

EFFECTS OF THE HAMILTON
STREET RAILWAY STRIKE OF
1982 ON DOWNTOWN BUSINESSES

By

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ABSTRACT

This study investigates the effects of transit strikes on the central business districts (C.B.D.'s) of large cities. It focuses directly on the Hamilton Street Railway (H.S.R.) strike which occurred during the summer of 1982, and attempts to outline exactly what age-groups were affected the most and whether or not the merchants of the downtown were significantly affected monetarily. Information was acquired from merchants through the circulation of a questionnaire which was distributed in September and October of 1983. A regression equation was formulated which took into account some possible causes for diminishing revenues other than the transit strike. The findings of this analysis were that the transit strike had a significant effect on the revenues of downtown businesses, as well as on the age-groups that were present in the downtown at the time of the strike. The regression analysis found that the other factors which were considered did not account for a very significant proportion of decreased revenues when compared to transit strikes.

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INTRODUCTION

The development of mass transit systems throughout major North American cities points to the importance assigned by planners and civic officials in ensuring a good and reliable means of transportation for the population. Mass transit has long been an important source of growth to the city as well. As Walker stated, ..."street-cars and omnibuses provided a way for the small middle-class of clericals, professionals and petty entrepreneurs to begin sorting itself out to the peripheral zone of the built-up area as well" (Walker, 1981, p.397). This statement assesses the movement of people from the downtown to their new place in the "peripheral-area" or suburbs. This process began in the early to mid eighteen-hundreds (1800's) and is also a recent trend, with the potential benefits of a well-run transit system being quite apparent.

In addition to transporting people to the suburban fringes of the city, which is where they prefer to live, a transit system also functions to link these suburban inhabitants to the economic core of the city which is the Central Business District (C.B.D.). It appears that with the large outward migration from the central city, the merchants of the central business district have sustained a noteworthy loss in patronage and in sales. Large suburban shopping centers have obviously had an adverse effect on the financial fortunes of the central city merchants as well. As a result,

it seems that one of the few factors which continues to favour the downtown businesses is a strong transport facility linking the downtown with the rest of the city. This strong transport facility includes the infrastructure provided such as, good roads and highways with sufficient linkages, and automobiles and buses as means by which individuals can travel relatively quickly and efficiently. This investigation will focus on buses as a means of transportation and will note the importance of buses to downtown business. The study will be broadened somewhat to relate the effects that have been experienced by the downtown merchants when transit services were temporarily suspended.

Specifically, this study focuses on the effects that the Hamilton Street Railway (H.S.R.) bus strike of the summer of 1982 had on the downtown merchants of Hamilton. The intent of this investigation is to see what effect the Hamilton Street Railway strike may have had on downtown businesses, and whether or not it had a significant monetary effect.

Much of the information relating to the effects that the bus strike had on local merchants was published daily in the local newspaper, "The Spectator." The newspaper told of the daily outrage of local merchants with businesses in the downtown. The most vociferous were the merchants who operated the downtown farmer's market, as they lamented how the bus strike had severely affected their sales (The

Spectator, June 16, 1982, p.7). They objected to the fact that the transit dependent sector of the population, especially senior citizens, who were their most frequent customers, had no way of getting downtown to shop besides using the bus. A common explanation of what happened during the strike was that the transit dependent members of the city found alternatives to the farmer's market even though it may have been considerably more expensive to shop at these new places. An example of some of the new places which senior citizens may have opted to patronize during the strike instead of the farmer's market may have been chain stores such as, Seven-Eleven, Bantam and Mac's Milk or supermarkets like Dominion and Loblaws for fresh fruits, vegetables and meat.

Most of the members of the downtown business community experienced drastic decreases in sales during the strike (The Spectator, June 28, 1982, p.8). The downtown merchants tried to ameliorate the situation by encouraging both sides (labour and management) to return to the bargaining table and also suggesting that an independent arbitrator should be appointed to help resolve the dispute (The Spectator, July 16, 1982, p.7).

As the bus strike continued huge losses were being experienced by numerous businessmen and they were prepared to lobby the financial committee of city council for financial aid (The Spectator, July 29, 1982, p.9). Prominent

businessman and chairman of the transit committee, Pat Valeriano, sympathized with the plight of the downtown merchants. Valeriano stated that the city would have to consider how much lost revenue was due to the bus strike, inflation, recession, local unemployment or other factors (The Spectator, July 29, 1982, p.9). The previous statement provides a synopsis of one of the sub hypotheses of this study which deals with causes for decreased revenues other than the bus strike. These factors which may have contributed in some way to the decreased revenues (if any) of local merchants are, inflation, recession and local unemployment. This is a very important hypothesis to consider since the economic climate in Hamilton during the entire year of 1982 was severely depressed.

Many observers cite the Stelco strike beginning in the summer of 1981 and lasting until December of the same year as being a very significant factor which led to the closure of numerous downtown establishments. A severe economic recession occurred some time after the Stelco strike and was accompanied by lay-offs from both major Hamilton steel producers, Stelco (Hilton Works) and Dofasco. This is also seen as being an important contributing factor to consider, but to separate the effects of the recession from unemployment in the Hamilton area remains a difficult task. Two important factors which remain are firstly, inflation which implies an increase of the general price of goods

accompanied by a consequent decrease in the value of the dollar and secondly, "other," accounting for any remaining reasons.

Another sub hypothesis of this study concerns the age-groups involved and indicates that certain groups of people termed "transit-captives" (teenagers and old-aged people) tend to rely on transit (i.e., buses) a great deal. Once transit is eliminated these people may not go back to the downtown until transit services are resumed. The study investigates the effects of the bus strike on patronage by various age-groups of the downtown in general, and of the various stores more specifically.

The study is divided into a number of sections and will proceed in the following manner. The literature review in the first section presents pertinent literature on buses and their importance to the downtown economic core. The next section discusses the research design for the Hamilton case study including questionnaire design and interpretation. The findings of tests and analyses comprise the next section where the appropriate statistical tests were applied in order that the questions which were asked initially may be answered. The conclusion unites the various sections of this study in order to present some new and pertinent information concerning how bus strikes affect downtown businesses.

Chapter 1 LITERATURE REVIEW

In studying the relationship between transit and the downtown, several broad statements concerning how the two are related can be made. As mentioned in the introduction, mass transit links the central city with the suburbs. Mass transit also links the economic functions of the central business district with those individuals who reside outside of the core and wish to travel there. The relationship between transit service and downtown prosperity can be considered the general form of the hypothesis under investigation. A positive relationship would imply that increasing transit services would also increase prosperity for the downtown and conversely, decreasing transit services would decrease prosperity for the downtown. A negative relationship would imply the opposite, that increasing transit services would decrease the prosperity of the downtown.

A review of the pertinent literature on the subject of the Hamilton Street Railway (H.S.R.) strike showed that much of the information directly related to the Hamilton study was obtained through the local newspaper and was presented in the introduction. Since few articles have been written directly relating to the Hamilton Street Railway (H.S.R.) strike it becomes necessary to place the study on a more general level. This means that the investigation of literature will be broadened to cover the relationship between transit and the downtown in general.

The theme of transit being vital to the economic well-being of the community, primarily the downtown business core, is a strong concept that deserves emphasis. This received support from Polin who stated that, "transit service has gained increased exposure and acceptance among the business community as a positive force in downtown redevelopment" (Polin, 1976, p.29). This point was further expounded by Reiner who believes that it is economically sound for a community to have and support a transit system, and that development of the transit system is a task that should be shared by transit and business sectors (Reiner, 1980, p.71).

Anthony Gallo of the Toronto Transit Commission (T.T.C.) agrees that the increased use of transit reduces congestion, revives the inner city, improves mobility and also increases business success (Gallo, 1980, p.8). The potential impacts of new rapid transit systems are very similar since "these systems stimulate, revitalize and create infrastructure economics in urban development in contrast to what would have occurred without such a system" (Knight, 1976, p.234).

