Assessing the Impact of Country of Origin on Product Evaluations: A New Methodological Perspective

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A new methodological approach for examining the impact of country of origin on product evaluations is proposed. It takes the form of a multiattribute attitudinal model analyzed by means of a system of simultaneous equations. This approach makes possible examination of the impact of other attributes as well as country of origin on evaluations, and takes into consideration the effect of familiarity and knowledge about the product class. Differences between respondents of two different national origins are also investigated because previous research indicates differences in country stereotyping by nationality.

Assessing the Impact of Country of Origin on Product Evaluations: A New Methodological Perspective

Extensive research on the impact of country of origin on buyer evaluations of products has been reported in the international marketing literature. Studies in industrial purchasing, for example, have found country of origin to be a salient cue in buyers' perceptions of quality (White and Cundiff 1978). It also has been found to have an important role in consumer purchasing decisions. However, in a recent review of these studies (25 in all), Bilkey and Nes (1982) point out that the research has had serious limitations. In particular, most studies, especially of consumer goods, have involved only a single cue, that is, the country of origin was the only information supplied to respondents on which to base their evaluations. This approach tends to bias results in favor of finding a country-of-origin effect, and is analogous to research on price-quality relationships where price is consistently found to affect evaluations of quality, but only if it is the sole informational cue provided (Olson 1977). Thus, like price, country of origin may serve as a proxy variable when other information is lacking (Huber and McCann 1982; Olson 1974).

The use of country of origin as a proxy and surrogate for other information suggests that prior experience or familiarity with a particular product class or brand may influence the impact of country of origin on evaluations. Consumers familiar with a specific product class therefore may be less likely to rely on country of origin as a cue in product evaluation. Similarly, favorable or unfavorable experience with products or brands from a specific country may color evaluations of other products or brands from that country. Previous research also has found differences in country stereotypes among different nationalities, which may reflect a country's level of economic development, and also prejudices in favor of "home" versus "foreign" country products (Bilkey and Nes 1982).

Such considerations suggest the need to adopt a multicue approach in investigating the impact of country of origin on product evaluations. Information about relevant product attributes other than the country of origin should be available to respondents for making their evaluations. In addition, factors likely to affect these evaluations such as respondent characteristics, nationality, or familiarity with the product class should be examined.

The purpose of our article is to suggest such an approach based on a form of the multiattribute attitudinal model. An econometric model consisting of a system of simultaneous equations is developed. It makes possible

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examination of the impact of selected attributes, together with the country of origin, on product evaluations. Use of this procedure is illustrated with data on evaluations of automobiles from three countries, the United States, Japan, and Germany, by respondents from two of these countries, the U.S. and Japan. Automobiles were selected for the illustration because consumers were considered likely to be well aware of the country of origin of selected models.[1]

The underlying conceptual framework for the model first is developed in more depth, and the basic parameters for model specification identified. The research methodology, including the rationale for selection of the product and the sample, data collection procedures, and more detailed specification of the system of equations, is presented next. We then discuss the major research findings relating to the impact of country of origin and prior familiarity or knowledge about the product or brand, as well as the impact of nationality and other sample characteristics, on overall evaluations of automobiles and evaluations on specific attributes. Finally, we draw conclusions about the implications of the findings and suggest directions for future research.

CONCEPTUAL FRAMEWORK

Conceptual Model

The conceptual model underlying the proposed approach follows that developed by Beckwith and Lehmann (1975) and Moore and James (1977). Overall affect (or evaluations) is specified to be a linear function of salient beliefs about a product or brand. The relation is, however, not only one-way. A reciprocal link from affect to beliefs known as the "halo" effect, may also exist, implying that beliefs are also influenced by overall evaluations. Hence, the model must be expanded from a single overall evaluation equation into a system of equations in which the effect of the overall rating on each belief is taken into consideration.

