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Country of origin: A competitive advantage?

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Abstract

Country of origin has been identified in the literature as an important cue that might be used by global marketers to influence consumers' valuation of the brand. Its effect on consumer perceptions, affect and behavioral intentions has been widely documented, based on consumer surveys and laboratory experiments. Despite this empirical evidence, we argue that country of origin is only one extrinsic cue among many extrinsic and intrinsic cues available to the consumer in a real purchase situation. Furthermore, in real life, consumers are likely to engage in some level of information search, which would further dilute the country of origin effect in the marketplace. Based on these arguments, we conclude that country of origin might not necessarily lead to a competitive (dis)advantage in terms of a price premium or discount. For a sample of products, we show that the objective product quality varies significantly by country of origin, and that these differences are consistent with extant research on country of origin effects on consumers' perceptions. After controlling for quality differences across brands, we demonstrate that marketers from different countries charge prices that are justified by differences in product quality. Price premiums or discounts are therefore explained by differences in product quality rather than the image effect produced by the country of origin cue. © 1999 Elsevier Science B.V. All rights reserved.

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1. Introduction

The effect of the country of origin (hereafter referred to as COO) of brands on consumer behavior has been one of the most researched issues in international business (Peterson and Jolibert, 1995). Over the last three decades, several researchers have examined the effect of COO on consumers' overall evaluation of product quality, beliefs regarding individual attributes of a product, attitude towards brand, and behavioral intention. Several reviews of this

body of literature have been published describing the nature and the extent of effects, the circumstances when the effect is more or less pronounced, and the factors moderating the effect (Leifeld, 1993; Peterson and Jolibert, 1995; Samiee, 1994; Verlegh and Steenkamp, 1999). Their conclusions suggest that COO has a significant effect on consumers' evaluations of products and that consumers tend to use COO as an extrinsic cue to make judgment about the quality of products.

Whether directly through personal experiences, through information acquired from other sources or due to stereotypical beliefs about countries, consumers also tend to develop product–country im-

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ages. These are images of quality of specific products marketed by firms associated with different countries (Heslop and Papadopoulos, 1993; Johanson and Thorelli, 1985). A few examples of such product–country images are Columbian coffee, Swiss watches, US appliances, Japanese electronics and German automobiles. Because of the product–country images consumers hold, and their sensitivity to COO, COO is believed to be one way of enhancing brand equity (Keller, 1993; Shocker et al., 1994). If consumers hold a positive (negative) product–country image for a given product and country, this image could lead to a generalized positive (negative) evaluation and attitude towards all the brands of a product associated with that country. Such COO-based equity might even extend to other product categories due to stereotypical bias.

One of the consequences of brand equity is that the brand may command premium prices (Aaker, 1996; Keller, 1993). Given the empirical evidence in support of consumers' judgment of quality based on the COO, one would expect such COO effects to influence the firms' pricing decisions. More specifically, firms originating in countries with better product–country image should be able to charge premium prices and those firms originating in countries with poor product–country image may have to offer products at discounted prices due to their country image. This price premium/discount should exist above and beyond the price differential due to quality differences. If the COO is found to affect pricing decisions, then COO can be regarded as a major variable leading to competitive (dis)advantages to firms originating in certain countries.

1.1. Role of COO on the consumers' decision-making process

Recently, Peterson and Jolibert (1995) and Verlegh and Steenkamp (1999) have conducted comprehensive meta-analyses of the literature on COO effects. These researchers have examined the relative impact of COO on different stages of the consumers' decision-making process such as perception, attitude and behavioral intention. They have also examined the moderating effect of several study characteristics.

The findings of these two studies provide some important insights regarding COO's possible effect in real markets.

An important conclusion of these two studies is that the effect of COO is smaller for multi-cue studies than for single cue studies. One of the criticisms of COO studies is that many COO studies have manipulated only one cue, i.e., COO cue. When all the other information are controlled, COO is likely to have a significant impact on product evaluation. However, in a real purchasing situation, consumers are likely to have additional information and access to other cues such as the actual physical product, brand name, price, warranty, etc. In such a situation, the impact of any one single cue such as COO may diminish significantly. Peterson and Jolibert (1995) report a significant decrease in the effect of COO on both quality perception and purchase intention when multiple cues are considered compared to COO as the only cue. Similarly, Verlegh and Steenkamp (1999) also report a significant decrease in the effect of COO in multiple cue studies compared to single cue studies. Thus, the quantitative reviews of the empirical results of previous studies clearly show that COO's effect reduces significantly in the presence of other cues.

