

**The role of demographic characteristics in
explaining increases in the incidence of child
abuse in the Barwon region.**

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Sociology: Internship Program

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Section 1. Profile of host organization: MacKillop Family Services

MacKillop Family Services is a non-government welfare organization that operates throughout Geelong and metropolitan Melbourne. MacKillop operates approximately 80 services across four regions and through nine programs. The number of families that MacKillop work with varies from year to year but at present MacKillop is working directly with 600 children and young people, 700 families, and indirectly with 1500 families.

The services provided by MacKillop Family Services at the North Barwon Office are categorised into three areas: children's services, youth services and disability services. The children's services provide emergency, part-time and long term care and support for children aged between 0-14. Some of these children are directly associated with Protective services and others may just need temporary care due to family breakdown or illness.

Youth services provides temporary and long-term residential and foster care for adolescents. These adolescents may have been in Child Protection for many years while other adolescents may only need temporary care. The Youth team also provides support for teen-ages who are experiencing difficulties at home and school. The Reconnect program liases with parents and schools to try to promote an environment that is conducive for the child to remain within the home and school.

The Disability service provides a wide range of programs for children with disabilities. They provide foster care, respite care for children and the parents of disabled children. The Incontinence program provides funding for those with specific needs and the Making a Difference program provides support for families where there are complex needs with a school age child with a severe or profound disability.

Evidence published by the Victorian Department of Human Services pointed to substantial and ongoing increases in child abuse rates throughout the region. The involvement of MacKillop Family Services in child and youth welfare implies a core concern with issues surrounding the increase of child abuse notification rates. MacKillop Family Services is primarily interested in those families who are excluded and marginalised from the wider community, therefore understanding why there is such an increase in notifications is of great interest to MacKillop Family Services, both for its service provision and planning. The current project is designed to contribute to that understanding.

Section 2. Research Problem

In 2002, the Victorian Department of Human Services published evidence of significant increases in child abuse rates over the preceding five years. That evidence, part of the project examining service provision to children suffering abuse and early intervention strategies for prevention, also highlighted the uneven nature of those increases (DHS, 2002:17). While modest increase had been observed in metropolitan areas, increases in rural areas had been dramatic. For example, in the Northern Metropolitan region there had been a small rise to 24 to 25 notifications of child abuse per thousand children between 1996 and 2001. Over the same period the rate for the Barwon South West region had risen from 28 notifications per thousand children to 37 notifications – an increase of over one-third. The size of the increase in rural regions, in contrast with that of the metropolitan area, is the broad focus of this study.

There are, at least, two explanations that might appear to account for the dramatic rise in notification rates. The earlier (1993-4) introduction of mandatory reporting required professionals such as police, teachers, nurses and medical practitioners to report suspected incidence of child abuse. Accompanying this, heightened public awareness of child abuse as an issue could have also increased notification rates (DHS, 2002:11). Thus, these explanations challenge whether increased notifications rate reflect real changes in rates of child abuse. No doubt these factors did play a role in the reported increases in notification rates. However, of themselves, they fail to account for the differential between rural and metropolitan regions – one of the most striking features of the statistics. Therefore, as the 2002 report concluded, even allowing for these factors there remain important, unanswered question about the increase.

The DHS report identified particular characteristics of families who were likely to be involved in the child protection system: low family income, family type (single parent), parents with a psychiatric or physical disability and parents abusing alcohol or prohibited substances. Families affected by domestic/family violence were also over represented in the child protection system. (DHS, 2002:27) The DHS report found that the proportion of families who had two or more of the above indicators involved in substantiated cases of child abuse increased from 44 per cent in 1996 to 73 percent in 2001 (DHS, 2002:27).

Therefore the initial aim of this study was to further explore the roles of mental health, drug abuse, and social and economic factors in explaining the increase in child abuse notification rates. However, it became apparent from very early that no access to either mental health or drug abuse data for the period of interest would be made available for the purpose of this study¹. Therefore, the study examined the remaining factor, social and economic demographic characteristics of families, as possible explanations for the increase in child abuse notification rates.

The study was limited to the South West Barwon region. Although the general interest was with Victorian rural regions, the Barwon South West region is of concern to MacKillop Family Services. Furthermore as a rural regional area, conclusions drawn on the findings relating to Barwon South West could have broader application to other rural regions and the agencies that service those regions.

¹ As a result of privacy laws, mental health and drug use data for the subregions could not be obtained in a comparable format for the two census periods 1996 and 2001

Section 3. Research Methods

The research method was investigatory, that is it was designed to help identify possible factors rather than measure or test specific effects. The research examined changes in social and economic characteristics between 1996 and 2001 comparing specific geographic sub-regions over the period. At the same time, the research compared notification rates of child abuse also between 1996 and 2001 as well as associated statistics of notifier type, abuse type, and victim age. Finally associations between social and economic demographic changes in specific areas and changes in rates of changes in child abuse notification were sought and noted.

Demographic Characteristics

Demographic characteristics were investigated using Australian Bureau of Statistics (ABS) census data. The census data provides the most comprehensive and detailed description of social demographic and economic characteristics of individuals, families and households in Australia. The ABS holds census every five years; the two censuses of interest for this project were held in 1996 and 2001. Limited data from these censuses are made publicly available by the ABS. More detailed information is available on a user pays basis.

Census data is organised around geographic regions; at the top level there is the State, which is divided into statistical divisions then subdivisions and further divided into statistical local areas (SLAs). The current project was interested in the West Barwon subdivision, part of the Barwon division of Victoria. West Barwon consists of 16 SLAs; the current project was concerned with 14 of these SLAs². The SLA level was chosen because it was the lowest geographical unit of analysis for which demographic information was readily accessible.

Seven demographic characteristics were investigated:

- ❖ Population size
- ❖ Age profiles
- ❖ Family type
- ❖ Income profile
- ❖ Education level
- ❖ Dwelling type
- ❖ Labour force and employment

Population size was measured by the number of people residing in the SLA on the night of the census. Age was investigated using age profiles categorised into five-year age groupings (0-4 years, 5-9 years etc.). Family type primarily distinguished between families with or without children, and then families with one parent and families with two parents. Income profile made use of weekly family income levels. Education level enumerated individuals by the highest level of post- secondary qualification gained. Dwelling type firstly distinguished between separate house, flat, townhouses and other form of accommodation. For separate housing a further distinction was drawn based upon ownership status (fully owned, being purchased, rental). Labour force and employment statistics allowed measures of involvement in the labour force, employment rates, and comparisons between full and part-time employment.

² The two SLAs that were excluded were Golden Plains and Golden Plains South. These two SLAs were not included because notification data was not provided by DHS so there was no concordance between the census data and DHS data.

DHS Notification Data

Notification data is collected by the Department of Human Services Victoria, and directly records every alleged incident of child abuse. The data was drawn from the period of 1996 to 2001. This period was chosen to correspond with the 1996 and 2001 ABS Census data and spans the observed 37 % increase in child abuse notifications (DHS,2002:11). The data consisted of each notified incident:

- ❖ Date of abuse
- ❖ Abuse type
- ❖ Notifier type
- ❖ Postcode and suburb
- ❖ Age of child
- ❖ Gender of child
- ❖ Indigenous origin of child

The DHS notification data faced two limitations. Firstly, the DHS data was coded via postcode whereas the ABS data was coded by SLA. There is no publicly available, direct concordance between postcode and SLA; although most postcodes fall wholly within a single SLA, many of the SLAs include multiple postcodes and some postcodes extend over multiple SLAs. Therefore a postcode-SLA concordance table was prepared using maps provided by DHS and ABS (see Appendix 2).

A second limitation of the notification data is that the data records notifications of alleged child abuse. The Victorian protocol for notifying and responding to alleged child abuse uses a three-stage system. Notifications are the first stage, the notification is then investigated, and consequently the allegation is either substantiated or not. It is the initial notification data that was made available. Information about outcomes following investigation was not accessible. The rates described in this project can only be taken to index the underlying abuse rates and changes.

