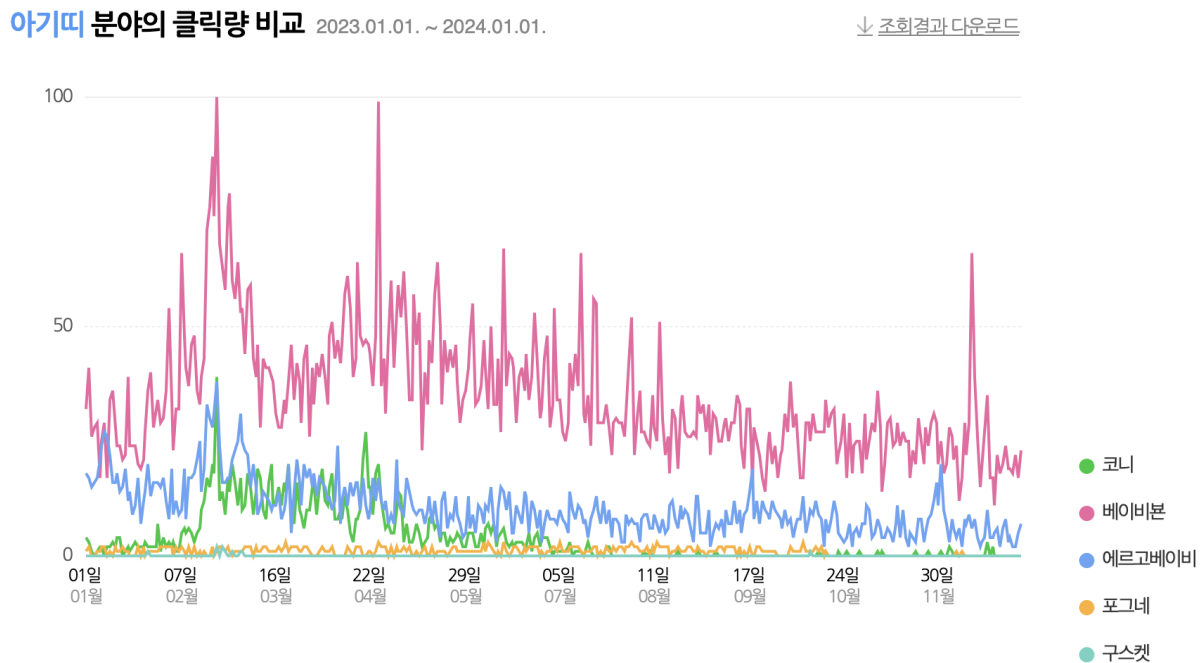

Figure 1. Naver 2023 baby brand search volume.
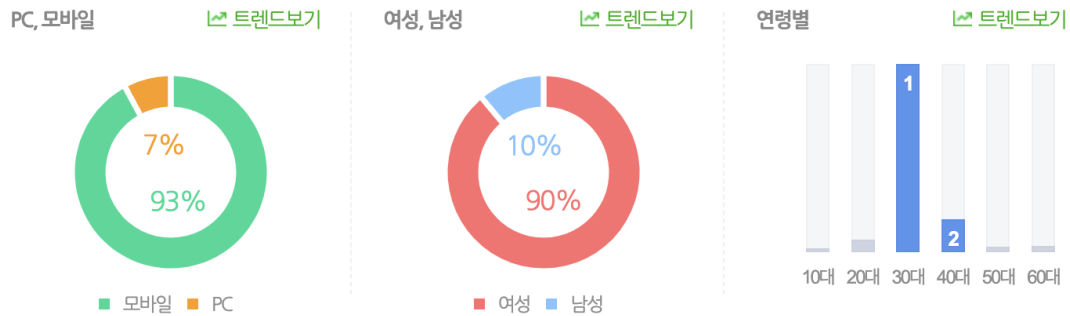
Figure 2. Search carrier conditions.

