

**The durability of private bus owners in Sri Lanka**  
**Use of sparse data to arrive at plausible findings**  
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A survey of private buses in middle of 1985 indicated that there was a high turnover of bus owners such that drivers reported an average of 4 years in private buses but only just over one year driving for the present employer, while conductors reported average service of just over one year in private buses as well as with the present employer. Responses of bus owners as to their period in business indicated that 33 percent had one year, 23 percent had two years and 21 percent three years in business, leaving only 23 percent with more than 3 years. This picture did not match the growth in private bus operating permits which had risen from 68 percent in 1982 to 100 percent in 1985. The survey figures (382 owners' responses) and the total permits (10,292 in 1985) were both converted to an index based on 100 in 1985. The growth in both indexes were compared and, subject to several qualifications, the following average picture emerged:

- : 16 percent any years' permits are not renewed in the next, giving a drop-out rate of 1 in 6.
- : Surveyed owners had been in business for an average of 2.1 years.
- : Business-survival of drop-outs was 3.3 years.
- : 71 percent of 1981 owners, 66 percent of 1982 owners and 53 percent of 1983 owners had quit by 1985.

The survey by its design covered only surviving owners. The method cannot detect all the owners who held permits for only one year. Therefore:

- : the average survivability of owners is expected to be at least 3 years.
- : the drop-out rate is understated and the durability rate overstated.

The emerging conclusions are:

- : private bus business is not very stable.
- : sparse data can be used to arrive at plausible findings.

The work is part of a much larger study sponsored by the Friedrich Ebert Stiftung. The complete study is undergoing final editing and will be published in due course as a book on the role and reward of manpower in private buses and aspects of the productivity of man and bus. From a paper presented at SLAAS Sessions December '87.

## 1. Introduction

1.1 Department of Private Omnibus Transport (DPOT) data reveal that 94 percent of registered owners in 1986 own only one bus and that their buses represent 87 percent of the private buses registered for route permits. A 1985 survey of 400 bus owners in Colombo, Kandy and Matara showed that 89 percent of them owned only one bus and that their buses represented 77 percent of the buses owned by the responding owners. These results match reasonably and tend to give confidence to the survey as a whole. The relevant figures are set out in Table 1:

1.2 During a pilot survey of 20 buses and their owners and crews (undertaken as a trial run for training the

enumerators and not for the purpose of obtaining any findings) it was noted that 17 owners (i.e. 85 percent) claimed to have been in business for 3

years or less. This seemed to be a very high percentage. Indeed DPOT figures showed that private bus route permits had increased by only 33 percent in the last 3 years. Therefore, although the primary purpose of the survey was to develop knowledge about the terms and conditions of employment of private bus employees and about their output as a contribution to the transport needs of the country, measured as bus-km per crew per day, it was decided to investigate, as a marginal issue, the survival period of the owners.

1.3 The hypothesis based on the pilot survey was that the duration for which an owner continued to ply his bus was short and that this could be correlated in some way to the high percentage of owners who owned only one bus. This later aspect was abandoned, but it was decided to try and find out how long owners did remain in business.

owners remain in business and the drop-out rate was not easy because of the limitation of the survey which necessarily interviewed only owners still in business. To interview those who had already dropped out would have been extremely difficult. Therefore to reach any sort of conclusion, even a tentative one, it was necessary to compare the survey answers of owners on their periods in business with DPOT data of permit growth.