Applying this approach to study the impact of country of origin on product evaluations implies including the country of origin of the product as a separate attribute in both the overall evaluation equation and each of the belief equations. Thus the impact of country of origin on both overall and specific attribute ratings can be examined.

Once the initial evaluation equation has been expanded into a system of equations, the impact of other variables can be taken into consideration. For example, the relation between the objective or "true" scores on each attribute and actual ratings can be examined.[2] An individual's previous experience with a product (and a brand), familiarity with a product class, and other characteristics likely to affect his or her evaluations (demographic characteristics, nationality, etc.) also can be taken into account (Moreland and Zajonc 1979).

This basic conceptual model already has been applied to examine the impact of "image" variables, and specifically country of origin, on product evaluations (Erickson, Johansson, and Chao 1984). In our study this approach is extended into a more complex formulation to examine the impact of nationality and other demographic variables of respondents. Not only is the direct impact of these variables on product evaluations taken into consideration, but also their interaction with familiarity and experience with specific products and brands.

Previous research has consistently found country stereotypes to depend on the nationality of a respondent, in some cases reflecting a "home-country" bias. In addition, individual characteristics of a respondent, and particularly differences in the availability and cost of various products or brands between countries, also may be expected to influence the degree of experience or knowledge about a brand or product class. These factors therefore may affect ratings of products of different national origins. For example, where direct experience with a product or brand from a given country is limited, the impact of the country-of-origin stereotype may be greater than in cases where there is more opportunity for first-hand experience of the product. Such influences were incorporated into the conceptual framework shown in Figure 1.

The operationalization of this conceptual model in terms of a system of simultaneous equations is reviewed next.

Model Specification

The conceptual framework can be represented by a system of simultaneous equations comprising the following sets of variables.

$\mathbf{Y}$ = an $(N \times k)$ matrix of the endogenous variables, one for the overall evaluation and one for each of the $(k - 1)$ beliefs, N = number of observations.

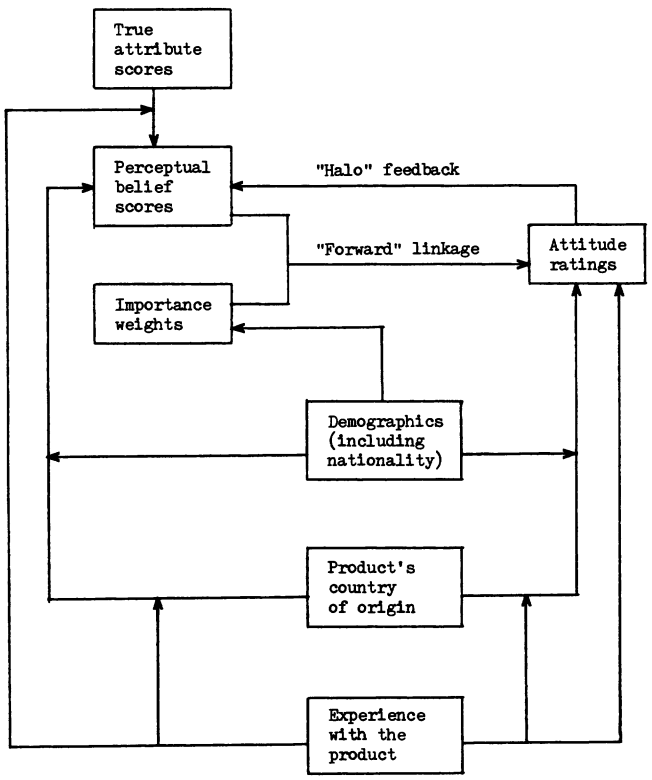
$\mathbf{X}$ = an $(N \times m)$ matrix of exogenous or predetermined variables, including the "true" attribute scores, the country-of-origin variables, and the demographic and experience variables (m variables in total).

$\mathbf{\Gamma}$ = a $(k \times k)$ nonsingular matrix of parameters of the endogenous variables, with -1 in the diagonal.

