

**What are the economic and travel
implications of pedestrianising a roadway
in Takapuna's shopping precinct**

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List of Publications from Thesis

Publications:

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Wooller, L.A., Badland H.M. & Schofield, G.M. (2010). *Pedestrianisation: Are we reading from the same page? Perspectives from key stakeholders in*

Takapuna, Auckland. (Submitted on 16 March 2010 to the Social Policy Journal of New Zealand).

Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the qualification of any other degree or diploma of a university or other institution of higher learning, except where due acknowledgment is made in the acknowledgments.

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Note to the Reader

Chapters 3 and 4 represent two papers that have been submitted to a scientific journal for peer-review processes and publication consideration. Chapter contributions from the wider research team are outlined in the introduction chapter. These studies were developed by the research team, with the master's student contributing the majority of the work to each manuscript. All co-authors agreed to the inclusion of these papers as chapter contributions to this thesis. The master's student played a critical role in the research overall by developing the survey and interview tools (drawing some items from the Acland Street Precinct Traders Association and the Public Spaces Public Life (Copenhagen) surveys). Primarily the master's student with the support of two research assistants collected survey data in the Takapuna shopping precinct, and the semi-structured interviews were conducted and transcribed by the master's student. Data analysis was conducted by the master's student with assistance from a statistician.

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The Auckland University of Technology Ethics Committee granted ethical approval for this research on 20 April 2009 (reference number (09/80)).

Abstract

Transforming car-oriented streets into functional public spaces and pedestrianised environments have typically been undervalued in conventional transportation, planning, and health literature. Yet urban regeneration initiatives have the potential to create environments that support active transport (e.g., walking and cycling), social interaction, and economic development. There is very little evidence-based research, however, around pedestrianisation. Few international studies have examined the association between pedestrianisation with health, social and economic outcomes from a stakeholder perspective, and there was a dearth of evidence in the New Zealand context. Limited knowledge also existed regarding the similarities and differences in attitudes toward pedestrianisation for key stakeholders, and how this impacted on the urban planning process.

As such, the aims of this thesis were to determine: 1) who the users were, how they travelled, and how much money they spent in the Takapuna shopping precinct; 2) how the spending habits and travel behaviours of adult shoppers may be influenced by pedestrianisation in Takapuna's shopping precinct; and 3) the shopper, retailer, and local government attitudes and behaviours toward pedestrianisation in Takapuna's shopping precinct. A comprehensive literature review formed the theoretical framework for the following two research chapters (Study 1 and 2), where data was gathered from face-to-face surveys and semi-structured interviews using adults drawn from the Takapuna shopping precinct.

In Study 1, a total of 325 shoppers and 62 retailers participated in a cross-sectional survey between May and June 2009. The majority of shoppers accessed the shopping precinct by motorised transport (65.8%). The main finding of this study is although median spend per trip was similar for shoppers across all transport modes (\$20.00 per trip), those who actively transported to the shopping precinct visited the area more frequently than shoppers who travelled by automobile (median 12 versus 6 trips per month, respectively; p -value = 0.032). This resulted in shoppers using active transport modes spending more money in total than shoppers who travelled to the precinct by motorised transport. Shoppers reported a more negative perception of the shopping precinct when compared with retailers' perceptions. Retailers' perceptions of shopper mode of transport to the area, perceptions of traffic flow, and pedestrian access were similar to those reported by shoppers. Subsequent changes to the urban environment that support the increased use of active transport modes may enhance economic development through increased purchasing frequency and provide public health benefits through greater accumulation of physical activity.

Study 2 investigated the perceived benefits of pedestrianising the shopping precinct in Takapuna, Auckland with key stakeholders. Semi-structured interviews were conducted with nine stakeholders drawn from three groups: shoppers, retailers, and local government. Shoppers and retailers perceived pedestrianisation schemes as a way of improving aesthetics, connectivity and accessibility, safety, public transport infrastructure, and walking and cycling levels within the area. Retailers were

concerned about the impact of short-term construction on retail revenue. Local government respondents realised the potential of pedestrianising the area to improve existing infrastructure and to become more economically competitive with other nearby retail options. All stakeholders recognised the importance and benefit of securing collaborative input into urban regeneration schemes, and identified that the initiatives must be considered within a long-term cohesive strategic framework.

This research adds to the growing body of urban regeneration research by identifying associations with physical activity and economic outcomes, and substantially contributes to the knowledge base within the New Zealand context. The evidence presented in this thesis supports that changes to the urban environment that support pedestrianisation in shopping precincts will likely provide long-term benefits, namely greater economic spend within the area and opportunities to accumulate physical activity.

Chapter One: Introduction

It is estimated that insufficient physical activity accumulation causes two million deaths worldwide annually [1], and the incidence of chronic diseases related to inactive lifestyles, such as heart disease, cancer, and type II diabetes, is increasing in many industrialised countries [2]. This has led to a rapid expansion of research and policy development to understand how neighbourhood and built environment variables are associated with physical activity engagement [3, 4]. Streets have been identified as places to facilitate physical activity engagement [5, 6], and an emerging body of evidence links domain-specific physical activity engagement, such as transport-related and leisure-time, with specific features of the built environment. As such, national [7] and international [8] urban design agencies are encouraging policy makers to develop community infrastructure that support walking and cycling.

Research has shown that ecological models have the potential to affect change in the community, whilst being sustainable and viable [9]. Ecological models are characterised by changes across multiple levels, which operate from an interrelated perspective incorporating social, psychological and environmental variables [9, 10]. The different levels of variables often incorporated into ecological models include intrapersonal (biological and psychological), interpersonal/cultural, organisation, physical environment (built and natural), and policy (laws, policies and codes) [11]. Recent research in the urban design and health fields has attempted to better understand the relationships between built environment and physical activity using ecological models [11, 12]. An example of the ecological

model characteristics underpinning a pedestrianisation intervention as part of urban regeneration scheme would be to provide safe, attractive and convenient places to encourage physical activity and social interaction, driven by educational and motivational programmes, with the support of associated community organisations (recreation groups) to aid change in social norms and culture. The health-environment-economy model also identifies interconnecting links between health, social, environmental, and economic wellbeing, with a focus on two overarching principles, being equity and sustainability [9]. There is substantial opportunity to use this model as part of an ecological framework to inform policy and planning at local government level to create sustainable environments that maximise the benefits for all users [9]. The health-environment-economy model is particularly useful in integrating health professionals and key government agencies to closely coordinate and integrate a more sustained strategic approach to the policy schema.

As such the foundation of this thesis is established on a model that hypothesises that the economy is interrelated with health and the environment. These three factors will be briefly discussed in the thesis introduction, and expanded more fully in the literature review.

Urban design influences

Internationally many cities have revitalised public spaces and reworked street function. This current renaissance of cities has been in response to deteriorating economic and social factors [13, 14]. For cities to be viable and sustainable urban design characteristics need to support enhanced health, social,

environmental, and economic variables [15, 16]. To date, introduction of the automobile into cities has seen the integrity of the pedestrian network undermined [17], and segregated land use [18]. This in some measure has been a factor for generating urban sprawl [19], reducing social interaction [20], and the aesthetic quality [21] of the neighbourhood environment.

Although the built environment and physical activity schema provides opportunities for planners and researchers to create healthier and more sustainable communities, a more comprehensive understanding is required with regard to the effect changes in the built environment can generate. To date, built environment and physical activity research has found that residential density, land use mix, and street connectivity are important predictors of travel behaviour and walkability [22, 23]. A recent study conducted by Frank & Levine [22, 24] found that proximity of residential and commercial uses was a function of residential density and land use mix. These variables helped determine how many routine tasks such as shopping, going to work, and visiting friends were within acceptable walking distances [24, 25].

Urban developments that promote pedestrianisation will likely provide significant long-term benefits such as higher levels of incidental physical activity accumulation through walking and cycling, and wider health benefits such as a reduction in vehicular congestion and air pollution, thereby resulting in reduced healthcare expenditure. Despite these advantages the likelihood of such changes taking effect is based on the limited knowledge of urban design policies and the integration of social, health and environmental objectives within traditional urban planning practices.

For the purposes of this research, pedestrianisation is defined as the part or total removal of vehicular traffic from the shopping precinct and surrounding streets. The definition also includes the addition of paving, seating, and other design enhancement details. Specific categories of vehicle (emergency services, public transport, and delivery) have been granted managed access is included. Pedestrianisation is also set apart from other vehicle free shopping environments such as covered malls.

Economic aspects of urban design

Urban design literature of late has evaluated the economic benefits of quality public spaces. Although studies clearly document the economic benefits achieved by pedestrianisation, few studies have evaluated the economic value urban regeneration can produce. One review by the Commission for Architecture and the Built Environment (**CABE**) in the United Kingdom [26], highlighted the importance of good quality public environments to attract investment and people to well-designed open spaces and commercial precincts. By introducing stakeholder input into the urban regeneration process, costs and benefits from better urban design could be more effectively considered and negotiated. However, a better understanding of the level of economic impact good quality public environments has for shopping precincts is urgently needed, particularly in the New Zealand context. Economic-related urban design literature is primarily limited to complex methodology due to the variations in market conditions and disparities in investment sectors; therefore further exploration is required about how changing the built environment influences physical activity, health and economic outcomes.

Thesis structure

This body of work is presented as progressive studies (presented as a series of chapters) that work in synergy to form a thesis. A literature review is followed by two studies (Study 1: quantitative, Study 2: qualitative) that function to build a comprehensive picture of user attitudes to pedestrianisation and the perceptions of spend, travel modes, and environment characteristics of shopping districts. The final chapter (Chapter 5) summarises key findings and future directions that emerged from this body of research and contextualise these findings. The appendices contain additional information that was exclusive of the main body of work.

As a result of the chosen submission format of this thesis being assembled as a number of papers presented in chapter style, this document is repetitive in parts, with the intention of Chapter 5 being to summarise and contextualise the series of separate but associated research chapters. The prefaces operate to bring together each research study. This research fulfils The Auckland University of Technology Master's guidelines by existing as an examination of the perceptions of pedestrianisation, and exists as an original contribution to this field of study.

Statement of the Problem

The few studies that have investigated pedestrianisation in urban settings have not directly and collectively investigated stakeholders' current characteristics of travel mode, spending patterns, and environmental perceptions within a shopping precinct, and how these variables would likely be affected by pedestrianisation. As such, it is important to develop this evidence base,

particularly in the New Zealand context where there is limited information available.

Accordingly, the aims of this thesis are as follows:

Study Aims

1. To determine who the users are, how they travel, and how much money they spend in the Takapuna shopping precinct.
2. To determine how the spending habits and travel behaviours of adult shopper's may be influenced by pedestrianisation in Takapuna's shopping precinct.
3. To examine the shopper and retailer attitudes and behaviours towards pedestrianisation in Takapuna's shopping precinct.

Significance of the Research

The significance of the research is as follows:

1. To enhance the limited body of evidence with regard to the environmental, health, and economic implications of pedestrianising a shopping precinct.
2. To provide an accurate depiction of shopper and retailer economic spend, travel modes, and environmental aspects within a shopping precinct located in Takapuna, Auckland.
3. To provide best practice recommendations to stakeholders with regard to pedestrianising in a shopping precinct.

Study Delimitations

1. Questionnaire data were only taken during one month in the year (May 2009).
2. Data were collected at one point in time, therefore causality cannot be inferred.
3. The sample used in Study 2 was not likely representative of the study population.
4. Study 2 extensively examined stakeholder perceptions of pedestrianisation. No intervention was conducted during the course of this paper.

Study Limitations

1. The study is regionally-focussed therefore findings may not be transferrable to other settings in New Zealand or internationally.
2. No reliability or validity measures were conducted on the questionnaire.
3. A mismatch of reported spend may have occurred, as shoppers reported the total spend made during a visit to the shopping precinct, whereas the retailer reported an average spend per customer per journey in their shop.
4. Sampling bias may contribute to responses not being representative of all users in the area.

Research Paper Contributions

The academic contributions for the research papers are as follows:

Paper 1: *Comparing perceptions and behaviours of shoppers and retailers in Auckland, New Zealand*

Wooller, L.A. (70%), Badland, H.M. (20%), & Schofield, G.M. (10%)

Paper 2: *Pedestrianisation: Are we reading from the same page? Perspectives from key stakeholders*

Wooller, L.A. (75%), Badland, H.M. (20%), & Schofield, G.M. (5%)

Chapter Two: Background Review

This review examines and summarises existing literature focussed on urban regeneration and the link with public health and economic variables, as well as identifying many of the multifaceted issues surrounding the implementation of a pedestrianisation scheme.

The history of urbanisation

The term 'urban design' first coined in the 1950's has evolved from a predominantly aesthetic concern with building form, to becoming primarily focussed with the quality of public life, encompassing both the physical built environment and sociocultural features, and the creation of places for people to use and enjoy [27]. The development of urban spaces evolved from the Greek market place 'the Agora' [17], where these spaces functioned as places of assembly, and facilities related to governance and commerce. During this period most people resided in towns where the urban spaces were located centrally as infrastructure to travel long distances was limited. Accordingly these spaces were meeting places where important events were staged: coronations, processions, feasts and festivals, town meetings and executions. The early Greek city also served as a market place for the exchange of goods and services, and existed as a thoroughfare as well as an end-point destination. Most movement was conducted on foot; people were subsequently able to walk, meet, talk and trade simultaneously in the same public spaces [28].

Until the industrial revolution, urban development was limited in a number of fundamental ways, resulting in the built environment being modestly scaled; travelling speeds were delimited to horse and cart and the availability of construction materials and building methods restricted the height that buildings could be built [27]. During the industrial revolution, the steam train was invented and this extended the distances people could easily travel. As well, train travel facilitated faster speeds (on average an increase of travel speed from 5 km/h to 15 km/h). Walking or bicycling trip distances also shifted from the city centre to tram stops or rail station nodes [29], and hence bigger cities were able to be built. Subsequently, these cities had higher residential densities along well-defined passageways in urban settlements (nodes around rail stations and tramlines) [29].

The post-war era resulted in increased accessibility to private automobiles and greater disposable income [27]. As a result, suburban populations grew exponentially in many industrialised countries [30]. Urban expansion into suburbia brought many changes, including increased commuter distances [31], alienation of segments in society [32, 33] through increased levels of crime [34, 35], and environmental degradation [32, 36]. Although suburban sprawl is currently still increasing [37, 38] there is now a renewed focus by local government agencies to restructure neighbourhoods following new urbanism principles and reduce urban sprawl.