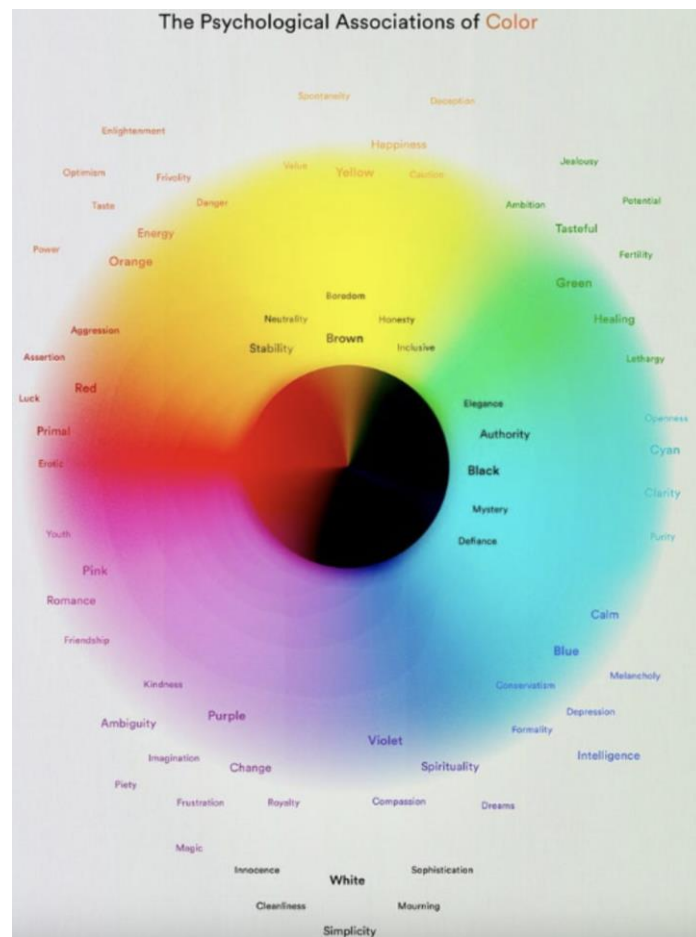**Emotional Design of Colors for Web Visual Elements**

Figure 3. The psychological associations of color.

Donald A. Norman's *Emotional Design* adeptly breaks down emotional design into three tiers: visceral, behavioral, and reflective. He particularly emphasizes the visceral level as crucial for instinctive reactions to design. Here, design's aesthetic elements like shape, color, texture, and touch are fundamental, sparking sensory responses that form our initial product impressions, which transcend cultural divides.

The visceral design taps into immediate sensory interaction and attention-grabbing without conscious effort. Web design uses this with visual elements—icons, colors, layouts, animations—carefully arranged to induce positive emotions, ensuring users are content and engaged right from the start. These elements form the emotional groundwork for user-webpage interaction, silently facilitating an initial emotional connection. Therefore, visceral design is essential for an appealing website and lays the foundation for behavioral and reflective user experience aspects. Color most directly affects emotion among visual elements. As Eaton suggested, the interplay of optics, electromagnetism, and chemistry with psychology signifies color's deep impact on emotional experiences. The Color Association of America's "seven-second rule" reveals color's 67% influence in quick consumer product choices. Colors attract us on the web, often before we consciously process them, delivering silent messages and emotional cues. Rudolf Arnheim's work further highlights color's capacity to embody emotions, evident in web design where color choices communicate feelings, creating ambiance and emotional resonance.

