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ECONOMIC AND FINANCIAL EVALUATION  
OF THE NATIONAL TRANSPORT COMPANY - NTC

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A Research Topic  
Presented to Business Division  
Beirut University College

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Science in Business  
Management

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By  
Salim M. Chames

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LIST OF TABLES

	<u>PAGE</u>
TABLE 1: DISTRIBUTION OF BUSES ALONG TRANSPORT LINES	13
TABLE 2: ROUTES SERVED BY NTC BUSES-SCHOOL LINE 1988	15
TABLE 3: ALLOCATION OF STUDENTS PER PRICE CATEGORIES	16
TABLE 4: PROJECTED REVENUES FROM SCHOOL LINE	17
TABLE 5: ROUTES SERVED BY NTC BUSES-EXTERNAL LINE 1988	18
TABLE 6: ALLOCATION OF RESPONDENTS PER PRICE PAID, PER WEEK	20
TABLE 7: ALLOCATION OF PASSENGERS PER PRICE-EXTERNAL LINE	21
TABLE 8: NUMBER OF PASSENGERS PER TWO PERIODS-1988-EXT. L.	24
TABLE 9: NUMBER OF PASSENGERS PER TWO PERIODS-1989-EXT. L.	24
TABLE 10: REVENUES FROM EXTERNAL TRANSPORT LINE	25
TABLE 11: ROUTES SERVED BY NTC BUSES-INTERNAL LINE- 1988	26
TABLE 12: REVENUES FROM INTERNAL TRANSPORT LINE 1988	27
TABLE 13: REVENUES FROM INTERNAL TRANSPORT LINE 1989	28
TABLE 14: TOTAL REVENUES EARNED BY NTC - 1988-96	30
TABLE 15: ALLOCATION OF TOTAL INVESTMENT COSTS PER YEAR	35
TABLE 16: SALARIES EXPENSE FOR 1988 AND 1989	38
TABLE 17: SSNF COSTS FOR 1988 AND 1989	39
TABLE 18: COST OF FUEL FOR 1988 AND 1989	42
TABLE 19: COST OF OIL FOR 1988 AND 1989	43
TABLE 20: TURNOVER OF DURABLE BUS SPARE-PARTS PER YEAR	45
TABLE 21: COST OF DURABLE BUS SPARE-PARTS	45
TABLE 22: TURNOVER OF ENGINE LIFE PER YEARS	47
TABLE 23: TOTAL MAINTENANCE COSTS ALONG THE PROJECT'S LIFE	47
TABLE 24: TOTAL OPERATIONAL COSTS ALONG THE PROJECT'S LIFE	48
TABLE 25: DISCOUNTED BENEFITS AND COSTS	51
TABLE 26: PROFIT AND LOSS STATEMENT	53
TABLE 27: CASH-FLOW STATEMENT	54
TABLE 28: DISCOUNTED BENEFITS AND COSTS WITHOUT SALARIES	56

## CONTENTS

	<u>PAGE</u>
<u>LIST OF TABLES</u>	i
CHAPTER I: INTRODUCTION	1
CHAPTER II: NTC's BACKGROUND AND MARKET AREA	6
CHAPTER III: DEMAND ANALYSIS AND ESTIMATION OF THE PROJECT	12
A- SCHOOLS TRANSPORT LINE	
B- EXTERNAL TRANSPORT LINE	
C- INTERNAL TRANSPORT LINE	
CHAPTER IV: COST ESTIMATES OF THE PROJECT	31
A- INVESTMENT COSTS	
B- FIXED AND VARIABLE COSTS	
CHAPTER V: FINANCING REQUIREMENTS, COST OF CAPITAL, AND PROFITABILITY INDICATORS	49
- ECONOMIC AND FINANCIAL RESULTS	
CHAPTER VI: CONCLUSION AND RECOMMENDATIONS	58
<u>BIBLIOGRAPHY</u>	60
<u>APPENDIX A: QUESTIONNAIRE</u>	63
<u>APPENDIX B: CROSS TABULATIONS FOR THE QUESTIONNAIRE</u>	67
<u>APPENDIX C: NTC LIST-PRICES</u>	72

CHAPTER I

INTRODUCTION

The presence of a nation-wide public transport system is an ultimate demand service nowadays. The deterioration of the Lebanese Pound against all foreign currencies has played a major role in increasing gasoline prices, where the cost of 20 liters of gasoline has reached sometimes LL 4,000 at the black market. Within this changing situation, the Lebanese people generally and those with low income brackets specifically have suffered heavily. Semi-annual increases in wages could not match the increasing cost of living, so the distribution of expenditures per house-hold has been sharply disturbed; more weights have been allocated to basic needs at the expense of others. Transportation being one of those basic needs has showed an increasing fraction out of total house-hold earnings. In this situation one may ask, what has been the role of the Lebanese Public Transport.

The Lebanese Public Transport sponsored by the State was never up to the standard to meet such growing public need mainly to successive clashes in the country. A total of 150 large buses which made up the public transport fleet in Beirut and its suburbs were destroyed by the fighting in 1975-1976. In 1977, and in an attempt to meet rapidly growing public transport requirements the Lebanese Government decided to purchase 220 large buses and 110 medium-sized buses. But successive clashes delayed many times the shipment of these buses to Lebanon. Moreover, the renewed clashes and Israeli invasion of 1982 suspended the Lebanese Transport from services, thus adding more losses to this sector.<sup>1</sup> Lebanese Public transport resumed its services again in 1985, but its functions are still insufficient in linking the Lebanese cities and towns to each other.

Such acute shortage in the public transport services and facilities plus haphazard increase in the cost of living, were mainly the motives behind establishing the National Transport Company, (N.T.C). N.T.C. is the only public transport company that offers such service in part of Mount of Lebanon; provinces of Al-Shouf and Alley, and in part of Al-Matin province, the Southern and upper part.

The main objective of this paper is to assess the economic, and financial feasibility of NTC in the Mount of Lebanon. This study will try to answer the question, whether NTC as a public transporting company is a feasible project for investment and going concern entity and under what circumstances. This project will consist of the following elements:

1. Iskandar, Marwan and Baroudi, Elias, The Lebanese Economy in 1982-83 Beirut-Lebanon, Middle East Economic Consultants S.A.R.L., 1983, PP 118-9

1. A building: The total utilized area is 300 sqm. This building consists of two floors. The ground floor will be used by a maintenance division which consists of three sectors, electric, mechanic, and washing and general revision sector. In addition to this division, a store for bus-spare parts will be maintained in this floor. The second floor will be used totally by management to run its operation.<sup>2</sup>
  
2. Bus station at Khaldi: The total utilized area is 225 sqm. This station will consist of a waiting hall, cafeteria, toilets, an office for NTC staff and a garage for two buses. The land to be used for construction will be leased from the Ministry of Public Works and Transport.<sup>3</sup>
  
3. A total of 25 buses will be purchased which will make up the public fleet transport for the Mount of Lebanon and Khaldi station.<sup>4</sup>

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2. Interview with Mr. Walid Yahya. National Transport Company, Manager-Beit El-Deen, Al-Shouf.

3. Ibid.

4. Ibid.



The data used in this paper depend greatly on primary sources, but on the other hand, secondary sources of data were consulted and were of great help when used through out this paper.

The primary sources of data used are as follow :

1. NTC's records.
2. A meeting with the manager in charge has taken place in which the elements of the project, nature of operation, and other specifications have been revealed out.
3. Questionnaire.
4. Various parties have been consulted to determine the market prices for the different elements of the project.
5. An observation of the internal routes has been carried out for two weeks.
6. A meeting with the engineer in charge of NTC's constructions has taken place in which all engineering specifications have been clarified.

The investment theory, with its emphasis on the time value of resources, money and the level of risk and uncertainty, as the two curcial elements that determine all investment decisions, implies that for any private or a public project to be economically feasible should pass certain investment criteria which integrate these two elements.<sup>5</sup> So, to evaluate the economic feasibility of the project understudy, the net present value criterion and the internal rate of return criterion will be used, and to assess the profitablity of the project, a projected income and cashflow statements will be produced as financial indicators for profitability and liquidity.

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5. Weston, Fred and Brigham, Eugene, Managerial Finance. Japan, Drydem press, 1981. P.66

This research paper consists of Six chapters including this chapter. Chapter Two analyzes the market in which NTC offers its services in addition to a review about NTC as a transport servicing company. Chapter Three presents the surveying techniques used to collect the needed data and the analysis of the findings. In this chapter a special attention has been drawn to demand estimates and a projected Statement of Earnings has been produced under specified assumptions. Chapter Four shows the investment, fixed, and variable costs to be incurred for running this project. Chapter Five discusses the financial requirements needed for investment in this project. This chapter also shows the methodology used to determine the cost of capital to the project, in addition to the analysis of findings revealed out by the economic investment criteria and the financial indicators. Chapter Six is the conclusion in which specified recommendations have been advanced to NTC management.

## CHAPTER 11

### NTC's BACKGROUND AND MARKET AREA

National Transport company referred to hereafter as NTC was established during September 1987 and the first bus put in service was also in September 1987. The shareholders of this company are three and are well known for their public works and wealthiness. The first one is a well known politician, the second is the financial manager at the local administration in El-Jabel, and the third is a wealthy Business-man. This chapter will mainly clarify NTC's operation from September 1987 till December 1987; in addition to a descriptive review of the transportation modes existing in NTC's market.

Due to the reasons mentioned in the first chapter, a group of investors organized and established a limited responsibility company called National Transport Company that offers public transport in part of Mount of Lebanon mainly, provinces of Al-Shouf and Alley, and in part of Al-Matin province, the Southern and Upper part. As a first step towards establishing the whole net work that link all villages and towns to each other first and with the capital through Khaldi bus-station second, NTC purchased 14 used buses which entered a preliminary testing period from September till the end of November. The main objective of this transitional or preliminary period was to scrutinize and identify the main routes that show dense passenger movements.