Currently, compact high-density developments are commonplace in many Asian cities and other densely populated places in the world. Kim [39] reported that in 2000 the population density in: Seoul was 16,356 residents/km²; Tokyo 13,092 residents/km², and New York 9,719 residents/km². By comparison Auckland has a

population density of 14.9 residents/km² [40]. Grant [41] noted that problems associated with higher residential density (such as increased noise and air pollution, traffic volumes, lack of privacy and open spaces) undermined the quality of life in many Asian cities. Accordingly, urban design guidelines within these countries focus on green space provision, reducing air pollution exposure, and encouraging participation in the urban environment.

There is further capacity for growth in population density within the New Zealand context. Strategies to support this are to provide more intensive housing close to town centres and transport, and to introduce mixed land use policies [42]. Implementation of these strategies has the ability to improve health-related outcomes by encouraging walking and cycling, reduce household spending on transport, decrease pedestrian injuries, and allow parking and transportation infrastructure to be more cost effective [7]. Central and local government authorities are actively pursuing these densification strategies.

Urban Theory and Policy

In urban planning literature, two main forms of urban design theory exist, new urbanism and modernism. New urbanism focuses on traditional architecture and building patterns that facilitate walking and cycling, and modernism is concerned with the use of materials and the geometric form of buildings. Each of these is discussed below.

New Urbanism

The new urbanism movement derives its theory from the planning profession, and has come to the fore in response to environments being dominated by the automobile and examples of poor urban design. New urbanism models include promotion of traditional neighbourhood design, transit-oriented communities, urban village concepts, and smart growth principles. Common elements of these models include: provision of mixed land use, compact form, walkable environments, public transport availability, attractive public realm, quality urban design, and narrow street networks [41]. These environments are being integrated into the United States, Canada, Australia, and New Zealand planning guidelines, and in some cases are supplanting conventional zoning policies [41].

New Zealand's approach to urban development has been documented in the New Zealand Urban Design Protocol [43]. The Protocol launched in 2005 by the Ministry of the Environment is a voluntary commitment to specific urban design initiatives by signatory organisations, which include central and local government, the property sector, design professionals, professional institutes and other groups. It supports and builds on a range of government policies and strategies for improving urban environments that encompass economic growth and innovation, transport, housing, regional development, social development, health, disability, and culture heritage [44] and is largely based on new urbanism principles.

The overarching goal of the New Zealand Urban Design Protocol is to improve the quality of the urban environment in a national context. Some examples are to assist cities to create healthier public open spaces (parks, recreational reserves), facilitate inclusive places (squares, pedestrian areas), create a strong

identity and sense of place, and support well-governed places that have a shared vision and sense of direction. The seven essential design qualities identified in the Protocol include context, character, choice, connections, creativity, custodianship, and collaboration. These guidelines are also supported by the Australian Council for New Urbanism (ACNU) [45] and Ecologically Sustainable Design (ESD) [46].

Modernism

Modernism in architecture and planning emerged at the end of the nineteenth century as a response to improved living and working conditions of industrial cities. A leading practitioner in modernism was Swiss architecture and planner Charles-Édouard Jeanneret-Gris (Le Corbusier), whose iconic trademark *ville verte* – a vision of towers in a park became the hallmark of modernist architecture.

Modernist architects and designers believed that new technology rendered old styles of building obsolete. This led to a dramatic acceleration in the pace and the physical scale and cycle of building demolition and renewal. Comprehensive redevelopment offered the prospect of higher quality environments and more efficient transport networks. As a result, historic street patterns and traditional notions of urban space were not promoted. Under modernism large blocks simplified the land-use pattern, removing the spaces that accommodated economically marginal but socially desirable uses and activities of high quality public spaces [47]. To date, a number of New Modernist stand-alone projects have been completed, and examples include the Guggenheim Museum in Bilbao (Frank Gehry) and the Jewish Museum in Berlin (Daniel Libeskind) [27].

The Built Environment and Health

Early 20th century public health agencies traditionally used the built environment to tackle specific health issues such as sanitation, workplace safety, fire codes, and communicable diseases [48], and more recently, cardiovascular disease, obesity [49, 50], physical activity, and social capital [51]. Chronic conditions are now a serious public health concern; it is estimated that non-communicable diseases account for 60% of all deaths and 47% of the global burden of disease internationally [1]. These figures are likely to increase to 73% and 60% respectively by 2020 [1], due in part to the environmental factors that promote sedentary lifestyles [48]. For example, in New Zealand 51.8% of people do not meet the National Physical Activity Guideline of at least 30 minutes of moderate intensity physical activity on most, if not all days of the week [52].

Consistently, higher numbers of walking trips have been related to living in more walkable neighbourhoods in comparison to low walkable areas [12, 53]. Walkable communities' are characterised by mixed land use, provision of transit and accommodation of the pedestrian and cyclist [47]. As a viable alternative to conventional low-density, auto-dependent suburban development, walkable communities focus on providing safe, attractive and accessible pedestrian-oriented environments. The Physical Activity in Localities and Community Environments **(PLACE)** project conducted in Australia demonstrated that participants who reported higher levels of mixed land use, dwelling density, street connectivity and net retail area resided in more walkable neighbourhoods, and these respondents reported higher levels of physical activity when compared with those who lived in less walkable communities [54].

Several recent studies have focussed on the relationship between the built environment and the choice of travel mode (e.g., driving a car, taking a bus, or walking) [55, 56]. Walking for utilitarian purposes has been consistently found to be more prevalent in dense, mixed-use neighbourhoods when compared with lower density, exclusively residential neighbourhoods. In an Australian study, researchers found that certain neighbourhood attributes (i.e., street connectivity, proximity to retail and commercial destinations) were associated with residents' walking for transport, however no significant associations existed between environmental factors and walking for recreation [57]. Furthermore, improving the accessibility to specific destinations can assist in promoting an active lifestyle, by promoting walking as the main mode of transport [58].

To further support these relationships, a three-year study investigated the relationship between urban sprawl, health outcomes and health-related behaviours. Residents of more compact places reported more leisure time walking and lower body mass than residents in more sprawling counties [55]. Leisure time walking behaviour was the only physical activity variable examined in this study, yet other studies have linked urban sprawl to transport-related physical activity [12, 59]. Car use has also directly been linked to obesity, with time spent in cars showing a 6% obesity risk increase for each additional hour travelled [60]. In China, 84% of adults do not own motorised transportation, yet the odds of being obese were 80% higher for men in households who owned a motorised vehicle compared with those who did not own a vehicle [41]. Accordingly, car reliance potentially has severe health consequences at the population-level.

Theoretical associations between health behaviours and urban form

To date, much of the physical activity and urban design research has focussed on population health promotion initiatives to encourage physical activity and social interaction [61]. Ecological models underpin many of these initiatives and these theories are in a good position to address inequalities, by addressing the wider determinants of health by tackling the social, economic, and environmental influences. Moreover, public health, transport, and urban planning professionals are now recognising the potential for ecological models to integrate and coordinate policies and interventions to ensure the best outcomes [9]. For example, Thomson, Atkinson, Pettigrew & Kearns [62] detailed a strong link between urban renewal programmes and the impact on health and socioeconomic status. The study showed that of the nineteen policies and evaluations that reported impacts on health or socioeconomic status, sixteen showed overall improvements after urban regeneration investment [62]. Yet, theoretical models are generally not incorporated formally into urban regeneration projects, such as pedestrianisation, and evidence remains scarce. Evaluations of these initiatives have rarely assessed impacts on health or social inequalities, and there are weaknesses in the economic evaluations. A better understanding of the impact pedestrianisation has on health, social, and economic outcomes that can be used to inform public through planning and policy-making processes is urgently required. To the author's knowledge no literature exists that evaluates pedestrianised streets in this manner within the New Zealand context, and limited evidence exists internationally.

Urban Form and Travel Behaviour

The urban form of many industrialised nations has changed dramatically with the increased availability of private automobiles post-World War II. These changes have altered the town centre landscape; spaces that were previously designated as pedestrian only spaces in many European and American cities have been altered to allow automobile thoroughfare and parking [13, 17, 28, 63].

Through the exercise of modern town planning and design principles, land uses have become segregated into zones and travel distances for all trip purposes has increased substantially [64].

This is evident in many American and Australasian cities [65]. Although European cities have been transformed in less dramatic ways, many have undergone major road building schemes [66]. In New Zealand an extensive roading system exists with a state highway network of 10,894 kilometres of major roads and motorways which provides links to 82,000 kilometres of local roads managed by territorial authorities [67]. Accordingly, driver and passenger travel accounts for 80% of all time spent travelling in New Zealand [68] , 47% of trips of less than five kilometres were made by automobile [69], yet the World Health Organization promotes walking and cycling as practicable for travelling short journeys [70]. In New Zealand the rates of vehicle ownership are 690 cars per 1000 population, third in the world with the USA atop with 780 vehicles recorded for every 1000 population [68]. This has substantial negative health [5] and economic [53] outcomes. It has now been recognised that a dramatic and immediate shift in regulatory policy and travel behaviour change is needed [71].

There is strong evidence that the urban environment affects the transport-mode choices of both adults and children [5, 72]. Automobile transportation made necessary by urban sprawl has important implications for health: people are less active, motor vehicle injuries increase, and mental health and social capital are negatively affected [36]. In the higher residential density, mixed land use parts of cities, which would normally facilitate higher levels of walking and non-motorised transport, active transport is becoming unattractive due to the lack of pedestrian infrastructure, higher levels of traffic noise and pollution, and injury risk [27-29, 73].

There is considerable evidence that mixed land use minimises travel distances, allowing people to make more trips by foot or bicycle than by automobile [27, 73-78]. The viability of public transport may also be improved: a single bus or train stop can serve several destinations, which encourages people to use the service more frequently, thereby reducing the need to use automobiles [36].

Studies show that commute distance directly impacts on the ability to walk or bicycle to work or school [60, 79]. In a study conducted by Harten & Olds [80], when the school setting was located one kilometre or less away from home, 46.5% of journeys were made actively (walking, cycling and other forms of non-motorised transport). At 4.5 kilometres, no child walked or cycled to school [80]. Badland, Schofield & Schluter [81] found that 97% of respondents identified that they could use active transport to access their occupation for distances one kilometre or less; however, less than half (46%) of this population walked or cycled to work at this distance. These figures reduced to 68% perceiving, and 18% actually active commuting at distances between two and five kilometres. Distance also has the capacity to influence the number of trip chains made in a journey (trip chaining -

sequence of trips bound by stops within a singular journey) [82]. In a New Zealand study, Sullivan and O'Fallon [83] found that 78% of respondents total length of trip chains with five or more stops were ten kilometres or more long. In contrast, a smaller number of respondents (7%) total length of trip chains five or more stops were less than five kilometres in total length.

Pedestrianised Streets

The implementation of pedestrianised streets has been associated with the reclamation of high quality public spaces for pedestrians and bicyclists, and the improvement of the urban environment as a place to live [17, 27, 63, 84-87]. Many pedestrianised streets are located along a central corridor; usually a few linear blocks along a main shopping street and serve the purpose as a place for people to meet and are given the highest priority. Public open spaces and pedestrian-oriented streets also allow pedestrians access to effective public transportation options. Examples of transit-pedestrian linkages such as light-rail; underground rail, parking and other forms of public transit such as buses and taxis have merit and provide opportunities to facilitate the effective movement of pedestrian traffic. Studies have shown that a coordinated transit system promoting the separation and linkage of different transport modes are most likely to affect the volumes of pedestrian traffic to an area [13, 17, 27, 85-88].

Providing effective transit systems is an important component in providing access to pedestrian-oriented spaces. It may be possible to attract users to public open spaces or destinations by creating additional pedestrian-oriented streets and areas, thus reducing the need for heavy volumes of public transport, thereby

providing opportunities for overall physical activity accumulation and social interaction [6, 56, 72]. Incorporating urban design features, such as building details, pavement texture, lighting, public art, street trees, and street furniture, into future initiatives may be helpful in creating attractive public open spaces with facilities that encourage pedestrian shoppers [6, 13, 89]. Traffic calming measures such as rumble strips, pedestrian refuges, and road markings and narrowing have also shown to reduce the risk of vehicle crashes with pedestrians [90] and improve pedestrian safety [91].

Diversifying the street environment through pedestrianisation and land uses may be logical ways to increase the level of shopper activity. Measures such as replacing shops selling duplicate items with more diverse businesses may provide opportunistic occurrences for increasing pedestrian activity, and shops with nightclubs and theatres may help promote evening activity and enhance safety. For example, in Australia a pedestrian street with a mixture of leisure use businesses (cinemas, health clubs and catering), combined with shops, residential, office and civic facilities had a higher average pedestrian count (1764 pedestrians per hour) than a vehicular street with limited pedestrian access which served a mainly commercial, office and transportation function (516 pedestrians per hour) [92].

Copenhagen was one of the first cities in the world to improve conditions for pedestrians by introducing promenades and pedestrianisation in 1962 [13]. Numerous observational and longitudinal studies were conducted examining patterns of pedestrian flow and vehicle travel, public transport sustainability, social interaction, and user perceptions of city centre functionality in Copenhagen [13, 28, 63]. Findings showed that pedestrian numbers showed a marginal decline in

weekdays, but weekend foot traffic increased markedly by 78% from 86,700 (1995) to 154,000 (2005) [13]. Public support for more pedestrian-only streets also increased from 58% (1995) to 65% (2005).

As a result of these studies incremental and ongoing developments of Copenhagen and neighbouring cities have seen dramatic improvements in pedestrian infrastructure to achieve greater balance between city vitality, functionality, and transport. Largely because of these findings, many other cities have recognised the advantages to improvements in pedestrian and bicycle systems, and the construction of quality public spaces could bring [13, 75, 86, 88, 93-95]. Corresponding urban policy strategies are now commonly found in cities in North and South America, Asia, Australia and in New Zealand.

Wellington and Auckland City have introduced the concept in the form of shared spaces, presenting pedestrians, cyclists, motorcycles and vehicles with an integrated use of public space [96, 97]. Measures include amendments to local council bylaws, with the removal of curbs, signage and signals to help promote pedestrian safety, reduced vehicle speeds, and enhanced pedestrian activity and economic vitality. Documented evaluations of the economic, environmental and health impacts of the shared spaces concept within New Zealand has yet to be implemented.