Another important result of these reviews is regarding the role of COO on influencing different stages of consumer behavior. Results of these reviews clearly suggest that although COO plays an important role in product evaluation, the effect tends to become weaker as one moves from perception of product quality to attitude formation and to behavioral intention. Peterson and Jolibert (1995) reported a significant decrease in COO effect as one moved from quality perception in single cue studies to purchase intention in single or multiple cue studies. Similarly, Verlegh and Steenkamp (1999) also reported significantly larger effect for quality perception compared to attitude formation and purchase intention. In other words, COO has significantly lesser impact as consumers move closer to the actual purchase situation from belief formation regarding the relative quality of brands.

Taken together, the empirical evidence from previous studies on COO effects show that as consumers move closer to actual choice behavior, COO effect tends to become weaker. Compared to situa-

tions in which COO effects have been examined so far, the actual purchase decisions consumers make in their daily lives carry greater potential risks and benefits. A consumer must not only incur the costs associated with the purchase but also live with the consequences of his/her choice decisions. Therefore, it is quite reasonable to expect the consumer to be willing to allocate more processing effort in a real life decision than in a hypothetical scenario considered in most previous studies of COO effect. Moreover, in the real consumer decision-making environment, COO as an informational cue competes head-to-head with other extrinsic cues and intrinsic cues. Consequently, the relative effect of COO on actual choice behavior is likely to be small. Therefore, if consumers do not use COO as an important informational input in the actual purchase of products, COO is unlikely to influence pricing decisions of firms.

In their attempt to conserve cognitive capacity, consumers are also known to switch to simplifying heuristics as the decision-making environment becomes more complex (Bettman, 1979). In such situations, extrinsic cues can be used to represent information regarding the known quality of a brand (Han, 1989). In other words, consumers might use extrinsic cues such as COO as a summary construct representing their knowledge about brands from different countries (Han, 1989). For example, consumers might rate microwave ovens originating from a certain country higher than others, not because they infer product quality from the COO cue, but because they know that microwave ovens originating from that particular country do indeed have better quality. In this situation, COO is used to eliminate brands and develop an evoked set rather than make inferences about quality, thus, saving consumers from extensive evaluation of intrinsic attributes. Thus, as indicated by previous research, COO may still influence attitude because it reflects the consumers' knowledge about product quality. However, because one of the necessary conditions for premium price is the asymmetry in information between buyers and sellers (Rao and Monroe, 1989), if consumers are already knowledgeable about product quality (to the point of using COO as a summary of their knowledge), they are not likely to pay any price that is not justified by that quality.

Therefore, there are two main reasons to expect weaker COO effects in the marketplace. First, consumers are likely to invest more of their cognitive resources when making purchase decisions in real life where COO is only one of the many cues to be processed, and as a consequence, COO effects are likely to be weaker. Second, consumers might use COO not as a cue to infer quality, but as a way of summarizing their knowledge about quality in the particular product category they are choosing from. Because of their greater involvement with the actual decision-making task, and their use of COO as a summary of their knowledge about product quality, consumers are not likely to pay prices that are not justified by product quality.

These results tend to suggest that although COO may make a significant influence on the consumers' judgment of the quality of products in laboratory experiments, its role in influencing consumers' actual choice behavior may be quite limited in the presence of other information and cues. The COO is simply one of the several cues available to consumers. As consumers move along in their decision-making process from assessment of quality of brands to attitude formation and final choice decision, the role of any one single cue such as COO may be quite insignificant. Besides, other factors such as budget constraint and need urgency may further moderate the actual choice behavior. In such a circumstance, consumers may not be willing to pay premium price or expect discounts simply because of the COO of brands. Even though COO might play an important role in affecting consumer perceptions of brand quality in a laboratory experiment, this effect may not necessarily lead to price premium or discounts in the marketplace.

Although there are many examples of manufacturers emphasizing country image in their promotional campaigns, packaging or branding decisions (see Leclerc et al., 1994; Papadopoulos, 1993), very little is known regarding the influence of COO on pricing decisions. In other words, although previous research has provided strong evidence regarding the effect of COO on consumer behavior, little is known about how this observed effect has influenced firms' behavior. Given the ample empirical evidence for the effect of COO on consumer behavior, there is a need for a systematic research on the market value gener-

ated by the COO cue, and how this cue may have benefited firms associated with countries possessing positive product–country images (Leifeld, 1993; Samiee, 1994).