Analytic Strategies

Analysis of the data began with descriptive investigations over the region and for target SLAs on both demographic and notification characteristics. This initial investigation was designed to provide an overview of the region as well as highlighting any 'stand-out' features for individual SLAs.

The descriptive investigation then proceeded to compare across the above characteristics for 1996 and 2001. Once again the aim was to identify any exceptional features; for example marked changes in age profile or notifier type.

A simple correlational analysis was then undertaken to identify possible relationships between changes in notification rates and changes in demographic features over the 1996-2001 period. Associations were sought across SLAs. Because of the relatively small number of SLAs investigated in this project and because of the limitations inherent in the data the investigation was limited to visual inspection.

Section 4. Findings

The research examined eight demographic characteristics, which were cross-tabulated with notification data. The salient features that emerged from the following demographic characteristics will be briefly described.

- ❖ Demographics – characteristics
- ❖ Age profiles
- ❖ Family type
- ❖ Income Level
- ❖ Dwelling Type
- ❖ Education
- ❖ Employment
- ❖ Population size

Age Profiles

Patterns of Change for the Region

Over 1996-2001 two major trends characterised the region; an ageing population that increased in size. The median age increased from 35.3 to 37.6 years, driven mostly by increased numbers of older adults. Overall, the population size increased by about 5.5% over the period 1996 to 2001³.

Age profiles for the region were examined using five, broad age groupings⁴:

- i. Younger children (0-9 years)
- ii. Older children (10-19 years)
- iii. Younger adults (20-39 years)
- iv. Middle-aged adults (40-59 years)
- v. Older adults (60 years and older)

The overall increase of 5.5% in the region's population over 1996-2001 occurred almost entirely among adults, particularly middle-aged and older adults. The growth rate among middle-aged adults was 16.1% while that for older adults was 11.3%. Against this the numbers of younger children actually fell in absolute numbers and children of all ages decreased in their proportional representation in the population.

Patterns of Change for Individual SLAs

Individual SLAs differed substantially from the regional average in their age profiles, Figure 1 compares the population growth rates, and the relative growth rates of the different age

3. This corresponds with an annualised growth rate of about 1.08% per annum.

4. The age groupings were chosen to distinguish first between children and adults, and then within children to distinguish on the basis of broad age categories; there is evidence of differences in the incidence of different kinds of abuse among children of differing ages. Similarly among adults, the distinction between those who were less than 60 years and those who were 60 years and older was designed to reflect a split between those adults likely to be still involved in child rearing and those whose children had grown to adulthood. Once again, the split between younger adults and middle-aged adults was designed to reflect the distinction between younger children and older children.

groups. Overall growth rates show that one SLA, SurfCoast East, stood out as having a markedly higher growth rate (21.8%) than any other. Six other SLAs shared similar growth rates of about 10%. The remaining seven SLAs had growth rates well below the average, ranging from 2.5% for Corio Inner to -3.4% for Queenscliff.

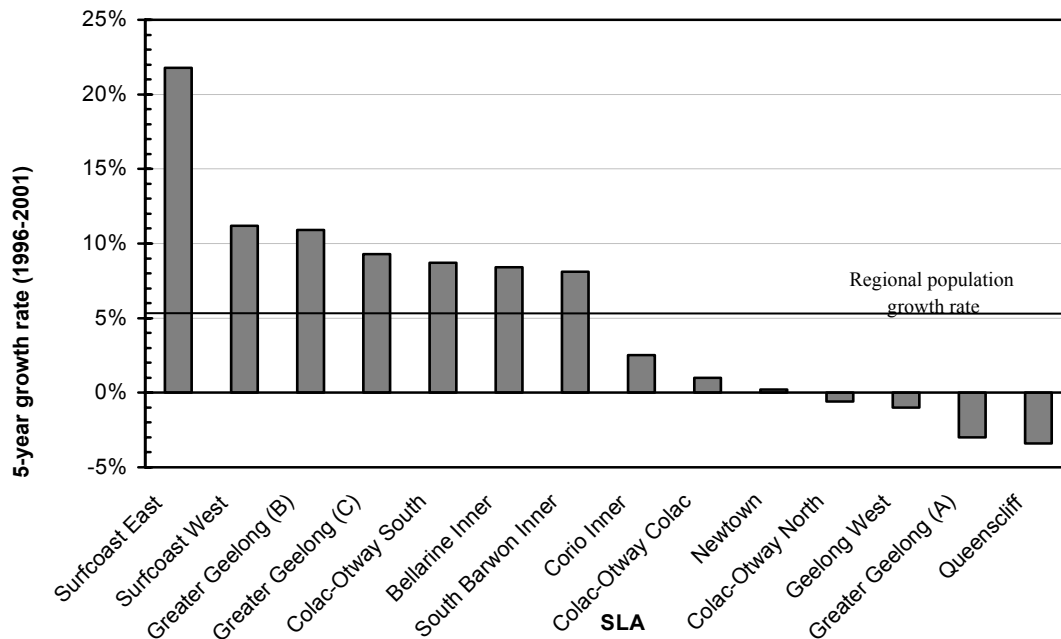


Figure 1. Comparison of five-year population growth rates by SLA

SLAs also varied in their age distribution reflected by median ages, which ranged from 32 years for Corio Inner to 42 years for Queenscliff. The proportional representation of individual age groups differed among the SLAs, the key division was between those younger than 40 years and those 40 years and older. Although population growth for the region was driven by middle-aged and older-aged adults, Figure 2 shows that there was an association between the proportion of children in the SLA and the SLA's population growth rate; the greater the proportion of children the higher the growth rate. There were several SLAs that had disproportionately large numbers of children given their growth rates (Corio Inner, Colac-Otway North, Colac-Otway Colac, Newtown).

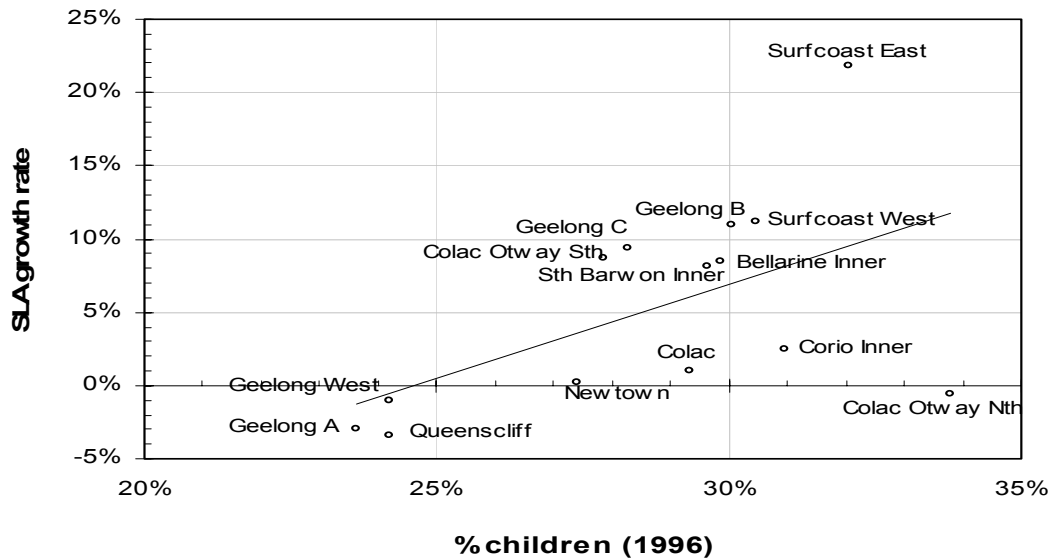


Figure 2. Comparison of Proportions of children in SLA (1996) with SLA growth rate (1996-2001).

Family Type Profiles

In 1996 just less than one half of all families in the region were dual parents and children. A further one third (35%) were couples without children. The remaining 14% were single parent families. There were substantial changes in the proportions and underlying growth rates of these family types over the five years. While the total number of families increased by 5.0%⁵ the number of dual parent families decreased by 3.5. The overall growth in families came from increases in the numbers of couples without children, 13.4% growth over the period, and single parent families, 13.7% growth over the period.