Economic Perspective

Studies have demonstrated that economic, environmental, and social aspects are influenced by good urban design principles [7, 26, 98], yet there is limited quantitative analysis on the economic value of urban design improvements

(such as pedestrianisation). Despite this lack of data, CABI supports that good urban design can contribute to enhanced economic, social and environmental values, and improve the quality of life for residents. Similarly, the Ministry for the Environment in New Zealand [7] identified that investment in well-designed urban projects significantly benefitted the community by creating focal points for interaction, enterprise and innovation, economic viability as well as creating environments conducive to physical activity. Conversely, poor design, or 'business as usual' was likely to have significant adverse environmental, social, and economic effects [7].

Urban design developers, planners and designers have in the last two decades moved towards more mixed-use development, attractive street-based retailing, flexible master plans and managed town centre shopping environments, as a way to promote economic growth [17, 63, 88, 93, 94, 99-102]. To support this relationship, walking to a shopping precinct was seen as an important factor for local shoppers in Australia, with 50% of shoppers walking to the shopping precinct. Furthermore, 58% of expenditure was walked into the centre, with a further 16% expenditure being derived from cycling and public transport [103]. In a United States study, nearly two-thirds (65%) of the retailers indicated that newly introduced traffic calming measures (decreased automobile speeds and the introduction of bicycle lanes) had a positive impact on retail sales [104].

Investors and local government also view urban design improvement schemes (e.g., pedestrianisation) as an opportunity to secure potential investment that provides prospective long-term income streams and/or capital growth, good quality covenants, above market average incomes, and the potential to open up

new market prospects [98]. To date, quantitative and qualitative assessments have evaluated the levels of property investment and values (including rent levels) [7, 105, 106], pedestrian count data, and vacancy rates [107]. An improvement in street design and quality added an average of 5.2% to residential prices, and an average of 4.9% to retail rents in London [26]. These results played a significant role in the justification of further regional investment in urban design.

Despite the substantial level of investment in improving urban spaces within town centres, little research is available to quantify the level of impact that well-planned and managed urban spaces have on the vitality and viability of town centres. In a survey conducted by the Department of the Environment [105], United Kingdom local authorities indicated that the 285 responding authorities had implemented major urban space enhancing schemes in 438 towns across the country since 1985. The majority of schemes identified (73%) were considered to be successful by the local authority. However, only 28% of authorities had undertaken any form of formal evaluation or measurement of the success of these interventions [105]. Of those who had undertaken an evaluation, little evidence was collected to quantify the economic benefits.

Pedestrianisation may have a broader economic benefit impact. These include considerable long-term benefits such as reducing healthcare costs by accumulating higher levels of incidental physical activity, limiting air pollution exposure, as well as promoting best practices in improving the living environment, providing more energy-efficient transport modes, and reducing traffic congestion by improving freight travel times and road user journey time reliability. A study conducted by the New Zealand Transport Agency found that the total annual

benefits (consumer savings, welfare benefits, and macro-economic benefits) resulting from the implemented recommendations and solutions to reduce traffic congestion nationally would deliver savings of \$5 billion dollars per annum by 2028 [108].

In the New Zealand context

A significant amount of the research on the impacts of urban design is drawn from Europe, United Kingdom and the United States, and little has been done within the New Zealand context. New Zealand urban areas have a number of similar characteristics to many European cities (Wellington, Dunedin) and American or Australian cities (Auckland), although many aspects of the regions are also unique. Moreover, the research suggests that many urban design features can be location-specific, and vary from one cultural context to another. In particular, caution should be taken when drawing conclusions from large, higher density overseas cities and applying them to smaller and much less densely populated cities, such as those evident in New Zealand. Takapuna shopping precinct is briefly discussed below with relation to pedestrianisation.

Takapuna shopping precinct

Takapuna is a central, coastal suburb of North Shore City (Auckland region); located in the northern North Island of New Zealand, at the beginning of a south-east-facing peninsula forming the northern side of the Waitemata Harbour. North Shore City with a population of approximately 205,605 people [109], is 4th in

size out of 73 districts in New Zealand. Opening up the shopping precinct of Takapuna to the beachfront and Hauraki Gulf has been suggested since the 1980's via the closure of Hurstmere Road to vehicular traffic [110]. The North Shore City Council has been pursuing these recommendations for some time; Takapuna urban design documents such as the Takapuna Centre Vision 2001 [111] and the Takapuna Strategic Review 2008 [95] clearly identify specific locale urban form characteristics and associated improvements that could be made.

The purpose of the strategic review conducted in 2008 was to focus on the Auckland Regional Council's strategy to accommodate future residential and business growth in and around existing centres [95]. Yet, very little progress has been made to implement these changes, and it has been recognised that in order for these recommendations to be realised influential stakeholders need to be engaged in the process and work collaboratively within a cohesive framework. Takapuna has a number of stakeholders involved in providing input into the urban design planning for the area. These include: the North Shore City Council, Brookfield Multiplex and Perron Development (commercial property managers), retailers, shoppers, Takapuna Business Association, and the local community.

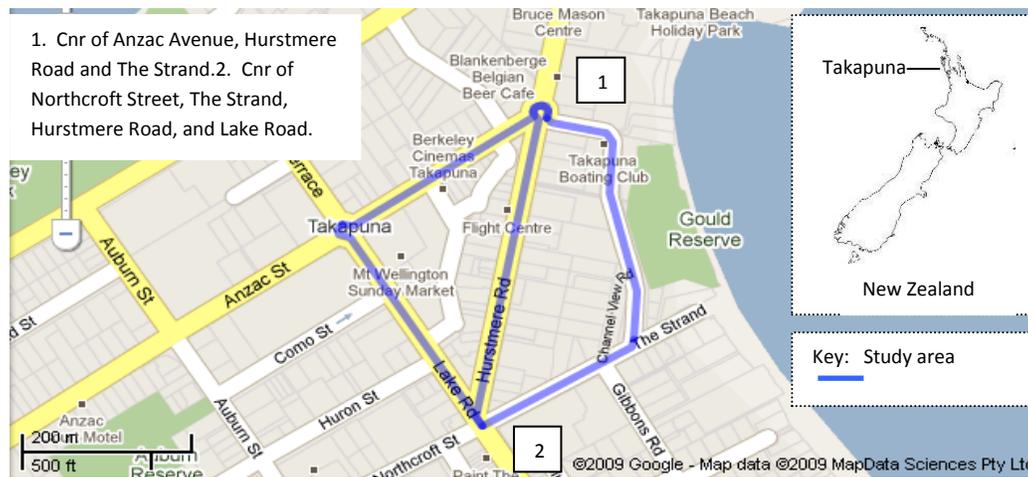


Figure 1: Takapuna study area

Takapuna shopping precinct presently has structures and buildings segregated by strict zoning laws designed for functionality (the importance of light, air, hygiene, aspect, prospect, and movement). The gross floor area space in business zone 3 within the study area (Figure 1) is 49,359 m², which is owned predominantly by two commercial property managers Brookfield Multiplex and Perron Development. The retail mix of the study area is comprised of 185 shops of which 33% are general merchandise, 21% fashion, 19.5% office, 18% food and beverage, with the remaining 8.5% community, vacant and other shops (Figure 1).

The majority of the shops were constructed in the 1970's, and are located within access of beach (< 500 metres). Westfield Shore City built in the early 1970's is one of the country's oldest shopping malls. Until recently Takapuna centre has been the dominant retail centre in North Shore City [95]. New retail competing areas such as Westfield's retail complex in Albany (circa 2007), has surpassed Takapuna with a retail floor space of 90,000 m² [112]. Furthermore, research has indicated that 75% of the available spend for Takapuna goes to other

retail centres within the North Shore, Newmarket and Auckland CBD [95]. With the increased competition, Takapuna shopping precinct has to look to provide an enhanced shopping experience to remain competitive in the retail sector in New Zealand. Many benefits, such as improvements in health outcomes, social capital and economic spend will likely come from implementing an urban regeneration project within this shopping precinct.

Conclusion

Both internationally and nationally, stakeholders are beginning to realise the impact and potential health, social and economic gains from an urban regeneration scheme and pedestrianisation of shopping precincts. It is imperative urban planning, public health, and economic analyses are drawn together when designing quality urban environments. From an investment and cost perspective a collaborative and consultative effort is required from all stakeholders to obtain maximum input and mutual benefit. In combination with funding and collaborative inputs, an adequate knowledge base will insure that projects from conception integrate robust methodologies to maximise health, social, and economic viability. Takapuna shopping precinct is in a position through locale specific design, effective policy interventions, and collaborative stakeholder input to improve conditions across multiple areas including support for pedestrian and social activities and business development.

Chapter Three: Comparing Perceptions and Behaviours of Shoppers and Retailers in Auckland, New Zealand

Preface

It was identified in the previous chapter that little was known about attitudes to pedestrianisation and the links with health and economic aspects, particularly within the New Zealand context. Gaining quantitative data in the New Zealand context will help to identify the locale specific value of urban regeneration schemes. The evidence presented in this chapter seeks to understand the relationships between shopper and retailers by investigating associations between shopper behaviours and retailer perceptions of transport mode, spending patterns, and the urban environment within a selected New Zealand shopping precinct (Takapuna, Auckland). Identifying these relationships will help fill a critical knowledge gap by establishing the potential effects of pedestrianisation in this setting.

Introduction

In many countries, urban spaces have changed substantially; from Greek pedestrian-oriented environments located in the city centre to climate controlled enclosed 'big box' mall environments that are positioned in suburban settings [17, 113]. As a result, automobile travel has largely substituted walking and is now the dominant transport mode for accessing shopping precincts within many developed countries [114-116]. For example, within New Zealand, 80% of travel to the shops

is now made using private automobiles [116]. Reliance on automobiles for travelling short journeys leads to negative health outcomes through reductions in physical activity accumulation [117, 118]. However, walking for shopping purposes is based on a variety of factors including: time, modal availability, cost, location of destination, pedestrian and public transport accessibility, and distances between shops, [119-121]; these variables have likely changed over time.

Settings that support higher pedestrian volumes include those with reduced car traffic and air and noise pollution, [56, 72, 82, 122], higher levels of community and social cohesion [123], provision of pedestrian space [124], and adequate pedestrian linkages to essential facilities [125, 126]. In contrast, retailer perceived concerns with pedestrianising streets were that shopper car parking spaces and commercial vehicle access would be reduced [127, 128], resulting in reduced customer numbers and retail sales [129]. On the contrary, evidence disputes the need for car parking availability. Revitalised pedestrian precincts have shown to be an attractive option for retailers, stakeholders, and shoppers [26, 28, 34, 35, 63, 85-87, 94, 123, 124, 130-133].

For example, a UK study identified that shoppers who travelled by car made more single-shop trips than shoppers by foot (22% versus 5%, respectively), and were less likely to visit multiple shops when compared with pedestrian shoppers (23% versus 27%, respectively) [133]. Other research ($n = 420$ adults) identified 42% of people perceived they would spend more money in stores and restaurants situated within a pedestrian supportive shopping environment [124], and an Australian study detailed that shoppers who walked to a shopping precinct contributed 50% of the sales in the area (compared with 26% of sales made by car

drivers) [103]. In the United States rent valuations increased ten-fold as a result of a pedestrian street revitalisation scheme (US\$60-\$70 per sq/ft prior to, and US\$600-\$700 per sq/ft after the revitalisation scheme) [134]. Based on these studies, it is likely that shopping environments that support pedestrian behaviours will provide substantial economic benefits to the retail community.

Although, these associations exist, to the authors' knowledge, these relationships have not been examined simultaneously within the New Zealand context. Accordingly, this descriptive study contributes to the understanding of the relationship between shopper and retailers by investigating associations between shopper behaviours and retailer perceptions of transport mode, spending patterns, and the urban environment in a New Zealand shopping precinct (Takapuna).

Methods and procedures

Setting

Takapuna is a coastal town located in North Shore City, Auckland region, New Zealand (Figure 1). The majority of the shops were constructed in the 1970's, and are located within access of the beach (< 500 metres), albeit disjointedly. Until recently Takapuna centre has been the dominant retail centre in North Shore City, but has undergone an extensive decline over the last five years from the development of larger shopping districts with enclosed malls [95]. In Takapuna most streets have two-way vehicular traffic flow and extensive car parking is available, with options ranging from costed restricted parking (private and council operated) to loading zones and mobility spaces within the shopping precinct. The

main shopping street is Hurstmere Road. A public transport (bus) station is within a 200-metre walk from Hurstmere Road (Figure 2).



Figure 2: Takapuna bus station on Lake Road

The retail mix within the study area (Figure 1) is comprised of 185 shops of which 33% are general merchandise, 21% fashion, 20% office, 18% food and beverage, with the remaining 8% of buildings consisting of community, vacant and other shops. Bitumen footpaths are located on both sides of the streets and vary in width depending on the size and width of the building stoops and street furniture present. As a result, pedestrian space is limited to a maximum width of 3 to 4 people walking abreast on the footpaths (Figure 3).



Figure 3: Street view of Hurstmere Road

Participants

A convenience cross-sectional sample of participants was recruited from two sites in Hurstmere Road, Takapuna (as indicated on Figure 1). Participants completed the shopper survey over a one-month data collection period (Wednesdays, Fridays and Saturdays between 10am and 2pm). Every fifth adult walking down the street was selected and invited to participate in the study. Inclusion criteria were participants aged 16 years and over and able to speak English. No information is available regarding those who did not participate in the study.

Store managers of each retail shop ($n = 185$) within the study area were invited to participate in the retailer survey by means of door-to-door recruitment. The retailers were sampled once during May 2009. Shops that were vacant ($n=15$),

closed ($n=5$), or for retailers who were unable to participate in the research because of management regulations (e.g., banks) ($n=15$) were excluded from this analysis. The study design was approved by the Auckland University of Technology Ethics Committee. Participants in the shopper survey provided verbal consent, and participants of the retailer survey provided written consent prior to participating in the study (refer Appendix F).

Measures

Shopper and retailer surveys were developed by adapting the Central Copenhagen Pedestrian Survey used by Gehl et al., [63] and the Acland Street Precinct Traders Association survey (Australia) [103]. The surveys used in the present study (refer Appendices D and E) assessed purpose of visit and pattern of visits to the shopping precinct, mode of transport to the site, attitudes towards the shopping precinct, visitor catchment size, and spending characteristics. The shopper and retailer surveys were designed to be comparable. No reliability or validity testing have been conducted with the surveys.

Mode of transport

Shopper survey respondents were asked: 'What was your main mode of transport to Takapuna's town centre today?' Responses were classified into one of the seven categories: 1) public transport, 2) cycle, 3) car, 4) walking, 5) taxi, 6) was dropped off, and 7) other. Retailer respondents were asked: 'What do you perceive is the main mode of transport by shoppers to Takapuna's town centre?' Responses were classified into one of the eight categories: 1) public transport, 2) cycle, 3) car,

4) walking, 5) taxi, 6) dropped off, 7) don't know, and 8) other. Travel modes were further collapsed into three categories: active transport (2, 4), motorised transport (3, 5, and 6) and public transport (1).

