Literature Analysis of the Emotional Colours in Big Brand Logo Design

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Abstract: Every brand proclaims its own identity through its logo. Any logo has its vision, whether through symbols, shapes, or colours. One of its colour features is that colours play a vital role in directing the immediate emotional responses of the viewers. Nonetheless, little academic research has explored the effect of colours in the logo design of big brands that manage to grasp people's attention and retain their memory for the longest time. This paper analyses the research on colours and emotions articulated by logo designs using colour theory. The author explored the emotional resonance of colours in the logo design of big brands and linked it with several computer techniques applied to detect emotional colours. The result reveals a connection between colours' emotions and the essence of their brands; colours do portray distinctive emotions related to their brand identity, hence several techniques could assist in that mission. Towards the end, the study noted that the other brands, particularly the new ones, should be explicitly particular in choosing the colours for their brands to hold people's memories.

Keywords: Brand identity, Colour theory, Computer technique, Emotional colour, Logo design

1 Introduction

Instinctively, every brand proclaims its own identity through its logo. It portrays distinct marks of the company that represent the essence of the brand [1]. Having the logo shows that the brand upholds unique characteristics that differ from the others and simultaneously showcase to the public its firm values. The logo also serves as a signature of the company, and one of the most important features is linking the design with appropriate colours [2]. People, in general, are usually attracted by the first glimpse of colour. Sometimes we define certain things in our lives based on the nature of colours.

In such nuance, colour plays a vital role in directing the immediate, forceful and different emotional responses [2], [3 and][4]. Colour is considered the most immediate and crucial factor to visually retain and memorise the design of a logo in people's minds [5]-[6]. On top of that, colour communicates brand personality through many elements and principles of design that stand in the form of brand logos and other elements of graphic design [7].

Apart from acting as a badge of identification, logos also serve as a way to increase a company's reputation. As such, logos create a competitive advantage and help simplify the tasks related to formal corporate communications [2]. Therefore, big brand companies, including Amazon, Apple, Google, and many others, were highly invested in creating notable designs and reshaping their logos through the years. Though a logo does not necessarily pin to purchasing power, to stay relevant, they must be aware of people's perception of the logo identity.

Previously, some studies focused on connecting designs with colour values. Nonetheless, little academic research has explored the effect of colours on logo designs of big brands that manage to grasp people's attention and retain their memory for the longest time. This paper analyses the research on colours and emotions articulated by logo designs using colour theory. The author explored the emotional

resonance of colours in the logo designs of big brands and linked it with previous techniques applied to detect emotional colours.

2   Literature Review

Since the beginning of time, colour has captured people in the most mysterious and abstract ways. [8] stated in the Theory of Colour by Johann Wolfgang von Goethe that the possession of colours is reflected by the retina, which reinterprets the colours. It is related to the fact that the human eye converges its focus on the edges of a complementary colour. In addition, Goethe determines six basic colours (indigo is not included), as shown in Figure 1 below.

Figure 1: Goethe's Theory of Colour

Next, it specified that a colour theory has its perceptions assigning meanings to them based on the functions that are valued in them [9]. These adaptation functions may develop as active, vivacious, lively, and intense responses, whereas opposition functions suggest passive, depressive, and weak responses. In short, apart from the fact that those adaptations could be stimulating, they may also have the opposite function of being sedative and reassuring.

To highlight these emotional colours, Goethe's colour theory presents the idea of colour in the form of cool and warm colours. Cool colours such as green, blue, and purple had a calming and sedative effect on people (in some cases, a depressing effect). Meanwhile, warm colours, such as red, yellow, and orange, had the opposite exciting effect, which was also considered stimulating and joyful [9]-[10].