[1] In this context, country of origin is defined as the country where corporate headquarters of the company marketing the product or brand is located. Though we recognize that the product may not necessarily be manufactured in that country because of multinational sourcing (e.g., Ford of Europe), we assume the product or brand is identified with that country.

[2] "True" scores can be indicated by the mean of the sample. An alternative solution is to introduce external ratings (Johansson, MacLachlan, and Yalch 1976). The latter is the procedure followed here. Correct values for various attributes (e.g., an automobile's gas mileage or its repair and safety record) can be obtained from published sources such as *Consumer Reports*.

Figure 1
COUNTRY-OF-ORIGIN EFFECTS IN THE BELIEF-ATTITUDE RELATIONSHIP



β = an ($m \times k$) parameter matrix for the exogenous and predetermined variables, with a sufficient number of fixed (zero) entries to establish identification.

$\mathbf{U}$ = an ($N \times k$) matrix of disturbances in the equations.

The model thus becomes the standard simultaneous system with k equations.

$$\mathbf{Y\Gamma} + \mathbf{X\beta} + \mathbf{U} = 0.$$

The specific variables included in each equation are discussed subsequent to data collection procedures.

RESEARCH APPROACH

To examine the relationships hypothesized in the conceptual model, we needed a product class which was as comparable as possible in terms of product variants in the two countries (the U.S. and Japan), and also comparable samples of respondents. In addition, appropriate data collection procedures had to be determined.

Product Selection

A product class was required in which identical or very similar brands were available in the two countries. In addition, salient attributes would ideally be the same or have a high degree of overlap. Automobiles were therefore a natural choice, especially when limited to the smaller compact models as the ranges of products available in this category are highly comparable in the two countries. In both the countries chosen for study, a substantial number of foreign makes are available. Though the level of import penetration is lower in the Japanese market and in some cases specifications differ between the countries, most models are very similar in the U.S. and Japan.

Sample Selection

As a primary objective of the study was to develop an improved methodological approach for examining country-of-origin effects, convenience samples of graduate students were used. Though these samples cannot be viewed as nationally representative, they constitute relatively comparable populations in the two countries in terms of socioeconomic characteristics, such as education and social background, which might affect evaluations.

The U.S. sample consisted of 70 graduate students at a West Coast university and the Japanese sample of 82 students at six universities near Tokyo and Kobe. The characteristics of the two samples, shown in Table 1, indicate that they are comparable in terms of sex and car ownership. The major differences are in age and whether or not respondents are from two-income households. The American respondents tend to be older than the Japanese and are more likely to be from a two-income household.

Data Collection

To develop the questionnaire used in the study we conducted two pilot studies. They were designed to elicit automobile makes and models which most frequently come to mind, as well as attributes most commonly used in evaluating automobiles. The choice of models and attributes to be included in the final study was based on those most frequently cited. Ten car models of three national origins, American, Japanese, and German, and 13 attributes were selected (Table 2).

The questionnaire was drawn up initially in English. The Japanese version was translated from English and then back-translated into English to identify errors (Douglas and Craig 1983). Some rewording of questions

Table 1
SAMPLE CHARACTERISTICS

	U.S.	*Japan*
Age (mean)	29	21
Sex (% male)	57	77
Two-income household (%)	81	0
Car owners (%)[a]	91	88
No. of respondents	70	82

[a]100% had driver's licenses.

Table 2
THE 10 AUTOMOBILE MODELS AND 13 ORIGINAL ATTRIBUTES

Automobile models[a]	*Attributes*
Japan	
Honda Accord	Price
Datsun 200SX (Nissan Sylvia)	Handling
Mazda 626 (Mazda Capella)	Horsepower
Toyota Celica	Acceleration
	Gas mileage
	Safety
U.S.	
Ford Mustang	Driving comfort
Chevrolet Citation	Passenger comfort
Plymouth K-Car	Reliability
	Durability
Germany	
BMW 320i (BMW318i)	Workmanship
VW Rabbit (VW Golf)	Styling
Audi 4000 (Audi 80)	Color selection

[a]Japanese names in parentheses where different.

was necessary to accommodate phraseology commonly used in Japanese, but otherwise the translation was very literal.