1.2. Objectives of the study

Two objectives have guided this research study. First, we examine differences in the level of *objective quality* at the COO level using longitudinal data on quality of competing brands associated with different countries in a sample of product categories. Our focus is on *country of origin* (COO) as opposed to *country of manufacture* (COM). COO refers to the country with which the firm producing a brand is associated, whereas COM refers to the country where a brand is actually manufactured or assembled. Previous studies have focused on assessing consumers' perception of quality of brands associated with different countries. They have not examined the source of these perceptual differences. Their findings raise the question whether observed perceptual differences in product quality associated with different countries are due to some halo effect indicating perceptual bias in favor of products made in some countries or due to actual differences in objective quality across firms representing different countries. In addition, although researchers have examined whether or not market prices of products reflect their relative quality (Tellis and Wernerfelt, 1987), we are not aware of any systematic study to examine whether there is a significant difference in the actual quality of products associated with different countries. A correspondence between perceptions of differences in quality of brands reported in previous studies and differences in objective quality of brands across countries might reflect consumers' knowledge of the actual quality of the products marketed by different countries, rather than their perceptual bias. Moreover, a significant difference in quality of the products across countries may also suggest that COO could be useful as a cue to make judgments about product quality.

The second objective of this study is to assess whether or not COO effects on consumer behavior have resulted in firms charging premiums/discounts on their products on the basis of their product–country images. Despite a large number of experiments and surveys measuring the effects of COO on per-

ception and affect, we are not aware of any major attempt to measure the impact of COO on the firms' behavior. Therefore, unlike previous studies of COO effects on consumers' judgment of quality and behavioral intentions, this study is designed to assess the impact of COO on managerial decision. More specifically, we empirically test whether manufacturers charge price premiums or price discounts attributable to COO, after accounting for the differences in objective quality of brands. Previous studies have provided ample evidence that consumers associate COO with their perception of product quality. As a natural extension of this research stream, this study seeks to know whether consumers also end up paying premium (or discount) prices for the brands associated with certain countries due to their better (or poor) product quality images.

In the following sections, we first present the description of data from *Consumer Reports* used in this study. Next, we examine the differences in the objective quality of brands associated with different countries for a sample of products. In order to test for COO-based (dis)advantage in the marketplace, we then use a series of hedonic price regressions estimating price premiums (or discounts) for brands associated with different countries after accounting for their quality differences. Through a meta-analysis of the hedonic regression results, we test for the existence of price premiums or discounts attributed to COO of brands. Section 4 presents a summary and discussion of results.

2. COO and objective product quality

2.1. Data

Data on objective quality were collected for a sample of 13 products from various issues of the US consumer magazine *Consumer Reports* from 1980 through 1994 (Consumer Union of US, 1980–1994). Details about the data are presented in Table 1. Some of the products sampled for this study have been used in previous studies on COO effects. The products were selected such that firms from more than one country were competing in that product category. All products (except for video tapes) included are durable goods, and most of them are in the

Table 1
Summary of the data used in each hedonic price regression

Study	Product	Date	Brands	Countries	Features	Price (US\$)
1	Telephone	1/89	25	2	9	65
2	Telephone	5/86	15	2	9	64
3	Telephone	12/92	28	2	10	42
4	Answering machine	5/83	17	2	8	137
5	Answering machine	5/86	24	2	13	147
6	Answering machine	11/91	18	2	19	112
7	Camcorder	3/94	12	4	9	738
8	Camcorder	11/87	25	3	10	1051
9	Camera	8/83	26	3	15	94
10	Camera	9/86	27	2	11	111
11	Camera	11/88	29	2	14	146
12	Camera	12/92	26	4	18	207
13	CD player	3/90	28	3	11	322
14	CD player	3/91	24	3	11	330
15	CD player	3/92	21	3	10	264
16	CD player	3/93	26	3	9	300
17	CD player	3/94	28	4	11	207
18	CD player	5/87	24	3	13	282
19	CD player	6/85	14	3	12	468
20	Clock radio	9/86	19	3	9	36
21	Clock radio	9/89	22	3	8	28
22	Clock radio	11/80	22	3	14	53
23	Clock radio	11/92	18	3	12	28
24	Cordless phone	9/83	12	2	7	204
25	Cordless phone	11/86	16	2	10	146
26	Cordless phone	11/89	17	2	11	149
27	Cordless phone	11/91	18	2	13	113
28	Microwave	3/81	21	4	8	508
29	Microwave	3/89	21	4	15	215
30	Microwave	5/83	16	3	8	385
31	Microwave	6/94	20	4	10	199
32	Microwave	11/85	17	3	8	278
33	Microwave	11/86	20	4	9	229
34	Microwave	11/91	17	4	15	220
35	Microwave	12/92	20	4	18	154
36	Receiver	3/89	25	2	16	230
37	Receiver	3/93	29	3	15	335
38	Receiver	3/94	25	2	11	313
39	Receiver	7/88	26	2	17	286
40	TV set	1/81	18	2	13	665
41	TV set	3/87	39	4	20	461
42	TV set	3/94	22	5	13	543
43	TV set	5/88	24	5	20	285
44	VCR	1/87	19	3	15	814
45	VCR	3/93	23	5	16	341
46	VCR	3/94	12	5	10	254
47	VHS tape	9/88	51	4	11	7
48	VHS tape	9/90	14	3	6	6
49	VHS tape	11/84	21	4	8	9
50	VHS tape	11/86	35	4	9	7

