



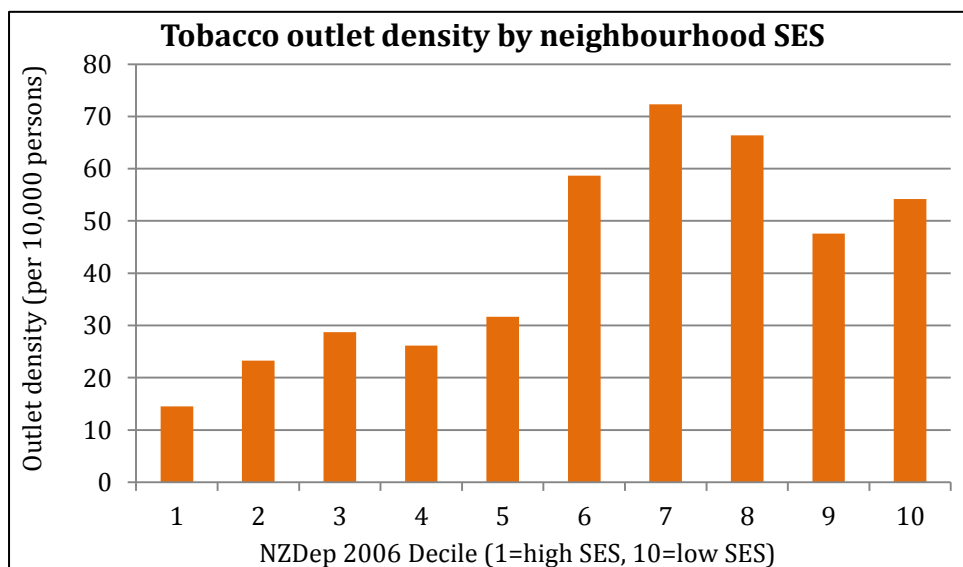
Environmental Health Indicators for New Zealand

Indicator: Retail tobacco outlets and neighbourhood smoking behaviour, 2006

Background

Access to tobacco products in convenience stores and supermarkets has been placed firmly in the spotlight of the New Zealand tobacco debate in recent years. Retail outlets have provided tobacco companies with an advertising venue for promoting tobacco products and encouraging initiation, maintenance or reuptake of smoking⁽¹⁾. The effect of access to retail outlets selling tobacco on initiation and consumption among adolescents is difficult to quantify in light of informal social supplies of cigarettes, particularly in this age group. There is, however, evidence that the majority of underage New Zealand smokers have purchased tobacco products from retail outlets despite the illegality of such sales^(2,3).

In New Zealand, age-restrictions and advertising bans have been in place since the mid-late 1990s, and again in 2012 legislation was passed to remove cigarette displays from the view of customers⁽⁴⁾. Commercial retailers of tobacco products are not required to hold a license, as is the case for alcohol vendors. Because of this, it is difficult to monitor and restrict the number or density of stores in the community. International literature suggests that tobacco outlets are more likely to be concentrated in low socio-economic neighbourhoods and near schools⁽⁵⁾. Previous New Zealand research found that convenience stores, the most common source of tobacco products among adolescents⁽³⁾, were clustered in socio-economically deprived areas⁽⁶⁾.



Variations in tobacco outlet density by neighbourhood deprivation

There is evidence of socio-economic variation in the density of tobacco outlets within the neighbourhoods of New Zealand's three largest cities (Auckland, Wellington and Christchurch). Density is defined as the number of outlets per 10,000 people within 800m (approximately 10 walking minutes^(5,6)) of the population weighted centroid from each census area unit (CAU). Socio-economic status, measured by the 2006 New Zealand Deprivation Index (NZDep) was related to retail tobacco outlet density. More deprived neighbourhoods had increased outlets per head of population with the highest outlet densities found in deciles 6-8 (Figure 1).

Figure 1: Neighbourhood tobacco outlet density by area deprivation, 2006



Neighbourhood tobacco outlet density and adult smoking behaviour

Neighbourhoods with a more dense provision of retail tobacco outlets around them also had higher rates of 'regular smokers' in the population aged 20 plus (Figure 2). The lowest age-specific rate of regular smokers was found in neighbourhoods with the lowest outlet density (1619 per 10,000) and the highest rate in the 4th quintile of density (1894 per 10,000). Males had higher rates of reported regular smoking than females within all quintiles of outlet density.