A   Colours trigger emotions

Unconsciously, colours could trigger explicit emotional responses in most circumstances to express the meaning they want to convey [11] [12]. Whether colour inspires people or causes depression, as well as brings joy or sadness, it certainly has exclusive meanings. Similarly, certain colours may arouse active or passive attitude disorders; colours may also favour thermal sensations of cold or heat [9]. This notion of colours linking to certain vibes brings people to acknowledge their state of emotions as each colour represents elusive meanings.

Generally, red is the most popular colour and exhibits enthusiastic features, warmth, and celebrations, whereas yellow gives people a sense of joy, excitement, and feelings of nobility and brightness. The orange colour reflects a sense of hope and yearning as it seizes the adventurous side of people. In the meantime, pink is commonly associated with the youth and feminine side of women or children. Then, blue expresses a sense of simplicity and comfort, but it also exudes a sense of melancholy and coldness. Green symbolises peace, which at the same time symbolises a sense of security and vitality. Besides, purple provides a sense of creativity, imaginative and a calming effect. Brown can create a sensation of warmth, steadiness, and the robust properties of the earth. On the other hand, white has always been the symbol of purity, sacredness, and elegance, while grey displays a calm and mysterious artistic conception. In contrast, black can bring people's feelings of seriousness, solidity, and sublimeness. [11], [13], [14], [15] and [16].

Table 1: Summary of emotions' colour by [11][13][14][15] [16].

Colour	Emotions
Red	Intense Energetic Enthusiast Warmth Celebrations
Yellow	Joy Excitement Nobility Brightness Clarity Positivity
Orange	Friendly Confidence Cheerful Hope Adventure Yearn
Pink	Feminine Youth
Blue	Trust Dependable Simplicity Comfort Melancholy Coldness
Green	Nature Freshness Peace Security Vitality
Purple	Creative Imaginative Luxury Wise Calming
Brown	Steadiness Warmth Earthly feelings
White	Purity Sacredness Elegance
Grey	Calm Mysterious Artistic
Black	Seriousness Solidity Sublime

As noted, each colour transmits a different type of emotion whether colour can stimulate or depress, create joy or sadness [9]. However, certain combinations of colours could also elicit certain emotions. Table 2 shows the simple meaning of the combination colour theory [18].

Table 2: Summary of a combination of emotions' colour [18].

Colour	Emotions
Yellow-red	Powerful
Red-yellow	Happiness
Red-blue	Discomfort
Blue-red	More active
Green-yellow	Annoyed
Blue-green	Confused
Red-purple	Loved

Based on Table 2, [18] reveals that a combination of colours could appeal to a more distinctive type of emotion. Although yellow-red and red-yellow represent similar notations of colours, the higher values of yellow than red send a different message than the opposite side of colour values. Red-yellow (red as the dominant colour) suits meaning for happiness, while yellow-red (yellow as the dominant colour) has intricate powerful values. The same goes with red-blue (red as dominant), which indicates a negative trait of discomfort, whereas blue-red (blue as dominant) links to more active values as a positive trait. It shows that the message of colour values, whether representing a single colour design or multiple colours, is different and unique.

B   Emotional colours in logo design

Emotions are complex states of mind that are correlated to physiological, cognitive, and social factors [18]. At any moment, colour transmits to people's retinas, forms the first cognition of psychology, and makes people produce many different perceptions, which lead to rich associations [11]. Over the centuries, brands' expressions have captured emotion and colour perspective as they affect human perceptions. Consequently, colour values are powerful weapons for revealing the thoughts and feelings of people [7]. Meanwhile, Goethe's colour theory guides the notation of emotional colour to leverage people's reactions. These emotional reactions to the perception of colour contribute to giving them their primary meanings in people's memories.

Indirectly, colour carries intrinsic meaning that becomes central to the brand's identity, which contributes to brand recognition [19]. A corporate logo can bring inherent and immediate value to a brand by selecting an appropriate colour [20]. Moreover, colour is an important element in creating a strong and easy-to-recognise logo that draws people's attention, as it plays a big role in driving brand personality [19] [20].

