How Regional Employment in the U.S. Automobile Industry Influences Consumer Ethnocentrism

William T. Neese, wneese@troy.edu*
W. Frank Thompson, Jr., wfthompson@troy.edu
Stephen C. Garrott, sgarrott@troy.edu

Introduction

Mass production of the Ford Model T is often thought of as the beginning of the automotive industry in the United States, yet multiple domestic manufacturers had begun operations between 1903 and 1924 (Epstein, 1927). In the period immediately following World War II, Big Three (Chrysler, Ford, and General Motors) automobile production dominated both domestic and world market share.

The automobile industry in the United States is undergoing major shifts. Consumer consumption of imports is rising, and the U.S. continues to witness foreign investment in automobile production facilities (BMI Research, 2015). Big-three automakers have lost market share to foreign-owned manufacturers, and automobile production hubs are developing outside of the traditional Michigan and Ohio production zones. These two states have lost more than 43,000 auto industry jobs since 2001, whereas Indiana, Mississippi, Tennessee, and Alabama have added approximately 12,000 jobs (newgeography.com).

Consumer Ethnocentrism and the CETSCALE

Consumer ethnocentrism is a phenomenon wherein consumers perceive domestic products as inherently superior to imported brands. This construct is known to impact consumption decisions (Bilkey and Nes, 1982; Clark, 1990; Josiassen, 2011; Samiee, 1994; Steenkamp and de Jong, 2010). Consumer ethnocentrism forms within individuals and affects their beliefs, feelings, and behavior (Sharma, 2015). Negative feelings toward a foreign nation (animosity) can influence consumer ethnocentrism (Chan, Chan and Leung, 2010; Hoffmann, Mai and Smirnova, 2011; Lwin, Stanaland and Williams, 2010), yet positive feelings for a foreign nation (affinity) can also drive purchase behavior (Oberecker and Diamantopoulos, 2011). Some consumers might even prefer global brands over local products (Nijssen and Douglas, 2011).

One major dimension of consumer ethnocentrism relates to employment opportunities and the economic well-being of fellow citizens (Rhiney, Arnold, and Salley-Toler, 2013; Smyczek and Glowik, 2011). The CETSCALE, a ten-item scale used to measure consumer ethnocentrism, captures this employment dimension through several items (Shimp and Sharma, 1987). The CETSCALE has been thoroughly analyzed both in the U.S. and foreign markets to determine its validity and reliability (Chowdhury and Ibn Rahman, 2014; Herche, 1992; Netemeyer, Durvasula, and Lichtenstein, 1991; Pentz, Terblanche, and Boschoff, 2013).

Focus for This Study

Individuals in the United States see foreign competition as a threat to their economic livelihood and quality of life (Shimp & Sharma, 1987). According to its authors, individuals residing in geographic areas where foreign competition is most acute score significantly higher on the CETSCALE. They reported that significant differences remained even after demographic and socioeconomic characters were controlled (Shimp & Sharma, 1987).

Given the evolution of the automobile industry in the United States over the previous three decades since the CETSCALE was developed, a profile of regional variances in the ethnocentric tendencies within the United States is warranted due to the potential impact that could have on marketing strategy and tactics. Do the investments and jobs created influence CETSCALE responses, and if so, how? The hypotheses below are designed to address these two questions.

H1: CETSCALE scores will be significantly different across U.S. geographical regions.

H2: CETSCALE means will be correlated with regional employment in the automobile industry, with the U.S. Census Bureau region having the most jobs related to automobile production exhibiting the highest mean score and the U.S. Census Bureau region having the fewest jobs related to automobile production exhibiting the lowest mean score.

This study additionally seeks to develop a more precise level of analysis incorporating geographical *division* levels to provide insight concerning how opportunities for employment in the U.S. automobile industry influence ethnocentrism. A map developed by the Auto Alliance illustrates how domestic production is focused in the East North Central division while foreign automobile manufacturing in the United States is concentrated in the East South Central division (Auto Alliance, 2015). This map shows that 18 of 24 of auto manufacturing facilities in the East North Central division are domestic and 8 of 12 in the East South Central division are foreign brands. Fiat is counted as domestic since Chrysler Automotive is one of the historic Big Three.

