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TITLE OF THESIS/TITRE DE LA THÈSE    The Economic Impact of Tourism on an
                                  Island Economy: A Case Study of Victoria, B.C.

UNIVERSITY/UNIVERSITÉ    Simon Fraser University

DEGREE FOR WHICH THESIS WAS PRESENTED/
GRADE POUR LEQUEL CETTE THÈSE FUT PRÉSENTÉE    Ph.D.

YEAR THIS DEGREE CONFERRED/ANNÉE D'OBTENTION DE CE GRADÉ    1980

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THE ECONOMIC IMPACT OF TOURISM ON AN ISLAND ECONOMY: A CASE STUDY OF VICTORIA, B.C.

by

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY in the Department of Geography

Simon Fraser University
December 1979

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A Case Study of Victoria, B.C.

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ABSTRACT

The primary objective of this study is to investigate the economic impact of tourism on Victoria, which is located on Vancouver Island, by determining the multiplier effects of tourist spending on the generation of income, employment, sales, government revenue and imports. Further, differential tourist multipliers are calculated in order to make comparisons of the relative contribution by types of tourists.

The secondary objective of the study is to examine differential accommodation multipliers according to types of industrial organisation, e.g., by location, size, scale, affiliation, and ownership. It was hypothesised that the central, the larger, the more affiliated, and the externally-owned establishments have lower multipliers than the peripheral, the smaller, the less affiliated, and the locally-owned ones. The a priori reasons are that the former types enjoy economies of scale in production and purchasing and also have smaller linkages with the local economy because of greater access to outside suppliers.

The method for calculating the regional income coefficient significantly extended the initial model developed by Archer. An additional weighting term was incorporated in order to reflect differences at the establishment level for the accommodation sector. Further, an eleven-sector input-output framework was
derived for the Victoria economy and was used as the basis for calculating the tourist multipliers. Analysis of variance and simple correlation techniques were used to test the null hypotheses that there are no associations among the multipliers and other selected variables with the classification variables. The data used in the analysis were collected from a survey of accommodations and from available published sources.

The major findings with regard to differential tourist multipliers are: 1) The regional tourism income multiplier of .65 per tourist dollar is consistent with previous findings. It is considered to be low because of the high leakage elements of island economies. 2) The results demonstrate the importance of secondary effects, since more income and jobs are generated by indirect and induced spending than by direct spending. 3) Although the differences are slight, overnight visitors have higher income, but lower employment multipliers, than do day-trippers.

The major findings in relation to differential accommodation multipliers are: 1) The study shows that different types of establishments have different levels of performance. In general, the findings support the initial hypotheses. 2) As a consequence of these different performance levels, the hypothesis that the usual method of calculating the income multiplier tends to be overestimated was also confirmed. The model was adjusted to compensate for this. 3) Higher multipliers
do not necessarily mean better performance, nor do they necessarily indicate what is best for the region. As was postulated, the lower multiplier values were also due to economies of scale, particularly economies of labour. Furthermore, the relative contribution of establishments with lower multipliers to the local economy are much greater than are those with higher estimates. Finally, other factors such as regional goals and priorities, supply contraints, and demand factors are found to be important from the standpoint of establishing guidelines for regional policy formulation.
ACKNOWLEDGEMENTS

It is my pleasure to acknowledge those who have contributed to the successful completion of this research project.

I feel honored to have been one of the first recipients of the B.C. Ministry of Education Graduate Engineering and Technology (GREAT) Award. In connection with this grant, the financial contributions of the B.C. Research Council, the B.C. Hotels' Association, and the Hotel & Restaurant Employees & Bartenders Union Local 40 are gratefully acknowledged. Letters of support from the Greater Victoria Visitors Bureau and the Greater Victoria Chambers of Commerce are also appreciated. In addition, computer time was generously provided by the geography department at SFU.

Heartfelt thanks are also extended to the following individuals who facilitated the carrying out of the research. They are Alex Tunner of B.C. Research, Lloyd Manuel of B.C. Hotels' Association, Peter Hammer of The Planistics Group, G. David Hall of Tourism B.C., and Geoffrey Swannel of Pannell, Kerr, & Forster. Suggestions at the initial stage of the research from Brian Archer are also appreciated.

I would like to thank the many hoteliers who were not only friendly and cooperative, but also kind enough to take time off from their busy schedules to be interviewed.

Special mention needs to be made of the supervisory
committee. I am grateful to my senior supervisor Michael E. Eliot Hurst for constantly challenging me to strive for greater conceptual understanding and theoretical merit. I am indebted to Shue Tuck Wong for introducing me to the fascinating field of tourism and for his many constructive criticisms, particularly on the statistical methodology and conceptual organisation of the dissertation. I am especially thankful to Turgut Var for his helpful advice on all aspects of the research and for his direction of the project as academic supervisor of the GREAT Award. Finally, I am also grateful to Thomas K. Peucker for his keen and lively comments. I would also like to acknowledge Peter E. Murphy for being the external examiner and for his useful comments on the final draft.

The maps were greatly improved by suggestions made by S. T. Wong, Wayne Luscombe, and Ray Squirrel. To the latter deserves special mention as he helped photograph the final illustrations.

Bernard Curtin typed the charts and proofread the preliminary draft. Some additional typing was kindly done by Nancy Burnham. Advice on the reproduction of the text by computer was given by Colleen Melsness. Of course, any errors and opinions are the sole responsibility of the author.

Finally, I am grateful for the support and encouragement of my friends and colleagues, and most of all, for the patience and understanding of my husband, Frank.
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I. THE CONCEPTUAL FRAMEWORK

Statement of the Problem

Tourism has been regarded as a leading strategy for the economic development of limited or ailing economies. The rationale is that tourism expansion provides the benefits of increased production, income, employment, and investments, as well as alleviates problems of balance of payments and regional disparities. In particular, the tourist industry has been widely promoted as the strategy of development for island economies. It is already the largest single industry in Hawaii, Fiji, Guam, Bermuda, the Virgin Islands, and the Bahamas.

According to the "Prebisch line", the traditional exports of developing regions are subject to slow growth because of the


low price and income elasticities of import demand and adverse terms of trade. This results in an increasing balance of payments gap and thus impaired developmental capacity. This situation characterises many island economies, which also have certain restrictive geographic features, such as spatial isolation, small land areas and populations, scarce resources, narrow economic base, extremely open economies, and attractive but fragile landscapes that are vulnerable to high impact developments. Hence, the high income elasticity for foreign travel, estimated at about 2 for developed countries, gives developing regions hope for increased foreign exchange earnings. Although Victoria obviously cannot be classified as a developing island economy in the conventional sense, it does share some similarities with other island countries, notably problems of accessibility, limited resources, and reliance on imports.

Tourism is a fact of life for many economies with limited economic possibilities, but it has been a rather neglected subject for serious study until fairly recently. Gray explains this neglect in relation to international trade theory. Since


International travel is classified as an "invisible" export, it has a certain residual quality to it by definition. He also points out that invisibles do not conform to the conceptual framework which assumes a virtual inability of factors of production to cross international boundaries. Further, the failure of national accounts in reporting estimates of invisible trade items has resulted in the emphasis on commodity trade. Goldsmith has observed that "tourism has seldom been included in studies of regional development even though it is a normal interregional transaction".

Others have pointed out that not much is really known about the role of tourism in stimulating development. The development potential of tourism is a subject that seems to have been virtually neglected, as research interest has been focused on the more "productive" secondary (manufacturing) and primary

6 "Invisibles" are defined as "nonmerchandise transactions in the current account." Other items are passenger transportation, freight transportation, dividends, interest and royalties. H. Peter Gray, International Travel--International Trade, (Lexington: Heath Lexington Books. 1970), pp. 1-4.


8 For the purposes of the study, "development" is defined as "the improvement of the productive capacity of the economy in the sense of maintaining a process of self-sustaining growth". Hence, it can be characterised by the capacity of the economy to restructure itself by self-generating and directing growth and change, and to respond to adverse exogenous changes. William Demas, The Economics of Development with Special Reference to the Caribbean, (Montreal: McGill University, 1965).
(extractive) activities. For example, Clark's theory on the progression of economic development from the dominance of the primary to the secondary to the tertiary is, for the most part, not applicable to regions that have traditionally relied upon the tertiary sector.

Tourism as a vehicle for economic growth is contrary to conventional wisdom thinking. Although increasing interest has been focused on the service sector as a potential growth vehicle, the tertiary sector has been traditionally viewed as endogenous to the local regional economy. According to both central-place and export-base theories, the tertiary sector is market-oriented and therefore non-basic in nature. This implies that service development is the result of regional growth, not the cause.

However, a case can be made for the unique nature of the "tourism commodity".

1. It is amenity-oriented, where the main tourism products are


provided mainly by a particular conception of nature and culture. Ferrario states that tourism is basically a landscape industry since it is totally identified with the environment in its widest sense.

"Many other leisure and recreational activities require an environmental stage but their main emphasis is on the activities themselves, not the setting. They do not necessarily have the direct relationship with and dependence upon the human and natural landscape that is essential for tourism."^{12}

In a sense these tourism products can be considered as ubiquitous goods, to be "discovered" and promoted, but they can no longer be considered as free goods.

2. Consumption takes place at the point of "production". This involves sharing of facilities with local residents, since tourist destinations are also places of their residence. Thus conflicts of interest may arise and the quality of the product itself may suffer because of environmental deterioration.

3. Tourism involves the movement of a factor of production, i.e., labour as consumers rather than producers. Gray calls this the international movement of a "factor of consumption".^{13}

4. It is a basic activity, since a crucial aspect of tourism is

---


^{13} Gray, op. cit., p. 3.
the foreign exchange earnings generated by international tourists.

5. It is "productive" in the sense of requiring substantial infrastructure and facilities. In fact, there is some evidence that tourism is more capital-intensive and less labour-intensive than commonly believed.\textsuperscript{14} This implies substitution of the factors of production and economies of scale.

6. There are problems of measurement of this elusive activity. Tourism is amorphous and diffuse, involving many intangibles, where even life styles are reified and sold as "tourism products". One of the most successful advertising campaigns actually failed to mention the location of the resort. "The selling of the holiday experience itself and not the destination was the important factor."\textsuperscript{15}

This unique nature of tourism partially explains why it has been difficult to establish formal principles to study the phenomenon, unlike other more tangible commodities. Rather, it has been assumed that the economic benefits of tourism are substantial and irrefutable.


In contrast with the overwhelming majority of studies that emphasise the benefits of tourism, some rather surprising results were obtained from several recent studies that examined the benefits of tourism to island economies. A benefit-cost analysis by Bryden demonstrated that the net social benefit to residents of the Caribbean is low.\(^{16}\) In a study to examine the linkages between diversified agriculture and tourism in Hawaii, Renaud concluded that the development of the tourist industry has had no stimulating impact on local agricultural output. Instead, he noted "that there is a switch from agricultural exports to tourism without the possibility of simultaneous expansion of both sectors".\(^{17}\) An econometric model developed by Ghali showed that only fourteen percent of the growth in Hawaii's personal income after 1952 was due to tourism. He concluded that personal income would grow without tourism because of other exports and internal forces in the economy.\(^{18}\) These findings suggest that the subject of tourism impacts requires closer examination.


One way of assessing regional economic impacts is by multiplier analysis, which attempts to estimate the impacts of an exogenous expenditure in terms of its cumulative effects on production, income, and jobs. The use of regional multipliers has persisted despite those who claim that "they are out of fashion as an operational concept because of their excessive aggregation and lack of spatial dimension."\(^\text{19}\) Of particular interest is a regional model developed by Brian Archer for examining the impacts of tourism in terms of income and job creation.\(^\text{20}\) The model has the virtue of allowing various possibilities for disaggregation. As a result of this flexible quality, this modified form of the input-output approach has potential for the study of impacts within a spatial, as well as an economic, framework. As Berry points out,

"the integrating concepts and processes of the geographer relate to spatial arrangements and distributions, to spatial integration, to spatial interactions and organisation, and to spatial processes."\(^\text{21}\)

This methodology has been applied in previous case studies in

\(^{19}\) However, Richardson and Gordon even suggest the use of a spatial multiplier, using distance-decay concepts. Harry W. Richardson and Peter Gordon, "A Note on Spatial Multipliers," Economic Geography '54 (October 1978): 312.


Anglesey, Cardiganshire, Gwynedd, Greater Tayside, Cumbria, East Anglia and the Caribbean. 22

Archer’s original model was formulated to determine the differential multiplier effects of tourism at the stages of generation, by types of tourist businesses, and by types of tourists. 23 It has since been applied to different types of communities and levels of regional aggregation (by the tiered-region approach). 24


23 The tourism multiplier refers to the capacity of the tourist industry to generate income, while the tourist multiplier refers to the propensity of a particular type of tourist to create income.

Archer has also developed a model to determine the aggregate regional income multiplier, so that the tourism multiplier may be compared to it.

This study extends the application of the model to the establishment level. The reason for this choice is that the establishment is a more appropriate level of study than the industrial sector, because of the differences in operating processes and purchasing policies between firms. 25 As many studies have shown, these differences negate the assumption of homogeneous production functions. 26 This study focuses on the accommodation facility, which is regarded by Lundgren as the major transfer mechanism for the geographic distribution of tourism in the region.

"It is to this geographic place (accommodation), that tourist-originated demands are attached and it is from the same site that these demands diffuse into the surrounding geography. Thus by manipulating the accommodation function one can in effect control the consequences of the tourist demand on a regional basis." 27

24 (cont'd) Trent University, 1975), pp. 26-42.


26 Homogeneous in the sense of having similar production functions within the industrial sector.

Specifically, this study seeks to examine the differential multipliers of lodging establishments according to types of industrial organisation, e.g., by location, size, scale, affiliation, and ownership. The assumption underlying the study is that an investment which generates greater linkages is in some sense of greater importance for economic development than another. This intra-industry study has specific geographic application, since it enables one to examine patterns of transaction flows within the region, and to a limited extent, between regions. The goal of the study is to overcome some aspects of the problem of the distribution of benefits, which is justifiably one of the major criticisms of impact studies.

As such, this study is merely a starting point from which to examine the development potential of the tourist industry. It is hoped that more substantive knowledge of the contribution to income and jobs by the accommodation sub-sectors and by different types of tourists will provide a better understanding of the structure and process of the tourist industry in Victoria, and therefore, serve as a guide for decision making.

Finally, recent developments have accentuated the need for more substantive information on the tourist industry. In 1976 the service sector for the first time came under the auspices of

the Anti-Combines legislation designed to prevent noncompetitive practices. Further, in 1978 the Travel Industry Development Subsidiary Agreement (TIDSA) for B.C., negotiated with the Department of Regional Economic Expansion (DREE), provided $50 million to boost the travel industry in nonmetropolitan areas. The effectiveness of the Foreign Investment Review Agency (FIRA) in restricting foreign ownership and control of Canadian enterprise is currently undergoing re-evaluation in its sixth year of operation. In addition, the B.C. Ministry of Tourism has recently combined with the Ministry of Small Business, which indicates a concern for the development of the tourist industry along this direction. Lastly, a recent task force report identifies the importance of tourism as Canada's largest single employer and sixth largest source of foreign exchange. It notes that tourist spending amounts for 5 percent of GNP, and yields governments some $5 billion in tax revenues.

29 Canadian Institute of Travel Counselors, The Travel Industry and the Law, Seminar sponsored by the GICT, (Toronto, May 7, 1977), pp. 82-100.

Organisation of the Study

This study is organised into five chapters. The remainder of this introductory chapter will present some explanatory remarks on the definitions and concepts of the multiplier and the objectives and hypotheses of the study. The research methodology is presented in Chapter Two which begins with a discussion of the field survey methods involving data collection and deficiencies. The second part of Chapter Two is a description of the mathematical models based on the Archer method and of the techniques used for testing various proposed hypotheses. In Chapter Three the relevant socio-economic and spatial parameters of the study area are described. The statistical results and major findings are presented in Chapter Four, while the final chapter summarises the study and concludes with policy implications and recommendations for further research.

The Concept of the Multiplier

Although the multiplier concept is a familiar one, confusion still exists. It is therefore appropriate at this point to present some basic definitions and distinctions. The multiplier is defined variously in the literature. It is the
"ratio of a change in national (regional) income to the initiating change in expenditure that brings it about."\textsuperscript{32} Three models that can be used to produce multipliers are export base, ad hoc, and input-output. In export-base theory the multiplier is the change in total activity divided by the change in the relevant causal activity. Ad hoc multipliers are adapted from the classical Keynesian model. Input-output multipliers are based on the value of the flows of current transactions through the economy.\textsuperscript{33}

In traditional Keynesian theory the multiplier measures the change in income due to an autonomous injection of expenditure into an economy, for example, through exports, foreign investment, government investment, and in this case, tourist spending. This expenditure stimulates economic activity so that provided there are enough resources, additional business activity, household incomes, and jobs, are generated. Hence, the multiplier is an approximate measure of the general prosperity brought about by the exogenous spending to the region by adding up all the successive rounds of transactions. (see Figure 1)

This summing up occurs at three stages in the multiplier


Figure 1. Flow of the Tourist Dollar in the Local Economy.
process. The initial injection of tourist spending is called the 
direct expenditure. This initial round of spending creates 
direct revenue for hotels, shops, and other tourist businesses, 
to the extent that it does not leak out of the region. The 
amount of this money that remains in the region as wages, 
salaries, and local purchases from other businesses, are the 
so-called indirect effects, which depend on the extent of the 
interindustry linkages (local purchases from local businesses) 
in the economy. Induced effects are the increases in economic 
activity generated by local consumption due to rising wages and 
salaries. Together, the indirect and induced effects are also 
known as the secondary effects.

