

Taking Social Justice Seriously in the Provision of Public Transport¹

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Abstract:

While social justice is typically put forward as a key justification for public transport, the work of a number of scholars would lead us to conclude that existing public transport is socially unjust — that public transport results in a net transfer of wealth from the worse-off to the better-off. This is because social justice as an objective has to be pursued in the context of other objectives. Because social justice is a difficult concept to measure (compared with simple determinants of success such as overall patronage levels), social justice takes a back seat.

These arguments can be criticised as flawed in terms of their conceptual underpinnings and the methodology used to measure social justice outcomes. Nevertheless, they do challenge public transport planners to clarify their social justice goals and to investigate ways in which these goals can be pursued in the delivery of public transport.

This paper reviews the arguments concerning social justice and the provision of public transport and, by presenting information on the actual travel needs of differing sectors of the population, suggests ways in which social justice objectives can be pursued in the context of environmental, financial and economic goals.

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1. INTRODUCTION

This paper is entitled 'taking social justice seriously' because when following the debates over social justice and transport one has the impression — possibly mistaken — that social justice is simply another field of battle in the ongoing war between those who want a more prominent role for government and those (usually economists) who want less. Social justice is not an end in itself so much as a weapon to beat the other side with. Certainly, if social justice is seriously regarded as an end in itself, then those on both sides of the debate should give serious attention to how existing expenditure and revenue raising can be better directed to achieving it, *whatever* the existing level of subsidy.

This paper will survey the existing published evidence regarding the impact of public transport on social justice as it relates to Adelaide. It will then discuss how public transport could be better designed to enhance social justice outcomes.

But first there is a need to explain just what is understood by the term social justice, at least in the context of this paper. When discussing social justice and transport we have in mind that social justice has at least two broad meanings.

(1) *distribution of resources*

By this, we refer to the net impact of the existence of public transport on the way in which resources are distributed in the community. Does its existence, particularly the way it is funded, result in a transfer of resources from poor people to the better off, or from the better off to the poor?

A more careful attention to defining and paying for community service obligations could result in a more socially-just distribution of resources.

(2) *provision of basic accessibility*

Here we have in mind the role of the public transport system in providing accessibility to those who would not have it if they had to rely on private transport. This may be for many reasons, but they usually boil down to the fact that disadvantaged people either cannot afford or cannot use a car. The accessibility is to both fulfil basic needs, such as to shop for food and to attend medical appointments, and to enable people to participate in a reasonably active social life.

Following the emphasis of the research being reviewed, this paper focuses on the former understanding. However the discussion and recommendations toward the end are very much directed toward social justice in terms of accessibility for the transport disadvantaged.

2. PREVIOUS ECONOMIC STUDIES

Social justice is an important justification for the subsidies government spends on public transport. However a number of economic studies have challenged the real social justice benefits of this expenditure, arguing instead that public transport represents a subsidy to the better off. These findings are very important because they have led to an assumption among transport policy advisers that public transport cannot be justified on equity grounds. Fare rises as such are therefore socially just.

Amos and Starrs

Amos and Starrs based their work on analysis by Travers Morgan of a 1984 survey of public transport use. They pointed out that because of much higher use by the employed and children, only one fifth of the operating subsidy paid to the STA could be said to be 'used' by pensioners and the unemployed — although this amount in itself was larger than the amount paid in concessional reimbursement for these groups. Amos and Starrs concluded that even if one includes concessions:

As a way of redistributing economic welfare to the less well off, Adelaide's public transport subsidies are inefficient. On average about 55% of the total public transport deficit is spent on higher than average income households although these represent only 43% of all households. For rail, only 41% of the subsidy is directed to travellers in the 57% of households with less than average incomes. (Amos and Starrs, 1984, p. 606)

Travers Morgan, 1992 (APTRANS)

This study analysed the Adelaide Household Travel Survey of 1986 (data from over 53,000 respondents) against the personal income data from the Adelaide Public Transport Study (APTRANS) of 1989-91.

The researchers found that public transport as it operated in Adelaide at the time had varying social justice value. Among those who travelled on adult fares higher incomes were over-represented. This is particularly exacerbated during the peaks and especially on trains. (Why train travel should disproportionately benefit the better off is curious, particularly as all but one of the lines serve relatively low socio-economic areas. The authors point to the longer distances for each trip. Another possibility is that the park and ride pattern that is more characteristic of train travel requires a car so raising the average wealth of the train traveller. We should also note that the train network is particularly oriented to the CBD. As we shall discuss later on, both these factors can be shown to benefit the better off.)