H3: CETSCALE means will be significantly more Buy American (higher) in areas with more traditional U.S. automobile production facilities (i.e., East North Central).

H4: CETSCALE means will be significantly lower (i.e., more Pro-Import) in geographical divisions with more foreign direct investment in automobile production plants (i.e., East South Central).

Methodology

This study combines secondary and primary data to test the above hypothesis. The *Alliance of Automobile Manufacturers* (*Auto Alliance* for short) publishes a list of facts about the automobile industry for each state in America on its website (www.autoalliance.com), which is the source of secondary data used in this analysis. This analysis also adopts the methodology from Kahle, Liu, and Watkins (1992) to form geographical regions using current U.S. Census Bureau regions and divisions. The primary data necessary for this study is furnished from a random sample of households across the United States using an incentivized traditional mail survey and including a pre-stamped return envelope. Respondents were exposed to print advertisements featuring foreign and domestic automobile brands using a between-subjects design. The mail survey enabled identification of the respondent's state through the postmark on the return envelope. The dependent variable is the 10-item CETSCALE in a 7-point Likert format (Shimp and Sharma, 1987).

To determine if significant dispersion exists in CETSCALE means across the United States, secondary data from the *Auto Alliance* is classified according to the current U.S. Census Bureau scheme. The following four U.S. geographical regions with nine divisions are used: (1) the *Northeast* region, with New England and Middle Atlantic divisions; (2) the *Midwest* region, with East North Central and West North Central divisions; (3) the *South* region, with South Atlantic, East South Atlantic, and West South Atlantic divisions, and (4) the *West* region, with Mountain and Pacific divisions.

Results

A sample of 314 usable responses resulted from the survey of 2,250 households, for a response rate of 14 percent. Data come from 44 out of 50 states, and appear reasonably consistent with the actual population distribution. Although the order is slightly rearranged, the top five states in current U.S. population (California, Texas, New York, Florida, and Illinois) match the top five states as a percentage of this sample. Respondent demographics generally match U.S. Census Bureau statistics, but participants did report higher education levels and higher income than the population at large. Hispanic participation is also below the national norm.

Seven nonparametric tests were conducted to determine the existence of any statistically significant differences in sample demographics across the four U.S. Census Bureau regions. Using the Kruskal-Wallis test, six demographic variables are not statistically significant: marital status, age, race/ethnicity, education, household income, and occupation. The only variable with a statistically significant difference across geographic regions was gender (Sig. = .04).

Quantitative Analysis

Initial Analysis of Variance results are displayed in Table 1. The level of significance is .01 for the ANOVA that tests multivariate CETSCALE means across U.S. geographical regions, validating H1. Individual CETSCALE items are analyzed next to determine the actual source of that difference. Five of these items account for the significance found across U.S. geographical regions for multi-item CETSCALE means. They are: (1) Purchasing foreign-made products is un-American; (2) It is not right to purchase foreign products; (3) A real American should always buy American-made products; (4) We should buy products manufactured in America instead of letting other countries get rich off us, and (5) American consumers who purchase products made in other countries are responsible for putting their fellow Americans out of work. Of these, items 1, 2, and 3 can be interpreted as general expressions of patriotic zeal when purchasing a product is being considered, whereas item 4 has a more overt economic slant (i.e., in the use of the phrase "get rich off us"). Item 5 directly relates to the employment dimension of primary interest in this study based on the phrase "putting their fellow Americans out of work."