Based upon the results of the preliminary period, many routes were recommended and chosen as fixed routes by NTC and some were not, such as Iqleem Al-Kharoub route.<sup>6</sup> This route was not implemented either internally between Iqleem Al-Kharoub and other parts of NTC's market area, or externally to Khaldi bus-station due to the following two major reasons. First, with respect to external line, those people who are obliged to commute to Beirut due to work circumstances or other reasons, use their own cars or take a lift with friends. But what is more important is that many bus owners are using their buses as taxi between Iqleem Al-Kharoub and Beirut directly to Al-Kola station which NTC does not offer. Many, if not all passengers, prefer to commute directly to Beirut instead of changing buses. Second, with respect to internal line, Iqleem Al-Kharoub is considered as completely independent economic, financial and educational area. The passengers movement between Iqleem Al-Kharoub and the other parts of the Mount of Lebanon is minimal. The only place that attracts passengers movement is Beit El-Deen where the official bureaux and civil administration of El-Jabel exist.

During this period and with 14 buses at hand, NTC routes appear as follow: 6 buses serve six routes directly to Khaldi- 3 buses from Al-Matin and Alley provinces and 3 buses from Al-Shouf province. The starting villages are as follow: Niha, Al-Maaser, and Ayen Dara in Al-Shouf province and Ras-Al-Matin, Agmeed and Kfarselwan in Al-Matin and Alley provinces. Another 6 buses service the schools transport line in addition to internal routes in Al-Shouf province.

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6. Interview with Mr. Fouad Al-Zu er. Route supervisor at the National Transport Company. Beit El-Deen, Al-Shouf .

With respect to internal line, only three routes has been fixed due to limited number of buses. These routes are as follow: Ayeen Dara - Beit El-Deen, Mouresti - Beit El-Deen, and finally Jahilia - Monasif - Beit El-Deen.<sup>7</sup> Beit El-Deen has been chosen as the ending and the starting of the routes mainly due to its importance, residence of official bureaux and civil administration of El-Jabel. The remaining two buses are kept as stand-by when over capacity is achieve along certain routes and for emergency cases, in case of buses breakdown.

Related to management operation during this period, NTC has occupied offices in Beit El-Deen offered by the Civil Administration in El-Jabel. NTC has been constructing its residence in Beit El-Deen since 1987, a building which consists of two floors. The total costs incurred till December 31, 1987 was LL 9,872,000 which represents 3/4 construction costs of the ground floor. The net operating results for this period was a deficit of LL 3,575,000 which was financed by equity.<sup>8</sup> NTC has beared all the following costs: fuel, oil, maintenance, salaries, advertising, stationery, and other costs. As the elements of the project are finished, many costs are to be cut down such as Maintenance costs which will be reduced only to the costs of bus spare parts and oil, since NTC is going to have its own maintenance workshop. This maintenance workshop will render the following services, mechanical and electrical problems, oil changing, washing, and other maintenance revisions. During this period NTC has handled all the maintenance problems by refering to the private market.

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7. Al-Zu'er, Fouad. Interview cited.

8. NTC's Records, Financial Statements as at December 31, 1987.

In addition to maintenance costs reduction, NTC is to forsee a reduction in fuel costs. NTC has been purchasing fuel from the free market. But with the new strategic plan to lease two gasoline stations from the civil administration in El-Jabel and purchasing fuel on its own, NTC will cut down the intermediary or value-added costs incurred before the final good reaches the consumer.<sup>9</sup>

The number of buses till the end of December 1987 was 14, but the total number of buses that will make the public transport fleet in NTC's market are 25 buses.<sup>10</sup> The 14 buses at hand have a capacity of 16 seats each, two persons sit comfortably on each seat. But this capacity could be raised to 50 persons which is the assumed capacity used through out this paper. The remaining 11 buses will be medium-sized buses with a capacity of twenty-five persons. More detailed information about buses-size and number will be discussed in depth in chapter Four in addition to, investment, variable, and fixed costs that will incur by running this project.

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9. Yahya, Walid. Interview cited

10. Ibid .

Many things have changed in the Mount of Lebanon, since the Civil War started. The consequences of the Civil War in the Mount of Lebanon is obvious. Many cities and villages were demolished and others have witnesses prosperity at the expense of others. Alley was the end loser among other towns. Businessmen and inhabitants of Alley and other unsecured towns moved to secured regions and started new life and businesses, mainly to Al-Matin and Al-Shouf regions. The growth or prosperity of these regions is clearly reflected in the establishment of many new stores, supermarkets, insurance companies, branches of well known banks, and many industrial companies.<sup>11</sup> Many projects and establishments have been organized whether profitable or non due to availability of opportunities waiting the funds to invest in. Certain towns and unknown villages have grown and are identified now as important centers in the area such as, Baakleen, Bakaata, Hamana, and Ras-Al-Matin. In addition to war consequences, remittances made by those who are working in the Gulf area have contributed to the growth and prosperity of the region in late 70's and early 80's.

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11. Sada El-Kalema, Newly Established Magazine, ( Arabic).  
Significant Commercial Movements Witnessed Al-Shouf Area.

The voice of permanent Bureau of Druze Organization, Beirut, Issue No. 3, 1988. P 7.

The only external transportation mode available in NTC's market to Beirut is the taxi- those owners of cars who have public licences. But as living conditions became worse, many car owners' used their cars to serve this line which has shown an increasing returns due to undersupply. Moreover, increasing prices of Auto-parts and fuel, and the lack of unsafe parking have urged many current users to stop using their own cars and to reveal to the transportation modes available which effected NTC market positively.

With respect to internal transportation modes available in NTC's market, there is no clear and defined schedules for this line. This sector has never been realized as completely separate line of business due to unmarketability. Although, the passengers movement among towns and villages in the area is significant, but most people move around by their own cars or with friends. Moreover, those drivers who work along this line, never consider it as a sole job to earn a living. The majority have first dependable jobs and they have committed to this job to meet the increasing cost of living.

So far, an idea about NTC's operation from September till the end of December of 1987 has been discussed in this chapter. In addition, certain points have been discussed such as the environmental conditions of the project and the transportation modes available in the area. The next chapter will discuss the surveying techniques used to collect the needed data to estimate the demand for this service.



CHAPTER III

DEMAND ANALYSIS AND ESTIMATION

The method used in this research paper for evaluating the economic and financial feasibility of NTC calls for estimating the future revenues and costs along the life of the project discounted at the appropriate cost of capital. So, the purpose of this chapter is to estimate the future demand for NTC's operation per line, schools transport line, internal line, and external line. An important remark to be raised at this stage is that the estimates of revenues and costs are carried out at current prices as at the beginning of 1988 along the life of the project, since it is assumed that any increase in future costs and or revenues will be equated by an equal increase in revenues and or costs. Moreover, the life of the project is 10 years just for discounting purpose, starting 1987 and ending 1996.

Secondary sources were of little help to this research paper since the project is the first of its kind in the Mount of Lebanon and Consulting other reearches could lead to wrong analysis due to the lack of analogous situations. So, all the data were collected through primary sources in the field by direct contact with a sample of people chosen, close observations of the routes, interviews with bus-drivers and NTC's personal records.

The total number of buses that will comprise NTC public fleets is 25 buses. However, the currently enrolled buses during 1988 are 14 buses. Table 1 shows the allocation of buses during 1988 and 1989 along the 3 transport lines as revealed by the manager.

Table 1

Distribution of Buses along Transport Lines - 1988 and 1989

	1988			1989		
	36 weeks	12 weeks Summer	total	36 weeks	12 weeks Summer	total
Schools line	6	-	-	10 #	-	-
External line	6	3	9	6	5	11
Internal line	3*	-	3	10 £	1	11
Stand-by	2	2	2	3	3	-
Total	14	-	14	25	-	25

Source: Yahya, Walid, Interview cited.

\* These buses represent 3 out of r buses that serve the school line in the morning and serve the internal line between school hours. During Summer, the other 3 buses will shift to serve the external line while those 3 buses will continue to serve the internal line for the whole day.

# These buses comprise of 6 large sized buses and 4 mediumsized buses. The 6 buses are fixed to serve this line, while in the Summer 5 out of these 6 large sized buses will be shifted to serve the external line with 1 bus as stand-by. The 4 mediumsized buses will serve the school line in the morning in addition to internal line between school hours. During Summer, when schools suspend their academic year, these 4 buses will continue to serve its internal routes for the whole day.

£ All buses that serve this line are mediumsized buses. 6 out of the 10 buses serve this line for the whole day, while the other 4 buses are those ones that are performing double job between schools line and this line. During Summer, 1 mediumsized bus will be added to serve this line from stand-by buses, and 1 large sized bus will be placed as a stand-by.

A. DEMAND ANALYSIS AND ESTIMATION OF SCHOOLS TRANSPORT LINE.

NTC realized that there is a big shortage in schools transport particularly to public, technical and vocational, and preliminary schools. These schools don't have their own transport system and students seek the private transport to commute to their schools. This market is supplied by the private transport, people who own buses of different sizes invested in this market. In addition, taxi owners and vocational labours who own a car and their businesses are suspended due to climate conditions, enter in separate engagements with students to get them to their schools. Moreover, some students commute to their schools via their relatives or they themselves own a car. But, irrespective of the different transportation modes available, students have always faced the problem of how they are going to reach their schools at the start of each academic year. So, due to the above mentioned reasons, the schools transport market is considered as a secured one in which no competition exists due to shortage in supply and also to low prices offered by NTC with a net difference from the private market prices ranges between LL 500 to LL 1,500 per month.<sup>12</sup>

In-view of the purpose of the project under-study, the needed data was secured out of NTC own records. Before analysing the data, it is better to know how NTC organizes this service. The students, who choose NTC transport line as a mean to commute to their schools, choose a representative whom in turn enters on their behalf in a special contract with NTC for a specified number of students, routes, and at pre-determined prices.<sup>13</sup> The current routes in service during 1988 are shown in Table 2.

- 
12. Random Comparative Analysis between Fares Charged by private Market and NTC.
  13. Yahya, Walid, Interview cited.

TABLE 2

Routes Served by NT Buses - Schools Line - 1988

Start of line	Intermediate routes	End of line	No. of buses	Km
Ghareifa	-	Baakleen	1	10
Aeen Dara	-	Agmeed	1	10
Masser Al-Shouf	Jdeideh- Al-Mazraa	Deir Al-Kamar	1	35
Khoreibeh	Jdeideh - Aeen Wzein	Baakleen	1	30
Jahiliya	Kaferheem - Kaferfakoud	Deir Al-Kamer	1	20
Baadaran	Niha-Amatour - Jdeideh	Deir Al-Kamar	1	35
Source: NTC's Records. <u>OP. Cit.</u>			6	150

Average Km per route=  $150 / 6 = 25$  Km

The contracts secured out of NTC own records were accumulated according to price paid by the students and to the number of students that pay the corresponding price per month. These findings were processed further for the sake of the study and are shown in table 3 which reveals the following information:

1. Column 1 shows the different price categories paid by the students.
2. Column 2 shows the No. of students who pay the corresponding price.
3. Column 3 shows the No. of seats available by one bus.
4. Column 4 shows the percentage of total number of students under specified price category by the total number of students who use NTC transport line.
5. Column 5 shows the revenue earned per price category.