However if all users are considered, bus services were seen as disproportionately benefiting the poorer, whatever the time of day. The period between the daily peaks (the 'inter-peak') had a preponderance of lower income users and the researchers found that concessionary fares (essentially restricted to pensioners, unemployed and students over

the age of 16) were predominantly used by lower income groups — as of course we would expect.

The interesting feature of this survey is the way the equity effect of the subsidy varies from route to route. For example, the subsidy for peak bus services in the 'outer south' were progressive, while those for the peak tram service from Glenelg were clearly regressive.

They concluded:

For the network as a whole, the progressive/regressive nature of the subsidies applied to the peak is unclear. The lowest income group is over-represented in the market but so is the highest income group. (Travers Morgan, 1992, p. 6)

Duldig and Gaudry

The most recent study was presented to the 1993 ATRF. Paul Duldig and Brendan Gaudry analysed figures from the 1986 Adelaide Household Travel Survey and the STA's detailed operational costs for 1991-92 to determine the incidence of subsidy (Duldig and Gaudry, 1993). Dividing households into four quartiles, they found the subsidy was regressive: 'For every \$1 of STA subsidy to below median income households, \$1.49 went to above median income households'.

The reason for this is that richer households make more use of the services. As Goodin and LeGrand point out, direct subsidies that lower (but not eliminate) the cost of the service for all users will almost inevitably provide proportionately greater subsidy to the better off, unless some measures are taken to restrict demand among the better off. If the cost is not negligible, the higher the income, the more is consumed. In the case of transport, Goodin and LeGrand point out that better-off commuters in London can afford the relatively high rail fares that are a cost of living in outer suburbs — fares that themselves are still highly subsidized. (Goodin and Le Grand, 1987)

Duldig and Gaudry also point that those households above the median incurred the highest subsidy trips as is demonstrated in the figure 1:

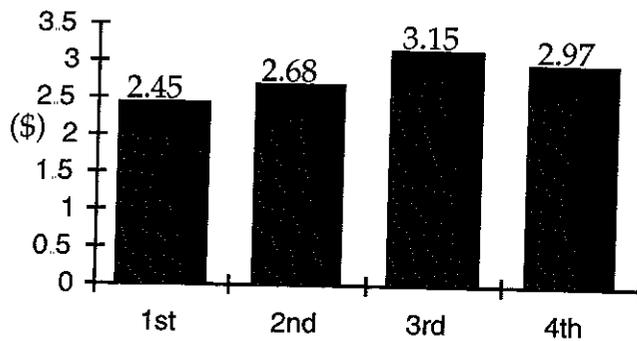


Figure 1: Subsidy per trip by quartile

(Source: derived from Duldig and Gaudry, 1993, p 904)

Duldig and Gaudry concluded:

The people who gain the most from low fares are also those who travel the most, who travel furthest and who otherwise would pay the most; that is, generally white collar commuters to the CBD and students travelling to school in the mornings. (Duldig and Gaudry, 1993, p. 904)

Commentary

Such studies have led key public officials to conclude that public transport has not been socially just, at least in terms of the distribution of resources. In 1985 the South Australian Director-General of Transport (and STA Board Member) wrote that

...in general, the subsidisation of the STA benefits the more affluent members of the community...

and that the STA pricing policies were

...regressive and inequitable from a distributional point of view.

(quoted, Kerin, 1987, p. 66)

In 1993 the STA's General Manager told the Industry Commission that his operation was socially unjust. (Industry Commission, 1994)

However it is doubtful if such studies have influenced the politicians or the general public, perhaps because their results do not seem to fit common perceptions of every day reality. If you ride the bus or the train into town, your fellow passengers don't look particularly well-off, especially outside the peak periods. Public transport does not have much social cachet — if anything, the opposite.

There are also discordant statistics. While it is true that the further out one lives, the less one uses public transport, within any one radial band, poorer suburbs have higher rates of public transport usage than wealthier suburbs. A glance at the Social Atlas produced by the ABS will demonstrate this. (see Appendix) There is also the fact that a high proportion of public transport users are on concession tickets — 66% in the case of Adelaide's STA. Robertson and Sloan, using figures from the 1986 census found that among the employed, those on lower income were more likely to use public transport. They conclude:

Those more likely to use public transport were females, those on lower incomes, those working in the city *and* with relatively low incomes, and those with easy access to transport links'

(Robertson and Sloan, 1992, p. 20)

How do we reconcile these discordant statistics and our intuition with the economic research?