**TABLE 1 : Dominance of One-Bus Fleets**

Source	OWNERS			BUSES			Avg buses per owner
	Total	Only one bus	% of owners	Total	owned as single units	% of buses	
<b>DPOT 1986</b>							
Colombo	3,614	3,386	94	3,954	3,386	86	1.09
Kandy	801	758	95	873	758	87	1.09
Matara	376	367	98	385	367	95	1.02
Sub-total	4,791	4,511	94	5,212	4,511	86	1.09
Other	5,390	5,105	95	5,788	5,105	88	1.07
<b>Total</b>	<b>10,181</b>	<b>9,616</b>	<b>94</b>	<b>11,000</b>	<b>9,616</b>	<b>87</b>	<b>1.08</b>
<b>Survey 1985</b>							
Colombo	200	174	87	239	174	73	1.19
Kandy	100	89	89	114	89	78	1.14
Matara	100	92	92	108	92	85	1.05
<b>Total</b>	<b>400</b>	<b>355</b>	<b>89</b>	<b>461</b>	<b>355</b>	<b>77</b>	<b>1.15</b>

**TABLE 2 : Employees' periods of employment in private buses and for present owner by %**

IN PRIVATE BUSES	CONDUCTORS				DRIVERS			
	Colombo	Kandy	Matara	Total	Colombo	Kandy	Matara	Total
Less than 1 year	47	43	50	47	16	7	5	13
1 - 2 years	26	31	19	25	13	11	10	12
2 - 3 years	11	18	16	13	12	11	8	11
Less than 3 yrs	84	92	85	85	41	29	23	36
More than 3 yrs	16	8	15	15	59	71	77	64
Total	100	100	100	100	100	100	100	100
<b>FOR PRESENT OWNER</b>								
Less than 1 year	55	57	68	58	55	52	69	57
1 - 2 years	20	23	19	20	23	23	18	22
2 - 3 years	16	10	6	13	13	15	7	12
Less than 3 yrs	91	90	93	91	91	90	94	91
More than 3 yrs	9	10	7	9	9	10	6	9
Total	100	100	100	100	100	100	100	100

**2. Drivers & Conductors periods of work in private buses and for present owner**

2.1 The hypothesis received some confirmation from more than 1,200 employees who were asked separately how long they had been employed in private buses and how long for the present owner. Their answers are shown in percentage form in Table 2 :

2.2. The answers are remarkable. Both conductors and drivers have worked for present owner for like periods, predominantly less than 3 years. Drivers have worked much longer in the sector than for the present owner. But allowing for a slight difference in the form of the question, conductors have worked for the same period in the sector and for the present owners. And as will be seen in Table 3, the owners' indications of period in business tally closely with the conductors period in employment.

**3. Owners length of time in the business**

3.1 The responses of 382 owners who replied this question are set out in Table 3:

3.2 This table shows that out of 382 responding owners 15 percent had been in business for less than 6 months, and 18 percent for a period of

6 - 12 months giving a total of 33 percent having one year or less in business. A further 23 percent had entered the business within the last 2 years giving 56 percent in business for 2 years or less. Another 20 percent were

carrying on the business for between 2 and 3 years. Thus 76 percent of the operators who responded had entered the business only during the last 3 years. About 7 percent of the owners had been in business for 5 years or more.

3.3 The high incidence of recent new entry into the business cannot be explained by recent growth in permitted private buses on the road.

**4. Growth in Private Bus Route Permits.**

4.1 Table 4 sets out the growth in route permits according to DPOT, with annual permits and annual net increases shown as a percentage of the total permits issued in 1985:

4.2 This table shows the growth in the number of buses allowed to operate private bus services. According to this, only 3 percent of the permits issued in 1985 represented a net increase in permits during that year, and only a further 4 percent represented a net increase in 1984.