Trip frequency

To establish trip frequency patterns, shopper respondents were asked 'How often do you visit Takapuna's town centre?' Options to select from were: 1) daily, 2) three times a week or more, 3) one to two times a week, 4) once a month, 5) less than once a month, 6) don't know, and 7) other. Responses were recoded so that all items are on a scale of 1 to 5 where 1 indicates higher frequency of trips and 5 represents a lower frequency of trips to the shopping area. Items 6 and 7 were coded missing values.

Environmental characteristics

Shopper and retailer respondents rated each of the following environmental characteristics: accessibility of public transport, traffic (automobile) levels, pleasantness of the environment, availability of pedestrian-only areas, level of connectivity, and shop quality in relation to the shopping precinct using a five point Likert scale, where 1 = strongly agree and 5 = strongly disagree. Negative worded questions were reverse coded before combining. After transformations, perceptions of environmental characteristics were collapsed into three categories: traffic and transport (question 1 and question 5), environmental quality (question 2-4), and access availability (question 6-7).

Spend comparisons

The question: 'How much do you spend or intend to spend in Takapuna's town centre today?' was used to determine level of spend for shopper respondents. Retailer respondents were asked 'How much do you perceive is the average spend made per shopper in your shop?' Extreme outliers were removed from the dataset (shopper: \$6,300, \$4,000, \$1430, \$600 and \$500). Shopper respondents were also asked 'Will you be making purchases from more than one shop in Takapuna's town centre today?' Responses were classified into one of three categories: 1) yes, 2) no, and 3) don't know.

Statistical Analysis

Percent means, Pearson's χ^2 test, analysis of variance (ANOVA), and Mann-Whitney *U* tests were used to determine the differences between groups (shoppers and retailers' perceptions of shopper behaviour) with regards to travel mode and trip frequency to the shopping precinct, level of spend and purchases made from multiple shops within the study site, and environmental characteristics of the shopping precinct. Statistical comparisons were made using SPSS v.16 (SPSS, Chicago, IL) and a statistical significance was accepted at $\alpha=0.05$.

Results

A final sample of 325 adults participated in the shopper study (53% women). The majority of the shopper survey respondents were between 36-55 years of age ($n = 123$), came from a North Shore-based suburb ($n = 239$), and did not work

within the Takapuna area ($n = 249$). A small number of the respondents were tourists to the area ($n = 17$). A final sample of 62 retailers from 150 eligible shops participated in the study (response rate = 41.3%), where 86% of retailer respondents were owner/managers of their shop. Although motorised transport was the dominant mode to access the shopping precinct (65.8%), the distribution of shopper travel modality was inaccurately predicted by retailers. Retailers perceived that more shoppers travelled to the shopping precinct by motorised vehicle (67% versus 65.8%, respectively) and active transport (18% versus 16.3%, respectively) modes than by actual shopper travel mode. Retailers underestimated shopper use of public transport to the shopping district (11% versus 16.6%, respectively).

Shoppers daily spend within the shopping precinct was captured and compared with retailers perceptions of shoppers spend. Retailers perceived that shoppers spent more ($\$62 \pm \110) than what shoppers reported spending in the area during a visit ($\$51 \pm \92), but this did not reach statistical significance (p -value = 0.206). Shoppers level of spend, number of purchases made from multiple shops, and trip frequency were compared by travel mode (Table 1). No significant relationships existed between mode of transport and median spend (p -value = 0.541) or purchases made from multiple shops (p -value = 0.586). However, those who actively transported made more trips per month to the shopping precinct than those who travelled by private automobile or public transport (p -value = 0.032).

Table 1: Median spend, and mean, standard deviation of trip frequency, and percentage of purchase made from multiple shops according to mode of transport

Mode	n (%)	Median spend (\$) (Range)	Mean trip frequency (/month)	Purchase from multiple shops
public transport	54 (16.6)	20.00 (220)	6 (27)	51.9%
active transport	53 (16.3)	20.00 (480)	12 (27)	54.7%
motorised transport	218 (67.1)	20.00 (450)	6 (27)	52.8%

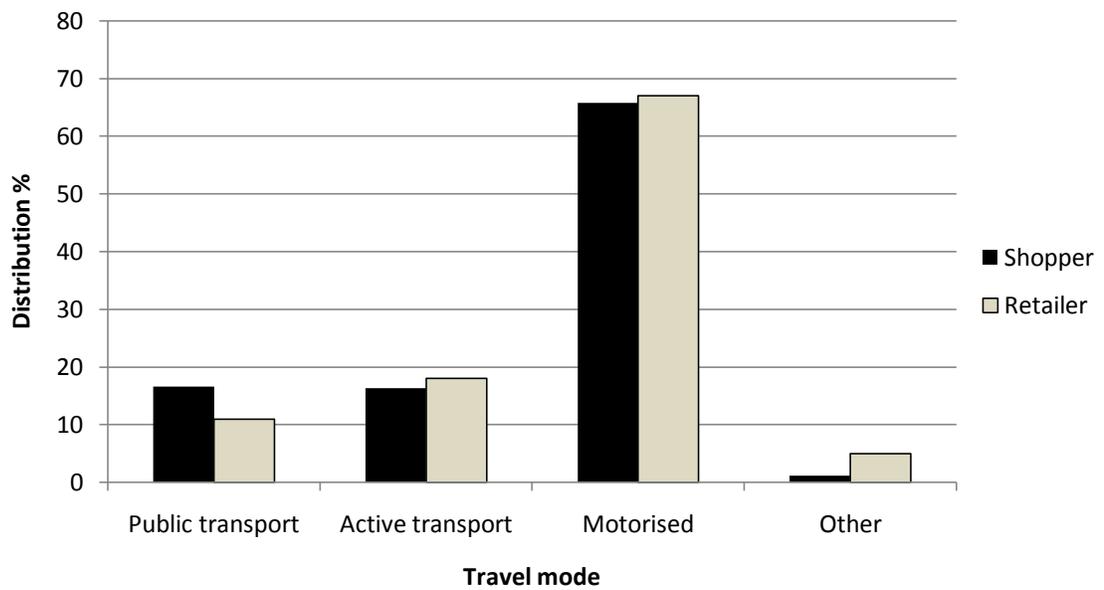


Figure 4: Shopper versus retailer perceived shopper mode of transport

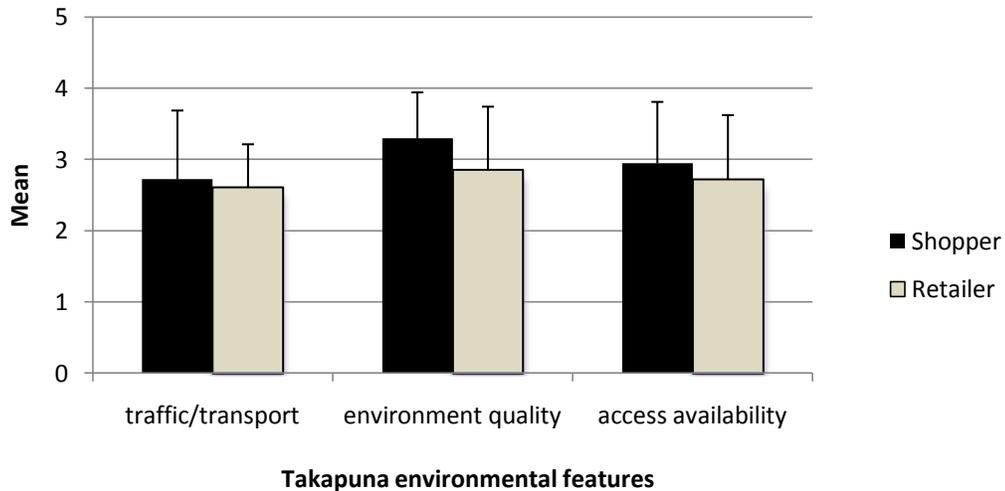


Figure 5: Shopper versus retailer opinion on Takapuna environmental features. A higher statement scores indicated a more negative view of the environment features

Data presented in Figure 5 compared shopper and retailer environmental perceptions of the shopping precinct. No significant differences were shown between shopper and retailer perceptions for traffic/transport (p-value = 0.120) or pedestrian accessibility (p-value = 0.060) within the area. A significant difference existed between the groups for environmental quality (p-value ≤ 0.001) with shoppers reporting more negative perceptions of the built environment quality in the Takapuna shopping precinct.

Discussion

Not surprisingly, the majority of shoppers accessed the area by car. The automobile reliance shown by shoppers in this study was similar to other research that has examined the travel modes for shopping purposes; the NZ Household

Travel Survey – mode share 2004-2008 found that 96% of shoppers utilised the car (66% as a driver, 30% as a passenger) as their main mode of transport for shopping purposes [116]. Relationships between shoppers spend, trip frequency, and shopper purchasing characteristics with mode of transport identified that shoppers utilising active transport accessed the shopping precinct six times more per month than those travelling by motorised transport. In practical terms, although shoppers spent similar amounts per trip, approximately \$80 extra spend per pedestrian shopper was generated in the area each month. The findings of the present study are in line with the Acland Street Survey [103] which noted that 57.2% of annual expenditure was by pedestrian shoppers compared with 26.4% of spend by shoppers travelling by automobile.

Public transport is a necessary component to facilitate pedestrian activity [114, 135-137], and in this study, the retailers underestimated shopper use of this travel mode. Ensuring appropriate public transport infrastructure exists and that car traffic is managed efficiently prior to the pedestrianisation of shopping areas are options that may improve shopper accessibility to the area. For example, Emery [138] reported on a retail-led urban renewal project in the UK. Key concepts of this retro-fit project were extensive public transport links within the central city and the creation of pedestrian accessible public open spaces. Visitor numbers and retail letting opportunities increased, and the number of high-end shops improved after the redeveloping the shopping precinct.

Internationally, much literature exists documenting the relationship between quality urban pedestrian environments and local economic activity [103, 139-141]. Our level of spend data (\$NZ) were similar when compared with Acland Street,

Melbourne (\$AU53.53 for Acland Street shoppers) [103], yet it is likely that pedestrian improvements to increase the amount of foot traffic through the shopping precinct will further increase the economic activity within Takapuna town centre by increasing the frequency of purchases in the area. Within Europe, a positive relationship between the quality of the urban environment and the associated economic and social capital has been established by Gehl et al., [122], in which the renewal of public spaces saw substantial increases in: pedestrian traffic volumes, the number of people spending time in the area, shopper spend, and property values. In our study, shoppers, when compared to retailers, reported more negative opinions on environmental characteristics (traffic and transport, environmental quality, and access availability) within the shopping precinct. It is likely that improving the environmental quality, including incorporating infrastructure to encourage people to linger in the space, will help stimulate economic activity and enhance the social capital within the area. Furthermore, encouraging people to accumulate small bouts of physical activity, such as walking to and between shops, can provide health benefits. A growing body of literature exists demonstrating that replacing car trips with walking or cycling for short journeys in a pedestrian supportive environment can increase levels of physical activity [142]. Increasing the walkability of a neighbourhood through pedestrian supporting schemes provides many benefits to the individual and the community, many of which include accessibility, consumer transport cost savings, public cost savings, more effective use of land, enhanced community liveability, improved health outcomes, and economic development [53].

Despite this research adding to the evidence base, there are several limitations of this study. Firstly, the shopper and retailer data were cross-sectional; therefore changes over time could not be assessed, and seasonal variations in shopper expenditure, opinions on environmental characteristics and variations in shopper transport modes could not be determined. Secondly, all data were self-report, which may have resulted in bias. Thirdly, the study was regionally-focused; therefore, comparative studies may need to be conducted using more representative samples. Despite these limitations, this research serves to provide an insight with regard to identifying attitudes and implications of pedestrianising a shopping precinct within the New Zealand context.

Conclusions

This paper identified and compared perceptions and behaviours of transport mode, spending patterns, and the urban environment features of shoppers and retailers within Takapuna, New Zealand. Although almost two thirds of shoppers travelled to the shopping area by motorised transport, shoppers travelling by active modes of transport made more trips to the shopping area per month. Major investment in creating environments that support active transport modes will likely facilitate more opportunities for people to engage in physical activity, have a positive impact on the economic activity within the area, and enhance health outcomes and social capital for all users.

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Chapter Four: Pedestrianisation: Are we reading from the same page?

Perspectives from key stakeholders in Takapuna, Auckland

Preface

The research presented in the previous chapter provided quantitative evidence that urban design characteristics were associated with shopper mode of transport, level of spend per trip and environmental perceptions of the shopping precinct. Accordingly, the research presented in this chapter seeks to understand the potential effects of pedestrianisation of the Takapuna shopping precinct. This study builds upon the quantitative evidence by providing a qualitative insight of the attitudes from nine stakeholders across three groups: shoppers, retailers, and local government. Specifically, the perceived benefits of pedestrianising a shopping precinct in Takapuna will have on the aesthetic nature and appeal, economic activity, transportation access, and the level of opportunity users have to enjoy and feel safe in the shopping precinct are examined. Findings from this study will provide recommendations that can be implemented to alleviate stakeholder concerns arising from the urban regeneration process and improve the area to enhance health and economic outcomes.

Introduction

Post World-War II has seen a growing trend in the development of shopping centres in peri-urban settings, as land is less costly to purchase in these areas

than more centralised locations. This is a shift from the traditional European city-style shopping precincts where developments frequently occurred before the wide scale use of automobiles and therefore are often proximal to residential housing and offer high levels of pedestrian infrastructure [132]. Urban regeneration through pedestrianised spaces has shown to increase physical activity levels, reduce car dependency, and improve economic activity at intervention sites [15, 63, 104, 143, 144]. Several studies have assessed the support for the development of pedestrianised shopping spaces, showing positive results [13, 92, 103, 132, 145]. Perceived benefits for shoppers include improved pedestrian links to services, facilities, and public transport infrastructure, development of open spaces for social and recreational use, and enhanced safety through the inclusion of traffic calming infrastructure [15].

Recognition also exists for architects and developers for the need to develop a better understanding of how people use public spaces [146]. Retailers, on the other hand, often perceive pedestrianisation of shopping precincts more negatively. Common concerns include the potential increase in rental expenditure [131, 147] and overcrowding of pedestrian areas [124]. For example, in a recent Bangkok study [131], 50% of the retailers perceived that pedestrianisation of the shopping precinct would not improve the shopping area, and a further 30% of the retailers identified that pedestrianisation of the area would increase rents, reduce shopper patronage, and increase pedestrian crowding.

