

Crossmodal Correspondences Between Brand Name and Typeface in Brand Communication

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Abstract

Background The sound of brand names conveys images as does the visual form of typefaces. Designers and brand managers consider these images when developing brand identities, but their efforts have largely relied on intuition, experience, and market trends. To this end, the present study empirically investigates the conjoint influence of the images conveyed by the brand name and by the typeface in brand identity.

Methods Study stimuli were developed as brand logotypes based on the results of pretests to manipulate the images conveyed by hypothetical brand names and typefaces. Chi-square tests and PROCESS macro regression analyses were conducted on survey data of 268 individuals to reveal how the interplay between brand name image and typeface image influences brand memory and consumer attitudes.

Results Aligning, as opposed to contrasting, the images of brand name and typeface in brand logotypes yields higher brand memory and consumer attitudes. However, what overrides this general tendency is that embedding small, feminine, light (vs. dark), soft, or light (vs. heavy) images in brand name most significantly contributes to increased brand memory and consumers' affective and global attitudes, whereas embedding large, masculine, dark, hard, or heavy images in typeface most significantly contributes to increased consumers' cognitive attitude.

Conclusions This study objectively analyzes how brands can capitalize on the intuitive sensations evoked by visual and textual information in their visual identity for effective brand communication. Detailed findings of the study provide guidelines for stakeholders and designers in developing brand names and visualizing them into logotypes with respect to the strategic focus of their brand.

Keywords Brand name, Crossmodal Correspondence, Logotype, Sound Symbolism, Typeface

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1. Introduction

As today's society is sometimes referred to as an "attention economy," the bombardment of communication content far exceeds the cognitive capacity of consumers, who are thus forced to allocate attention selectively. In turn, the competition among brands for the scarce resource is growing in intensity and effective brand communication has become a necessity. Moreover, in today's global economy, how brand communication efforts are perceived and interpreted across languages and cultures is an important managerial concern. The two core elements of brand identity that define the initial impression of a brand are its brand name and the visual form in which the brand name is presented to consumers. Brand name, in particular, is critical not only because no business entity can operate without a name and it shapes the initial brand image (Aaker, 1991), but also because it is difficult to change once established. Hence, strategically managing the intuitive feelings consumers experience from brand names provides an advantage for brands.

A growing body of research supports the notion that there exist nonarbitrary mappings between sound and meaning. These associative mappings are collectively referred to as *sound symbolism* (e.g., Newman, 1933; Sapir, 1929). Perhaps the most well-known paradigm is the *bouba-kiki effect*, which refers to people's tendency to associate *bouba* with a round shape and *kiki* with a spiky shape (Ramachandran & Hubbard, 2001). In the context of brand communication, sound-meaning associations offer invaluable benefits to brands in ensuring that brand names convey images that are universally shared (e.g., Cai and Zhao, 2019; Chen et al., 2016; Hoshi et al., 2019; Huang et al., 1969; Miron, 1961; O'Boyle et al., 1987; Shrum et al., 2012). However, little is known as to how brand names interact with the visual form in which they are presented at brand-consumer touchpoints. Considering the low likelihood that consumers experience brand names purely acoustically during the entire consumption process, the influence of brand names must be considered conjointly with the visual form in which consumers experience them. Moreover, there exists a literature gap between the research strand of sound symbolism in brand naming and that of visual communication in brand design. To this end, the present study empirically investigated how the images conveyed by brand names interact with the images conveyed by typefaces to ultimately shape consumers' perception and attitude.

2. Literature review

2.1. Brand name image

Brand names often serve as the first point of interaction between brands and consumers, and the expectation toward an unfamiliar brand is said to almost entirely derive from the initial impression created by the brand name (Aaker, 1991). Studies have demonstrated that brand names that are relevant to the product category or suggestive of a positive product attribute increase brand preference (Bao et al., 2008; Hillenbrand et al., 2013; Kohli et al., 2005; Lowrey & Shrum, 2007). Brands were also evaluated higher on product attributes that are semantically associated with the brand name (Wänke et al., 2007).

Brand names also significantly influence consumers' retention such that those connoting product attributes or benefits (Lowrey et al., 2003) are better remembered. Hence, desirable brand names are perhaps those that are memorable (Delano, 1999) and evoke meaningful associations (Kapferer, 2012). It is also important for brand names to be registrable and interpreted consistently by global consumers. Here, sound symbolism offers a means to embed sensorially transferable meanings in brand names that are universally shared. A myriad of results testifies that such sound-meaning associations are governed by some generalizable patterns, in which certain acoustic features facilitate certain image associations in word perception (see Westbury et al., 2018, for a review.) Studies have shown that brand names whose sound symbolism is consistent with the brand are more preferred and better remembered (Boltz et al., 2016; Choi et al., 2018; Klink, 2001; Lowrey & Shrum, 2007; Shrum et al., 2012; Vanden Bergh et al., 1984; Wu et al., 2013; Yorkston & De Mello, 2005).

