

Consumption Patterns of Asian-Canadians and Canadian-Born

The Canadian 1990 Survey of Family Expenditures is used to examine spending pattern differences between Asian-Canadians and the Canadian-born residing in Canada. Using Tobit analysis to correct for limited dependent variables and to control for differences in household characteristics, significant differences were found for expenditures on household operations, transportation, personal care, recreation, tobacco and alcohol, miscellaneous, and gifts and contributions. Transportation, recreation, and gifts and contributions were luxury goods for both ethnic groups.

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Introduction

Canada is a country of immigrants. In 1991, almost 16 % of the total population in Canada reported being foreign born and 86.4% of Canadian residents reported an ethnic origin other than Canadian (*Statesman's Year Book*, 1992). Since 1971, Canada has had an official multicultural policy that has encouraged maintenance of diverse and unique ethnic communities within Canadian society (Department of Secretary of State of Canada, 1988).

Asians comprise a major portion of Canadian immigrants (Lee, 1995). In 1981, nearly 40% of Canada's immigrants were Asian. In 1991, the proportion of Asian immigrants was 53% (*Canada Year Book*, 1994). Examining the spending patterns of these Asian-Canadians is of interest for several reasons: (1) previous studies of the influence of ethnicity on consumer preferences and budget allocation have generally focused on Blacks and Hispanics rather than Asians, (2) Asians are now 5.1% of the Canadian population, (*Canada Year Book*, 1994) up from 1% in 1971 (*Canada Year Book*, 1980) with further growth expected, (3) the Canadian multicultural policy may help preserve the distinct values, lifestyles, religious practices, tastes and preferences of Asian immigrants.

The purpose of this paper is to explore differences in the spending patterns of Asian-Canadians (Asians) and the Canadian-born (Canadians). Results of this study can be useful for theory development, marketing, and public policy.

Review of Literature

United States data was used in the few existing studies of the effect of ethnicity on consumer spending patterns. Using the 1972-1973 Consumer Expenditure Survey and multiple regression, Ketkar

and Cho (1982) and Ketkar and Ketkar (1987) found that white families spent more on food-away from home, health care, recreation, auto insurance, radios and televisions; less on clothing, home furnishings and equipment, and household operation compared with non-white households.

Wagner and Soberon-Ferrer (1990) used the 1980-1981 Consumer Expenditure Survey to study the impact of ethnicity on expenditures for food at home, food away from home, and clothing. Their multivariate analysis indicated that, all else equal, Blacks spent more than other households on clothing and less on food away from home; whereas Hispanics spent more on food at home.

Fan (1994) combined data from the 1980-1990 Consumer Expenditure Survey, the 1980-1990 Consumer Price Index, and the 1990 ACCRA Cost of Living Index to examine the differences in household budget allocation patterns between Asian-American households and Black, Hispanic, and white ethnic groups. Asian-American households had significantly different budget allocation patterns compared with the other three ethnic groups. Asian-American households allocated less of their budget to fuel and utilities compared to the three other ethnic groups. Compared to white households, Asian-Americans allocated a relatively larger budget share to shelter and education. Compared to Black households, Asian-American households allocated a larger budget share to food at and away from home, and shelter, but less to apparel. Compared to Hispanic households, Asian-American households allocated a smaller budget share to food at home, but a larger share to food away from home.

Theory and Method

Theory

The theoretical basis of this study is

neoclassical consumer theory. Consumer expenditure is deemed to be a function of economic resources as well as consumer tastes and preferences (Bryant, 1990). A zero level of expenditure for any given consumption category might arise if the survey period is too short for a purchase to be made, or if the consumer would not purchase the item under any circumstances or if a corner solution is present such that, given a change in relative income or price, a consumer would purchase the item. Since the survey period is not short and the analysis in this study focuses on broad expenditure categories, the assumption is made that a category of commodities is permanently in the consumer's utility function. Thus, zero expenditures indicate a corner solution. Tobit analysis is appropriate in such a case.

Data

Data for this study are from the Canadian 1990 Survey of Family Expenditures collected for the Family Expenditure Surveys Section, Household Surveys Division, Statistics Canada (Statistics Canada, 1991). This extensive national survey obtained information on private households (a person or persons living in one dwelling unit) in the 17 metropolitan areas of Canada. In most cases, households of two or more are occupied by those related by blood, marriage or adoption.

