

## Japanese People Perception of Corporate Logo and Product Design Images in Japan and Arabia

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### ABSTRACT

As a result of increased globalization, the Japanese public and corporations alike are beginning to interact more openly with Arabic corporate. The primary focus of this study is to shed light on and compare corporate logo designs of English alphabet type and product design (logos) images to those of Arabic alphabetic type in Japan. Factor analyses revealed three main images-- "Traditional and Consistent," "Familiar and Favorable," and "Creative and Innovative"-- and discovered that Arabic logotypes seems to be creative yet unfamiliar to Japan. Similarly cluster analyses for the factor scores of product logos indicated the same creativity and unfamiliarity in product logos. Moreover Rough sets analyses showed that corporate logos with English alphabetic logotypes were more familiar than those with Arabic alphabetic of the same corporate. Our findings suggest that in order to enhance Arabic corporate Logos in the Japanese marketplace, it is extremely important to familiarize Japanese with the Arabic alphabets.

### KEYWORDS

Arab corporate, Logo design, Product image, Japanese consumer, Rough sets, Cluster analyses.

### 1. INTRODUCTION

Enhancing a corporation's image is important for corporate survival in the current competitive marketplace. Among the strategies incorporated for obtaining effective brand image is logo formation, which represents a vital appeal in commercials for consumer products. Logos appear on television, packaging, letterhead, business cards, advertising signs, annual reports, and product designs. Logos are considered a critical in-store recognition aid for speeding up the selection process for preferred product. This

explains why researches on the psychological effects of corporate logos are many [1, 2, 3] Okata & Yamashita [4] have aggregated these previous studies into three effects: 1) Recognition: Consumer awareness of corporate logo existence, 2) A common shared meaning: Commonality between consumer perception of corporate logo and corporate intended logo image, and 3) Positive effect: Corporate logo favorable impression on consumer. Since these three encourage consumer purchase and encourage employment for human resource professionals, they are arguably able to influence the log industry significantly [4, 10].

### 2. PROBLEM STATEMENT

Since Japan has adopted English in daily life even in compulsory education [5] Japanese people have become much more familiar with the English alphabet than other foreign languages. However, the Arabic language has begun to show up regularly in the Japan marketplace in part due to improved diplomatic and commercial communications between Japan and Arab countries. The need for Japanese to contact with Arabic logotypes corporate is compelling [6].

### 3. OBJECTIVE

Although evolutionary psychology suggests that people from different cultures response to visual stimuli is genetically programmed and relatively immune from cultural influence [7] a number of empirical research data indicates that emotional reaction to individual design attributes is influenced by cultural differences [8, 9] Therefore, in order to understanding how corporate logo attribute and attributes

combination bring image or cause impression, it is extremely important to grasp the psychological effect of corporate logos. In this paper, we conducted two studies to examine the differences of Japanese consumer perception towards Arabic, English, and Japanese logotypes images attempting to utilize our findings in improving Arabic logotype design for the Japan marketplace.

#### 4. STUDY (1)

A total of 20 well-known logos representing 10 global corporate in Arab and Japan were selected as a stimulus of 10 Arabic and English alphabetic logotypes: FedEx, Burger King, CNN, Subway, Tide, Baskin Robbin, Vodafone, Starbucks, Coca Cola, and Adidas as is shown in Figure 1.



Figure 1 Examples of corporate logos

In order to ensure that the questions are designed to address the needs of this research and are asking the correct questions, the questionnaire structure was based on empirical Japanese research previously conducted [4, 10, 11] A booklet of 10 pages where each contained two corporate logo versions in Japanese and Arabic. The description of the 12 logo image questions are as follows: “1. Energetic: motion sense”, “2. Innovative: inspiration sense”, “3. Familiar: recognition sense”, “4. Consistent: solid sense”, “5. Reliable: professionalism sense”, “6. Favorable: goodness sense”, “7. Traditional: custom sense”, “8. Promotable: progress sense”, “9. Futuristic: vision sense”,

“10. Creative: skill sense”, “11. Characteristic: feature sense”, and “12. Luxurious: class sense.” Here is the five-point rating scales used for this study: (“1. Yes”, “2. Somewhat Yes”, “3. Neither way”, “4. Somewhat No”, and “5. No”). There were 50 subjects who participated in this survey (35 males, 15 females) representing undergraduate students majoring in industrial art design at a well-known private university located in the Tokyo metropolitan area.