One factor discounting the intuitive evidence is a tendency to compare those travelling by public transport with those travelling by car. The studies cited have compared those travelling by public transport with the population as a whole, not just those on the move. It is quite likely that the richer you are the more mobile you are. We don't know what the proportion of trips by public transport are for the different income groups. It is quite likely that car usage would be even more skewed toward higher incomes. This of course is important if we are considering taxes and subsidies for car users, but here we should be comparing the wealth of public transport users against the population as a whole — including those that stay at home.

Methodological difficulties

On the other hand there is reason to question the findings of the economic studies themselves. There are methodological difficulties that have led them to an exaggeration of the incidence of subsidy to the better off.

Both Gaudry and Duldig and Travers Morgan in 1984 relied on household income as a 'measurable proxy for the ability of a household to pay for private transport services'. Instead of using individuals as the basic unit of analysis, individuals were grouped into the households in which they lived and the households became the basic unit of analysis

The use of individual income is difficult because of the distorting effects of children. Statistical impressions of negligible income are misleading. However the reliance on the household as the basic unit for data analysis has a number of problems:

- Most importantly, to divide households into quartiles is not necessarily to divide the population into quartiles. If the lowest quartile of households have few individuals in them (eg if they are single pensioners) then one can naturally expect households in that quartile to make little use of services. The highest quartile, on the other hand, may well have the most individuals within it, particularly if that

high household income is earned by multiple income earners. Simply put, high income household may use public transport more because there are more people in them, not because they as individuals use public transport more.

This may be the main explanation of the total public transport travel by children from the highest quartile of households is two and a half times as high that that of children from the lowest quartile households — that is, there are simply many more children from these households². (Of course there are other explanations. Duldig and Gaudry point out that students make up 40% of the expensive morning peak load and those travelling to private schools form a 'disproportionately high' proportion of this. (Duldig and Gaudry, 1993 p. 901) Interestingly, the ratio is not maintained for non-weekday services. On Sunday in particular lower income children predominate, suggesting that those children who are in lowest income household don't have access to a car for recreation and shopping.) Similarly, pensioners from lowest quartile households make 12 times as many trips by public transport as those from highest quartile. Is this at least partly because there are many more pensioners among the lowest quartile of households?

Unfortunately we simply don't have the data which reveals the average use of public transport by individuals from each quartile. But some indication of distortion brought about by using aggregated household data alone is provided by the following ABS figures from a 1990 survey:

- 5.3% of households from the lowest income quintile had three children or more, compared with 14.2% from the highest quintile,
- 5.2% of households from the lowest income quintile had at least two income earners, compared with 83.2% from the highest quintile,
- 4.2% of households with married couples from the lowest income quintile had dependents, compared with 53.4% from the highest quintile,
- 71.1% of households from the lowest income quintile claimed the pension as the principal source of income, compared with 0% from the highest quintile. (ABS, 1990, tables 1 and 10)

We may also speculate that parents with children of an age to use public transport a lot (eg senior school students) may themselves be at a relatively affluent stage of their lives, at least when measured in terms of income. Peak use of public transport by an individual would likely to be when his or her parents are both working.

- Total household income may not be a good indicator of financial well-being. Other things being equal, households with children will not be as well off as those

² This information is drawn from the raw data used by Duldig and Gaudry. I am grateful to Brendan Gaudry for making this available.

without. It may be that a high household income is brought about by having both parents working and is necessary to support a large number of children.

- Household income is not the only factor determining access to private transport services. Other determinants of transport disadvantage include disability, loss of a drivers licence and age. The economic studies have been concerned with the incidence of transport usage, rather than relative accessibility of services.
- The household unit will contain individuals with varying access to 'private transport services'. Children will be reliant on their parents, and it may well be that the ability of their parents to drive their children will be determined as much by the time they have available as the money. Similarly elderly relatives living in a high income household may still be transport disadvantaged if those they live with are not available to ferry them about.

This last point leads to a philosophical problem that has been overlooked in most economic analyses. Should children from better off families be seen as having the same economic and social advantages as their car-owning and driving parents? Certainly their mobility and hence access to services is not as easy as that of their parents.

Such factors point to the wisdom of not relying on individual income as a measure of transport advantage, but they also suggest we cannot rely on household income either. Studies which rely on such data need to be carefully qualified. The APTRANS study used individuals as the basic unit, but confined the study to people over the age of 16 only.

3. FLAT FARES AND SOCIAL JUSTICE

The result of these problems is that we should be highly sceptical of social justice arguments to increase public transport fares per se. But although these factors cast doubt on whether there is in fact a subsidy to the better off, one should not be complacent. After all, Duldig and Gaudry also note that each trip taken by the better-off attracts a higher subsidy than one taken by a poorer person. Why should this be so?