Shared spaces is gaining acceptance within the urban planning field. A shared space is an area that has been specifically designed to incorporate motor vehicles, pedestrian and other road users within one 'shared' space. Introducing

shared spaces has the potential to improve existing land use mix, pedestrian accessibility, aesthetic appeal, and encourage walking within the designated areas [148]. New Zealand's urban design focus emphasises shared spaces, and the concept is currently being introduced into four streets within Auckland, New Zealand [149]. North Shore's (Auckland, New Zealand) present core planning focus for Takapuna is to introduce localised shared spaces. For example, creating pedestrian priority walkways with appropriate signage and street furniture, providing cycle lanes to improve links to locations around the North Shore, and allocating pedestrian-oriented spaces for improved access to public transportation and the beach [95, 111]. To date, much work has examined the urban form of the Takapuna shopping precinct with this concept in mind [95, 110, 111, 150].

The most recent strategic review of Takapuna focused on the local government's strategy to accommodate future residential and commercial services and to improve the quality of the public space within the area [95]. Key foci included implementing contemporary urban design practices to new buildings and public spaces, adopting practical pedestrian policies to improve accessibility and functionality for all users, utilising technologies to enhance building structure, public spaces and streetscapes, and stimulating private investment opportunities to promote economic growth in the area. These recommendations were largely based on successful pedestrianisation schemes undertaken in European town centres [63].

Although much background work has been done to highlight the benefits a pedestrian or shared space scheme would bring to Takapuna, little progress has been made to implement these changes. The present study, through examining the

attitudes and perceptions stakeholders have on pedestrianisation, can identify valuable opportunities to incorporate collaborative stakeholder input to improve the development and planning process of pedestrian schemes in shopping precincts. Involving stakeholders in the design and implementation process will enhance stakeholder 'buy-in' by having contributed experiences and points of view from the outset ensuring long term support for the urban regeneration process within the area. Accordingly, this qualitative descriptive study seeks to examine the attitudes of three groups of stakeholders (shoppers, retailers, local government) drawn from Takapuna, Auckland on the perceived effects of a conceptual pedestrianisation scheme.

Methodology

Participants

One-to-one semi-structured interviews were conducted with nine stakeholders purposively selected from each of the three following groups: 1) shoppers in Takapuna shopping precinct (S1, S2, S3; $n = 3$); 2) local government (North Shore City Council Urban Design Team and Takapuna Business Association) representatives (G1, G2, G3; $n = 3$); and 3) local retailers (R1, R2, R3; $n = 3$). The lead researcher was the facilitator for each interview. Each interview lasted approximately 30 minutes.

Shopper and retailer participants were recruited during a previous shopper survey conducted in May 2009 in the Takapuna shopping precinct. The local government representatives were identified by the lead researcher and invited to

participate by telephone. All interviews were conducted between June and July 2009. The host institution approved the study design and interview schedule. Participants in the semi-structure interviews provided written consent prior to participating in the study (refer Appendix G).

Setting

Takapuna is a central coastal suburb located in North Shore City, Auckland, New Zealand (Figure 1). The area contains an extensive range of shopping, commercial and entertainment facilities. The majority of retail and commercial buildings in the area were constructed in the 1970's, and are located within close proximity to the beach and a lake (≤ 500 metres), albeit not directly connected. Until recently the Takapuna shopping precinct was the dominant retail centre in North Shore City, but has undergone an extensive decline over the last ten years from the development of several larger enclosed mall developments in peri-urban settings [95]. Within Takapuna, most streets have two-way vehicular traffic flow and extensive car parking; with options ranging from costed restricted parking (private and council operated) to loading zones and mobility spaces within the shopping precinct. The main shopping street in Takapuna is Hurstmere Road. A public transport (bus) station is located within a 200-metre walk from Hurstmere Road (Figure 2).

Measures

A semi-structured interview guide was developed by the research team and used for each of the interviews. The schedule contained 18 questions constructed

under 5 predetermined themes focussed on perceptions of the Takapuna shopping precinct. The questions were modified slightly depending on the stakeholder group the participant came from. Respondents were encouraged to expand their responses where appropriate. The overarching themes were: 1) general perceptions of the Takapuna shopping precinct; 2) attitudes toward pedestrianisation, 3) economic activity in relation to pedestrianisation; 4) travel attitudes and behaviours; and 5) miscellaneous aspects of the Takapuna shopping precinct (e.g., pedestrian safety, public space characteristics). These themes are listed in Table 2.

Data analysis

Full transcripts were generated by the lead researcher from data collected through audio-taped interviews and field notes. Transcriptions were randomly checked against the interviews by the wider research team and were summarised using recursive abstraction to illuminate patterns or concepts arising from the themes.

Concepts and comparisons were identified by electronically searching transcripts for key words (e.g., pedestrianisation, transport infrastructure, economic aspects, safety, pedestrian accessibility) using Microsoft Word 2007 (Microsoft Inc., Redmond, WA). Using the grounded theory approach [151, 152], the themes were systematically examined for different view points, the potential frequency and strength of opinion, and any unconventional opinions.

Table 2: Interview guide questions

Introductory Themes

- What do you like about the current urban and physical environment of Takapuna town centre?
- What do you dislike about the current urban and physical environment of Takapuna town centre?
- What do you like about shopping in Takapuna town centre?
- What do you dislike about shopping in Takapuna town centre?
- What do you like about the current transport infrastructure in Takapuna town centre?
- What do you dislike about the current transport infrastructure in Takapuna town centre?

Pedestrianisation

- How would pedestrianising Hurstmere Road affect pedestrianisation rates in Takapuna's town centre?
- What health impacts (if any) do you think would come from pedestrianising Hurstmere Road?
- How would pedestrianising Hurstmere Road impact on accessibility to Takapuna town centre?
- How would pedestrianising Hurstmere Road directly affect your business? (Retailer only)
- For retailers not located in pedestrianised areas, would you consider moving to Hurstmere Road if it was pedestrianised?
(Retailer only)

Economic aspects

- What financial impact would pedestrianising Hurstmere Road have on your business? (Retailer only)
- How would pedestrianising Hurstmere Road affect the type and/or frequency of purchases made by shoppers?
- What impacts would pedestrianisation have on the retail mix of Takapuna town centre?

Travel

- How would pedestrianising Hurstmere Road affect car parking options or traffic flows in or around Takapuna town centre?
- How would pedestrianising Hurstmere Road affect the public transport accessibility in Takapuna town centre?
- How would pedestrian-only areas provide more opportunities for diversification of transport options or activities?

Miscellaneous aspects

- Do you think pedestrian-only areas provide safe and secure places to be in?
 - Do you think pedestrianisation of spaces provides more opportunities for people to enjoy their surroundings?
 - How do you think the North Shore City rate payers would respond if Hurstmere Road was to become pedestrianised?
-

Results

Results were separated firstly by the five themes, and secondly by stakeholders comments (Tables 2-7). The majority of respondents ($n = 8$) perceived pedestrianisation as an opportunity to provide recreational and social engagement, encourage more leisure businesses (e.g., cafes) and the use of active transport, and improve pedestrian accessibility to public transport and the beach. In addition, the local government respondents recognised that pedestrianisation developments would require a series of practical and well-considered strategies to initiate this process. It was regarded as possible to manipulate the streetscape by developing small areas of pedestrian-only spaces through restricting vehicular traffic in nominated streets and introducing shared space designs (no curb interface, using cobbles on the street surface, and minimising traffic signage) within designated areas. These strategies would also in part improve connectivity with the local beach and nearby retail shops and services (theme 1).

All stakeholders recognised the lack of aesthetic appeal and the need for improved maintenance within the Takapuna shopping precinct (Table 2). It was acknowledged that the close proximity of the area to the beach was an asset, although connections to the beach were disjointed or non-existent. The quality of the shopping theme yielded mixed results, with respondents reporting both excellent (S2, S3, R2) and poor availability of goods and services within the area (S1, R1).

Table 3: Perceptions relating to founding themes of Takapuna

Shoppers

Nothing attracts me to the centre. Not enough shopping variety. It's alright if you have a car but is disjointed and not user friendly for public transport and other forms of transport (walking/cycling). (S1)

No incentive to come to visit the area. Shopping selection is good. Transport network gets me from A to B. Not enough car parking spaces/car parking too expensive. (S2)

North Shore City Council/Takapuna Business Association

The centre has a poor relationship with the beach; streets that have poor connectivity and are not pedestrian friendly (Como, Huron, Northcroft Streets & Byron Ave). The centre has individual store operators that you would not necessarily find in the malls, which gives opportunities for innovation to take place, although the type of shops (retail mix) still needs improvement. Some like shops are not grouped together meaning that distances walked are great, this would deter people from shopping in the area. The centre lacks the depth and range of shops at present; lacks continuity of the shopping experience as many of the shops adjoining Hurstmere Rd are cut off by poor pedestrian connectivity. This creates a situation where shoppers amass either in the mall or the street not both. The current bus station is well positioned and should be visible to the public to encourage patronage. Although more needs to be done to the pedestrian infrastructure to support public transport in the town centre (more pedestrian-only area, residential housing in close proximity); provide better vehicle linkages to support public transport usage; would like to see a central car park supporting pedestrian-only areas. (G1)

Retailers

The centre is close to the beach and is a natural attraction for visitors and locals. The physical environment of the area means that Takapuna is confined to a narrow isthmus with the harbour on one side and the beach on the other. The urban environment has been developed with the car in mind and does not utilise the physical attributes of the area. Shop selection in the area is good. The current urban environment needs upgrading. The buses are located in the centre of the shopping district and the current two-way traffic flow and speed of vehicles through Hurstmere Rd is a problem. (G3)

Public transport infrastructure was considered by most respondents ($n = 8$) to be insufficient for the area. As a result, strong support was seen for transportation infrastructure and pedestrian-only spaces that encourage non-motorised forms of transport (walking and cycling), and this in turn was perceived to positively impact on health outcomes. It was also recognised that pedestrianisation would reduce the likelihood of vehicle-related injuries to pedestrian users, therefore 'heighten' the shopping precinct experience.

Respondents strongly agreed that pedestrianisation would provide supportive environments for social interaction and the opportunity for users to linger and stay longer (Tables 4 and 5).

The economic theme identified mixed perceptions. It was recognised by all groups that hospitality businesses would be attracted to pedestrian-only areas (Table 5), resulting in people spending a longer period of time in the shopping precinct. Yet, one shopper (S2) perceived no positive economic benefits of pedestrianisation due to redevelopment costs incurred, restrictions to vehicle traffic flows and the loss of car parking spaces. Retailers had short-term concerns regarding pedestrianisation; these included reduced revenue opportunities resulting from a decrease in foot traffic caused by limited accessibility to the area, and limited aesthetic appeal (e.g., on-going construction). Despite this, retailer feedback was largely positive about the long-term prospects of pedestrianisation. It was identified that pedestrianisation would likely lead to long-term increases in shopper volumes that would provide opportunities to improve sales and economic activity in the area, and also become more economically competitive with other retail options. North Shore City Council and Takapuna Business Association expressed a desire to see the retail mix of the area improved with a major anchor shop and a larger number of 'high-end' retailers to encourage increased pedestrian volumes and economic vitality for the area. All respondents strongly agreed that the number of vacant or short lease shops operating was a major concern to the viability and retail mix of the shopping precinct.

Table 4: Perceptions relating to pedestrianisation

Shoppers

Pedestrianisation would bring more people into Hurstmere Road for shopping and leisure activities. People would walk more if the pedestrian mall was in place so the advantages speak for themselves. There would be less traffic congestion so people would be able to walk around more freely increasing accessibility to services and shops. (S1)

If pedestrianisation was well advertised it would work well. The scheme would have to discourage vehicle traffic from entering Hurstmere Rd for reasons of pedestrian safety; pedestrianised areas would encourage people to stay and linger longer in the town centre (social interaction). Takapuna needs to introduce shared urban spaces as in Europe (cars and people). Pedestrianisation will work if the adequate parking options are supported, an example of this would be to introduce more 'green' parking options, e.g. parking on all weather green surfaces. (S3)

North Shore City Council/Takapuna Business Association

What I feel would work is to pedestrianise a portion of Hurstmere Rd (Halls Cnr to the Takapuna Bar) and divided into three sections. The first section is the pedestrianised section and two vehicle segments (Hurstmere through to The Strand and/or Hurstmere Rd through to the central car park. No through traffic as such although traffic would travel in opposite directions [\leftarrow \rightarrow]. I would ultimately like to see a series of pedestrianised lanes with no traffic at all through Hurstmere Rd (conflict). Very few health impacts would result from pedestrianisation, although at present shoppers are subjected to car fumes making their shopping experience not so great. I would like to see the promenade developed further in The Strand, with Hurstmere Rd to remain a shopping destination with a reduced level of car traffic. Pedestrianising the entire length of Hurstmere Rd would have major impacts on accessibility to the Takapuna area. The traffic flows evenly between the three routes (Anzac, Hurstmere & The Strand) and the current plan is to give increased pedestrian priority. The real concern here is that if Hurstmere Rd was to be pedestrianised that would give the other route alternatives a 50-50 split forcing more traffic onto The Strand and along the beachfront which is counter-productive. (G2)

Retailers

In the short term it may affect pedestrianisation rates as people get use to the idea of parking and utilising the pedestrian mall; it would increase pedestrianisation rates long term as people enjoy walking through the pedestrian mall without the worry of vehicles (injury). Pedestrianisation would encourage more people out of their cars and into the pedestrian-only areas (walking, cycling, and rollerblading); provided that there is adequate parking facilities accessibility to the centre would not be compromised. Pedestrianisation would benefit this business as it would give people safer access to the shop (crossing streets and intersections); pedestrianisation would also allow people to amble across the road safely, taking away the need for people to alone sort cafes on that side of the street due to the inconvenient nature of having to cross at pedestrian crossings or light patrolled intersections. The business would possibly look at utilising the footpath area, therefore increasing the number of customers that could be served and seated. I am sure that this business would consider moving to this type of retail and urban set-up. (R2)

Table 5: Perceptions relating to economic aspects

Shoppers

Pedestrianisation would bring more people to the area and these people would have a certain expectation of the type of shops that they would prefer to shop in. (S1)

Pedestrianisation would encourage the type of shops that people can sit and stay or linger for longer. (S3)