Table 3

Allocation of Students per Price Categories

Price 1	No. of Students 2	No. of seats available 3	% 4	Revenue Earned 1*3*4 LL 5
2,900	24	50	7.7 %	11,165
2,800	5	50	1.6 %	2,240
2,500	20	50	6.4 %	8,000
2,200	5	50	1.6 %	1,760
2,000	12	50	3.8 %	3,800
1,950	6	50	1.9 %	1,852
1,800	12	50	3.8 %	3,420
1,700	64	50	20.5 %	17,425
1,600	57	50	18.2 %	14,560
1,500	27	50	8.6 %	6,450
1,250	44	50	14.1 %	8,812
800	4	50	1.3 %	520
600	33	50	10.5 %	3,150
Total	313		100.0 %	LL 83,154

Source: Contract Available at NTC residence at the end of 1987

Average price per student = LL 83,154 / 50 = LL 1,665

To determine the total revenue earned from this line, an average price per student based upon the following assumption was determined. The assumption is that one bus with a capacity of 50 seats will contain the different percentages, column 4, under specified price category, column 1. For example, 7.7% of 50 seats available will pay LL 2,900 per month and so on for the rest. Then, an average price/student was determined which is equal to LL 1,665 per month, (total of column 5 divided by the number of seats available per one bus). In order to calculate the total revenue earned from this line per year, the underlying formula was constructed and used through out the paper for this line.

$$\text{Total Revenue} = \text{No. of buses allocated} \times \text{No. of seats available} \times \text{Average Price Student} \times \text{9 months Academic year}$$

The following table, Table 4, shows the future revenues that untill be earned from this line, assuming that any future allocation for additional buses to this line will have the same features as the currently existing ones. (mediumsized buses that will be added in 1989 have a capacity of 25 seats each).

Table 4

Projected Revenues from Schools Transport Line

Year	87	88	89	90-96
Revenues	-	4,495,500	5,994,000	5,994,000
per year		1	2	

Using above formula and information in table 1 for buses allocation lead to:

1. R. 88= 6 \* 50 \* 1,665 \* 9 = LL 4,495,500
2. R. 89= 6 \* 50 \* 1,665 \* 9  
4 \* 25 \* 1,665 \* 9<sup>+</sup>  
= LL 5,994,000

B. DEMAND ANALYSIS AND ESTIMATION FOR EXTERNAL TRANSPORT

NTC external transport line through Khaldi station was a radical change in the traditional transport modes available in the area. This line has been introduced promptly as a suitable mean mainly due to increasing prices and to unavailability of fuel at any time, in addition to other factors such as, increasing prices of auto spare-parts, and bad roads conditions due to the lack of Governmental maintenance.

The total number of buses allocated to this line during 1988 are 6 buses. Each bus perform one trip per day, from the mountain to the station in the morning and Vis-versa in the after-noon. The last bus that leaves Khaldi station is at 3.00 PM. Table 5 shows the routes that are served by these 6 buses.

Table 5

Routes Served by NTC Buses - External Line - 1988

<u>Start of line</u>	<u>End of line</u>	<u>No. of buses</u>	<u>KM.</u>
Kfarselwan	Khaldi	1	70
Ras Al-Matin	Khaldi	1	65
Agmeed	Khaldi	1	60
Niha	Khaldi	1	65
Aeen Dara	Khaldi	1	60
Maaser	Khaldi	1	50

Source: NTC's Records, OP. Cit.

Total 310

Average KM per Bus =  $310 / 6 = 60$  KM

To estimate the demand for this line a designed questionnaire was administrated and distributed to the actual users at Khaldi station for one week, since their responses form the basis for the demand eveluation of this line. The type of questions asked were mainly marital status, job description, residence, salary, if they own a car, how many times they use NTC line per week, etc. (See Appendix A for the Questionnaire).

Due to time limitation a sample of 80 respondents was selected randomly at Khaldi station for one week. Then a coding system for the 80 filled questionnaires was designed and ran on the computer and obtained back the results in the form of cross-tabulations between the questions. (See Appendix B).

These cross-tabulations are presented as they are with no further analysis due to certain limitation which will be discussed later in this part. Out of these cross-tabulations, only cross-table number 6 will be used in this research paper for the demand estimation, see the following table.



Table 6

Allocation of Respondents per Price Paid and per  
Number of Usage of NTC's Buses per Week

	1	2	3	4	5	6	Total
LL	1	3	-	2	1	2	9
50	1.3%	3.8%	-	2.5%	1.3%	2.5%	11.3%
	12	8	1	4	-	6	31
100	15.0%	10.0%	1.3%	5.0%	-	7.5%	38.3%
	1	5	-	1	-	3	10
125	1.3%	6.3%	-	1.3%	-	3.8%	12.5%
	6	5	1	3	-	-	15
150	7.5%	6.3%	1.3%	3.8%	-	-	18.8%
	10	3	-	2	-	-	15
200	12.5%	3.8%	-	2.5%	-	-	18.8%
Total	30	24	2	12	1	11	80
	37.5%	30.0%	2.5%	15.5%	1.3%	13.8%	100.0%

Source: Questionnaire distributed at Khaldi station.

(Vertically - price, horizontally - times per week)

Table 6 represents two questions asked in the questionnaire. The first question is about the number of times each respondent uses the external transport one way per week. The second question is about the permanent residence. In view of the answers supplied by the respondents, the price paid by them was determined based upon NTC price list. See Appendix C for the list.<sup>14</sup> Moreover, the data appeared in Table 6 was used to calculate the average price paid per respondent, See Table 7.

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14. NTC's Records. OP. Cit.

Table 7  
Allocation of Passengers per Price Paid - External Line

<u>Price</u>	<u>No. of Respondents</u>	<u>Total Price paid by respondents</u>	<u>1*2</u>
50	9	LL 450	
100	31	3,100	
125	10	1,250	
150	15	2,250	
200	15	3,000	
	<u>Total</u>		
	80	LL 10,050	

Source: NTC's Price List and Questionnaire distributed at Khaldi station.

Average price paid by respondent =  $10,050/80 = \text{LL } 125$

To determine the demand for this line, the underlying introduced assumptions constitute the basis of the evaluation process of this line.

1. The respondents answers to the first question how many times they use NTC transport line represent one-way transport - from the mountain to Khaldi station per week. It will be assumed that all the respondents will use this line two-ways. This assumption is revealed by the ratio that appears in Table 8.
2. The additional buses allocated from schools transport line during the summer period and those that will be added in 1989 will bear the same occupancy rates as of those revealed by the respondents.
3. The third assumption is that the number of passengers per week, Table 9 - Column 4, is going to be fixed plus a 10% increase during the Summer period only despite the fact that 50% of respondents are students, Table 2 - Appendix B. This is so, because more people living in the capital in Winter will spend their week ends up in the mountain in Summer.

Many limitations were behind the aforementioned assumptions which are as follow :

1. Lack of analogous situations for comparative reasons due to the fact that the project is the only one in the area.
2. Since the project is unfamiliar to the public, any marketing data obtained from communication with the public beyond the actual users could be misleading or at most insufficient.
3. Lack of statistical data about the distribution of people per age, sex, occupation, and per capita which was a major limitation for more comprehensive study.
4. Time limitation to present this study.
5. Scattered population and the feel of non-representative sample if the questionnaires were to be administrated and distributed in another way different to what was actually done.

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Based upon the respondent answers and the assumptions taken, tables 8 and 9 were constructed which show the number of passengers per week for two periods. Out of these two tables, table 10 was constructed to show the future revenues that will be earned from this line along the life of the project.

Table 8

Number of Passengers per Two Periods - Ex. Line - 1988

9 MONTHS - 36 WEEKS				SUMMER PERIOD - 12 WEEKS		
% of Res-pondents	Ratio	Capacity	Total no. of Passengers per week 1*2*3*	T no. pass. per week plus 10% increase 4*10%	T. no. of Pass. per week for additional buses #	T. no. of pass. during Summer 5 + 6
1	2	3	4	5	6	7
37.5%	2/12	3,600	225	248	112	360
30.0%	4/12	3,600	360	396	180	576
2.5%	6/12	3,600	45	50	22	72
15.0%	8/12	3,600	360	396	180	576
1.3%	10/12	3,600	39	43	20	63
13.8%	1	3,600	497	547	248	795
100.0%		3,600	1,526	1,680	762	2,442

Table 9

Number of Passengers per Two Periods - Ex. Line - 1989

9 MONTHS - 36 WEEKS				SUMMER PERIOD - 12 WEEKS		
% of Res. pondents	Ratio	Capacity	Total no. of passengers per week 1*2*3	T no. of pass. per week plus 10% increase 4*10%	T no. of pass. per week for additional buses £	T no. of pass. during Summer 5 + 6
1	2	3	4	5	6	7
37.5%	2/12	3,600	225	248	187	435
30.0%	4/12	3,600	360	390	300	696
2.5%	6/12	3,600	45	50	38	88
15.0%	8/12	3,600	360	396	300	696
1.3%	10/12	3,600	39	43	33	76
13.8%	1	3,600	497	547	414	961
100.0%		3,600	1,526	1,680	1,272	2,952

\* Capacity = Total no. of buses per day \* no. of trips per day \* no. of seats available per bus \* 6 days per week  
 = 6 \* 2 \* 50 \* 6 = 3,600

# T no. of passengers per week for additional buses =  
 Capacity \* column 1, and 2

Capacity = Total no. of buses per day \* no. of trips per day \* no. of seats available per bus \* 6 days per week  
 = 3 \* 2 \* 50 \* 6 = 1,800  
 1,800 \* 37.5% \* 2/12 = 112

£ T no. of passengers per week for additional buses =  
 Capacity \* column 1, and 2

Capacity = Total no. of buses per day \* no. of trips per day \* no. of seats available per bus \* 6 days per week  
 = 5(table 1) \* 2 \* 50 \* 6 = 3,000  
 3,000 \* 37.5% \* 2/12 = 187

Table 10  
Revenues from External Transport Line

Year	Revenues for a Period 36 weeks	Revenues for 12 weeks Summer period	Total Revenues
	No. of pass. per week * Av. price * 36 weeks	No. of pass. per week * Av. price * 12 weeks	1 + 2
	LL	LL	LL
1988	6,867,000	3,663,000	10,530,000
1989	6,867,000	4,428,000	11,295,000
90-96	6,867,000	4,428,000	11,295,000

C. DEMAND ANALYSIS AND ESTIMATION OF INTERNAL TRANSPORT LINE

The already existing routes that are served by NTC buses cluster around Beit El-Deen, the residence of governmental offices and civil administration in El-Jabel, see the following table, Table 11.