Goodin and LeGrand noted that public transport in Britain resulted in massively disproportionate subsidies to the better off. Rail in particular had this effect, the better off receiving almost ten times the benefit of the poor. This is because of the nature of British cities (particularly London), in which the more affluent choose to commute from relatively distant suburbs. (Goodin and Le Grand, 1987, p. 103)

This feature is of course not so evident in Australia, where it is just as likely that the less well-off are found in the outer suburbs where real estate is cheap. (For references to this long-perceived trend in the US and Australia, see O'Conner and Maher, 1979.) Indeed, a flat fare structure is often justified on social justice grounds, because it benefits those who are forced by low income to live a long way from the CBD.

However such an assumption is true only if the poorer people who live in these suburbs do travel long distances on public transport. There is reason to believe they do not.

Australian public transport networks are radially based, centred on the CBD. As such, they cater best for those who work in the CBD — white collar workers in offices and shops. Blue collar workers, whose employment is more likely to be away from the CBD, where land is cheaper, are not well served. (It might be added that with an increasing proportion of retail activity being based away from the CBD³, public transport is becoming less relevant for shop assistants as well.)

A study by Robertson and Sloan has highlighted the fact that generally, the further out they live, the less likely it is that residents will want to travel to the CBD. (Robertson and Sloan, 1992) They found that up to 30 kilometres, the higher the income, the further the distance travelled to work, especially for males. (Robertson and Sloan, 1992, p. 24) The situation is more complicated for women, where there is a correlation up to \$32 000, but as incomes rise beyond this, the distance travelled to work declines. They refer to the 'breakpoint' theory of commuting patterns: individuals are prepared to travel only so far. Low income earners in particular travel shorter distances to work. (Robertson and Sloan, 1992, table 6). They quote Scott:

'It has been observed on many different occasions that the spatial structure of commuting patterns in the metropolis can be described in terms of a simple inverse function of distance. ... When this equation is calibrated, it invariably identifies the lineaments of a commuting shed around a given workplace ... such that nearby neighbourhoods house a high proportion of the workers ... and more distant neighbourhoods correspondingly smaller proportions. These relationships are much influenced by the socioeconomic status of commuters. ... In the case of female factory workers, for example, a commuting shed typically covers a comparatively restricted spatial area; but in the case of male managerial labor, it may range over the whole metropolitan area' (Scott, quoted in Robertson and Sloan, 1992, p. 3)

The intuitive reason for this is that low paid jobs are low paid because the skills they require are freely available. Employers get the labor they need within a local catchment area. Specialised skills are not needed and so an employer is more able to fill the positions from among locals living in the area. This comes about because low paid workers find a greater number of jobs acceptable to them and so distance from home will be an important factor in where they work. Robertson and Sloan found that for lower paid workers, the job market tends to be a local one. Lower paid workers who lived in outer suburbs did not travel to the CBD:

'Thus, ... the areas of Adelaide which are further out — Elizabeth and Noarlunga, which are a little more than 20 kilometres from the CBD — display something of a local labour market in their patterns of local employment. So too does Port Adelaide, which is only 14 kilometres from the CBD and has good transport links with it.' (p. 20)

³ In 1947 61% of Adelaide's retail sales were made in the CBD. By 1986 the figure was only 20%. (Moriarty and Beed, 1992, pp. 261-2)

One interesting related point to note is that men travel further to work than women. Robertson and Sloan find that, for Adelaide, men travelled an average 15% further than females. In seeking a reason for this, they quote Manning:

'women can be expected to spend less time travelling to work because they are generally less well paid and because their out-of-working time is more valuable than men's'. (quoted, Robertson and Sloan, 1992, pp. 3-4)

For those living further out, the disparity was even greater. (Robertson and Sloan, 1992, Table 3) Women who live a long way out in the northern or southern suburbs, they found, are more likely to work locally, though they are also more likely to work in the CBD than males. (Robertson and Sloan, 1992, p. 14) Those women working in the CBD were typically holding clerical or sales positions before their child-bearing years. (Robertson and Sloan, 1992, p. 21) This is a relatively affluent stage in their income/expenditure life cycle though one in which they may be struggling to buy a home.

Because their work is likely to be in the CBD and regional centres and because they are more likely to shop than men, women are heavier users of public transport. Another important factor is the high proportion of women without a car among the elderly. In a 1991 survey, women were almost twice as likely to use public transport alone (Robertson and Sloan, 1992, p. 44)

In summary, other things being equal, lower paid people are *disadvantaged* by a flat fare policy, not advantaged. The picture on a gender basis is not so clear cut. While women generally work closer to home than men, and so one would think they would be advantaged by a distance-based fare system, they are over-represented among the long-distance CBD commuters.