consumer-electronics category. After excluding brands whose COO could not be identified, the total sample represented 122 brands originating in seven countries (US, Japan, Korea, Netherlands, Sweden, France and Germany). Because of the limited sample size, brands from Sweden, France and Germany are grouped into the “Others” category.

2.2. Objective quality and COO

In order to measure the differences in the level of objective quality of brands across countries, we compared the quality rankings of brands for each product within a given *Consumer Reports* test. This provided us with data on the number of times each country dominated other countries in quality of brands of a product at a given time. This procedure was repeated for each product and for each *Consumer Reports* test. Finally, we consolidated the results of these comparisons to obtain a summary of all pair-wise comparisons of brands across time (1980–1994) and products. Results of this comparison are presented in Table 2. This table shows the number of pair-wise comparisons in which a country dominated another country in brand quality in the sampled product categories. For example, there was a total of 4734 (2806 + 1928) direct comparisons between brands originating in Japan and the US. In 2806 (59%) of these comparisons, the quality of the Japanese brands was ranked higher than that of the US brands, whereas in the rest (41% of the cases), the quality of the US brands was ranked higher than that of the Japanese brands.

Table 2
Paired comparisons of overall quality (column countries dominate row countries)

	US	Japan	Korea	Netherlands	Others ^a
US	0	2806 ^b	110	241	200
Japan	1928	0	108	378	284
Korea	179	277	0	34	41
Netherlands	183	420	16	0	47
Others	232	353	34	31	0

^aOthers include Germany, France and Sweden.

^bIn 2806 of the (2806 + 1928) comparisons of brands associated with Japan and US, Japanese brands were superior in rank to US brands.

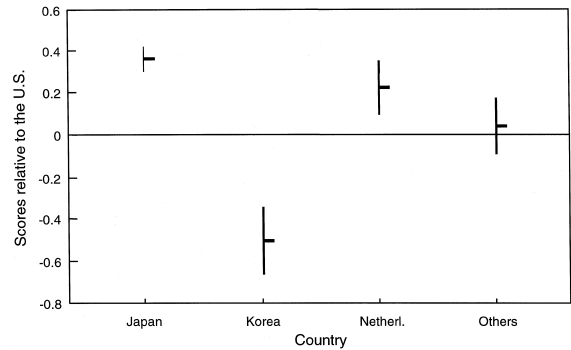


Fig. 1. Estimated quality scores (and 95% confidence intervals) by country.

We applied the logistic equivalent of Thurstone’s Case V (i.e., using a logistic function instead of a normal ogive to translate proportions into scale values) to the data in Table 2 in order to obtain maximum-likelihood estimates and standard errors of overall quality scores for each country. The estimates, along with their 95% confidence intervals using the US as the standard (i.e., US = 0), are displayed in Fig. 1.

The estimates displayed in Fig. 1 clearly show that for the sampled products, the overall objective quality (as measured by *Consumer Reports*) of products originating in Japan is significantly better than the products originating in the US, Europe and Korea — the 95% confidence interval for Japan is clearly above zero (the standard level of quality set for the US), and higher than the confidence intervals for Korea and Others. On the other hand, the quality of Korean products is significantly lower than that of the US, Japanese and European products. In summary, these results show that countries vary significantly in terms of the objective quality of the products they market in the US.