An example of how increased transit service to the downtown encourages increased shopping activity can be seen in the Vancouver Freebus Study, where no charge transit service was provided by the city of Vancouver for the downtown core (Vancouver Freebus Study, 19, p.56). It was found that by far the most positive aspect of the special downtown

transit services were the benefits derived by local businessmen in terms of increased patronage as well as increased sales (Vancouver Freebus Study, 19, p.57).

A study of the transit strike which occurred in Pittsburgh in 1976 made some important statements of the potentially damaging effects of such a strike. The study found that stores in the downtown suffered greater financial losses than non-CBD stores. In addition to this it was determined that "transit-captives" would be increasingly disadvantaged with the progression of a bus strike, since fewer of their trips could be postponed (Blumstein, 1983, p.380).

Those members of the population who were previously labelled "transit-captives" play a very important role in this relationship between transit and downtown prosperity. It was frequently cited in newspaper articles as well as in scientific journals that the old-aged individuals were the ones most severely affected by the suspension of transit services. The loss of their patronage was frequently noted as more significant than that of any other group. The role played by these transit dependent members of our society is of great importance since it has been found that many of these people return to the bus system after a strike, essentially because they have no other means of transportation (Brachman, 1978, p.50). While Brachman also noted that prestrike "choice" riders may not return to transit at all

(Brachman, 1978, p.50). It is believed that for this reason transit companies should orient their services around the captive markets such as poor, elderly and autoless individuals who depend on their services to the exclusion of all others (Polin, 1976, p.35). This focus on "transit-captives" will be investigated thoroughly later in this study to see if it merits any consideration.

Labour unrest is another key consideration in this investigation. Since the wages of transit workers are constantly escalating, the affordability of good transit service may quickly be drawing to a close. This may hasten the tendency for people to use automobiles instead of buses for journeys to the central business district. Labour instability is exhibited through strikes and is quite unproductive since both sides (labour and management) lose money during a strike, and the transit system is likely to experience a loss in ridership after the strike is over (Gambaccini, 1976, p.15). The main point revealed here is that when the transit system is not run as efficiently as possible, many different groups will feel the resultant negative affects. The remaining sections of this study focus on research design for the Hamilton case study, tests and analyses performed on the data, and conclusions of the investigation.

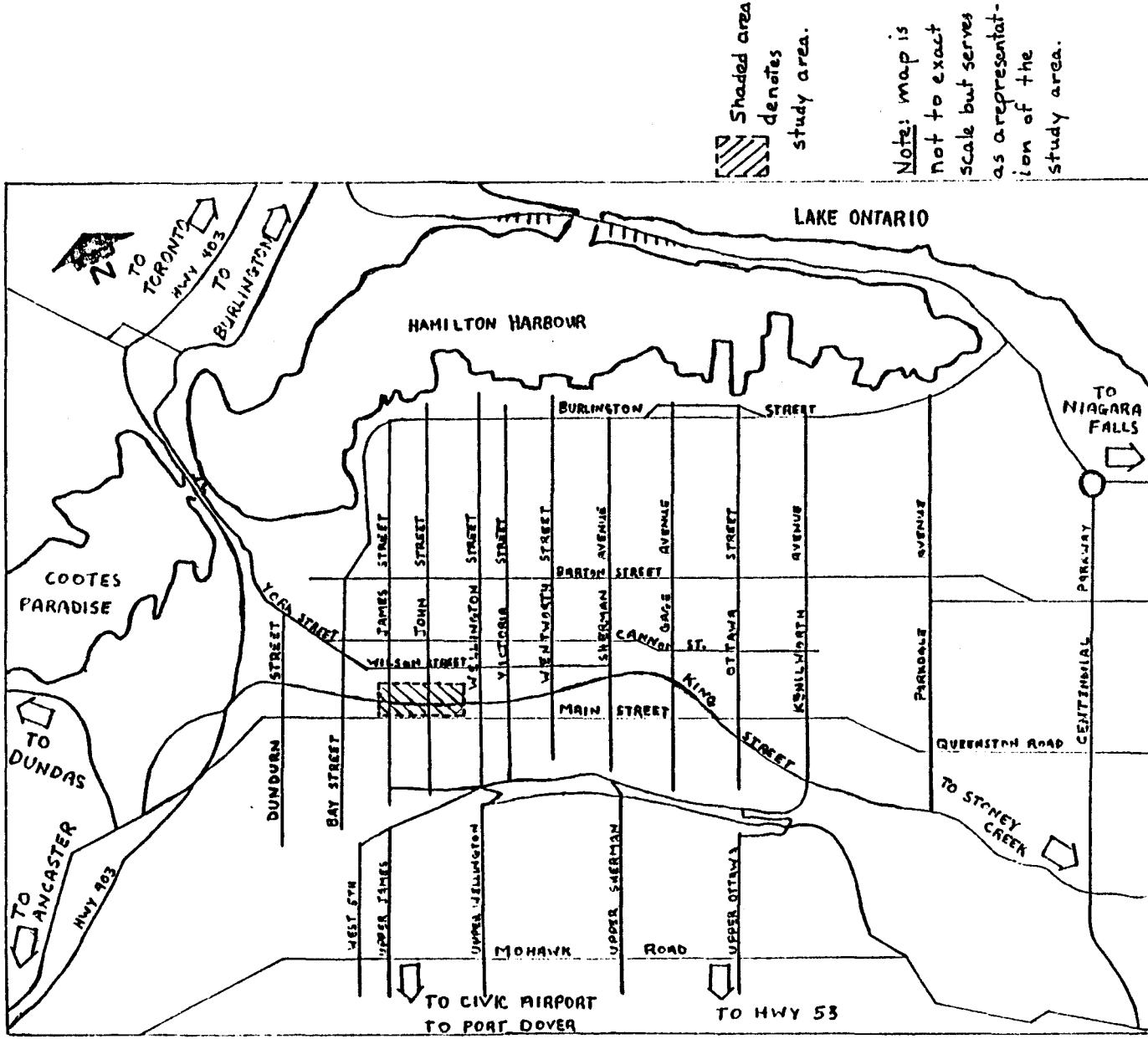
Chapter 2.1 RESEARCH DESIGN

This chapter concerns itself with the design of the study. It should already be apparent that the study will test the hypothesis that transit is vital to the economic "well-being" of the downtown business core. The study was conducted in the downtown core of Hamilton and encompasses as much of the downtown area as possible (figure 1). The reason for the study being conducted using the downtown as the object is that an efficient transportation system is seen as an essential element which enhances the business and commercial functions of the downtown (Central Area Plan-Hamilton, 1979, p.18). This chapter focuses on the location of the study and boundaries of the study area, as well as the data collection procedures which were employed.

The primary traffic artery upon which the study focuses is King Street. The exact location is between James Street and Mary Street, on both the north and south sides of King Street east. The north side of King Street is segmented into one block divisions beginning at Mary Street and ending at James Street forming four such divisions. The south side of King Street forms only two major sections or divisions including the Terminal Towers Mall and the shops east of James Street. The three remaining sectors are comprised of Jackson Square Mall, the Farmer's Market, and the east side of James Street from King to King-William Street