4. WAYS TO PROMOTE SOCIAL JUSTICE

Unfortunately while this paper has cast doubt on previous quantitative assessments of public transport and the distribution of resources, it has not been able to say for sure that public transport promotes social justice in that sense. To do that we need to know things like:

- to what extent does financial well-being for individuals correlate to use of *and* reliance on public transport?
- to what extent does financial well-being correlate to distance travelled *on public transport*? We have seen that managers travel further to work than workers, but does this matter *if* they don't use public transport anyway?

Nevertheless, even without such data it is possible suggest ways to improve social justice outcomes.

1. Encourage local services

By all means develop services in outer metropolitan areas, but focus these on providing access to *local* services and employment, not the CBD. Furthermore, provide a price structure to ensure that local trips cost less than long-distance trips. Fares should be lowered for these — if necessary at the expense of raising the fares of express services to the CBD.

However the structure of our cities is such that the 'local' or regional centres are further from home for those living in outer suburbs than for those in older suburbs. Therefore if concentric zones are used, they should use increasingly larger radial distances.

Encouragement of local services is also important if we see social justice in terms of accessibility as a means of assisting the transport disadvantaged gain access to employment, shopping, educational and recreational facilities. It should be cheaper and suit the needs and preferences of the transport disadvantaged for the emphasis to be placed on having such facilities locally available, with good local transport services to them. The most important exception here would be tertiary students, who are frequently both transport disadvantaged and forced to travel long distances by the specialised nature of the facilities they need access to.

Duldig and Gaudry suggest social justice could be improved by 'better aligning transport routes and hence access to those areas of recognized lower socio-economic status'. (Duldig and Gaudry, 1993, p. 907) A focus on local services would better enable this to happen, though if it results in more demand responsive services the whole concept of 'routes' becomes less important.

2. Differentiate fares by time

Even given the problems posed by using household incomes as data units, it is still clear that the travel between the peaks and on Sundays is heavily used by those on lower incomes. (At this stage further research is needed before we can say confidently that other off-peak usage is by low income earners.) Therefore a social justice strategy would lower fares for the off-peak periods, between the peaks and on Sundays at least.

3. Review user based subsidies in preference to operating subsidies

This paper has defended the current use of operating subsidies as a social justice measure by calling into question previous data which claimed they were regressive. Nevertheless, user-based subsidies can be used to more precisely target those in need. This was demonstrated by the 1992 Travers Morgan study.

However concessions policy, like policy on operating subsidies, pursues other goals beside social justice. The list of those entitled to concessional travel has typically grown incrementally and in the case of the STA covers present and former employees, current and former members of parliament, the Governor and spouse, visiting armed services personnel, Victoria Cross holders, police officers, and all people over 60 who work less

than 20 hours a week — as well as pensioners, the unemployed, children, students and the physically and mentally disabled.

It is probably true that apart from present and former STA employees those who don't deserve concession travel on social justice grounds make very little use of it in practice. Nevertheless the availability of concessions should be reviewed from time to time, using grandfather rights to prune the list painlessly if such a pruning is warranted.

Clearly, the provision of vouchers or even cash to the poor and other transport disadvantaged would be an effective alternative to operating subsidies and existing concessions as a means of promoting social justice. That such an approach is not used simply demonstrates that government policies will try to meet several goals at once: (reducing congestion, pollution and so on) and that social justice has to be traded-off against these other goals. It also demonstrates that appropriate social justice strategies have to be seen in terms of prevailing attitudes regarding the extent to which poor people should be free to determine how resources directed to them are spent.

4. Separate school travel where possible

As noted above, students pose a particular problem for social justice. Though they may be personally income poor and transport disadvantaged, they may nevertheless be privileged in terms of their social situation. As has been noted, school travel on regular public transport is claimed to be skewed to the private schools. Governments should not be subsidizing children to travel to distant (usually private) schools particularly as this only exacerbates the ghetto effect on the local school.

Like other state governments, the South Australian government has a policy of providing free travel to school only if the closest school is more than a certain distance (typically 4.5 kilometres) from home. While it could be argued that the distance specified is unrealistic, the principle adopted is sound and should be used as the basis for government funding. Though there may be practical difficulties and possible operating inefficiencies, there is merit in separating the school services from the regular services where-ever possible.