**TABLE 3 : DURATION OF OWNERSHIP OF 1985 SURVEYED BUS OWNERS**

DURATION IN BUSINESS	Colombo		Kandy		Matara		Total	
	Owners	%	Owners	%	Owners	%	Owners	%
<b>Up to 2 Years</b>								
0 - 6 months	29	16	16	17	13	15	58	15
6 - 12 months	35	18	13	14	20	20	68	18
up to one year	64	34	29	31	33	35	126	33
1 - 2 years	56	29	15	15	16	17	87	23
total	120	63	44	45	49	52	213	56
<b>Over 2 Years</b>								
6 + years	4	2	2	2	4	4	10	3
5 - 6 years	3	2	9	9	7	7	19	5
5 + years	7	4	11	11	11	11	29	8
4 - 5 years	7	3	13	14	5	5	25	6
4 + years	14	07	24	25	16	16	54	14
3 - 4 years	16	8	9	9	11	12	36	9
3 + years	30	16	33	34	27	28	90	23
2 - 3 years	40	21	20	21	19	20	79	21
total	70	37	53	55	46	48	169	44
<b>TOTAL</b>	<b>190</b>	<b>100</b>	<b>97</b>	<b>100</b>	<b>95</b>	<b>100</b>	<b>382</b>	<b>100</b>

**SUMMARY OF PERCENTAGE**

	Colombo	Kandy	Matara	Total
Less than 1 year	34	30	35	33
1 - 2 years	29	15	17	23
2 - 3 years	21	21	20	21
Less than 3 yrs	84	66	72	77
Over 3 years	16	34	28	23
Total	100	100	100	100

TRENDS INDICATING HIGH OWNERSHIP TURNOVER

FIGURE 1

Index  
1985  
= 100

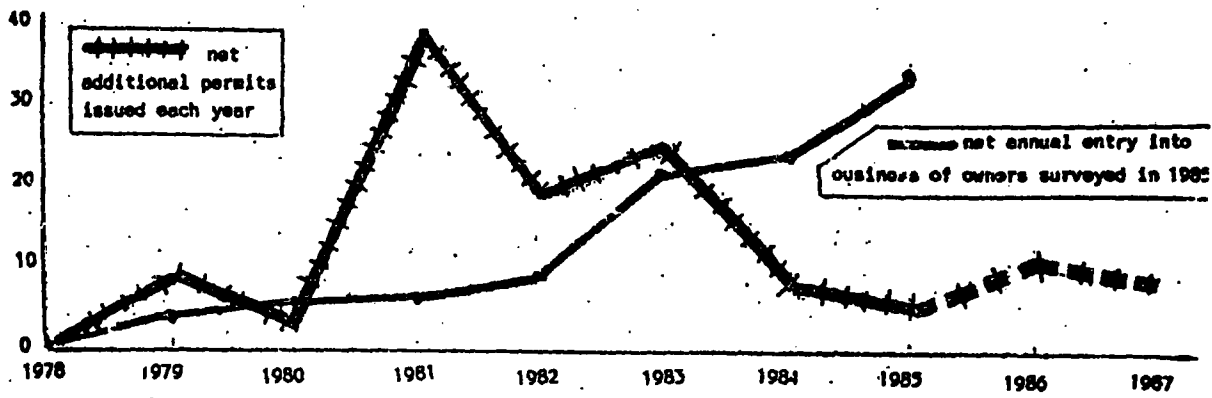
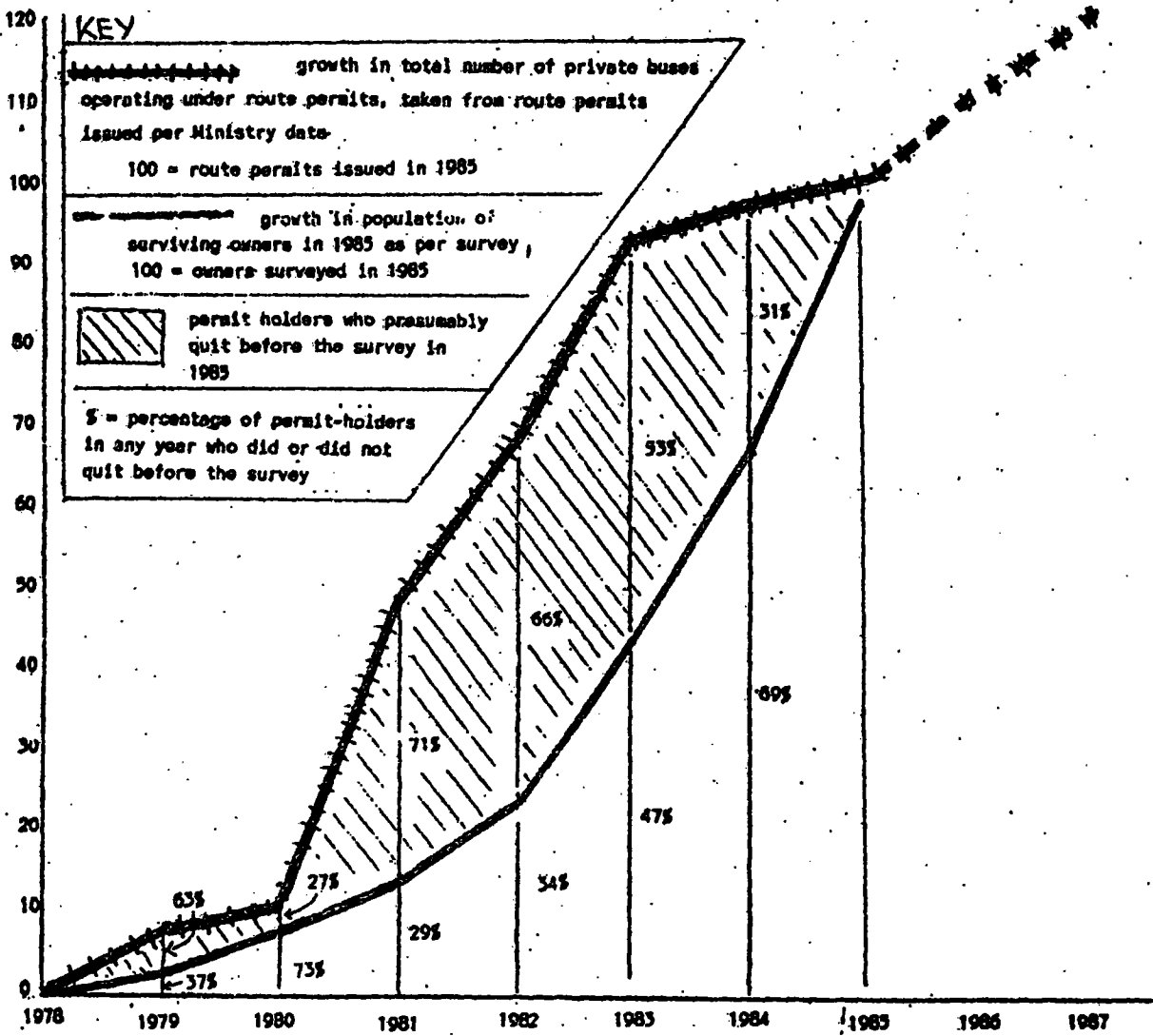