Four types of tourism multiplier are in common use. The 
first type is the transactions (or sales) multiplier, which 
relates tourist expenditure to sales generated in the local 
economy. The second type of multiplier, the output multiplier, 
is similar to the first, except that it measures the rise in 
 Inventories, as well as sales. Because of the difficulties of 
acquiring data on inventory changes, these two multipliers are 
usually considered to be identical. They reflect the total 
interdependence of the industrial sectors within the economy. 
For example, an "output" multiplier of 1.5 means that $1.5 
dollars of total industry requirements are needed to produce one
dollars worth of final demand for the industry in question.34

The third type of tourism multiplier, the income multiplier, falls into two distinct categories—the ratio or the normal. The ratio income multiplier is of the Type I or Type II variety. The Type I multiplier is the ratio of the direct and indirect income to the direct income, while the Type II multiplier is the ratio of the direct and secondary income to the direct income. Hence, the multiplicand, which is the initial unit the resultant change is measured against, is in income terms. Ratio multipliers provide a useful picture of degree of internal linkages in the economy and the relative importance of the secondary effects, but they do not give any indication per se of the volume of exogenous sales that is required to generate endogenous income. In other words, additional information is needed to link tourism receipts with the income that is generated.

By contrast, this link is achieved directly through the other type of income multiplier, called the normal income multiplier. The normal income multiplier attempts to measure the total amount of direct, indirect, and induced household income, e.g., wages and salaries, rent, interest, and profits, that is generated by a unit of additional autonomous expenditure. Because the multiplicand is in expenditure terms in this instance, it is more relevant and important as a guide for decision making.

The fourth type of tourism multiplier is the employment multiplier, which similarly falls into the ratio and normal categories. The ratio variety indicates the generation of secondary employment relative to the direct component, while the normal type indicates the total employment generation per unit of tourist spending. All these four types of multipliers are intrinsically related and all of them are useful as guidelines for public policy.

The most well-known income multiplier is the Keynesian multiplier, which was originally developed as an instrument for national economic planning. The classic model developed by Keynes in 1939 for a closed economy is:

35 Archer also refers to normal multipliers as "unorthodox", and to ratio multipliers as "orthodox".

---

35 Archer also refers to normal multipliers as "unorthodox", and to ratio multipliers as "orthodox".

18
\[
K = \frac{1}{1 - \text{mpc}}
\]

where, mpc is the marginal propensity to consume.

Various forms of this simple multiplier principle for open economies can be found in the tourist literature:

\[
K = \frac{1}{1 - \text{mpc + mpm}}
\]

where, mpm is the marginal propensity to import.\(^{36}\)

\[
K = \frac{1 - \text{tpm}}{1 - \text{mpc + mpm}}
\]

where, tpm is the tourists' propensity to buy imported goods and services.\(^{37}\)

Another adaptation suggested by Clawson and Knetsch was used as the basis of this study.\(^{38}\)

\[
K = \frac{A}{1 - BC}
\]

where, A is the proportion of tourist expenditure remaining in

\(^{36}\)Himan, op. cit.

\(^{37}\)Lundberg, op. cit.

the economy after first round leakages, B is the proportion of income that local people spend on local goods and services, and C is the proportion of the expenditure of local people that accrues as local income.

In all of these equations, the denominator is a measure of leakage elements, e.g., imports and savings. By definition, consumption leakages are the complement of local consumption and are inversely related to the size of the multiplier. In equations (3) and (4), factor leakages are the complement of local backward linkages plus local value-added. Thus, leakages represent what is not spent in the local economy.

Objectives and Hypotheses

The primary objective of this study is to assess the economic impact of tourism on the economy of metropolitan Victoria by estimating the multiplier effect of tourist spending on the generation of total income, sales, employment, government revenue, and imports. Further, differential tourist multipliers according to types of tourists are calculated. Since these multipliers reflect the spending patterns of tourists, such as overnight visitors and day-trippers, it is possible to compare their relative contributions to the local economy.

39 Backward linkages are purchases from suppliers, while forward linkages are sales to purchasers.
The secondary objective of the study is to examine differential accommodation multipliers according to types of industrial organisation. These multipliers reflect the variations in local value-added, industrial linkages, and leakages. As was explained earlier, the normal income multipliers indicate the capacity to generate marginal income per unit of tourist expenditure, while the ratio income multipliers indicate the relative importance of the three stages of the multiplier process. In addition, the overall level of economic activity created by tourist spending is measured by the transactions multiplier. Furthermore, labour-intensiveness can be measured in terms of either wages or number of jobs.

There is some evidence in the literature that indicate that there are a priori reasons for expecting the multiplier effects of large and foreign plants to be lower than those of small and local ones. Stigler argues that buying and selling patterns are a function of information availability and that large establishments are likely to enjoy economies of scale in information collection. Pred discusses labour and agglomeration economies in relation to accessibility to markets. Keeble

40 It has been suggested that "the behaviour of firms may perhaps be explained more effectively with reference to a multi-variate classification which categorises plants according to their position within a chain of production, their organisational status or their ownership background rather than the traditional manufacturing sectors." P. A. Wood, "Industrial Location and Linkage," *Area* 2 (1969): 34-39.
relates local industrial linkages to resultant economies of scale in manufacturing firms. A study in Ireland, using a linkage model, showed that native firms have higher backward and forward linkages than foreign firms, and that foreign firms show little sign of developing further linkages. In short, the rationale is that the large, foreign firms enjoy economies of scale in production and purchasing and also have relatively few linkages in the local economy.

The multiplier variables tested in this study are the direct, indirect, and total income multipliers, the direct, indirect, and total employment multipliers, ratio multipliers, and transactions multipliers. Other selected variables of interest are the proportion of wages to total revenue, direct import content, other value-added, and percentage loss in revenue due to the increase in ferry fares. These variables are correlated to organisation variables denoting the following ways of classifying the accommodation sector:

1. Location of establishment (Highway 1A, North Downtown, Downtown).


42 See also, Lever, op. cit.
2. Size (number of units).
3. Scale (total revenue per unit; or total room revenue per unit).
4. Type of affiliation (owner-operated, hired-management, referral, franchise, chain).
5. Type of ownership (locally-owned, externally-owned).
6. Type of establishment (motel, hotel).
7. Type of facility (nonlicensed, licensed; or ratio of food and beverage revenue to room revenue).
8. Class of hotel (average roomrate).
9. Return on operation (profit before depreciation per unit).
10. Level of occupancy (average occupancy rate).

Specifically, measures of association, using analysis of variance and bivariate measures of association, are conducted for the multipliers and selected variables of the accommodation sub-sectors with the organisation variables.

The results are expected to confirm previous findings that the larger, more concentrated and externally-owned

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43 For further detail on the organisation variables, see Appendix 2.

44 When analysis of variance is used, the multipliers and selected variables are the dependent variables at the interval or ratio level, while the organisation variables are the nominal independent variables. The use of analysis of variance in the geographic literature can be seen in Peter Haggett, Locational Analysis in Human Geography, (New York: St. Martin's Press, 1966), p. 290; Susanne R. Walker, "Linkage Structures in an Urban Economy," Regional Studies 11 (1977):263-273; and Stewart, op. cit.
establishments have lower multipliers because they have less linkages in the local economy. Since the location variable is also a surrogate for distance, one might hypothesise that the more centrally-located establishments have lower multipliers than the more peripherally-located ones. It is also hypothesised that these lower estimates are associated with higher import and lower local value-added ratios. Additionally, rate of occupancy and elasticity of revenue with transportation cost is expected to vary by organisation type. The objective is to see whether or not industrial organisation or geographical factors affect the propensity to generate income and jobs in the local economy.

The above hypotheses were put into a testable form as the following null hypotheses to be accepted or rejected at the 5 percent level.

1. There is no association between the multipliers and the organisation variables.
2. There is no association between import content and the organisation variables.
3. There is no association between the value-added ratios and the organisation variables.
4. There is no association between occupancy rate and the organisation variables.
5. There is no association between vulnerability to changes in accessibility and the organisation variables.
II. THE RESEARCH DESIGN

While the previous chapter has presented the conceptual framework, the purpose of this chapter is to present the general methodology of the study. Since this study is based upon a questionnaire survey of 45 hotels and motels in Victoria, as well as various published data, the first part of the chapter discusses the various data sources, the questionnaire design, the field survey techniques, and data limitations. The second part of this chapter introduces the mathematical models used in calculating regional income and employment generation and in hypothesis testing.

Field Survey Methods

A survey of the accommodation sector was conducted for this study. The purpose of the survey was to collect information on purchasing patterns, income and expenditures, geographic distribution of purchases, employment, and other background information. Ideally, this type of information should be collected from all of the tourist businesses in the region. However, since such information is difficult to come by, a heavy reliance was made on whatever published sources were available.
The Data Sources

After the literature was reviewed, a number of organisations and agencies at the federal, provincial, and local levels were contacted in the search for more relevant data at the initial stages of the project. The following sources of information proved to be the most useful:


These surveys were conducted by the B.C. Research Council under the sponsorship of the B.C. Department of Travel Industry. The results of these surveys were incorporated into two other useful sources of information—the B.C. Tourism Model developed by B.C. Research and the Vancouver Island Tourism Facts Book 1977 produced by B.C. Tourism Ministry.²

7. Statistics Canada Publications.

Secondary data for the nonaccommodation sectors were obtained from Corporation Financial Statistics (61-207), Corporation Taxation Statistics (61-208) and The Input-Output Structure of the Canadian Economy, 1961-1974

¹ Complete references for these source materials can be found in the bibliography.

² The present Department of Small Business and Travel Industry has also been known in previous years as the Department of the Provincial Secretary and Travel Industry, B.C. Tourism, and Department of Travel Industry.
(15-508). Information on the pattern of household expenditure, personal income tax, and the propensity to consume were obtained from *Urban Family Expenditure* (62-544).

8. An Interindustry Study of the Metropolitan Vancouver Economy.

This input-output study conducted by Craig Davis on the 1971 economy was used as the basis for the adjusted interindustry coefficients of the economy of Metropolitan Victoria.


This economic base study conducted by the Capital Regional District provided information on imports and employment for the Victoria region. The 1977 survey of visitors (Impact) provided additional information for tourists in Victoria.


A variety of data were obtained from a number of secondary sources, including the *B.C. Regional Index*, *B.C. Economic Summary*, and *B.C. Facts and Statistics*, Ministry of Economic Development.

The Questionnaire

The questionnaire is included in Appendix III. The first part of the questionnaire dealt with pertinent background facts about the company, including years of operation, occupancy rate, business organisation, and ownership. The second part was
designed to collect data on the numbers and location of
suppliers and amounts and geographical distribution of
purchases. In the third section, data on income and expenditure
breakdowns were requested. The fourth part required the
interviewee to estimate the number of employees in several
categories. An attempt was made in the final section to canvass
hoteliers on the effect of the ferry fare increase in the summer
of 1976 and their opinions on how the tourist trade could be
improved.

The Sample Population

The Directory of B.C. Tourist Accommodations provides a
listing of the provincially-approved tourist lodgings. It is a
voluntary directory estimated to be 80 percent complete. A
sample of the seventy-six hotels and motels closest to Victoria
city was chosen from this listing. No attempt was made to
survey campgrounds and trailer parks. The sample population
represents 85 percent of the hotels and motels in Metropolitan
Victoria by number and 95 percent of the unit-capacity.

3 This part of the questionnaire uses a format similar to the
one used to study the impact of tourism in the Bahamas. Archer,
Tourism in the Bahamas and Bermuda, op. cit.

4 Tourism B.C. Directory of British Columbia Tourist
Accommodation 1977, Victoria B.C.

5 Motor hotels were classified as hotels.
The Field Interviews

Prior to the survey in Victoria, a pilot study was conducted in Vancouver. Twenty hotels and motels were arbitrarily selected and were sent a letter explaining the nature of the study and outlining the information that would be required. They were later contacted by telephone for the purpose of scheduling an interview. Although only four interviews were granted, the experience provided the opportunity to improve the questionnaire design and sharpen interviewing techniques.

Before the inception of the survey in Victoria, the relevant local public and private tourism organisations were contacted and additional support for the study was obtained. It was decided that the best period for the survey would be the late spring after the tax reporting period. Accordingly, in May 1978 a letter of introduction was sent to the seventy-six establishments along with a self-addressed envelope and card indicating the most convenient times to schedule an interview during the next two months. As a follow up, each of the seventy-six hoteliers were telephoned. The personal interviews, which ranged from one-half hour to two hours, were conducted over a period of four months.

Of the seventy-six establishments contacted, fifty-eight responded with interviews during the period of the survey and about a dozen more indicated a willingness to be surveyed during the winter. However, usable financial information was obtained
from only forty-five establishments, representing 58 percent of the establishments but 64 percent of unit-capacity in the sample space. The next section of the chapter discusses the representativeness and reliability of the data, as well as the preparations involved in processing the data.

Data Deficiencies and Limitations

In order to examine the representativeness of the participating establishments, the sample listing was grouped by size. Hotels with less than 75 rooms and motels with less than 25 rooms were considered to be small. The response rates of these four categories are:

- 9 small hotels, or 75 percent.
- 11 large hotels, or 61 percent.
- 16 small motels, or 53 percent.
- 9 large motels, or 56 percent.

When grouped by location the response rates are as follows:

- 24 establishments in the downtown area, or 59 percent.
- 18 establishments along Highway 1A, or 58 percent.
- 3 establishments in Saanich, or 75 percent.

And when grouped by affiliation the response rates are:

- 6 chain or franchise establishments, or 100 percent.

---

These designations are among those used by Statistics Canada in data collection. Personal communication with Jerry Freda, Statistics Canada, Ottawa, Ontario.
4 referral establishments, or 50 percent.
35 independent establishments, or 56 percent. 

Although the survey can be considered to be fairly representative in terms of size, location, and affiliation, it is biased in several respects. Several managers of externally-owned establishments were reluctant to cooperate without permission from the owner. The owners were contacted by mail, but it was difficult to get them to participate. The sample is also biased toward the Victoria municipality for the sake of convenience in data collection. Finally, the sample is also biased toward those who were willing to cooperate and probably toward those that keep better financial records. 

However, these difficulties can never be entirely overcome in any survey.

In addition, the reliability of the data is also an important consideration. At the end of each interview, the financial information was rated according to the following

7 Chain establishments are those that are entirely owned by a firm owning four or more establishments. Franchise operations are those that pay a fee for management contracts, while referral organizations are those that obtain promotional or referral services without payment. Some examples are: Canadian National, Slumberlodge, and Delta (chain); Best Western and Holiday Inns (franchise); and Flag Inns, Prestige Inns, and Canadiana (referral). Independent operations are completely unaffiliated although there may be cases of multiple ownership by the same company.

8 This is not entirely undesirable since it ensures more reliable data.
scale:
1. Data from financial statement - 29 responses.
2. Estimation with reference to financial records - 7 responses.

This means that about eighty percent of the responses in the first two categories are reasonably accurate. Of course, data on items such as suppliers and employment were at best, intelligent guesses.

In any case, it was necessary to perform some consistency checks and make some adjustments to the raw data because of problems of aggregation, omissions, and noncompatibility. Despite efforts to standardise accounts by the Uniform System of Accounts, a variety of accounting procedures are practiced.\textsuperscript{9} Coding the data into the desired format required adjustments in some cases such as using average ratios from establishments of similar type, size, and location. Missing and incomplete data were handled in the same fashion.

Expenditures were correlated with revenues and the trends were as expected with high positive coefficients for almost all items, except capital expenses. However, there are ambiguities in items such as profits, proprietor's salary, and capital

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expenditures due to the peculiarities of keeping financial records for tax purposes.

The sample size is not particularly small compared to similar studies in the literature, but it does limit the extent to which the sample can be disaggregated. Another limitation is that the data were obtained from a variety of sources and span a period of seven years (1971-1977). However, this problem could not be overcome because of resource constraints and is partially mitigated in that the analysis requires percentages and ratios rather than the actual dollar amounts.

An insurmountable difficulty is that the survey data are not compatible with the nonsurvey data, since different methods were used to collect them. Hence, any comparisons between the accommodation and nonaccommodation sectors are unreliable. However, comparisons within the accommodation sector are acceptable, if one bears in mind that multipliers are merely crude approximations and that their primary usefulness is their function in comparing accommodations, industrial sectors, tourists, and regions.
The Archer Multiplier Estimation Method

The Tourism Income Model

As was previously mentioned the methodology developed by Archer was based on equation (4) (page 19) and is of the normal income type. Hence, it measures the ratio of total income generated per unit of the initial injection of tourist expenditure. The regional tourism income multiplier is determined by the following equation:

\[ \frac{1}{1 - C \sum_{i=1}^{I} X Z V} \prod_{j=1}^{J} \prod_{i=1}^{I} Q_{j} K_{ij} V_{i} \]  \hspace{1cm} \ldots (5) \]

where, \( j \) is each category of tourist, \( i \) is each type of business, \( Q_{j} \) is the proportion of total tourist expenditure spent by the \( j \)th type of tourist, \( K_{ij} \) is the proportion spent by the \( j \)th type of tourist in each \( i \)th type of business, \( V_{i} \) is the direct and indirect income generated per $1 of revenue by the \( i \)th type of business which receives tourist expenditures, \( C \) is
the propensity to consume, $X_i$ is the proportion of total consumer spending by the residents of the tourist region in the $i$th type of business, and $Z_i$ is the proportion of consumer spending by residents in the $i$th type of business within the region.