Family Type Across SLAs

SLAs varied in the percentage representations of their family types and in the growth rates of those family types. One SLA, Surf Coast East, stood out from all others in having a growth rate of 24% across all family types, the next highest-ranking SLA – Greater Geelong B had a growth rate that was nearly half SLAs differed from the overall region in the proportional representation of family types and in their growth rates, Figure 3 shows that the proportion of dual parent families varied from 57% in Greater Geelong C down to less than 40% in Greater Geelong A. The percentage of couples without children varied inversely from just over one third up to about 50%. The proportion of single parent families appeared unrelated to either of the other family types ranging from less than 10% (Greater Geelong C) up to 20% (Corio Inner).

A comparison of growth rates of single parent families relative to growth rates of all families reflected changes in the relative importance of such families in each SLA. The growth rate of single parent families in some SLAs was higher than expected given the growth rate of all families in those SLAs. For example, in Colac-Otway South single parents numbers increased by 29% between 1996-2001. Other SLAs with higher than expected growth rates in single parents were Colac-Otway North, Corio Inner, Newtown and Bellarine Inner.

⁵ an annualised growth rate of 0.98% pa

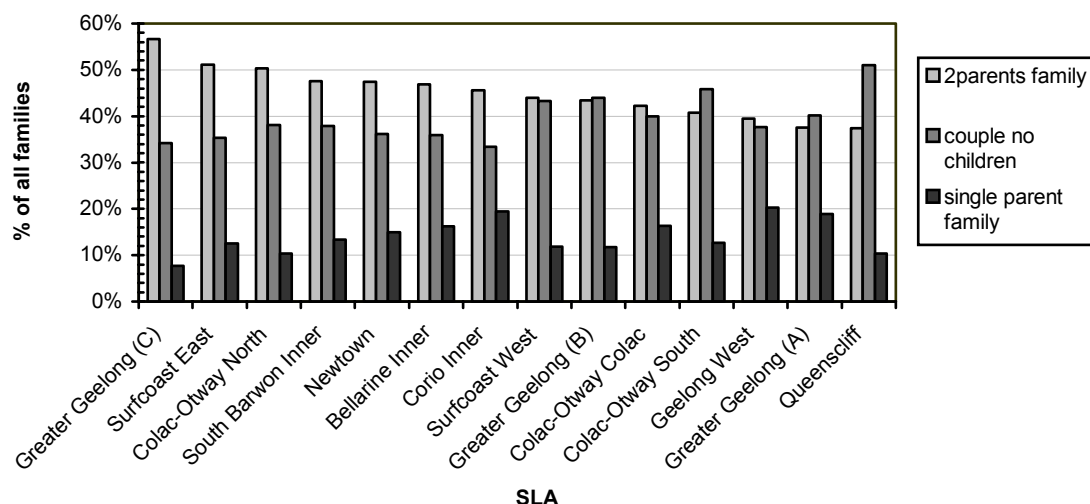


Figure 3. Comparison of distribution of family types by SLA (2001).

Income – Family Weekly

Patterns and Changes for the Region

Family weekly income for the region rose by 29% over the five-year period (annualised rate of 5.2% p.a.; see Figure 4). The median weekly family income was \$662 per week in 1996. By 2001, the median family income was \$853 per week.

Around these median values, individual family types⁶ had incomes that varied markedly. Dual parent families consistently had the highest weekly incomes being around one-third higher than those of the average family income. In 1996 that value was \$879 per week⁷, which had risen by 31% to \$1148 per week in 2001. Couples without children typically earned the second largest amount, though still, below the overall median weekly income at \$484 per week. This increased by 37% to \$664 per week by 2001. Single parent families earned the lowest weekly family income of \$411 per week rising by 18% to be earning a median income of \$485 per week in 2001. Single parent families began the period with the lowest weekly income and over the subsequent five years fell further behind relative to other family types.

7. For ease of presentation, only the interpolated median, weekly incomes are presented in the following discussion. The median category can be easily identified as the interpolated median always lies within the median category.

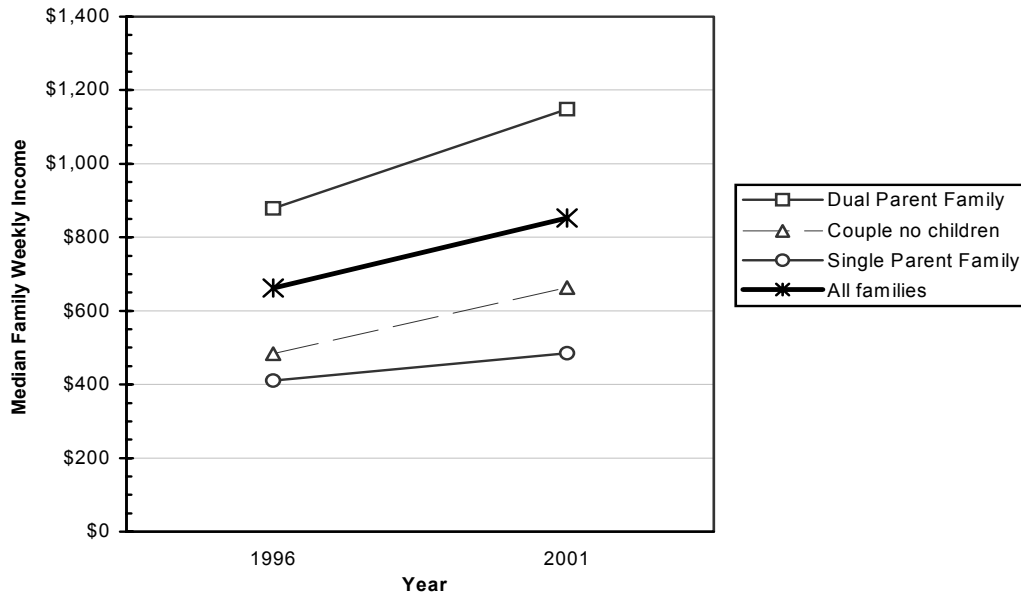


Figure 4 Comparison of Weekly Family Income for three family types showing changes from 1996 to 2001

Patterns of Change for Individual SLAs

Family incomes rose in every SLA over the five-year period, however, in 1996 Colac-Otway South had a median income of \$529 while Greater Geelong C had an income of \$831, nearly 60% above the Colac-Otway South value. That differential had increased to nearly 70% in 2001 with Colac-Otway South still having the lowest in income at \$687 while Newtown had a median weekly family income of \$1159.

There was a strong correspondence between income levels for 1996 – 2001. Although income levels for 2001 broadly corresponded with those for 1996, several SLAs had increased however well below those for the region as a whole (see figure 5), Bellarine Inner Corio Inner and South Barwon Inner, all had growth rates of less than 29%.

A more detailed examination of family income differences across SLAs distinguishing among family types found that dual parent families followed a very similar pattern to that described for all families. This was not true for single parent families. There were two main differences. First, incomes levels differed less among SLAs for the single parent families than they did for other family types, even accounting for the much lower level of typical