Table 1: Analysis of Variance for CETSCALE means across Four U.S. Census Bureau Regions[1]

Model/CETSCALE Item[2]	Category Mean	Std. Dev.	N	Sum of Squares	df	Mean Square	F	Sig.
MULTIVARIATE	1 = 3.93 2 = 4.59 3 = 4.27 4 = 3.88	1.55 1.33 1.34 1.45	46 81 122 65	23.35	3	7.78	4.02	.01
TOTAL	4.22	1.41	314					
UNIVARIATE								
Purchasing foreign-made products is un-American.	1 = 3.53 2 = 3.91 3 = 3.57 4 = 3.04	1.82 1.89 2.01 1.70	46 81 122 65	27.75	3	9.25	2.59	.05
TOTAL	3.54	1.90	314					

Table 1: (Continued)

Model/CETSCALE Item[2]	Category Mean	Std. Dev.	N	Sum of Squares	df	Mean Square	F	Sig.
UNIVARIATE								
It is not right to purchase foreign products.	1 = 2.83 2 = 3.85 3 = 3.12 4 = 2.97	1.83 1.92 1.89 1.79	46 81 122 65	44.64	3	14.88	4.26	.01
TOTAL	3.24	1.90	314					
A real American should always buy American-made products.	1 = 3.50 2 = 4.16 3 = 3.66 4 = 3.15	2.16 1.95 1.98 1.98	46 81 122 65	38.12	3	12.71	3.19	.02
TOTAL	3.66	2.02	314					
We should buy products manufactured in America instead of letting other countries get rich off us.	1 = 4.39 2 = 5.24 3 = 4.86 4 = 4.32	2.24 1.74 2.02 1.96	46 81 122 65	38.38	3	12.79	3.28	.02
TOTAL	4.78	2.00	314					
American consumers who purchase products made in other countries are responsible for putting their fellow Americans out of work.	1 = 3.46 2 = 4.13 3 = 3.75 4 = 3.25	1.94 1.69 2.01 1.89	46 81 122 65	31.22	3	10.41	2.90	.04
TOTAL	3.70	1.91	314					

1. (1) Northeast; (2) Midwest; (3) South; (4) West.
2. Significant at α = .05.

U.S. Census Bureau Regional Analysis

To test Hypothesis 2, Table 2 compares automobile industry employment for the four U. S. Census Bureau *regions* with their corresponding CETSCALE means, the percentage of automobile industry jobs in each region, and the average percent of each region's job force represented by the automobile industry. The rankings necessary to test H2 are presented in parentheses.

Table 2: Size of U.S. Automobile Industry by Census Bureau Geographical Region[1]

Census Bureau Region	Divisions[2]	Total Number of Auto Jobs	Percent of U.S. Auto Jobs[3]	Percent of Region's Job Force	CET Mean
REGION 1: NORTHEAST (n=46)	*New England* *Middle Atlantic*				
	TOTAL (RANK)	895,680 (3)	12.3 (3)	2.68 (3)	3.93 (3)
REGION 2: MIDWEST (n=81)	*East North Central* *West North Central*				
	TOTAL (RANK)	3,112,966 (1)	42.8 (1)	7.73 (1)	4.59 (1)
REGION 3: SOUTH (n=122)	*South Atlantic* *East South Central* *West South Central*				
	TOTAL (RANK)	2,478,538 (2)	34.2 (2)	5.24 (2)	4.27 (2)
REGION 4: WEST (n=65)	*Mountain* *Pacific*				
	TOTAL (RANK)	738,931 (4)	10.4 (4)	1.99 (4)	3.88 (4)

1. Source: *Alliance of Automobile Manufacturers State Facts* (http://www.autoalliance.org/); Accessed 02-16-2015.
2. *New England*: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont; *Middle Atlantic*: New Jersey, New York, Pennsylvania; *East North Central*: Illinois, Indiana, Michigan, Ohio, Wisconsin; *West North Central*: Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota; *South Atlantic*: Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia; *East South Central*: Alabama, Kentucky, Mississippi, and Tennessee; *West South Central*: Arkansas, Louisiana, Oklahoma, and Texas; *Mountain*: Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming; *Pacific*: Alaska, California, Hawaii, Oregon, and Washington.
3. Column total equals 99.7% due to rounding.

The ranking of CETSCALE means displayed in Table 2 exactly match each employment statistic in all four cases, strongly supporting H2. Ethnocentrism is significantly correlated with regional employment in the American automobile

industry, and is arguably driven by benefits and threats associated with household employment as Shimp and Sharma (1987) proposed three decades ago.