Archer explains the components of the model:

"In essence, the regional income multiplier can be disaggregated into two possible parts. Firstly, the direct and indirect income generated within the region by a unit of tourist spending can be expressed as the QKV term. This formula is really a working method of reducing the value of a unit of the multiplicand to allow for those direct leakages which do not contribute to the formation of regional income. Secondly, the additional income generated by the re-spending of factor earnings by the resident population of the recipient region can be found by applying a multiplier expression to this formula."$^{10}$

It can be seen that import leakages occur in two ways--when local businesses purchase goods from outside the region and when consumers spend money outside the region.

The Value-added Model

In order to calculate meaningful multiplier values, regional income generation (RIG) coefficients were derived for each industry in terms of local value-added. The value-added

formula developed by Archer is as follows:

\[
V = \frac{1}{S} \left[ W(1-h-tw) + P(1-tp) + R(1-tw) + \sum_{i=1}^{I} M_i V_i \right]
\]

where, \( V \) is the regional income coefficient for each business, \( W \) is the gross wages and salaries paid to residents in the region, \( h \) is the deductions made for social insurance and benefits, \( tw \) is the tax rate on wages and salaries, \( P \) is the profits accruing to residents in the region, \( tp \) is the tax rate on profits, \( R \) is the rent payments to residents in the region, \( M_i \) is the cost payments made to the \( i \)th business type, \( V_i \) is the regional income generated by the \( i \)th business type, and \( S \) is the total sales turnover of the business.

The two components in this model are the direct and indirect value-added. Direct local value-added is defined as the sum of the wages and salaries, rent, interest, and profits paid to local residents, per dollar of sales turnover. Indirect local value-added is the additional value-added created in other sectors of the local economy as a result of any local purchases made by businesses receiving tourist dollars and also the chain reaction of further purchases. Note that leakages from value-added occur when wage or factor payments in the form of
rent, interest and profits are paid to nonresidents.

The Archer method disaggregates businesses into average and marginal businesses, defined respectively as businesses that depend primarily on tourism and businesses that rely only partly on the tourist trade. In previous studies separate value-added coefficients were calculated for the two types of businesses giving two values for the retail trade sector, for example. Since data at this level of detail were not available, only one coefficient was computed for each nonaccommodation sector as a whole.\(^{11}\)

Notice that the value-added coefficients (equation (6), page 36) can also be expressed as a system of linear equations of the form

\[
x = y + Ax \quad \ldots \ldots \ldots \ldots \ldots . (7)
\]

where, \(x\) is the vector of direct and indirect RIGs for each industry, \(y\) is the vector of direct value-added coefficients as defined above, and \(A\) is the interindustry transactions

\(^{11}\) Thus, the coefficients computed in this study are expected to be slightly larger than those computed by using marginal and average coefficients, since the average coefficients are probably larger than marginal ones. This is because the marginal businesses require a certain number of support staff during the slack tourist season, so that the extra value-added as a ratio to tourist revenues is probably smaller than the average ratio.
coefficients matrix.\textsuperscript{12} Hence, the standard solution, using the Leontief inversion technique, can be employed, since

\[ x - Ax = y \] \hspace{1cm} (8)

\[ (I - A)x = y \] \hspace{1cm} (9)

\[ x = (I - A)^y \] \hspace{1cm} (10)

where, $I$ is the identity matrix.\textsuperscript{13} Hence, equation (10) is the solution for the direct and indirect income change, as well as for the other input coefficients of government revenue and imports.

Extension to the RIG Model

The model was modified in order to determine tourism multipliers that reflect variations within the accommodation sector by organisation type. This is accomplished by including an additional weighting term to the multiplier equation, so that income generation coefficients are determined separately for

\textsuperscript{12} The $A$ matrix is the transposed constant coefficients matrix of the input-output variety, with the exception that transactions are in purchasers prices, rather than the usual convention of using producers prices.

\textsuperscript{13} The matrix techniques can be found in Miernyk, op. cit.; Richardson, op. cit.; and Walter Isard, \textit{Methods of Regional Analysis: An Introduction to Regional Science}, (Cambridge: The M.I.T. Press, 1960).
each business category. In this way, linear nonhomogeneous
functions are derived for the accommodation sector.

Hence, for every \( i \), each type of accommodation
establishment (hotel, motel),

\[
V = \sum_{h=1}^{H} f \cdot V \quad \ldots \ldots \ldots \ldots \ldots (11)
\]

where, \( h \) is the level of industrial organisation, \( F_{ih} \) is the
proportion of expenditure on accommodation in each \( h \)th level of
organisation of the \( i \)th type of business which receives tourist
expenditure, and \( V_{ih} \) is the direct and indirect income generated
per $1 of revenue by each \( h \)th level of organisation of the \( i \)th
type of business which receives tourist expenditure.

The general form of the multiplier estimation model
incorporating this modification then is:

\[
\sum_{j=1}^{J} \sum_{i=1}^{I} \sum_{h=1}^{H} q_{ji} k_{ih} f_{ih} V \quad \frac{1}{I} \quad \ldots \ldots \ldots \ldots (12)
\]

\[
1 - \sum_{i=1}^{I} x_{ii} z_{ii} v_{ii} \quad i = 1 \quad i \quad i \quad i
\]

where, the symbols are as defined above.
Thus, the local value-added for the accommodation sector is the weighted sum of the income generation coefficients of each type of hotel. For the nonaccommodation sectors, the model is constrained so that it becomes the original multiplier equation, such that for every \( i \) = nonaccommodation business, \( h = 1 \), \( F_{ih} = 1 \) and \( V_{ih} = V_i \), in other words, the \( F_{ih}V_{ih} \) term becomes the \( V_i \) term in equation (5) (page 34).

The Regional Income Multiplier

The adapted model for the aggregate regional income multiplier is:

\[
\sum_{i=1}^{I} \frac{1}{1-C} \times X \times V_{ii} \times I = \left( \sum_{i=1}^{I} - \frac{1}{1-C} \times X \times Z \right) \times V \quad \text{(13)}
\]

where, the symbols are as defined above.\(^{14}\)

\(^{14}\) Archer, "The Anatomy of a Multiplier," op. cit., p.75.
The Regional Employment Generation Model

The final model to be presented is the regional employment multiplier model.\textsuperscript{15}

\[
\sum_{j=1}^{J} \sum_{i=1}^{I} Q_{ji} K_{j} E_{i} \quad + \quad \sum_{j=1}^{J} \sum_{i=1}^{I} Q_{ji} K_{j} V_{ji} \quad \frac{1}{I} \quad \sum_{i=1}^{I} X_{i} E_{i} \quad \ldots \quad (14)
\]

\[
1 - C \sum_{i=1}^{I} X_{i} Z_{i} V_{i} \quad \frac{1}{I}
\]

where, \( E_{i} \) is the amount of employment (direct and indirect) generated by $1 of tourist expenditure in the \( i \)th type of business and the other symbols are as defined above.

This model is divided into two parts. The first expression on the top measures the direct and indirect employment generated in the business sectors of the economy by a unit of tourist expenditure. The second term measures the employment induced by the household incomes derived from tourism. The expression in

\textsuperscript{15} Archer and Jones, \textit{Tourism in Appleby}, op. cit., pp. 104-5.
the brackets is the region's income multiplier (see equation (5), page 34). The addition of the two expressions is the total employment multiplier.

The values of \( E_i \) are the regional employment generation coefficients (REG), which is similar in form to the RIG model (equation (6) (page 36)).

\[
E = \frac{D + \sum_{i=1}^{M} E_i}{S}
\]

where, \( D \) is the number of employees for each business and the other symbols have the same meanings as in equation (14) (page 41).

Several salient points may be noted concerning the methodology adopted in this study. First, the original regional tourism model developed by Archer in 1971 included the initial unit of tourist expenditure so that the income multiplier consisted of the value estimated by equation (5) (page 34) plus one. Archer later omits the initial unit, "since it represents only the initial unit of tourist expenditure, the benefit of
which accrues to the tourist.\textsuperscript{16} Second, leakages are more rigorously calculated compared to the other more aggregated models, since leakages are accounted for in the value-added items, as well as for imports and savings.\textsuperscript{17}

Third, in departure from the Archer method, an input-output framework is used as the basis of the calculations, since data are available from published sources. This makes a survey of all the tourist businesses unnecessary, although it means that one cannot distinguish between marginal and average tourist businesses.

Fourth, the weighted coefficient for the accommodation sector is expected to be smaller than that calculated by the method using overall sums since a larger proportion of sales accrues to the larger establishments with presumably smaller RIG coefficients. To some extent, this should compensate for the larger values obtained by not excluding nontourist-related transactions in the marginal businesses.\textsuperscript{18} Fifth, as has been the case with virtually all multiplier studies, average propensity to consume was used because of data restrictions.

\textsuperscript{16} Archer, "Anatomy of a Multiplier," op. cit., p. 73.

\textsuperscript{17} In contrast to the usual national accounting definition of value-added, government revenues are considered to be a leakage in the first round, although the multiplier effects of further public spending in the local economy are accounted for.

\textsuperscript{18} Refer to Footnote 11.
Finally, while conventional models assume uniform impacts from all exogenous spending, this method accounts for the relative contributions by the various types of tourists. Hence, the model is essentially a modified input-output analysis that attempts to measure the contribution of tourism to the local economy by adopting a more rigorous method of calculating net values than the more aggregated multiplier models.

**Statistical Models**

The statistical techniques to be presented are analysis of variance, Spearman correlation and Pearson product-moment correlation.¹⁹

Analysis of Variance

The basis of analysis of variance is the decomposition of variation or sums of squares corrected for the mean (SS). In a one-way analysis of variance there is a dependent, or criterion variable Y and a categorical independent variable, or factor, A. The between groups sum of squares is often denoted as $S_{SSa}$, that

is, the portion of the sum of squares in \( Y \) due to factor \( A \). The within groups sum of squares if often denoted as \( SSe \), which is the variation which is not accounted by \( A \). The sum of these two quantities is \( SSy = SSA + SSe \), which is the total sum of squares in \( Y \).

Analysis of variance tests the hypothesis that there are no differences between means of groups, that is,

\[
Ho = t1 = t2 = \ldots th = 0
\]

where, \( h \) is the number of groups and the \( t1, t2, \ldots th \) are the differences between the \( h\)th group means and the overall mean level. It is usual to test the hypothesis by comparing the ratio of the between groups mean square to the within groups mean square with the \( F \) distribution.\(^2\)

Eta is a descriptive statistic used for measuring the strength of the effects of \( A \) on \( Y \), where

\[
\eta^2 = \frac{SSA}{SSy} \quad (16)
\]

\( \eta^2 \) denotes how much of the variation in the dependent variable is explained by the independent variable. It is called the correlation ratio and ranges from 0 to 1. It is basically an indication of how dissimilar the means on the dependent variable

\(^2\) Draper and Smith, op. cit., p. 244; and Nie et al., op. cit., pp. 400-401.
are within the categories of the independent variable.\textsuperscript{21}

**Pearson Product-Moment Correlation Coefficient**

The Pearson correlation coefficient, $r$, is used to denote the strength of the relationship between two interval-level variables. The strength of the relationship indicates both the goodness of fit of the linear regression line to the data and, when $r$ is squared, the proportion of explained variance by the other variable. A negative $r$ denotes an inverse relationship. Mathematically, $r$ is defined as the ratio of covariation to the square root of the product of the variation in $X$ and the variation in $Y$, where $X$ and $Y$ symbolise the two variables.\textsuperscript{22} The $r$ ranges from -1 to 1, while the $r^2$ ranges from 0 to 1.

**The Spearman Correlation Coefficient**

The Spearman rank-order correlation coefficient is similar to the Pearson correlation coefficient, except that it requires that the variables be at least ordinal in scale.

\[
\rho = 1 - 6 \sum_{i=1}^{N} \frac{d_i^2}{N^3 - N}
\]

where, $d$ is the difference between the ranks of the two

\textsuperscript{21} Nie et al., op. cit., p. 230.

\textsuperscript{22} Nie et al., op. cit., p. 281.
variables for each case. Spearman's rho is defined as the sum of the squared differences in the paired ranks for two variables over all cases, divided by a quantity which is what the sum of the squared differences in ranks would have been had the two sets of ranking been totally independent.23

23 Nie et al., op. cit., p. 209.
III. THE TOURIST INDUSTRY IN METROPOLITAN VICTORIA

The purpose of this chapter is to describe the geographic landscape of Victoria. In addition, the importance of the tourist industry is discussed in terms of the supply and demand components of tourism in Victoria. The region is divided into six tourist market areas in order to provide a better base for the analysis of the distribution and impact of tourist activities in the region. Since the study focusses on the hotel sector, survey results are presented on establishment concentration, occupancy rates, and vulnerability to changes in accessibility. The theme of this chapter is Victoria's attractiveness as a resort located on an island and its representativeness of the diverse nature of tourism in B.C.

The Geographic Landscape

Vancouver Island is situated between latitudes 48 20' - 50 40' north and longitudes 123 10' - 128 30' west with an area of some 32,100 square kilometres (12,519 sq. miles). It is the largest of North America's offshore islands with a predominantly mountainous core composed largely of a heterogeneous group of pre-Cretaceous sedimentary and volcanic rocks. This mountainous
core is surrounded by coastal lowlands, particularly in the north and east.1 (see Figure 2)

It was on the southeastern coastal plain that European Settlement developed beyond the stage of the isolated fur trading post. However, the greater part of the island still consists of wilderness frontier.2

In 1976, metropolitan Victoria had a population of 218,404, which represented approximately 50 percent of the population of Vancouver Island and 9 percent of that of the Province. (see Table 1) Its eleven municipalities can be seen in Figure 3.

The climate of Vancouver Island has been characterised as "humdrum" because it possesses a "mild, unexciting, unspectacular, maritime climate, experiencing neither extremes of heat nor cold." Severe weather events are almost unheard of and the southeast has only a moderate annual precipitation and a relatively dry summer.3

In short, Victoria's beautiful physical setting as a water resort within close proximity to scenic mountainous terrain, mild climate, and sport fishing, make it a popular tourist

1 Harold D. Foster, "Relief, Drainage and Natural Hazards, Vancouver Island: Land of Contrasts, ed. Charles N. Forward, Western Geographical Series Vol. 17, University of B.C., (Victoria: University of Victoria, 1979), p. 51
2 Ibid, p. 1
3 Stanton E. Tuller, "Climate", Vancouver Island: Land of Contrasts, op. cit., p. 86.
Figure 2. The Vancouver Island Tourist Region.

Figure 3. The Victoria Metropolitan Area.
<table>
<thead>
<tr>
<th>Municipality</th>
<th>1976 Census</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victoria</td>
<td>62,551</td>
</tr>
<tr>
<td>Esquimalt</td>
<td>15,053</td>
</tr>
<tr>
<td>Oak Bay</td>
<td>17,658</td>
</tr>
<tr>
<td>Saanich</td>
<td>73,383</td>
</tr>
<tr>
<td>Central Saanich</td>
<td>7,413</td>
</tr>
<tr>
<td>North Saanich</td>
<td>4,697</td>
</tr>
<tr>
<td>Sidney</td>
<td>6,732</td>
</tr>
<tr>
<td>Subdivision B*</td>
<td>29,437</td>
</tr>
<tr>
<td>Indian Communities</td>
<td>1,480</td>
</tr>
<tr>
<td><strong>Census Metro Area</strong></td>
<td><strong>218,404</strong></td>
</tr>
<tr>
<td><strong>Vancouver Island</strong></td>
<td><strong>441,417</strong></td>
</tr>
<tr>
<td><strong>British Columbia</strong></td>
<td><strong>2,466,608</strong></td>
</tr>
</tbody>
</table>

**SOURCE:**


*Langford, Colwood, Metchosin, and View Royal destination. In addition, the presence of the world-famous Butchart Gardens, as well as its "Olde English" charm, increases
its attractiveness.\(^4\) According to a study which calculated
catchtivity indices for the Province, Vancouver Island ranks
first as the most attractive of the 8 tourist regions, while
Victoria ranks second among the 19 tourist districts.\(^5\) Visitors
to Victoria can easily participate in the range of experiences
that the Province offers, including the wilderness experience in
camps or resorts in the northern areas.

Economic Development

Micklewright has pointed out that the manufacturing sector
of Vancouver Island may be characterised by a "strong dependence
on wood and wood-related industries on one hand, and a
concentration of non-wood-related industries in the Capital
Regional District on the other hand."\(^6\) The major manufacturing
activities in metropolitan Victoria, based on the 1971 census by
percentage of the labour force, are wood (28.8 percent), food
and beverage (20.1 percent), print and publishing (12.2

\(^4\) Kenneth Lines, "A Bit of Old England: The Selling of Tourist

\(^5\) Turgut Var, Doug Beck, and Patrick Loftus, "Determination of
Touristic Attractiveness of the Touristic Areas in British

\(^6\) The Capital Regional District includes metropolitan Victoria,
Sooke, Saltspring Island, Outer Gulf Islands and Indian
Communities. In 1976 the population of the Capital Regional
District was 230,592.
percent), and transportation equipment (9.8 percent). 7

Victoria's production and employment by industrial sector can be seen in Table 2. The primary sector, consisting of agriculture, forestry, fishing, and mining, is relatively small with less than 3 percent of the labour force. Only 11.4 percent of the working population is employed in the primary and secondary sectors. This means that the tertiary sector accounts for about 89 percent of total employment, and an estimated 78 percent of total production. This implies weak backward linkages and a high import content to pay for imported goods.