TABLE 4  
PRIVATE BUS ROUTE PERMITS

YEAR	1979 1987 PERMITS	% of 1985
1979	809	8
+	294	3
1980	1,103	11
+	3,972	38
1981	5,075	49
+	1,913	19
1982	6,988	68
+	2,614	25
1983	9,602	93
+	416	4
1984	10,018	97
+	325	3
1985	10,343	100
+	1,162	11
1986	11,505	111
+	879	9
1987	12,384	120

Source: Ministry of Private Omnibus Transport: (personal communication)

#### 5. Net Drop-Out Rate

5.1 Tables 4 and 3 indicate that 1983 permits were 93 percent of those

in 1985 as against only 44 of surveyed owners being in business in 1983. The number of buses (and therefore permits) of the 382 responding owners is not readily ascertainable, but since the bus per owner rate in the survey is only 1.15, this is not likely to effect the ensuing discussion.

5.2 Table 5 is an assemblage of the endurance of owners from Tables 3 (sample survey of owners) and 4 (total issued permits) by using an index from each based on the percentage of the 1985 date.

5.3 Table 5 assumes that the sample is typical of the whole. Permits of one year are assumed to be renewed where the increase allows after taking into account new entrants per survey index. The increase in the index of total permits is first set-off against the survey index and then allocated. Where the increase in total permit index is less than the new entrants per survey index, the deficit is treated as drop-outs for that year.