HAMILTON

Figure 1



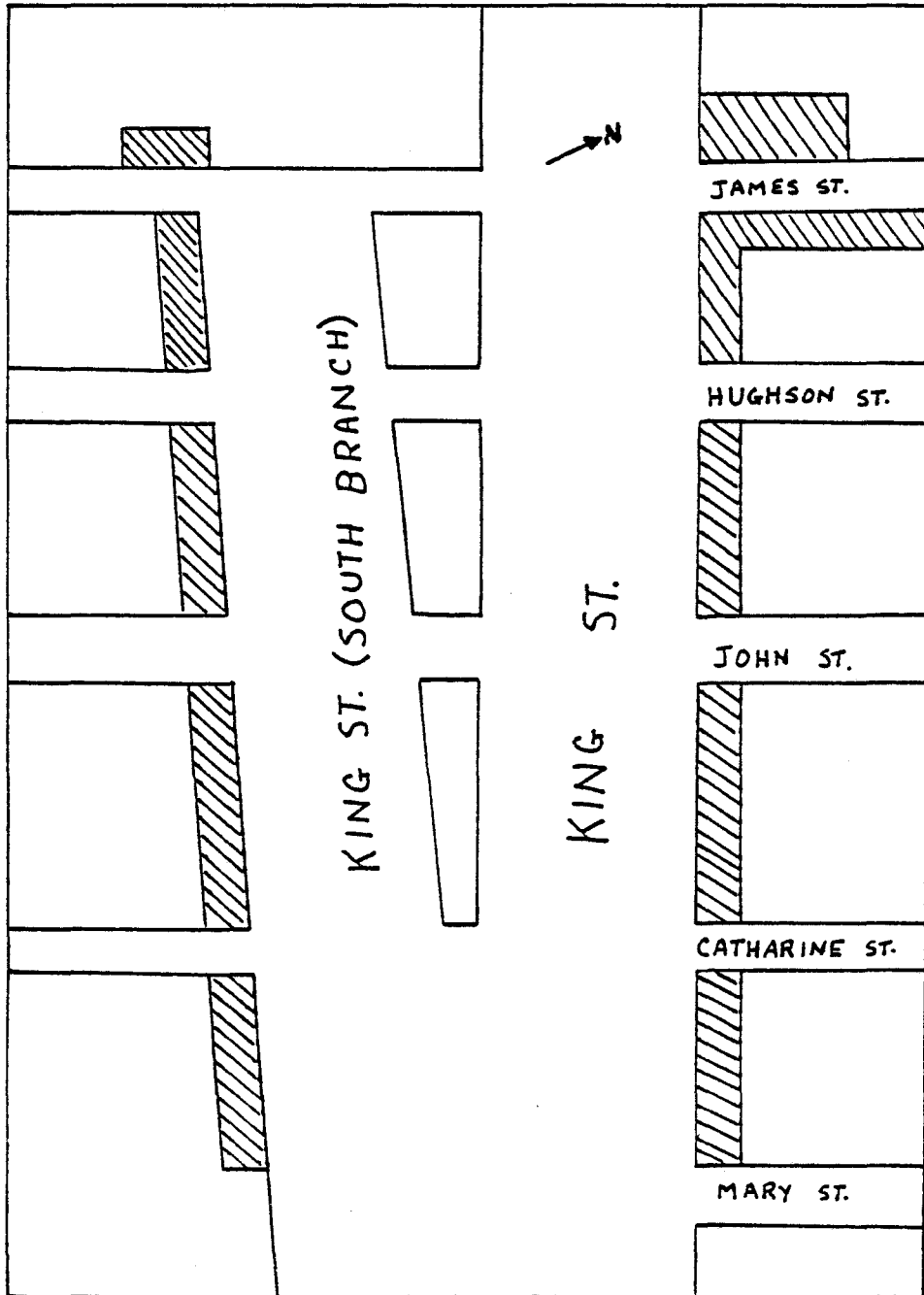
(figure 2).

The data collection technique that was employed, involved the use of questionnaires to sample potential respondents found in the downtown core. The utilization of a questionnaire was the only way in which to acquire data relevant to this study in a quick, efficient manner since no study has previously been done to determine the effects of the transit strike on downtown merchants. The next section entitled, Questionnaire Design and Interpretation, goes into more detail concerning the design and responses that were received from the questionnaire.


Approximately forty-three questionnaires were distributed to shops on the north side of King Street. This was because many businesses were forced to close soon after the bus strike because of dwindling profits. The aim in distributing the questionnaires was to sample all of the businesses along the King Street strip, as well as the members of the Farmer's Market which together account for about eighty percent of the questionnaires distributed. It was also decided that the major department stores in the area should be included (Eatons, Robinsons, Woolworths, Zellers and Loblaws), and most importantly the inclusion of the two malls (Terminal Towers Mall and Jackson Square Mall) as the boundaries of the survey area allowed for the distribution of the last twenty questionnaires. In the case of Jackson Square, only a few questionnaires were distributed

DOWNTOWN STUDY AREA

Figure 2



Note: map is not to exact scale but serves as a representation of the study area.

 Shaded areas denote where questionnaires were distributed to stores.

because few of the store managers there now were at Jackson Square at the time of the strike. The remainder of the questionnaires were distributed at Terminal Towers which is at the eastern boundary of the study area. This makes the total number of questionnaires distributed equal to one-hundred, of which seventy were completed satisfactorily. This type of data collection allowed for maximum coverage of the important sectors of the survey area, and less coverage for less important sectors. The following part of chapter two deals with a thorough investigation of the questionnaire and the interpretation of data acquired from it.

Chapter 2.2

THE QUESTIONNAIRE: DESIGN AND INTERPRETATION

A questionnaire was used in this study of the downtown to determine the opinions of the various respondents concerning the effects of the bus strike. The utilization of questionnaire data was one of the only ways in which to acquire any type of numerical data on this subject. An attempt was made to keep the questionnaire as simple as possible so that any confusion surrounding various questions would be minimized. Thus, potential respondents would be more inclined to answer with few reservations.

The questionnaire consists of twenty questions, all of which are relatively simple and easily understood. All but three of the twenty questions provide a short list of answers from which a correct answer is chosen by circling the most appropriate response. Two of these three questions concern the amount of revenues lost during the strike and thus requires a numerical figure, though some merchants surveyed preferred not to respond at all because of the highly confidential nature of such information.

The last question that was asked in the questionnaire dealt with projections of what respondents believe the future might hold if another bus strike occurred in the summer of 1984. The answers to this question were very interesting and all fairly similar because all of the respondents stated that another transit strike would almost certainly ruin them

financially. This last question was not included in the formal analysis of the findings because it was difficult to apply the answers to this question into statistical form. The most frequently used response to this question was that a provincial mediator should have been appointed immediately, and that both parties (labour and management) are brought to the bargaining table so that a mutually satisfying compromise may be reached. Naturally, the responses were overwhelmingly in favour of avoiding a transit strike in the future at all costs. This question seems to have succeeded in giving a very strong indication of the importance of transit to the downtown since most merchants strongly supported mediation between the two disputing parties.

The questionnaire is comprised of various parts, of which the first two questions, being of a general nature, are aimed at establishing whether or not less people frequented the downtown and its stores. The respondents overwhelmingly asserted that there were less people downtown and less people in the stores. The absolute frequencies of the various answers for these two questions are almost identical (Appendix, Questionnaire Section #1, #2).

The third question focuses on the various age-groups which comprise the average downtown shopper and tries to determine which age-groups' patronage was affected the most. It was initially believed that the "transit-captives," that

is, old-aged individuals and teenagers would be the most severely affected age-groups, but this was not entirely the case. A review of the questionnaire findings determined that old-aged adults (i.e. 60 years of age and over), were the most affected age-group with teenagers ranking a low fourth out of five age-groups. The position of teenagers in such a low ranking is astounding, but if we look closely it may be seen that a majority of the stores surveyed did not cater to the teens and thus would not be affected at all in terms of patronage (Appendix, Questionnaire Section #3).

The fourth question asks whether or not the store caters to people who are not affected by the transit strike and the respondents were divided quite closely on this question. The next couple of questions deal with the availability of downtown parking and to what extent parking in the downtown is encouraged by merchants. If we look at the overall response to question #5 and #6 we find that downtown parking is cited as a problem by a majority of merchants, and the fact that most merchants do not offer discounted parking in the form of vouchers places a greater emphasis on the transit system (Appendix, Questionnaire Section #5, #6).