The labour force in the primary and secondary sectors in Victoria is at least half of that of the Province and Nation. (see Table 3) Hence, the Victoria economy can be described as having a predominant service sector and a weak basic sector. However, Micklewright views the potential for the development of the manufacturing sector as rather limited because of Victoria's isolation in time-cost terms, the small size of the local market, and the increasing concentration of industrial ownership. On the other hand, he states that the same isolation and presence of important amenities are positive influences in attracting industries with high value-low weight products. He identifies the tourist industry, research establishments,

## TABLE 2

PRODUCTION AND EMPLOYMENT BY INDUSTRIAL SECTOR,

VICTORIA METROPOLITAN AREA

<table>
<thead>
<tr>
<th>Industry</th>
<th>Production $('000)</th>
<th>%</th>
<th>Employment (1976)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>180,000</td>
<td>8.6</td>
<td>2400</td>
<td>2.8</td>
</tr>
<tr>
<td>Construction</td>
<td>112,300</td>
<td>5.4</td>
<td>5278</td>
<td>6.3</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>286,400</td>
<td>13.7</td>
<td>7236</td>
<td>8.6</td>
</tr>
<tr>
<td>Wholesale</td>
<td>350,000</td>
<td>16.7</td>
<td>2514</td>
<td>3.0</td>
</tr>
<tr>
<td>Retail</td>
<td>436,000</td>
<td>20.8</td>
<td>11,100</td>
<td>13.1</td>
</tr>
<tr>
<td>Transportation</td>
<td>53,206</td>
<td>2.5</td>
<td>4,367</td>
<td>5.2</td>
</tr>
<tr>
<td>Communications</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>and utility</td>
<td>18,694</td>
<td>.9</td>
<td>1,535</td>
<td>1.8</td>
</tr>
<tr>
<td>Finance</td>
<td>311,500</td>
<td>14.8</td>
<td>4,216</td>
<td>5.0</td>
</tr>
<tr>
<td>Service</td>
<td>300,000</td>
<td>14.3</td>
<td>24,363</td>
<td>28.9</td>
</tr>
<tr>
<td>Government</td>
<td>50,000</td>
<td>2.4</td>
<td>21,410</td>
<td>25.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,098,100</strong></td>
<td><strong>100.0</strong></td>
<td><strong>84,419</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

**SOURCES:**


<table>
<thead>
<tr>
<th>Industry</th>
<th>Metro Victoria %</th>
<th>British Columbia %</th>
<th>Canada %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>2.9</td>
<td>7.5</td>
<td>8.4</td>
</tr>
<tr>
<td>Construction</td>
<td>6.3</td>
<td>7.0</td>
<td>6.2</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>8.8</td>
<td>16.1</td>
<td>19.8</td>
</tr>
<tr>
<td>Trade</td>
<td>15.9</td>
<td>16.2</td>
<td>14.7</td>
</tr>
<tr>
<td>Transportation, communication and other utilities</td>
<td>6.8</td>
<td>9.5</td>
<td>7.8</td>
</tr>
<tr>
<td>Finance, insurance and real estate</td>
<td>4.8</td>
<td>4.6</td>
<td>4.2</td>
</tr>
<tr>
<td>Community, business and personal services</td>
<td>28.2</td>
<td>24.8</td>
<td>23.7</td>
</tr>
<tr>
<td>Public administration</td>
<td>18.8</td>
<td>6.3</td>
<td>7.4</td>
</tr>
<tr>
<td>Other</td>
<td>7.5</td>
<td>7.9</td>
<td>7.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

**SOURCE:**


consulting firms, and their related industries, as particularly viable.\(^8\)

\(^8\) Ibid., p. 262
The Importance of the Tourist Industry

There are two components of the tourist industry. The supply side consists of the "tourism plant", including accommodation, restaurants, tourist attractions, and gift shops. On the demand side is the "tourist", defined by the International Union of Official Travel Organisations (IUOTO), as temporary visitors staying at least 24 hours for the purposes of leisure or business. In this study the impact of day-trippers is also considered, since they constitute about 20 percent of visits to Canada.

Tourist Demand

In 1977, the volume of visitors to Victoria is estimated to have been approximately 1.5 million, including day-trippers, which was about 7 times the local population. (see Table 4) This figure can be compared to the 1.9 million overnight visitors to Vancouver Island. In 1977 tourist expenditures were an estimated 135 million dollars in metropolitan Victoria, or about half the

---

### TABLE 4
EXPENDITURE PATTERNS OF TOURISTS IN VICTORIA, 1977

<table>
<thead>
<tr>
<th>Category of Expenditure</th>
<th>Overnight Visitors</th>
<th>Day-trippers</th>
<th>All Tourists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vancouver Residents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accommodation</td>
<td>23%</td>
<td>15%</td>
<td>22%</td>
</tr>
<tr>
<td>Transport</td>
<td>16%</td>
<td>26%</td>
<td>18%</td>
</tr>
<tr>
<td>Meals</td>
<td>27%</td>
<td>26%</td>
<td>27%</td>
</tr>
<tr>
<td>Groceries</td>
<td>2%</td>
<td>10%</td>
<td>3%</td>
</tr>
<tr>
<td>Entertainment &amp; Recreation</td>
<td>11%</td>
<td>6%</td>
<td>10%</td>
</tr>
<tr>
<td>Shopping</td>
<td>21%</td>
<td>17%</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TOURIST EXPENDITURES AND NUMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tourist Expenditures ($) mm</td>
</tr>
<tr>
<td>Accommodation</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

**SOURCES:**

Tourism B.C. Vancouver Island Tourism Facts Book 1977, (Victoria: Queen's Printer, 1977)


tourism revenue in Vancouver Island.\textsuperscript{10}

The market share of tourism on Vancouver Island is estimated to be about 20 percent of that of the Province. It is evident in Figure 4 that the rate of growth of tourism revenues for B.C. exceeds that of the Island.

The expenditure patterns of overnight visitors, consisting of nonresidents and Vancouver Island residents, and day-trippers can be seen in Table 4. As can be expected, these three groups spend different proportions of the tourist dollar on accommodation with the difference accounted for by transportation expenses. Another noticeable difference is that resident tourists spend about 8 percent more on groceries than the other groups.

Several distinctive features of the Vancouver Island tourist were revealed by a discriminant analysis by Murphy.\textsuperscript{11} The results of the study confirmed the importance of the west coast market and the presence of campers. It was also noted in the study that the extra expense of ferries, in addition to general expenses, contributed to the higher expenditures of

\textsuperscript{10} The estimate of $130 million by Tourism B.C. for overnight visitors was used, although a figure of $128 was derived by using survey data. The contribution of day-trippers was estimated to be $5 million, based on 250,000 day-trippers with an average $20 per day expenditure. Information on day-trippers was obtained from the Capital Regional District and Laventhal and Horwath.

\textsuperscript{11} Peter E. Murphy, "Development and Potential of Tourism", \textit{Vancouver Island: Land of Contrasts}, op. cit., pp. 294-5
Figure 4. A Comparison of British Columbia and Vancouver Island Travel Industry Revenues.

visitors to the Island than the average expenditures of visitors to the Province.

Tourist traffic to Vancouver Island is seasonal and hotel operators rely on a short season lasting from June to October for most of their room revenues. The seasonal pattern of daily traffic flow is shown in Figure 5.

Supply Aspects

The regionalization of metropolitan Victoria's eleven municipalities and districts does not coincide with tourism planning. For instance, motels located along Highway 1A belong to five different municipalities, including Victoria, Saanich, View Royal, Colwood, and Langford. Hence, to use these as planning regions would be to divide up an essentially similar market area. On the other hand, accommodation located in other than the Victoria Municipality and along Highway 1A is relatively sparse and is widely distributed among a few locations. Retaining municipal boundaries in these cases would fragment an already small and narrow market. More meaningful regions for tourism planning can be obtained by dividing the Victoria Metropolitan Area into 6 market areas according to major transportation routes, municipal boundaries, and similarity of accommodation type. (see Figure 6) These six Market Areas are:
Seasonal difference
January to July 28% increase
in average daily traffic volume

Figure 5. Seasonal Variation of Daily Traffic Flow, 1976.
Figure 6. Tourism Market Areas in the Victoria Metropolitan Area.
1. Downtown and vicinity
2. Highway 1A
3. Saanich
4. Sidney-North and Central Saanich
5. Goldstream
6. Colwood-Metchosin

Most of the tourist accommodation is located in the Downtown and Highway 1A Market Areas, which contain 81 percent of the 100 establishments and 84 percent of 5101 units in metropolitan Victoria. (see Table 5) Altogether, these two areas also contain over 92 percent of total hotel and motel units in the Metropolitan Area. Sixty-eight percent of the campground spaces are also located here.

Over three-quarters of the hotels are located in the Downtown Market area, while the majority of motels are located in the Highway 1A area. A corridor-type development is the general predominant pattern. In terms of average unit-capacity both hotels and motels in the Downtown Area are at least twice as large as those located in the other regions. Hence, the Downtown Market Area is spatially dominated by hotels and larger establishments, while small motels are spatially concentrated in the Highway 1A Market Area. (see Figure 7)

Only 16 additional establishments are located in the remaining 4 Tourist Market Areas. Fifty-seven percent of unit-capacity in this vast area consists of campground and
### TABLE 5

**ACCOMMODATION BY TOURIST MARKET AREAS IN METROPOLITAN VICTORIA**

<table>
<thead>
<tr>
<th></th>
<th>Hotels</th>
<th>Motels</th>
<th>Campgrounds</th>
<th>Trailer Parks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Est. Units</td>
<td>Est. Units</td>
<td>Est. Units</td>
<td>Est. Units</td>
</tr>
<tr>
<td>1. Downtown</td>
<td>25 2078</td>
<td>16 613</td>
<td>1 50</td>
<td>1 70</td>
</tr>
<tr>
<td>2. Highway 1A</td>
<td>4 308</td>
<td>30 834</td>
<td>6 262</td>
<td>5 83</td>
</tr>
<tr>
<td>3. Saanich</td>
<td>1 87</td>
<td>3 33</td>
<td>0 0</td>
<td>0 0</td>
</tr>
<tr>
<td>4. Sidney-N. &amp; C. Saanich</td>
<td>2 100</td>
<td>6 89</td>
<td>2 50</td>
<td>2 56</td>
</tr>
<tr>
<td>5. Goldstream</td>
<td>0 0</td>
<td>0 0</td>
<td>2 249</td>
<td>0 0</td>
</tr>
<tr>
<td>6. Colwood-Metchosin</td>
<td>1 28</td>
<td>1 8</td>
<td>1 28</td>
<td>2 75</td>
</tr>
</tbody>
</table>

**SOURCE:**

Tourism B.C. Directory of British Columbia Tourist Accommodation 1977, Victoria, B.C.
Figure 7. The Spatial Distribution of Tourist Accommodation by Market Area in Metropolitan Victoria.

Establishment Concentration

The proportion of unit-capacity, revenues, and profits accounted for by the two, four and eight largest establishments are shown in Table 6. These proportions indicate that the degree of establishment concentration is rather high because the market is dominated by a few establishments. The largest two hotels in the sample account for 20 percent of the total units and 38 percent of the total revenue but 48 percent of net profit before depreciation. The largest 8 hotels account for 44 percent of unit-capacity but 80 percent of the profits. The proportions for food and beverages are even higher than the proportions for total revenue and room revenue. However, since Victoria has only one large hotel over 150 rooms, these high concentration levels can also be explained in terms of narrowness of market, that is, "establishments are small (often sub-optimal) but are large relative to the market in which they operate."

TABLE 6
THE PROPORTION OF ROOMS AND REVENUES ACCOUNTED FOR BY
THE LARGEST 2, 4, AND 8 HOTELS IN VICTORIA

<table>
<thead>
<tr>
<th>Largest</th>
<th>Units</th>
<th>Total Revenue</th>
<th>Room Revenue</th>
<th>Beverage Revenue</th>
<th>Food and Beverage Revenue</th>
<th>Profit Before Depreciation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>20.4</td>
<td>37.6</td>
<td>34.8</td>
<td>38.3</td>
<td>36.7</td>
<td>47.8</td>
</tr>
<tr>
<td>4</td>
<td>28.7</td>
<td>48.2</td>
<td>46.3</td>
<td>53.3</td>
<td>55.2</td>
<td>61.5</td>
</tr>
<tr>
<td>8</td>
<td>44.1</td>
<td>65.7</td>
<td>60.1</td>
<td>76.0</td>
<td>79.0</td>
<td>78.3</td>
</tr>
</tbody>
</table>

*Note: All figures are ratios to sample totals, which represents a 64 percent unit-capacity of metropolitan Victoria.*
Levels of Occupancy

The rate of occupancy is probably the best parameter for tourist activity, since it provides some indication of the interactions between supply and demand. It has been pointed out, however, that "occupancy rate is not a substitute for earnings." 13

The average occupancy rate of the total sample was 51.4 percent. When grouped by affiliation categories, the average rates were chain (65.0), franchise (48.4), referral (69.1), hired-management (48.9), and owner-operated (49.0). Surprisingly, the lowest average rate was obtained by the franchise motels. An examination of the correlation coefficients indicates why this is so. The level of occupancy was found to increase with scale (room revenue, r=.75), room rates (r=.31), and size of hotel (r=.26). 14 This means that size and scale factors are more important in determining occupancy levels. However, the results of a one-way analysis of variance in Table 7 showed that the difference in occupancy rates between the affiliated and independent establishments was significant at the 2 percent level.

---


14 The reader is referred to Appendix 2 for more detail on the correlation coefficients.
TABLE 7
AVERAGE OCCUPANCY BY TYPE OF AFFILIATION, 1977

<table>
<thead>
<tr>
<th>Affiliation</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affiliated</td>
<td>10</td>
<td>60.0</td>
<td>13.2</td>
<td>4.2</td>
</tr>
<tr>
<td>Independent</td>
<td>35</td>
<td>48.9</td>
<td>12.6</td>
<td>2.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F = 5.869</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>p = .020</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>eta = .35</td>
</tr>
<tr>
<td>All lodgings</td>
<td>45</td>
<td>51.4</td>
<td>13.4</td>
<td>2.0</td>
</tr>
</tbody>
</table>

A negative relationship was found for occupancy rate with the ratio of revenue from food and beverage to revenue from rooms (r = -.26, p = .043). This confirms previous findings that hotels with large food and beverage operations rely less upon room sales than the other hotels, since they also have significantly higher profits. Previous analysis of the data has shown that licensed hotels with less than 18 percent of their total revenues received from rooms, not only have the lowest room rates and smallest size, but also have low break-even occupancy rates that might even approach zero. In fact, no significant relationships for the level of occupancy with total revenue or profit was found.

Vulnerability to Changes in Accessibility

Being almost entirely dependent on ferry tourist traffic, Victoria is extremely sensitive to any changes in time-cost access. The effect of the doubling of the ferry rates in the summer of 1976 did not affect all lodgings uniformly. The results in Tables 8 and 9 show significant variations in the percentage of lost revenues with respect to location and establishment type. The downtown lodgings reported an average 11 percent decrease, while those in the upper downtown area and along Highway 1A suffered average losses of 22 percent and 25 percent, respectively \( (F\approx3.816, p=.031) \). Moreover, hotels reported an average 12 percent decrease in revenues compared to the 25 percent loss by motels \( (F\approx7.565, p=.009) \). Correlation analysis also showed that losses from the increase in ferry fares were significantly and negatively related to size \( (r=-.43, p=.003) \), scale (room revenue, \( r=-.30, p=.026 \)), and class of hotel (room rate, \( r=-.28, p=.035 \)).

Several hoteliers stated that they lost more business from B.C. residents than U.S. visitors and were critical of media reports which they felt exaggerated the situation.\(^\text{16}\) Although

\(^{16}\) B.C. residents in other than Vancouver Island represented 30 percent of the overnight visitors and contributed 26 percent of the gross revenues from tourism in the Vancouver Tourist Region in 1976. Tourism B.C., Vancouver Island Tourism Facts Book 1977, (Victoria: Queen's Printer, 1977) pp. 8, 18.
### TABLE 8
AVERAGE DECREASE IN REVENUES DUE TO THE DOUBLING OF FERRY FARES BY LOCATION, 1976

<table>
<thead>
<tr>
<th>Location</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
<th>F</th>
<th>p</th>
<th>eta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown</td>
<td>16</td>
<td>10.6</td>
<td>12.6</td>
<td>3.2</td>
<td>3.816</td>
<td>.031</td>
<td>.40</td>
</tr>
<tr>
<td>Northdowntown</td>
<td>10</td>
<td>21.5</td>
<td>15.5</td>
<td>4.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highway 1A</td>
<td>16</td>
<td>24.9</td>
<td>17.1</td>
<td>4.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All lodgings</td>
<td>42</td>
<td>18.6</td>
<td>16.1</td>
<td>2.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TABLE 9
AVERAGE DECREASE IN REVENUES DUE TO THE DOUBLING OF FERRY FARES BY TYPE, 1976

<table>
<thead>
<tr>
<th>Type</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
<th>F</th>
<th>p</th>
<th>eta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel</td>
<td>20</td>
<td>12.0</td>
<td>12.9</td>
<td>2.9</td>
<td>7.565</td>
<td>.009</td>
<td>.40</td>
</tr>
<tr>
<td>Motel</td>
<td>22</td>
<td>24.7</td>
<td>16.6</td>
<td>3.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All lodgings</td>
<td>42</td>
<td>18.6</td>
<td>16.1</td>
<td>2.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Interviewees reported that business was back to normal, these findings demonstrate the ability of different types of establishments to withstand changes in accessibility.
In summary, Victoria's popularity as a tourist destination in B.C, is exceeded only by that of Vancouver's. It has many attractions as an island resort and is more dependent on the tourist trade than the Province or Nation. On the other hand, the high seasonal element of tourism, rather high degree of establishment concentration, significant differences in occupancy rates, and vulnerability to changes in accessibility by different types of establishment are not entirely unique to Victoria. Rather, these features are considered to be characteristic of other communities in the Province, for example, those in the North.
IV. THE ECONOMIC IMPACT OF TOURISM IN VICTORIA

Having characterised the importance of tourism to Victoria, we now proceed to present the cumulative multiplier effects of tourist spending on the economy of the Victoria Metropolitan Area.