One approach in measuring the sound symbolic image of sounds is by sonority, which refers to the loudness of a sound relative to that of other sounds with the same length, stress, and pitch (Ladefoged & Johnson, 2011). According to sonority hierarchy (Table 1), vowels are most sonorous, among which the height of vowels is inversely proportional to its sonority, and approximants are less sonorous than vowels but more sonorous than nasals, which are more sonorous than obstruents (Carr, 1993; Goldsmith, 1990; Gussenhoven & Jacobs, 2017; Jespersen, 1904; Katamba, 1989; Ladefoged & Johnson, 2011; Selkirk, 1982). In the present study, we manipulate brand name image using sonority hierarchy as recent attempts associating sonority with sound perception have shown plausible evidence (Jacobs & Kinder, 2018; Johansson et al., 2020) and sonority describes a more rudimentary nature of sounds than do articulatory phonetics. Previous studies have associated high sonority sounds with the images of smallness, lightness (vs. darkness), and lightness (vs. heaviness) and low sonority sounds with the images of largeness, darkness and heaviness (Cuskley et al., 2019; Newman, 1933; Walker & Parameswaran, 2019). Drawing on previous studies and considering the polarized images associated with sound symbolism, we hypothesize that brand names differ in their influence on brand memory and consumer attitudes depending on the images they convey, for which we comparatively analyze brand names with high sonority sounds against brand names with low sonority sounds.

Table 1 Sonority hierarchy (higher row implies higher sonority)

Classification		Phoneme	Example
Vowels	Low to low-mid vowels	æ, ɑ, ɛ, ʌ, ɔ	<u>c</u> at, <u>h</u> ot, <u>b</u> ed, <u>c</u> up, <u>d</u> oor
	Mid vowels	ə	<u>a</u> bove
	High to high-mid vowels	i, u, ɪ, ʊ, e, o	<u>e</u> at, <u>m</u> oon, <u>b</u> id, <u>g</u> ood, <u>h</u> em, <u>p</u> oke
Approximants		j, w, l, ɹ	<u>y</u> ou, <u>w</u> in, <u>l</u> ove, <u>r</u> ed
Nasals		m, n, ŋ	<u>m</u> oon, <u>n</u> ut, <u>s</u> ing
Obstruents		f, v, θ, ð, s, z, ʃ, ʒ, h, ʧ, ʤ, p, b, t, d, k, g	<u>f</u> eel, <u>v</u> ine, <u>θ</u> ing, <u>ð</u> at, <u>s</u> un, <u>z</u> oo, <u>ʃ</u> ine, <u>ʒ</u> ual, <u>h</u> ouse, <u>ʧ</u> air, <u>ʤ</u> ump, <u>p</u> ast, <u>b</u> oy, <u>t</u> ea, <u>d</u> og, <u>k</u> old, <u>g</u> o

2. 2. Typeface image

The denotative content of text is verbal language while the connotative meaning of text—the visual structure in which the text is written—is a form of visual language. Typefaces carry a communication capacity such that the visual features of a text interact with the denotative meaning of the message to significantly affect the delivery and impact of the message (Doyle

& Bottomley, 2009; Tannenbaum et al., 1964). Prior research support that readers agree on the appropriateness of typefaces for different contexts and uses (Haskins, 1958; Schiller, 1935) and consistently ascribe certain personality or attribute to particular typefaces (Brumberger, 2003; Nedeljković et al., 2017; Velasco, Woods, et al., 2018). The reason as to why typefaces differ in their connotative meaning is essentially in the visual structures carrying a certain atmosphere in themselves.

Both practitioners and scholars have regarded typeface as an important component to achieve brand communication goals (Childers & Jass, 2002; Henderson et al., 2004; McCarthy & Mothersbaugh, 2002; Pan & Schmitt, 1996; Tantillo et al., 1995). Previous studies have found that typeface influences the memorability and readability of advertisements and ultimately brand perceptions (Childers & Jass, 2002; Hagtvedt, 2011; Henderson et al., 2004; Lieven et al., 2015; McCarthy & Mothersbaugh, 2002; Xu et al., 2017) such as brand identity (Doyle & Bottomley, 2004; Zaichkowsky, 2010) and brand personality (Grohmann et al., 2013). Moreover, researchers have explored not only the independent role of typeface but also its interactive effect with other pertinent factors. For instance, previous studies identified the importance of the fit between typeface and product category (Doyle & Bottomley, 2004), between typeface and brand symbol (Salgado-Montejo et al., 2014), and between typeface and target gender (Wen & Lurie, 2018). Research have also found that appropriate typefaces in brand identities can form the personality of the brand (Grohmann et al., 2013; Jordan et al., 2017), communicate brand positioning and product attributes (Celhay et al., 2015; Doyle & Bottomley, 2011; Velasco, Hyndman, et al., 2018), reinforce behavioral intention (H. Huang & Liu, 2020), increase the likelihood to recommend (Grohmann, 2016), and ultimately build its market share (Doyle & Bottomley, 2004). Drawing on these arguments and considering the polarized images associated with typefaces from prior literature (Table 2), we hypothesize that typefaces differ in their influence on brand memory and consumer attitudes depending on the images they convey, for which we comparatively analyze serified, lowercased, oblique, thin, and non-extended typefaces against sans-serifed, uppercased, roman, bold, and extended typefaces.