The positive aesthetic appeal of logos facilitates the emotional bond between people and brands [21]. Several major brands, including Apple, Google, McDonalds, and others, have redesigned their logos for a more simplistic look, which is a trend characterised by a focus on minimalistic design [12]. Even so, choosing a colour for a corporate identity requires a core understanding of colour theory [22], which then helps the brand to portray the colours for their logo design to appeal to people in the long run.

C   Logo designs of big brand companies

Logos are specifically designed to be visually appealing, relatively simple, highly memorable, and instantly recognisable [23]. Logo design, also known as Corporate Visual identity, is the graphic design that projects the core of the company's visual identity and plays a determinant role for companies [21]. According to [21], the word 'logo' refers to the graphic design that companies use to clarify themselves and their products, with or without the company's name. A logo can also be considered a graphic representation that triggers memory associations with the target brand [24].

As logos are typically linked to memory associations, they become a salient point for any company to design the logo components attentively from the beginning. Furthermore, the intensity of rivalry in the marketplace pushes the company to carefully design logos with or without its name to

identify itself or its products [24]. It is an effective means to maintain the image and honour of a company by ensuring the quality of the logo, and the logo of some big brands is enough to represent the entire enterprise itself [25].

Recently, [26] reported that Amazon has retained the title of the world's most valuable brand with a US$299.2 billion brand value, while Apple toned down to second place with US$297.5 billion, followed by Google in the third place with a US$281.3 billion value. Next, McDonald's, Coca-Cola, Pepsi and others stay in the Top 100 most valuable brands. These brands' logos are considered easily recognised and communicate a consistent brand image that maintains the signature of the company.

i. The Smiling Arrows Under the Amazon Logo

Figure 2: Amazon's Logo

Amazon is the first large company to sell goods and services over the Internet. It began as an online bookstore but swiftly expanded to the point that the company logo now represents that they sell anything from A to Z [27]. The orange tint of the smiling arrow beneath the Amazon logo, subtly reveals the brand's warehouse to passing motorists [28], which symbolises a huge concept of the brand. Due to the way the colour orange conjures up adventures, it captures the brand's philosophy of expanding its product line over time.

ii. The Simplicity of Apple Logo

Figure 3: Apple's Logo

Apple's brand personality has been associated with innovativeness and premium quality [29]. Over decades, Apple has grown to be one of the most successful businesses in the world, and their logo is frequently seen as minimalist, memorable, and recognisable [12] [23] [30] since it is one of the simplest brand symbols [30] that makes use of the colour grey (recent version). The Apple logo has a positive association around the world as a result of Apple's emotional branding [22]. Apple's logo is also perceived as exciting because of its appealing designs, uniqueness, and creativity, which evoke emotions [31], and the grey colour in the logo radiates the state of being calm and artistic in structure to cultivate its innovativeness.

iii. A Text Only Google Logo

Figure 4: Google's Logo

Google's culture is concentrated on innovation; it is an extremely strong and dynamic brand that always hires, motivates, and develops the best talents from the best universities [12] [29]. The Google logo is a text-only logo that is considered one of the most popular and instantly recognisable logos. The

combination of blue, red, yellow, and green colours in the logo represents precision, uniqueness, growth, elegance, and excellence [12]. Google re-branded its logo, reinforcing it as a playful and creative brand known for April Fools' pranks [16]. In addition, [16] considers the vivid yellow "O" that suggests warmth and optimism in between primary hues, giving the public the impression that this company is quirky and does not take things too seriously. Google's brand is so well-known that its colours alone can be used to identify it.