Dwelling Type

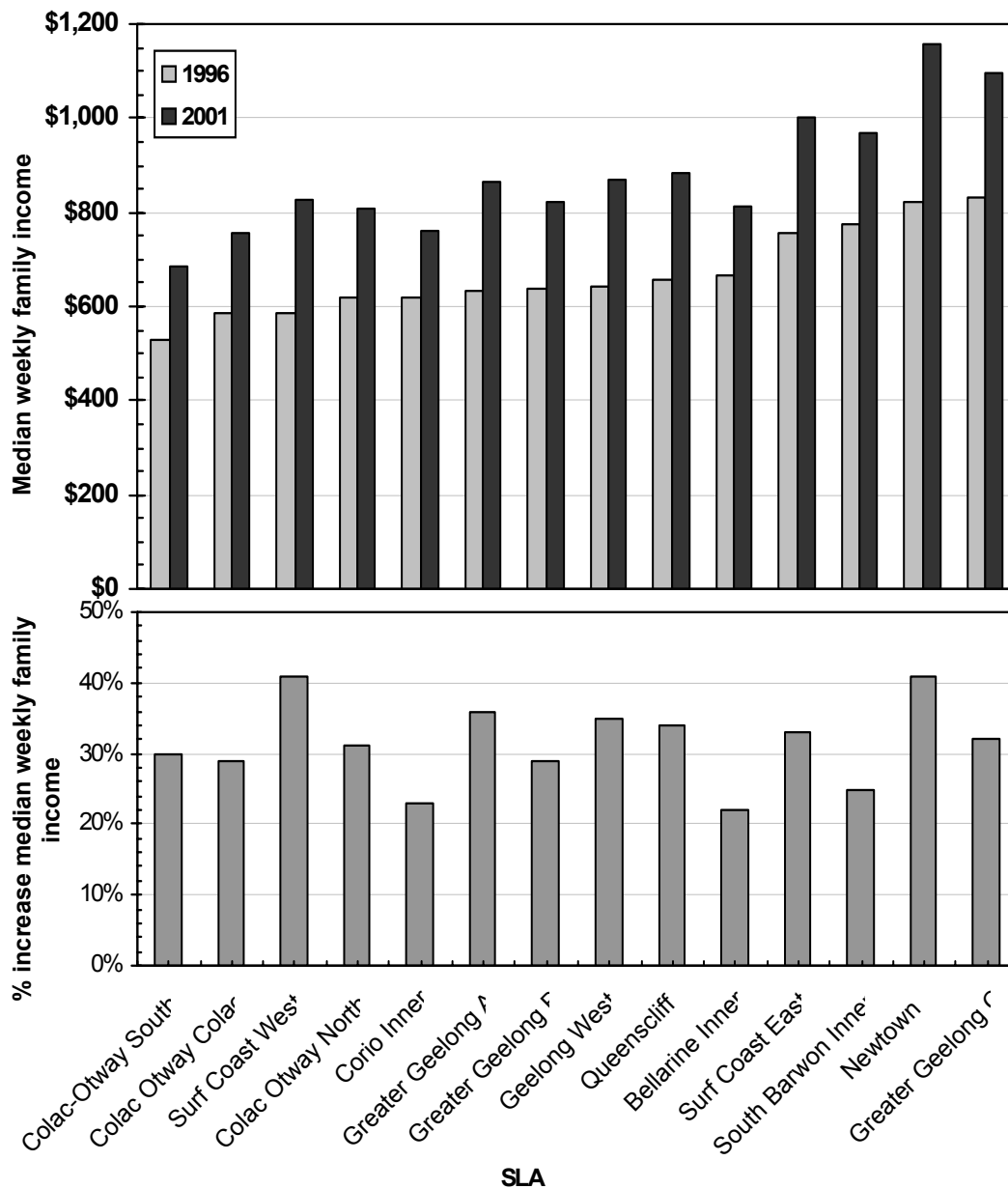


Figure 5. Median weekly family income by SLA for 1996 and 2001 (upper panel), and growth in income over the five-year period (lower panel).

Patterns of Change for the Region

Over the five-year period 1996-2001 the total number of separate houses increased by 9% to 76,197. This growth rate runs ahead of the population growth rate of 5.5% for the region. For separate houses the majority both in 1996 and 2001 were fully owned (1996: 51.9%, 2001: 50.7%). Consequently, the growth rate in the number of houses that were fully owned was 8.2%, slightly below the growth rate of all houses. Similarly houses being rented accounted for just over 17% in 1996 and were 16.3% in 2001. The major source of growth in the number of houses was in properties being purchased; these increased by 12.9% over the period accounting for 30.8% in 1996 and 31.9% in 2001.

Patterns of Change for Individual SLAs

There were marked differences among SLAs in home ownership and renting patterns. Growth rates in houses either fully owned or being purchased followed closely population growth rates for most SLAs. However, growth rates in rental properties were much more poorly correlated with population growth rates Figure 6 shows the tight clustering of SLAs around the trend line relating population and home ownership/being purchased rates in contrast with the much looser distribution for rental properties. It seems that across SLAs population growth was closely associated with growth rates of owned/purchasing housing, but that growth rates in population growth rates alone might not be driving growth rates in rental housing.

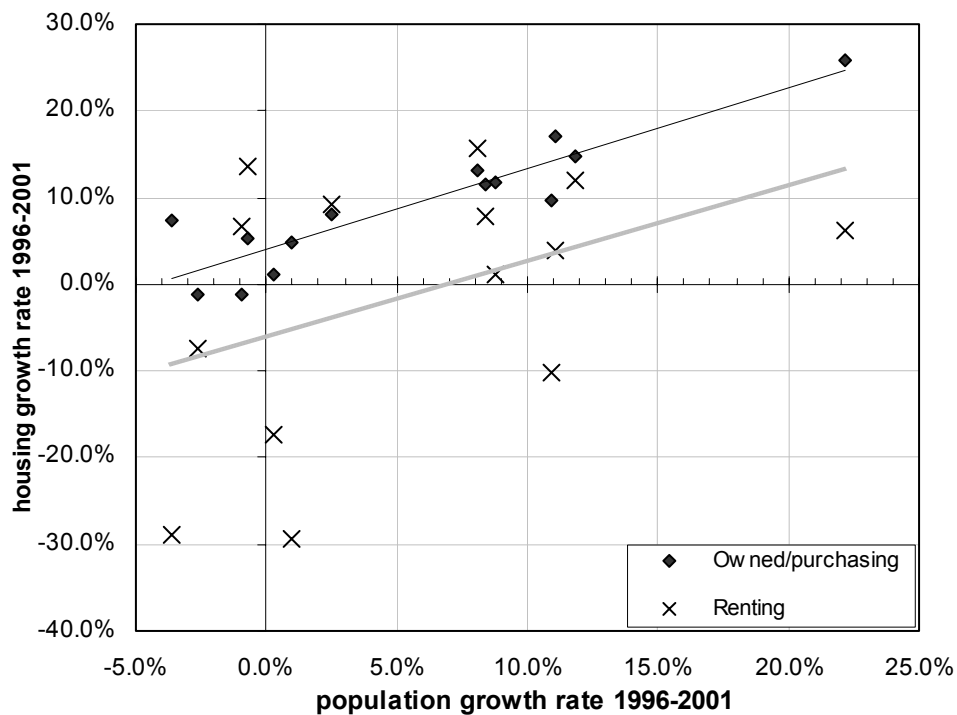


Figure 6. Comparison of population growth rates with housing (owned/purchasing vs renting) growth rates 1996-2001 for Individual SLAs.

SLAs also varied in the proportions of housing given to rental accommodation (see Figure 7). SLAs with the highest rental rates were Greater Geelong A, Corio Inner and Geelong West. All had about 20% of houses given to rental - and all had low population growth rates. At the other extreme Colac-Otway North and Greater Geelong C each had around one in ten houses dedicated to rental housing and all had much more robust population growth rates.

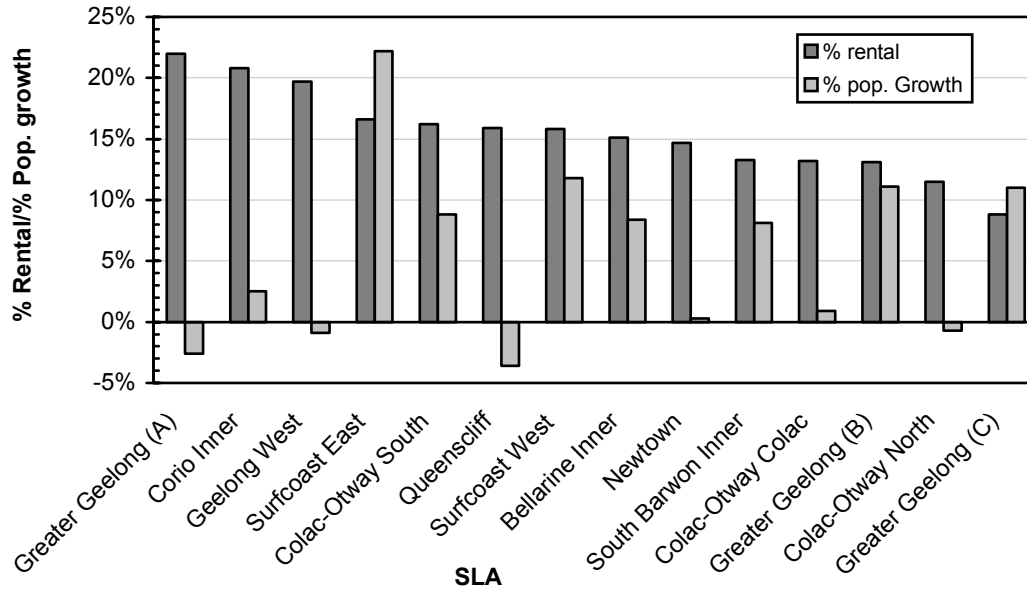


Figure 7. Comparison of SLAs on percentages of all housing given to rental (2001).