U.S. Census Bureau Analysis at the Division Level

Table 3 displays the result of the second Analysis of Variance conducted to test H3 and H4, which models CETSCALE means as the dependent variable and the nine geographical *divisions* previously described as the treatment. The multivariate significance level is .05 and the power statistic is .81, both meeting acceptable threshhold levels for the analysis to continue. The two highest and thus most Buy-American CETSCALE means are the East North Central (4.68) and East South Central (4.63) regional divisions, providing support for H3. These two geographical divisions have the largest number of automobile industry jobs in the United States.

Table 3: Analysis of Variance for Multivariate CETSCALE means across Nine U.S. Census Bureau Divisions[1]

Model/CETSCALE Item	Category Mean	Std. Dev.	N	Sum of Squares	df	Mean Square	F	Sig.
MULTIVARIATE	1 = 3.66	1.44	14	30.52	8	3.82	1.96	.05
	2 = 4.04	1.60	32					
	3 = 4.68	1.28	52					
	4 = 4.44	1.41	29					
	5 = 4.14	1.34	65					
	6 = 4.63	1.35	25					
	7 = 4.25	1.34	32					
	8 = 3.99	1.68	16					
	9 = 3.84	1.38	49					
TOTAL	4.22	1.41	314					
UNIVARIATE								
It is not right to purchase foreign products.	1 = 2.57	1.79	14	57.36	8	7.17	2.05	.04
	2 = 2.94	1.87	32					
	3 = 4.00	1.93	52					
	4 = 3.59	1.90	29					
	5 = 3.00	1.75	65					
	6 = 3.32	2.08	25					
	7 = 3.22	2.04	32					
	8 = 3.50	2.03	16					
	9 = 2.80	1.70	49					
TOTAL	3.24	1.90	314					

Table 3: (Continued)

Model/CETSCALE Item	Category Mean	Std. Dev.	N	Sum of Squares	df	Mean Square	F	Sig.
A real American should always buy American-made products.	1 = 2.43	1.60	14	99.64	8	12.46	3.23	<.01
	2 = 3.97	2.22	32					
	3 = 4.37	1.88	52					
	4 = 3.79	2.04	29					
	5 = 3.37	1.95	65					
	6 = 4.56	1.71	25					
	7 = 3.53	2.08	32					
	8 = 3.69	2.21	16					
	9 = 2.98	1.89	49					
TOTAL	3.66	2.02	314					

1. (1) New England; (2) Middle Atlantic; (3) East North Central; (4) West North Central; (5) South Atlantic; (6) East South Central; (7) West South Central; (8) Mountain; (9) Pacific.

Mean differences across geographical divisions for only two of ten items produced these multivariate results: (4) "It is not right to purchase foreign products" and (5) "A real American should always buy American-made products." Pairwise comparisons of these two items provide information needed to test H4, and are displayed in Table 4. Although the East North Central division produced the highest mean score (4.00) of the nine geographical areas for item 4 as expected, the East South Central division with a 3.32 mean is *not* the second highest or even substantially lower than the East North Central mean. This result does not provide support for H4. Mean scores for item 4 are all 4.00 or below, indicating general disagreement nationwide with that statement and an overall favorable sentiment toward purchasing imported automobiles. Item 5 also does not support H4. The 4.56 mean score for the East South Central U.S. geographical division is actually higher than the 4.37 mean for the East North Central region, but these two means are not significantly different from one another. Mean scores on item 5 again generally favor foreign brands in the United States automobile market.