Subjects were first shown three example logos (FedEx, Burger King, and Coca Cola) to illustrate the task, and then were given the questionnaire booklets to simultaneously rate his/her answers within an hour.

#### 4.1. Factor Analyses

The validity of cross-individual comparison scores are vital to many practices in applied psychological research. The premise of researching in individual personality or perception is to construct comparability; hence the utilization of an adequate analyses method is important for true representation of the collected data. Relative factorial invariance is widely tested with Factor Analysis that allows one to empirically test obtained data and then translate it into factor analytic language, so that the main factors can be clarified [4, 10]

In our survey, the correlation matrix in the evaluation data of the 20 corporate logotypes was examined by Factor Analysis method application [10] Analytic procedures revealed three groups of substantially correlated variables representing three main factors with given values equals or more than 1 ( $\lambda \geq 1$ ) and cumulative contribution rate of 66.94%. The following three variables combinations of "4. Consistent" and "7. Traditional", "6. Favorable" and "3. Familiar ", and "10. Creative" and "2. Innovative" have high factor loadings scores, each pair was considered a main factor and respectively represented the image level of "Traditional-Consistent", "Favorable-Familiar", and "Creative-Innovative ". Moreover Varimax rotation was selected for determining the dimensionality of each extracted factor as in Table 1 below.

Table 1 Factor loadings

Item	Factor 1 (F1)	Factor 2 (F2)	Factor 3 (F3)
	Traditional-Consistent	Familiar-Favorable	Innovative-Creative
4. Consistent	0.79	0.19	-0.08
7. Traditional	0.75	0.11	0.15
9. Futuristic	0.71	0.35	0.23
12. Luxurious	0.67	-0.01	0.43
5. Reliable	0.67	0.55	0.05
8. Promotable	0.53	0.41	0.38
6. Favorable	0.39	0.75	0.17
1. Energetic	-0.08	0.75	0.37
3. Familiar	0.36	0.75	0.09
11. Characteristic	0.08	0.12	0.83
10. Creative	0.16	0.20	0.78
2. Innovative	0.12	0.44	0.62
Eigenvalue	3.20	2.56	2.28
Factor contribution ratio	26.64	21.34	18.97
Cumulative contribution ratio	26.64	47.98	66.94

The Average Scores of Factor 1 (F1) and Factor 2 (F2) in Figure 2 shows that the image of “Traditional-Consistent” and “Familiar-Favorable” scored low for Arabic logotypes and high for English alphabetic logotypes although logo marks are similar in shapes and colors respectively, indicating presence of unfamiliar.

attributes towards Arabic characters. In the contrast to Figure 2, Average Scores of Factor 2 (F2) and Factor 3 (F3) in Figure 3 reveals that “Innovative-Creative” image scored high in Arabic logotypes than in English alphabetic logotypes. It clarifies high level of creative attribute perception towards Arabic characters design.