2.3. Correspondence between objective and perceived qualities

A number of studies have examined consumers’ judgment of quality of durable products including some of the products included in this study. Results of these studies are presented in Table 3. The table includes results from only those studies where consumers in the US judged quality of products made in the countries included in this study, in order to be

Table 3
Summary of studies showing average quality rating of durables of different countries

Authors	Products	Variable	Japan	USA	Germany	Korea
1. Chao (1989)	TV	Quality	–	4.79	–	3.08
	VCR	6 = excellent, 1 = poor	–	4.51	–	3.13
	Stereo		–	4.62	–	2.97
2. Chao (1993)	Electronics	Quality 5 = high, 1 = low	4.11	3.80	–	–
3. Cordell (1992)	Wrist watch	Quality 0 = same as Korea 1 = better, – 1 = worse	0.46	–	0.56	0.00
4. Elliot and Cameron (1994)	Dishwasher	Quality 5 = very good, 1 = very poor	–	–	4.70	3.40
5. Han and Terpstra (1988); Han (1989)	TV	Overall image 7 = high, 1 = low	6.01	5.24	4.68	3.92
6. Han and Terpstra (1988); Han (1989)	Auto	Overall image 7 = high, 1 = low	5.75	4.55	5.56	3.80
7. Hong and Wyer (1989)	PC and VCR	Favorableness 10 = very favorable, 1 = least favorable	7.76	–	6.06	3.56
8. Johansson et al. (1994)	Tractor quality	7 = very good, 1 = very poor	4.90	6.10	5.60	3.90
9. Levin et al. (1993)	Auto	Quality + 4 = highest score, – 3 = lowest score	1.38	0.82	–	–
10. Maheswaran (1994)	PC	Favorableness Higher scores better	5.97	–	–	4.51
11. Tse and Lee (1993)	Stereo system	Performance 6 = very good, 1 = very bad	4.43	–	–	2.73
12. Wall and Heslop (1986)	Home entertainment	Quality 7 = very good, 1 = very poor	6.30	5.50	5.20	–

comparable to the objective measure of relative quality displayed in Fig. 1. Pair-wise comparisons of average scores of perceived quality of products across countries show that in all cases, the quality of products from Japan, the USA and Germany are perceived to be better than products originating from South Korea. Furthermore, in about 80% of the cases, the Japanese products are perceived to be better than American and German products; and

American products are perceived to be better than German products in 75% of the cases. In summary, considering all the comparisons of mean perceived quality of products originating from different countries, consumers tend to perceive Japanese products to be better than the rest of the countries studied; American products are perceived to be better than German and Korean products; and German products are perceived to be better than Korean products.

In spite of the differences in the measurement of quality between this study and other studies, there are some important similarities in results. A cursory comparison of our measurement of objective quality (Fig. 1) and perceived quality of products from different countries as reported in other studies (Table 3) indicates that consumers' quality assessments are consistent with the observed differences in product quality across these countries. This correspondence between perceived and objective quality indicates that consumers' assessment of quality for products originating from different countries might be based on factual information such as their own experiences with these products or information obtained from neutral sources such as buying guides. Furthermore, the differences in quality perceptions observed in previous COO studies could be a reflection of the consumers' knowledge of the products originating from different countries, rather than a perceptual bias.

3. COO and price premium / discount

The second objective of this study is to examine whether firms associated with different countries charge a premium price or give a price discount for their brands that is above and beyond what would be justified by their quality differences. We used hedonic price regression to estimate the price premium/discount due to COO. The details of this methodology can be found elsewhere (see Boyer et al. (1984) for a comprehensive review). Here, we provide only a brief discussion of this methodology.

3.1. Hedonic price methodology

The hedonic price methodology consists of fitting a regression on a cross-section of brands in the same product-market, using price as the dependent variable and objective characteristics (i.e., product features and objective performance measures) as predictors. This methodology is grounded on the model of product differentiation in perfectly competitive markets by Rosen (1974). Rosen demonstrates that in a perfectly competitive market in which consumers have full information about available products and producers have full information about consumer

preferences, the hedonic price function relating market prices to the physical characteristics of products reflects the inter-sections between the demand functions from a diverse population of consumers and the supply functions from a diverse group of producers. Therefore, this function would represent the outcome from optimal decisions by consumers and producers (Boyer et al., 1984).

In a perfectly competitive market, the hedonic price function would define the market-clearing price for any bundle of product attributes. However, there are many reasons for imperfections in market competitiveness. Consumers do not necessarily have full information about all available products, and the attribute space is not filled with a continuum of products due to the indivisibility of brands and barriers to entry for new competitors (Boyer et al., 1984). In fact, market inefficiencies have been found in many product markets (Hjorth-Andersen, 1985), allowing producers to extract a surplus from consumers (Kamakura et al., 1988). The main objective of our hedonic analysis is to test whether such inefficiencies could arise from the producers' use of the COO in making pricing decisions. The major question we want to address is: are producers from different countries charging price premiums or offering price discounts because of advantages or disadvantages from their overall COO image, but not justified by their product features?