Ethnic Identity

In this data set, ethnic groups were identified according to country of birth. This study focused on married couple households where both husband and wife reported the same ethnicity. There were 1,950 families whose household head and spouse were Canadian-born; 116 families reported Asian origins. Fifty-six Asian families came from "China and South East Asia" which included: China, Hong Kong, Japan, Korea, Taiwan, and Vietnam. Sixty Asian families were from "Other Asia," which included: Bangladesh, India, Pakistan, Punjab, Sri Lanka, Cambodia, Indonesia, Malaya, Malaysia, New Zealand, Philippines, Singapore, Thailand, and Australia.

Statistical method

Tobit analysis was used to correct for the presence of limited dependent variables. Given the potential bias that may arise from having a large number of zeros present in a given expenditure category, ordinary least-squares is inappropriate (Madalla, 1983).

The empirical model used in this study can be expressed as follows:

$$C_i = \alpha + \beta_1 X + \beta_2 A + \beta_3 S + \beta_4 R_1 + \beta_5 R_2 + \beta_6 R_3 + \beta_7 R_4 + \beta_8 E_1 + \beta_9 E_2 + \beta_{10} E_3 + \beta_{11} E_4 + \beta_{12} O_1 + \beta_{13} O_2 + \mu \quad (1)$$

where C_i is the annual expenditure on the i th consumption category, α is a constant, β_1 to β_{13} unknown coefficients, X is total annual expenditure, A is age of the reference person, S is household size indicated by the number of person weeks (number of weeks a person present in household), R_1 is Atlantic and Quebec region, R_2 is Manitoba and Saskatchewan, R_3 is Alberta, R_4 is British Columbia (Ontario is the omitted category), E_1 is a reference person with less than 9 years of elementary education, E_2 is a reference person with some post-secondary education, E_3 is a reference person with post-secondary certificate or diploma, E_4 is a reference person with a university degree (reference person with some or completed secondary education is the omitted category), O_1 is a reference person with a white collar occupation, O_2 is a reference person with a blue collar occupation (reference person who is a homemaker is the omitted category), and μ is an error term.

This equation can be summarized as the following Tobit model:

$$C_i = \alpha + X\beta + \mu \quad \text{if } \alpha + X\beta + \mu > 0 \\ C_i = 0 \quad \text{if } \alpha + X\beta + \mu \leq 0 \quad (2)$$

where X is a vector of independent variables, β is a vector of unknown coefficients, and C_i and μ are defined as previously.

The marginal propensity to consume derived from the model for all cases is:

$$\frac{\partial E(C_i)}{\partial X} = F(Z) \frac{\partial E(C_i)}{\partial X} + EC^* \frac{\partial E(Z)}{\partial X} \quad (3)$$

where $E(C_i)$ is the expected expenditure on a certain

category of all observations, $E(C_i)$ is the expected expenditure on a certain category for observations with expenditures greater than zero, and $F(Z)$ is the probability of having expenditures greater than zero for all cases. The marginal propensity to consume is the change in expenditure for a given commodity per unit change in total expenditures, *ceteris paribus*.

The marginal propensity to consume for cases

above the limit is $\frac{\partial E(C_i)}{\partial X}$ and $F(Z)$ is the cumulative probability of being above the limit associated with total expenditure (Madalla 1983, pp. 149-60; McDonald and Moffitt, 1980).

To derive income elasticities, the left-hand side of equation (3) is multiplied by $\bar{X} / E(C_i)$ where \bar{X}

is the mean of total expenditures for the sample (Kinsey, 1984). Elasticity indicates the percentage change in expenditure on a specific category, given a 1% change in total expenditures, other things being equal.

Dependent variables

The expenditure categories used as dependent variables are: food at home, food away from home, shelter, household operations, household furnishings and equipment, clothing, transportation, health care, personal care, recreation, education and reading, tobacco and alcoholic beverages, miscellaneous, and gifts and contributions. Specific components of each expenditure category used in this study are listed in the documentation for the 1990 Survey of Family Expenditures Public Use Microdata File (Statistics Canada, 1991).

Independent Variables

The independent variables include annual expenditures, age of respondent, family size, region of residence, occupation of respondent, and education level of respondent.