Table 4: Significant Pairwise Comparisons for Higher CETSCALE Means Across Nine U.S. Census Bureau Divisions[1]

CETSCALE Item (Sig.)	I[2]	Mean for I	J[2]	Mean for J	Mean Diff. (I - J)	Std. Error	Sig.	Conf. Int. (Lower)	Conf. Int. (Upper)
It is not right to purchase foreign products. (α = .04)	3	4.00	1	2.57	1.43	.56	.01	.32	2.54
	3	4.00	2	2.94	1.06	.42	.01	.24	1.89
	3	4.00	5	3.00	1.00	.35	<.01	.32	1.69
	3	4.00	9	2.80	1.20	.37	<.01	.47	1.94

Table 4: (Continued)

CETSCALE Item (Sig.)	I[2]	Mean for I	J[2]	Mean for J	Mean Diff. (I - J)	Std. Error	Sig.	Conf. Int. (Lower)	Conf. Int. (Upper)
A real	2	3.97	1	2.43	1.54	.63	.02	.30	2.78
American	2	3.97	9	2.98	.99	.45	.03	.11	1.87
should	3	4.37	1	2.43	1.94	.59	<.01	.77	3.10
always buy	3	4.37	5	3.37	1.00	.37	<.01	.28	1.72
American-	3	4.37	9	2.98	1.39	.39	<.01	.62	2.16
made	4	3.79	1	2.43	1.37	.64	.03	.11	2.62
products.	5	3.37	3	4.37	-1.00	.37	<.01	-1.72	-.28
(α = <.01)	5	3.37	6	4.56	-1.19	.46	.01	-2.10	-.28
	6	4.56	1	2.43	2.13	.66	<.01	.84	3.42
	6	4.56	5	3.37	1.19	.46	.01	.28	2.10
	6	4.56	9	2.98	1.58	.48	<.01	.63	2.53

1. Mean differences included in this table are considered significant at the .05 level or less.
2. (1) New England; (2) Middle Atlantic; (3) East North Central; (4) West North Central; (5) South Atlantic; (6) East South Central; (7) West South Central; (8) Mountain; (9) Pacific.

Conclusion

The geographical division most in agreement with "It is not right to purchase foreign products" is the East North Central division of the United States, which benefits most from Big Three automobile production employment. Although the word *imported* is not directly used, individuals in Michigan may not care if a Toyota is manufactured in Kentucky or Mississippi because that economic activity is not benefitting Michigan households. Those brands are competition for Michigan products regardless of being manufactured in America.

Conversely, item 5 states: "A real American should always buy American-made products." The term "American-made products" is not brand-specific and can be interpreted to include anything manufactured or assembled on American soil regardless of the nationality of the facility's owners. Respondents from Alabama, Kentucky, Mississippi, and Tennessee agreed with this statement significantly more than households in the New England, South Atlantic, and Pacific geographical territories. The exact same pattern of statistical significance emerges from East North Central households as well. This result seems to suggest that regardless of the brand name, U.S. households are influenced by the fact that those production jobs are in America and benefit them personally. The phrase "Made in America" is perhaps evolving along with the global automobile industry and taking on a new meaning for consumers in the United States.

Limitations and Direction for Future Research

This study is limited by the small sample size for a national survey. Although adequate to compute statistical significance, confidence in CETSCALE mean scores would be greater if the sample contained a larger number of participants. The study is further limited because neither the survey instrument nor the commercial mailing list allowed households specifically employed in the automobile industry to be identified for analysis. Future research should develop new measurement scales and methodologies that effectively capture how employment-related economic benefits derived from producing, servicing, or marketing foreign brands in a domestic marketplace influences household consumption. The analysis presented here profiles one such scenario to the extent possible and, despite the need for new scale development, in the process effectively illustrates the continued usefulness and adaptability of the CETSCALE.

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Relevance to Marketing Educators, Researchers and Practitioners: The impact of ethnocentric beliefs and attitudes on consumption is widely known, but the influence of foreign direct investment on ethnocentrism is rarely considered. Marketers should understand the ethnocentric tendencies of domestic consumers who are employed by foreign manufacturers producing products sold in the same country.

Author Information:

William T. Neese is an Associate Professor of Marketing at Troy University in Troy, Alabama.

W. Frank Thompson is an Assistant Professor of Marketing at Troy University in Troy, Alabama.

Stephen C. Garrott is a Professor of Marketing at Troy University in Troy, Alabama.

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