Color's psychological impact is significant, with different combinations eliciting varied emotional reactions, as noted by Goethe's classification of colors symbolizing energy or calmness. Moreover, the emotional conveyance of color also involves its brightness and saturation, influencing the mood of web pages. Varied color tones on a website can thus evoke different emotions, offering web designers an expressive palette to influence user feelings.
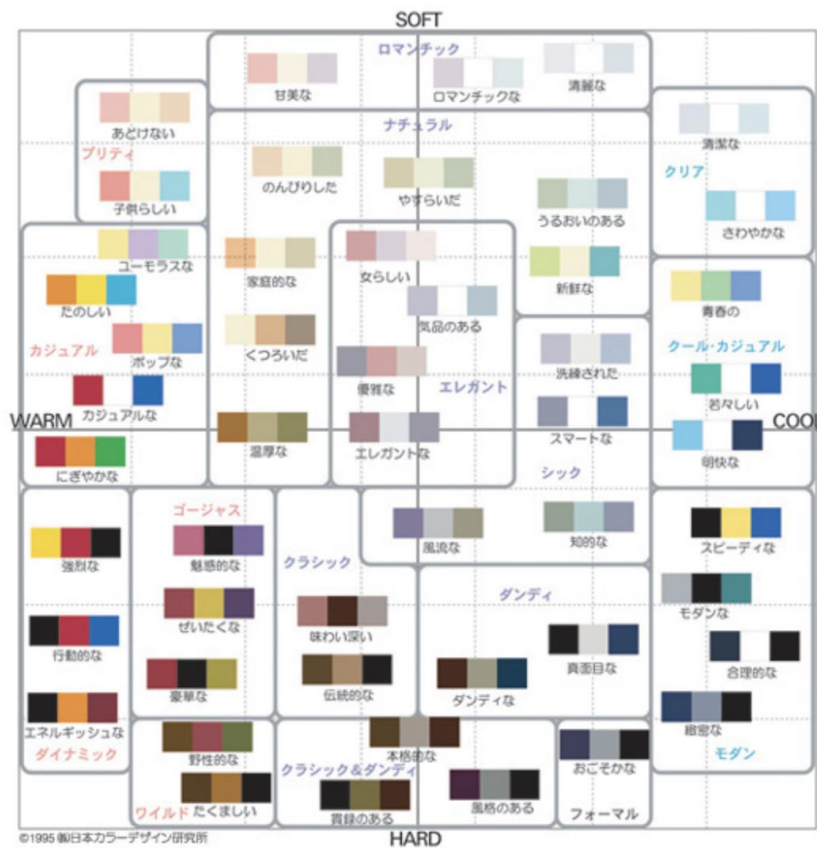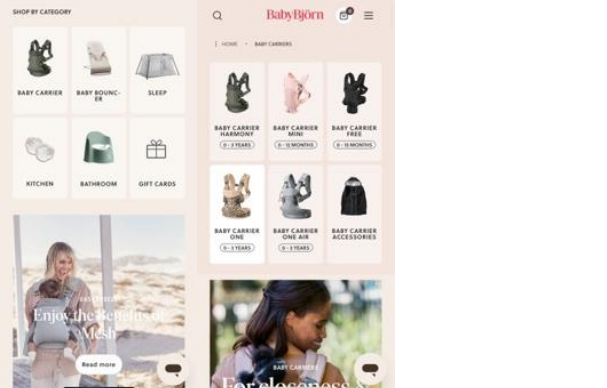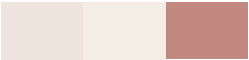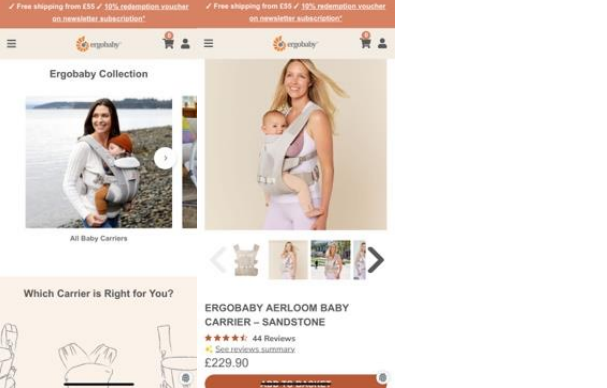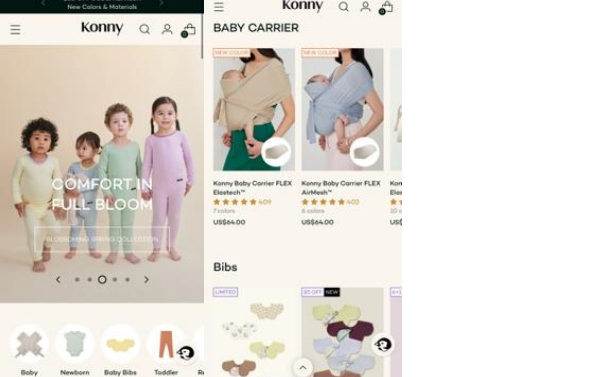

Figure 4. Color image coordinates.

Finally, there are also external factors that influence the emotional expression of colors, such as the form of the color and the theme it represents. Kandinsky in "Concerning the Spiritual in Art" mentioned, "The inevitable

connection between color and form poses to us the question of the effect of form on color" (1996, p. 43). Clearly, the connotation of some colors can be enhanced or weakened by the forms in which they are used. Generally, glaring colors are more suitable for shapes with distinct outlines (like yellow for triangles), while soft, dark colors are more fitting for circular forms (like blue for a circle). Color must be presented in a certain shape, and just like color, different shapes evoke different emotions. If the emotions expressed by both are consistent, the emotional connotation of the color is strengthened; otherwise, it is weakened. For example, the "Hot" icons on a webpage interface are often designed in striking red or red-yellow colors paired with sharp-angled star shapes, thus creating a sense of urgency to attract the viewer's attention.