As a first step, the multipliers for eleven sectors in Victoria's economy were derived by using the input-output model. Since there was such a great reliance on secondary sources, this represents only a modest attempt. Nevertheless, it provides the necessary framework for examining the hypotheses presented in Chapter One. The results with respect to the major variables of interest are examined. Using the methodology suggested in Chapter Two, the accommodation income multiplier is then weighted by ownership categories and compared with the aggregate regional income multiplier.

In addition, differential tourist multipliers for overnight and day visitors are determined. The relative contributions of the various types of tourists to household income, sales, jobs, government taxes and imports are then compared.
Sector Multipliers for Victoria

As a basis for calculating the tourism multipliers, it was necessary to determine the local value-added elements of the industrial sectors in Victoria by using equation (6) (page 36). Because survey data were available for only the accommodation sector, secondary data sources were relied upon for the remaining sectors.\(^1\) Hence interindustry comparisons are to be viewed with caution.

For the purposes of this study, it was assumed that no wages and salaries were paid to nonresidents of Victoria, although purchase of services from outside the region were considered to be imports. Furthermore, since no information on leakages from the value-added elements were available for the nonaccommodation sectors, an estimate of 20 percent leakages, derived from the survey data, was applied uniformly for all sectors. This is an imperfect method relied upon only as a measure of last resort. In general, this estimate for factor leakages are considered to be conservative with the effect of overestimating the multipliers. Tests of sensitivity of the model to changes in the leakages from other value-added on the multipliers and household income are discussed later in the text.

\(^1\) The pattern of expenditures of the restaurant sector was estimated by using data for hotels with ratios of food and beverage sales to total sales of at least 90 percent. Refer to Table 29 in Appendix 1 for further detail.
Table 10 shows that the wholesale and retail trade sectors have among the lowest normal multipliers (.263, .472), and yet have the highest ratio multipliers (3.011, 3.533). The reason that the ratio multipliers are so high is that the direct income coefficients are so low. The main value of the ratio multiplier lies in demonstrating the importance of secondary relative to direct income.

The finance sector has the highest direct (.589) and total income coefficients (.983) because of high interest payments. The accommodation total RIG of .736 was exceeded only by those for the restaurant (.747), communications and utility (.747), and finance sectors (.983). Furthermore, as was expected, the income and transactions multipliers of the service sector were generally higher than those for the primary and secondary sectors. The accommodation multiplier of .736 is 47 percent higher than the aggregate multiplier for the region (.502), which was calculated by using equation (13) (page 40).

The transactions multipliers for the industrial sectors range from 1.285 to 1.638. These values can be compared to the multipliers of 1.18 to 1.97 obtained in Davis' input-output study of metropolitan Vancouver.2

<table>
<thead>
<tr>
<th>Industrial Sector</th>
<th>Direct Income (Per $1 of Turnover)</th>
<th>Indirect Income</th>
<th>Induced Income</th>
<th>Total Income</th>
<th>Ratio Income Type I</th>
<th>Type II</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>.238</td>
<td>.049</td>
<td>.099</td>
<td>.386</td>
<td>1.207</td>
<td>1.625</td>
<td>1.154</td>
</tr>
<tr>
<td>Construction</td>
<td>.243</td>
<td>.172</td>
<td>.144</td>
<td>.558</td>
<td>1.707</td>
<td>2.297</td>
<td>1.524</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>.277</td>
<td>.050</td>
<td>.113</td>
<td>.441</td>
<td>1.180</td>
<td>1.588</td>
<td>1.155</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>.087</td>
<td>.108</td>
<td>.068</td>
<td>.263</td>
<td>2.237</td>
<td>3.011</td>
<td>1.285</td>
</tr>
<tr>
<td>Retail trade颇有</td>
<td>.134</td>
<td>.217</td>
<td>.121</td>
<td>.472</td>
<td>2.624</td>
<td>3.533</td>
<td>1.540</td>
</tr>
<tr>
<td>Transportation</td>
<td>.314</td>
<td>.210</td>
<td>.182</td>
<td>.705</td>
<td>1.667</td>
<td>2.245</td>
<td>1.638</td>
</tr>
<tr>
<td>Communications and utility</td>
<td>.379</td>
<td>.175</td>
<td>.192</td>
<td>.474</td>
<td>1.462</td>
<td>1.968</td>
<td>1.488</td>
</tr>
<tr>
<td>Finance</td>
<td>.589</td>
<td>.141</td>
<td>.253</td>
<td>.983</td>
<td>1.239</td>
<td>1.668</td>
<td>1.321</td>
</tr>
<tr>
<td>Service</td>
<td>.339</td>
<td>.101</td>
<td>.152</td>
<td>.592</td>
<td>1.299</td>
<td>1.749</td>
<td>1.286</td>
</tr>
<tr>
<td>Restaurant</td>
<td>.393</td>
<td>.162</td>
<td>.192</td>
<td>.747</td>
<td>1.413</td>
<td>1.902</td>
<td>1.542</td>
</tr>
<tr>
<td>Accommodation</td>
<td>.413</td>
<td>.134</td>
<td>.189</td>
<td>.736</td>
<td>1.324</td>
<td>1.783</td>
<td>1.430</td>
</tr>
<tr>
<td>Aggregate</td>
<td>.278</td>
<td>.094</td>
<td>.129</td>
<td>.502</td>
<td>1.084</td>
<td>1.459</td>
<td>1.066</td>
</tr>
</tbody>
</table>

**NOTES:**

Government Revenues are excluded from the direct income coefficients but are included in the indirect and induced elements.

Refer to Table 29 in Appendix 1 for data used in the calculations.
The sector multipliers were obtained by using standard Leontief inversion techniques. Because of the technical differences, explained in Chapter 2 and at the beginning of this chapter, the method used in this study is more closed than the Archer method, i.e., more industrial sectors were treated as endogenous. As a check, the model was closed with respect to the household sector. The results were identical to those calculated by the Archer model when a value of 100 percent for household propensity to consume (C) was used. Thus the two different methods are consistent.

Nevertheless, despite the fact that these multipliers are considered to be gross estimates, they exhibit expected patterns and the values appear to fall within a reasonable range. However, the intra-industry comparisons in the next section can be made with greater confidence, since they were primarily based upon the survey data.

Differential Accommodations Multipliers

Statistical tests of significance were conducted for the direct, indirect, and total regional income and employment coefficients, transactions and ratio multipliers, as well as for other selected dependent variables. Initially, 27 independent variables were considered but these were later reduced to 16 variables because of redundancy. The organisation variables
indicated location, size, scale, affiliation, ownership, type of establishment, type of facility, class of hotel, return on operation, and level of occupancy.

One-way analysis of variance was used to test whether there were significant differences among establishments when they were grouped by five categories of location, affiliation, ownership, type, and facility type. The regional income generation coefficient was discovered to be significant at the .013 level by ownership categories with an F value of 6.792. Both regional employment generation coefficients and transactions multipliers were found to be significantly different when grouped by type of facility, that is, whether or not the establishments are licensed. The F values were 4.2 and 12.5 with significance levels of .05 and .001 respectively (refer to Tables 11-13).

Although the eta^2 statistic indicates how much of the variation is explained by the nominal categories, more useful information can be obtained from correlation coefficients which indicate the strength and direction of the relationships of the variables. (see equation (16), page 45)

The significant relationships, in general, confirm the hypotheses formulated at the beginning of the study. A summary

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3 However, these results do not imply causal relationship. Blalock, op. cit.

4 Further detail on the correlation coefficients can be seen in Appendix 2.
## TABLE 11

ANALYSIS OF VARIANCE OF THE TOTAL REGIONAL INCOME GENERATION COEFFICIENTS OF ACCOMMODATION BY OWNERSHIP CATEGORIES

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degree of Freedom</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explained</td>
<td>0.093</td>
<td>1</td>
<td>0.093</td>
<td>6.792</td>
<td>0.0131</td>
</tr>
<tr>
<td>Residual</td>
<td>0.586</td>
<td>43</td>
<td>0.014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>0.678</td>
<td>44</td>
<td>0.015</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: N = 45 and Eta = .37

## TABLE 12

ANALYSIS OF VARIANCE OF THE TOTAL REGIONAL EMPLOYMENT GENERATION COEFFICIENTS BY TYPE OF FACILITY

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degree of Freedom</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explained</td>
<td>0.002</td>
<td>1</td>
<td>0.002</td>
<td>4.208</td>
<td>0.046</td>
</tr>
<tr>
<td>Residual</td>
<td>0.023</td>
<td>43</td>
<td>0.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>0.025</td>
<td>44</td>
<td>0.001</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: N = 45 and Eta = .30
TABLE 13
ANALYSIS OF VARIANCE OF THE TRANSACTIONS MULTIPLIER
BY TYPE OF FACILITY

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degree of Freedom</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explained</td>
<td>.126</td>
<td>1</td>
<td>.126</td>
<td>12.530</td>
<td>.001</td>
</tr>
<tr>
<td>Residual</td>
<td>.439</td>
<td>43</td>
<td>.010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.556</td>
<td>44</td>
<td>.013</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: N = 45 and Eta = .48

of the significant relationships between the dependent variables and the independent variables is as follows.

1. Direct RIGs are higher for the locally-owned establishments.
2. Indirect RIGs are higher for the licensed, the lower class, the smaller-size, and the smaller-scale (room revenue per unit) establishments.
3. Total RIGs are higher for the locally-owned and the less profitable establishments.
4. Ratio multipliers are higher for the smaller-size establishments.
5. Transactions multipliers are higher for the licensed hotels, the lower class, and the smaller-scale establishments.
6. Direct REGs are higher for the nonlicensed, the
7. Indirect REGs are higher for the peripheral, the lower class, the smaller-size and the smaller-scale, the less profitable, and the locally-owned establishments.

8. Total REGs are higher for the less-affiliated, the lower class, the smaller-size, and the smaller-scale establishments.

9. The direct import ratio is higher for the licensed hotels, the central, the more-affiliated, the externally-owned, the higher class, the larger-scale and the more occupied establishments.

10. The wage ratio is higher for the licensed hotels, the central, the higher class, the larger-size, and the larger-scale establishments.

11. The other value-added ratio is higher for the nonlicensed hotels, the peripheral, the less affiliated, the locally-owned, the smaller-size, and the smaller-scale establishments.

12. The percentage loss due to the doubling of ferry fares is higher for the peripheral, the motel, the lower class, the smaller-size, and the smaller-scale (room revenue per unit) establishment.

13. Occupancy rates are higher for the nonlicensed (ratio variable), the higher class, the larger-size, and the larger-scale establishments.
larger-scale (room revenue per unit) establishment. Hence, in each of these instances, the null hypothesis of zero correlation can be rejected at least the .05 level.

Of the 104 possible correlations of the multipliers with the organisation variables, only about one-third showed significant relationships. Out of the total, 20 percent were significant at the .05 level, 10 percent were significant at the .01 level, and only 5 percent were significant at the .001 level. As was hypothesised, those enterprises with higher multipliers have significantly lower import content and additionally, higher percentages of other value-added.5 Some of the major findings in regard the the main variables of interest are summarised as follows.

Location

The location variable was also a surrogate for proximity to city center, albeit a weak one. In general, the multipliers did not vary significantly with respect to location, although the import and wage ratios decreased with distance from the downtown area. The only significant relationship was the indirect REG at the .001 level (rho = -.47), while the other multipliers exhibited

---

5 It was pointed out in Chapter Two that the value of the total regional income coefficient is directly related to the direct local value-added element. On the other hand, it is inversely related to the amount of leakages, not only from imports of purchases of goods and services by businesses and households, but also from factor payments of value-added elements to outside regions.
weak negative correlations. This means that the peripheral establishments generated more indirect employment per tourist dollar. Hence, the null hypotheses of zero correlation of the tourism multipliers with location can be rejected in only this instance.

Peripheral establishments also reported greater losses from the increase in ferry fares than the more centrally-located hotels (significant at the .01 level). In this instance, about 18 percent of the variation in the loss in revenues could be attributed to the location variable (rho= - .43, p=.01).

Although the occupancy rate for the large downtown luxury hotels was 71 percent, compared to the overall average occupancy rate of 51.4 percent, levels of occupancy, using analysis of variance, did not vary significantly among the three main market areas. This can be explained by the special rates the motels in the outside areas offer during the shoulder months to attract a more permanent clientele, mostly Prairie-farmers. Apparently, each market area is competitive and has its own appeal. The Downtown Market Area attracts the more foot-oriented and luxury-seeking visitor. The Upper Downtown Area serves the more auto-oriented visitor, while the Highway 1A 'Motel Village' caters to the tourist who seeks a quieter and more inexpensive lodging.

However, occupancy rate was found to be weakly correlated with proximity to city center (rho=.21). The popularity of the
Downtown Market Area is due to its accessibility to tourist entry points, proximity to tourist attractions, and the greater propensity to travel by public transportation or foot because of rising fuel costs. During the peak of the summer season, this area becomes quite congested, and plans to improve the ambience and flow of traffic in the area are being implemented.

Size and Scale

Although total RIG was not significantly correlated with size and scale of operation, some significant relationships for the indirect RIG, ratio, and transaction multipliers with the independent variables were found. In general, these multipliers decreased with increasing size and scale of operation.

The direct, indirect and total REGs were also inversely related to the size and scale variables. It was possible to reject the null hypotheses in all these instances at at least the .05 level of significance.

The hypothesis that the large scale (but not size) establishments had higher import content was also confirmed. However, the smaller hotels had significantly higher other value-added ratios (rent, interest, and profit) than the larger ones. For these reasons, the REGs were higher for the smaller establishments, even though the larger ones had significantly higher wage content. The smaller multipliers for the large hotels can also be explained by the economies of scale they
achieve. Of course, the large companies provide most of the job opportunities in the region.

A study by Schwindt and Var showed that smaller hotels are relatively more important in B.C. than in Oregon or Washington, due to provincial legislation which favors hotels in the allocation of liquor licenses. Survey results show that Victoria hotels had an even higher average percentage of total revenues due to alcoholic beverages than their B.C. counterparts.

The question of optimal size has been the focus of many studies, but no firm conclusions have yet been made, especially for the service sector. A study by Kipnis on manufacturing firms favors the development of medium-size plants, which achieve increasing scale economies and maintain diversified production activities, but are not big enough to take advantage of internal economies of self supply or to depend on outside supply agents.

---


Affiliation

Significant and negative correlations were found for the direct and total RIGs with degree of affiliation at the .05 level. Once again, this result was due to the significantly higher import content (all at the .001 level) and also the lower proportion of other value-added for the more-affiliated companies due to greater leakages. However, their high wage ratios tend to lessen the effects that the leakages have in reducing the size of the multipliers. Hence, the remaining multipliers exhibited only weak negative relationships with the levels of affiliation.

Because of the advantages to be obtained through promotional and referral services, it was surprising that occupancy rates and loss from the increase in ferry fares were not significantly correlated with the affiliation variable. Analysis of variance showed that the affiliated hotels had a 23 percent higher average occupancy rate than the independent establishments. (p=.02, see Table 7) However, the results in this section are not very conclusive because of the small number of affiliated firms in the study region.

Ownership

That the total RIG varied significantly with type of ownership was one of the major findings of the study. Total RIG was correlated with the percentage of shares owned by
nonresidents at the .036 level. Using analysis of variance, it was shown that there are significant differences in the value of RIGs between the locally-owned versus externally-owned operations at the .013 level. The study also found significantly higher import content but lower other value-added ratios for the externally-owned firms. In contrast with the other findings, wage content did not vary significantly with ownership. These results confirm the previous findings in the literature that the externally-owned companies have lower income multipliers because of smaller linkages in the local economy.

In addition, the data showed that firms that were at least 50 percent owned by outside interests, including those in B.C. and in the rest of Canada, captured 75 percent of the earnings of the hotel industry in metropolitan Victoria. Although the income multiplier values were smaller for the outside firms, they provided substantially more household income and jobs than the locally-owned ones.