Table 11  
Routes Served by NTC Buses - Internal Line - 1988

Internal Route	No. of buses	KM
Aeen Dara - Beit El-Deen	1	30
Mouristy - Beit El-Deen	1	30
Jahiliya - Beit El-Deen	1	15
<u>Source:</u> Yahya, Walid, <u>Interview cited.</u>		75

Total 3

Average KM per bus =  $75/3 = 25$  KM

No data was obtained from direct contact with respondents since the results could be misleading or at most insufficient due to the lack of unexperienced behavior. Instead, other research techniques were used to determine the demand for this line such as, close observations of the routes were carried out for two weeks at different times of the day, and interviews with the bus-drivers.

The current buses allocated to serve this line are 3 large sized buses. These buses serve the schools transport line in the morning and then make one trip along its specified internal route, and in the afternoon shift to serve the schools transport line again. Based upon close observations and interviews, the demand for this line will be divided into three periods. The first period represents two seasons, Autumn and Winter. The second period represents the Spring, while the third period will represent the Summer. Based upon these observations and interviews, an average occupancy rate per day was determined and since no major differences in occupancy rates for the different routes in service were observed, it is assumed that all existing routes and those that will be placed in the future will have the same occupancy rates. Based upon the results of research techniques and the assumption made at this stage, Tables 12, 13A and 13B were constructed which show the revenues to be earned from this line for 1988 and 1989.

Table 12  
Revenues from Internal Line - 1988

Period	Capacity per week	Occupancy rate	Passengers per week	Pass.per year	Price	Revenues per year LL
1	1,800	25 %	450	10,800	100	1,080,000
2	1,800	30 %	450	5,480	100	548,000
3	3,600	40 %	1,440	17,280	100	1,728,000
Total Rev.						3,356,000

Source: Interviews with Bus-Drivers and Personal Close observations.



The capacity for the third period has changed since the buses will serve the internal routes for the whole day during the summer. While in the first two periods, these buses have been serving the schools transport line in the morning and the after-noon, in addition to the service rendered to internal routes between school hours.

Table 13A  
Revenues from  
6 Medium Sized Buses Allocated Totally  
to Serve Internal Routes 89

Period	Capacity per week	Occupancy rate	Passengers per week	Pass.per year	Price	Total Rev. per year LL
1	3,600	50 %	1,800	43,200	100	4,320,000
2	3,600	60 %	2,160	25,920	100	2,592,000
3	3,600	80 %	2,880	34,560	100	3,456,000
Sub-total Rev.						10,368,000

Table 13B  
Revenues from  
4 Medium Sized Buses Allocated to Serve  
Internal Transport Line and Schools Line  
year 1989

Period	Capacity Per week	Occupancy rate	Passengers per week	Pass.per year	Price	Total Rev. per year LL
1	1,200	50 %	600	14,400	100	1,440,000
2	1,200	60 %	720	8,640	100	864,000
3	3,000	80 %	2,400	28,800	100	2,880,000
Sub-total Rev						5,184,000
TOTAL REVENUE						15,552,000

The occupancy rates have not changed as of those appeared in table 12, but the type of buses have changed. The medium sized buses have a capacity of 25 seats, so the occupancy rates must be doubled to reflect this change.

The occupancy rates for the last two periods starting 1990 till 1996 will change respectively to 70% and 85%. This increase in occupancy rates is considered as a conservative change as revealed by the bus-drivers after this line has been in service for 2 years. The under-lying calculations show the revenues that will be earned based upon the new occupancy rates for 1990. The revenues for the remaining life of the project will be the same as that of 1990.

Revenues from 6 Medium Sized Buses Allocated  
Totally to Serve Internal Routes 90

Period	Capacity per week	Occupancy rate	Passengers per week	Pass.per year	Price	Total Rev. per year LL
1	3,600	50 %	1,800	43,200	100	4,320,000
2	3,600	70 %	2,520	30,240	100	3,024,000
3	3,600	85 %	3,060	36,720	100	3,672,000
Sub. total Rev.						11,016,000

Revenues from 4 Medium Sized Buses Allocated  
to Serve Internal Routes and Schools Line  
year 1990

Period	Capacity per week	Occupancy rate	Passengers per week	Pass.per year	Price	Total Rev. per year LL
1	1,200	50 %	600	14,400	100	1,440,000
2	1,200	70 %	840	10,080	100	1,008,000
3	3,000	85 %	2,550	30,600	100	3,060,000
Sub. total Rev.						5,508,000
TOTAL REVENUE						16,524,000

Table 14 shows the total revenues that will be earned by NTC from the different lines in operation. In addition to these revenues, another revenue is to be earned by renting the cafeteria at Khaldi station and this will be equal to LL 600,000 per year starting 1989.<sup>15</sup>

Table 14  
Total Revenues Earned by NTC 1988-96

<u>TOTAL REVENUE EARNED by NTC OVER the LIFE of the PROJECT</u>					
<u>YEAR</u>	<u>SCHOOLS LINE</u>	<u>EXTERNAL LINE</u>	<u>INTERNAL LINE</u>	<u>OTHERS</u>	<u>TOTAL REVENUE</u>
1988	4,495,500	10,530,000	3,356,000	-	18,381,000
1989	5,994,000	11,295,000	15,552,000	600,000	33,441,000
1990	5,994,000	11,295,000	16,524,000	600,000	34,413,000
1991	5,994,000	11,295,000	16,524,000	600,000	34,413,000
1992	5,994,000	11,295,000	16,524,000	600,000	34,413,000
1993	5,994,000	11,295,000	16,524,000	600,000	34,413,000
1994	5,994,000	11,295,000	16,524,000	600,000	34,413,000
1995	5,994,000	11,295,000	16,524,000	600,000	34,413,000
1996	5,994,000	11,295,000	16,524,000	600,000	34,413,000

15. Field Market Research, Prevailing market prices as at the beginning of 1988 in Khaldi area.

CHAPTER IV  
COST ESTIMATES OF THE PROJECT

After discussing the nature of operations of the project with NTC's manager, the costs to be incurred are classified into 3 categories; 1) Investment costs, are those costs to be capitalized and depreciated over a determinable life, 2) Fixed costs, are those costs to be incurred irrespective of the nature of operations, 3) Variable costs, are those costs that vary directly with operations so, these costs will be presented accordingly. What is worth mentioning at this stage is that all capitalized expenditures, accredited or contracted to a third party in dollars have been valued based upon BDL closing rate as at December 31, 1987 which is equal to LL 455/dollar. Moreover, all costs have been estimated at current prices prevailing as at the beginning of 1988.

A. INVESTMENT COSTS

Investments costs classified under this category are, cost of the building at Beit El-Deen, cost of the bus-station at Khaldi, cost of the buses, cost of furnitures and fixtures for NTC residence, and finally cost of the equipments for the maintenance workshop.

1. Cost of the Building

The total area used for construction works is 300 sq.m.<sup>16</sup> The building will comprise two floors, the ground floor will be used by the maintenance division while the first floor will be utilized by the management. The construction works have been started in 1987 in the ground floor where two thirds are finished as at December 31, 1987. The costs of digging and constructions till the end of 1987 were LL 9,872,000 as per NTC's statements.<sup>17</sup> The total built up area is 1857 square meter. The estimation of construction costs is based upon the cost of one square meter estimated at LL 15,000.<sup>18</sup> So, the total construction costs will be equal to LL 27,855,000 in which LL 9,872,000 was incurred in 1987. The remaining costs will be incurred in 1988 in which the construction works is expected to be completed. The land used for constructions has been donated by an outside party whose name was not mentioned for confidential reasons only.<sup>19</sup>

2. Cost of Bus-Station at Khaldi

The land for construction works will be leased from the Ministry of Public Works and Transport. The total area used for construction is 224 sq.m. The total engineering and civil works has been accredited at \$ 15,000 which is worth to LL 6,825,000.<sup>20</sup> The construction works have started since the beginning of 1988, and it is expected to finish by the end of 1988 in which all costs will be paid.

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16. Interview with Mr. Selman Zeid. Engineer in charge of NTC Constructions.

17. NTC's Records. OP. cited.

18. Zeid, Selman, Interview Cited.

19. Yahya, Walid. Interview cited.

20. Ibid.

3. Cost of Buses

The total number of buses that will comprise NTC public fleets are 25 buses. Fourteen large used sized buses have been purchased in 1987 at a cost price LL 30 millions.<sup>21</sup> The other 11 buses will be medium sized buses and also used ones. The cost of one medium sized bus has been estimated at half price of the large used bus.

14 used large sized buses (50 persons capacity)	LL 30,000,000
11 used medium sized buses (25 persons capacity)	16,500,000
registration fees	<u>750,000</u>
	LL 47,250,000

These medium sized buses will be purchased and put in service by 1989.

4. Cost of Equipments for Maintenance House

The maintenance house will consist of 3 sections:

- Mechanic section, which will handle such problems as, engine repairs, spare parts repair, general mechanic revisions,..etc.
  - Electric section
  - Revision section, which will render the following services, oil and grease changing, tires repair, and washing services.
- 

21. NTC Records. OP. Cit.

To supply this workshop with the all necessary equipments, NTC received many price offers which ranged between \$ 10,000 and \$ 11,000.<sup>22</sup> So, the estimated cost price of these equipments is the average between the two figures which is equal to \$ 10,500. In addition, a truck will be purchased at a cost price of \$ 2,500 to catch up broken buses during service equiped by the all necessary tools. Moreover, an inventory of bus spare-parts was purchased during 1987 at a cost price of \$ 5,000 as revealed by the manager.<sup>23</sup> So, the total costs to be incurred by this workshop are presented in the following table.