Table 1

Color Analysis of the Brands

Brand	Brand official website interface	Item color
BabyBjorn		
Ergobaby		
Konny		

In the visual design of these three brands' web pages, we can observe a commonality: They have all carefully selected color schemes that can provoke emotional resonance. Ergobaby, BabyBjorn, and Konny have utilized an off-white as the main background color for their web pages, a choice that is far from arbitrary. Off-white, as a soft and neutral color, creates a warm and natural backdrop that positively impacts the comfort of the eyes and the lasting visual appeal.

Particularly, Ergobaby has incorporated its signature light orange and gray into its design, a color combination that cleverly balances warmth with professionalism, conveying the brand's approachability while also reflecting the high quality and reliability of its products. BabyBjorn has visually adopted a gentle light pink tone, which, in harmony with its red brand logo, renders the entire site with a friendly and comfortable feel, aptly representing the warmth and safety of its maternal and baby products. In contrast, Konny has chosen a bold and unique approach, using distinct black as an accent. This strong contrast not only draws visual focus but also imparts a sense of modernity and fashion to the web page. The use of black goes beyond aesthetics; it conveys a powerful brand personality—confident, elegant, and avant-garde. Compared to the first two brands, Konny has enhanced the contrast in product colors, using low-saturation and high-brightness colors to infuse the visual aspect of the web page with vibrancy.

These color choices are not merely visual design decisions; they are deeply rooted in the core values and emotional positioning of the brands. Through the astute application of these colors, the web pages of the three brands have not only successfully captured the visual attention of their target consumers but have also subtly established an emotional connection with them. This is a successful practice of emotive strategy in web visual design.

Emotional Design of Webpage Visual Element Layout

Beyond the direct impact of colors, form is another fundamental feature captured by the eyes and plays a crucial role in shaping the first impression of users on a webpage. Following the initial visual impact brought about by colors, the next elements that catch the user's eye are the specific shapes of the visual elements on the webpage. These forms, even before delving into the content, have already planted the seeds of corresponding emotions in the viewer's mind.

In web design, forms can be roughly divided into two types: the external physical form, such as circular images, straight dividers, etc., which are the concrete shapes directly presented before the users; and the more abstract structural form, such as the virtual lines constructed based on the flow of the user's gaze, guiding the movement of their attention.
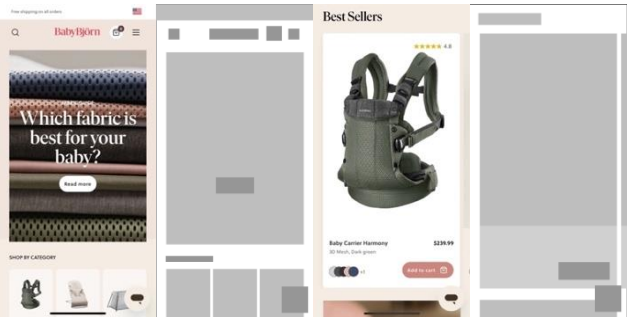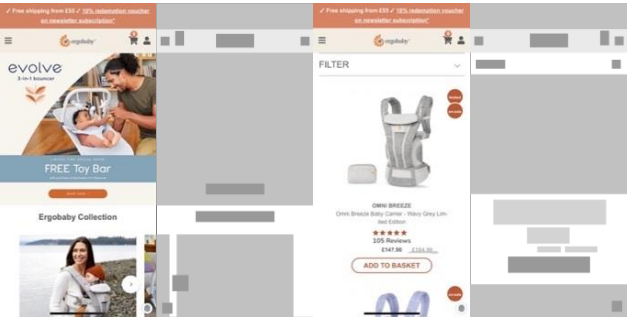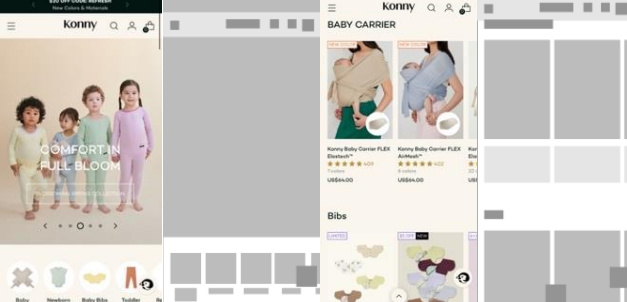
The forms of visual elements on a webpage are mainly categorized into three basic types: dots, lines, and surfaces. As the simplest form, dots have a static and stable characteristic, creating a visual focal point and bringing a concentrated and peaceful feeling to the webpage. A single dot placed appropriately in the design can provoke intense attention from the user, and its location on the page can inspire different psychological feelings. For example, a dot placed in the center of the page conveys calmness and focus, while a dot at the top may induce a sense of instability, and one at the bottom provides a sense of steadiness but may be easily overlooked.