The questionnaire was administered to each sample in either a group session or the classroom. Respondents were asked to rate each of the models on each attribute, and also to rate the importance of each attribute. Whenever possible, the attributes were scaled in objective terms. For example, base price was scaled in dollars for the American sample and yen for the Japanese. Similarly, acceleration was given in the number of seconds to attain a speed of 60 mph (100 km in Japan). The overall evaluation of each model then followed. Familiarity with each model was assessed, and finally a few questions were asked relating to background variables. The "true" attribute values were collected from secondary sources (automobile magazines and *Consumer Reports*) and supplemented by base price figures collected in each country. Most Japanese students belonged to motor clubs. Thus the fact that many Japanese students do not have a driver's license, and hence may not be familiar with different automobiles, was not a problem.

DATA ANALYSIS

The data were analyzed in two main phases. First, preliminary analysis was conducted to normalize attribute scores within individuals, thus eliminating potential problems due to differences in response set bias from one country to another. A principal-components factor analysis, pooling the data from the two samples, also was conducted to eliminate potential problems due to multicollinearity as well as to identify a common attribute space for the two samples. This procedure resulted in the identification of six attributes to be included in the model. In the second phase of the analysis, the simultaneous equation system consisting of the overall rating equation and the individual belief equations was estimated by means of a three-stage least squares approach.

Preliminary Analysis

In the first phase of the analysis, following the procedure suggested by Bass and Wilkie (1973), we normalized the attribute scores within individuals to eliminate variations due to differences in response set. In addition, two parallel estimations were run, one employing an aggregate specification in which the beliefs or attributes were summed (using the normalized self-reported importances as weights) before estimation and one "disaggregate" specification in which the individual attributes were introduced separately. As in the Bass and Wilkie study, the disaggregate specification showed a higher R^2 (.52 versus .41) and hence is the model used in subsequent analysis.

To determine which attributes should be included in the model, we conducted a principal-components factor analysis, pooling the data from the two samples. This procedure enabled us to assess potential problems due to multicollinearity as well as common attributes for the two samples. Three factors with eigenvalues above 1.0 were identified. On the basis of this analysis, three key attributes, *reliability, horsepower,* and *driving comfort,* each with a high loading on a given factor, were selected. In addition, three other attributes, each independent of the first three, *gas mileage, handling,* and *styling,* were included. These attributes were weighted by their importance ratings in the model estimation.

Simultaneous Equations Model

Once the preliminary analysis had been conducted, the next step was to specify the final variables and the formulation of the simultaneous equations model. The specific variables used are shown in Table 3. The disaggregate specification consisted of the overall rating equation and the set of belief equations. The complete model is shown in Table 4. With no "true" score available for the styling variable, the sixth attribute was treated as an exogenous variable.[3] Consequently, there were only five attribute equations in the system. For the overall rating equation, the country of origin of each model, its market share, whether or not the respondent owned a car, and whether it was an American or Japanese make were included in addition to the attributes. Four demo-

[3]Because "true" scores could be introduced for only five of the six attributes identified, the system of simultaneous equations consisted of six endogenous variables and six equations—the overall rating equation and five attribute equations. As styling is essentially a subjective evaluation, no "true" score could be identified for it. It therefore is an exogenous "taste" variable rather than an endogenous variable. We thank an anomyous *JMR* reviewer for this conceptualization of the model. Initially the sixth attribute was viewed as endogenous, resulting in an "incompletely" specified system. The reviewer's comments stimulated rethinking of this conceptualization and led to the version presented here.