Education

Patterns of change for the region

Across the region, there was an increase in the proportion of individuals with qualifications from just under one-third (31%) of all individuals in 1996 to over one-third (35%) in 2001 (see Appendix 3), a 13% increase over five years. Figure 8 shows that between 1996 and 2001, bachelor degrees and certificates became more common.

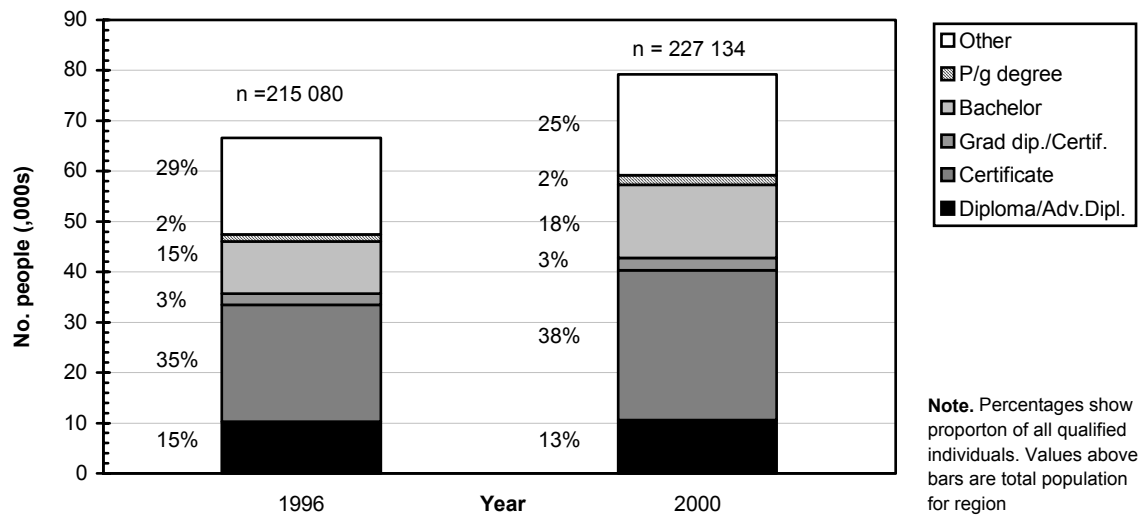


Figure 8. Comparison of number of individuals with post-secondary qualifications between 1996 and 2001.

Patterns of change for individual SLAs

The shift towards more individuals being qualified at a higher level was not equally distributed across SLAs. Corio Inner had the smallest increase in qualification levels for its

population. In 1996 that proportion was 26% - already well below the region's average level of 31%. That proportion had only risen to 28% in 2001, which was a relative decrease compared to the region. Other SLAs that fell behind were: Colac-Otway Colac, Bellarine Inner, Newtown and SurfCoast East.

Corio Inner, was also under-represented in higher qualifications such as Postgraduate degrees and was over-represented in lower qualifications such as certificates (eg. 40% versus the overall average of 35% in 1996). The same SLAs that showed relative decreases in the proportions of their populations with qualifications were also over-represented in the lower qualifications (eg. Bellarine, Colac-Otway North).

Labour Force Participation and Employment patterns

Three measures were used to investigate the labour force and employment:

- Participation rates – the proportion of the community actually involved in the labour force either working or seeking work
- Employment rate – the proportion of those in the labour force who are actually employed
- The proportion of those employed in full-time as against part-time work.

Patterns of Change for the Region

The region's labour force participation rate rose from 58.5% in 1996 to 60.1% in 2001. This together with the increase in the region's population and the decrease in the percentage of children meant that the number of individuals involved in the labour force rose by 7.9% over the five-year period.

Unemployment rates also fell over the period from 11.2% at the time of the 1996 census to 8.0% in 2001. A comparison with the growth in the underlying population shows that the number of individuals actually employed rose by 11.8% over the period. Together with the larger and older population, and the higher participation rate, the lower unemployment rate resulted in the number of employed individuals growing at more than twice the rate that the population is increasing.

The percentage of all workers who were employed full-time fell from 66% in 1996 to only 62% in 2001 corresponding with a very modest increase in actual numbers of individuals from 55,881 to 59,167, or about 5.9%. In contrast, there was a 21.5% increase in part-time employment numbers from 27,445 individuals in 1996 to 33,347 in 2001. Consequently, part-time workers increased their proportional representation of all workers from 32% in 1996 to 35% in 2001. In 1996, there were just over two full-time workers for every part-time worker. By 2001, that ratio had fallen to 1.75 full-time workers for every part-time worker.

Patterns of Change for Individual SLAs

The regional increase of 7.9% in the number of individuals in the labour force was not evenly distributed across SLAs. Equally, actual labour force participation rates varied widely across the SLAs (see Figure 9, upper panel). The lowest rates were found for Queenscliff, which was well below 50%, while the highest rates, close to 70%, were found for SurfCoast East. Other SLAs with low participation rates were Corio Inner, Greater Geelong (B) and (C), Colac, and Bellarine Inner.

SLAs varied even more widely in their change of participation rates between 1996 and 2001 (see Figure 9, lower panel). Furthermore, there appeared to be little relationship between participation rates and the change in those rates over the five-year period. The two SurfCoast SLAs increased their participation rates by about five percent, while Greater Geelong (C) saw

a very substantial drop of nearly 10% in its participation rate. One other SLA, Bellarine Inner, also had a drop in its participation rate; although this decrease was close to zero (-0.6%). Several other SLAs also saw little or no change in their participation rates (Corio Inner, Queenscliff, and Colac-Otway North and South).

The overall, regional experience of reduced unemployment rates was also observed in each of the SLAs (see Figure 10, upper panel), and the extent of that reduction varied moderately among the SLAs (see Figure 10, lower panel). There was no evidence that the size of the reduction in unemployment was closely related to the initial level of unemployment.

The highest levels of unemployment, both in 1996 and in 2001 were found for Corio Inner and Geelong West. Relatively high levels of unemployment were also observed in Greater Geelong (A) and Bellarine Inner; in the case of Bellarine Inner, the relatively high level of unemployment was maintained between 1996 and 2001.