North Shore City Council/Takapuna Business Association

Would make it safe for families and children; would make the area more of a café outdoor dining experience, creating a more relaxed atmosphere; takes away any concerns about car related injuries to shoppers. (G2)

Retailers

It would bring more customers/tourists to my shop this would bring a positive financial impact for not only this shop but for the whole shopping area. This would have a big affect as more customers would mean more opportunities for increased sales on a long term basis making us more competitive. There would be an increased variety as the empty shops would fill with different types of shops. (R1)

Pedestrianisation would bring more customers to the café for the abovementioned reasons therefore increasing financial takings; on the flip side of the coin the business would see a drop in take-out purchases from people who have travelled to the shop by car. As more customers are able to be seated this creates opportunities for sit down purchases (larger meals). Frequency would not vary too much, although more customers would create more turn over of tables. It would create more sit down cafés/bars and leisure businesses. (R2)

Pedestrianisation would affect our business greatly. Our customers would shop less frequently as access would be impeded due to the direct nature of pedestrianisation. Perhaps pedestrianisation would draw more businesses that are food and beverage oriented to the area. (R3)

Table 6: Perceptions relating to travel

Shoppers

If there was sufficient parking on the peripheries of the town centre then this would greatly accommodate shoppers. Improvements to the ring roads would improve traffic flow. (S1)

North Shore City Council/Takapuna Business Association

Would make it safe for families and children; would make the area more of a café outdoor dining experience, creating a more relaxed atmosphere; takes away any concerns about car related injuries to shoppers. (G2)

Retailers

Pedestrianisation would bring more customers to the café for the abovementioned reasons therefore increasing financial takings; on the flip side of the coin the business would see a drop in take-out purchases from people who have travelled to the shop by car. As more customers are able to be seated this creates opportunities for sit down purchases (larger meals). Frequency would not vary too much, although more customers would create more turn over of tables. It would create more sit down cafés/bars and leisure businesses. (R2)

Pedestrianising the area would affect our business greatly. Our customers would shop less frequently as access would be impeded due to the direct nature of pedestrianisation. Perhaps pedestrianisation would draw more businesses that are food and beverage oriented to the area. (R3)

The miscellaneous topic identified various concepts (Table 7). Firstly, that pedestrianised streets may be unsafe places to be in (especially at night). Proposed solutions to enhance safety were to increase natural surveillance by increasing pedestrian volumes and placing surveillance cameras and security personnel in prominent positions. Secondly, Takapuna may be unable to support the required volume of foot traffic to make the urban regeneration successful because of its low residential population density. Thirdly, pedestrianisation was generally perceived as being beneficial in the long-term for the area and regarded as a practical solution to improve the shopping precinct. Fourthly, it was recognised that ratepayers of North Shore would support the idea and concept of pedestrianisation in some form on Hurstmere Road, Takapuna. Fifthly, developing

the area into a shared space would provide additional opportunities for people to engage in a more pleasant environment (e.g., leisure activities reduced noise and air pollution).

Table 7: Perceptions relating to miscellaneous aspects– pedestrian safety; public space characteristics; and responses as rate payers

Shoppers

Pedestrian-only areas would provide pleasant, relaxing, noise and pollution free places to be in. Happy and proud of the innovative way the council have looked at increasing walking incidences. (S1)

Yes, pedestrian spaces would provide safer places provided they are supported by security personnel and security cameras. - Yes of course, people would enjoy their surroundings if the following was implemented: 1) changing art structures, and 2) more theatrical performances in the area, would provide a better atmosphere. - Consult the people of Takapuna and ask them what they would like. People would generally support the idea of pedestrianisation providing that the parking is supported, a central theme and focus was introduced and the shops were upgraded. (S3)

North Shore City Council/Takapuna Business Association

Pedestrianisation may not necessarily provide safer places to be in, without the high population density these can become isolated places. Pedestrianised spaces that are active usually would provide opportunities for people to enjoy their surroundings, although equally good shopping streets can also provide the same opportunities. I think people would be happy with the concept of pedestrianisation. (G1)

Retailers

Yes pedestrian areas are safe places to be in. Pedestrian areas provide people with opportunities to enjoy their surroundings. I think the rate payers would not mind money's being allocated to pedestrianising Hurstmere Road, providing they can see value for money. At present the cost of rent does not equate to money well spent as there has not been a 'facelift' in this centre for some time. (R1)

I feel that the rate payers would not mind if they can see something positive happening to the area, and that they are receiving value for money; the rate payers would also like to participate and be kept informed about what is going on (time-lines/budgets/and costings). Lack of communication would be a big negative for the long term use of the project. (R2)

Discussion

The interviews highlighted support from all groups for a pedestrianisation or shared spaces scheme in the Takapuna shopping district. However, concerns

emerged with regards to the short- and long-term implementation and viability of such a project. From the five themes investigated, important similarities emerged in attitudes amongst the stakeholders studied here. Transportation infrastructure within the area fails to make provisions for all types of travel modes, particularly with regard to public and active transport. The findings of the present study are similar to those expressed in an earlier strategic document for the area [95], where it was recognised by the North Shore City Council that pedestrian and transport linkages between retail shops, public transport facilities, and the beach needed to be improved. Within Europe, a positive relationship was established by Monheim [132] between pedestrian accessibility, transportation options, and economic activity in pedestrian precincts, in which pedestrian volumes, and economic performance were strengthened, as a result of improved accessibility (public transport) and higher quality retail options locating to pedestrianised streets.

The recognition by the stakeholders of positive health benefits resulting from pedestrianisation was unsurprising. Internationally, an extensive evidence base exists documenting the relationship between pedestrian schemes and the improved walking and cycling conditions [29, 34, 74, 78, 85, 86, 93, 153], and improved walking and cycling infrastructure has been positively linked to physical activity engagement [12]. Local government acknowledgment of the need to provide environments and infrastructure conducive to encouraging physical activity and health is replicated in previous strategic documents [95, 111], and actively supports public consultation with the local community through a community feedback process, to ensure that clear community health and economic goals are being addressed [110, 154].

As a result of pedestrianisation, land use mix within the shopping precinct may potentially change with increases in the number of outdoor café-type establishments and/or high-end retail stores. Securing a major anchor shop and supporting 'high end' retail shops was important for local government stakeholders. This is further supported by Ibrahim and Galven's [155] findings where a major anchor retailer strengthened economic activity and foot traffic within a local shopping district. As such, improving Takapuna's urban environment is likely to be an important factor for encouraging diversity of shops, securing long-term income options (rental income and capital growth), and eliciting high quality covenants that improve the economic performance for the future.

Consistent with Kodukula's [131] findings, it was perceived that construction of pedestrian areas might, in the short-term, hamper potential retail revenue. Although retailer concerns regarding pedestrianisation may be well-founded, concerns of pedestrian accessibility to shops could be reduced by implementing temporary measures to facilitate access to retail stores during any construction work in the area, and promoting these measures to the local community. These measures may include providing alternative pedestrian linkages with services and facilities, supporting active and public transport by creating marked passages, and providing appropriate car parking options on the periphery of the shopping precinct. Care should be taken to implement these strategies along with any pedestrianisation scheme, as gaining 'buy-in' through consultation and communication between retailers and shoppers is imperative to the success of the scheme as different stakeholders are likely to hold differing perceptions and views regarding the built environment.

The respondents supported improvements to pedestrianised environments to help alleviate concerns raised regarding personal safety. It was perceived that environmental and structural enhancements (enhanced natural surveillance from increased pedestrian volumes, prominent surveillance cameras and security personnel) would be better options to what was currently available to improve their perceptions of safety within the pedestrianised area. Wright and Montezuma [14] reported that vibrant pedestrian spaces attracted people to the area creating a 'safety in numbers' effect. Gehl [63] also found that pedestrianisation encouraged people to stay longer and the encouraged people to engage in a more diverse range of social activities that likely extended beyond normal office hours.

Despite this research adding to the evidence base, there were several limitations to this study. Firstly, due to the purposeful sampling strategy used, the stakeholders were likely not representative of all users in the area, resulting in bias. Secondly, the study was regionally-focussed, therefore, these findings may not be transferrable to other settings in New Zealand or internationally. Thirdly, the interviews were only administered at one time point. Longitudinal research is needed to help determine the causal relationship between the potential economic and public health implications of pedestrianisation.

Conclusion

Pedestrianisation through an urban regeneration process is generally well supported by shoppers, retailers, and the local government. A successfully developed pedestrianisation project is likely to improve economic performance, encourage 'high-end' retail options, improve personal security, and enhance health

outcomes. By gaining insight into these relationships suitable urban design modifications can be implemented in response to stakeholder and community input. Alleviating project feasibility and accessibility concerns during construction, in the short-term, would help to ensure a seamless development process.

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Chapter Five: Conclusions

Thesis Conclusions

At the commencement of this thesis, it was identified that understanding the associations between pedestrianisation, public health, and economic variables was an emerging field of research. It was evident that very little research in this area has been conducted in New Zealand. As such, this thesis sought to examine the relationship between the built environment, specifically pedestrianisation, and the collective public health and economic behaviours and perceptions with stakeholders within a New Zealand context.

The review (Chapter 2) was constructed around research drawn from urban planning, public health, and economic literature and framed the content of the thesis. Existing pedestrianisation literature was identified and reviewed to identify gaps in the evidence, while identifying short- and long-term directions for future research and interventions. While reviewing the existing literature it became apparent that limited evidence-based research had been undertaken in New Zealand. This information is critical for informing decisions on urban design and planning of pedestrianisation schemes. To overcome the dearth of urban design research, existing survey tools taken from the Acland Street (Melbourne) and Copenhagen studies were used to examine shopper and retailer attitudes to pedestrianisation (Chapter 3). Combining questions from these two surveys formed a useful backdrop to the presented New Zealand research. Study 1 (Chapter 3) used a quantitative methodology (surveys) to examine shopper and retailer perceptions of shopper spend, travel modes, and environmental characteristics of

the Takapuna shopping precinct. The study revealed those who actively travelled (e.g., cycled and walked) to the shopping precinct visited the area more frequently than shoppers who travelled by automobile (median 12 versus 6 trips per month, respectively). It was also shown that retailers' perceptions of transport availability to the area, perceptions of traffic, and pedestrian access accurately matched the behaviour of the shoppers. To our knowledge, this analysis provided the first New Zealand based evidence of these relationships.

Chapter 4 (Study 2) built on the previous chapter by interviewing key stakeholders about pedestrianisation in the shopping precinct. The study revealed that shoppers and retailers regarded pedestrianisation schemes as a means of improving aesthetic appeal, accessibility and connectivity, public and non-motorised (walking and cycling) transport infrastructure, and safety within the shopping precinct. Local government stakeholders realised the potential benefits of pedestrianisation to improve existing infrastructure and become more economically competitive with other nearby retail options. Stakeholders viewed short- and long-term viability, feasibility and accessibility as barriers to the successful completion of a pedestrian scheme. Research has shown that stakeholder attitudes have the potential to substantially influence the success of urban regeneration schemes [130]; therefore pedestrianisation redevelopment initiatives must be considered within a long-term cohesive strategic framework that engages numerous stakeholders.

This body of work contributes to the field by collectively examining behaviours and stakeholder perceptions of pedestrianising a shopping precinct in the New Zealand context. Comparable with international data [103, 133], shoppers

that actively transported to the shopping precinct visited the area more frequently than those who travelled by automobile. Accordingly, pedestrian developments have the potential to provide supportive environments for active and public transport, enhance economic performance, and improve accessibility to the area. These proposed improvements will likely result in additional accumulation of physical activity, thereby providing public health benefits, as well as enhancing economic activity within the area. Accordingly, the findings presented in the thesis make a compelling case for the urban regeneration through pedestrianisation of the Takapuna shopping precinct.

Future directions

In order for Takapuna's shopping precinct to be successfully pedestrianised an interdisciplinary approach to research and development is required, involving short- and long-term collaborative processes. Any urban regeneration process occurring in Takapuna should draw from the international research examples as well as the findings presented in Chapters 3 and 4. Possible pedestrianisation strategies such as the partial or complete closure of Hurstmere Road to vehicular traffic, the development of pedestrian-oriented zones and shared spaces, improved public and non-motorised transportation options, and enhanced traffic and parking management appear to be viable options within this setting. However, these developments need to be implemented in conjunction with ongoing evaluation methods to provide a robust picture of long-term impacts associated with pedestrianisation in the New Zealand context.

It is likely that support for urban regeneration schemes will be further supported by central government through concerns of carbon emissions and rising oil prices. In the future, regulations that consider these variables may be developed and applied to all urban developments, and a favourable response would be to increase active and public transport to shopping precincts through pedestrianisation. To date, this has been overlooked in the literature yet many urban regeneration schemes facilitate the creation of environments that are less reliant on automobiles and promote active travel.

There are also further opportunities to conduct research which include in-depth robust longitudinal studies that observe the impacts of pedestrianisation on economic and public health outcomes. In addition, natural experiments could be implemented to actively involve researchers in pre-implementation and post-evaluation to provide stakeholders with accurate information of the potential barriers and benefits of a pedestrianisation scheme.

Despite considerable resources dedicated to highlighting the benefits a pedestrianisation scheme would bring to Takapuna, the transfer of reported recommendations into practice is slow and unpredictable. Future directions include identifying opportunities and incorporating collaborative stakeholder engagement to improve planning processes of pedestrianisation schemes in New Zealand. This may in turn enhance stakeholder 'buy-in' to stimulate the urban regeneration process within the area, and provide the greatest health, social, economic, and urban planning benefits.

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Appendices

Appendix A: Shopper Questionnaire Participant Information Sheet



Participant Information Sheet

Date Information Sheet Produced:

25 March 2009

Project Title

What are the economic and travel implications of pedestrianising a roadway in Takapuna's town centre?

An Invitation

You are invited to take part in this study about how pedestrianising areas in Hurstmere Road, Takapuna may influence the spending habits and travel behaviours of adult shoppers. Information is being collected by a researcher (Leslie Wooller) and an appointed research assistant from Auckland University of Technology, Auckland. Your participation in this study is completely voluntary, and if you choose to participate, you are free to withdraw from the research at any time without giving a reason and with no adverse consequences.

What is the purpose of this research?

The project hopes to understand the travel and economic implications of pedestrianising a roadway in Takapuna's town centre. Findings will be used to inform future urban design and physical activity research and interventions to help improve physical activity and health. Findings will be published in the form of academic presentations and feedback will be provided to the North Shore City Council and the Takapuna Business Association.

How was I chosen for this invitation?