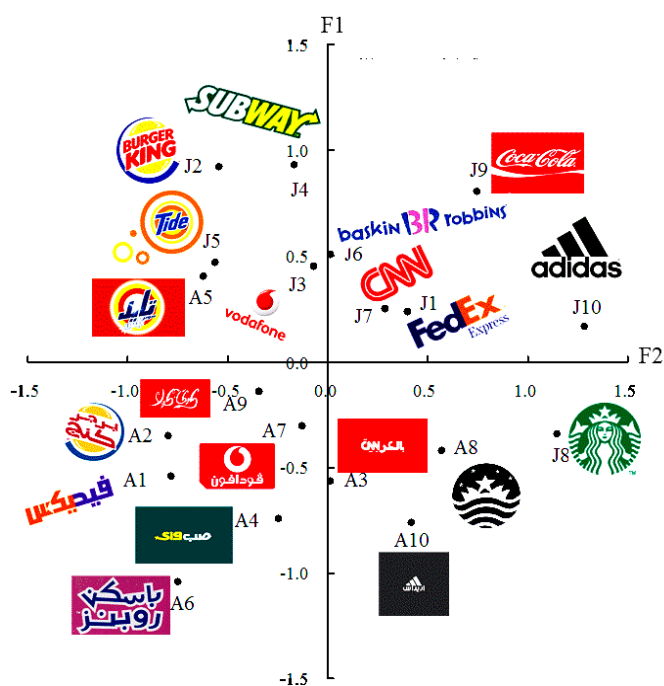


Figure 2 Average scores of Factor 1 and Factor 2

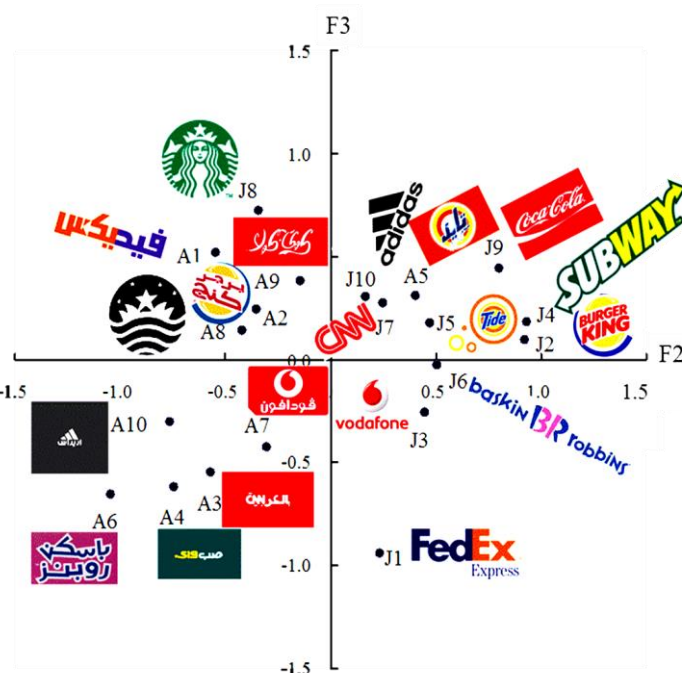


Figure 3 Average scores for Factor 2 and Factor 3

### 4.2. Rough Sets Analyses

Although Factor Analyses extracted three dimensions of the main corporate logo images "Tradition-Consistent", "Favorable-Familiar", and "Creative-Innovative," how logo attributes influence consumer perception was still unclear. In order to obtain adequate contraction of minimum attributes combination as well as identifying the psychological relationship between logo samples and consumer perception, an additional mathematical analyses approach known as Rough Sets proposed by Zdzisław Pawlak [12] would be imperative. In psychology, it is been used widely for data explicit interpretation and accurate minimal sets by revealing the causal relationship between "If" and "Then" rule decisions [11, 13, 14, 15] Rough Set analyses require binary variables for a case or an event. Each variable takes the values 0 or 1, that is, each case or event is conceived as a configuration of conditions. Data have the form of a decision table in which the columns represent causal variables (logical variables)

may take the values 0 or 1 and the rows represent cases [16] The composition of decision table between logo design structure (logo mark, logo entirety, and logotype) and main corporate logo images(Traditional-Consistent, Familiar-Favorable, and Innovative-Creative) is shown in Table 2: 1) Target set U, 2) Attribute Set Condition C, and 3) Attribute Set Decision D. Target set U is made of corporate logo, Attribute Set Condition C consists of the following equations: C = {Logo Mark (1 for Present, 0 for Absent), Active-Inactive (1 for Active, 0 for inactive), Solid sense (1 for Present, 0 for Absent), Logotype thickness (1 for thin, 0 for thick), Logotype Italic sense (1 for Present, 0 for Absent), Logotype variation of base line (1 for Present, 0 for Absent), Logotype white color processing of (1 for Present, 0 for Absent), Logotype language type (1 for Known, 0 for Unknown)}, and finally Attribute Set Decision D of main corporate logo images D = {Traditional-Consistent, Familiar-Favorable, and Innovative-Creative (given 1 when image score is greater than Zero, 2 when image score is lower than zero) }.