The next few questions dealt with revenues and how strongly they were affected by the bus strike. The seventh question asked whether revenues were affected at all by the bus strike and the response was "yes" in a majority of the

cases. The next question asked respondents to rate how strong an effect the bus strike had on their revenues using a Likert scale. One end of the scale stated a very strong negative effect while at the other end of the scale a very strong positive effect was stated, with five gradations between these two opposing effects. The respondents all chose the ratings of neutral to very strong negative effect, while none rated the transit strike as having any positive effects. This reflects the experienced decrease in revenues that was experienced by a large number of merchants. The next two questions (#9 and #10) dealt in exact dollar figures, that is, percentages of revenues and by what amount they were affected. Quite predictably, a substantial number of merchants were unwilling to divulge any of this data owing to the highly confidential nature of such information. Approximately twenty-five percent of the respondents did not give information concerning how revenues were affected in terms of dollar values. Of those remaining, a fairly large number of them experienced revenue losses in the twenty-thousand to twenty-nine-thousand dollar range. When the respondents were asked to express how revenues were affected as a percentage, all but fourteen percent expressed revenues in such a manner. Most merchants experienced revenue losses in the twenty to twenty-nine percent range. These answers strongly emphasize the negative revenue effect experienced by merchants during the strike (Appendix,

Questionnaire Section #7 - #10).

The next question deals with whether the merchants had a good year financially, which took the entire year into consideration. This leads to the next question quite directly, which asked what factors other than the bus strike may have hurt the downtown economically. Of the answers listed the most popular response was local unemployment, with recession being the second most frequently chosen response, and inflation and "other" factors being chosen the least. The selection of unemployment as a factor other than the transit strike was a popular choice, with high local unemployment being the chief impetus for such a response. The thirteenth question assesses the importance of the bus strike along with other factors and it was found that fifty-two percent of the merchants (respondents) did not believe the bus strike to be the single most important reason for a decline in revenues. This is to imply that other factors which may be acting separately or in unison were seen as being more important than the bus strike alone in causing revenues to decrease (Appendix, Questionnaire, #11 - #13).

The questions from number fourteen to nineteen asked fairly obvious questions and were not used when testing of the other questions was undergone. The first three questions in this group asked the respondents to investigate the possible solutions to the conflict. Firstly, the length of negotiations was cited as a problem with ninety-two percent

of the respondents supporting this view. The next question asked the merchants whether they felt transit was an essential service, and thus asked if transit-workers should be forced to stay on the job. The majority of merchants agreed that transit was an essential service and therefore, agreed that transit workers should be forced to stay on the job, that is, sixty-eight percent were in favour of this course of action. The next question dealt with mediation and asked merchants if they felt it would have helped bring about an earlier solution to the problem; ninety-two percent of the respondents were in favour of mediation (Appendix, Questionnaire Section #14, #15, #16).

The next couple of questions (#17, #18) asked if a relationship existed between transit and the economic prosperity of the downtown, and if so what the nature of such a relationship was. A total of eighty-six percent of all respondents voted that a relationship exists and eighty-four percent voted that they believe the relationship to be a positive one.

The last question for which frequencies were derived asked which mode of transportation was more important to the downtown, the bus or car. The vast majority of merchants answered that the bus was a more important mode of transportation than the car, thus reinforcing their answers to previous questions which emphasized the importance of the bus (Appendix, Questionnaire Section #17 - #19).

The previous part of this chapter has analyzed each question along with the corresponding absolute and relative frequencies. The rest of this chapter divides the study area into its component parts (sectors) and attempts to explain the responses in terms of the location of these stores (Tables 1 - 3).

An interesting fact to consider is that there are frequent personnel changes among the management of the Jackson Square shops. As a result, it becomes increasingly difficult to have questionnaires completed with any degree of accuracy or regularity. In most cases the managers may not have been at their present location long enough to be of any help in the study. These are among the major reasons for there being so few respondents from Jackson Square Mall.

Another interesting phenomenon is the fact that the members of the Farmer's Market were so unresponsive. It was mentioned in the literature review that farmers were among the first to voice their disapproval, as well as being one of the loudest factions of the business community to do so. The main reason that they had such strong objections to the transit strike is that it had negatively affected the patronage of pensioners and old-aged individuals who are "transit-captives." The reasons for old adults being transit dependent is that they are usually too old to drive themselves, or find that driving is too much of an expense and a bother. The most ideal way for these older people to

travel is to use public transit which is fairly cheap and trouble free. An alternative form of transportation for these individuals could be by taxi, but this is a fairly expensive mode of transportation and although it is quicker than the bus it remains a costly alternative.

While almost all shopowners of the Farmer's Market that were questioned stated that they had experienced substantial losses during the transit strike, many of them were reluctant to offer any exact dollar figures concerning losses during the strike. Of the thirty-three questionnaires distributed to shopowners of the Farmer's Market, only thirteen were completed amounting to a thirty-nine percent completion rate. This compares quite poorly with the other sectors of the downtown core that were surveyed. The next lowest completion rate of questionnaires was sixty percent for the John Street - Hughson Street sector. The remaining seven locations had a completion rate of eighty percent or higher.

Some reasons given for such a poor completion rate among farmers are that when the respondents were approached with questionnaires on a Saturday, (which is their busiest day) they did not have sufficient time to complete them immediately. The interviewer was told to come back the next week to pick up the questionnaires, but upon returning the next Saturday it was found that many questionnaires were still not completed. Thus, another trip was made to the

Farmer's Market to pick up the remaining questionnaires. By this time whoever had not completed a questionnaire the first or second week was certainly not going to have one done two weeks later. The blame may be placed on the technique employed in this particular instance. The interviewer is aware that Saturday was not the best of days to do this type of work since the shopowners were too busy to be of much assistance. Conversely, however, if the questionnaires had been distributed on a weekday there would not have been as many farmers to survey as there were on the weekend.

It also seems that farmers were generally "tight-lipped" or suspicious when it came to giving out information concerning the effects of the bus strike, as opposed to the businessmen surveyed on the King Street strip. The farmers were more reluctant to give any dollar figures and in most cases they required a more persistent effort from the surveyor than did the other individuals that were interviewed.

As stated earlier, the Terminal Towers Mall on the south side of King Street and at the eastern boundary of the area surveyed may be compared to the western boundary of the survey area which is the Jackson Square Mall. These two malls form the east and west bounds for the area being surveyed. This occurrence is more accidental than by design since to the outer extremities of each there is a noticeable change in the type of establishment present.

Looking at Jackson Square Mall, one may remark that

it is substantially larger than Terminal Towers and thus creates a greater attractive force to pedestrians than does its counterpart at the eastern boundary. Jackson Square provides a newer and larger facility as well as a more pleasing aesthetic environment than Terminal Towers. It was obviously built to function as the commercial and cultural focus of the downtown.

To the west of Jackson Square along King Street there are a series of office towers with the Sheraton Hotel under construction directly between them. The newest of the downtown office towers in the Standard Life Building, a modernistic glass office building behind which the arena is presently under construction. This entire block extending from James Street to Bay Street along King and York Streets has been built up quite recently (from the early 1970's to the present) and reflects a strong commitment by local politicians to revive the sagging economic core of the city. The arena-trade center and the Sheraton Hotel are strong indicators of this trend, as are the recently built Convention Center, Hamilton Place and Art Gallery. These facilities comprise the cultural focus of the city and are quite distinct from the area being surveyed in the study which have essentially commercial retailing functions.

Looking east of Terminal Towers there are two theatres and numerous small shops on either side of the street. Many of these shops specialize in stereo and

electronics equipment, and do not usually deal with the casual shoppers that frequent the stores further west on the King Street strip. The quality of clothing offered by the stores in this area does not appear to compare very favourably with the more fashionable and expensive clothiers to the west. There are numerous variety stores in this area and also some specialty shops (hat and cloak stores) which further distinguish this area from the rest of the downtown. The distinct character of this sector of the downtown along with distance from the King and James Street area are two main reasons why this sector was not included in the survey.