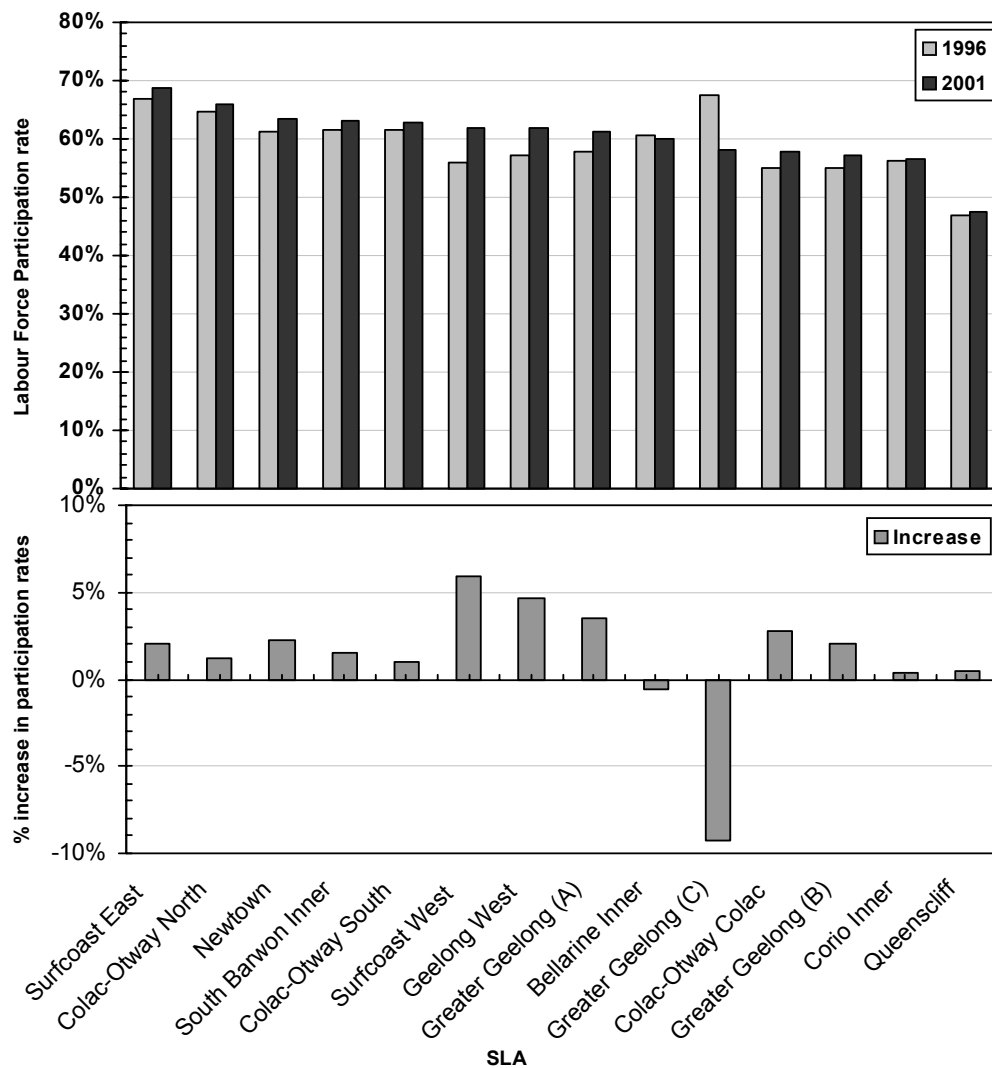


Figure 9. Labour force participation rates for SLA, comparing participation rates for 1996 and 2001 (upper panel), and growth or decrease in the percentage of individuals participating over five-year period (lower panel).

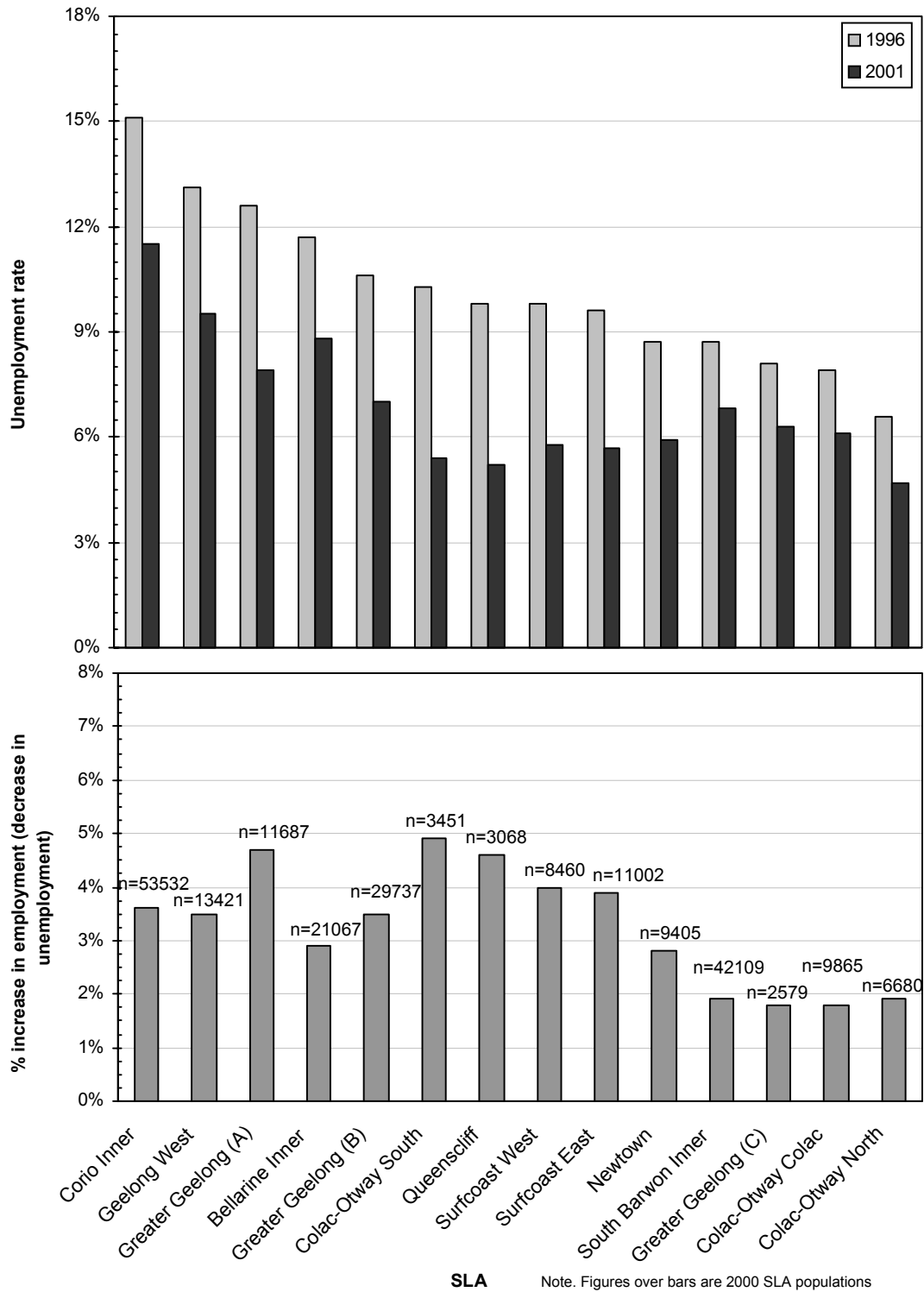


Figure 10. Employment (unemployment) rates for individual SLAs, comparing 1996 with 2001 (upper panel), and percentage point increase in employment (decrease in unemployment) (lower panel.)

Child Abuse Notifications

Notification data used in the current study were consistent with the reported DHS figures. They showed a large increase of about 71% in notifications between 1996 and 2001. Taking account of the change in population still showed an increase of 62% from about 5.53 notifications per thousand residents in 1996 to 8.99 notifications per thousand residents in 2001. A similar comparison is made on the number of notifications per child⁸. In 1996, there were 18.90 notifications per thousand children and in 2001 that figure was 32.79 notifications per thousand children; this was an increase of about 70%.