Table 2 Decision Table

Target Set U Sample	Attribute Set Condition C								Attribute Set Decision D		
	Logo Mark	Logo Entirety		Logo Type (Font)					Traditional Consistent	Familiar Favorable	Innovative Creative
	Present Absent	Active Inactive	Solid Sense	Thickness	Italic Sense	Baseline Change	White Color Processing	Language			
J1	0	0	1	0	0	0	0	1	1	1	2
A1	0	0	0	0	0	0	0	0	2	2	1
J2	1	1	0	0	1	0	0	1	2	1	2
A2	1	1	0	0	1	0	0	0	2	2	1
J3	0	0	0	0	0	0	1	1	2	1	2
A3	0	0	1	0	0	0	1	0	2	2	2
J4	0	1	0	0	1	0	1	1	2	1	1
A4	0	1	1	0	0	0	1	0	2	2	2
J5	1	0	0	0	1	0	0	1	2	1	1
A5	1	0	1	0	1	0	1	0	2	1	1
J6	0	0	0	0	0	0	0	1	2	1	2
A6	0	0	1	0	1	0	0	0	2	2	2
J7	1	0	0	0	0	0	0	1	1	1	1
A7	1	1	1	0	0	0	1	0	2	2	2
J8	1	0	1						1	2	1
A8	1	0	1						1	2	1
J9	1	1	1	1	1	0	1	1	1	1	1
A9	0	1	1	1	1	0	1	0	2	2	1
J10	1	0	1	0	0	0	0	1	1	1	1
A10	1	0	1	1	0	0	1	0	1	2	2

The goal of Rough Set Analyses is to specify the different configurations of the causal variables that produce the outcome variable. And the goal of logical minimization is to represent the data in a rationally constructed shorthand manner as the table below demonstrates [17, 18] The sets shown in Table 3 were minimized by contraction technique and the following complementary rules were applied based on decision class weights (0.9), (0.6), and (0.444) respectively : 1) If [known language] exists in corporate logo Then ["Familiar-Favorable" Image] exists, 2) If [Solid sense present] and [known language] exist in corporate logo Then ["Traditional-Consistent" Image] exists, and 3) If [Logo Entirety Active] And [Italic Sense

Present] And [White Color Processing Present] exist in corporate logo Then ["Innovative-Creative" Image] exists. It clarifies that in order to impart the image of "Familiar- Favorable" or "Traditional-Consistent" in corporate logo it is important that the language character used in logo design to be known by the consumer.

Moreover since the image of "Innovative-Creative" correlates with [Logo Entirety] and [Logotype], and not necessarily with [Logo Mark], it reveals that imparting the image of "Innovative-Creative" for corporate logo can be imparted by the combination of logo attributes used in logo design not by concentrate on a specific attribute.

Table 3 Contraction

Decision Class	c	Logo Mark		Logo Entirety				Logotype (Font)										
		Present-Absent		Active-Inactive		Solid Sense		Thickness		Italic Sense		Baseline Change		White Color Processing		Language		
		Present	Absent	Active	Inactive	Present	Absent	Thin	Thick	Present	Absent	Present	Absent	Present	Absent	Known	Un-known	
Traditional Consistent	2					0.6											0.6	
		0.6			0.6			0.6			0.6					0.6		
											0.6		0.6		0.6	0.6		
Familiar Favorable	1																0.9	
Innovative Creative	3			0.444						0.444				0.444				
		0.444			0.444				0.444									

### 4.3. Result

Our findings reveal that the perception of Arabic and English logos by Japanese consumers for the same company differs because of the unfamiliarity with Arabic alphabets and familiarity with the English alphabets, however, a strong image of creativity was found in Arabic logo design attributes although Arabic characters are not well-known in Japan.

### 5. STUDY (2)

Because we found that Arabic logotype is more creative than English by Japanese people, we

can now test whether or not this result is the same for Japanese logotype. Since the first study examined logos of the same corporate, our interest in the second one was focused on different corporate logos but for similar products.

Subjects participated in this study were 22 undergraduate students (4 male and 18 female). We applied the same questionnaire structure used in first study and displayed digitally to subjects, one at a time, each logo of the following products -Washing detergent, Laundry Detergent, Glass detergent, Dishwasher detergent, Soft drink, Perfume, Soap, Beer, Biscuits, Fruit can, Toilet Paper,

and Tobacco in local Japan and Arab market as shown in Figure 4.



Figure 4 Examples of product logos

### 5.1. Factor Analyses

In study (2) we were able also to prioritize three influential factors resembling main factors in study (1), that is, "3. Familiar" and "6. Favorable", "10. Creative" and "2. Innovative", and "7. Traditional" and "4. Consistent" as is shown in Table 4. Accordingly product logos main images are similar to corporate logos images as it has been found in relevant research conducted previously [10, 11] In Table 4, since the result is relatively consistent with what study (1) concluded, it points out that the associations made between main three images for corporate and product logos in part influence positively Japanese perception when logos structures are being designed based on possible set of combinations among grasped main images.