Table 2 Previous findings on typographic image

Category	Type	Type	Reference
Classification	Serif	Elegant, formal, feminine, romantic, readable, charming, emotional, distinct, beautiful, interesting, extraordinary, rich, happy, valuable, new, gentle, young, calm, less traditional, more personality, freshness, high quality, vitality	Qiu et al., 2017; Tantillo et al., 1995
	Sans serif	Masculine, powerful, smart, upper-class, clear, reliable, natural, standard	Grohmann, 2016; Morris et al., 2002; Qiu et al., 2017; Roethlein, 1912; Tantillo et al., 1995
Letter case	lowercase	Youthful, friendlier, feminine, warm	Sassoon, 1993; Teng et al., 2021; Wen & Lurie, 2018; Xu et al., 2017
	UPPERCASE	Potent, masculine, strength, authority, competent	Tannenbaum et al., 1964; Teng et al., 2021; Wen & Lurie, 2018; Xu et al., 2017
Posture	Oblique	Feminine, beauty, active	Davis & Smith, 1933; Tannenbaum et al., 1964
	Roman	Masculine, strength, potent	Davis & Smith, 1933; Tannenbaum et al., 1964

Weight	Thin	Feminine, higher pitch	Lieven et al., 2015; Walker, 2016
	Bold	Masculine, strength, daring, assertive, solid, substantial	Davis & Smith, 1933; Lieven et al., 2015; Van Leeuwen, 2006
Width	Regular	Feminine, beauty	Davis & Smith, 1933
	Extended	Masculine, strength	Davis & Smith, 1933

2. 3. Crossmodal correspondences

Cognitive psychology has long recognized that information received through multisensory organs and perceived as congruent or consistent yield responses different than those perceived as incongruent or inconsistent. This is commonly explained by the theory of processing fluency such that the consequences result from a sense of familiarity, arising from limited cognitive processing (Whittlesea, 1993). Empirical findings have revealed that subjects display faster response times under multisensory congruent conditions than under incongruent conditions of sound-size associations (Itagaki et al., 2019), sound-shape associations (Heyman et al., 2019; Hung et al., 2017), sound-typeface associations (Lewis & Walker, 1989), sound-color associations (Sun et al., 2018), shape-typeface associations (De Carolis et al., 2018), and shape-word associations (Velasco et al., 2016). Regarding brand memory, unfamiliar words whose definition aligns with the sound symbolic image of the word are better remembered than their alternatives (Preziosi & Coane, 2017). In the context of branding, memorability was found to enhance as the degree of consistency among advertising elements increased (Childers & Jass, 2002; S. Y. Lee & Shen, 2009). Regarding attitudinal responses, conceptual or perceptual fluency leading to positive attitudes have been observed (e.g., Lee & Labroo, 2004; Reber et al., 1998; Winkielman & Cacioppo, 2001).

Consistent cues across various media have also been shown to yield desirable consumer attitudes. Congruencies between typeface and product category and between typeface and product shape were found to increase brand choice and brand value (Van Rompay & Pruyn, 2011). Consistency in design elements was also found to increase brand preference and affective responses (Lieven et al., 2015; Pleyers, 2021). From the perspective of multisensory brand communication, scent was found to be effective in increasing brand favorability when the scent is perceptually congruent with the brand image (Errajaa et al., 2021), while music was found to be effective in increasing brand choice when the music is perceptually congruent with the product category (North et al., 2016). More specifically related to the present study, Doyle and Bottomley (2004, 2006, 2011) have demonstrated that congruent brand name and typeface combinations lead to higher brand preference and evaluation. However, a more constructive approach is called for to integrally analyze consumers' response to auditory and visual branding cues by incorporating objective, fundamental measures of sounds and typeface, developed in linguistics and design, respectively. Such an approach would lead to empirical evidence that reduces the uncertainty involved in the decision-making process of branding. In this light, the author's pilot study revealed that image-congruent combinations of brand name and typeface positively impact brand memory, brand appeal, and perceived quality (Jun & Lee, 2022). The present study further explored in depth the effect of the alignment between the images conveyed by brand name and typeface when consumers encounter logotypes of unfamiliar brands.