TABLE 5: INDEXED PRIVATE BUS OWNER SURVIVORS & QUITTERS 1979-1985

	from Table	1979	1980	1981	1982	1983	1984	1985	Total
1. total permits (Note 1)									
from prior year	4		8	11	49	68	93	97	326
increase	4	8	3	38	19	25	4	3	100
total	4	8	11	49	68	93	97	100	426
2. survivors in 1985 (Note 2)									
renewals	3		3	8	14	23	44	67	159
new entrants	3	3	5	6	9	21	23	33	100
total	3	3	8	14	23	44	67	100	259
3. permit sequence									
prior year permits	4		8	11	49	68	93	97	326
less net drop-outs (Note 3)			(2)				(19)	(30)	(51)
renewals assumed			6	11	49	68	74	67	275
net new entrants (Note 4)		8	5	38	19	25	23	33	151
total permits	4	8	11	49	68	93	97	100	426
4. drop-out %									
net drop-outs									
			25%				20%	31%	16%

#### NOTES

- Index figures for total permits (a proxy for total buses) are taken directly from Table 4.
- Index figures for survivors in 1985 (i.e. responding owners) are taken directly from Table 3.
- In 1980, 1984 and 1985, increase in survivors is more than increase in total permits. The excess is taken as net drop-outs and deducted from total permits of the previous year.
- In 1981, 1982 and 1983, increase in total permits represents net new entrants (i.e. total new entrants less drop-outs from previous year not identified by the survivor analysis).
- In any year the increase in permits represents new entrants less drop-outs (i.e. permits of previous year not renewed). This analysis takes account only of drop-outs indicated by the excess of survivors index increase over the permit index increase.
- 1985 responding owners who may not renew their permits in 1986. (i.e. 1985 drop-outs) are not known since the survey was done in 1985.

5.4 The result of this exercise is to show that 20 percent of 1983 permit-holders dropped out in 1984 and that 31 percent of 1984 permit-holders dropped out in 1985. The overall average dropout rate is 12 percent, but, because the survey gives no indication of how many surveyed owners would renew their permits in 1986, the year 1985's should be excluded. The average dropout rate then increases to 16 percent.

#### 6. Duration in Business (i.e. Survival)

6.1 Based on the same indexed figures as Table 5, an attempt at age analysis of owners' duration in business is shown in Table 6:

6.2 A first-in first-out assumption is made as to the year in which drop-outs first entered. The index numbers are weighted for years of duration. This exercise is shown for total permits, drop-outs and survivors (i.e. renewals) separately. The result of the exercise is to show an average duration in business:

survivors 2.0 years

drop-outs 3.3 years

6.3 Since it was not known how many survivors in 1985 will drop out in 1986, or when they will drop out, the survivors' average of 2 years is not very meaningful. Moreover the likelihood is that stable operators survive. Hence even the drop-out average of 3.3 years may understate the typical survival period of private bus owners.

6.4 Nonetheless it would appear that a significant number of the respondents entered the business by taking over from a retiring owner. And if the sample is representative, it would seem that there is instability in the business which causes relatively high turnover in ownership, reflecting comparatively short average periods in business.

6.5 Figure 1 attempts to visualise the business duration pattern of private bus owners.

6.6 Assuming that the survey is typical of all private bus permits, this figure illustrates quitting rates vide Table 7:

6.7 The percentage declines not because of increasing stability, but because of the lesser time lapse before the survey.

6.8 The result of this exercise must be treated with caution because of several factors, including the estimation inherent in the owners' responses, the approximation of all figures into whole years, the assumption that the sample is typical, and the bringing together of total and survey figures into a common denomination based on an index. Despite the caution, however, it seems reasonable to conclude that the business is not one of great stability. This in fact tallies with reported experience in other countries, where stability develops only in a condition

of regulated route licences which diminish the scope for competition on the road. Whether stability is or is not a worthwhile feature is not the subject of this discussion.