iv. The Bright Colours of McDonald's Logo

Figure 5: McDonald's Logo

McDonald's, the world's largest chain of fast-food restaurants, is more renowned for its logo, and the "Golden Arches" became instantly recognisable and established as one of the most popular brands [12]. The colour combination of red and yellow is directly associated with McDonald's in many people's minds [31]. In conjunction with the research by [32] to capture the essence of McDonald's brand personality, people perceived McDonald's as fast, happy, interesting, pushy, kind, lively, young, communicative, open, relaxed, and sociable, which form a solid cluster of brand characteristics. It visibly reflected the logo's red colour as a warm, celebratory colour and yellow as full of joy and excitement. Above all, McDonald's expands the meaning of happiness through the emotions of bright red (as the dominant colour) and yellow.

v. The Flat Design of the Pepsi Logo

Figure 6: Pepsi's Logo

Pepsi has redesigned its logo for a more simplistic look with a flat design [33]. This brand uses colour to create a distinctive visual identity, build trust with a target audience, and distinguish itself from rivals in the marketplace, as in the well-known Coca-Cola vs. Pepsi battle. Pepsi abandoned the red hue and embraced the colour blue to set itself apart from Coca-Cola [19]. Pepsi brand personality is more often associated with a young, enthusiastic, and joyous brand [29], which echoes the meaning of emotion's colours under the blue-red combination as an active frame.

In sum, big brands dictate the colours of their logo design in conjunction with their brand identity. Nevertheless, some of the brand's logos are not stagnant, and they keep reshaping and revising the logo design as they grow and expand the business. It disturbs the cost of rebranding for new brands [21] since most brands spend a lot on revising the design. Thus, any new brand or small company should start reviewing and designing a proper logo at an early stage of branding by imposing certain techniques to attain the correct emotional colours related to the brand.

D   Techniques applied to the emotional colours for logo designs

This modern age witnessed several techniques that could be applied in detecting emotional colours for designing a logo. One of them is accomplished by [34] who analyses the emotional characteristics of colour language in computer graphic designs to look up how computer graphic design's use of colour communicates with emotions. The study of the emotional aspects of colour language in computer

graphic design enables people to comprehend the meaning of colours, learn the rules of colour language, and apply them to computer graphic designs to improve performance and evoke positive feelings. Therefore, this aids in the decision-making process of finding suitable colours for logo designs. Figure 7 shows an analysis of the emotional colour language in computer graphic designs.
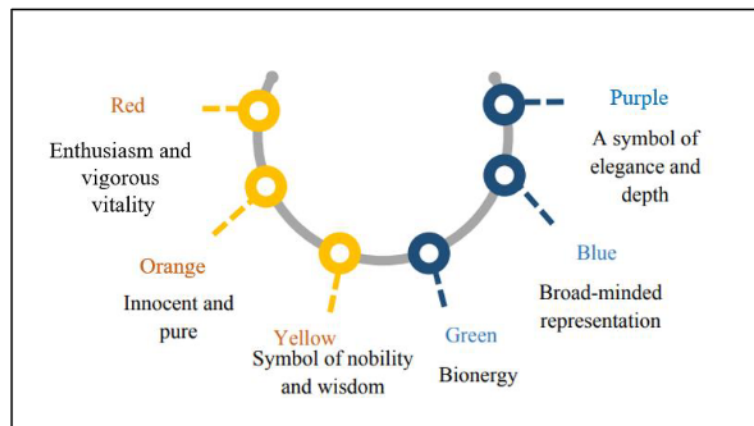

Figure 7: Computer graphic design technique by [34]