3. Method

3. 1. Materials

Two pretests were conducted to establish image manipulations: Pretest 1 (resp., Pretest 2) collected the extent to which hypothetical brand names (resp., typefaces) convey certain images. A list of semantic differentials was compiled from prior literature on sound symbolism and the work by Osgood, Suci, & Tannenbaum (1957), from which ten pairs were selected based on two criteria: (1) any pair of images that is dominantly specific to either brand names or typefaces were excluded, and (2) any pair of images whose either pole describes a negative attribute was excluded. The selected image dimensions were small vs. large, feminine vs. masculine, light vs. dark, fast vs. slow, soft vs. hard, light vs. heavy, weak vs. strong, passive vs. active, cold vs. hot, and humorous vs. serious. The two poles of these image dimensions are designated as Pole 1 (left of vs.) and Pole 2 (right of vs.) for brevity.

Sixteen candidates of hypothetical brand names were developed for Pretest 1: *Cessie*, *Hiffy*, *Bougo*, *Dobou*, *Joovy*, *Thitto*, *Keshu*, and *Chipu* are concentrated with low sonority sounds and thus belong to Pole 1, and *Rauma*, *Yarang*, *Maula*, *Walong*, *Maraun*, *Rawole*, *Nawone*, and *Laumal* are concentrated with high sonority sounds and thus belong to Pole 2. These disyllabic non-words were carefully fabricated such that they are not suggestive of any existing brand and were reviewed by a professor in English Phonetics and Phonology for suitability and viability. A total of 56 individuals participated in Pretest 1, who rated each brand name on the ten image dimensions.

Typeface image manipulation involved five criteria of classification, letter case, posture, weight, and width. Sixteen typefaces were selected to be tested: Adobe Caslon Pro Italic, Baskerville MT Std Italic, CantoPen Light Italic, Centennial LT 46 Light Italic, Didot LT Italic, Garamond Premier Pro Light Italic, IvyPresto Thin Italic, and Palatino LT Light Italic for Pole 1, and Amplitude Wide Bold, Brother XL Heavy, Eurostile Extended Black, Fedra Sans Bold, Futura Bold, Geom Graphic Bold, Helvetica Neue 73 Bold Extended, and Obvia Expanded Black for Pole 2. These were selected for their clear representation of each typographic characteristic and their level of discrimination against their alternatives. All typefaces were prepared as an identical dummy text that read, “lorem ipsum dolor,” and were reviewed by a professor in Design for suitability and viability. A total of 59 individuals participated in Pretest 2, who rated each typeface on the ten image dimensions.

Mean rating results of the two pretests are provided in Figure 1. One-way ANOVA was conducted on the pretest results to determine the dimensions that sufficiently distinguish both brand name and typeface images. Accordingly, those with a significant p-value and an effect size η^2 greater than 0.1 for both brand name and typeface images were selected (Table 3), resulting in five dimensions of small vs. large, feminine vs. masculine, light vs. dark, soft vs. hard, and light vs. heavy. Then, for the reduced dimensions, the distance between each brand name image rating against each typeface image rating was calculated using the Euclidean distance formula. That is, the lower the value, the greater the congruence between the image of the brand name and the image of the typeface. Four combinations of brand name and typeface with the lowest values were selected as stimuli for the congruent condition and four combinations with the highest values were selected as stimuli for the incongruent condition (Table 4).