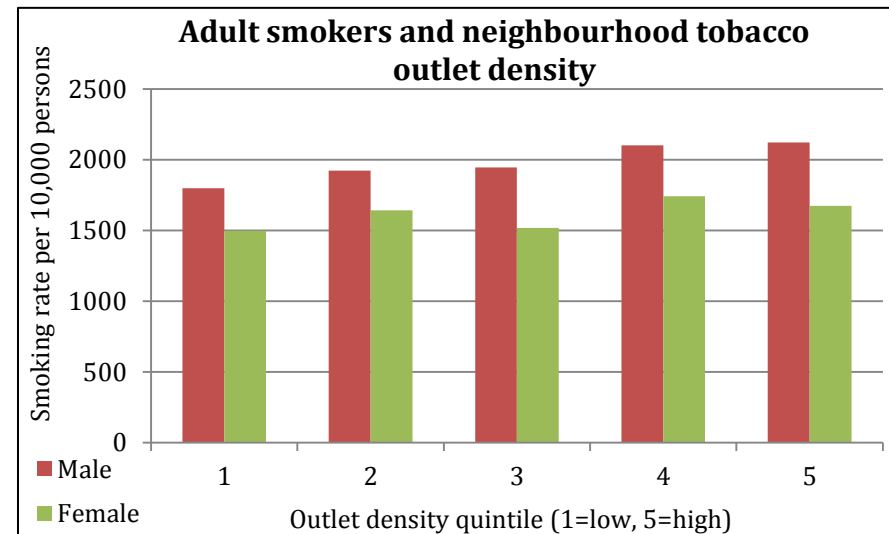


Figure 2: Rates of regular smoking among adults (aged 20+) by density of tobacco outlets, 2006

Neighbourhood tobacco outlet density and adolescent smoking behaviour

The relationship between age-specific rates of adolescent (15-19 years) regular smokers and neighbourhood outlet density showed a similar trend to adult rates (Figure 3). As in the previous figure rates of regular smokers rose as outlet density increased. In contrast to adult smoking behaviour it was adolescent females and not males who had higher rates of regular smoking across all quintiles of neighbourhood outlet density.

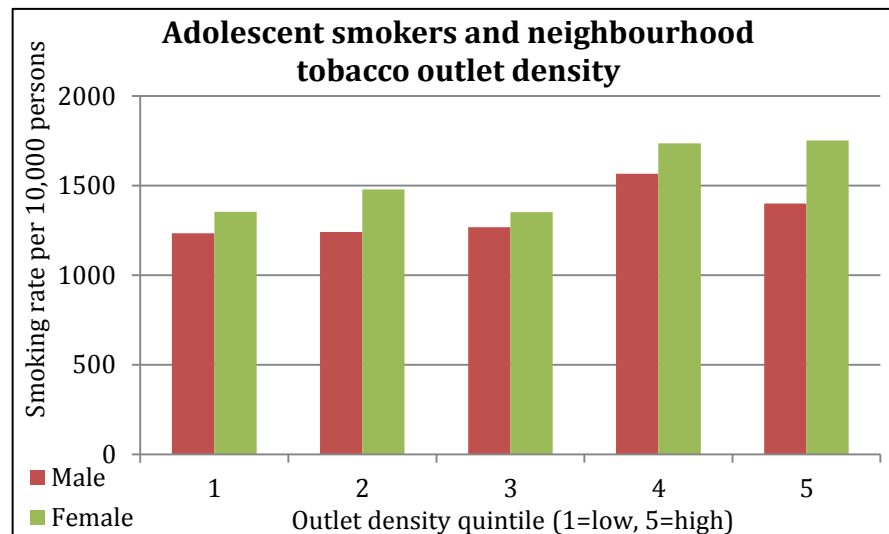


Figure 3: Rates of regular smoking among adolescents (aged 15-19) by density of tobacco outlets, 2006

Tobacco outlet density at a neighbourhood level is likely to work in tandem with existing social causes of smoking initiation and continuation. Increasing the visibility and access to tobacco products can serve to promote pro-smoking behaviours among already at risk communities and adolescents in particular.



Geographic variation in tobacco outlets

The location of tobacco outlets in urban zoned neighbourhoods within the Auckland and Wellington Territorial Local Authorities (TLA) and Christchurch City (see notes) can be seen in Figures 4-6 relative to neighbourhood socio-economic status.