Other than that, [35] introduces the development of colour designs in new media design background thinking technology that produces visual colour performance more effectively so that it can send a sense of taste, atmosphere, and creative colour design thinking space. This colour design will be synchronised with the overall layout, which will combine designs with colour designs and expand the learning content freely. In a way, colour becomes one of the most active elements in receiving all kinds of information, guiding the colour of independent design leads to certain creativity and purpose. A pleasing interface and logo can elicit a good psychological and emotional reaction in corporate branding. Through the company's dynamic logo, designers were able to convey information and create an indefinite form of colour that reflects the unique personality of the brand.
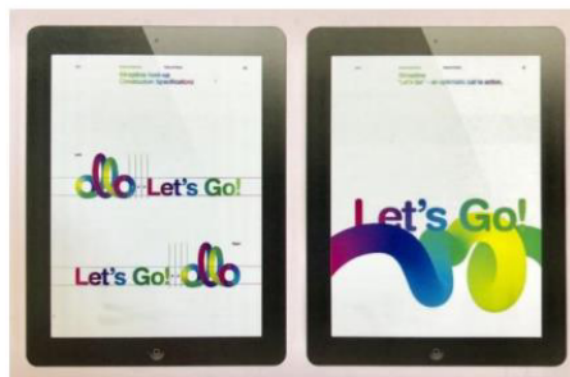

Figure 8: Brand Image Application System [35]

Finally, the Psychophysiological Data Harvesting (PDH) technique was used in research by [36] that can be evaluated under Human-Computer Interaction (HCI). Psychophysiological measurements are related to nervous systems, facial expression analysis and eye tracking that take place in the somatic nervous system and the autonomic nervous system. Three parts make up this method. The first is the adaption of HCI, which requires the participants to wait for their biological rhythm to be ready for psychophysiological measurements. The following phase involves gathering information on the autonomic nervous system from the participants while utilising the desired PDH instruments and at a proper time. It is possible to set up this phase for either local or remote harvesting. The final step entails gathering cognitive responses upon completion of the PDH procedure.
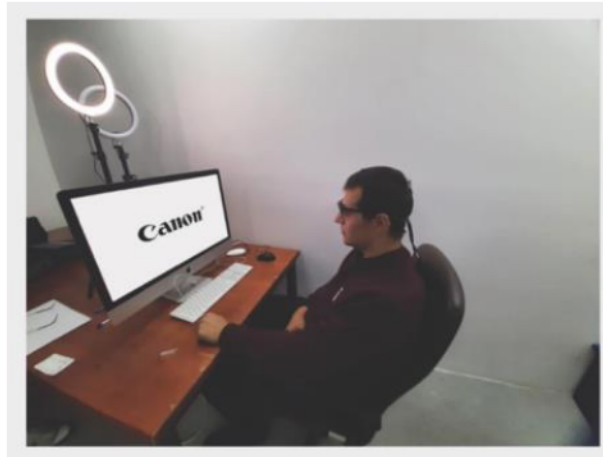
Figure 9: Example of Pilot Field Study practice [36]

The above study [36] focused on evaluating the logos' linear effects that evoke expressed emotions using the PDH technique. Since colours could capture viewers' attention or distract them, the brand logos were presented to the participants in black and white. Therefore, the next experiment should concentrate on displaying the true logo colours to recover the emotions of logo design.

3   Conclusion

Any start-up companies, Small and Medium Enterprises (SMEs), and new brands should consider logo designs as a critical component for their success to sustain the survival of the company [21]. Designing memorable logos and elevating brand value may be aided by connecting colours to emotional responses. Given that the study shows that colour does influence people's emotions, any business should think about selecting suitable colours that complement corporate brands.

The result discloses that most of the big brands characterise the essence of their brands in their logo designs, and each logo colour purposely portrays distinctive emotions related to their core business or brand identity. To assist that mission, several computer techniques and technologies were introduced to achieve the correct emotional colours of the brand's logo design.

It is suggested to avoid picking a colour without considering the company's brand identity and primary business objectives. Even if some firms have multicolour logos, it is ideal to convey the brand's identity by sticking to a narrow colour palette and a simple design. A straightforward but distinctive logo helps people remember the brand and fosters a powerful emotional reaction.

Future work for this study will involve identifying the emotional characteristics of logo colour designs using the PDH technique. The focus will start on a small-scale technique, whether it is eye tracking or facial recognition, to grasp explicit emotions in logo colour designs. Hence, new brands could benefit from such a procedure.