Tertiary students cannot be treated in this way, given the necessarily wide catchment area. However once again tertiary students, while frequently having low personal incomes, and without access to personal transport are privileged at least in terms of life expectancies. Given the typical flexibility of their study hours, one possibility to consider would be to disallow tertiary student concessions on the morning peak buses, say before 8.30 in the morning. The negative affects of this could be off-set by an introduction of an off-peak rate for evening services.

5. CONCLUSION

While there is no doubt that public transport does contribute to social justice in terms of providing a measure of accessibility for the transport disadvantaged, from a simple survey of the existing literature it is not possible to say for sure that public transport contributes to social justice in terms of the net distribution of resources. All we can say is

that more work is needed. To gain a conclusive picture would be very difficult, particularly if we attempted to account for the degree of need involved in people's travel and if asset holding were included. Low incomes among pensioners may well mask high asset levels and comfortable life styles.

But from a practical point of view such work is not as important as a recognition that whatever the contribution of public transport to social justice, it could be better. Government subsidy for public transport is the political reality for the foreseeable future; we should be trying to ensure that the dollars spent achieve social justice goals more effectively.

This paper has discussed a few possibilities. They are practical, though also politically contentious. Note also that all of the options discussed also contribute to some other goals the governments are striving for — most notably economic efficiency, and a more sustainable urban structure. It is true that there is a trade-off — by themselves they would exacerbate congestion by raising fares in the morning peak, so encouraging car use. The increase would be negligible, but it does point to the need for an holistic approach to accessibility problems, addressing the issues not just through one policy mechanism such as the supply of public transport.

Acknowledgements

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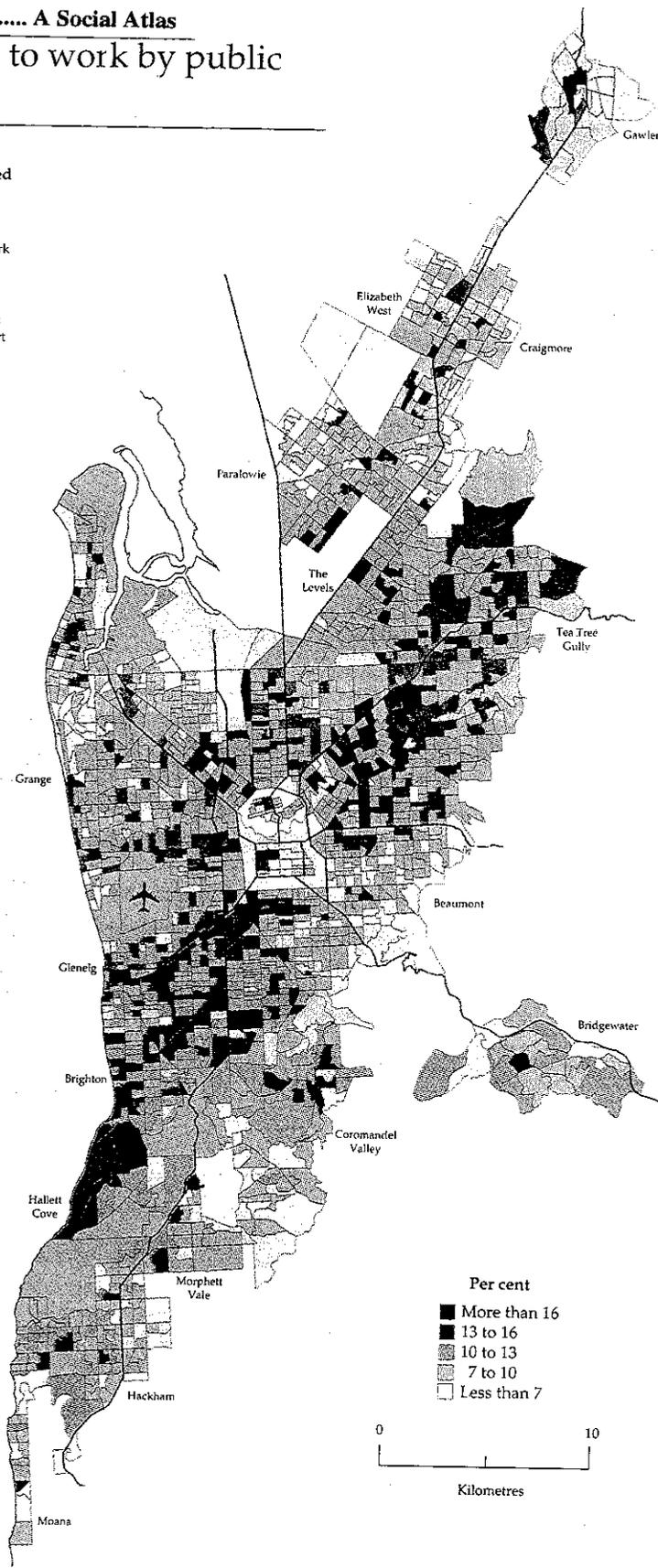
References