According to the permanent income hypothesis, the level of permanent consumption realized by an individual or a family depends on permanent income. In the short run, however, families have more control over expenditures than over income. Therefore, total expenditures are used in this study as a proxy for income (Prais and Houthakker, 1971).

Previous studies of expenditure patterns indicate the age of the head of a household directly influences expenditure patterns and that specific purchases occur in particular time periods of life (Chen and Chu, 1982). Age of respondent was measured as a continuous variable.

Since climate and cultural differences in each region of the country influence expenditure patterns (Ketkar and Cho, 1982), region of residence is used to capture differences of taste and preferences in consumption that might influence expenditures across families in this study. Dummy variables were used to classify region: Atlantic Provinces (Newfoundland, Prince Edward Island, Nova Scotia and New Brunswick), Quebec, Ontario, Manitoba and Saskatchewan, Alberta, and British Columbia (Ontario was the omitted category).

Both occupation and education of respondent may influence consumer taste and preference for types and levels of expenditures chosen. Occupation of respondent was measured as three dummy variables: white collar, blue collar and homemaker (the omitted category).

Level of education was divided into four categories: less than 9 years of elementary education, some post-secondary education, post-secondary education completed and university degree earned. Higher levels of education can alter valuation of time allocation and consequently impact expenditures for time-related goods and services (Ketkar and Cho, 1982; Ketkar and Ketkar, 1987).

Characteristics of the sample

Data describing the characteristics of the sample are shown in Table 1. Average age of the reference person was 45 years for the Asians, 44 years for the Canadians. Family size as represented by number of weeks that a person was a part of the family was higher for Asian families at 209 weeks (approximately 4 persons in the family during the year) compared to 161 weeks (approximately 3 persons per family per year) for Canadian families.

Differences in region of residence can be seen. Over three-quarters of the Asian families resided in Ontario, British Columbia, and Atlantic and Quebec (31.5%, 23.3% and 22.5%, respectively). Over two-thirds of Canadian families lived in Ontario (30.9%) and Atlantic and Quebec (38.4%). Relatively fewer Canadian families lived in British Columbia (11.8%) and Alberta (9.8%) compared to Asian families (23.3% and 18.9%, respectively).

Interesting differences were observed in education level of the two ethnic groups. A greater percentage of Asians compared to Canadians had less than 9 years of elementary education (11.3% versus 9.6%). A larger percentage of Canadians had completed secondary education (42.3% compared to 34.6%) or some post secondary education (9.6% compared to 5.3%). The percentages who acquired a post-secondary certificate or diploma was similar for both Asians (19.5%) and Canadians (22.8%). But, almost 30% of Asians had a university degree, nearly two times the percentage of Canadians with a similar degree. Thus, compared to Canadians, Asians had a higher percentage with both very low and very high levels of education.

Relatively more Asians than Canadians were employed in white collar occupations (57.8% and 52.1%, respectively). Blue collar employment was very similar for both ethnic groups at 31.0% for Asians and 32.1% for Canadians. Relatively more Canadians reported being not employed compared to Asians (15.8% and 11.2%, respectively).

Table 1
Descriptive Statistics for Selected Sociodemographic Characteristics

Household characteristics	Asian (n=116)	Canadian (n=1950)
Age of ref. person	45.4	43.9
Number of person weeks	209	161
	Percent	
Region of residence		
Atlantic and Quebec	22.5	38.4
Ontario	31.5	30.9
Manitoba & Saskatchewan	3.8	9.1
Alberta	18.9	9.8
British Columbia	23.3	11.8
Education of ref. person		
< 9 years of elementary secondary ed.	11.3	9.6
Some post-secondary ed.	34.6	42.3
Post-secondary certif.	5.3	9.6
University degree	19.5	22.8
University degree	29.3	15.7
Occupation of ref. person		
White collar	57.8	52.1
Blue collar	31.0	32.1
Not employed	11.2	15.8

Findings and Discussion

Expenditure levels

Total annual expenditures, average expenditure levels, and average budget shares are reported in Table 2. Total annual expenditures were almost the same for both ethnic groups at \$39,131 (Canadian dollars) for Asians and \$39,118 for Canadians. However, as seen in Table 2, the dollars allocated to each expenditure category differed for each ethnic group.