<u>Type</u>	<u>Cost Price</u>	<u>Exchange Rate</u>	<u>Cost in LL</u>
Equipments	\$ 10,500	455	4,777,500
Truck	2,500	455	1,137,500
Inventory	<u>5,000</u>	<u>455</u>	<u>2,275,000</u>
	\$ 18,000	455	8,190,000

##### 5. Furnitures and Fixtures for NTC Residence

After discussing the type of furnitures and fixtures to be furnished at NTC residence with the manager, the cost has been determined at LL 5 millions. This figure includes the cost of furnitures at Khaldi station. The cost price of these equipments and fixtures have been estimated by comparative judgement based upon a newly established company in the same area which seems to have the same size as NTC but operating in a different business.

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22. Yahya, Walid, Interview cited.

23. Ibid.

Table 15 shows the total investment costs that will be incurred per year.

Table 15  
Allocation of Total Investment Costs per year

Type	1987	1988	1989	Total
Construction - Res .	9,872,000	17,983,000	-	27,855,000
Kha.	-	6,825,000	-	6,825,000
Buses	30,000,000	-	17,250,000	47,250,000
Maint. House	2,275,000	5,915,000	-	8,190,000
Furnit. & Fixt.	-	-	5,000,000	5,000,000
Total LL	42,147,000	30,723,000	22,250,000	95,120,000

B. Fixed Costs and Variable Costs

Fixed costs are those costs incurred irrespective of the level of output such as, salaries, rent, advertising, ..etc. Variable costs are those costs that vary directly with Km. run by buses such as spare-parts and sparking plugs. But since this study assume normal operations without taking into consideration casual stops or blocks, the variable costs will be considered fixed just for the sake of the study. The costs that are expected to incur from running such business are as follow:

- |                                |                            |
|--------------------------------|----------------------------|
| 1. Salaries                    | 6. Miscellaneous           |
| 2. NSSF costs                  | 7. Rent                    |
| 3. Stationery                  | 8. Depreciation            |
| 4. Elect., Water and Telephone | 9. Fuel and Oil            |
| 5. Advertising                 | 10. Maintenance and Repair |



1. Salaries

Salaries to be incurred will be sub-divided into 4 categories, salaries by management, by the bus staff, by the maintenance workshop, and finally those salaries that will be incurred by the gasoline-station staff.

The estimation of salaries expense is based upon actual salaries paid by NTC as at the end of 1987.<sup>24</sup>

a. Management Salaries:

	per month
General Manager	LL 60,000
Executive Manager 2	80,000
Cheif Accountant	35,000
Assistant Accountant 2	40,000
Route Supervisor	25,000
Secretary	15,000
Personnel Officer	<u>20,000</u>
Total	LL 257,000
Total per year	LL 3,300,000

b. Maintenance Workshop Salaries:

	per month
Supervisor	LL 25,000
Mechanic Expert	20,000
Mechanic Assistant 2	26,000
Electric Expert	20,000
Electric Assistant 2	26,000
Workers 2	<u>22,000</u>
Total	LL 139,000
Total per year	LL 1,668,000

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24. NTC Records. Salaries were extracted from NTC's payroll as at 31/12/87.

c. Bus-Staff Salaries:

Each bus needs 2 persons to be run, the driver and an assistant for tickets circulation. The following table shows the monthly and yearly salaries to be incurred in years 1988 and 1989. Starting 1990 and along the life of the project, the salaries expense will be the same as that of 1989.

	Salary per month per empl.	1988			1989		
		No. of buses	Monthly Salaries	Yearly Salaries	No. of buses	Monthly Salaries	Yearly Salaries
Driver	13,000	12	156,000	1,872,000	22	286,000	3,432,000
Assistant	11,000	12	132,000	1,584,000	22	242,000	2,904,000
Total	24,000	12	288,000	3,456,000	22	528,000	6,336,000

d. Gasoline Stations Salaries:

The salaries to be incurred to run the 2 gasoline stations rented from the Civil Administration in El-Jabal, will comprise the salaries paid to 4 workers. The monthly salary per worker is LL 13,000 and thus leading to a yearly salaries expense figure equal to LL 624,000.

The following table (Table 16) shows the total salaries that will be incurred by NTC per year.

Table 16  
Salaries Expense for 1988 and 1989

<u>Salaries / Type</u>	<u>1988</u>	<u>1989</u>
Management	3,300,000	3,300,000
Maintenance	-	1,668,000
Buses	3,456,000	6,336,000
Gasoline Stations	<u>624,000</u>	<u>624,000</u>
Total	LL <u>7,380,000</u>	<u>11,928,000</u>

2. NSSF Costs

It is assumed that all staff are to be registered at The National Social Security Fund starting 1988. The cost that NTC will bear against NSSF are divided into three categories.

- a. Family Allowance, which is a fixed percentage, 7.5% of triple minimum wage which is equal to LL 2,167,5 per worker.<sup>25</sup>
- b. End of Service Indemnity, which is a provision to be provided by NTC for all staff-members, a monthly paid salary per employee per year.<sup>26</sup>
- c. Sickness & Mother-hood, which is a percentage, 5.5% of double minimum wage. If the salary per employee does not exceed double minimum wage than the 5.5% will be applied on basic salary. If it exceeds double minimum wage, the 5.5% is applied on double minimum wage.<sup>27</sup>

The following table (Table 17) shows total NSSF costs for 1988 and 1989.

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25. Arther Anderson Mattar & Co. SSNF Subscription, Bulletin. 28/10/87. (Arabic), Beirut.

26. Ibid.

27. Ibid.

Table 17

SSNF Costs for 1988 and 1989

<u>NSSF / Type</u>		<u>1988</u>		<u>1989</u>
Family All.	LL	80,197	LL	143,055
End of Ser. Ind.		615,000		994,000
Sick. & Mother.		<u>27,005</u>		<u>470,080</u>
Total	LL	<u>722,202</u>	LL	<u>1,184,135</u>

3. Stationery

According to NTC's Financial Statements as at 31/12/1987, the Stationery expense incurred from September till December is LL 106,000. So, the expected stationery expense will be based on this figure which is equal to LL 318,000 for 1988, while that of 1989 will be equal to LL 350,000. This increase represents the cost of tickets for additional buses that will be placed in service during that year.

4. Electricity, Water, and Telephone Expense

The estimated expense per month and per year is as follows:

<u>Type of Expense</u>		<u>per month</u>		<u>per year</u>
Electricity	LL	4,000	LL	48,000
Water		2,000		24,000
Telephone		<u>5,000</u>		<u>60,000</u>
Total	LL	<u>11,000</u>	LL	<u>132,000</u>

5. Advertising

During 1987, NTC spent LL 50,000 on advertising. It is assumed that advertising expense will be LL 50,000 per year for 1988 & 1989 only due to the following reason. NTC has not established yet all the planned routes and with the introduction of a new route, NTC has to advertise to inform the public about the new route put in service at their disposal. By 1989, NTC will have been implemented all the planned routes per lines so then, there is no need for more advertising.

6. Miscellaneous Expense

A provision of LL 50,000 per year has been taken for miscellaneous expense which includes the following, coffee, tissues, detergents, ..etc.

7. Rent Expense

The only rent expense to be incurred by NTC includes the rent for the 2 gasoline stations rented from the Civil Administration in El-Jabal and that of the land leased from the Lebanese Government. The yearly rental expense for the 2 gasoline stations is LL 100,000, and that of the land is LL 250,000.<sup>28</sup> So, the total yearly rent expense is LL 350,000 starting 1988 and so on for the remaining years along the life of the project.

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28. Yahya, Walid; Interview cited.

9. Depreciation Expense

The following table shows the depreciation expense per year for the capitalized costs for 1988 and 1989.<sup>29</sup>

Assets Type	1988			1989		
	Amount	Rate	Dep. Exp.	Amount	Rate	Dep. Exp.
Building	-	2%	-	27,855,000	2%	557,100
Bus-Station	-	2%	-	6,825,000	2%	136,500
Buses-Large	30,000,000	10%	3,000,000	30,000,000	10%	3,000,000
Medium	-	10%	-	17,250,000	10%	1,725,000
Equipments	-	10%	-	5,915,000	10%	591,500
Furnit. & Fixt.	-	10%	-	5,000,000	10%	500,000
Total LL			3,000,000			6,510,100

10. Fuel and Oil Expense

The fuel expense for 1988 and 1989 are shown clearly in table 18, while the oil expense for the same period is shown in table 19. What is worth mentioning at this stage that all costs of fuel and oil are in dollars and a rate of LL 370 for one dollar has been used to evaluate the dollars in LL. From 1989 and along the life of the project, the cost of fuel and oil will be the same as that of 1989, since all planned routes will be at service by that year.

29. Torbey, Josiph, Income Tax in Lebanon. (Arabic), Beirut, Dar-An-Nahar Khalifa Printing Establishment, 1986.

Table 18  
Cost of Fuel for 1988 and 1989

Schools line	Average Km per bus one-way	No. of trips per day	Km run/ bus/day	Km run bus/year	No. of buses allocated	Total Km. runned by total buses/	No. of gallon of fuel spent per gallon of fuel	Total No. of gallons of fuel needed / per year	Cost of 1 gallon of fuel \$	Total cost of fuel/year/line
1988 Large bus	25	2	50	36 9000	6	54,000	60	900	2.75	2,475 *
1989 Large buses	25	2	50	36 9000	6	54,000	60	900	2.75	2,475 Ø
Medium buses	25	2	50	36 9000	4	36,000	80	450	2.75*	1,238 Ø
<b>External line</b>										
1988 One year	60	2	120	48 34560	6	207,360	60	3,456	2.75	9,504 *
Summer period	60	2	120	12 8640	3	25,920	60	432	2.75	1,188 *
1989 One year	60	2	120	48 34560	6	207,360	60	3,456	2.75	9,504 Ø
Summer period	60	2	120	12 8640	5	43,200	60	720	2.75*	1,980 Ø
<b>Internal line</b>										
1988 9 month	25	2	50	36 10800	3	32,400	60	540	2.75	1,485 *
Summer	25	4	100	12 7200	3	21,600	60	360	2.75	990 *
1989 One year	25	4	100	48 28800	5	144,000	80	1,800	2.75	4,950 Ø
One year	25	2	50	48 14400	5	72,000	80	900	2.75	2,475 Ø
Summer	25	2	50	12 3600	5	18,000	80	225	2.75*	619 Ø
* Source: Yahya, Walid, Interview cited.										
Total cost of fuel										
1988 * = \$ 15,642 X 370 = LL. 5,787,540										
1989 Ø = \$ 23,241 X 370 = LL. 8,599,170										

Table 19  
Cost of Oil for 1988 and 1989

	No. of buses	Km run by one bus / year			No. of Km before oil changing	No. of times to change oil/year	No. of klg needed/ change per bus	Total No. of klg needed year	Price of 1 klg of oil	Total Cost of oil/ buses
		Schools L	Internal L	External L						
	(1)				(2)	(3)	(1x2x3)			
Large	3	9,000	18,000	-	1,000	27	486	\$ 1	486	
1988 Large	3	9,000	-	8,640	1,000	18	324	\$ 1	324	
Large	6	-	-	34,560	1,000	34	1,224	\$ 1	1,224	
Medium	5	9,000	18,000	-	1,000	27	540	\$ 1	540	
1989 Medium	5	-	28,000	-	1,000	28	560	\$ 1	560	
Large	6	9,000	-	8,640	1,000	18	648	\$ 1	684	
Large	6	-	-	34,560	1,000	34	1,224	\$ 1	1,224	

Total Cost  
 1988 = \$ 2,034 x 370 = LL. 752,580  
 1989 = \$ 2,972 x 370 = LL. 1,099,640

(1) Source: Hamadi, Sami. Interview cited. (2) Shams, Fouad. Interview cited.