All adults aged 18 years or over shopping along Hurstmere Road are eligible to participate in the study. A total of 768 people will be recruited for this study.

What will happen in this research?

You will be asked to complete a questionnaire consisting of a series of questions to determine demographic attributes, shopper and retailer attitudes, and spending habits and travel behaviours. This survey will ask you to rate your level and frequency of spend, how you travel to Takapuna town centre, the reasons for coming to the Takapuna town centre, and your perceptions of pedestrianising Hurstmere Road, Takapuna.

What are the discomforts and risks?

No physical or psychological risks are anticipated from participating in this study.

What are the benefits?

The study will provide valuable insights into how pedestrian-orientated areas in Hurstmere Road, Takapuna may help to improve pedestrian safety and mobility; reduce both noise and pollution by discouraging or restricting access of non-essential vehicles. In addition, pedestrian-orientated areas may help to promote walking as a transport mode by making the walking experience more enjoyable. Pedestrian-orientated areas may also help to create a pleasant environment that gives people opportunities to be involved in different social and cultural activities as well. If you wish you will receive a copy of the feedback upon completion of the study.

How will my privacy be protected?

The information collected from you will be kept strictly confidential, and will be stored as coded (not named) information. Information will be destroyed after six years. No participants will be identified in any research reports.

What are the costs of participating in this research?

There are no financial costs of participating in the research. It is estimated that the survey will take four minutes to complete.

What opportunity do I have to consider this invitation?

No notification is required if you wish to take part or not wish to take part in this study. The researcher and researchers' assistant will be available at the designated questionnaire access points (Figure 1) in the four week period of April 2009 if you wish to take part in the study.

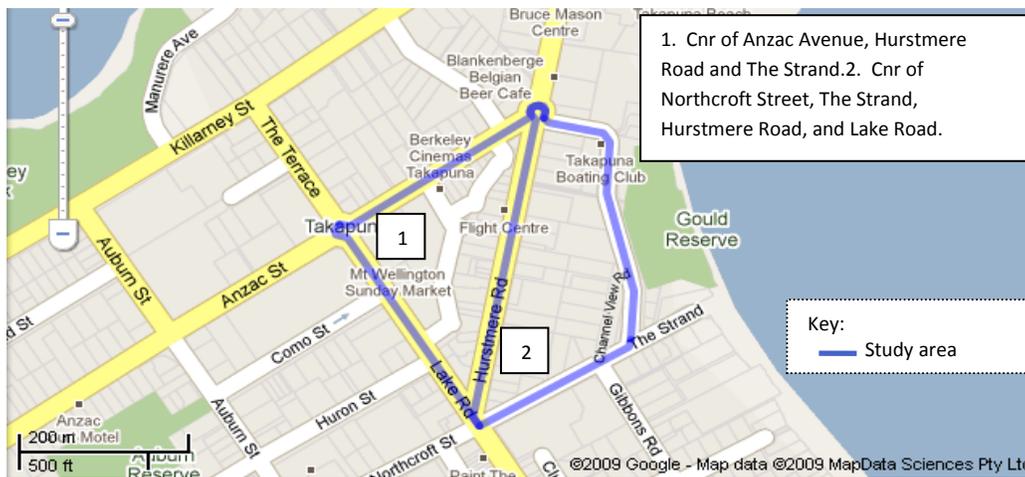


Figure 1: Questionnaire administration points

How do I agree to participate in this research?

You can agree to participate in this study by providing verbal consent to the researcher. The survey will be conducted with you.

Will I receive feedback on the results of this research?

A copy of the research report will be made available to you if you wish to receive it. Feedback will also be made available through the local community newsletter.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Hannah Badland, hannah.badland@aut.ac.nz, 921 9999 ext 7630.

Concerns regarding the conduct of the research should be notified to the Executive Secretary, AUTEK, Madeline Banda, madeline.banda@aut.ac.nz, 921 9999 ext 8044.

Whom do I contact for further information about this research?

Project Researcher

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Approved by the Auckland University of Technology Ethics Committee on 20 April 2009 AUTEC

Reference number 09/80

Appendix B: Retailer Questionnaire Participant Information Sheet



Participant Information Sheet

Date Information Sheet Produced:

25 March 2009

Project Title

What are the economic and travel implications of pedestrianising a roadway in Takapuna's town centre?

An Invitation

You are invited to take part in this study about how pedestrianising areas in Hurstmere Road, Takapuna may influence the spending habits and travel behaviours of adult shoppers. Information is being collected by a researcher (Leslie Wooller) and an appointed research assistant from Auckland University of Technology, Auckland. Your participation in this study is completely voluntary, and if you choose to participate, you are free to withdraw from the research at any time without giving a reason and with no adverse consequences.

What is the purpose of this research?

The project hopes to understand the travel and economic implications of pedestrianising a roadway in Takapuna's town centre. Findings will be used to inform future urban design and physical activity research and interventions to help improve physical activity and health. Findings will be published in the form of academic presentations and assist in the development of the North Shore City Council Transport Strategy and City Plan documents, to improve transport, land use planning and city growth strategies.

How was I chosen for this invitation?

All retail store owners/managers within the study area (Figure 1) have been invited to participate in the study. A total of 205 retailers will be invited to participate in the study.

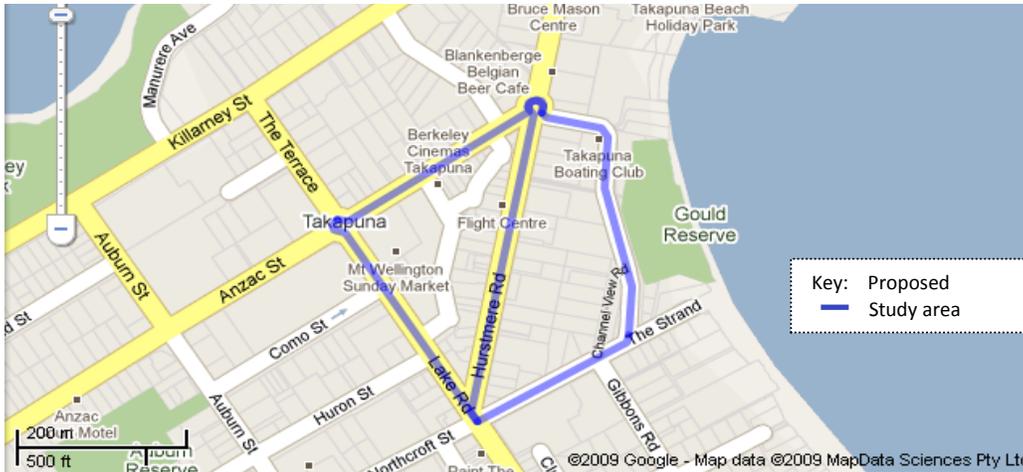


Figure 1: Proposed study area

What will happen in this research?

You will be asked to complete a questionnaire consisting of a series of questions to determine demographic attributes, shopper and retailer attitudes, and spending habits and travel behaviours of shoppers to your store. This survey will ask you to rate your customers perceived level and frequency of spend, how they may travel to Takapuna town centre, the reasons for coming to the Takapuna town centre, and your perceptions of pedestrianising Hurstmere Road, Takapuna.

What are the discomforts and risks?

No physical or psychological risks are anticipated from participating in this study.

What are the benefits?

The study will provide valuable insights into how pedestrian-orientated areas in Hurstmere Road, Takapuna may meet the transport needs of people, businesses and communities. Pedestrian-only areas have the potential to make city streets and town centre more attractive and safe for all users, particularly cyclists and pedestrians. Furthermore a pedestrian-only area may be effective in connecting the town centre by public and private transport encouraging walking, cycling and the use of public transport. You will receive a copy of the feedback upon completion of the study.

How will my privacy be protected?

The information collected from you will be kept strictly confidential, and will be stored as coded (not named) information. The consent forms will be kept separate from other information collected and will be locked away and kept strictly confidential. Information will be destroyed after six years. No participants will be identified in any research reports.

What are the costs of participating in this research?

There are no financial costs of participating in the research. It is estimated that the survey will take 10 minutes of your time to complete.

What opportunity do I have to consider this invitation?

Once the delivery of the survey is complete, the researcher will provide a two week opportunity for you to decide if you wish to take part or not wish to take part in the study. This will also provide you with an opportunity to ask questions about the questionnaire or study.

How do I agree to participate in this research?

If you agree to participate in this research, you will be asked to complete a consent form before starting the study. This ensures you understand what will happen in the study and that you consent to participate in the research. The researcher will provide the consent form. Please note that even if you do consent to participate, you may choose to withdraw from the study at any time, without any adverse consequence.

Will I receive feedback on the results of this research?

A copy of the research report will be made available to you if you wish to receive it. Feedback will also be made available to you in the retailer newsletter.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr Hannah Badland, *hannah.badland@aut.ac.nz*, phone 921 9999, ext 7630

Concerns regarding the conduct of the research should be notified to the Executive Secretary, AUTEK, Madeline Banda, *madeline.banda@aut.ac.nz*, 921 9999 ext 8044.

Whom do I contact for further information about this research?

Project Researcher

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***Approved by the Auckland University of Technology Ethics Committee on 20 April 2009 AUTEC
Reference number 09/80***

Appendix C: Participant Information Sheet (Semi-structured Interview)



Participant Information Sheet

Date Information Sheet Produced:

25 March 2009

Project Title

What are the economic and travel implications of pedestrianising a roadway in Takapuna's town centre?

An Invitation

You are invited to take part in this study about how pedestrianising areas in Hurstmere Road, Takapuna may influence the spending habits and travel behaviours of adult shoppers. Information is being collected by a researcher (Leslie Wooller) and an appointed research assistant from Auckland University of Technology, Auckland. Your participation in this study is completely voluntary, and if you choose to participate, you are free to withdraw from the research at any time without giving a reason and with no adverse consequences.

What is the purpose of this research?

The project hopes to understand the travel and economic implications of pedestrianising a roadway in Takapuna's town centre. Findings will be used to inform future urban design and physical activity research and interventions to help improve physical activity and health. Findings will be published in the form of academic presentations.

How was I chosen for this invitation?

You have been purposively selected to be interviewed as you indicated that you wished to participate in this component of the study. The semi-structured interview discussions will consist of three representatives from the following groups: 1) local town centre retailers, 2) the North Shore City Council and Takapuna Business

Association, and 3) shoppers on Hurstmere Road. A total of nine people will be recruited and interviewed separately for this study.

What will happen in this research?

You have been invited to participate in a semi-structured consisting of a series of general questions and topics to determine shopper and retailer attitudes, and spending habits and travel behaviours. This interview will cover topics such as pedestrianisation of Takapuna town centre, economic aspects of pedestrianisation, travel, and issues that may arise from discussion.

What are the discomforts and risks?

No physical or psychological risks are anticipated from participating in this study.

What are the benefits?

The study will provide valuable insights into how pedestrian-orientated areas in Hurstmere Road, Takapuna may give more opportunities for people to walk, cycle or use public transport, in a safer, healthier community. You will receive a copy of the feedback upon completion of the study.

How will my privacy be protected?

The information collected from you will be kept strictly confidential, and will be stored as coded (not named) information. The consent forms will be kept separate from other information collected and will be locked away and kept strictly confidential. Information will be destroyed after six years. No participants will be identified in any research reports.

What are the costs of participating in this research?

There are no financial costs of participating in the research. The interviews will take one hour to complete.

What opportunity do I have to consider this invitation?

The participation sheet will be given to you, from which you will be contacted in three days to decide if you wish or do not wish to participate in the interviews.

How do I agree to participate in this research?

The researcher will re-contact you and schedule an appointment with you. If you agree to participate in this research, you will be asked to complete a Consent Form before starting the study. This ensures you understand what will happen in the

study and that you consent to participate in the research. The researcher will provide the consent form. Please note that even if you do consent to participate, you may choose to withdraw from the study at any time, without any adverse consequence.

Will I receive feedback on the results of this research?

A copy of the research report will be made available to you if you wish to receive it.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Leslie Wooller, *leslie.wooller@aut.ac.nz*, 921 9999 exr. 7119.

Concerns regarding the conduct of the research should be notified to the Executive Secretary, AUTEK, Madeline Banda, *madeline.banda@aut.ac.nz*, 921 9999 ext 8044.

Whom do I contact for further information about this research?

Project Researcher

Leslie Wooller
Centre for Physical Activity and Nutrition Research
Faculty of Health and Environmental Sciences
Auckland University of Technology
90 Akoranga Drive
Auckland
Phone number: (09) 921 9999 ext.7119
Email: *leslie.wooller@aut.ac.nz*

Project Supervisor

Dr Hannah Badland
Centre for Physical Activity and Nutrition Research
Faculty of Health and Environmental Sciences
Auckland University of Technology
90 Akoranga Drive
Auckland
Phone number: (09) 921 9999 ext.7630
Email: *hannah.badland@aut.ac.nz*

***Approved by the Auckland University of Technology Ethics Committee on 20 April 2009 AUTEK
Reference number 09/80***

Appendix D: Shopper Questionnaire



Takapuna town centre shopper questionnaire

Hello my name is _____ from AUT University. We are doing some research today to determine the potential economic and public health implications of reducing vehicular traffic by pedestrianising a portion of Takapuna's town centre. It would be much appreciated if you could spare me approximately four minutes of your time to answer some questions. By completing this questionnaire you are indicating your consent to participate in this research. . All information will remain anonymous. Would you like to complete the questionnaire? Yes No

[IF YES – start with the questionnaire]

[IF NO – thank them for their time]

Capitals mean instruction to interviewer and not to be read out

Q1. What is the main purpose of your visit to Takapuna's town centre today?

- | | |
|--|--|
| <input type="checkbox"/> ₁ Work | <input type="checkbox"/> ₂ Leisure |
| <input type="checkbox"/> ₃ Work related | <input type="checkbox"/> ₄ Personal business |
| <input type="checkbox"/> ₅ Shopping | <input type="checkbox"/> ₆ Exercise |
| <input type="checkbox"/> ₇ Education | <input type="checkbox"/> ₈ Lunch/dining at a
café/restaurant/bar |
| <input type="checkbox"/> ₉ Don't know | <input type="checkbox"/> ₁₀ Other..... |

PLEASE TICK ONLY ONE BOX

Q2. Please state any other reasons for your visit to Takapuna's town centre today?