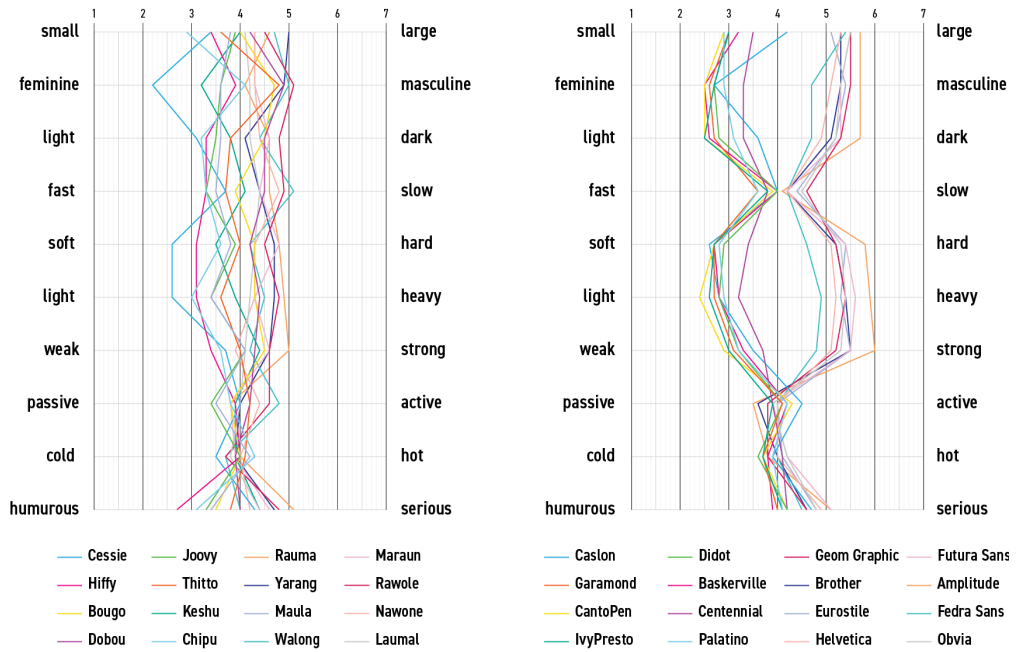


Figure 1 (left) Result of Pretest 1; (right) Result of Pretest 2

Table 3 Image dimension reduction analysis

	Small vs. large	Feminine vs. masculine	Light vs. dark	Fast vs. slow	Soft vs. hard	Light vs. heavy	Weak vs. strong	Passive vs. active	Cold vs. hot	Humorous vs. serious
Brand name image	p=.000 $\eta^2=.106$	p=.000 $\eta^2=.196$	p=.000 $\eta^2=.130$	p=.000 $\eta^2=.137$	p=.000 $\eta^2=.150$	p=.000 $\eta^2=.185$	p=.000 $\eta^2=.076$	p=.000 $\eta^2=.054$	p=.228 $\eta^2=.021$	p=.000 $\eta^2=.169$
Typeface image	p=.000 $\eta^2=.430$	p=.000 $\eta^2=.518$	p=.002 $\eta^2=.473$	p=.000 $\eta^2=.038$	p=.000 $\eta^2=.510$	p=.000 $\eta^2=.532$	p=.000 $\eta^2=.435$	p=.167 $\eta^2=.021$	p=.156 $\eta^2=.022$	p=.000 $\eta^2=.075$

Table 4 Study stimuli

		Brand name image	
		Pole 1	Pole 2
Typeface image	Pole 1	<i>cessie</i> /SES-i/	<i>rawole</i> /RAA-wubl/
		<i>joovy</i> /JOO-vi/	<i>rauma</i> /RUH-maa/
	Pole 2	HIFFY /HIF-i/	HIFFY /HIF-i/
		CHIPU /CHI-poo/	YARANG /YAA-raang/

Regarding terminology throughout this paper, the following variables are defined as follows: ‘logotype image congruency’ refers to whether the brand name and the typeface convey congruent or incongruent images; ‘logotype image’ refers to whether the brand name and the typeface both convey Pole 1 or Pole 2 images for the congruent condition; and ‘brand name image’ and ‘typeface image’ refer to whether the brand name or the typeface, respectively, conveys Pole 1 or Pole 2 images.

3. 2. Study

The survey comprised four parts. The first part pertained to consumer attitudes. Study stimuli were presented one at a time in a random order, which participants rated on seven-point Likert scales. Visual presentation not only reduces bias, but also is a feasible method as prior literature supports that sound symbolism is manifested even when words are presented visually and read silently (Aryani & Jacobs, 2018; Klink, 2000; Ohtake & Haryu, 2013). Three scales pertained to global attitude (bad vs. good, dislike vs. like, and unfavorable vs. favorable; adopted from Batra and Ahtola, 1991, MacKenzie et al., 1986, and Mitchell and Olson, 1981), three scales pertained to affective attitude (unappealing vs. appealing, unattractive vs. attractive, and hateful vs. lovable; adopted from Baker and Churchill, 1977, and Crites et al., 1994), three scales pertained to cognitive attitude (useless vs. useful, harmful vs. beneficial, and low quality vs. high quality; adopted from Crites et al., 1994, and Low and Lamb, 2000), and five scales pertained to the image of the stimuli (corresponding to the five image dimensions). The second and third parts of the survey collected participants’ demographic information and self-assessment of self-image, respectively. The fourth part measured brand memory by cued recall tasks, for which the first letter of each stimulus was presented in the same font as their originally presented form, followed by underscores whose number corresponds to the number of the remaining letters. A total of 270 participants were recruited from various regional, academic, and interest groups on online social media platforms of Facebook and LinkedIn (Table 5) by posting calls for participants which directed to the survey URL. Two of the participants were later removed from analyses for insufficient English proficiency. Cronbach’s alphas were calculated to validate the reliability of study variables (Table 6). In particular, the item of hateful vs. lovable was removed to improve the reliability of the affective attitude measure.

Table 5 Demographics

Category	Item	Frequency	Percent
Sex	Female	193	72.015
	Male	75	27.985
Age	18-19	9	3.358
	20-29	156	58.209
	30-39	55	20.522
	40-49	24	8.955
	50-59	16	5.970
	60+	8	2.985
Ethnic group	White	173	64.552
	Black or African American	14	5.223
	Asian	64	23.881
	Other	17	6.343
Total		268	100.000

Table 6 Reliability of study variables

Variable	Scale	Cronbach's alpha if item deleted	Cronbach's alpha (M)
Affective attitude	Unappealing vs. appealing	0.783	0.885
	Unattractive vs. attractive	0.759	
	Hateful vs. lovable	0.924	
Cognitive attitude	Useless vs. useful	0.678	0.791
	Harmful vs. beneficial	0.711	
	Low quality vs. high quality	0.765	
Global attitude	Bad vs. good	0.928	0.942
	Dislike vs. like	0.904	
	Unfavorable vs. favorable	0.917	