11. Maintenance & Repair Expense

Since NTC's maintenance workshop will be ready by 1989, NTC will handle all maintenance problems during 1988 by referring to the private market. The estimation of this expense for 1988 is based upon NTC's maintenance expense for 1987 which is equal to LL 837,834 from September till DEcember. So, the maintenance expense for 1988 is equal to LL 2,515,000.

By 1989, NTC's maintenance workshop will be ready to render all services related to buses, and the only cost that NTC will bear is the cost of spare-parts. To evaluate this expense, an experienced person who was in this business for 10 years was consulted and the outcomes of this interview is revealed in table 20.<sup>30</sup> This table shows the most durable spare-parts with their estimated lives per Km. Table 21 shows the cost price of these spare-parts, in addition to the total cost that will be incurred per year based upon the data appeared in Table 20.<sup>31</sup> Other spare-parts which are not mentioned or not taken into consideration in Table 21 will be met from the inventory purchased in 1987.

- 
30. Interview with Mr. Sami Hamadi. A previously experienced person in this business. Now a days operating his new maintenance garage Baaklee
31. Interview with Mr. Fouad Shams. Owner of an Establishment that trades in Spare-Parts.

Table 20

Turn over of Most Durable Bus Spare-Parts per year

Km run / bus 1989 - Table 19	Brake 10,000 Km	Sparking plug 10,000 Km	Popine small 10,000 Km	Sparking plug ribbon 20,000 Km	Popine large 20,000 Km	Fuel filter 24,000 Km	Diske 50,000 Km
27,000	3	3	3	1 ½	1 ½	7	2 years
28,800	3	3	3	1 ½	1 ½	7	2 years
17,640	2	2	2	1	1	4	3 years
34,560	3	3	3	2	2	9	2 years
Total No. of units/bus	11	11	11	6	6	27	2 years

Source: Hamadi, Sami. Interview cited.

Table 21

Cost of Durable Bus Spare-Parts

No. of Buses Table 19	Each Bus needs M4	Each Bus needs L 6	7.5	7.5	6	7.5	35	5
5	15	60	15	7.5	6	7.5	35	5
5	15	60	15	7.5	6	7.5	35	5
6	12	72	12	6	6	6	24	6
6	18	108	18	12	12	12	54	6
Total units/buses	60	300	60	33	33	33	148	22
Cost / unit	\$ 42	\$ 3.5	\$ 4	\$ 9	\$ 8	\$ 8	\$ 2.5	\$ 80
Total cost/buses	\$ 2,520	\$ 1,050	\$ 240	\$ 297	\$ 264	\$ 264	\$ 370	\$ 1,760

Total cost of units/year/buses accepted = \$ 4,741 x 370 = LL 1,754,170  
Diske/year/buses = \$ 1,760 x 370 = LL 651,200 every two years

Another maintenance expense to be realized but not yearly is the engine repair cost. The engine life is 100,000 Km, but since NTC's buses are used ones, the estimated life per each bus-engine is 50,000 Km. before any engine maintenance takes place. Table 22 shows the number of years needed before any engine maintenance takes place. The cost of spare-parts that are used in rebuilding one engine is LL100,000.<sup>32</sup> Table 23, column 3, shows the engine maintenance costs expected to incur in the future at current prices as at the beginning of 1988.

Table 24 is the summary for all operational costs.

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32. Hamadi, Sami, Interview cited.

## Turnover of engine life per years

No. of Buses	Km run/ bus	Before engine Repair		After engine Repair		Turnover/ 10 years
		Expected life Km	No. of years before E.R.	Expected life Km	No. of years after engine R.	
5 medium B	27,000	50,000	2	100,000	4	3
5 medium B	28,800	50,000	2	100,000	4	3
6 large B	17,640	50,000	3	100,000	6	1
6 large	34,560	50,000	2	100,000	3	3

Source: Hamadi, Fuad. Interview cited.

Table 23

## Total Maintenance Costs along the Project's Life

year	Cost of Spare-Parts Table 21	Cost of Disk Table 21	Cost of Engine Repair Table 22	Total Maintenance and Repairs Expense
1989	1,754,170	-	-	1,754,170
1990	1,754,170	651,200	600,000	3,005,370
1991	1,754,170	-	600,000 + 500,000	2,854,170
1992	1,754,170	651,200	600,000 + 500,000	3,505,370
1993	1,754,170	-	-	1,754,170
1994	1,754,170	651,200	600,000 + 500,000	3,505,370
1995	1,754,170	-	500,000	2,254,170
1996	1,754,170	651,200	600,000 + 600,000	3,605,370

Table 24

## Total Operational Costs along the Project's Life

Year	Salaries	NSSF	Station- ery	Elect. Water Telephone	Advertising	Miscell.	Rent	Deprecia- tion	Fuel	Oil	Mainten- ance	Tota Without
1988	7,380	722	318	-	50	50	350	3,000	5,788	753	2,515	17,926
1989	11,928	1,184	350	132	50	50	350	6,510	8,599	1,100	1,754	25,497
1990	11,928	1,184	350	132	-	50	350	6,510	8,599	1,100	3,005	26,698
1991	11,928	1,184	350	132	-	50	350	6,510	8,599	1,100	2,854	26,547
1992	11,928	1,184	350	132	-	50	350	6,510	8,599	1,100	3,505	27,198
1993	11,928	1,184	350	132	-	50	350	6,510	8,599	1,100	1,754	25,447
1994	11,928	1,184	350	132	-	50	350	6,510	8,599	1,100	3,505	27,198
1995	11,928	1,184	350	132	-	50	350	6,510	8,599	1,100	2,254	25,947
1996	11,928	1,184	350	132	-	50	350	6,510	8,599	1,100	3,605	27,298

CHAPTER V

FINANCING REQUIREMENTS, COST OF CAPITAL, AND PROFITABILITY

INDICATORS

After estimating the future revenues and costs in chapters III and IV respectively, we will try in this chapter to determine and identify the sources of funds needed to finance this project. In addition, this chapter presents the results of the economic and financial evaluation as specified by the investment and financial criteria mentioned in chapter I.

The funds needed to finance this project are LL 95,120,000 as shown in Table 15. According to NTC sources, all funds are to be raised by equity amounting to LL 100 millions. The difference between amount raised by equity and the determined investment costs as shown in Table 15, represents the working capital needed before any pooled revenues are generated from operations.

To test the economic feasibility of the project according to NPV criterion, the cost of capital to the company has to be calculated first. And since the owners' main objective is to provide social welfare, the cost of capital to the firm is equal to the opportunity rate of return on a riskless asset which in this case equivalent to the rate of interest on the Lebanese Public Treasury Bills. The annual rate of return on the LPTB is around 32%.<sup>33</sup> So, a cost of capital equivalent to 32% is used in the NPV calculation to assess the economic evaluation of the project. The NPV formula used is as follows:

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33. Interview with Mr. Hassan Khudr. Responsible for Treasury Bills deals at the National Bank for Industrial and Touristic Development. Beirut, Lebanon

$$NPV = -Co + \frac{R1 - C1}{(1+r)^1} + \frac{R2 - C2}{(1+r)^2} + \frac{R3 - C3}{(1+r)^3} + \dots + \frac{Rn - Cn + Sn}{(1+r)^n}$$

co= Immediate capital cost of the project.

C1- Cn= Capital cost and operating cost incurred in cash repective years.

R1- Rn= Expected revenue stream of the project.

r = Rate of discount used which is equivalent to the Cost of Capital to the owners.

n = Life span of the project which is equal to 10 years starting 1987 and ending 1996.

Sn= Salvage value at year n. The following table shows the salvage value of all fixed assets at year n which is year 1996

Type of Asset	Acc. Depreciation at Year n	LL	Cost price LL	Net Book Value LL
Residence	4,456,800		27,855,000	23,398,200
Station	1,092,000		6,825,000	5,733,000
Large buses	SV 25% of cost		30,000,000	7,500,000
Small buses	SV 25% of cost		17,250,000	4,312,500
Equipments	4,732,000		5,915,000	1,183,000
Furnitures	4,000,000		5,000,000	1,000,000
			Total Salvage V LL	43,126,700

Table 25 shows the calculation of Net Present Value after discounting the difference between annual benefits and costs (investment and operational) at a cost of capital equal to 32%.