An interview with a local businessman indicated an interesting theory that while the bulk of downtown merchants experienced huge losses because of the bus strike, much of the business they lost may have gone to the merchants east of Mary Street to Wellington Street. While this may be an appealing notion the question remains, how could the shoppers get to Wellington Street if they had no means of getting downtown. Conversely, if they could acquire transportation to Wellington Street why wouldn't they walk up the King Street strip to the shops and stores which offer better quality merchandise.

The south side of King Street is characterized as being very different from the rest of the sectors of the survey area. This sector is composed of the following types

of establishments, two restaurants, one bar, one sport-shop, one men's wear store and a large department store. The department store was included in this sector so that another sector would not have to be formed to contain only one department store.

The shops on the south branch of King Street are located very close to the bus stops at Gore Park, and it would seem to be a very convincing argument that these merchants should be strongly dependent on transit as a supplier of potential customers. Interviews with these merchants, however, indicated that they did not depend very heavily on transit to generate pedestrian traffic. The shopowners stated that people who were patrons of their shops/stores were wealthy enough to provide their own transportation. For example, an expensive men's clothing store located there indicated that they specialize in tailoring and handle only the customers that go to their shop for the purpose of buying suits and fashionable clothes. They do not depend at all on window shoppers or on pedestrian traffic generated by transit facilities. Similarly, the restaurants and bar that were surveyed in this sector voice similar opinions and indicate that whoever frequents their facility usually has his or her own means of transportation. This is not to say that these merchants did not experience any losses simply because they are not overly dependent on transit to generate their customers. An exam-

ple of this is an expensive sporting goods store located on the south side of King Street which experienced a strong negative monetary effect as a result of the transit strike. It appears that in this case a number of factors may have acted in unison to produce this bleak economic picture. These other factors may include, high prices, locally depressed economic conditions (recession), unemployment in basic industries (i.e. steel and metal fabricating plants) and inflation. The problem is magnified in this case as it becomes increasingly difficult to separate the effects of these extraneous variables. The next chapter presents an analysis of the data pertinent to this study. Following that will be the conclusions of this study.

Chapter 3

ANALYSIS

The questionnaire provides a solid basis on which to test the hypotheses. The types of data that are recorded in the questionnaire are nominal, interval, and ordinal. These represent a progression of information, where the more revealing type of data can give you more information which can in turn be more useful. Nominal variable attributes have only the characteristics of exhaustiveness and mutual exclusiveness, those variables whose attributes may be logically rank-ordered are ordinal measures. An example of ordinal data or measures would be grouping people according to the amount of education they have. Interval data deals with variables that give the actual distance separating the attributes, while ratio which is the most precise measure is based on the existence of a true zero point such as age or length of residence.

Depending on the types of data the questionnaire has recorded we can choose from a variety of statistical tests which best evaluate our data. Upon investigating the questionnaire it becomes quite important to classify each question in terms of the type of data which it represents. This is shown quite clearly in table 4 of the Appendix, which expresses each question and the type of data that the answer represents. Also recorded on this chart are the appropriate tests that can be used given different types of data.

The data acquired from the questionnaire was recorded on the Cyber computer system at McMaster University using the Statistical Package for the Social Sciences (SPSS). This enabled the data to be stored and also enabled testing using statistical methods learned in the analytical section of the Statistical Package for the Social Sciences.

A simple analysis which may be performed is the crosstabulation statistic. It is a joint frequency distribution of cases according to two or more classificatory variables. Using the CROSSTAB command on SPSS it was possible to perform a crosstabulation between question #1 and question #3. The first question asks the respondent if there were less people downtown during the transit strike than before or after while the third question asks what age-group's patronage was affected the most. This compares question #1 with each age-group individually (i.e. PDTN vs. TNAG, PDTN vs. YNGAD, PDTN vs. MDAD, PDTN vs. MATAD, and PDTN vs. OLDAD). Looking at the first test which categorized teenage patronage against the number of people downtown, we find that those respondents who stated that teenagers' patronage was not affected voted ninety-two percent in favour of there being less people downtown, and these respondents comprised seventy-nine percent of all respondents. Of the twenty-one percent of the remaining respondents who voted that teenage patronage was affected, eighty percent of these people agreed that there were less people downtown. These findings

AGE-GROUPS' PATRONAGE THAT WAS AFFECTED
THE MOST W.R.T. THE DOWNTOWN:
CROSSTAB RESULTS

Figure 3

Count
 Row%
 Column%
 Total%

	<u>PDTN</u>				<u>PDTN</u>		
<u>TNAG</u>	YES	NOT	YES	<u>MATAD</u>	YES	NOT	YES
Patronage	51	+	4 = 55	Patronage	40	+	6 = 46
Not Affected	93%		7% 79%	Not Affected	87%		13% 66%
	81%		6%		64%		86%
	73%		6%		57%		9%
Patronage	12	+	3 = 15	Patronage	23	+	1 = 24
Affected	80%		20% 21%	Affected	96%		4% 34%
	19%		4%		37%		14%
	17%		4%		33%		1%
	63		7 <u>70</u> 100%		63		7 <u>70</u> 100%
	90%		10%		90%		10%
	<u>PDTN</u>				<u>PDTN</u>		
<u>YNGAD</u>	YES	NOT	YES	<u>OLDAD</u>	YES	NOT	YES
Patronage	51	+	6 = 57	Patronage	29	+	5 = 34
Not Affected	90%		10% 81%	Not Affected	85%		15% 49%
	81%		86%		46%		71%
	73%		9%		41%		7%
Patronage	12	+	1 = 13	Patronage	34	+	2 = 36
Affected	92%		7% 19%	Affected	94%		6% 51%
	19%		14%		54%		29%
	17%		1%		49%		3%
	63		7 <u>70</u> 100%		63		7 <u>70</u> 100%
	90%		10%		90%		10%
	<u>PDTN</u>				<u>PDTN</u>		
<u>MDAD</u>	YES	NOT	YES				
Patronage	45	+	6 = 51				
Not Affected	88%		12% 73%				
	71%		86%				
	64%		9%				
Patronage	18	+	1 = 19				
Affected	95%		5% 27%				
	29%		14%				
	26%		1%				
	63		7 <u>70</u> 100%				
	90%		10%				

KEY:

- TNAG = TEENAGERS
- YNGAD = YOUNG ADULTS
- MDAD = MIDDLE AGED ADULTS
- MATAD = MATURE ADULTS
- OLDAD = OLD ADULTS
- PDTN = LESS PEDESTRIANS DOWNTOWN

Source: Computer print out

represent a difference from the hypothesis that "transit-captives" such as teenagers and old-aged adults will suffer severely from a transit strike and that less teenagers will be in the downtown as a result of the transit strike. As can be seen from the matrix, however, seventy-nine percent of the respondents felt that patronage of teenagers downtown was not affected. When the next age-group, young adults, was crosstabulated with the number of people downtown, similar results were obtained as those of the preceding example. There was no significant difference between young adults and teenagers downtown during the strike. The results of the crosstabulation of middle-aged adults with the number of people downtown shows that there is a significant increase in the category of patronage affected for middle-aged adults. This increased significance of patronage occurs through the remainder of the age-groups reaching its maximum in the old-aged adult category. This is in direct agreement with the pre-mentioned hypothesis of "transit-captives." As we look at the matrix which crosstabulates old-aged adults with the number of people downtown, it is found that the respondents split their vote fairly closely between the categories of patronage affected and patronage not affected for old adults. Approximately ninety percent of the respondents agreed that there were less people downtown, and they split their vote fairly evenly and stated that in forty-six percent of the cases the patronage of old-adults was not affected, while

patronage was affected fifty-four percent of the time.

This was not unlike the crosstabulation which compares store patronage with age-group. In this analysis the results are strikingly similar to the previous series of crosstabulations where the age-group was affected stronger as age increased (i.e. there were less people in the store and also patronage was affected to a greater degree as age-group increased). These simple analyses point to a relationship between age and patronage (downtown/store). We have found that through each age-group the strike has lowered patronage significantly which was found in eighty-eight to ninety percent of the respondents. The difference arose when the respondents were asked to state whether or not patronage of a particular age-group was affected, and it was found that as one progressed from the teenage group to the old-aged group the effect on patronage was found to increase profoundly (figure 3).