Following the usual practice in hedonic price analysis, we fit the following function to market data, through regression analysis,

$$\ln P_j = \alpha_0 + \sum_{i=2}^I \alpha_i D_{ij} + \beta Z_j + e_j, \quad (1)$$

where j denotes a brand; P_j is the street price for brand j ; i denotes a country, D_{ij} is equal to 1 if brand j 's COO is country i ; zero otherwise, and fixed to zero for the US as the standard of comparison ($i = 1$); Z_j is the vector of features for brand j ; e^{α_i} is the price surplus -(relative to US domestic products) (if $e^{\alpha_i} > 1$) or discount -(if $e^{\alpha_i} < 1$) for brands originating in country i ; β is a vector -of parameters adjusting prices for differences in objective quality across brands.

The intercept (α_0) in the hedonic regression above captures the average price for US domestic products,

while the dummy coefficients (α_i) measure the log-price differentials (relative to US products) due to COO.

The hedonic price regression in Eq. (1) was applied to the data published by *Consumer Reports* for 12 products in the 1980–1994 period, in 50 separate studies. One regression was estimated across all brands within a given product category being reviewed by *Consumer Reports* in a given issue. The application of the hedonic regression model presented in Eq. (1) to the data summarized in Table 1 led to estimates of the price premium/discount (e^{α_i}), above/below the expected price from the products' measured quality, which can be attributed to the products' COO. Because product quality is evaluated along attributes that are specific to each product category, the COO price premium/discounts are estimated within each particular study published by *Consumer Reports*.¹ We treat each of these hedonic regressions as an independent study, leading to independent estimates of COO effects (i.e., price premiums). These estimates of the price premium/discount relative to products originating in the US, across all 50 studies are summarized in the box-and-whiskers plot in Fig. 2, which shows the median, bottom and top quartiles within each country. The effects of the other predictors in the hedonic regressions are not reported for two main reasons: (a) they are not of immediate interest for this particular study, and (b) they cannot be easily summarized, because product attributes are not consistent across product categories and time.

Notice, from Fig. 2, the presence of four clear outliers among all the estimates, for cameras and microwave ovens from other European countries, microwaves ovens from Japan, and Dutch radio clocks. These outliers were excluded from subsequent analyses. Fig. 2 also suggests that there is considerable discrepancy in COO effects across the 50 studies, with only minor differences in the median effects for each country. Products originating in Japan seem slightly more expensive (after accounting for objective quality) than the US products, while those

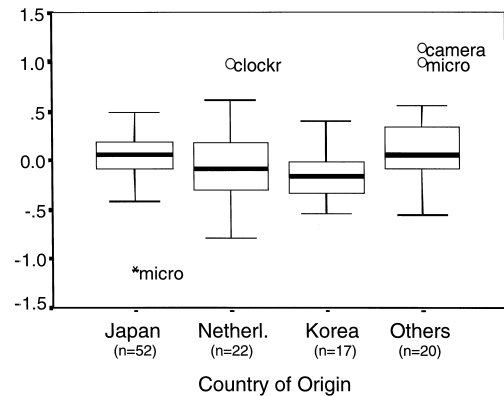


Fig. 2. Summary of estimated price premiums/discounts.

originating in The Netherlands and Korea are discounted slightly, relative to American products.

3.2. A meta-analysis of COO effects on price

Because the estimates summarized in Fig. 2 were obtained from 50 independent studies of a dozen different product categories, a substantial portion of the variance in COO effects across studies might have arisen due to differences in design across studies. Therefore, we test for the existence of COO-related price premiums/discounts through a meta-analysis of these 50 studies, in an attempt to better generalize from their results. Meta-analysis has been used in many disciplines as a methodology to draw generalizations from the results obtained in a large number of independent studies (see Farley and Lehman (1986) for a comprehensive discussion of this methodology). Recently, this methodology has also been applied to explore the generalizability of studies on COO effects (Peterson and Jolibert, 1995; Verlegh and Steenkamp, 1999).

Similar to other marketing applications, our main objective is to obtain a better measurement of the phenomenon under study, after sorting out the effects of methodological factors in each of the independent studies. In our meta-analysis of the 50 hedonic price regressions, we considered two discrete (COO and Product category) and four continuous (Number of brands, Number of attributes, Number of countries and Average price) design characteristics. We also included all first-order interactions involving the

¹ The number of brands for each country included in hedonic regressions were USA (49), Japan (41), Netherlands (5), South Korea (3), Sweden (3), Germany (2), and France (2).