Straight lines, with their precise and authoritative attributes, are commonly found on government or informational portal websites, creating a stable and professional atmosphere; curves, on the other hand, with their lively and light-hearted character, are more suitable for children's, women's, or entertainment websites, offering a sense of beauty and elegance. Zigzag lines symbolize a sense of speed and dynamic change and are often used

in designs for sports websites that aim to convey excitement, instability, or a sense of power. Additionally, the combination and application of straight and curved lines can also evoke different psychological sensations. Horizontal lines convey calmness and stability, whereas vertical lines symbolize loftiness and power. A continuously downward-extending vertical line intensifies the sense of motion, such as the currently popular waterfall layout, which continuously loads and displays new content blocks as the page scrolls, forming a free-flowing visual effect and providing users with a relaxed and liberating psychological experience. Such designs are not only aesthetically pleasing but also subtly influence and guide the user's emotions and behaviors.

Table 2

Brand Visual Layout Pattern Analysis

Brand	Visual layout	Specificities
BabyBjorn		1. The website features a card-style layout structure, with each section from the top brand logo and navigation bar to the main content area clearly delineated. 2. Contrast and focus: The product display utilizes high-contrast images and background colors, especially in the "Best Sellers" section, highlighting dark-colored products against a light background. 3. Visual guidance: For instance, in the banner images on the homepage, eye-catching titles and buttons are used to direct users for further exploration or to take action. 4. Supplementary visual elements: Elements like star ratings provide visual proof of user feedback, while price tags offer a direct display of product information.
Ergobaby		1. Clarity of top navigation: The website's top features a clear and concise navigation bar, paired with the brand's logo. 2. Eye-catching banner ads: Bold images and compelling copy are used on the main visual banner. 3. Neat arrangement of product information: Product details are formatted uniformly, with descriptions and price tags neatly organized, providing a clear and cohesive browsing experience. 4. Effective presentation of promotions: The site effectively displays promotional information, such as "free shipping" and "discounts with newsletter subscription", positioned where the user's gaze naturally falls, making them easily noticeable and encouraging purchase decisions.
Konny		1. Feature image: The website utilizes large feature images that directly convey the brand's target audience and product use, while also creating a warm family atmosphere. 2. Organized product display: The product page shows multiple items from different series in a horizontal sliding manner, aligning with user habits. 3. Visual guidance elements: The homepage design includes icons and text, guiding users to learn more about the products.

The website layouts of BabyBjorn, Ergobaby, and Konny adeptly integrate the design principles of dots, lines, and surfaces, offering a user experience that is both unified and distinctive. BabyBjorn's website, with its clear grid layout and straight line divisions, communicates a sense of well-ordered stability; Ergobaby adds a touch of warmth to its orderly structure by blending straight and curved lines. Konny, with its soft color blocks and naturally flowing lines, conveys the brand's gentleness and approachability. While conveying brand messaging and enhancing user experience, each brand's website emphasizes its core values and unique characteristics through its visual language—be it the arrangement of focal dots, the guiding power of lines, or the emotional conveyance of surfaces—reflecting meticulous attention to detail and a deep understanding of user experience.

Emotional Design of Webpage Visual Element Layout

When users first visit a website, they typically do not read through all the content carefully but rather quickly scan to see if anything of interest stands out. Eye-tracking studies have summarized browsing patterns into three types: Gutenberg, Z-pattern, and F-pattern, with Gutenberg and F-pattern being more widely recognized. The Gutenberg pattern suggests that the visual trajectory of users scanning the website content forms a large Z, often used when the website does not have a lot of content. On pages with more content elements, users tend to follow the F-pattern. The F-pattern indicates that users first horizontally scan the top of the page, then move down vertically along the left side of the screen, and finally scan vertically.

Figure 5. User navigation mode.

Generally, balance refers to a state of relative stasis where opposing forces offset each other. In web design, visual balance can be achieved by carefully designing the placement, size, proportion, color, and texture of visual elements, making it a fundamental requirement for aesthetic appeal, and bringing psychological calm to viewers. Balance includes both symmetrical and asymmetrical types, with symmetrical balance offering a sense of dignity and stability, and asymmetrical balance providing richer, more dynamic visuals.