Table 3
VARIABLE LISTINGS

1. *Endogenous variables*

y_1 = overall rating of the car model, range 1–5 (RATE)
y_2 = perceived gas mileage (GAS)
y_3 = perceived handling (HAND)
y_4 = perceived horsepower rating (HP)
y_5 = perceived driving comfort (DRIV)
y_6 = perceived reliability (RELY)

For the *aggregate* specification, each of the 13 attribute ratings were first multiplied by the self-reported importance weights and then summed. The aggregate model thus had only two endogenous variables.

y_1 = overall rating (as for the disaggregate version above)
y_2 = summed belief scores

2. *Exogenous variables*

Country of origin and demographic characteristics

$x_1 - x_3$ = *country of origin* of the cars, coded as 0–1 indicator variables.
x_1 = American car (AMERICAN)
x_2 = Japanese car (JAPANESE)
x_3 = German car (GERMAN)

$x_4 - x_6$ = country of origin interactive with *respondent's nationality* (coded 1 for American respondents, 0 for Japanese respondents)
x_4 = American car, nationality (AMENAT)
x_5 = Japanese car, nationality (JAPNAT)
x_6 = German car, nationality (GERNAT)

$x_7 - x_9$ = country of origin interactive with *income* of household (1 for two-income households, 0 for one-income households)
x_7 = American car, income (AMEINC)
x_8 = Japanese car, income (JAPINC)
x_9 = German car, income (GERINC)

$x_{10} - x_{12}$ = country of origin interactive with *sex* of respondent (1 for males, 0 for females)
x_{10} = American car, sex (AMESEX)
x_{11} = Japanese car, sex (JAPSEX)
x_{12} = German car, sex (GERSEX)

$x_{13} - x_{15}$ = country of origin interactive with *age* of respondent
x_{13} = American car, age (AMEAGE)
x_{14} = Japanese car, age (JAPAGE)
x_{15} = German car, age (GERAGE)

Experiential factors

x_{16} = car ownership, 1 for "yes," 0 for "no" (OWNCAR)

$x_{17} - x_{18}$ = country of origin of car owned, 0–1 indicator variables
x_{17} = owns American car (AMEOWN)
x_{18} = owns Japanese car (JAPOWN)

$x_{19} - x_{20}$ = familiarity with makes from different countries (range 1–4)
x_{19} = familiarity with American cars (AMEFAM)
x_{20} = familiarity with Japanese cars (JAPFAM)
x_{21} = market share of the car make in the sample (SHARE)

True attribute scores

$x_{22} - x_{26}$ = true scores for the car model on five attributes
x_{22} = EPA estimated gas mileage (GASTRUE)
x_{23} = handling score from *Consumer Reports* (HANDTRUE)
x_{24} = horsepower rating from technical specs (HPTRUE)
x_{25} = driving comfort score from *Consumer Reports* (DRIVTRUE)
x_{26} = reliability score from *Consumer Reports* repair records (RELYTRUE)

$x_{27} - x_{31}$ = true scores interactive with ownership of the car make (1 for ownership of the car make, 0 otherwise)
x_{27} = true gas mileage, ownership (GASTOWN)
x_{28} = true handling, ownership (HANDTOWN)
x_{29} = true horsepower rating, ownership (HPTOWN)
x_{30} = true driving comfort, ownership (DRIVTOWN)
x_{31} = true reliability, ownership (RELYTOWN)
x_{32} = styling (STYLE)

For the *aggregate* specification, each of the 13 true attribute scores were multiplied by the reported importance weights and then summed. The true scores for the "styling" and "color" attributes were set at the mean perceptual values in this computation. The aggregate model thus had only two variables in this set.

x_{22} = summed true attribute scores
x_{23} = summed true attribute scores interactive with ownership

graphic variables (nationality, sex, age, and single- versus two-income households) also were introduced interactively with the country-of-origin variable.

In the five attribute equations, testing for "halo" effects required, in addition to the country-of-origin variable and the four interactive demographic variables, the inclusion of the "true" scores for each of the attribute measures. Familiarity with a make also was introduced interactively with country of origin to account for the possibility that the origin effect would be stronger when familiarity was low. In addition, because owners of a make were likely to be better informed about the attributes of that make, an interactive variable developed by multiplying ownership of a make and the "true" score was introduced.