To ascertain whether the differences in expenditure levels were statistically significant, a dummy variable for Canadian born was entered into a Tobit equation for each expenditure category. When differences in age, household size, region of residence, education and occupation were controlled, a significant difference between ethnic groups was found at the .001 level for the following expenditure categories:

Table 2
Average Expenditure Levels and Average Budget Shares of Household Expenditures by Ethnic Groups

	Average Expenditure Level (Canadian \$)		Average Budget Share (percentage)	
	Asians	Can.	Asians	Can.
Total expenditures	39,131	39,118		
Food at home	5606	4785	16.2	13.8
Food away	1794	1808	4.2	4.4
Shelter	8413	8395	23.8	22.7
Household op.	2023	2258	5.2	5.9
Furnish. & equip.	1495	1748	4.0	4.3
Clothing	3182	2977	7.8	7.2
Transportation	7561	6603	17.3	15.8
Health care	1052	904	2.7	2.5
Personal care	892	1021	2.4	2.7
Recreation	2083	2976	4.9	7.0
Reading & educ.	1062	694	2.6	1.7
Tobacco & alcohol	485	1619	1.4	4.4
Misc.	985	1551	2.6	3.9
Gifts & contrib.	2501	1779	4.6	3.8

transportation, personal care, recreation, tobacco and alcohol and miscellaneous. Significant differences were found at the .01 level for household operation and at the .05 level for gifts and contributions. For several of the remaining categories, differences in dollar expenditure levels between the two ethnic groups was above \$100 (Canadian). However, after controlling for differences in household characteristics, no significant differences between ethnic groups were found for food at home, food away from home, shelter, furnishings and equipment, clothing, health care, and reading and education.

Income elasticities

Income elasticities for the 14 expenditure categories are shown in Table 3. Those categories with income elasticities less than one are generally called necessities. Luxury goods have income elasticities greater than one (Bryant, 1990). For both ethnic groups, food at home, shelter, household operations, clothing, health care, personal care, reading and education, tobacco and alcohol, and miscellaneous expenditures are considered necessities. Food away

from home and furnishings and equipment are luxury goods for Asian families, but necessities for Canadian families. Transportation, recreation, and gifts and contributions are luxury goods for both ethnic groups.

Table 3
Income Elasticities for Expenditure Categories by Ethnic Group

	Asians	Canadians
Food at home	0.219	0.168
Food away	1.039	0.814
Shelter	0.440	0.344
Household op.	0.843	0.539
Furnishings & equip.	1.036	0.889
Clothing	0.908	0.957
Transportation	1.106	1.100
Health care	0.683	0.503
Personal care	0.381	0.555
Recreation	1.342	1.240
Reading & ed.	0.452	0.729
Tobacco & alcohol	0.637	0.256
Misc.	0.633	0.798
Gifts & contributions	1.810	4.732

Conclusion and Implications

Study results indicate significant spending pattern differences between Asian and Canadian families for some, but not all, expenditure categories. Controlling for differences in household characteristics, significant differences in spending (at or above the .05 level) between the two ethnic groups was found for household operations, transportation, personal care, recreation, tobacco and alcohol, miscellaneous, and gifts and contributions. No significant differences were found for food at home, food away from home, shelter, furnishings, clothing, health care, and reading and education.

An implication of this research for theory development is that ethnicity can be a significant factor shaping consumer tastes and preferences. The differences found between Asian and Canadian families suggests it is important to consider a wider range of ethnicity than the typical white/nonwhite comparison.

For both marketers and public policy makers, the results of this study indicate that Asian and Canadian consumers do not have significantly different levels of spending for goods such as food at home,

shelter, clothing, or health care -- items that are necessities for both groups. However, significant differences are found for items such as transportation, recreation, and gifts and contributions. These items are luxury goods for both groups. This result suggests that ethnicity may play a greater role in affecting consumer tastes and preferences for discretionary spending versus spending for basic items. Thus, marketers may benefit from taking ethnic differences into account when marketing "non-basic" items such as recreational services. Public policy makers, on the other hand, may find ethnicity relatively less important than other factors when examining the need for income supplements to purchase basic items. And, while the spending patterns of Asian families residing in Canada do not reflect complete assimilation, clearly, for the two ethnic groups considered in this study, Canada's "multicultural" policy has not resulted in spending pattern differences for every spending category.

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Endnotes

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