## 7. Conclusions

7.1 Subject to several qualifications, the following average picture emerged:

- 0 16percent of any year's permits are not renewed in the next, giving a drop-out rate of 1 in 6.
- 0 surveyed owners had been in business for 2.1 years on average.
- 0 business survival of drop-outs was 3.3 years

TABLE 7

PERCENTAGE OF ROUTE PERMIT HOLDERS OF PAST YEARS WHO QUIT BEFORE 1985

YEAR OF PERMIT	% QUIT BEFORE 1985
1979	63
1980	27
1981	71
1982	66
1983	53
1984	31

- 0 71 percent of 1981 owners, 66 percent of 1982 owners and 53 percent of 1983 owners had quit by 1985.

7.2 The survey by its design covered only surviving owners. The method cannot detect all the owners who held permits for only one year. Therefore:

- 0 the average survivability owners is expected to be at least 3 years
  - 0 the drop-out rate is understated and the durability rate overstated.
- 7.3 The emerging conclusions are:
- 0 private bus business is not very stable.
  - 0 sparse data can be used to arrive at plausible findings.

## 8. Acknowledgement

8.1 The work is part of a much larger study sponsored by the Friedrich Ebert Stiftung. The complete study is undergoing final editing and will be published in due course as a book on the role and reward of manpower in private buses and aspects of the productivity of man and bus.

8.2 The authors acknowledge with thanks the sponsorship and encouragement given by the Friedrich Ebert Stiftung, and the assistance given by Trade Union representatives who attended workshop discussions; Secretary, Ministry of Private Omnibus Transport and Secretary, Labour.

8.3 However all opinions and findings are those of the authors alone.

TABLE 6 : AGE ANALYSIS OF OWNER & PERMIT INDEXES

	1979		1980		1981		1982		1983		1984		1985		Total		Total without 1985		
	nr	wt	nr	wt	nr	wt	nr	wt	nr	wt	nr	wt	nr	wt	nr	wt	nr	wt	
total permits																			
7 years													3	21	3	21			
6 "												3	18	5	30	8	48	3	18
5 "									6	30	5	25	6	30	17	85	11	55	
4 "							6	24	5	20	22	88	9	36	42	168	33	132	
3 "					6	18	5	15	38	114	19	57	21	63	89	267	68	204	
2 "			6	12	5	10	38	76	19	38	25	50	23	46	116	232	93	186	
1 year	8	8	5	5	38	38	19	19	25	25	23	23	33	33	151	151	118	118	
total	8	8	11	17	49	66	68	134	93	227	97	261	100	259	426	972	326	713	
average yrs net drop-outs	1	1.5	1.3	2.0	2.4	2.7	2.6	2.3	2.2										
7 years																			
6 "																			
5 "									3	15					3	15	3	15	
4 "											16	64			16	64	16	64	
3 "									16	48	10	30			26	78	26	78	
2 "											4	8			4	8	4	8	
1 "	2	2													2	2	2	2	
total	2	2							19	63	30	102			51	167	51	167	
average yrs survivors	1								3.3	3.4					3.3	3.3	3.3		
7 years													3	21	3	21			
6 "												3	18	5	30	8	48	3	18
5 "									3	15	5	25	6	30	14	70	8	40	
4 "							6	24	5	20	6	24	9	36	26	104	17	68	
3 "					6	18	5	15	22	66	9	27	21	63	63	189	42	126	
2 "			6	12	5	10	38	76	19	38	21	42	23	46	112	224	89	178	
1 year	6	6	5	5	38	38	19	19	25	25	23	23	33	33	149	149	116	116	
renewals	6	6	11	17	49	66	68	134	74	164	67	159	100	259	375	805	275	546	
average yrs	1	1.5	1.3	2.0	2.2	2.4	2.6	2.1	2.0					2.1	2.0	2.0			