Table 25  
DISCOUNTED BENEFITS AND COSTS  
THOUSANDS LL

Year	Capital Costs 1	Operational costs 2	Revenues 3	Net result 4 3 - (1+2)	32% 5	Present value 6 4 * 5
1987	45,722	-	-	(45,722)	1	(45,722)
1988	30,723	17,926	18,382	(30,267)	0.7576	(22,930)
1989	22,250	25,497	33,441	(14,306)	0.5739	( 8,210)
1990	-	26,698	34,413	7,715	0.4348	3,355
1991	-	26,547	34,413	7,866	0.3294	2,591
1992	-	27,198	34,413	7,215	0.2495	1,800
1993	-	25,447	34,413	8,966	0.1890	1,695
1994	-	27,198	34,413	7,215	0.1432	1,033
1995	-	25,947	34,413	8,466	0.1085	916
1996	(43,127)	27,298	34,413	50,242	0.0822	4,130
					NPV LL	(61,342)

According to the NPV investment criterion, a project is economically viable if its NPV is greater than zero. The calculated NPV as shown in Table 25 is LL (61342) so, NTC is not an economically feasible project. With respect to the Internal Rate of Return criterion, adopt any project whose IRR is greater than the cost of capital of the project or the firm. So, if we try to calculate the IRR for the project under-study by reducing the difference between discounted annual benefits and costs to zero, the IRR will be equal to 1%. So, according to IRR investment criterion, this project is also unfeasible. As a result of the evaluation using the NPV and the IRR criteria, we can conclude that the NTC is unfeasible project to adopt.



With respect to financial indicators, Tables 26 and 27 show respectively a projected Profit and Loss Statement and a Cash-Flow Statement for NTC from 1987 till 1996 based upon the assumptions raised in the previous two chapters.

Although, the projected P & L statement shows successive profits over the life span of the project starting 1989, but NTC is still, as the economic indicators reveal, unfeasible project to adopt. This is so, because the calculated average rate of return is only equal to 1% per year which is very low as compared to any riskless asset in the market. The major expense categories that constitute the bulk of the operational costs are payroll, fuel and oil, and maintenance which carry the following percentage respectively, 36%, 45%, and 11% based upon the average over the life span of the project.

Table 26

Profit and Loss Statement  
(THOUSANDS LL.)

Year	1988	1989	1990	1991	1992	1993	1994	1995	1996
Rev. Sch. Line	4,495	5,994	5,994	5,994	5,994	5,994	5,994	5,994	5,994
Rev. Ext. Line	10,530	11,295	11,295	11,295	11,295	11,295	11,295	11,295	11,295
Rev. Int. Line	3,356	15,552	16,524	16,524	16,524	16,524	16,524	16,524	16,524
Rev. Others	-	600	600	600	600	600	600	600	600
Total Revenues	18,381	33,441	34,413	34,413	34,413	34,413	34,413	34,413	34,413
Total OP. Costs	17,926	25,497	26,698	26,547	27,198	25,447	27,198	25,947	27,298
Depreciation	3,000	6,510	6,510	6,510	6,510	6,510	6,510	6,510	6,510
Total OP. Costs	20,926	32,007	33,208	33,057	33,708	31,957	33,708	32,457	33,808
Net. Inc. bef. Tax ( 2,545)	1,434	1,434	1,205	1,356	705	2,456	705	1,956	605
Taxes	-	-	-	-	-	-	-	-	-
N. Inc. after Tax ( 2,545)	1,434	1,434	1,205	1,356	705	2,456	705	1,956	605

Table 27  
Cash flow - Statement  
(Thousands LL.)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Cash outflow :										
Construction costs	9,872	24,808	-	-	-	-	-	-	-	-
Equipments: Maint. Div.	-	5,915	-	-	-	-	-	-	-	-
Buses	30,000	-	17,250	-	-	-	-	-	-	-
Furniture & Fixtures	-	-	5,000	-	-	-	-	-	-	-
Inventory	2,275	-	-	-	-	-	-	-	-	-
Deficit 1987	3,575	-	-	-	-	-	-	-	-	-
Total Operation Costs without dep. (Table 24)	-	17,926	25,497	26,698	26,547	27,198	25,447	27,198	25,947	27,298
Total Cash outflow	45,722	48,649	47,747	26,698	26,547	27,198	25,447	27,198	25,947	27,298
Cash Inflow										
Total Revenues	-	18,381	33,441	34,413	34,413	34,413	34,413	34,413	34,413	34,413
Total Cash Inflows	-	18,381	33,441	34,413	34,413	34,413	34,413	34,413	34,413	34,413
Cash Surplus or Deficit	(45,722)	(30,268)	(14,306)	7,715	7,866	7,215	8,966	7,215	8,466	7,115
Cumulative Cash Surplus or deficit	(45,722)	(75,990)	(90,296)	(82,581)	(74,715)	(67,500)	(58,534)	(51,319)	(42,853)	(35,738)

The Cash-Flow Statement has been presented in this way to show the pay-back period of the project. This statement reveals that NTC's sources, revenues generated from operations are not enough to recover the initial investment costs over the life span of the project. With a pay-back period over 10 years, which is a long period to recover the cost outlays, NTC is considered as unfeasible project. To conclude at this stage, The financial indicators, the Cash-Flow and P & L statements, reveal that NTC is unfeasible project to adopt.

One may ask why the owners have committed themselves to such unfeasible project.

To answer the above raised thought, a discussion with the manager has taken place after coming up with the results who reveals the investors' point of view. According to him, the owners have committed themselves to such a project for humanitarian and social welfare reasons. Increasing cost of living carried by the deterioration of the Lebanese Pound against all foreign currencies and rising rates of inflation have influenced adversely those with low income brackets and the people in general. The owners have seen the opportunity to establish a company that offers public transport at reduced prices as compared to the private market, thus bearing a social cost on its behalf. Moreover, the salaries that will be incurred by NTC are to be bear by an outside party.

In view of this new outcome, the NPV was recalculated again as shown in Table 28.

Table 28  
DISCOUNTED BENEFITS AND COSTS WITHOUT SALARIES  
THOUSANDS LL

Year	Net result Table 25 1	Operational costs salaries Table 24 2	Net result 3 1 + 2	32% 4	Present value 3 * 4
1987	(45,722)	-	(45,722)	1	(45,722)
1988	(30,267)	7,380	(22,887)	0.7576	(17,340)
1989	(14,306)	11,928	( 2,378)	0.5739	( 1,365)
1990	7,715	11,928	19,643	0.4348	8,541
1991	7,866	11,928	19,794	0.3294	6,520
1992	7,215	11,928	19,143	0.2495	4,776
1993	8,966	11,928	20,894	0.1890	3,949
1994	7,215	11,928	19,143	0.1432	2,741
1995	8,466	11,928	20,394	0.1085	2,213
1996	50,242	11,928	62,170	0.0822	<u>5,110</u>
					NPV LL ( 30,597)

The NPV still shows that the project is unfeasible and this is due to heavy capital expenditures associated with limited revenues. The IRR is still very low as compared to the cost of capital to the firm which is equal to 17%. The financial indicators, Profit and Loss and Cash-Flow Statements will increase simultaneously by the salaries figure over the life span of the project.

Here again one may ask, why NTC owners have sacrificed the opportunity of an annual return equal to 32% that could be earned by investing the money in a riskless asset such as Treasury Bills. The answer is that, NTC's committed objective to provide public transportation services is due to humanitarian and social welfare reasons. Most likely the owners will be partially subsidized by the Local Administration in the area.

CHAPTER VI  
CONCLUSION AND RECOMMENDATIONS

The results of the economic evaluation do not recommend the adoption of the project under the two cases, first where is no financial subsidy, and second where there is a financial support from the Local Administration in the area. The results of the NPV and IRR criteria under both cases are as follow:

1. NPV is a negative 61.4 millions and IRR is 1%
2. NPV is a negative 30.5 millions and IRR is 17%.

The financial indicators, Profit and Loss and Cash-Flow Statements, reveal that the project is unfeasible to adopt. With a yearly average profit equal to LL 875,000 and a pay-back period over 10 years, NTC is not an inducing project for any private party for investment. What can be concluded from these financial indicators is that, although NTC is unfeasible project, but it could be a self-financing company as shown in Table 26. The revenues generated from operations are quite enough to meet all yearly operational costs and any capital replacement in the future. So, based upon the above mentioned fact, there is no need for any outside financial support to this project.

To conclude, NTC is unfeasible project to adopt under any circumstance, and this is due to heavy expenditures associated with limited revenues generated from operations. Although, NTC could be a self-financing company without an outside financial support, but on the other hand NTC is unable to meet any future expansion in the operations.

The limited revenues generated from operations by NTC depends on the lines in service. The schools and internal transport lines could not generate extra revenues due to limited capacity in the first and due to seasonal demand in the second. On the other hand, it seems that there is an opportunity for increasing the revenues generated from the external line by extending its services to Beirut directly instead of limiting it to Khaldi station only.

So, certain recommendations could be advanced to NTC management and to those researchers interested in extending the scope of this research paper beyond its current scope.

- The opportunity of increasing the revenues that could be generated from extending the services of the external transport line beyond Khaldi station - to Beirut.
- Changing the network distribution of buses in which it meets the lines that show dense passenger movements.
- Sensitivity test .

1.	If cost of capital = 24%	NPV = (18.765)	IRR = 2%
2.	If average price / Internal line	= LL 150	
	Average price / External line	= LL 250	
	Average price / Schools line	= LL 2,250	
	Than NPV = (5,341)	IRR = 30%	

Based upon the second sensitivity test, we recommend an increase in the prices charged by NTC for all the transport lines at service.



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2. Hamadi, Sami, Owner of a Maintenance Garage, Al-Shouf, Lebanon.
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4. Shams, Fouad, Owner of an Establishment that Trades in Spare-parts, Al-Shouf, Lebanon.
5. Yahya, Walid, NTC's Manager, Al-Shouf, Lebanon.
6. Zeid, Selmán, NTC's Engineer, Engineer in charge of Construction Works, Al-Shouf, Lebanon.

APPENDIX A

QUESTIONNAIRE

ان المعلومات التي ستستخلص من هذه الاستمارة سوف تستخدم كمصدر معلومات في اطروحة ماجستير ، لذا يرجى الاجابة بدقة وشكرا لتعاونكم .