Exploring the websites of BabyBjorn, Ergobaby, and Konny, it's evident they enhance visual experience by adhering to principles of balance, contrast, rhythm, and proportion. BabyBjorn's website exemplifies

symmetrical balance with a grid layout, creating a stable, orderly beauty that instills confidence. The clear contrast between product images and backgrounds, along with prominent price tags, offers visual clarity. Ergobaby employs asymmetrical balance, integrating product images and descriptions into a fluid layout for a dynamic, welcoming atmosphere. Varied product image sizes introduce rhythm, adding vitality to the page. Konny's design effectively uses contrast and rhythm, with new color tags sharply standing against soft backgrounds to catch attention. Varied image sizes and spacing introduce a rhythmic beauty, offering a seamless browsing flow. Moreover, Konny's proportional relationships, like using the Golden Ratio between product close-ups and detailed descriptions, subtly enhance the visual journey. These brands showcase distinctive visual designs, creating attractive, functional user interfaces that meet aesthetic needs and provide a pleasant browsing experience through meticulous layout and detail handling.

Baby Brand Official Website Instinctive Layer of Emotional Innovation Design

   Enhanced interactive animations. The use of enhanced interactive animations has brought more vivid and interactive user experiences to brand official websites. For instance, BabyBjorn incorporates delicate animations in its product displays, showing an enlarged view of the baby carrier when users hover over it. Detailing such effects to showcase different usage and adjustment methods of the carrier not only improves information delivery efficiency but also attracts users on a visceral level, enhancing their interest and favorable impression of the product.

   Personalization and adaptive design. Konny's website, through precise user behavior analysis, offers a personalized shopping experience. It cleverly integrates a "You Might Like" feature in the shopping cart interface, not just recommending products based on browsing history and preferences but also optimizing content layout intelligently using big data and algorithms. This approach finely transforms user behavior into personalized services, offering highly relevant product recommendations and significantly enhancing the personalization and relevance of the user experience. The dynamic content recommendation system not only meets user needs but also subtly enhances users' favorable impression and trust in the Konny brand. By demonstrating its insight into user needs and commitment to experience optimization, the brand deepens users' brand loyalty on a visceral level. In this process, Konny is not just selling products; it's creating emotional resonance, making users feel cared for and understood, thereby solidifying its unique brand position in a competitive market.

   Augmented reality experience. In the instinctual layer design of baby brand official websites, the application of Augmented Reality (AR) technology directly impacts users' intuitive perceptions, providing an immediate visual and emotional experience. For example, users can observe in real-time how a product fits within their home environment, like how a baby crib looks in the nursery or the actual size of a baby stroller at the front door. This immersive visual experience instinctively sparks users' recognition of the product's comfort and utility while also enhancing their affection and trust in the product on an emotional level. With AR technology, brands not only allow potential buyers to feel the practical value of the product before making a purchase decision but also deepen the emotional connection between users and the brand on an instinctual level.

Results

   The instinctual level is the first point of contact for users with a product, and within the instinctual layer of a webpage, there are various elements such as questions, images, and animated backgrounds. Numerous visual elements each convey rich information, fulfilling the website's functions. They constitute the overall appearance

of the webpage, which in turn is shaped by their color, form, and combination. For baby brands, the design methods at the instinctual level of the official website focus on creating an immediate and profound positive emotional experience. Through carefully selected color strategies, website designers use warm and soft hues to evoke users' instinctual reactions, thus establishing a positive emotional connection the moment users open the webpage. This use of color not only reflects the brand's personality but also communicates its core values without words. Moreover, by constructing clear visual focal points and intuitive layouts, brand websites effectively guide users' attention, allowing them to instinctively perceive and understand the content.

The design cases of brand websites like BabyBjorn, Ergobaby, and Konny thoroughly demonstrate the basic design methods at the instinctual level, enhancing users' overall experience and brand perception. Improvements based on existing instinctual level designs include enhanced interactive animations, personalized design, and augmented reality experiences, optimizing baby brand official websites to offer better experiences and reinforce brand loyalty. These design principles play a central role in enhancing user-friendliness and promoting brand identity internalization, laying a solid foundation for a close connection between users and the brand. However, the article also has shortcomings, such as the lack of user testing and how to choose elements that reflect the brand's positioning and target market, which could make the article more specific and persuasive. It is hoped that future research will continue to address these areas.

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