The findings of this study agree with those in a study of the industrial structure of the Vancouver hotel industry. The study found that about 78 percent of the unit-capacity of hotels with 200 or more rooms is linked to foreign (primarily American) interests.9

Although the percentage of wages to total revenue is significantly higher for the larger establishments than the smaller ones, the REG coefficients are significantly higher for the latter type. This is probably due to economies of labour in the larger establishments, and the fact that the proprietor's salary was not included in wages and salaries, thus distorting the wage percentage especially for the smaller owner-operated establishments.¹⁰

Simple correlation analysis showed that the total government revenue coefficient was significantly and negatively correlated to facility type (r=-.73, p=.001), establishment type (r=-.53, p=.001), food and beverage ratio (r=-.58, p=.001), size (r=-.31, p=.021) and scale (r=-.62, p=.001), but not to the room revenue (r=-.07) or profit (r=.04). Further examination shows that these results were due to the larger proportion of revenues paid by the nonlicensed, the smaller and motel establishments to the municipal and provincial governments. Although it is not the purpose of this study to investigate tax structure, these findings suggest that these types of establishments carry a greater tax burden in relation to their sales volume than do the licensed, the larger, and hotel establishments.

¹⁰ As this tends to lessen the usefulness of the wage ratio, the REG is considered to be a better measure of labour-intensiveness.
Extension of the Model

In equation (12) (page 39) the Archer model was modified to include weighted value-added elements for the accommodation sector as an alternative to the approach using overall sums. In this way it is possible to reflect differences within the accommodation sector due to variations in organisation type by relaxing the assumption of homogeneous production functions.

Since the total RIG coefficient was significantly related to the ownership variable by both analysis of variance and correlation analysis, it was used as the basis for weighting the accommodation coefficients. As was hypothesised, the method using overall sums overestimates the income multiplier for accommodations by 7 percent and the total tourism income multiplier by 1.7 percent. (see Tables 14 and 15)

The 38 locally-owned establishments represent 84 percent of the sample, while the externally-owned ones, which are at least 50 percent owned by nonresidents, capture 75.4 percent of the market share. Thus, the overall-sum method tends to underrepresent the impact of the externally-owned establishments. Since the weighted method corrects for this, the weighted value of .684 was used to calculate the tourist multipliers presented in the next section.
### TABLE 14

**A COMPARISON OF THE LOCAL VALUE-ADDED ELEMENTS OF THE ACCOMMODATION SECTOR BY USING DIFFERENT METHODS OF AVERAGING.**

(Per-\$ of Tourist Spending)

<table>
<thead>
<tr>
<th>Method</th>
<th>Percent of Receipts</th>
<th>Direct Income</th>
<th>Indirect Income</th>
<th>Induced Income</th>
<th>Total Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall sum&lt;sup&gt;1&lt;/sup&gt;</td>
<td>.413</td>
<td>.134</td>
<td>.189</td>
<td>.736</td>
<td></td>
</tr>
<tr>
<td>Weighted by ownership type&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locally-owned&lt;sup&gt;3&lt;/sup&gt;</td>
<td>24.6%</td>
<td>.441</td>
<td>.143</td>
<td>.202</td>
<td>.787</td>
</tr>
<tr>
<td>Outside-owned</td>
<td>75.4%</td>
<td>.366</td>
<td>.118</td>
<td>.167</td>
<td>.651</td>
</tr>
<tr>
<td>Wgt. average</td>
<td>.384</td>
<td>.124</td>
<td>.176</td>
<td>.684</td>
<td></td>
</tr>
</tbody>
</table>

| Percentage difference<sup>4</sup> | -7.0% | -7.5% | -6.9% | -7.1% |

---

<sup>1</sup> Transactions of all establishments are added together.

<sup>2</sup> Classification by ownership was significant at the .013 level.

<sup>3</sup> Locally-owned establishments are more than 50 percent owned by Victoria residents.
TABLE 15
A COMPARISON OF THE TOURIST MULTIPLIER VALUES USING DIFFERENT AVERAGING PROCEDURES FOR THE ACCOMMODATION SECTOR

<table>
<thead>
<tr>
<th>Category of Tourist</th>
<th>Direct Income</th>
<th>Indirect Income</th>
<th>Total Income</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WGT Over</td>
<td>Percent Diff.</td>
<td>WGT Over</td>
</tr>
<tr>
<td>Overall sum</td>
<td>WGT Over</td>
<td>Percent Diff.</td>
<td>WGT Over</td>
</tr>
<tr>
<td>Overnight Visitors</td>
<td>Non-residents</td>
<td>.314</td>
<td>.321</td>
</tr>
<tr>
<td>Van. Is. res.</td>
<td>.299</td>
<td>.303</td>
<td>-.013</td>
</tr>
<tr>
<td>Average</td>
<td>.312</td>
<td>.318</td>
<td>-.019</td>
</tr>
<tr>
<td>Day-trippers</td>
<td>.291</td>
<td>.292</td>
<td>-.003</td>
</tr>
<tr>
<td>All tourists</td>
<td>.311</td>
<td>.317</td>
<td>-.023</td>
</tr>
</tbody>
</table>

1 The accommodation sector was weighted by ownership categories (refer to table 14).
Differential Tourist Multipliers

This section presents the tourism multipliers for income, employment, and transactions, as well as the other input coefficients of government revenue and import content. Once these have been estimated, then the impact of tourism is determined by applying the appropriate multipliers to the expenditures of the various types of tourists using equation (5) (page 34). Thus, comparisons of the relative contribution by various types of tourists to the total amount of household income, jobs, sales, government revenues and imports can be made. The amount of direct income and jobs generated by the accommodation sector can also be determined.

Household Income and Sales

For every dollar of tourist spending, 65 cents of household income is generated in metropolitan Victoria. Only 31 cents is direct income, demonstrating the importance of the secondary effects. Daytrippers generate 64 cents compared to 65 cents for overnight visitors, representing a slight 1.5 percent difference. On the other hand, day-trippers generate $1.53 of sales in the local economy for every $1 of tourist spending, compared to $1.50 for overnight tourists. These differences reflect the greater proportion of expenditures by day tourists.
on retail sales and transportation, but less on accommodation which has a relatively higher income coefficient. (refer to Table 16) 

In 1977 tourism generated $41,983,000 direct household income, and $87,297,000 total household income in Victoria (see Table 17). Ninety-six percent of household income was generated by overnight tourists with only 15 percent of this contributed by Vancouver Island residents. This confirms the importance of nonresident overnight tourists. In addition, a total of $203,093,000 sales was generated in the local economy by the $135,000,000 tourism revenues in that year. (see Table 25) This represents about 10 percent of the gross regional product in metropolitan Victoria.

The importance of the accommodation sector can be seen when the direct RIG coefficient is disaggregated into its accommodation and nonaccommodation components. While only 22 percent of the average tourist dollar is spent on lodgings, Tables 18 and 19 show that 27 percent of direct income is generated by hotels and motels, which was $11,093,000 in 1977.

Out of this amount, the relative contribution of the hotels by ownership categories can be determined. Although locally-owned establishments capture 25 percent of the market share, their contribution to total household income is 28

\[11\text{ This reflects the slightly higher RIG coefficients for accommodation.}\]
### TABLE 16

**TOURIST INCOME AND TRANSACTIONS MULTIPLIERS IN VICTORIA**

<table>
<thead>
<tr>
<th>CATEGORY OF Tourist</th>
<th>DIRECT (1)</th>
<th>INDIRECT (2)</th>
<th>DIRECT &amp; Indirect (3)</th>
<th>TOTAL (4)</th>
<th>TYPE I (3)+(1)</th>
<th>TYPE II (4)+(1)</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overnight Visitors</td>
<td>.314</td>
<td>.167</td>
<td>.481</td>
<td>.648</td>
<td>1.532</td>
<td>2.062</td>
<td>1.498</td>
</tr>
<tr>
<td>Non-residents</td>
<td>.299</td>
<td>.180</td>
<td>.479</td>
<td>.644</td>
<td>1.600</td>
<td><strong>2.154</strong></td>
<td>1.530</td>
</tr>
<tr>
<td>Van. Is. residents</td>
<td>.312</td>
<td>.169</td>
<td>.481</td>
<td>.647</td>
<td>1.542</td>
<td>2.075</td>
<td>1.503</td>
</tr>
<tr>
<td>Average</td>
<td>.291</td>
<td>.182</td>
<td>.473</td>
<td>.637</td>
<td>1.627</td>
<td>2.190</td>
<td>1.532</td>
</tr>
<tr>
<td>Day-trippers</td>
<td>.311</td>
<td>.169</td>
<td>.480</td>
<td>.647</td>
<td>1.545</td>
<td>2.079</td>
<td>1.504</td>
</tr>
<tr>
<td>All Tourists</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Normal Income* (per $ of tourist spending)
TABLE 17

THE IMPACT OF TOURIST EXPENDITURES ON HOUSEHOLD INCOME IN VICTORIA, 1977
(Money Amounts in Thousands of Dollars)

<table>
<thead>
<tr>
<th>Category of Tourist</th>
<th>Tourist Expenditures % of Total</th>
<th>Direct Amount</th>
<th>Indirect Amount</th>
<th>Induced Amount</th>
<th>Total Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overnight Visitors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonresidents</td>
<td>81.5</td>
<td>34,547</td>
<td>18,365</td>
<td>18,314</td>
<td>71,225</td>
</tr>
<tr>
<td>Van. Is. residents</td>
<td>14.8</td>
<td>5,982</td>
<td>3,592</td>
<td>3,314</td>
<td>12,889</td>
</tr>
<tr>
<td>Total</td>
<td>96.3</td>
<td>40,530</td>
<td>21,957</td>
<td>21,627</td>
<td>84,114</td>
</tr>
<tr>
<td>Day-trippers</td>
<td>3.7</td>
<td>1,453</td>
<td>911</td>
<td>818</td>
<td>3,183</td>
</tr>
<tr>
<td>All tourists</td>
<td>100.0</td>
<td>41,983</td>
<td>22,868</td>
<td>22,446</td>
<td>87,297</td>
</tr>
</tbody>
</table>
TABLE 18

THE ACCOMMODATION AND NON-ACCOMMODATION COMPONENTS
OF THE DIRECT INCOME COEFFICIENT FOR VICTORIA
(Per $1 of Tourist Spending)

<table>
<thead>
<tr>
<th>Category of Tourist</th>
<th>Accommodation</th>
<th>Non-accommodation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overnight Visitors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonresidents</td>
<td>.089</td>
<td>.225</td>
<td>.314</td>
</tr>
<tr>
<td>Van. Is. residents</td>
<td>.059</td>
<td>.240</td>
<td>.299</td>
</tr>
<tr>
<td>Average</td>
<td>.085</td>
<td>.227</td>
<td>.312</td>
</tr>
<tr>
<td>Day-trippers</td>
<td>.019</td>
<td>.271</td>
<td>.291</td>
</tr>
<tr>
<td>All tourists</td>
<td>.082</td>
<td>.229</td>
<td>.311</td>
</tr>
</tbody>
</table>

TABLE 19

THE ACCOMMODATION AND NON-ACCOMMODATION COMPONENTS
OF DIRECT HOUSEHOLD INCOME IN VICTORIA 1977
(Money Amounts in Thousands of Dollars)

<table>
<thead>
<tr>
<th>Category of Tourist</th>
<th>Accommodation</th>
<th>Non-accommodation</th>
<th>Total Direct Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overnight Visitors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonresidents</td>
<td>9,816</td>
<td>24,731</td>
<td>34,547</td>
</tr>
<tr>
<td>Van. Is. residents</td>
<td>1,181</td>
<td>4,802</td>
<td>5,982</td>
</tr>
<tr>
<td>Total</td>
<td>10,997</td>
<td>29,533</td>
<td>40,530</td>
</tr>
<tr>
<td>Day-trippers</td>
<td>96</td>
<td>1,357</td>
<td>1,453</td>
</tr>
<tr>
<td>All tourists</td>
<td>11,093</td>
<td>30,890</td>
<td>41,983</td>
</tr>
</tbody>
</table>
percent or $3,126,000. However, it is apparent from Table 20 that most of the direct income is generated by the externally-owned lodgings - $7,967,000.

Employment

Tourist employment multipliers were calculated by using equations (14) and (15) (pages 41 and 42). The results in Table 21 show that one full-time job is created for every $10,000 of tourist spending. Contrary to the results of the income multipliers, the value for the multiplier for the day-tripper is 12 percent higher than that for the overnight visitor. Similarly, of the overnight visitors, residents of Vancouver Island generate 4 percent more jobs per unit of spending than do non-residents. These results reflect the higher propensities of the transportation and retail sectors to generate jobs compared to the accommodation sector. As in the case of income generation, more jobs were provided by the secondary effects than by direct tourism revenue.

The impact of tourist expenditures on employment can be seen in Tables 22 and 23. In 1973 tourism generated 6,317 direct jobs and a total of 13,791 jobs, as a result of the multiplier effects. Further investigation reveals that 16 percent of the direct jobs, or 997 were provided by hotels.

The 6,317 direct jobs (in full-time equivalents) can be
TABLE 20

THE RELATIVE CONTRIBUTION OF ACCOMMODATION GROUPS TO DIRECT HOUSEHOLD INCOME IN VICTORIA, 1977.
(Money Amounts in Thousands of dollars)

<table>
<thead>
<tr>
<th>Type of Ownership</th>
<th>Total Revenue</th>
<th>Direct Income</th>
<th>Direct Household Income</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$</td>
<td>%</td>
<td>Coefficient</td>
</tr>
<tr>
<td>Locally-Owned</td>
<td>7,084</td>
<td>24.6</td>
<td>.441</td>
</tr>
<tr>
<td>Outside-owned</td>
<td>21,766</td>
<td>75.4</td>
<td>.366</td>
</tr>
<tr>
<td>Total</td>
<td>28,850</td>
<td>100.0</td>
<td>.384</td>
</tr>
</tbody>
</table>

TABLE 21

EMPLOYMENT MULTIPLIERS FOR VICTORIA (Per $1,000 of Tourist Spending)

<table>
<thead>
<tr>
<th>Category of Tourist</th>
<th>Direct Employment</th>
<th>Indirect Employment</th>
<th>Total Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Accommodation</td>
<td>Non-accommodation</td>
<td></td>
</tr>
<tr>
<td>Overnight Vis.</td>
<td>.008</td>
<td>.038</td>
<td>.046</td>
</tr>
<tr>
<td>Nonresident</td>
<td>.005</td>
<td>.043</td>
<td>.048</td>
</tr>
<tr>
<td>Van. Is. res.</td>
<td>Average</td>
<td>.008</td>
<td>.039</td>
</tr>
<tr>
<td>Day-trippers</td>
<td>.002</td>
<td>.054</td>
<td>.055</td>
</tr>
<tr>
<td>All Tourists</td>
<td>.007</td>
<td>.039</td>
<td>.047</td>
</tr>
</tbody>
</table>
### TABLE 22

**THE IMPACT OF TOURIST EXPENDITURES ON EMPLOYMENT IN VICTORIA, 1977**

<table>
<thead>
<tr>
<th>Category of Tourist</th>
<th>Tourist Expenditures</th>
<th>Number of Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of Amount Total ($mm)</td>
<td>Direct</td>
</tr>
<tr>
<td>Overnight Vis. Nonresidents</td>
<td>81.5 110</td>
<td>5,073</td>
</tr>
<tr>
<td>Van. Is. residents</td>
<td>14.8 20</td>
<td>966</td>
</tr>
<tr>
<td>Total</td>
<td>96.3 130</td>
<td>6,039</td>
</tr>
<tr>
<td>Day-trippers</td>
<td>3.7 5</td>
<td>277</td>
</tr>
<tr>
<td>All tourists</td>
<td>100.0 135</td>
<td>6,317</td>
</tr>
</tbody>
</table>

### TABLE 23

**THE ACCOMMODATION AND NON-ACCOMMODATION COMPONENTS OF DIRECT EMPLOYMENT IN VICTORIA, 1977**

<table>
<thead>
<tr>
<th>Category of Tourist</th>
<th>Accommodation</th>
<th>Non-accommodation</th>
<th>Direct Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overnight Visitors Nonresidents</td>
<td>882</td>
<td>4,191</td>
<td>5,073</td>
</tr>
<tr>
<td>Van. Is. residents</td>
<td>106</td>
<td>860</td>
<td>966</td>
</tr>
<tr>
<td>Total</td>
<td>988</td>
<td>5,051</td>
<td>6,039</td>
</tr>
<tr>
<td>Day-trippers</td>
<td>9</td>
<td>269</td>
<td>277</td>
</tr>
<tr>
<td>All tourists</td>
<td>997</td>
<td>5,320</td>
<td>6,317</td>
</tr>
</tbody>
</table>
compared with estimates for Vancouver Island. In 1976 it was estimated that there were 11,400 full-time and part-time employees in the tourist industry in Vancouver Island with 38 percent of these in the accommodation sector.12 The estimate for 1978 is that 27 percent of the jobs were created by the accommodation sector.13

Government Revenue and Import Content

Estimates for government revenue and import coefficients were derived from equation (10) (page 38). Table 24 shows the direct and total multipliers for the three levels of government, and for imports of goods and services. The overnight visitor has the greater propensity to generate direct municipal, provincial, federal taxes, as well as total government payments, than does the day-tripper. On the other hand, both direct and total import content is higher for the day-tripper. The multiplier for total government revenue is .213 and for total import content .339 or 34 percent per dollar of tourist expenditure.