١- الوضع الاجتماعي اعزب \_\_\_\_\_ متأهل \_\_\_\_\_ عدد الاولاد \_\_\_\_\_

٢- المهنة موظف \_\_\_\_\_ طالب \_\_\_\_\_ مهنة اخرى \_\_\_\_\_

٣- محل الإقامة : \_\_\_\_\_

٤- مركز العمل الجبل \_\_\_\_\_ بيروت \_\_\_\_\_

٥- ما هي المسافة التي تفصلك عن عملك ؟

اقبل من ١٥ كلم _____	بين ٤٥ - ٥٥ كلم _____
بين ١٥ - ٢٥ كلم _____	بين ٥٥ - ٦٥ كلم _____
بين ٢٥ - ٣٥ كلم _____	بين ٦٥ - ٧٥ كلم _____
بين ٣٥ - ٤٥ كلم _____	اكثـر من ٧٥ كلم _____

٦- الراتب الشهري

اقـل من ١٠,٠٠٠ لـل _____
بين ١٠,٠٠٠ - ١٥,٠٠٠ لـل _____
بين ١٥,٠٠٠ - ٢٠,٠٠٠ لـل _____
بين ٢٠,٠٠٠ - ٢٥,٠٠٠ لـل _____
اكثـر من ٢٥,٠٠٠ لـل _____

٧- هل تملك سيارة ؟ نعم \_\_\_\_\_ كلا \_\_\_\_\_

٨- هل تستعمل سيارتك للانتقال الى مركز عملك ؟ نعم \_\_\_\_\_ كلا \_\_\_\_\_

اذا كان الجواب على السؤال الثامن بالنفي الرجاء الاجابة على  
السؤالين التاسع والعاشر .

٩- ما هي الاسباب التي تدفعك الى عدم استعمال سيارتك ؟ ( الرجاء اعطاء رقم تسلسلي من ١ الى ٤ حسب الاولوية ) .

- الوضع الامني
- ارتفاع اسعار قطع الغيار
- عدم وجود بنزين بكميات متوافرة
- ارتفاع سعر صفيحة البنزين

حدد الاسباب الاخرى اذا وجدت \_\_\_\_\_

١٠- اذا كنت تريد الانتقال الى مركز عملك او الى اي مكان اخر ما هي وسيلة النقل التي تفكر بها ؟ ( اعطاء رقم تسلسلي من ١ الى ٤ حسب الاولوية ) .

- استعمال السرفيس ( التكسي )
- مع احد الاصدقاء او الاقرباء
- اوتوستوب
- النقل العام

١١- هل جربت الانتقال بواسطة النقل العام ؟ نعم — كلا —

اذا كان الجواب على السؤال الحادي عشر ايجابيا الرجاء الانتقال الى السؤالين ١٢ و ١٣، اما اذا كان الجواب بالنفي الرجاء الانتقال الى السؤال الرابع عشر .

١٢- عدد المرات التي تستقل فيها النقل العام ؟

- يوميا
- اربعة مرات في الاسبوع
- مرتين في الاسبوع
- مرة كل اسبوع
- حدد عدد المرات : \_\_\_\_\_

١٣- هل تستعمل النقل العام للانتقال الى مركز عملك ؟ نعم — كلا —

اذا كان الجواب بالنفي الرجاء تحديد وجهة استعمال النقل العام: \_\_\_\_\_

- ١٤- هل تحبذ وجود نقل عام يربط جميع قرى  
الجيل بعضها ببعض وبالعاصمة ؟  
— م — كلا —
- ١٥- هل ستكون من مستعملي هذا النقل العام؟  
— نعم — كلا —
- ١٦- ما هو السعر الذي تدفعه كتعرفة للانتقال بواسطة النقل العام : — لل
- ١٧- اذا كنت تملك سيارة ، هل تعود الى استعمالها في حال زالت الشروط  
التي وضعتها في السوءال رقم ٦ ؟  
— نعم — كلا —

APPENDIX B

GROSS TABULATIONS BETWEEN QUESTIONS ASKED in  
the QUESTIONNAIRE

Separate tabulations for questions asked in the questionnaire which show the number of respondents that answered the related question with the percentage out of the sample total.

M. Status	%
Married	17 21,3%
Single	63 78,8%
Total	80 100,0%

Occupation	&
Employee	26 32,5%
Student	40 50,0%
Others	14 17,5%
Total	80 100,0%

Own a Car	%
Yes	26 32,5%
No	54 67,5%
Total	80 100,0%

Salary	%
Less than 10,000	8 10,0%
Bet. 10,000 & 15,000	11 13,8%
Bet. 15,000 & 20,000	8 10,0%
Bet. 20,000 & 25,000	9 11,3%
Above 25,000	2 2,5%
No Answer	2 2,5%
Total	40 50,0%

Frequency Times per week	%
1	30 37,5%
2	24 30,0%
3	2 2,5%
4	12 15,0%
5	1 1,3%
6	11 13,8%
Total	80 100,0%

One-way Price	%
LL	9 11,3%
50	31 38,8%
100	10 12,5%
125	15 18,8%
150	15 18,8%
200	80 100,0%
Total	80 100,0%



GROSS TABULATIONS

TABLE 1

(Vertically - Occupation, Horizontally - Salary)

Description	Less than LL 10	Bet.LL 10 & 15	Bet.LL 15 & 20	Bet.LL 20 & 25	Above LL 25	Student	Total
Others	3 3,8%	2 2,5%	3 3,8%	3 3,8%	1 1,3%	2 2,5%	14 17,5%
Student	1 1,3%	- -	- -	- -	- -	39 48,8%	40 50,0%
Employee	4 5,0%	9 11,3%	5 6,3%	6 7,5%	1 1,3%	1 1,3%	26 32,5%
Total	8 10,0%	11 13,8%	8 10,0%	9 11,3%	2 2,5%	42 52,0%	80 100,0%

Table 2

(Vertically - Occupation  
Horizontally - M Status)

Descrip.	Married	Single	Total
Others	8 10,8%	6 7,5%	14 17,5%
Student	- -	40 50,0%	40 50,0%
Employee	9 11,3%	17 21,3%	26 32,5%
Total	17 21,3%	63 78,8%	80 100,0%

Table 3

(Vertically - Occupation,  
Horizontally - Own a Car)

Descrip.	Yes	NO	Total
Others	8 10,5%	6 7,5%	14 17,5%
Student	29 36,3%	11 13,8%	40 50,0%
Employee	17 21,3%	9 11,3%	26 32,5%
Total	54 67,5%	26 32,5%	80 100,0%

Table 4

(Vertically - Occupation, Horizontally - Times per Week)

Description	1	2	3	4	5	6	Total
Others	4 5,0%	4 5,0%	-	3 3,8%	1 1,3%	2 2,5%	14 17,5%
Student	16 20,0%	13 16,3%	-	4 5,0%	-	7 8,8%	40 50,0%
Employee	10 12,5%	7 8,8%	2 2,5%	5 6,3%	-	2 2,5%	26 32,5%
Total	30 37,5%	24 30,0%	2 2,5%	12 15,0%	1 1,3%	11 13,8%	80 100,0%

Table 5

(Vertically - Salary, Horizontally - Times per Week)

Description	1	2	3	4	5	6	Total
Less than LL 10,000	2 2,5%	4 5,0%	-	1 1,3%	-	1 1,3%	8 10,0%
Bet. LL 10 & 15	4 5,0%	2 2,5%	1 1,3%	3 3,8%	-	1 1,3%	11 13,8%
Bet. LL 15 & 20	3 3,8%	1 1,3%	1 1,3%	3 3,8%	-	-	8 10,0%
Bet. LL 20 & 25	3 3,8%	3 3,8%	-	1 1,3%	1 1,3%	1 1,3%	9 11,3%
Above LL 25,000	1 1,3%	-	-	-	-	1 1,3%	2 2,5%
Student	17 21,3%	14 17,5%	-	4 5,0%	-	7 8,8%	42 52,5%
Total	30 37,5%	24 30,0%	2 2,5%	12 15,0%	1 1,3%	11 13,8%	80 100,0%

Table 6

(Vertically - Price, Horizontally - Times per Week)

Description	1	2	3	4	5	6	Total
LL 50	1 1,3%	3 3,8%	- -	2 2,5%	1 1,3%	2 2,5%	9 11,3%
LL 100	12 15,0%	8 10,0%	1 1,3%	4 5,0%	- -	6 7,5%	31 38,8%
LL 125	1 1,3%	5 6,3%	- -	1 1,3%	- -	3 3,8%	10 12,5%
LL 150	6 7,5%	5 6,3%	1 1,3%	3 3,8%	- -	- -	15 18,8%
LL 200	10 12,5%	3 3,8%	- -	2 2,5%	- -	- -	15 18,8%
Total	30 37,5%	24 30,0%	2 2,5%	12 15,0%	1 1,3%	11 13,8%	80 100,0%

APPENDIX C

NTC LIST PRICES

لائحة تعرفه اجور النقل ابتداءً من آتشرين الثاني ١٩٨٧ .

التعرفة	المن	من
٢٠٠	خلدة	نيحا - باتر
٥٠	المختارة	نيحا
٢٥	المختارة	باتر
٥٠	بعماتا	نيحا - باتر
١٠٠	بعقلين	نيحا - باتر
١٠٠	خلدة	بعماتا - بعقلين
١٢٥	خلدة	مداور - المختارة
١٢٥	خلدة	المزرعة
٢٥	كفر حيم	بعقلين
٥٠	خلدة - الدامور	كفر حيم
٥٠	كفر حيم	بعماتا
٢٠٠	خلدة	مصر الشوف / الخريبة / بعدران
٥٠	بعماتا	مصر الشوف / الخريبة / بعدران
٧٥	بعقلين	مصر الشوف / الخريبة / بعدران
١٠٠	كفر حيم	مصر الشوف / الخريبة / بعدران
٢٥	عين زحلتا	عين داره
٥٠	الباروا - بتلون	عين داره
١٠٠	كفرنبنج - بيت الدين	عين داره
١٥٠	كفر حيم	عين داره
١٧٥	الدامور	عين داره
٢٠٠	خلدة	عين داره

لائحة تعرفية اجراء النقصان ابتداء من ٢ تشرين الثاني / ١٩٨٧ .

التعرفية	السبب	ملاحظات
٢٥	بتانيه - القلعة	قرنايل
٥٠	هنا . الحديس	قرنايل
٧٥	الشبانبة - قبيح	قرنايل
١٠٠	بعمدون	قرنايل
١٠٠	عاليه	قرنايل
١٥٠	بيسور - قبرشون	قرنايل
٧٥	عزب - وون	بعمدون
٥٠	بيسور - قبرشون	بعمدون - عاليه
٢٠٠	السد	قرنايل
١٥٠	السد	بعمدون
١٠٠	السد	عاليه
٥٠	السد	بيسور - قبرشون
٢٥	السد	عزب - وون
٧٥	وغير - الريمات	قرنايل
١٥٠	السد	وغير
١٠٠	عاليه	الحديس
١٧٥	السد	الحديس
٢٠٠	السد	عزب - وون