It may be noted that a relationship exists between those who thought revenues were affected by the bus-strike and the amount of money lost. Using the coding that was employed in deriving a computer hard-copy a relationship may be stated (i.e. REVAFB (#7) vs. REV\$ (#9) or REVAFB (#7) vs. REV% (#10)). The appropriate test to be used in this case is a one-tailed t-test. It may be necessary to briefly describe the statistical test being used (t-test) by stating that it is involved in comparing means on the same

interval or ratio variable for two independent groups defined by a nominal variable. In deciding upon whether it is a one or two-tailed test the difference is that with a two-tailed test the direction of the difference in means is unspecified, while in a one-tailed test the direction of the difference in means is specified so that the critical region is concentrated at one-tail of the distribution. The null hypothesis of this particular analysis may be stated as follows (H_0); respondents who answer that revenues were affected during the bus strike (1) did not lose more revenue than those that answered revenues were not affected by the bus strike ($H_0: \mu_1 = \mu_2$). The alternate hypothesis (H_1) may be stated as follows, respondents who answer that revenues were affected by the bus strike lost more revenues than those that answered revenues were not affected by the bus strike ($H_1: \mu_1 > \mu_2$). These hypotheses are basically the same as the null and alternate hypotheses testing (REVAFB vs. REV%) revenue affected during the bus strike by percentages of revenue lost. On performing the t-test it was found that the value for the standard deviation was zero for group 2 of (REVAFB) those that said revenues were not affected by the bus strike. As a consequence of this the F-values for both tests, (i.e. REVAFB vs. REV\$ and REVAFB vs. REV%) were zero as were the two-tailed probabilities. Thus, one can intuitively reject the null-hypothesis since testing by this method is not possible in either case (figure 4).

T-TEST SUMMARY

Figure 4

$\alpha = 0.05$ (Significance level)

H_0 : Respondents who answered that the bus strike was the most important reason for a decline in revenues (\$,%), did not lose more revenue (\$,%) than those who answered oppositely. $H_0: \mu_1 = \mu_2$

H_1 : Respondents who answered that the bus strike was the most important reason for a decline in revenues (\$,%), lost more revenue than those who answered oppositely. $H_1: \mu_1 > \mu_2$

BMIMP		#cases	Std.Dev.	F-Value	2-tailed Prob.	Pooled Variance Estimate	2-tailed Prob.	Separate Variance Estimate	2-tailed Prob.
REV\$	1	12	.9	1.08	.994	.069			.072
	2	33	.935						
REV%	1	18	.669	2.88	.023	.001			.000
	2	34	1.736						

REV\$ F=.944 > .05
 \therefore Use Pooled Variance Estimate
 2-tailed=.069; 1-tailed=.0345
 .0345 < .05 \therefore Reject H_0

REV% F=.023 < .05
 \therefore Use Separate Variance Estimate
 2-tailed=.000; 1-tailed=.000
 .000 < .05 \therefore Reject H_0

H_0 : Respondents who answer that revenues were affected during the bus strike did not lose more revenue than those that answered revenues were not affected by the bus strike.

$H_0: \mu_1 = \mu_2$

H_1 : Respondents who answer that revenues were affected during the bus strike lost more revenue than those that answered revenues were not affected by the bus strike.

$H_1: \mu_1 > \mu_2$

REVAFB		#cases	Std.Dev.	F-Value	2-tailed Prob.	Pooled Variance Estimate	2-tailed Prob.	Separate Variance Estimate	2-tailed Prob.
REV\$	1	41	.850	0	1.0	0			0
	2	8	0						
REV%	1	48	.954	0	1.0	0			0
	2	8	0						

The std. dev. is 0 for group 2 of Rev\$ & Rev% \therefore we can intuitively reject the null hypothesis.

Source: Computer print out

A t-test was also used in testing the following null hypothesis (H_0); respondents who answered that the bus strike was the most important reason for a decline in revenues did not lose more revenue (\$) than those that answered oppositely ($H_0: \mu_1 = \mu_2$). The alternate hypothesis (H_1) states that respondents who answered the bus strike was the most important reason for a decline in revenue (\$) lost more revenue (\$) than those that answered oppositely ($H_1: \mu_1 > \mu_2$). After performing the necessary steps at the .05 significance level for the t-test using revenue (\$) (%), it was determined that the null hypothesis should be rejected in both cases. This supports the central idea that revenues were affected by the bus strike and those who responded in such a manner lost more money (figure 4).

Another important area to investigate is how revenue dollars (\$) and percentages were affected by factors other than the bus strike. These factors include inflation, recession, unemployment and "other." This was done by utilizing multiple regression techniques which analyzes the relationship between a dependent and a set of independent variables. The main focus of this type of statistical analysis is the evaluation and measurement of overall dependence of a variable on a set of other variables. This relation may be described in functional form as follows:

$$\text{Rev}\$ = b_0 + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + \dots + b_n x_n$$

↑ ↑ ↙ ↘ ↘ ↘
strike unemployment inflation recession "other"

The type of data used in a regression analysis is usually ratio data, but in the case of this study an alternate approach was used. If the factor (i.e. unemployment, recession) was important it was given a value of one, if not it was given a value of zero. Concerning the revenues lost, a categorization of revenues was formulated whereby numbers from one to four represented increasing losses in revenues.

The null hypothesis (H_0) stated that revenue (\$) were not affected by factors other than the bus strike itself such as, local unemployment, recession, inflation and other. The alternate hypothesis (H_1) stated that revenue (\$) were affected by factors other than the bus strike itself such as, local unemployment, recession, inflation and other. When all the variables were entered together the only significant variables were local unemployment and "other" at the .05 significance level. The factor "other" was not significant in the analysis when entered alone, and when "other" and local unemployment were entered together they were both found to be significant variables. This is similar to the test of revenue (%) with the same variables entered. In the first case (REV\$) the factors combined for a significance of 14.5%, while in the second case (REV%) the significance comprised a 22.59% explanation; thus, both were fairly poor explanations. This implies that factors other than the bus strike mentioned in

REGRESSION ANALYSIS

Figure 5

REV\$ vs. LCLUN, REC, INFL, OTH. $\alpha = 0.05$

	<u>B</u>	<u>Significance</u>	<u>R-Square</u>	H ₀ : Revenues (\$) of merchants were not affected by factors other than the bus strike itself such as, local unemploy- ment, recession, in- flation & other. H ₁ : Revenues (\$) of merchants were affected by factors other than the bus strike such as local unemployment, reces- sion, inflation & other.
LCLUN	.812	.045 < .05: Significant	.1449	
REC	.546	.844 > .05: N. Significant		
INFL	.123	.708 > .05: N. Significant		
OTH	.751	.037 < .05: Significant		
LCLUN	.778	.054 < .05: Significant	.142	
OTH	.705	.017 < .05: Significant		
OTH	.507	.075 > .05: N. Significant	.061	

REV% vs. LCLUN, REC, INFL, OTH. $\alpha = 0.05$

	<u>B</u>	<u>Significance</u>	<u>R-Square</u>	H ₀ : Revenues (%) similar to above. H ₁ : Revenues (%) similar to above.
LCLUN	1.160	.013 < .05: Significant		
REC	.124	.693 > .05: N. Significant	.2259	
INFL	.292	.938 > .05: N. Significant		
OTH	.967	.019 < .05: Significant		
LCLUN	1.207	.005 < .05: Significant	.2230	
OTH	1.032	.002 < .05: Significant		
OTH	.725	.035 < .05: Significant	.0866	

Source: Computer print out

this statistical test do not comprise a strong explanation for a decline in revenues (figure 5).

Thus, we can see from our results that the age-group whose patronage was affected the most was the old-aged individuals or "transit-captives." This complies with the sub-hypothesis concerning "transit-captives."