- | | |
|--|--|
| <input type="checkbox"/> ₁ Work | <input type="checkbox"/> ₂ Leisure |
| <input type="checkbox"/> ₃ Work related | <input type="checkbox"/> ₄ Personal business |
| <input type="checkbox"/> ₅ Shopping | <input type="checkbox"/> ₆ Exercise |
| <input type="checkbox"/> ₇ Education | <input type="checkbox"/> ₈ Lunch/dining at a
café/restaurant/bar |
| <input type="checkbox"/> ₉ Don't know | <input type="checkbox"/> ₁₀ Other..... |

TICK ALL BOXES THAT APPLY

Q3. What was your main mode of transport to Takapuna's town centre today?

- | | |
|--|---|
| <input type="checkbox"/> ₁ Public transport | <input type="checkbox"/> ₂ Cycle |
| <input type="checkbox"/> ₃ Car | <input type="checkbox"/> ₄ Was dropped off |
| <input type="checkbox"/> ₅ Taxi | <input type="checkbox"/> ₆ Other..... |
| <input type="checkbox"/> ₇ Walking | |

PLEASE TICK ONLY ONE BOX

Q4. If your main mode of transport was car, please indicate where you parked your car today.

On the street	1
Local council parking facilities –	
• Anzac Street	2
• Killarney Street	3
Takapuna Library car park	4
Private parking facilities –	
• Wilson parking – Bloomfield Spa	5
• Hurstmere Road	6
• Tournament parking – The Strand	7
Shore City car park	8

PLEASE TICK ONLY ONE BOX

Q5. What suburb did you come from today?

.....

Capitals mean instruction to interviewer and not to be read out

Q6. In the last month, how often do you visit Takapuna's

- | | |
|---|--|
| <input type="checkbox"/> ₁ Daily | <input type="checkbox"/> ₂ Three times a week or more |
| <input type="checkbox"/> ₃ One to two times a week | <input type="checkbox"/> ₄ Once a month |
| <input type="checkbox"/> ₅ Less than once a month | <input type="checkbox"/> ₆ Don't know |
| <input type="checkbox"/> ₇ Other | |

PLEASE TICK ONLY ONE BOX

Q7. How much do you spend or intend to spend in Takapuna's town centre today?

\$.....

Write in total amount of spend in TTC

Q8. Will you be making purchases from more than one shop in Takapuna's town centre today?

- | | |
|--|--|
| <input type="checkbox"/> ₁ Yes | <input type="checkbox"/> ₂ No |
| <input type="checkbox"/> ₃ Don't know | |

Q9. I would like to get your opinion on a variety of features in Takapuna's town centre. For each of the following statements please tell me how much you agree, using the following scale:

1. strongly agree
2. agree
3. neutral
4. disagree
5. strongly disagree
6. don't know

Interviewer to read out options

GO THROUGH EACH STATEMENT FROM THE INDICATED STARTING POINT (*)

*

*	strongly agree	agree	neutral	disagree	strongly disagree	don't know
Takapuna's town centre has easily accessible public transport						
Takapuna's town centre has good quality shops						
The low quality of shops detract you from shopping in Takapuna's town centre						
Takapuna's town centre has a pleasant environment						
Takapuna's town centre has too much car traffic.						
Takapuna's town centre does not have enough pedestrian-only areas.						
Takapuna's town centre has good connections to the wider Takapuna region.						

Please indicate your answer with the appropriate number in the box

Q10. What type of shop do you most prefer to shop at?

- ₁ Shops in enclosed malls
- ₂ Street front shops
- ₃ Shops in pedestrian-only areas
- ₄ Upper floor shops
- ₅ Don't know
- ₆ Other.....

PLEASE TICK ONLY ONE

TO FINISH OFF COULD YOU PLEASE TELL ME A LITTLE ABOUT YOURSELF

Q11. Gender (DO NOT ASK)

- ₁ Male
- ₂ Female



Interviewer not to read out

Q12. Which of the following age group do you belong to?

- ₁ 16-25 years
- ₂ 26-35 years
- ₃ 36-45 years
- ₄ 46-55 years
- ₅ 56-65 years
- ₆ 66 years or older
- ₇ Rather not say

Q13. Are you a tourist to the Auckland region?

- ₁ Yes (*If yes, skip to Q14*)
- ₂ No

Q14. Do you work in Takapuna's town centre?

- ₁ Yes
- ₂ No

Q15. If Hurstmere Road, Takapuna was to become a pedestrian-oriented area, would you...

a) Still shop in Takapuna's town centre?

- ₁ Yes
- ₂ No
- ₃ Don't know

PLEASE TICK ONLY ONE BOX

b) Still use the same form of transport to travel to Takapuna's town centre?

- ₁ Yes
- ₂ No
- ₃ Don't know

PLEASE TICK ONLY ONE BOX

Q16. What improvements would you like to see made to Takapuna's town centre?

.....

.....

.....

.....

Interviewer:

Date:

Starting time:

Finishing time:

Place of interview:

Administration details to allow editing, e.g. identifies if an interviewer is making mistakes, if timing is right, etc

Name:

.....

Contact details:

.....

.....

.....

.....

Fill in and tear off this portion if the participant would like feedback details about the survey

Appendix E: Retailer Questionnaire

Takapuna town centre retailer questionnaire



'Summer, Takapuna Beach' original painting by Wendy Leach.

The retail owner/manager is to complete this questionnaire.

Please complete the following survey. If you wish to comment on any questions or qualify your answers, please use the space provided on the back page. If you have any queries please contact:

Leslie Wooller, phone number: (09) 921 9999 ext.7119, email:
leslie.wooller@aut.ac.nz



Faculty of Health and
Environmental Sciences
Auckland University of
Technology
90 Akoranga Drive
Auckland
New Zealand

Q1. What do you perceive as the reasons for shoppers choosing Takapuna's town centre as their destination? (Please tick all boxes that apply)

- | | |
|---|---|
| <input type="checkbox"/> ₁ Shops close to people's work | <input type="checkbox"/> ₂ Range of shops/services available |
| <input type="checkbox"/> ₃ Entertainment | <input type="checkbox"/> ₄ Convenience/compact shopping |
| <input type="checkbox"/> ₅ Atmosphere (vitality/street life) | <input type="checkbox"/> ₆ Shopping |
| <input type="checkbox"/> ₇ Showing visitors around | <input type="checkbox"/> ₈ Shoppers live nearby |
| <input type="checkbox"/> ₉ Going to the beach | <input type="checkbox"/> ₁₀ Don't know |
| | <input type="checkbox"/> ₁₁ Other..... |

Q2. What is the main reason for you choosing to operate your business in its current location? (Please tick only one box)

- | | |
|---|---|
| <input type="checkbox"/> ₁ High level of pedestrian flow | <input type="checkbox"/> ₂ Proximity of store location to place of residence |
| <input type="checkbox"/> ₃ Premises located in major shopping area | <input type="checkbox"/> ₄ Suitable floor area |
| <input type="checkbox"/> ₅ Convenience to public transport | <input type="checkbox"/> ₆ Convenience to parking |
| <input type="checkbox"/> ₇ Stores of the same type nearby | <input type="checkbox"/> ₈ Large population living nearby |
| <input type="checkbox"/> ₁₀ Don't know | <input type="checkbox"/> ₉ Low rental/price of current premises |
| | <input type="checkbox"/> ₁₁ Other..... |

Q3. As a retailer, please indicate how *important* the following requirements of retail supporting facilities are for your shop by ticking the corresponding box for each item?

	Very important	Important	Moderately important	Slightly important	Not important
Availability of public transportation infrastructure	1	2	3	4	5
Availability of pedestrian-only areas	1	2	3	4	5
Availability of car parking	1	2	3	4	5
Adequate loading/docking areas	1	2	3	4	5

Q4. Please estimate the percentage of your customers that come from a nearby workplace?

..... (% work locally)

Q5. Of your customers that do not come from a nearby workplace, please estimate the percentage of your customers that access your shop by...

	%
Public transport	
Bicycle	
Car	
Taxi	
Walking	
Motorcycle	
Was dropped off	
Don't know	
Other	
Total 100%	

Q6. What type of shopping locations do you perceive your customers would most like to shop at? (Please tick only one box)

- | | |
|--|--|
| <input type="checkbox"/> ₁ Shops in enclosed malls | <input type="checkbox"/> ₂ Street front shops |
| <input type="checkbox"/> ₃ Shops in pedestrian only areas | <input type="checkbox"/> ₄ Upper floor shops |
| <input type="checkbox"/> ₅ Other..... | <input type="checkbox"/> ₆ Don't know |

Q7. How much do you perceive is the average spend made per shopper in your shop?

\$ ₁ (Please indicate amount rounded to the nearest dollar)

Q8. If a portion of Hurstmere Road, Takapuna was to become a pedestrian-only area, would you perceive that:

a) More people would shop in Takapuna's town centre?

- ₁ Yes
₂ No
₃ Don't know
(Please tick only one box)

Q9. I would like to get your opinion on a variety of features in Takapuna’s town centre. For each of the following statements please tell me how much you agree, using the following scale:

1. strongly agree
2. agree
3. neutral
4. disagree
5. strongly disagree
6. don't know

Please indicate your answer with the appropriate number in the box

Please tick the boxes that apply.

	strongly agree	agree	neutral	disagree	strongly disagree	don't know
Takapuna’s town centre has easily accessible public transport						
Takapuna’s town centre has good quality shops						
The low quality of shops detract you from shopping in Takapuna’s town centre						
Takapuna’s town centre has a pleasant environment						
Takapuna’s town centre has too much car traffic.						
Takapuna’s town centre does not have enough pedestrian-only areas.						
Takapuna’s town centre has good connections to the wider Takapuna region.						

Q10. As a retailer, please indicate below what improvements you would like to see made in Takapuna's town centre?

.....

.....

.....

.....

Takapuna town centre retailer questionnaire

Comments Sheet

If you have any additional comments you would like to make about Takapuna's town centre, please write them in the section below.

Your contribution to this survey is greatly appreciated.

The questionnaire will be collected by the researcher.

A copy of the report compiled from the questionnaire will be sent to all retailer participants upon request.

**Appendix F: Retailer Questionnaire Participant
Consent Form**



Participant Consent Form

Project title: **What are the economic and travel implications of pedestrianising a roadway in Takapuna’s town centre**

Project Supervisor: **Dr Hannah Badland**

Researcher: **Leslie Wooller**

- I have read and understood the information provided about this research project in the Information Sheet dated 25 March 2009.
- I have had an opportunity to ask questions and to have them answered.
- I understand that participating in the study will involve:
 1. Answering a questionnaire to determine the retailers’ perception of adult shoppers who visit Takapuna’s town centre, including the frequency and pattern of shopper visits, shopper transport modes, and retailers’ perceptions of Takapuna’s town centre.
- I understand that I may withdraw myself or any information that I have provided for this project at any time prior to completion of data collection, without being disadvantaged in any way.
- If I withdraw, I understand that all relevant information will be destroyed.
- I agree to take part in this research.
- I wish to receive a copy of the report from the research (please tick one):
Yes No

Participants Signature:

Participants Name:

Participants Contact Details (if appropriate):

.....
.....

Date:

**Approved by the Auckland University of Technology Ethics Committee on 20 April 2009 AUTEK
Reference number 09/80**

Note: The Participant should retain a copy of this form.

Appendix G: Interview Participant Consent Form



Participant Consent Form

Project title: **What are the economic and travel implications of pedestrianising a roadway in Takapuna’s town centre**

Project Supervisor: **Dr Hannah Badland**

Researcher: **Leslie Wooller**

- I have read and understood the information provided about this research project in the Information Sheet dated 25 March 2009.
- I have had an opportunity to ask questions and to have them answered.
- I understand that notes will be taken during the interviews and that they will also be audio-taped and transcribed.
- I understand that I may withdraw myself or any information that I have provided for this project at any time prior to completion of data collection, without being disadvantaged in any way.
- If I withdraw, I understand that all relevant information including tapes and transcripts, or parts thereof, will be destroyed.
- I agree to take part in this research.
- I wish to receive a copy of the report from the research (please tick one): Yes No

Participants Signature:

Participants Name:

Participants Contact Details (if appropriate):

.....

.....

Date:

Approved by the Auckland University of Technology Ethics Committee on 20 April 2009 AUTEC Reference number 09/80

Note: The Participant should retain a copy of this form.

Appendix H: Research Officer Confidentiality Agreement



Confidentiality Agreement

Project title: **What are the economic and travel implications of pedestrianising a roadway in Takapuna’s town centre**

Project Supervisor: **Dr Hannah Badland**

Researcher: **Leslie Wooller**

- I understand that all the material I will be asked to record and transcribe is confidential.
- I understand that the contents of the tapes or recordings from the interviews, Consent Forms and/or questionnaires can only be discussed with the researchers.
- I will not keep any copies of the transcripts nor allow third parties access to them.

Research assistants Signature:

Research assistants Name:.....

Date:

Approved by the Auckland University of Technology Ethics Committee on 20 April 2009 AUTEK Reference number 09/80

Note: The Research Assistant should retain a copy of this form.

Appendix I: Interview Guide Questions

Introductory Themes

- What do you like about the current urban and physical environment of Takapuna town centre?
- What do you dislike about the current urban and physical environment of Takapuna town centre?
- What do you like about shopping in Takapuna town centre?
- What do you dislike about shopping in Takapuna town centre?
- What do you like about the current transport infrastructure in Takapuna town centre?
- What do you dislike about the current transport infrastructure in Takapuna town centre?

Pedestrianisation

- How would pedestrianising Hurstmere Road affect pedestrianisation rates in Takapuna's town centre?
- What health impacts (if any) do you think would come from pedestrianising Hurstmere Road?
- How would pedestrianising Hurstmere Road impact on accessibility to Takapuna town centre?
- How would pedestrianising Hurstmere Road directly affect your business? (Retailer)
- For retailers not located in pedestrianised areas, would you consider moving to Hurstmere Road if it was pedestrianised? (Retailer)

Economic aspects

- What financial impact would pedestrianising Hurstmere Road have on your business? (Retailer)
- How would pedestrianising Hurstmere Road affect the type and/or frequency of purchases made by shoppers?
- What impacts would pedestrianisation have on the retail mix of Takapuna town centre?

Travel

- How would pedestrianising Hurstmere Road affect car parking options or traffic flows in or around Takapuna town centre?
- How would pedestrianising Hurstmere Road affect the public transport accessibility in Takapuna town centre?
- How would pedestrian-only areas provide more opportunities for diversification of transport options or activities?

Miscellaneous aspects

- Do you think pedestrian-only areas provide safe and secure places to be in?
 - Do you think pedestrianisation of spaces provides more opportunities for people to enjoy their surroundings?
 - How do you think the North Shore City rate payers would respond if Hurstmere Road was to become pedestrianised?
-