4. Result

4. 1. On brand memory

Brand memory data was recoded into two cases of no memory and partial to perfect memory. A chi-square test revealed that logotype image congruency statistically correlates with brand memory ($X^2=6.3533$, $df=1$, $p<.05$, Table 7) such that consumers better remember logotypes whose brand name and typeface images agree (28.1%) than those whose images disagree (23.3%). A statistical significance was also found between brand name image and brand memory ($X^2=55.6944$, $df=1$, $p<.001$, Table 8) such that consumers better remember logotypes whose brand name images belong to Pole 1 (32.7%) as opposed to Pole 2 (18.7%). Logotype image was also found to statistically correlate with brand memory ($X^2=16.0797$, $df=1$, $p<.001$, Table 9) such that consumers better remember logotypes whose brand name and typeface images both belong to Pole 1 (33.6%) as opposed to Pole 2 (22.6%).

Table 7 Crosstabulation on brand memory by logotype image congruency

		Congruent N(%)	Congruent N(%)
Brand memory	No memory	771(71.9%)	822(76.7%)
	Partial or perfect memory	301(28.1%)	250(23.3%)
Total		1072(100.0%)	1072(100.0%)

$X^2=6.3533$, $df=1$, $p=.0117$

Table 8 Crosstabulation on brand memory by brand name image

		Pole 1 N(%)	Pole 2 N(%)
Brand memory	No memory	721(67.3%)	872(81.3%)
	Partial or perfect memory	351(32.7%)	200(18.7%)
Total		1072(100.0%)	1072(100.0%)

$X^2=55.6944$, $df=1$, $p=.0000$

Table 9 Crosstabulation on memory by logotype image

		Pole 1 N(%)	Pole 2 N(%)
Memory	No memory	356(66.4%)	415(77.4%)
	Partial or perfect memory	180(33.6%)	121(22.6%)
Total		536(100.0%)	536(100.0%)

$X^2=16.0797$, $df=1$, $p=.0001$

4. 2. On consumer attitudes

PROCESS macro model 6 was employed (Hayes, 2022) with 5,000 bootstrapped resamples at 95% confidence interval to analyze the effects of logotype image congruency, logotype image, brand name image, and typeface image on consumers' affective, cognitive, and global attitudes. All continuous dependent variables were mean-centered. A serial multiple mediation regression model was employed specifically to analyze and deduce which and how specific domains of consumer attitudes are impacted by the interactive influence of brand name and typeface images.

Logotype image congruency was found to significantly influence affective attitude ($\beta = -.2015$, $p < .001$) but not cognitive nor global attitudes. Affective attitude was found to positively influence cognitive attitude ($\beta = .5145$, $p < .001$) and global attitude ($\beta = .6687$, $p < .001$), and cognitive attitude was found to positively influence global attitude ($\beta = .2952$, $p < .001$). Affective and cognitive attitudes were found to fully mediate the relation between logotype image congruency and global attitude (Figure 2; Table 10).

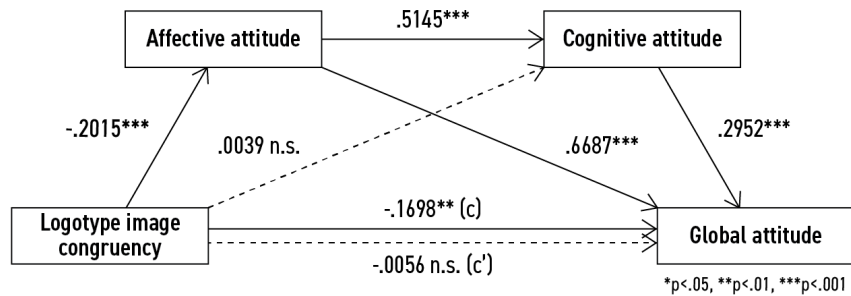


Figure 2 Serial mediation analysis on logotype image congruency

Table 10 Serial multiple mediating effects of affective and cognitive attitudes on the relation between logotype image congruency and global attitude

Path	β	SE	t	p	95% CI	
Logotype image congruency → Affective attitude	-.2015	.0590	-3.4172	.0006	-.3171	-.0859
Logotype image congruency → Cognitive attitude	.0039	.0283	.1366	.8914	-.0516	.0593
Affective attitude → Cognitive attitude	.5145	.0103	49.8043	.0000	.4943	.5348
Logotype image congruency → Global attitude	-.0056	.0241	-.2316	.8169	-.0528	.0416
Affective attitude → Global attitude	.6687	.0129	51.7636	.0000	.6434	.6940
Cognitive attitude → Global attitude	.2952	.0184	16.0491	.0000	.2591	.3313
Logotype image congruency → Affective attitude → Global attitude	-.1347	.0392	-	-	-.2112	-.0577
Logotype image congruency → Cognitive attitude → Global attitude	.0011	.0084	-	-	-.0155	.0172
Logotype image congruency → Affective attitude → Cognitive attitude → Global attitude	-.0306	.0092	-	-	-.0488	-.0129
Total indirect effect	-.1642	.0486	-	-	-.2579	-.0703