The t-tests show that both of the null hypotheses tested can be rejected. In the first case, the null hypothesis which was rejected, stated that respondents who answered that the bus strike was the most important reason for a decline in revenue (\$,%) did not lose more revenue (\$,%) than those who answered oppositely. In the second case, the null hypothesis which was intuitively rejected, stated that respondents who answer that revenues were affected during the bus strike did not lose more revenue than those that answered revenues were not affected by the bus strike.

The regression analysis focused on factors other than the bus strike which may have had a negative affect on downtown businesses but found that these other factors defined in the investigation (local unemployment, recession, inflation and other) comprised a poor explanation for decreased revenues of downtown merchants.

These findings are very important since they can give an indication of the effects of the transit strike in the Hamilton case. They point to the overall importance of transit and the link it provides with the downtown which may be a significant factor in the continued growth and expansion of the central business district.

CONCLUSION

Upon concluding the testing involved in this study, the results are clear but they do not offer as strong an explanative force as was initially believed. Some key relationships were formulated in the statistical analysis of this study, but it is hoped that in the future some improvements may be institutionalized when undertaking a study of this nature.

Firstly, it is hoped that merchants will be more helpful in assisting with the completion of the questionnaire. Most notably with the completion of the revenue section of the questionnaire, which was the most poorly completed section of the questionnaire.

It was also difficult to get a fair appraisal from merchants since they were in the midst of the downtown redevelopment (Gore Park) at the time of the distribution of questionnaires. It was difficult to deal with redevelopment, which was cited as an additional major problem affecting the downtown merchants.

A further regret of this study is that the bus strike of 1971 could not be used as a reference in this study. This is because most of the store owners who were in operation in 1971 are no longer in the downtown. The cause of this is bankruptcy, as well as the large scale redevelopment of the downtown area which occurred in the early to mid 1970's. It would have been very helpful to have used the 1971 strike

as a basis for the study, but it was quite apparent that this would not be possible.

It is felt, however, that buses are very important to the economic vitality of the businesses of the downtown because this topic seemed to find a unanimous response. New advances in planning design such as, pedestrian downtowns and car-free downtowns should be considered as feasible alternatives to the present congestion that affects the bus and car traffic in the downtown. On its own, the bus could be the main support for downtown business in a car-free downtown.

The theme of labour unrest being the chief cause of such problems is echoed by many of the downtown merchants. It is the hope of this investigation that a new era of improved relations between labour and management may be upon us, so that a repeat of the Hamilton scenario of 1982 may be avoided at all costs.

APPENDIX

This questionnaire is aimed at studying the effects of the Hamilton bus strike during the summer of 1982. It is hoped that the answers provided in the questionnaire may be a useful means of assessing the effects of the bus strike.

Please circle the appropriate answer.

1. Were there significantly less people (i.e. less pedestrian traffic) in the downtown during the strike than before or after?

	<u>Abs. Freq</u>	<u>Rel. Freq</u>	
1. Yes	63	90.0	ABBREV. (PDTN)
2. No	4	5.7	
3. Maybe	3	4.3	
TOTAL	70	100.0%	

Explain:

2. Were there fewer people in your store during the strike?

	<u>Abs. Freq</u>	<u>Rel. Freq</u>	
1. Yes	62	88.6	(PSTR)
2. No	5	7.1	
3. Maybe	3	4.3	
TOTAL	70	100.0%	

Explain:

3. If yes to question #2, what age groups' patronage do you think was affected the most? (AGRP)

	<u>Abs. Freq.</u>		<u>Rel. Freq</u>	
1. 13-19 yrs (teenagers)	NO	55	78.6	Tt1.100%
	YES	15	21.4	
2. 20-29 yrs. (young adults)	NO	57	81.4	Tt1.100%
	YES	13	18.6	
3. 30-49 yrs. (middle aged adults)	NO	51	72.9	Tt1.100%
	YES	19	27.1	
4. 50-59 yrs. (mature adults)	NO	46	65.7	Tt1.100%
	YES	24	34.3	
5. 60+ yrs. (old adults)	NO	34	48.6	Tt1.100%
	YES	36	51.4	

Explain:

4. Does your store cater to a specific segment of the population that would not be affected by a transit strike? For example, middle aged adults most of which own their own cars. (SPLN)

	<u>Abs. Freq</u>	<u>Rel. Freq</u>
1. Yes	24	34.3
2. No	36	51.4
3. Maybe	10	14.3
TOTAL	70	100.0%

Explain:

5. Do customers complain about available parking in the area? (AVPK)

	<u>Abs. Freq</u>	<u>Rel. Freq</u>
1. Yes	44	62.9
2. No	23	32.9
3. Maybe	3	4.3
TOTAL	70	100.0%

Explain:

6. Do you provide vouchers which allow for free or discounted parking in a designated lot? (PKV)

	<u>Abs. Freq</u>	<u>Rel. Freq</u>
1. Yes	14	20
2. No	56	80
3. Maybe	0	0
TOTAL	70	100%

Explain:

7. Were your revenues affected by the bus strike? (REVAFB)

	<u>Abs. Freq</u>	<u>Rel. Freq</u>
1. Yes	57	81.4
2. No	8	11.4
3. Maybe	5	7.1
TOTAL	70	100.0%

Explain:

8. How strong an effect did the bus strike have on your revenues? (SREVAF)

	<u>Abs. Freq</u>	<u>Rel. Freq</u>
1. very strong negative effect	19	27.1
2. strong negative effect	21	30.0
3. moderate negative effect	21	30.0
4. neutral (no effect)	9	12.9
5. moderate positive effect	0	0
6. strong positive effect	0	0
7. very strong positive effect	0	0
TOTAL	70	100.0%

9. Can you comment on how your revenues were affected during the strike in terms of dollar values (i.e. earnings were \$50,000.00, loss of \$10,000.00). (REV\$)

loss of:	<u>Abs. Freq</u>	<u>Rel. Freq</u>
1. \$ 0-\$ 9,999	16	22.9
2. \$10,000-\$19,999	15	21.4
3. \$20,000-\$29,999	19	27.1
4. \$30,000+	3	4.3
5. No Comment	17	24.3
TOTAL	70	100.0%

10. Can you express how revenues may have been affected as a percentage of normal revenue (i.e. decrease in revenue by 30%). (REV%)

loss of:	<u>Abs. Freq</u>	<u>Rel. Freq</u>
1. 0- 9%	13	18.6
2. 10-19%	11	15.7
3. 20-29%	20	28.6
4. 30%+	16	22.9
5. No Comment	10	14.3
TOTAL	70	100.0%

11. Look back at 1982, was it a good year for you financially? (GDYR)

	<u>Abs. Freq</u>	<u>Rel. Freq</u>
1. Yes	13	18.6
2. No	46	65.7
3. Maybe	11	15.7
TOTAL	70	100.0%

Explain:

12. What factors other than the bus strike could have hurt the Hamilton downtown (in an economical context)? (OTHFAC)

	<u>Abs. Freq</u>	<u>Rel. Freq</u>
1. local unemployment (factory layoffs, shutdowns)	NO 8 YES 62	11.4 88.6
2. inflation (rising price levels with low wage levels)	NO 54 YES 16	77.1 22.9
3. recession (no economic growth in a country or region)	NO 44 YES 26	62.9 37.1
4. other (specify)	NO 54 YES 16	77.1 22.9

Explain:

13. Was the bus strike the single most important reason for a decline in revenues? (BMIMP)

	<u>Abs. Freq</u>	<u>Rel. Freq</u>
1. Yes	21	30.0
2. No	37	52.9
3. Maybe	12	17.1
TOTAL	70	100.0%

Explain:

14. Do you believe that the length of negotiations between the H.S.R. union and the City of Hamilton created any problems for the downtown business community? (LENEG)

	<u>Abs. Freq</u>	<u>Rel. Freq</u>
1. Yes	65	92.9
2. No	2	2.9
3. Maybe	3	4.3
TOTAL	70	100.0%