Table 4
ANOVA results for the meta-analysis of price premiums/discounts

Source	Weighted sum of squares	Degrees of freedom	Mean squares	F-ratio	p-value
COO	2.66	3	0.89	2.20	0.09
Product category	5.42	11	0.49	1.22	0.29
Number of attributes	0.76	1	0.76	1.89	0.17
Number of countries	0.03	1	0.03	0.06	0.80
Number of brands	0.38	1	0.38	0.93	0.34
Average price	0.10	1	0.10	0.24	0.63
Residual	36.05	89	0.40		
Total (corrected)	44.50	107			
$R^2 = 0.19$					

COO factor, with the exception of the COO versus Product category interaction, because of the co-linearity between these two design characteristics. The main effects allow us to verify whether the estimate of COO effect was influenced by any of the characteristics of the hedonic price regressions. The first-order interactions allow us to verify whether certain design characteristics could have distorted the estimate of the price premium/discount for any particular country. Our dependent variable is the estimate of COO effect (α) for each country in each hedonic price regression.

Meta-analyses are typically performed with ANOVA or linear regression, linking the estimates of the phenomenon under study to the variables describing the study design. We use a linear regression in our study. However, because COO effects displayed in Fig. 2 are estimates obtained from various hedonic regressions, the dependent variable in our meta-analysis has an estimation error associated with it. Therefore, we perform our meta-analysis through weighted least squares, using a weight that is inversely proportional to the standard error of each estimate of price premium/discount.

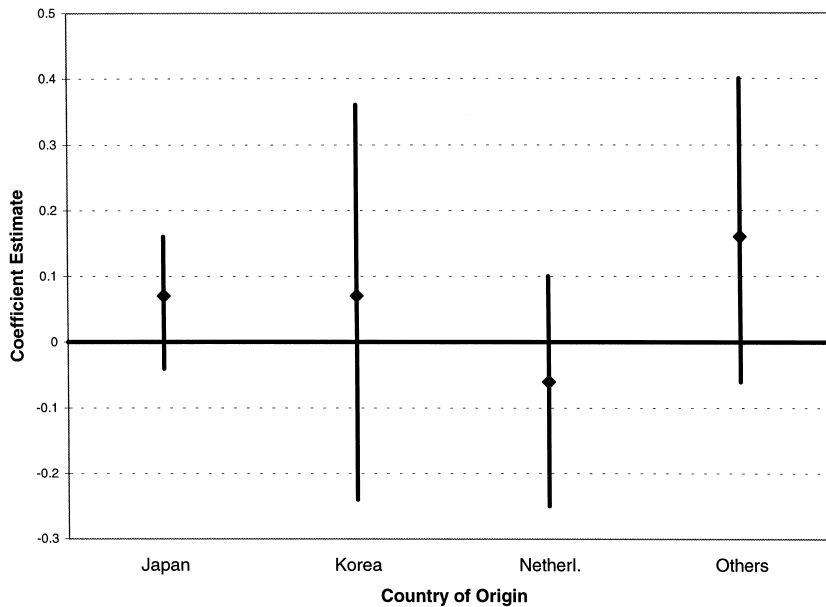


Fig. 3. Mean estimates (and 95% confidence intervals) of price premium/discount by COO.

Results from our meta-analysis, displayed in Table 4, show that even after accounting for differences in study design, one cannot find any generalizable COO effect ($p = 0.09$) across the 50 hedonic price regressions. A comparison between the results in Table 4 with those from an analysis of variance including interactions between the price premium/discount and the design characteristics showed no significant interactions, leading to the conclusion that the estimates of COO price premium/discount in these studies were not affected by any of the design characteristics (at the $p = 0.05$ level). The 95% confidence intervals for the mean COO effect in Fig. 3 show that none of the four countries considered had a significant price premium/discount relative to the US.

This analysis indicates that after considering the price differences in brands due to quality differences, COO has no significant influence on prices. In other words, consumers do not seem to pay more or less because they hold better or worse image regarding the quality of products originating in different countries. There is no price premium or discount for brands originating in different countries, once their quality differences are accounted for.