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References

[1]   R. Dew, A. Ansari, and O. Toubia, "Letting Logos Speak: Leveraging Multiview Representation Learning for Data-Driven Branding and Logo Design". *Marketing Science*. 41. 10.1287/mksc.2021.1326, 2021.

[2]   N. Hynes, "Colour and meaning in corporate logos: An empirical study". *Journal of Brand Management*, *16*(8), 545–555.

[3]   E. Ozkul, H. Boz, B. Bilgili, and E. Koc, "What colour and light do in service atmospherics: A neuro-marketing perspective." *Atmospheric turn in culture and tourism: Place, design and process impacts on customer behaviour, marketing and branding.* Emerald Publishing Limited, 2019.

[4]   J. Yu, and R. Egger, "Color and engagement in touristic Instagram pictures: A machine learning approach." *Annals of Tourism Research*, *89*, 2021.

[5]   A. Arabi, *Influence Of Colors On Consumer Behavior Conceptual And Theoretical Approaches.* Academica Brâncuşi Publisher, 2017.

[6]   A.T.Alexander, "The Impact Of Color On Visual Retention And Preference In Logo Design". *Master's Thesis.* Graduate School of Clemson University, 2019.

[7]   E. B. Oladumiye, and E. Odji, "Emotion and colour perception: A psychoanalytical theory of graphic design in consumer of goods." *Journal of Fine and Studio Art*, 7(1), 1–11, 2018.

[8]   A. A. R. Galeotti, "The Challenge Of The Teaching Of Colour: A Method For The Graphic Design". *In the proceeding of the 1st International Conference On Marketing And Design Intersections And Challenges,* October 18 - 19, Faro, Portugal: pg24, 2018.

[9]   F. D. Giraldo, E. M. Castaño, S. Giraldo, and S. Mejía, "Literature review on the theory of color and its relationship with moods in older people," in *ACM International Conference Proceeding Series*, Association for Computing Machinery, Sep. 2019, pp. 15–18. doi: 10.1145/3364138.3364144.

[10]   B. T. Popelka, "Perceptual and emotional response to shape and colour: A study for healthcare logo design", *Master's Thesis*, Iowa State University, 2011.

[11]   Q. Ji, Y. Zhao, and L. Liu, "Analysis of Color Language in Poster Design", *Advances in Intelligent Systems and Computing*, 952, 250–262, 2020.

[12]   E. M. Avram, "Brand Logo Perception In A Globalized Society", *SEA – Practical Application of Science*, Volume VII, Issue 19 (1 / 2019), 2019.

[13]   Y. Lu, "The Application of Color Contrast in Poster Design". *Art and Performance Letters, 2523-5877 Vol. 3 Num. 1,* 2022.

[14]   Z. Liu, *Research on Color Design in Book Design*, Published by Francis Academic Press, UK, Vol. 2, Issue 9: 37-40, 2017.

[15]   A. Sundhareswaran, "Use Of Colour In Indian Movie Poster Design Analysis of Four Genres", *Master's Thesis*, Christ University Bengaluru, 2015.

[16]   R. J. Mamasharibovich and K. Nilufar, "What Is The Logo That Has Taken Over The World", *Academia Globe Inderscience Research*, Volume 4, Issue 3, 2023.

[17]   B. Diethelm, "The Five-colour theory: A new approach to colour," *Color Res Appl*, vol. 46, no. 3, 2021, doi: 10.1002/col.22664.

[18]   M. H. Alkawaz and A. H. Basori, "The Effect of Emotional Colour on Creating Realistic Expression of Avatar", *Association for Computing Machinery, Inc.* ACM 978-1-4503-1825-9/12/0012, 2012.

[19]   L. I. Labrecque and G. R. Milne, "Exciting red and competent blue: the importance of color in Marketing", *Journal of the Academy of Marketing Science (2012),* 40:711–727, 2012.