Explain:

15. Since the H.S.R. employees are under the employ of the Regional Municipality of Hamilton-Wentworth, do you think that they should have been forced to stay on the job? (EMPSTY)

	<u>Abs. Freq</u>	<u>Rel. Freq</u>
1. Yes	48	68.6
2. No	16	22.9
3. Maybe	6	8.6
TOTAL	70	100.0%

Explain:

16. Should a provincial mediator have been appointed to help resolve the issue from the outset? (PROMED)

	<u>Abs. Freq</u>	<u>Rel. Freq</u>
1. Yes	65	92.9
2. No	4	5.7
3. Maybe	1	1.4
TOTAL	70	100.0%

Explain:

17. Do you believe that a relationship exists between transit and the economic prosperity of the business core? (TRECO)

	<u>Abs. Freq</u>	<u>Rel. Freq</u>
1. Yes	60	85.7
2. No	8	11.4
3. Maybe	2	2.9
TOTAL	70	100.0%

Explain:

18. If yes to # 17, do you feel that the nature of this relationship is positive, in which the presence of mass transit allows for the economic prosperity of the business core? (POSREL)

	<u>Abs. Freq</u>	<u>Rel. Freq</u>
1. Yes	59	84.3
2. No	3	4.3
3. Maybe	8	11.4
TOTAL	70	100.0%

Explain:

19. Are buses essentially the "life-line" of the downtown core, or are cars more important to the downtown?

(BUSCAR)	<u>Abs. Freq</u>		<u>Rel. Freq</u>	
1. Buses	NO 64	Ttl.70	91.4	Ttl.100%
	YES 6		8.6	
2. Cars	NO 17	Ttl.70	24.3	Ttl.100%
	YES 53		75.7	

Explain:

20. What would your suggestions be if another bus strike was expected in the summer of 1984?

Explain:

TYPE OF STORE/BUSINESS ESTABLISHMENT

Table 1

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
Men's Clothing	1.	4	5.7	5.7	5.7
Women's Clothing	2.	8	11.4	11.4	17.1
Dept. Store	3.	5	7.1	7.1	24.3
Drug Store	4.	3	4.3	4.3	28.6
Jewellery Store	5.	5	7.1	7.1	35.7
Amusement (Arcade)	6.	2	2.9	2.9	38.6
Supermarket	7.	1	1.4	1.4	40.0
Farmer's Mkt.(Stall Owners)	8.	13	18.6	18.6	58.6
Variety Store	9.	2	2.9	2.9	61.4
Small Novelty Shops	10.	6	8.6	8.6	70.0
Camera Shops	11.	4	5.7	5.7	75.7
Record Shops	12.	5	7.1	7.1	82.9
Restaurants (Bars)	13.	12	17.1	17.1	100.0
	TOTAL	70	100.0	100.0	

VALID CASES 70

MISSING CASES 0

Source: Computer print out

SECTORS INTO WHICH THE STUDY AREA WAS DIVIDED

Table 2

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
Terminal Towers Mall	1.	10	14.3	14.3	14.3
South Side of King Street	2.	6	8.6	8.6	22.9
North Side of King Street (Mary St. to Catharine St.)	3.	7	10.0	10.0	32.9
North Side of King Street (Catharine St. to John St.)	4.	8	11.4	11.4	44.3
North Side of King Street (John St. to Hughson St.)	5.	6	8.6	8.6	52.9
North Side of King Street (Hughson St. to James St.)	6.	9	12.9	12.9	65.7
King St. to King-William St. along James St. N	7.	5	7.1	7.1	72.9
Jackson Square Mall	8.	6	8.6	8.6	81.4
Farmer's Market (York Blvd. behind Jackson Square)	9.	13	18.6	18.6	100.0
	TOTAL	70	100.0	100.0	

VALID CASES 70

MISSING CASES 0

Absolute frequencies are measuring the number of stores in each sector.

Source: Computer print out

TYPES OF STORES SURVEYED IN EACH SECTOR

Table 3

I. <u>Terminal Towers</u> 1 Supermarket 2 Small Shops (Novelty) 1 Men's Clothing 1 Variety Store 2 Women's Clothing 1 Camera Shop 1 Jewellery Store 1 Drug Store <hr/> 10 TOTAL	II. <u>South Side of King Street</u> 2 Men's Clothing 3 Restaurants 1 Department Store <hr/> 6 TOTAL	III. <u>North Side of King Street (Mary St. to Catharine St.)</u> 4 Women's Clothing 1 Camera Shop 2 Restaurants <hr/> 7 TOTAL
IV. <u>North Side of King Street (Catharine St. to John St.)</u> 3 Restaurants 1 Women's Clothing 1 Jewellery Store 1 Small Shop (Novelty) 2 Record Shops <hr/> 8 TOTAL	V. <u>North Side of King Street (John St. to Hughson St.)</u> 1 Jewellery Store 2 Amusement (Arcades) 2 Restaurants 1 Department Store <hr/> 6 TOTAL	VI. <u>North Side of King Street (Hughson St. to James St.)</u> 3 Record Shops 3 Small Shops (Novelty) 1 Variety Store 1 Jewellery Store 1 Department Store <hr/> 9 TOTAL

Table 3
cont'd

VII.
King Street to King-William
along James Street North
1 Camera Shop
1 Restaurant
1 Department Store
1 Jewellery Store
1 Drug Store
5 TOTAL

VIII.
Jackson Square
(corner of King Street and James Street)
1 Department Store
1 Men's Clothing
1 Women's Clothing
1 Camera Shop
1 Drug Store
1 Restaurant
6 TOTAL

IX. Farmer's Market
(York Boulevard behind Jackson Square)
13 Farmer's Market (Stall owners)
13 TOTAL

TOTAL # STORES FROM SECTOR I - IX:

I	II	III	IV	V	VI	VII	VIII	IX		Ttl.
10	+	6	+	7	+	8	+	6	+	13
										=
										70

CLASSIFICATION
OF
QUESTIONNAIRE DATA

Table 4

<u>Nature of Questions:</u>	<u>ABBREV.</u>	<u>#</u>	<u>Type of Date</u>
Number of people downtown and in store	(PDTN) (PSTR)	Q 1: Q 2:	Nominal Nominal
Age Group	(AGRP)	Q 3:	Nominal --Divided into 5 Categories:
Segment of pop'n	(SPLN)	Q 4:	Nominal i) teenagers (TNAG) ii) young adults (YNAD)
Downtown parking available	(AVPK) (PKV)	Q 5: Q 6:	Nominal Nominal iii) middle aged adults (MDAD) iv) mature adults (MATAD)
Revenue affect	(REVAFB) (SREVAF)	Q 7: Q 8:	Nominal Ordinal v) old aged adults (OLDAD)
Net Revenue affect	(REV\$) (REV%)	Q 9: Q10:	Interval Interval
Overall finances	(GDYR)	Q11:	Nominal
Factors other than the bus strike	(OTHFAC)	Q12:	Nominal --Divided into 4 Categories: i) local unemployment (LCLUN) ii) recession (REC) iii) inflation (INFL) iv) other (OTH)
Importance of buses	(BMIMP)	Q13:	Nominal
Solutions to the problem	(LENEG) (EMPSTY) (PROMED)	Q14: Q15: Q16:	Nominal Nominal Nominal
Transit-economy linkage	(TRECO) (POSREL)	Q17: Q18:	Nominal Nominal
Most important mode of transport	(BUSCAR)	Q19:	Nominal

cont'd

APPROPRIATE
TESTS GIVEN
DATA

	NOMINAL	ORDINAL	INTERVAL/RATIO
NOMINAL	Chi-Square Crosstabs		
ORDINAL	Mann-Whitney U Test Kruskall Wallis	Kendall's Tau Spearman's Rho	
INTERVAL/ RATIO	T-Test Analysis of Variance	Spearman's Rho Kendall's Tau	Pearson's R Regression

Source: Geography 4J3

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