This equation system was estimated by means of a three-stage least squares procedure.[4] We used a jackknife procedure, splitting the sample into 10 subgroups, each con-

[4]In the preliminary runs, testing was done to establish the appropriateness of pooling the observations without demographic covariates and self-reported importance weights. Two questions were examined, (1) the pooling of Japanese and American respondents and (2) the pooling "within" each of these two subsamples. Because the model consisted of a set of simultaneous equations, a modified Chow test had to be used (Berndt et al. 1974; Fisher 1970). The estimation runs

taining only one observation (one auto) from each respondent. Rather than taking every tenth observation (which would have resulted in a subgroup for each car model), we developed the groups by taking the first car for one respondent, the second car for the next, etc.

FINDINGS

The results of the final analysis for the complete disaggregate model are reported in Table 4. First, the general nature of the underlying multiattribute model and the impact of familiarity on overall and attribute ratings are examined. Then the country-of-origin effects in relation to both American versus Japanese versus German automobiles and American versus Japanese respondents are discussed. Finally, the impact of other demographic factors on automobile evaluations is reviewed.

Nature of the Multiattribute Model

As Table 4 indicates, all six attributes have a significant impact on overall rating. Furthermore, all six coefficients are positive, indicating that automobiles are rated higher when their gas mileage, handling, horsepower, driving comfort, reliability, and styling are rated higher. There is also evidence of a strong "halo" effect for the five endogenous attributes, indicating that overall ratings also affect attribute ratings. Again, the coefficients are positive in all cases except gas mileage.

The last finding is intriguing. Apparently gas mileage has a positive impact on overall rating (i.e., higher gas mileage is preferred). However, automobiles receiving high overall ratings tend systematically to be underrated on gas mileage, suggesting a perception that a preferred car will not have good gas mileage. This finding, coupled with the significance of the handling and horsepower attributes in the rating equation, suggests that a primary concern was high performance cars with good reliability whereas gas mileage was of less importance.

A look at the impact of familiarity or knowledge about the various models on overall and attribute ratings suggests that, in general, knowledge about the automobiles was high and reasonably accurate. The coefficients for the "true" scores for all five attributes are significant and are positive in all cases except handling. In the case of handling, only persons owning a given model seemed to be aware of what the "true" rating was. Similarly, ratings on reliability by owners of a given model appear to be substantially more accurate than those of nonowners. As could be expected, the popularity of a car also influenced overall ratings, with market share significantly related to overall rating.

Country-of-Origin Effects

Stereotypes of automobiles of different national origins. Examination of Table 4 suggests that the country of origin of an automobile does not affect overall ratings, but has some effect on ratings on specific attributes. This observation is consistent with the findings of previous research (Erickson, Johansson, and Chao 1984), and appears to be particularly significant in the case of American cars and to a lesser extent German cars. American cars were consistently rated low on gas mileage and somewhat low on reliability, but overrated on horsepower. German automobiles, in contrast, were rated low on driving comfort and to some extent high on gas mileage. There appears to be less bias in the evaluations of the Japanese cars.

Familiarity with models of different national origins appears to affect evaluations, but does not necessarily result in more favorable perceptions. Somewhat surprisingly, persons who owned Japanese cars tended to give them more negative overall ratings than others. However, persons who were more familiar with Japanese cars tended to rate them more highly on gas mileage and reliability and lower on driving comfort and, to a lesser extent, horsepower. Similarly, persons who were familiar with American cars tended to rate them more highly on driving comfort.

Thus, country of origin appears to have *some* impact on the various attribute ratings of automobiles. It does not, however, appear to be very marked nor does it appear to reflect a consistent positive or negative stereotyping of automobiles based on country of origin.