[20]   M. Torbarina, N. Grgurić Čop and L. Jelenc, "Logo Shape and Color as Drivers of Change in Brand Evaluation and Recognition", *Naše gos-podarstvo/Our Economy, 67(1), 33–45*, 2021.

[21]   S. Bresciani and P. Del Ponte, "New brand logo design: Customers' preference for brand name and icon", *Journal of Brand Management*, vol. 24, no. 5, pp. 375–390, Oct. 2017.

[22]   A. Biricik, "The Role Of Logo Design In Creating Brand Emotion: A Semiotic Comparison Of The Apple And IBM Logos", *Master's Thesis*, Graduate School of Engineering and Sciences of İzmir Institute of Technology, 2006.

[23]   A. B. Blake, M. Nazarian and A. D. Castel, "The Apple of the mind's eye: Everyday attention, metamemory, and reconstructive memory for the Apple logo", *The Quarterly Journal of Experimental Psychology*, 68:5, 858-865, 2015.

[24]   A. R. Zahari, E. Esa and N. A. Azizan, "Logo Design Characteristics of the Top 50 Most Valuable ASEAN Brands: An Empirical Study of Pre- and Post-Coronavirus Impact", *Global Business and Management Research: An International Journal Vol. 13, No. 4s*, 2021.

[25]   X. Jia, Y. Dong and B. Wang, "Logo Design Process and Method of Intellectual Property Big Data in the Digital Media Era", *Hindawi Discrete Dynamics in Nature and Society Volume 2022, Article ID 2556365, 12 pages,* 2022.

[26]   "Brand Finance Global 500, The annual report on the most valuable brands in the world", SyncForce, 2023. [Online]. Available https://www.rankingthebrands.com/The-Brand-Rankings.aspx?rankingID=83. [Accessed 20 April 2023].

[27]   B. Althafairi, N. Alhoumaida, M. Saxena, Z. Almsri, "Case Study – Amazon*", Journal of the Community Development in Asia*, 2019.

[28]   A. Delfanti, *The Warehouse Workers and Robots at Amazon*, British Library Cataloguing in Publication Data, Pluto Press, 2019

[29]   M. I. Niros and Y. A. Pollalis, "Brand Personality And Consumer Behavior: Strategies For Building Strong Service Brands", *Journal of Marketing and Operations Management Research*, Volume 2, Number 2, 2014.

[30]   I. Iancu and B. Iancu, "Recall and Recognition on Minimalism. A Replication of the Case Study on the Apple Logo", *KOME − An International Journal of Pure Communication Inquiry,* Volume 5 Issue 2, p. 57-70, 2017.

[31]   M. Kronberg, "Color and shape in logo design: influence on consumer perceptions of brand personality", *Ph.D. Thesis*, Department of Marketing Hanken School of Economics Helsinki, 2020.

[32]   J. V. Rekom, G. Jacobs, P. W. J. Verlegh and K. Podnar, "Capturing the essence of a corporate brand personality: A Western brand in Eastern Europe", *Journal of Brand Management,* 14,114 −124, 2006.

[33]   V. Bossel, K. Geyskens, C. Goukens, "Facing a trend of brand logo simplicity: The impact of brand logo design on consumption", *Food Quality and Preferences,* Volume 71, pages 129-135, 2019.

[34]   J. Cao, "Research on the application of color language in computer graphic design," *Journal of Physics: Conference Series*, IOP Publishing Ltd, May 2021.

[35]   L. Bizhu, "The Mutual Development of Colour Design and Application in New Media Design", *International Conference on Computer Technology and Media Convergence Design*, April 23 - 25, Sanya, China: 2021.

[36]   A. İcil Tuncer *et al.*, "Evaluating the relationship between logo and corporate reputation with psychophysiological data harvesting technique," *Business & Management Studies: An International Journal*, vol. 11, no. 2, pp. 413–434, Jun. 2023, doi: 10.15295/bmij.v11i2.2180.