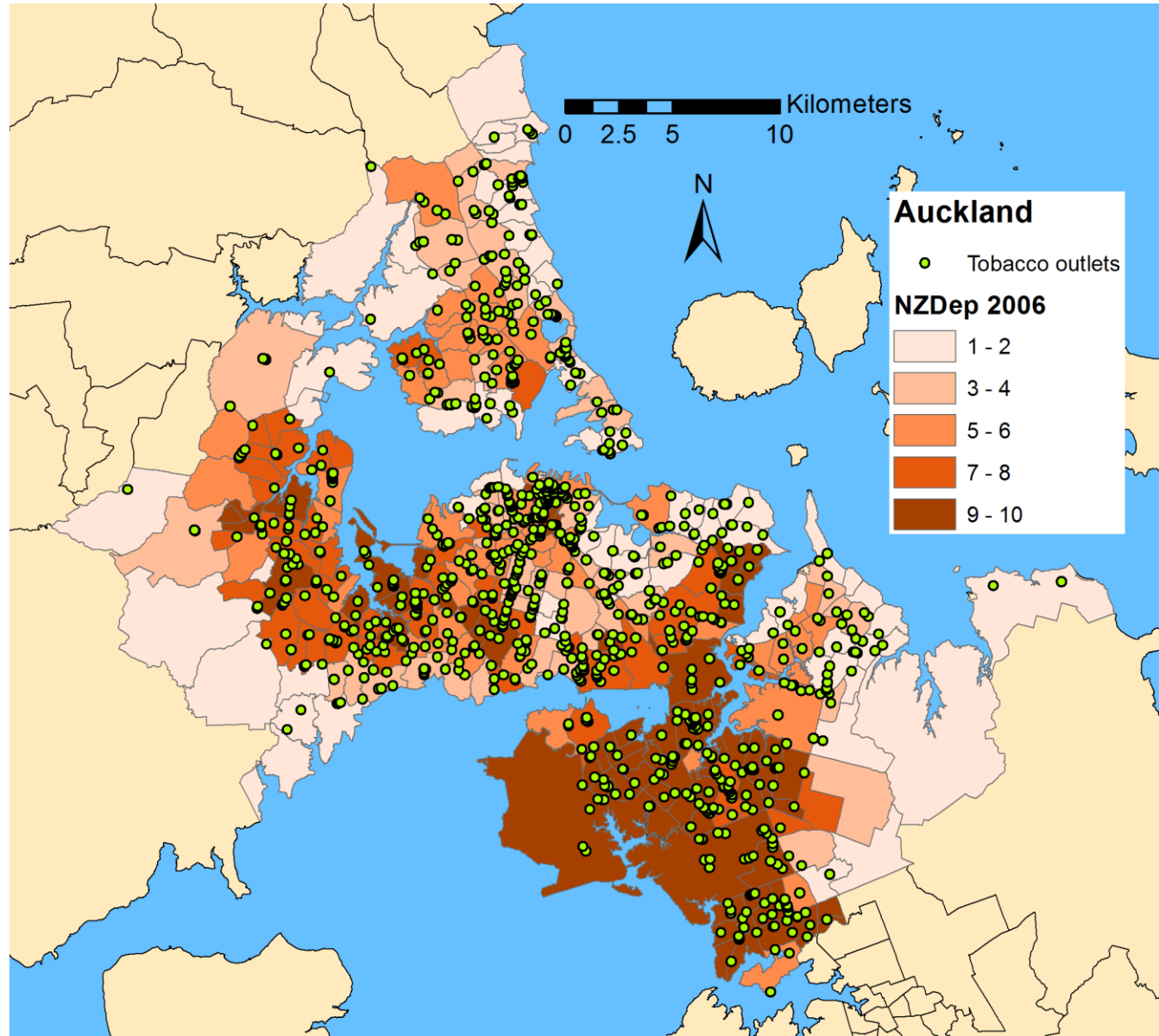


Figure 4: Neighbourhood deprivation and tobacco outlet locations in the Auckland TLA 2006