Impact of nationality on ratings. Examination of differences between the two samples in their ratings of the automobiles suggests that nationality affects ratings, though the ratings do not necessarily reflect a prejudice in favor of automobiles of home-country origin. American respondents in fact rated Japanese automobiles more positively than did Japanese respondents. However, they also rated German automobiles more negatively. American respondents also tended to rate American cars more positively on gas mileage and more negatively on horsepower, though this finding may reflect lower gasoline prices and hence less importance attached to such factors in the U.S. Japanese cars, in contrast, were rated less favorably on gas mileage, though this was the only attribute where there was any bias. In the case of German automobiles, American respondents tended to rate them less favorably on gas mileage, but more positively on horsepower and to a lesser extent on handling and driving comfort. Thus, though there appears to be some bias

used for the testing involved a six-equation system and a total of 62 free parameters. The test between the American and the Japanese subsamples showed an F-value of 58.4. With a critical value of $(F.05,62,8768) = 1.4$, the hypothesis of homogeneity was clearly rejected. To test the heterogeneity of the "within" samples, splits of the respective subsamples into four mutually exclusive subsets of respondents were made on the basis of sex and age. The computed F-statistic was 75.2 for the American subsample and 44.5 for the Japanese, resulting again in a rejection of the hypothesis of homogeneity. These findings provided the basic rationale for the introduction of the interactive demographic variables and the attribute importance weights in the subsequent analysis.

Table 4
JACKKNIFE ESTIMATES OF DISAGGREGATE MODEL

	Equations					
	Overall rating (RATE)	*Gas mileage (GAS)*	*Handling (HAND)*	*Horsepower (HP)*	*Driving comfort (DRIV)*	*Reliability (RELY)*
Endogenous variables						
OVERALL RATING	−1	−.29[a]	.22[a]	.69[a]	.86[a]	.31[a]
GAS	.28[a]	−1				
HAND	.73[a]		−1			
HP	.26[a]			−1		
DRIV	.52[a]				−1	
RELY	.35[a]					−1
Exogenous variables						
AMERICAN	.61	−2.53[a]	.02	1.14[a]	.90	−1.03[c]
JAPANESE	−1.55	.97	.25	−.07	.96	.37
GERMAN	.94	1.57[c]	−.23	−1.08	−1.87[b]	.62
AMENAT	−.33	2.23[a]	.03	−1.29[b]	−.09	.49
JAPNAT	.48[c]	−.75[b]	.03	−.11	−.46	.34
GERNAT	−.62[b]	−.77[b]	.32[c]	1.28[a]	.55[c]	−.42
AMEINC	.00	−.05	.34[c]	.06	−.14	−.64[c]
JAPINC	−.34	−.14	.37[b]	.20	.25	−.31
GERINC	−.23	.11	.11	−.28	−.09	−.95[b]
AMESEX	−.48[b]	.53[b]	−.07	.30	.39[c]	.05
JAPSEX	.67[a]	−.37[c]	−.25[b]	.03	−.59[a]	−.17
GERSEX	−.08	.08	−.05	−.32	.41[c]	−.13
AMEAGE	.21	−.20	−.51[a]	.24	.01	.12
JAPAGE	.48[c]	.05	−.37[a]	−.11	−.23	−.17
GERAGE	.10	.14	−.30[c]	−.10	.26	.10
OWNCAR	−.79					
AMEOWN	−.25					
JAPOWN	−.44[b]					
AMEFAM		.23	.10	−.17	−.24[b]	.18
JAPFAM		.49[a]	−.08	−.18	−.21[b]	.55[b]
SHARE	1.01[b]					
GASTRUE		.22[a]				
HANDTRUE			−.05[b]			
HPTRUE				.10[a]		
DRIVTRUE					.05[b]	
RELYTRUE						.06[c]
GASTOWN		.83				
HANDTOWN			2.07[b]			
HPTOWN				.01		
DRIVTOWN					.01	
RELYTOWN						6.31[a]
STYLE	.07[a]					
R^2	.44	.32	.16	.22	.27	.32

[a]Significant at .01 level.
[b]Significant at .05 level.
[c]Significant at .10 level.

in ratings due to nationality, it does not indicate any consistent trend in favor of one country or the other.