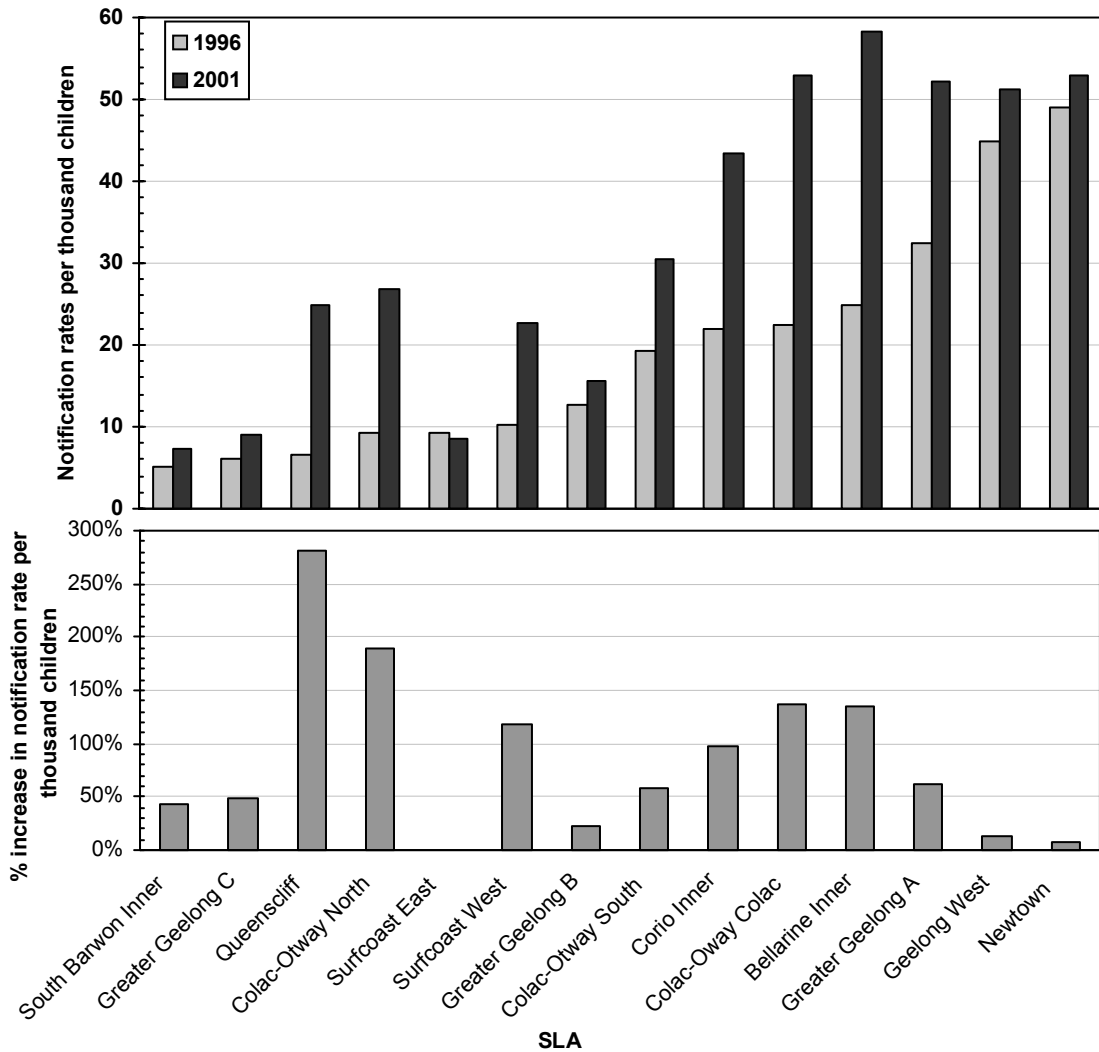


Figure 11. Child abuse notification rates per thousand childre by SLA for 1996 and 2001 (*upper panel*), and growth in notification rates over the five-year period (*lower panel*).

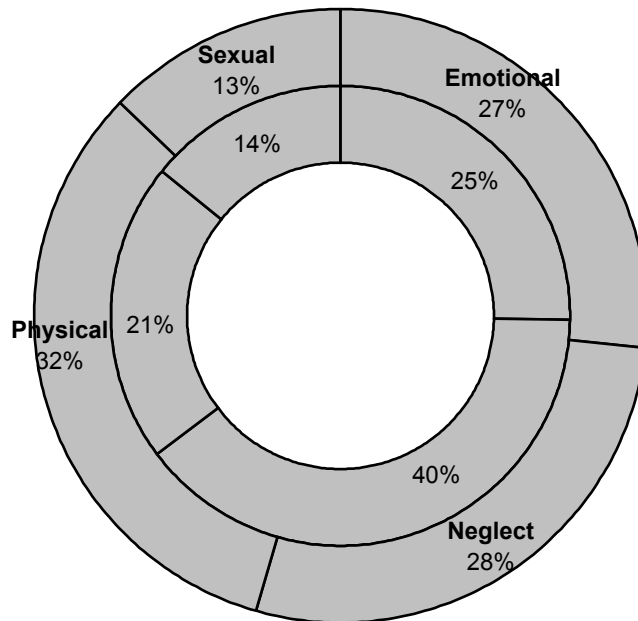
Both the initial levels of abuse notifications and the growth rates over the five years differed across SLAs. In 1996, notification rates ranged from about five notifications per thousand children in South Barwon Inner to about 49 notifications per thousand children in Newtown.

8. For the purpose of this investigation, children were defined as any person being 18 years or younger at the time of the alleged incident. This corresponds with the age range reported in the DHS notification data.

Changes in notification rates (see lower panel of Figure 11) varied from a slight decrease in Surf Coast East to a near quadrupling in Queenscliff and near tripling of notification rates in Colac-Otway North. Other large increases were also observed in Surf Coast West, Colac-Otway Colac, Bellarine Inner and Corio Inner.

Patterns of Abuse

The analysis examined the four broad categories of abuse: emotional, neglect, physical and sexual. Over the 1996-2001 period, physical abuse and neglect categories were the two most commonly notified, with neglect accounting for about two in every five notifications in 1996, but falling to about 28% in 2001. Against this, notifications of physical abuse increased from about one-in-five in 1996 to one-in-three notifications in 2001 (see Figure 12).



T

Figure 12. Notification rates for four broad types of abuse comparing relative frequencies for 1996 vs 2001.

Five SLAs had a growth rate in physical abuse notifications rates in excess of 100% (i.e. an effective doubling): Corio Inner (222%), Newtown (188%), Bellarine Inner (177%), Colac-Otway Colac (164%), and Geelong A (137%). Against this, Geelong West experienced a lower increase in notification rates.

Much of the 70% increase in all notifications⁹ came from alleged incidents of physical abuse. Over the five-year period, physical abuse notifications increased by 164%. This contrasted with an increase of 83% for emotional abuse, 52% for sexual abuse and 23% for neglect.

Notification rates varied by the child’s age and therefore, changes in notifications by age category were examined. Figure 13 shows that there were much larger increases in the numbers of notifications between 1996-2001 for children in the age range from 5-9 years (91% up to 159%). Other age groups although experienced increases in numbers of notifications had much smaller increases (81% to 28%).

Clearly these increases will be associated with changing numbers of children in each age category over the five-year period. However, it is worth noting that only four SLAs had

⁹ Notifications per thousand children.

increases in the numbers of children in the 5-9 year age group: Bellarine Inner, Corio Inner, Greater Geelong A and South Barwon Inner.

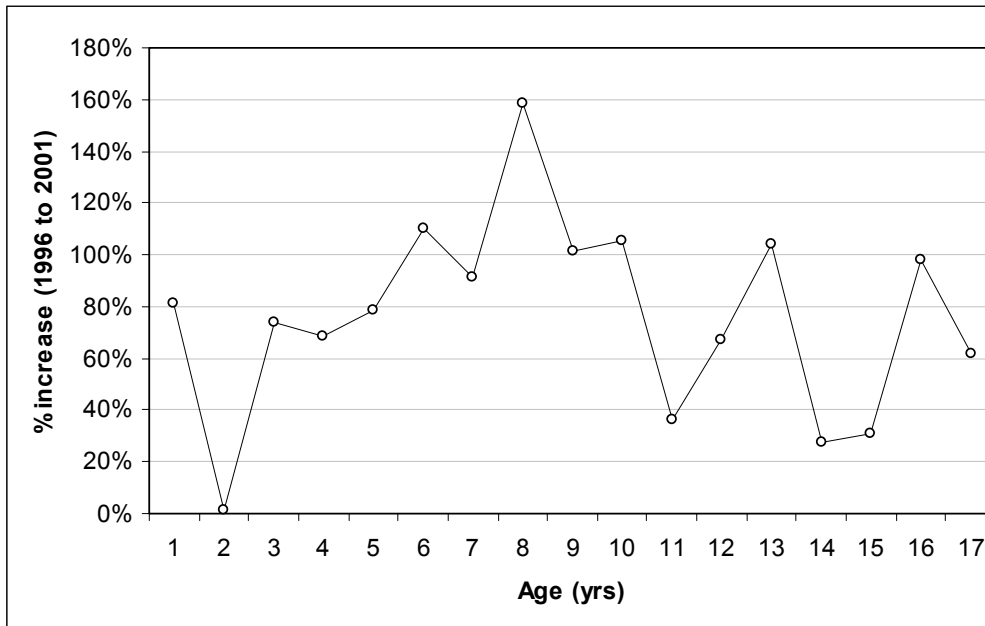


Figure 13. Increase in number of notifications by age of child .