- Australian Bureau of Statistics (1990) *1990 Survey of Income and Housing Costs and Amenities: Income Units Australia*, cat. 6523.0
- Amos, P and Starrs, M, (1984) 'Public transport subsidies in Adelaide' *Ninth Australian Transport Research Forum*, Adelaide, pp. 595-6-11
- Duldig, Paul and Gaudrey, Brendan (1993) 'The equity incidence of the State Transport Authority subsidy in South Australia: an update' *Australian Transport Research Forum*, Gold Coast, pp. 895-914.
- Goodin, Robert and Le Grand, Julian, (1987) *Not only the poor: the middle classes and the welfare state* (London: Allen and Unwin).
- Industry Commission, 1994 Transcripts to inquiry on urban transport, evidence of the General Manager of the State Transport Authority of South Australia, 22 February.
- Kerin, Paul D, (1987) 'Why subsidise state transport authorities?' *Australian Quarterly*, 59 (1), pp. 60-72.
- Moriarty, P and Beed, C (1992) 'Explaining Personal Travel Increases in Australian Cities' *Australian Transport Research Forum* Canberra, pp. 259-270
- O'Conner and Maher, (1979) 'Change in the Spatial Structure of a Metropolitan Region: Work-Residence Relationship in Melbourne, 1961-1971' *Regional Studies* 13(4), pp. 361-380.
- Robertson, Frances and Sloan, Judith, (1992) *Identifying Local Labour Markets in Metropolitan Adelaide* National Institute of Labour Studies, Flinders University.
- Travers Morgan, 1992 *Incidence of Public Transport Subsidies in Adelaide Study: Working Paper 2*, Analysis of Public Transport Studies Adelaide, Travers Morgan.

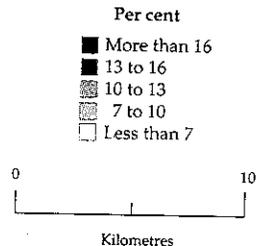
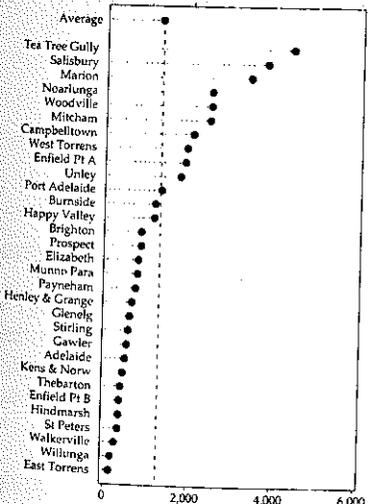
People who travelled to work by public transport

People who used public transport in their journey to work as a percentage of employed people

- Within the Adelaide Metropolitan Area, 38,713 people used public transport in their journey to work on the day of the Census. This was about nine per cent of the employed population.
- The main feature of the map is the high percentages of public transport users around the public transport routes, such as:
 - the O Bahn busway which runs north-east of the city;
 - the tramway from the city to Glenelg; and
 - the train route from the city to Noarlunga in the south
- High percentages of people who used public transport in their journey to work were evident in:
 - the south-western suburbs of Forestville, Goodwood, Black Forest, Plympton, Glenelg, Seaclyff and Marino; and
 - the north-eastern suburbs of Felixstow, Windsor Gardens and Paradise
- Very few south-eastern suburbs contained high percentages of public transport users