Effect of Sample Characteristics on Evaluations

The inclusion of the interactive variables relating to income, sex, and age also enabled us to examine the impact of these variables on overall evaluations and on attribute ratings for American versus Japanese versus German cars. These variables, particularly sex, appear to have influenced ratings in certain instances.

Interestingly, male respondents tended to give more negative ratings overall to American cars than did female respondents and, conversely, rated Japanese cars more positively. There is relatively little difference between the two sexes in terms of their ratings of German cars. Income appears to have relatively little impact on ratings. This finding may be due at least in part to the absence of attributes (except gas mileage) that might be affected by economic considerations. Age appears to influence ratings, particularly for handling. Older respondents tended to rate cars of all three national origins less favorably on handling, but especially American and Japanese cars.

Thus, as in the case of nationality, the demographic characteristics of the sample appear to have some effect on overall and attribute ratings, but no consistent bias or tendency for automobiles of a specific national origin is evident.

DISCUSSION AND CONCLUSION

Although clearly no definitive conclusions can be reached given the nature of the samples and their size, the study does provide some interesting insights about appropriate research methodology for studying country-of-origin effects on product evaluations. In particular, adoption of a multiattribute approach suggests that the impact of country of origin may be considerably more complex than is typically assumed, and that familiarity and other factors affecting information or experience with a product should be taken into consideration in addition to nationality and other demographic characteristics.

Examination of the results for the multiattribute model shows that though each of the six attributes has a significant impact on overall evaluation of an auto, there is persistent evidence of a "halo" effect. Thus, the overall evaluation of a car appears to influence ratings on specific attributes. One might expect this tendency to be strongest if knowledge or awareness of the attribute is low or not very accurate. This is not necessarily the case, however, because the effect is significant for all five attributes and not only the two where the accuracy of the ratings is somewhat suspect.

The results also provide little evidence of stereotyping based on country of origin. The country of origin appears to affect ratings on certain attributes, for example, ratings of American cars on gas mileage and German cars on driving comfort, but not overall evaluations. Even these belief effects are relatively minor, however, and do not appear to reflect any consistent bias in terms of either specific attributes or specific countries. Similarly, there is little evidence to suggest any prejudice in favor of home-country products. Though there are differences in the evaluations from the two nationalities, they are related mainly to attribute ratings, especially on gas mileage and horsepower, and do not show any consistent tendency to underrate or overrate cars of a given national origin.

Demographic characteristics of respondents, and in particular their sex, do influence evaluations. As in the case of nationality, however, there are no consistent tendencies or trends for cars of different national origins or specific attributes.

After a first glance at the findings one might be tempted to conclude that country-of-origin effects are relatively minor. However, in view of previous research indicating the existence of country-of-origin effects, such a conclusion may be somewhat premature. Country-of-origin effects may be less significant than has generally been believed, and they may occur predominantly in relation to evaluation of specific attributes rather than overall evaluations. Our findings offer little support, for example, for the hypothesis that the country of origin is used as a surrogate variable to evaluate a product when a respondent has limited experience or knowledge about that product.

Further research clearly is required and should be based on more representative samples and other types of products. We examined only a single product, automobiles, for which considerable information is readily available and for which evaluations are likely to be based on some objective characteristics. Examination of country-of-origin effects in the evaluation of products for which subjective rather than objective characteristics have a key role may prove fruitful. In such a context, the impact of the degree of familiarity or experience with the product class and specific variants, and other factors influencing the availability and use of information in making judgments, as well as the effect of the demographic characteristics of respondents, might be probed. In addition, examination of both overall and attribute-specific evaluations should help clarify the exact nature of country-of-origin effects.

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