4. Summary and conclusions

Because of the growing competition from international firms, consumers' sensitivity to COO has become a relevant issue for brand managers. Researchers have studied this issue extensively by examining consumers' judgments of quality, their preferences and behavioral intentions in response to the COO cue. However, despite the large number of experiments and surveys measuring the effects of COO on perception and affect, we are not aware of any major attempt to measure the impact of COO on actual markets. The measurement of COO effect on actual markets is essential because effects observed in controlled experiments may not necessarily hold in real markets. In the particular case of COO effects, there are at least two main reasons why these effects might not hold in a real, competitive market. First, when making actual purchase decisions for many of the products tested in our and other studies,

consumers are likely to devote more time and processing capacity than in laboratory studies involving remote and hypothetical situations. They are also likely to engage in some level of information search, so that COO will be only one cue competing with many other sources of information. Second, when asked for their perceptions and attitudes towards products from various countries, consumers might express their knowledge about the actual quality of those products, using COO not as a non-substantive cue of quality, but as a summary of their knowledge. In a competitive market, consumers will be willing to pay only prices that reflect their perception of quality for the available products. If consumers' perceptions are consistent with the actual quality, manufacturers will be pressed to charge only prices that are justified by that quality, and therefore, would not be able to charge a premium, nor will be motivated to offer a discount.

Integrative reviews of previous studies on consumers' reactions to COO of brands show that consumers tend to infer brand quality from COO as a cue (Peterson and Jolibert, 1995; Verlegh and Steenkamp, 1999). But the question still remains: is COO a valid indicator of objective quality? A significant difference in quality of brands originating in different countries reported in this study indicates that COO is a reliable cue of brand quality, at least for the products sampled in this study. Although there are several studies that have examined the relationship between price and objective quality (see Ratchford et al. (1996) for a review), we are not familiar with any study that has examined whether COO is a valid indicator of objective quality or not. Our results, based on longitudinal data for a sample of products, suggest that for certain products, COO might be a valid cue for relative product quality.

Our meta-analysis of results from a series of hedonic regression analyses of price on physical attributes and COO suggests that COO does not necessarily result in price premiums or price discounts beyond what would be expected on the basis of objective quality. Although our analyses revealed that countries differed significantly regarding the quality of their products, the hedonic price analyses showed that, after accounting for the differences in quality (performance and features), COO had no significant impact on price.

The products analyzed in this study are such that intrinsic information about product quality is readily available to consumers through buying guides such as *Consumer Reports* and other sources such as advertising, retailers, etc. These products are “utilitarian” or “search” goods. Consumers, based on personal experience or information from other sources, appear to have developed knowledge regarding the quality of products made in different countries, and might use COO as a summary construct rather than as an inferential cue to make judgments about the quality of brands. Therefore, one explanation for the lack of premium price for Japanese products is that, in the face of the consumers’ prior knowledge and availability of objective information, Japanese firms could not charge premium price.

However, for image or “hedonic” products such as wines and fragrances, quality cannot be assessed prior to purchase. In such a situation, extrinsic cues such as price, brand name and COO may be utilized to make judgments about quality (Steenkamp, 1990). It is quite possible that pricing strategies would be different for these “hedonic” products, leading to price premiums and discounts above and beyond quality differences. Unfortunately, factual information regarding intrinsic attributes and objective quality of brands for such products is rarely available. Due to the experiential nature of these products, attribute information is usually based on the perceptions of a sample of consumers or experts, which are often tainted by the known or assumed COO of the products. This paucity of information on objective quality makes it difficult to detect the presence of price premium or discounts over and above the prices justified by product quality in the marketplace.

Another reason for not observing a price premium might be the specific pricing strategies followed by firms from certain countries. The underlying assumption in hedonic regression analysis is that manufacturers set prices to maximize profits in the short/medium run. However, Japanese firms are known to follow a long-term strategy focused on gaining high market shares (Grossberg, 1990) and to price their products accordingly. In this situation, in spite of the fact that a positive product–country image may allow Japanese firms to charge premium prices, they might not do so in order to gain higher market shares. We could not test this possibility because we

had no access to market share information for the same products we had used in our study. Future research may examine this issue for products where market share data are available.

Still another reason for the lack of price premium for Japanese products may be competition. Not only do Japanese companies have to compete with products marketed by American, European, Korean and others, but they also have to compete with each other. Therefore, even though Japanese products may enjoy brand equity due to their superior quality, intra-competition among Japanese firms may discourage them to take advantage of this brand equity.

Recent meta-analyses of studies on COO effects on quality perception, attitude formation and behavioral intentions also provide some insights regarding the possible reasons for not observing effect on pricing decisions (Peterson and Jolibert, 1995; Verlegh and Steenkamp, 1999). The findings from these meta-analyses of the results of previous studies on COO’s influence on consumer behavior suggest that COO effect on choice behavior is less pronounced than the effect on perception of quality. Given this lack of strong effect of COO on final choice behavior, COO is unlikely to play any significant role in pricing decisions. The absence of a significant COO effect on price after controlling for the quality difference provides some support to the argument that COO has not influenced the firms’ pricing decisions significantly.

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