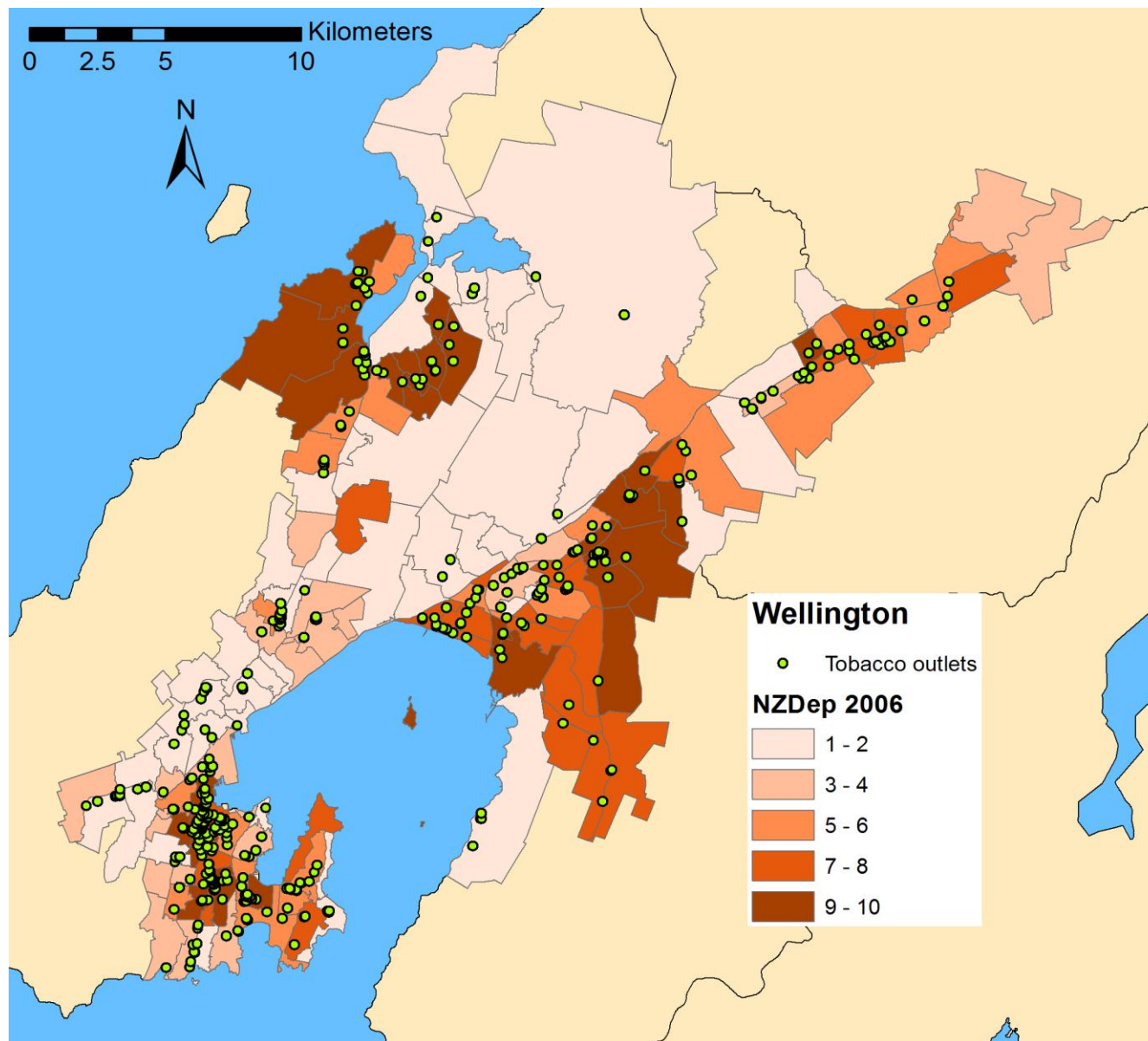


Figure 5: Neighbourhood deprivation and tobacco outlet locations in the Wellington TLA, 2006