Logotype image was found to significantly influence affective ($\beta = -.3526$, $p < .001$) and cognitive ($\beta = .2456$, $p < .001$) attitudes, but not global attitude. Affective attitude was found to positively influence cognitive ($\beta = .4865$, $p < .001$) and global ($\beta = .6291$, $p < .001$) attitudes, and cognitive attitude was found to positively influence global attitude ($\beta = .3202$, $p < .001$). Affective and cognitive attitudes were found to fully mediate the relation between logotype image and global attitude (Figure 3; Table 11).

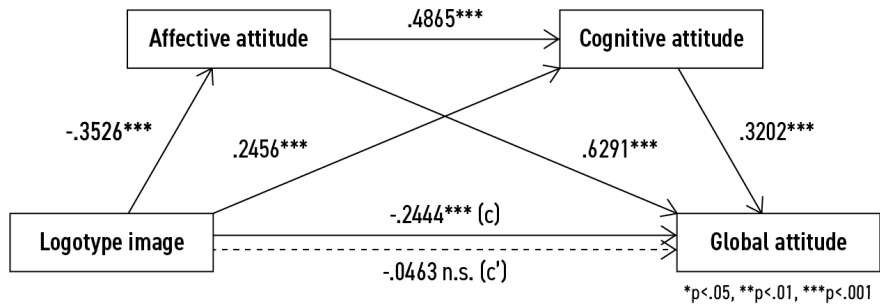


Figure 3 Serial mediation analysis on logotype image

Table 11 Serial multiple mediating effects of affective and cognitive attitudes on the relation between logotype image and global attitude

Path	β	SE	t	p	95% CI	
Logotype image → Affective attitude	-.3526	.0819	-4.3043	.0000	-.5134	-.1919
Logotype image → Cognitive attitude	.2456	.0404	6.0793	.0000	.1666	.3248
Affective attitude → Cognitive attitude	.4865	.0149	32.5553	.0000	.4572	.5159
Logotype image → Global attitude	-.0463	.0355	-1.3018	.1933	-.1160	.0235
Affective attitude → Global attitude	.6291	.0182	34.4848	.0000	.5933	.6649
Cognitive attitude → Global attitude	.3202	.0265	12.1040	.0000	.2683	.3721
Logotype image → Affective attitude → Global attitude	-.2218	.0525	-	-	-.3249	-.1186
Logotype image → Cognitive attitude → Global attitude	.0786	.0147	-	-	.0516	.1095
Logotype image → Affective attitude → Cognitive attitude → Global attitude	-.0549	.0138	-	-	-.0828	-.0290
Total indirect effect	-.1981	.0664	-	-	-.3287	-.0658

Brand name image was found to significantly influence affective ($\beta = -.3256$, $p < .001$), cognitive ($\beta = .0806$, $p < .01$), and global ($\beta = -.0988$, $p < .001$) attitudes. Affective attitude was found to positively influence cognitive ($\beta = .5179$, $p < .001$) and global ($\beta = .6622$, $p < .001$) attitudes, and cognitive attitude was found to positively influence global attitude ($\beta = .2998$, $p < .001$). Affective and cognitive attitudes were found to partially mediate the relation between brand name image and global attitude (Figure 4; Table 12). No serial mediation effect of affective and cognitive attitudes on the relation between typeface image and global attitude was found.

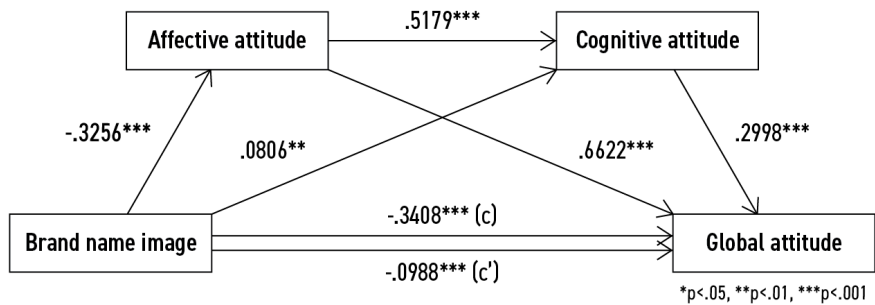


Figure 4 Serial mediation analysis on brand name image

Table 12 Serial multiple mediating effects of affective and cognitive attitudes on the relation between the brand name image and global attitude