Direct government revenue generated by the tourist industry in 1977 was $18,148,000, compared to total revenues of

12 Tourism B.C. Vancouver Island Tourism Facts Book 1977, Victoria, Queen's printer, 1977, p. 53.

<table>
<thead>
<tr>
<th>Category of Tourist</th>
<th>Government Revenue</th>
<th>Import Content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Direct</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>Municipal</td>
<td>Provincial</td>
</tr>
<tr>
<td>Overnight Visitors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonresident</td>
<td>.019</td>
<td>.034</td>
</tr>
<tr>
<td>Van. Is. res.</td>
<td>.016</td>
<td>.030</td>
</tr>
<tr>
<td>Average</td>
<td>.018</td>
<td>.033</td>
</tr>
<tr>
<td>Day-Trippers</td>
<td>.013</td>
<td>.026</td>
</tr>
<tr>
<td>All tourists</td>
<td>.018</td>
<td>.033</td>
</tr>
</tbody>
</table>
$28,745,000, consisting of municipal (11 percent), provincial (25 percent) and federal (64 percent). The relative contribution by overnight tourists to each of these three levels of government was about 97 percent. (see Table 25)

The direct multiplier estimate is consistent with the $36,000,000 direct government revenue for Vancouver Island, since about 50 percent of the tourists who travel to the Island visit Victoria. However, the corresponding breakdowns by levels of government is municipal (31 percent), provincial (31 percent) and federal (38 percent). The 1977 estimate for tax revenues for the Province was $80,000,000.15

Direct imports in Victoria in 1977 amounted to $18,946,000, while total imports were $45,790,000 or approximately one-fourth of total sales created by tourist spending. In this case the cumulative secondary multiplier effects contribute an amount greater than the direct import content.

Sensitivity Tests

Tests of reliability in the previous studies have shown that the regional tourism multiplier model is robust in that it is able to withstand slight changes in the propensity to

14 Ibid.

TABLE 25

THE IMPACT OF TOURIST EXPENDITURES ON GOVERNMENT REVENUES, IMPORTS AND SALES IN VICTORIA, 1977
(Money Amounts in Thousands of Dollars)

<table>
<thead>
<tr>
<th>Category of Tourist</th>
<th>Total Government Revenue</th>
<th>Imports</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Municipal</td>
<td>Provincial</td>
<td>Federal</td>
</tr>
<tr>
<td>Overnight Visitors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonresidents</td>
<td>2,552</td>
<td>6,049</td>
<td>15,021</td>
</tr>
<tr>
<td>Van. Is. residents</td>
<td>421</td>
<td>1,031</td>
<td>2,714</td>
</tr>
<tr>
<td>Total</td>
<td>2,973</td>
<td>7,079</td>
<td>17,735</td>
</tr>
<tr>
<td>Daytrippers</td>
<td>89</td>
<td>233</td>
<td>636</td>
</tr>
<tr>
<td>All Tourists</td>
<td>3,062</td>
<td>7,312</td>
<td>18,371</td>
</tr>
</tbody>
</table>

Note: All figures include the direct, indirect, and induced effects of tourist spending.
consume (C) and the proportion of household spending in the local area (Z).\(^{16}\) (refer to equation (5), page 34) In this study, sensitivity tests for the two most unreliable estimates (leakages from the other value-added and import ratios) were conducted for the accommodation RIG, the tourism multiplier, and total household income. The results can be seen in Tables 26 and 27.

The tests show that 5 percent increases in leakages from the other value-added ratios decreased the values of the accommodation multiplier, the tourism multiplier, and household income by .016, .017, and $2,184,000 (2.5 percent), respectively. Similarly, a 5 percent increase in direct import content decreased these same variables by .008, .012, and $1,587,000 (1.8 percent), respectively. Thus, the model was relatively more sensitive to changes in value-added leakages than import content, although somewhat substantial differences in income change resulted in both cases. Hence the model is considered to be fairly sensitive to imports and leakages.

In addition, these tests also indicate the approximate gains that could be achieved through strengthening the linkages in the economy by increasing local factor payments or by import substitution. For example, a 5 percent decrease in leakages from other value-added or purchases of imports by businesses would

\(^{16}\) See, for example, Archer and Jones, op. cit.; and Henderson and Cousins, op. cit.
TABLE 26

SENSITIVITY TESTS OF CHANGES IN LEAKAGES FROM LOCAL VALUE-ADDED
ON INCOME INTERACTIONS IN VICTORIA

<table>
<thead>
<tr>
<th>Other Value-Added</th>
<th>Accommodation Multiplier</th>
<th>Tourism Multiplier</th>
<th>Household Income</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>$(’000)</td>
</tr>
<tr>
<td>-.20%</td>
<td>.754</td>
<td>.715</td>
<td>96,424</td>
</tr>
<tr>
<td>-.15%</td>
<td>.736</td>
<td>.697</td>
<td>94,082</td>
</tr>
<tr>
<td>-.10%</td>
<td>.718</td>
<td>.680</td>
<td>91,780</td>
</tr>
<tr>
<td>-.05%</td>
<td>.701</td>
<td>.663</td>
<td>89,519</td>
</tr>
<tr>
<td>Estimated</td>
<td>.684</td>
<td>.647</td>
<td>87,297</td>
</tr>
<tr>
<td>.05%</td>
<td>.668</td>
<td>.630</td>
<td>85,113</td>
</tr>
<tr>
<td>.30%</td>
<td>.589</td>
<td>.554</td>
<td>74,734</td>
</tr>
<tr>
<td>.55%</td>
<td>.517</td>
<td>.483</td>
<td>65,173</td>
</tr>
</tbody>
</table>

1 Other value-added consists of rent, interest and profit, but not wages.

Note that as leakages increase, the values of the multipliers decrease.
### Table 27

**Sensitivity Tests of Changes in Import Content on Income Interactions in Victoria**

<table>
<thead>
<tr>
<th>Import Content Multiplier</th>
<th>Accommodation Multiplier</th>
<th>Tourism Multiplier</th>
<th>Household Income ($'000)</th>
<th>Pct. diff. from estimated value</th>
</tr>
</thead>
<tbody>
<tr>
<td>-.50%</td>
<td>.797</td>
<td>.801</td>
<td>108,147</td>
<td>23.9</td>
</tr>
<tr>
<td>-.25%</td>
<td>.733</td>
<td>.714</td>
<td>96,409</td>
<td>10.4</td>
</tr>
<tr>
<td>-.10%</td>
<td>.703</td>
<td>.672</td>
<td>90,689</td>
<td>3.9</td>
</tr>
<tr>
<td>-.05%</td>
<td>.693</td>
<td>.659</td>
<td>88,956</td>
<td>1.9</td>
</tr>
<tr>
<td>Estimated</td>
<td>.684</td>
<td>.647</td>
<td>87,297</td>
<td>-1.8</td>
</tr>
<tr>
<td>.05%</td>
<td>.676</td>
<td>.635</td>
<td>85,710</td>
<td>-3.6</td>
</tr>
<tr>
<td>.10%</td>
<td>.668</td>
<td>.623</td>
<td>84,189</td>
<td>-8.4</td>
</tr>
<tr>
<td>.25%</td>
<td>.646</td>
<td>.593</td>
<td>79,981</td>
<td>-15.3</td>
</tr>
<tr>
<td>.50%</td>
<td>.615</td>
<td>.548</td>
<td>73,945</td>
<td>-15.3</td>
</tr>
</tbody>
</table>
bring about increases in Victoria's household income of
$2,222,000 or $1,659,000, respectively.

Comparison with Previous Case Studies

The tourism multipliers for Victoria can be compared with
estimates in other case studies using the Archer method in Table
28. The estimate for the Victoria multiplier of .647 falls below
the Caribbean estimates but exceeds most of those of the Great
Britain studies by a factor of 2. However, there are
geographical as well as methodological reasons why this is so.
Although Victoria is located on an island, its economy is more
diversified than those in the study areas in the United Kingdom.
The greater interdependence and diversification of the Victoria
economy is evidenced by the higher ratio and transactions
multipliers.

Other studies do not agree entirely with the finding that
the income multiplier for day-trippers is lower than that for
overnight visitors. Only three out of the other five studies
show this relationship, i.e., those on Keswick, Gwynedd, and
Tayside.

The government revenue coefficients are similar to those
for the Caribbean study which focussed on government
expenditures. However, the total import coefficient for Victoria
is half that of those found in the Caribbean. While this latter
TABLE 28

A COMPARISON OF THE VICTORIA TOURISM MULTIPLIERS WITH THOSE PRODUCED IN OTHER STUDIES USING THE ARCHER METHOD

<table>
<thead>
<tr>
<th></th>
<th>Income Multipliers</th>
<th>Employment Multipliers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Tourists</td>
<td>Over-Night Trippers</td>
</tr>
<tr>
<td></td>
<td>(per unit of tourist expenditure)</td>
<td>(per $1,000 of tourist expenditures)</td>
</tr>
<tr>
<td>Victoria 1977</td>
<td>.647</td>
<td>.647</td>
</tr>
<tr>
<td>Bermuda, 1975</td>
<td>1.100</td>
<td></td>
</tr>
<tr>
<td>Bahamas, 1974</td>
<td>.782</td>
<td></td>
</tr>
<tr>
<td>Keswick, Cumbria, 1976</td>
<td>.348</td>
<td>.371</td>
</tr>
<tr>
<td>Gwynedd, N. Wales, 1973</td>
<td>.368</td>
<td>.324</td>
</tr>
<tr>
<td>East Anglia, 1975,</td>
<td>.349</td>
<td>.339</td>
</tr>
<tr>
<td>Cardiganshire, 1973</td>
<td>.310</td>
<td>.317</td>
</tr>
<tr>
<td>Anglesey 1970</td>
<td>.25</td>
<td>.25*</td>
</tr>
</tbody>
</table>

(Continued on next page)
Table 28 (continued)

<table>
<thead>
<tr>
<th>Ratio Multiplier</th>
<th>Transaction Multiplier</th>
<th>Government Revenue</th>
<th>Import Content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(per $1 of tourist spending)</td>
<td></td>
</tr>
<tr>
<td>Victoria</td>
<td>2.078</td>
<td>1.504</td>
<td>.213</td>
</tr>
<tr>
<td>Bahamas</td>
<td>1.34</td>
<td>1.16</td>
<td>.23</td>
</tr>
<tr>
<td>Bermuda</td>
<td></td>
<td></td>
<td>.21</td>
</tr>
<tr>
<td>Keswick</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gwynedd</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SOURCES:


*Estimate refers to hotel guests only.
result can be explained by the broader base of the Victoria economy, it does not explain why the Victoria income multiplier is smaller than those for the Bahamas or Bermuda.17

Summary

This chapter has presented information on the multiplier effects of tourism in the Victoria Metropolitan Area. Based on the survey data for 45 hotels and motels, as well as other published information, regional income coefficients were derived from a modest input-output analysis of the Victoria economy. The multipliers for the service sectors were generally higher than for the primary and secondary sectors. That the conventional method of summing up the accommodation sector overestimates the regional income generation coefficient was confirmed and therefore, the accommodation multiplier was adjusted from .736 to .684. This latter figure was 36 percent higher than the composite regional multiplier of .502. The employment multiplier for the accommodation sector was .084.

On the whole, the direct, indirect, and total RIGs and REGs for the accommodation sector were negatively correlated with the organisation variables, indicating that size and industrial

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17 The methodology varied from the other studies since household leakages were incorporated in the propensity to consume variable.
organisation do have some explanatory powers, thereby confirming
the hypotheses of this study. In particular, there were strong
inverse correlations for the REGs and volume measures. However,
some positive relationships were found for the indirect RIG,
indicating that the hotels with high food and beverage ratios
generate more indirect income and sales per tourist dollar to
the local economy, than do those with lower ratios. On the other
hand, only about one-third of the possible relationships of the
multipliers with the organisation variables was significant.

A puzzling result was the highly significant negative
 correlations obtained for government payments. It was found that
the smaller, the nonlicensed, and the motel-type establishments
paid a greater proportion of their revenues as municipal,
provincial, and total taxes.

The regional tourism income multiplier for Victoria was .65
per tourist dollar and the employment multiplier was .10 per
$1,000 of tourist spending. The transactions, government
revenue, and import coefficients per $1 tourist dollar were 1.5,
.21 and .34, respectively. Overnight visitors spend relatively
more on accommodation and less on transportation and retail
purchases than do day-trippers. These spending patterns have the
effect of producing slightly higher income multipliers for
overnight visitors and higher employment multipliers for
day-trippers. On the whole, overnight visitors generate more
than 95 percent of the economic activity in the region than do
the day visitors.

Including the multiplier effect, the tourist spending of $135 million in 1977 generated approximately $87 million of household income, $203 million of sales, 14,000 jobs, $29 million in government revenues and $46 million of imported goods and services in Victoria. (see Figure 8) The importance of the accommodation sector is evident, since it generated 27 percent of direct income and 16 percent of direct employment.
LEAF 114 OMITTED IN PAGE NUMBERING
V. CONCLUSIONS

Now that the economic impact of tourism on the economy of Victoria has been determined, the study proceeds into the final chapter. This study alludes to the current policy concerns of foreign ownership, competition policy, development of tourism infrastructure and small business development. To a large extent, these issues determined the choice of variables on industrial organisation. Given the data deficiencies, methodological limitations, and theoretical uncertainties, it is stressed that the conclusions drawn from this study are only tentative. As was stated in the previous chapter, the major findings support the initial hypotheses of the study. They also appear to support present government policy directions. However, care should be taken in formulating policies which are based solely on the basis of the size of multiplier estimates. Other factors, such as capacity constraints, demand factors, and regional goals and priorities, are important from the standpoint of establishing guidelines for regional policy formulation.

This chapter is divided into three sections. Firstly, the major findings of the study are summarised. Secondly, recommendations for public action as a result of the findings of the study are suggested. Thirdly, directions for further research are proposed.
Major Findings

The major finding in relation to the differential tourist multipliers are:

1. The multiplier estimates for Victoria are generally higher than the other studies using the Archer method. This was expected because of the methodological reasons mentioned in Chapter Two, and also because of the relatively broader base of the Victoria economy. However, the results are considered to be consistent with previous findings that the regional tourism multiplier is low. This can be expected from island economies, which have high leakage elements. The regional income multiplier of .65 obtained in this study can be compared with the value of .87 estimated for Prince Edward Island obtained by using an ad hoc model. 1

2. The results demonstrate the importance of secondary effects, since more income and jobs were generated by indirect and induced spending than by direct spending.

3. According to the results, if the goal is to maximise income, then overnight visits should be promoted. On the other hand, if the goal is to maximise employment, then day-trips should be promoted. However, these findings may lead to wrong

policy conclusions, since these strategies may or may not be feasible depending on supply constraints and market demands.

The major findings in regard to differential accommodation multipliers are:

1. The study shows that different types of establishments have different levels of performance. As was mentioned in the beginning of the study, there were a priori reasons for expecting the relationships that were found in the analysis. The multipliers for the accommodation sub-sectors were expected to vary with size and industrial organisation because of differences in purchasing patterns and factor leakages. The findings support the initial hypotheses of the study, since smaller multipliers were generally found for the central, large, affiliated, and externally-owned establishments because of the higher leakage elements.

2. As a consequence of these differences, the hypothesis that the usual method of estimating the income multiplier tends to overestimate it was confirmed. The model was adjusted to compensate for this.

3. Higher multipliers do not necessarily mean better performance, nor do they necessarily indicate what is best for the region. As was postulated, the lower multiplier values were also due to economies of scale, particularly economies of labour. Furthermore, the relative contribution to the regional economy of establishments with lower
multipliers are much greater than those with higher estimates. For example, the results show that externally-owned lodgings contribute more than twice the direct income than do those that are locally-owned.

4. Caution must be used in translating these results into public policy. For example, Brownrigg and Grieg showed that even though the multiplier for a certain accommodation sub-sector is relatively high, this does not necessarily mean that the multiplier for tourists staying in that type of lodging would also be high. Their accommodation multipliers for licensed hotels and camping facilities were .23 and .67, respectively. However, the tourist income multipliers for visitors staying in these different facilities were identical—.23. Archer himself warns that the wrong policy conclusions can be drawn from the multipliers and states that the information they provide is of limited value, since-multiplier analysis only provides a partial picture. Finally, the results are only useful within the context of the goals and priorities of the region.

---


Implications for Planning

Establish Clearer Regional Goals and Priorities

Although provincial marketing targets have been identified and promotional efforts have been expanded, there is a need to take positive steps in establishing regional goals and priorities. The tourist industry has been subject to the generally universal trends within capitalism of conglomeration and the need for better management. Hudson claims that the concentration of financial links is changing the whole structure of the industry from individually-made "products" to mass-produced articles for mass-consumption. The resulting conflicts of interest and the competition for limited resources has also brought about increased government intervention and control of resources. The fundamental considerations for policy formulation are equity and efficiency.

Additionally, policy directions are often ambiguous. Diamond relates tourist sectoral output multipliers to four objective functions reflecting Turkish planning priorities. The policy objectives were (1) the maximisation of income, (2) the


maximisation of employment, (3) the minimisation of capital and
(4) the minimisation of foreign exchange losses. He explained
how, in some cases, these objectives were irreconcilable, e.g.,
some industries minimise the loss of foreign exchange but do not
create a relatively high amount of income and employment.6

Some proposed regional goals would be to maximise the
benefits for local residents (income and jobs), to optimise
industrial mix (broaden the economic base), to optimise
facilities mix (determine scale of facilities), and to optimise
factor mix (promote local purchases).

Strengthen the Economic Base

This analysis has demonstrated the importance of linkages
to the local economy in generating income and jobs, based on the
premise that greater interdependence in the economy is desirable
for regional development. But it is a much more difficult matter
to determine how this is to be achieved. On the basis of the
study results, three beneficial strategies can be advocated.