Table 4 Factor loadings

Item	Factor 1 (F1)	Factor 2 (F2)	Factor 3 (F3)
	Familiar-Favorable	Innovative-Creative	Traditional-Consistent
3. Familiar	0.857	-0.049	-0.024
6. Favorable	0.851	0.134	0.114
5. Reliable	0.842	-0.093	0.298
12. Luxurious	0.582	-0.270	0.350
8. Promotable	0.421	0.274	0.416
10. Creative	-0.084	0.824	0.144
2. Innovative	-0.030	0.792	-0.055
11. Characteristic	-0.041	0.727	0.201
1. Energetic	0.333	0.568	-0.328
9. Futuristic	0.339	0.151	0.727
7. Traditional	0.190	-0.155	0.691
4. Consistent	0.054	0.441	0.626
Eigenvalue	2.959	2.575	1.967
Factor contribution ratio	24.661	21.459	16.394
Cumulative contribution ratio	24.661	46.120	62.514

### 5.2. Cluster Analyses

Across clusters we consider in particular, are cluster which contains case J and case A of {7(J), 18(J), 10(J), 19(J), 15(J), 14(J)} and {4(A), 8(A), 1(A), 12(A), 24(A)} in Table (4) and (5) respectively.

A comparison between average scores of case J and case A clarifies that Arabic alphabetic

logotype designs are unfamiliar (-0.698\* < 0.499\*) but creative to Japanese people (0.251\*\* > -0.179\*\*).

Substantially Clusters Analyses show that there is high degree of similarity between results of study (1) and (2), hence our results are significant and can be applied for corporate and product logos design industry.

Table 5 Cluster (1)

Stimuli	Factor 1 (F1)	Factor 2 (F2)	Factor 3 (F3)
	Familiar-Favorable	Innovative-Creative	Traditional-Consistent
3(J)	0.534	-0.026	-0.388
20(A)	0.447	-0.031	-0.422
6(J)	0.661	-0.010	0.013
2(J)	0.644	-0.407	-0.472
22(J)	0.615	-0.594	-0.158
9(A)	0.191	-0.168	-0.307
17(A)	0.137	0.073	-0.372
5(A)	-0.105	-0.128	-0.551
7(J)	1.051	0.417	0.116
18(J)	0.742	0.683	0.305
10(J)	0.844	-0.401	0.500
19(J)	0.477	-0.252	0.405
15(J)	0.446	-0.434	0.964
14(J)	0.297	-1.228	0.789
Average	0.499 *	-0.179**	0.030

Table 6 Cluster (2)

Stimuli	Factor 1 (F1)	Factor 2 (F2)	Factor 3 (F3)
	Familiar-Favorable	Innovative-Creative	Traditional-Consistent
13(A)	-0.881	-0.200	-0.346
21(A)	-0.705	-0.058	-0.329
16(A)	-0.892	0.289	0.016
11(J)	-0.427	-0.381	0.229
23(J)	-0.601	-0.322	0.792
4(A)	-0.786	0.628	-0.953
8(A)	-0.542	0.663	-0.698
1(A)	-0.271	0.100	-1.018
12(A)	-0.700	1.357	0.835
24(A)	-1.174	0.431	1.048
Average	-0.698*	0.251**	-0.042

**5.3. Result**

Since corporate tend to communicate to consumers via visual image in marketplace, it is possible that public impression of corporate logo image may not be as favorable as intended by corporate leaders if logo image is not influential. Therefore acknowledging factors influencing Japanese consumer behavior towards Arabic products is fundamentally

needed for logo design in order to better meet Japanese consumers' expectations.

**6. CONCLUSION**

Our results support that although Japanese consumer respond to corporate logos differently across cultures; however, diverse attributes used in Arabic logotype design seem to influence Japanese consumers' perception positively although Arabic alphabetic are not well-known

in Japan, a conceptual cue for vast area of research between Japan and Arabia. Therefore further study is highly recommended.

Out findings suggests that to enhance the recognition of Arabic corporate logotypes in Japan, it is important to familiarize Japanese with Arabic alphabets.

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