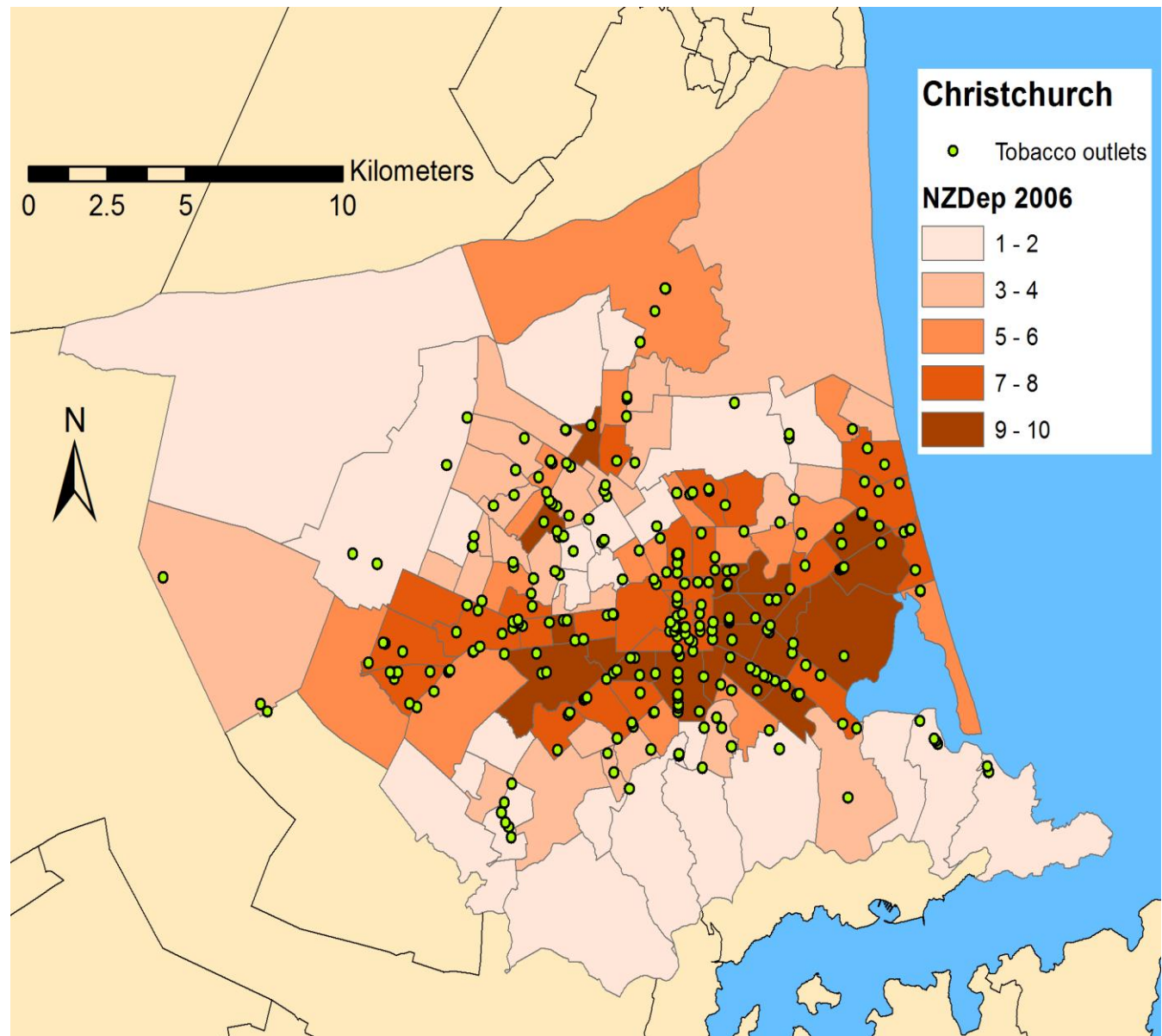


Figure 6: Neighbourhood deprivation and tobacco outlet locations in Christchurch city, 2006



Notes

- Cartography: CB, GeoHealth Laboratory, University of Canterbury.
- 'Tobacco Outlets' are all registered convenience stores (including dairies and service stations) and supermarkets in the cities of interest as at 2006 sourced from their respective territorial authorities.
- Area level-smoking data has been sourced from the 2006 NZ Census for all individuals aged 15+. Smoking rates are age and sex specific rates based on published population figures by CAU sourced from the 2006 NZ Census.
- The three cities of interest include only neighbourhoods with an Urban zoning classification. Further the Auckland region contains smaller authorities from the 2006 Census: North Shore, Waitakere, Auckland City and Manukau. The Wellington region is made up of Porirua, Upper Hutt, Lower Hutt and Wellington City. Christchurch city is the urban area which excludes Banks Peninsula.

References

1. Lovato, CY, Hsu, HC, Hadd, V, & Nykiforuk, CI (2007). Tobacco Point-of-Purchase Marketing in School Neighbourhoods and School Smoking Prevalence: A Descriptive Study. *Canadian Journal of Public Health*, 98(4), 265-270.
2. Ministry of Health (2007). *New Zealand Tobacco Use Survey 2006*. Wellington.
3. Ministry of Health (2009). *Tobacco Trends 2008: A brief update of tobacco use in New Zealand*. Wellington.
4. Smoke-free Environments Act, Ministry of Health, 108 Cong. Rec.(1990).
5. Henriksen, L, Feighery, EC, Schleicher, NC, Cowling, DW, Kline, RS, & Fortmann, SP (2008). Is adolescent smoking related to the density and proximity of tobacco outlets and retail cigarette advertising near schools? *Preventative Medicine*, 47, 210-214.
6. Pearce, J, Hiscock, R, Blakely, T, & Witten, K (2008). The contextual effects of neighbourhood access to supermarkets and convenience stores on individual fruit and vegetable consumption. *Journal of Epidemiology and Community Health*, 62(3), 198-201.