Path	β	SE	t	p	95% CI	
Brand name image → Affective attitude	-.3256	.0587	-5.5457	.0000	-.4407	-.2104
Brand name image → Cognitive attitude	.0806	.0283	2.8446	.0045	.0250	.1362
Affective attitude → Cognitive attitude	.5179	.0104	50.0070	.0000	.4976	.5382
Brand name image → Global attitude	-.0988	.0241	-4.0977	.0000	-.1461	-.0515
Affective attitude → Global attitude	.6622	.0130	51.1212	.0000	.6368	.6876
Cognitive attitude → Global attitude	.2998	.0184	16.3322	.0000	.2638	.3358
Brand name image → Affective attitude → Global attitude	-.2156	.0393	-	-	-.2930	-.1394
Brand name image → Cognitive attitude → Global attitude	.0242	.0087	-	-	.0075	.0420
Brand name image → Affective attitude → Cognitive attitude → Global attitude	-.0506	.0098	-	-	-.0699	-.0324
Total indirect effect	-.2420	.0487	-	-	-.3369	-.1475

5. Discussion

The findings reveal that consumers manifest overall desirable attitudes toward logotypes whose brand name and typeface convey congruent rather than incongruent images. However, what contributes most significantly to increased brand memory and affective and global attitudes is a brand name that conveys small, feminine, light (vs. dark), soft, or light (vs. heavy) images such as by being concentrated with low sonority sounds. On the contrary, what contributes most significantly to increased cognitive attitude is a typeface that conveys large, masculine, dark, hard, or heavy images such as by being sans-serifed, uppercased, roman, bold, or extended.

Hence, brands whose strategic focus is to be strongly imprinted in consumers' mind or to appear appealing, attractive, good, likable, or favorable are recommended to concentrate their brand name with low sonority sounds and visualize into a logotype using serifed, lowercased, oblique, thin, or non-extended typefaces to convey small, feminine, light (vs. dark), soft, or light (vs. heavy) images both by their brand name and their typeface such as *cessie* and *joovy* among the study stimuli. If brands are to adopt a brand name concentrated with high sonority sounds, then its visualized logotype is best to connote a consistent image by utilizing sans-serifed, uppercased, roman, bold, or extended typefaces such as *YARANG* and *WALONG* among the study stimuli. On the other hand, brands whose strategic focus is to appear useful, beneficial, and high-quality are recommended to concentrate their brand name with high sonority sounds and visualize into a logotype using sans-serifed, uppercased, roman, bold, or extended typefaces to convey large, masculine, dark, hard, or heavy images both by their brand name and their typeface, again, such as *YARANG* and *WALONG* among the study stimuli. If brands are to design their logotype using serifed, lowercased, oblique, thin, or non-extended typefaces, then the brand name is best to connote a contrasting image by being concentrated with high sonority sounds such as *rawole* and *rauma* among the study stimuli.

6. Conclusion

The present study both theoretically and practically contributes toward tactically potentiating the multisensory communicative function of brand identities for desired consumer response. Theoretically, the study objectively revealed the interactive effect of brand name and typeface in logotypes and actively bridged the research on sound symbolism and the research on visual identity design, serving as an evidential ground on which to advance multisensory brand communication research by an interdisciplinary approach. Practically, the findings provide empirical guidelines for practitioners involved in brand identity development in their intuitive decision making. Experienced managers and designers are aware of sounds and typographic characteristics eliciting certain sensations or feelings. The present study demonstrated how their efforts can collectively and effectively be merged toward developing brand identities that ideally support the strategic focus of their brand.

For this research strand to take the next necessary leap, both brand name and typeface measures should further be elaborated. Brand name image may be further segmented by employing measures that have been associated with sound perception such as the location of image-conveying phonemes (Adelman et al., 2018; Klink & Wu, 2014), the effect hierarchy of vowels and consonants (Fort et al., 2015; Klink & Wu, 2014), and the influence of repeated sounds (Argo et al., 2010). Additionally, Pretest 1 found that consumers perceive *Thitto* as masculine and *Maula* as feminine, contradicting prior literature. This is perhaps because they were rated as names of persons, impacting perceptions of brand gender. Further research is called for to assort person name patterns and incorporate into research on sound symbolism in brand naming. There also remain typographical measures untreated in the present study. Namely, letter size, letterspacing, x-height, ascender and descender lengths, stroke contrast, angle of posture, and other typeface classifications such as slab serif, glyphic, and script all influence the ultimate brand image consumers shape from the typeface adopted in brands' visual identity. Moreover, study stimuli were restricted to the form of a logotype as it is the most essential visualization of brand identity. Other brand design elements such as symbol mark, color palette, and graphic motif nevertheless impact consumer perception and should be considered. Considering the orthographic shape of letters is also necessary to fully understand the visual image of typefaces (Bottini et al., 2019; Cuskley et al., 2017), which refers to the innate form of letters such that letters like 'C' and 'O' are round while letters like 'H' and 'E' are rectangular (Pohlen, 2015). Lastly, expanding the research on multisensory brand design to include tactile, olfactory, and gustatory images will greatly contribute to broadening our understanding of brand communication that effectively capitalizes consumers' intrinsic mechanisms and formulating objective and evidential guidelines for the intuitive decision-making process involved in brand design.

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