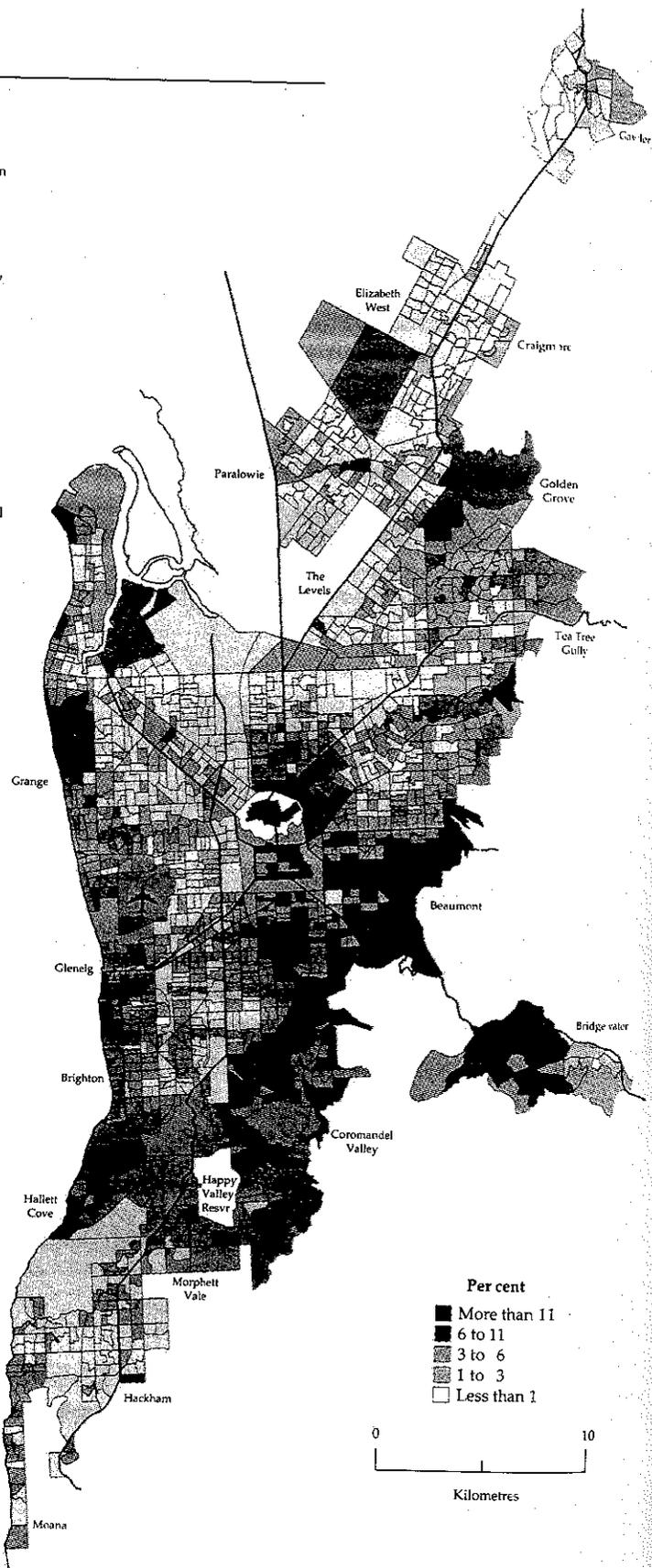
Number of people who travelled to work by public transport by Statistical Local Area



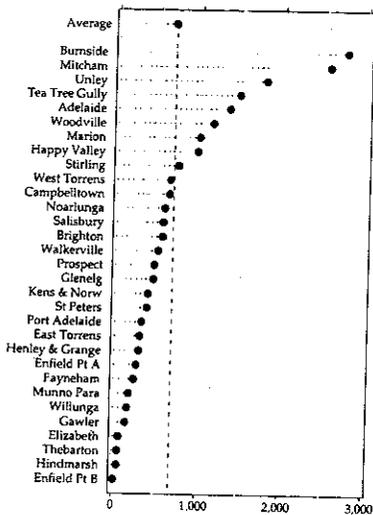
High income earners

People with income over \$50,000 as a percentage of people aged 15 or older

- There were 20,191 people who reported in the 1991 Census that they had an annual income of more than \$50,000 in the Adelaide Metropolitan Area. This represented almost 3 per cent of all people aged 15 years or older.
- The measure of income collected in the Census was income from all sources i.e. it included wages, salary, business income, government benefits (including family allowance), rents, dividends and interest.
- There was a high percentage of high income earners in the eastern and south-eastern suburbs of Stonyfell, Toorak Gardens, St Georges, Beaumont, Leabrook, Urrbrae and Springfield.
- Inner suburbs with high percentages of high income earners were Medindie, North Adelaide, Gilberton, Walkerville, Adelaide, Malvern and Unley Park.
- The hills suburbs around Bridgewater and the coastal suburbs of Tennyson and West Lakes also recorded high percentages of high income earners.
- The outer northern and outer southern suburbs contained relatively low percentages of high income earners.
- There is a close association between income, education and occupation which is evident by comparing this map with those showing people with university qualifications (see page 22) and managers and administrators (see page 31).



Number of high income earners in Statistical Local Areas



Per cent

- More than 11
- 6 to 11
- 3 to 6
- 1 to 3
- Less than 1