1. Strengthen existing linkages—although the limited economic
possibilities of island economies presents particular
challenges, Victoria does have indigenous secondary industry
such as food processing, printing, and transportation

6 J. Diamond, "Tourism and Development Policy: A Quantitative
equipment. Possibilities of making local purchases should be encouraged, particularly at the wholesale level.

2. Establish new linkages--this is much more difficult to accomplish even though present government policy of offering incentives and concessions to private industry appears to be the most promising way to broaden the economic base through diversification.

3. Control leakages--this strategy is much more contentious than the previous two, since restrictions on trade and foreign control of capital are likely to be resisted by the business community as a whole.

It has been shown that small decreases in leakages could result in the additional generation of millions of dollars in household income. For these reasons, it is felt that efforts should be made to increase the backward and forward linkages in the economy, for example, by diversification and import substitution.

Reappraise the System of Public Assistance

It is recognised that inequities can never be entirely eliminated. Nevertheless, the study results suggest that tax policy should be reappraised to see whether the tax burden falls unevenly on the small enterprises.
Establish an Information System Based on Supply-Side Data

Traditionally, tourism development strategies have been based on demand side data involving extensive visitor surveys. Although border counts are important in determining tourist profiles, it is argued that the information provided by supply side data is more timely, broader based, and less costly to obtain. Additionally, it provides information that is more useful for policy makers, as well as hotel operators.

Suggestions for Further Research

This study has been hampered by poor data, methodological limitations, and theoretical weaknesses. Hence, interindustry comparisons were made with caution. Moreover, it provides static results for the short term, only.

Nevertheless, this study does provide some first estimates for the multiplier impact of tourism in the Province. In addition, the analysis has been extended to the level of the establishment in this detailed study of the accommodation sector. As such, it represents one of the first attempts to study multipliers at this level of disaggregation. By incorporating some concepts in the geographical literature, such as location, linkages, and industrial organisation, this empirical investigation represents a contribution to the micro, as well as macro, level of planning.
There are several ways in which this study could be extended and improved.

1. **Improve the data base**--The inclusion of better data would improve the reliability of the estimates and comparisons.

2. **Extend the study**--The study could be extended to include other tourists (campgrounds and recreation vehicles), the other tourist regions in the Province, and levels of regional aggregation. The techniques could also be used to evaluate the impacts of new projects or proposals. Spatial concepts could also be applied more specifically to the geographic distribution of benefits, e.g., distance-decay concepts or length of linkages. The model could also be transformed into a dynamic one by incorporating a dynamic feedback mechanism, similar to the consumption feedback mechanism developed in previous studies. Along these lines, dynamic capital flows could also be investigated.

3. **Apply other planning models**--the results of this study could be incorporated with other economic studies using benefit-cost analysis or decision modelling to provide more useful information for policy formulation.

4. **Develop better theory**--this study has demonstrated the need for a more solid theoretical foundation for economic development based on the tertiary sector. It is argued that the tourist industry is a capital-intensive despite the amorphous and diffuse nature of the tourism commodity. Until
the role of tourism in stimulating development becomes clearer, studies of this nature have only limited usefulness.
**TABLE 29**

**EXPENDITURE PATTERNS BY INDUSTRIAL SECTOR, VICTORIA 1977**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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**Local Value-added**

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<th>Profit after tax</th>
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<td>25.77</td>
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**Govt. Payments**

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(Continued on next page)
TABLE 29 (continued)

EXPENDITURE PATTERNS BY INDUSTRIAL SECTORS, VICTORIA 1977

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<td>1.61</td>
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SOURCES:


(continued)


Note: Column totals may not add to 100 due to rounding.
### TABLE 30
SECONDARY INCOME GENERATED BY HOUSEHOLD SPENDING
(Per Dollar of Household Spending)

<table>
<thead>
<tr>
<th>Category of Expenditure</th>
<th>Expenditure Pattern</th>
<th>Sector Value-Added</th>
<th>Induced Income Generation</th>
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<tbody>
<tr>
<td></td>
<td>(XZ)</td>
<td>(V)</td>
<td>(XZ)x(V)</td>
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<td>.001</td>
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<td>Transportation</td>
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<td>.035</td>
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<tr>
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<td>.555</td>
<td>.027</td>
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<tr>
<td></td>
<td>.017</td>
<td>.555</td>
<td>.009</td>
</tr>
</tbody>
</table>

- Induced (second round)-------------------- |                       | .271               |
- Induced (subsequent rounds)              |                       | .075               |
- Total                                    |                       | .346               |

**SOURCES:**


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<th>Variables*</th>
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<td></td>
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<td></td>
<td>beverage revenue</td>
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<td></td>
<td></td>
<td>to room revenue</td>
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<td>13. Percentage of local</td>
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(Continued on next page)
TABLE 31 (continued)

CLASSIFICATION AND CODES OF ACCOMMODATION

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<td>Scale of establishment</td>
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<td></td>
<td>10. Total revenue per unit</td>
</tr>
<tr>
<td>Return on operation</td>
<td>11. Profit before depreciation per unit</td>
</tr>
<tr>
<td>Level of occupancy</td>
<td>12. Occupancy rate</td>
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*Numbering of variables corresponds to the order in Table 32.*
### TABLE 32

**MEASURES OF ASSOCIATION OF THE ORGANISATION VARIABLES**

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<td>-.21</td>
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**NOTES:**

Values within the first five rows and columns are gamma coefficient variables \( (X) \). The coefficients within the remaining first five rows and columns are Spearman correlation coefficients for ordinal with interval variables. Values in columns 6 - 13 are Pearson correlation coefficients ratio variables \( (*) \).

Levels of significance are denoted by:

- \( X \), \( + \), \( * \) significant at 0.05, \( XX \), \( ++ \), \( ** \) significant at 0.01, \( XXX \), \( +++ \), \( *** \) significant at 0.001.

Refer to Table 31 for variable codes.

*Excludes extreme case.*
### TABLE 32

**MEASURES OF ASSOCIATION OF THE ORGANISATION VARIABLES**

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The first five rows and columns are gamma coefficients for ordinal variables (X). The coefficients within the remaining first five columns are correlation coefficients for ordinal with interval variables (+). Columns 6 - 13 are Pearson correlation coefficients for interval or ordinal variables. Significance are denoted by: * significant at 0.05, ** significant at 0.01, and *** significant at 0.001.

For variable codes.
# Table 33
Pearson Correlation Matrix of the Tourism Multipliers and Selected Variables

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**Notes:**

Levels of significance are denoted by: * significant at 0.05, ** significant at 0.01, and *** significant at 0.001.

Variables 9 - 15 are ratios to total revenue plus sales taxes minus depreciation.

<sup>a</sup>Regional income generation coefficient.

<sup>b</sup>Regional employment generation coefficient.

<sup>c</sup>Percentage loss due to the doubling of ferry fares in the summer of 1976.
TABLE 33
CORRELATION MATRIX OF THE TOURISM MULTIPLIERS AND SELECTED VARIABLES

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Significance are denoted by: * significant at 0.05, ** significant at 0.01, *** significant at 0.001.

These are ratios to total revenue plus sales taxes minus depreciation.

't generation coefficient.

'ment generation coefficient.

'due to the doubling of ferry fares in the summer of 1976.
TABLE 34
MEASURES OF ASSOCIATION OF THE TOURISM MULTIPLIER VARIABLES WITH THE ORGANISATION VARIABLE

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<tr>
<td>Employment</td>
<td>.58</td>
<td>.06</td>
<td>.53</td>
<td>.18</td>
<td>.09</td>
<td>.58</td>
<td>.06</td>
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<tr>
<td>Wages</td>
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<td>.33</td>
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<td>.56</td>
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<tr>
<td>Other value added</td>
<td>.11</td>
<td>.15</td>
<td>.43</td>
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<td>Ferry</td>
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</tr>
</tbody>
</table>

NOTES:
Columns 1 - 5 give the Spearman Correlation Coefficients (+). The values as follows: + significant at 0.05; ++ significant at 0.01; + significant at 0.05; ++ significant at 0.01.

Columns 6 - 13 show the Pearson Correlation Coefficients (*). The values as follows: * significant at 0.05; ** significant at 0.01; *** significant at 0.01.

Refer to Tables 31 and 33 for further clarification of the variables.

Excludes extreme case.
TABLE 34

MEASURES OF ASSOCIATION OF THE TOURISM MULTIPLIERS AND SELECTED VARIABLES WITH THE ORGANISATION VARIABLES

<table>
<thead>
<tr>
<th>Facility Location</th>
<th>Type</th>
<th>Affiliation</th>
<th>Ownership</th>
<th>Food and Beverage Ratio</th>
<th>Room Rate</th>
<th>Total Revenue</th>
<th>Rooms Revenue</th>
<th>Profit</th>
<th>Occupancy</th>
<th>Local Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>- .01</td>
<td>- .08</td>
<td>- .14</td>
<td>- .33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- .22</td>
<td>.03</td>
</tr>
<tr>
<td>02</td>
<td>- .02</td>
<td>.14</td>
<td>- .21</td>
<td>- .06</td>
<td>.31</td>
<td>.33</td>
<td>.30</td>
<td>.12</td>
<td>- .29</td>
<td>- .12</td>
</tr>
<tr>
<td>02</td>
<td>- .15</td>
<td>- .11</td>
<td>- .18</td>
<td>- .36</td>
<td>.03</td>
<td>.20</td>
<td></td>
<td>.10</td>
<td>- .15</td>
<td>- .29</td>
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<tr>
<td>09</td>
<td>- .16</td>
<td>.07</td>
<td>- .02</td>
<td>.17</td>
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<td></td>
<td></td>
<td>- .17</td>
<td>- .01</td>
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<tr>
<td>48</td>
<td>.07</td>
<td>- .37</td>
<td>- .14</td>
<td>.02</td>
<td>.53</td>
<td>- .26</td>
<td>- .11</td>
<td>.37</td>
<td>- .22</td>
<td>.02</td>
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<tr>
<td>27</td>
<td>- .15</td>
<td>- .20</td>
<td>- .32</td>
<td>- .20</td>
<td>.24</td>
<td>- .30</td>
<td>- .39</td>
<td>.32</td>
<td>- .32</td>
<td>- .20</td>
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<td>15</td>
<td>- .47</td>
<td>- .24</td>
<td>- .23</td>
<td>- .14</td>
<td>- .05</td>
<td>- .50</td>
<td>- .51</td>
<td>- .26</td>
<td>- .38</td>
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<td>25</td>
<td>- .22</td>
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<td>77</td>
<td>- .37</td>
<td>- .67</td>
<td>- .18</td>
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<td>- .11</td>
<td>- .43</td>
<td>- .70</td>
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<td>- .42</td>
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<td>76</td>
<td>- .25</td>
<td>- .64</td>
<td>- .42</td>
<td>.02</td>
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<td>+++</td>
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<td>73</td>
<td>- .12</td>
<td>- .53</td>
<td>- .18</td>
<td>- .09</td>
<td>- .58</td>
<td>- .06</td>
<td>- .31</td>
<td>- .62</td>
<td>- .07</td>
<td>.04</td>
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<td>.49</td>
<td>.11</td>
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<td>- .56</td>
<td>- .43</td>
<td>- .33</td>
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<td>- .43</td>
<td>- .41</td>
<td>- .15</td>
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<td></td>
</tr>
</tbody>
</table>

the Spearman Correlation Coefficients (+). The levels of significance are denoted significant at 0.05; ++ significant at 0.01; +++ significant at 0.001.

the Pearson Correlation Coefficients (*). The levels of significance are denoted significant at 0.05; ** significant at 0.01; *** significant at 0.001.

and 33 for further clarification of the variables.

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APPENDIX 3

TOURISM ACCOMMODATION SURVEY

Please provide the following information for financial year 1977.

1. How long has this establishment been in business?
   How long has the business been operated by present owners?

2. Accommodations statistics:
   a) How many rooms were available for rent in 1977?
   b) Please estimate your average room occupancy rate for 1977.
      (i.e. percent of occupancy)
   c) Could you break down your room rental revenue into:
      Commercial, industrial and convention business
      Other tourists and visitors
      Permanent guests
      ----------------------------------
      100 %
   d) What would you estimate to be your average daily room rate for 1977?

3. How is this business organized? (please ✔ all applicable)
   □ Chain operation
   □ Franchise operation
   □ Owner operated
   □ Leased by outside management
   ✔ Other, please specify ____________________________

4. a) How is this business registered?
   □ Individual Proprietorship  □ Partnership  □ Incorporated Company

   b) Location of head office ____________________________

   c) What percentage of the business or voting shares are owned by residents of:
      Victoria Metropolitan Area
      Rest of Vancouver Island
      Vancouver and Lower Mainland
      Rest of B.C.
      Rest of Canada
      U.S.A.
      Other, please specify ____________________________
      100 %
5. a) Approximately how many suppliers did you make purchases from during 1977 for:

   Inventories
   Furniture, fixtures, & equipment

b) Could you please tell me where these suppliers are located?

<table>
<thead>
<tr>
<th>Location</th>
<th>Number of Suppliers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victoria Metropolitan Area</td>
<td></td>
</tr>
<tr>
<td>Rest of Vancouver Island</td>
<td></td>
</tr>
<tr>
<td>Vancouver and Lower Mainland</td>
<td></td>
</tr>
<tr>
<td>Rest of B.C.</td>
<td></td>
</tr>
<tr>
<td>Rest of Canada</td>
<td></td>
</tr>
<tr>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td>Other, please specify</td>
<td></td>
</tr>
</tbody>
</table>

6. What is the percentage distribution of your purchases from wholesalers, retailers, manufacturers, construction, etc.?

<table>
<thead>
<tr>
<th>Type of Supplier</th>
<th>Whole</th>
<th>Retail</th>
<th>Manufacturer</th>
<th>Contractor</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventories</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>Furn. fixtures &amp; equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

*Includes Government Liquor Stores

7. Could you give me an approximate breakdown of your total revenue into the following categories:

<table>
<thead>
<tr>
<th>Category</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rooms</td>
<td></td>
</tr>
<tr>
<td>Food</td>
<td></td>
</tr>
<tr>
<td>Beverage**</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Includes Public House
8. TOTAL BUSINESS EXPENSES (note: for financial year 1977)

(a) Total Labour Costs - Would you please give me some idea of your total wage and salary bill, including holiday and sick pay, social insurance contributions, etc.? 

(b) Other Operating Costs - Please provide a breakdown of your operating costs, excluding wages and salaries, into the following categories:

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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beverages</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Printing and office supplies</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other materials and supplies</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heat, light, and power</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Laundry</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchased advertising and sales promotion</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchased repairs and maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchased delivery services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchased legal and auditing fees</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Management or franchise fees</td>
<td></td>
<td></td>
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<td></td>
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<td>Insurance</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business taxes, permits, &amp; licenses</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Property taxes</td>
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<tr>
<td>Rent</td>
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<td></td>
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<tr>
<td>Interest</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All other operating expenses (please specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Rows should total 100%
9. Could you give me a breakdown of any assets which you acquired for repairs and maintenance, renovations and upgrading during 1977 into the following categories:

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
</tbody>
</table>

10. Could you give me some idea of the geographical distribution of profit into the following regional breakdown:

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vic. Metro. Area</td>
<td></td>
</tr>
<tr>
<td>Rest of Van. Is.</td>
<td></td>
</tr>
<tr>
<td>Van. and Low. Main.</td>
<td></td>
</tr>
<tr>
<td>Rest of B.C.</td>
<td></td>
</tr>
<tr>
<td>Rest of Canada</td>
<td></td>
</tr>
<tr>
<td>U.S.A.</td>
<td></td>
</tr>
<tr>
<td>Other, please spec.</td>
<td></td>
</tr>
</tbody>
</table>

100 %

11. Would you please give me some idea of your total sales revenue, including sales tax, for 1977?

$ 

12. Employment:
   a) Could you tell me the total number of your labour force, including members of your family, for an average week in

   February 1977
   August 1977

b) Would you break down the August total into the following categories:

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent Full time</td>
<td>Permanent Full time</td>
</tr>
<tr>
<td>Part time</td>
<td>Part time</td>
</tr>
<tr>
<td>Seasonal Full time</td>
<td>Seasonal Full time</td>
</tr>
<tr>
<td>Part time</td>
<td>Part time</td>
</tr>
</tbody>
</table>

   c) Of the extra staff in August, could you tell me how many are from:

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vic. Metro. Area</td>
<td></td>
</tr>
<tr>
<td>Rest of Van. Is.</td>
<td></td>
</tr>
<tr>
<td>Elsewhere</td>
<td></td>
</tr>
</tbody>
</table>

   d) How many of your August staff were students?

   

139
13. Do you experience any difficulty in obtaining sufficient labour in the local area? □ Yes □ No

If so, which types? ________________________________

14. Do you experience any difficulty in obtaining sufficient labour from outside? □ Yes □ No

If so, which types? ________________________________

15. After the doubling of the ferry fares in the summer of 1976, did your business experience □ an increase □ a decline □ no change.

If applicable, could you estimate what percentage of your total revenue in 1976 declined as a result of the raising of the ferry fares?

Please describe what has happened since then.

16. Have you ever received any public assistance? □ Yes □ No

What is your opinion of increased public assistance for your business?

17. What do you think is needed to improve your tourist business?
Selected Bibliography

Books


**Articles and Papers**


Var, Turgut; Beck, Doug; and Loftus, Patrick. "Determination of Touristic Attractiveness of the Touristic Areas in British Columbia." Journal of Travel Research 15 (Winter


Reports and Public Documents