Section 5. Summary and Conclusions

The current study identified a number of quite strong associations between changes in socio economic factors and notification rates over the period 1996-2001 for the Barwon South West Region. The key findings related to demographic changes and changes in the labour force.

It was noted above that population growth rates were positively associated with the proportion of children in SLAs. Several SLAs however, had disproportionately low growth rates even negative growth rates given their percentage of children (eg Corio Inner, Colac-Otway North, Newtown). These SLAs were among those with either high notification rates and/or showed very large increases in their notification rates over the period.

The Examination of changes in labour force statistics identified a group of SLAs that had high unemployment rates, low participation rates and/or shifts from full time employment to part-time employment (Colac-Otway Colac, Greater Geelong B, Queenscliff, Bellarine Inner, Corio Inner and Geelong West). Once again these SLAs experienced above average to large increases in notification rates.

The project also identified a number of other associations between socio economic changes and notification rates. Relatively large increases in the proportions of single parent families, relative decreases in incomes particularly for single parent families, large increases in rental housing, and a falling behind in SLA's education level were all associated with high notification rates and/or large increases in notification rates.

Conclusions

Vinson (1999) and Vinson & Baldry (2000) have presented analysis of child abuse focused not only at the level of families but also at the level of communities. They discuss the ways in which 'disadvantaged' communities (low income, low education, high unemployment rate) can become a factor in themselves, leading to higher child abuse rates. Vinson (1999) also reviews compelling evidence for the operation of family level factors (mental health status, maternal education level, low birth weight).

Findings of this study are consistent with both the community level and family level interpretations offered by Vinson et al. For example, evidence that relatively low income is associated with high abuse rates could be understood as operating either through individual families (low income, higher stress) or through the community (feelings of marginalisation both social and economic absorbed by community members).

The current data do not allow for the discrimination between community level and family level interpretations. In arguing for the roles that communities play in child abuse, Vinson et al was able to draw upon studies for which community level data was available but in conjunction with family level data allowing the relative contributions of each level to be determined. The ABS data describes broad characteristics of large communities (the average size of the SLAs examined in this study was well over 15,000 people). Further work should refine the unit of analysis at least down to 'social clusters'¹⁰ as well as attempting to identify characteristics of individual families.

¹⁰ Vinson (1999) operationalised a 'cluster' as encompassing a 200 square meter area.

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Basic Community Profile

Barwon – Division

West Barwon– Sub division

Colac-Otway North (210151754), Colac-Otway South (210151755), Colac-Otway Colac (21015751)

East Barwon– Sub division

Greater Geelong (C) Part B (210102757), Queenscliff (210106080), SurfCoast East (210106493), SurfCoast West (210106495)

City of Greater Geelong Part A– Sub division

Bellarine Inner (210052751), Corio Inner (210052752), Geelong (210052753), Geelong West (210052754), Newtown (210052755), South Barwon Inner (210052756)

Australian Bureau of Statistics Census Data 2001

Basic Community Profile (Catalog No. 2001.0)

Barwon – Division

West Barwon – Sub division

Colac-Otway North (210151754), Colac-Otway South (210151755), Colac-Otway Colac (21015751)

East Barwon– Sub division

Greater Geelong (C) Part B (210102757), Queenscliff (210106080), SurfCoast East (210106493), SurfCoast West (210106495)

City of Greater Geelong Part A– Sub division

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Appendices

1. Income
2. Concordance Table Postcode x Suburb x SLA
3. Raw Data

Appendix 1: Income

The 2001 Census data describing family income levels was categorised differently from the 1996 income data. Therefore in order to make comparisons between the two series, both the 1996 and the 2001 data were recategorised by combining categories that individually described unique income ranges. The resulting classification scheme offered direct comparisons on all of the reported income categories, but at the cost of a smaller number of broader income categories.

Table 1. Comparison of 1996 and 2001 census income categories, showing combined categories used for reporting in this report.

Census data income categories		Report income categories
1996	2001	
Negative/Nil income	Negative/Nil income	Neg/Nil
\$1-\$119 \$120-\$299	\$1-\$199 \$200-\$299	\$1-299
\$300-\$499	\$300-\$399 \$400-\$499	\$300-499
\$500-\$699	\$500-\$599 \$600-\$699	\$500-699
\$700-\$999	\$700-\$799 \$800-\$999	\$700-999
\$1,000-\$1,499	\$1,000-\$1,199 \$1,200-\$1,499	\$1000-1499
\$1,500-\$1,999	\$1,500-\$1,999	\$1500-1999
\$2,000 or more	\$2,000 or more	\$2000+
Partial income stated All incomes not stated	Partial income stated (a) All incomes not stated (b)	Other

Nevertheless, there were eight income categories upon which income was classified (nine if the 'Other' category is included). Because the categories were ordinal in nature, it was possible to compute a median income level. Calculation of medians also simplified interpretation of the data; not only were there the 14 SLA categories, but also income data was presented for four different family types. A single median value for each of the 54 combined categories made comparisons much easier. However, the reduction in the number of income categories also reduced the utility of the commonly reported median category. Broader categories meant that quite large underlying differences could exist between categories, but not be reflected by differences in the median category. Therefore, an interpolated median was also calculated. The interpolated median where within the median

category, the actual 50th percentile would lie. It is subject to the assumption that within the median category, the observed scores are distributed uniformly. However, this assumption is not unrealistic, and therefore, at least for the purpose of attempting to index finer differences than would be available using only median categories, it provided a useful strategy.

Appendices 2: Concordance Table Post Code × Suburb × SLA

Postcode	Suburb	SLA
3212	Lara Lara Lake	Corio Inner
3214	Corio Norlane Norlane West North Shore	
3215	Geelong North	
3221	Lovely Banks	
3215	Bell Park Bell Post Hill Hamlyn Heights	Geelong West
3218	Geelong West Herne Hill Manifold	
3216	Belmont Highton Wandana Heights	Newtown
3216	Grovedale Marshall Mount Duneed	South Barwon Inner
3221	Waurm Ponds Fyansford	
3219	Breakwater Newcomb Whittington	Bellarine Inner
3221	Moolap	
3224	Leopold	
3215	Drumcondra	Greater Geelong A
3219	Geelong East	
3220	Geelong Geelong South	

Postcode	Suburb	SLA
3211	Little River	Greater Geelong C
3221	Anakie	
3221	Wye River	Colac-Otway South
3233	Apollo Bay	
3236	Forrest	
3237	Beech Forrest	
3238	Lavers Hill	
3243	Gereangamete	
3221	Bellarine Wallington	Greater Geelong B
3222	Clifton Springs Drysdale	
3223	Indented Heads Portarlinton St Leonards	
3226	Ocean Grove	
3227	Barwon Heads Connewarre	
3225	Point Lonsdale Queenscliff	Queenscliff
3228	Jan Juc Torquay	SurfCoast East
3216	Freshwater Creek	SurfCoast West
3230	Anglesea Point Roadknight	
3231	Aireys Inlet	
3232	Lorne	
3235	Deans Marsh	
3240	Moriac Mount Moriac	
3241	Bambra Winchelsea	
3250	Colac	Colac-Otway Colac

Postcode	Suburb	SLA
3242	Birregurra	Colac-Otway North
3249	Alvie	
	Barongarook	
	Elliminyt	
	Irrewarra	
	Kawarren	
	Nalangli	
	Swan Marsh	
	Warrion Yeo	
3251	Beac Eurack Weering	
3254	Balintore Cororooke	
3322	Cressy	