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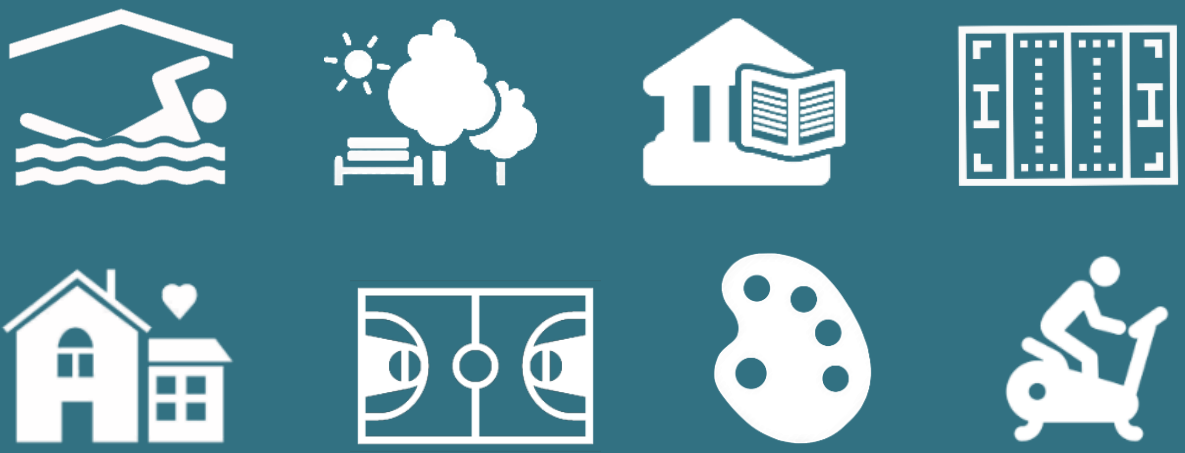

Use and non-use values of Auckland Council amenities

Final Report

July 2020

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Preface

Auckland Council commissioned this study to quantify how much the public use and value local amenities, including libraries, community centres, arts centres, neighbourhood parks, leisure centres, swimming pools / aquatic centres, indoor courts and sports fields. To fulfil the study needs, a survey was undertaken with Auckland residents to collect data on their usage of these amenities. The survey also included a stated choice experiment to quantify the value of these amenities. This report provides a detailed description of the design of the survey and experiments, the data collection methodology, the resulting sample and their usage of these amenities and the development of discrete choice models to analyse the data from the choice experiments and provide the resulting valuations. It is noted that this study was conducted prior to the Covid-19 pandemic and thus the usage and valuations reflect conditions prior to the pandemic.

The study was led by Nexus who oversaw the market research, survey design and model analysis. Accent led the market research and contributed to the survey design and analysis. RAND Europe was responsible for the design of the stated choice experiments and model analysis.

We acknowledge the input of the people who have contributed to this study. Particularly we thank the people at Auckland Council for their direction and input into the survey design, data collection and analysis. We also thank Dynata who supported the market research through provision of their online panel. Finally, we thank the two thousand plus survey respondents who provided valuable information through the survey for this project. It would not have been possible to undertake this work without their efforts.

This report may be of value to those who are interested in the usage and valuation of public amenities as well as those who are interested in measuring the value of non-market goods using stated choice experiments and discrete choice modelling methods more generally.

Executive Summary

Introduction

Auckland Council commissioned this research to help them understand the value that the general Auckland population places on the provision of the following amenities:

- Libraries
- Community centres
- Arts centres
- Neighbourhood parks
- Leisure centres
- Swimming pools/aquatic centres
- Indoor courts
- Sports fields.

In particular, Auckland Council, wished to know 'use' and 'non-use' values of these amenities to people in the population to help inform their business case evaluations for specific amenities being proposed.

The 'use' value is, for example, the value for those who actively use the amenities, for example going to a swimming pool or visiting a library. The 'non-use' value is the value that can be attributed to the amenity even though not used. This may be, for example, because they think the amenity makes the place more pleasant or because they value the option of being able to use it in the future.

Auckland Council also wished to measure the usage of amenities.

Method

The method was an online survey of the Auckland population using representative quotas by age, gender and area.

The questionnaire included Stated Choice experiments (SCs) to measure the value of local amenities and collected data about the usage of each of the amenities and socio-economic characteristics of the respondent and their household.

The SC experiments were based around a series of hypothetical choices. Participants were asked to imagine that they were moving into a new area in Auckland (ignoring the issues associated with a move and assuming that the new area doesn't yet have any local amenities) and to think about what sort of amenities they would like in this area and how much extra they would be willing to pay to have access (e.g. through increased rates). The choice options included different amenities, with differing service levels, costs and access distances.

A pilot of 150 was undertaken in January 2020 followed by a main stage of 1,850 interviews undertaken in March 2020 (before Covid-19 could impact findings).

Main Findings

Nature of sample

- 68% of participants' dwellings were stand-alone houses. 11% lived in units, 9% in town houses and 9% in apartments.
- 34% of households were couples with children at home (including adult children), 30% were couples without children at home, 16% were single persons living alone and 6% were single parent households.
- 27% of households comprised one adult, 48% comprised two adults, 44% had one or more children (including adult children) at home.
- 52% owned their property, 42% rented and 5% boarded.
- 95% of households had one or more vehicles. The Central area has the least number with 10% having none.
- Overall, 58% were employed either full or part time, 14% were unemployed and 15% retired.
- 63% were New Zealand Europeans, 17% were Asians, 10% Māori and 7% Pacific peoples.

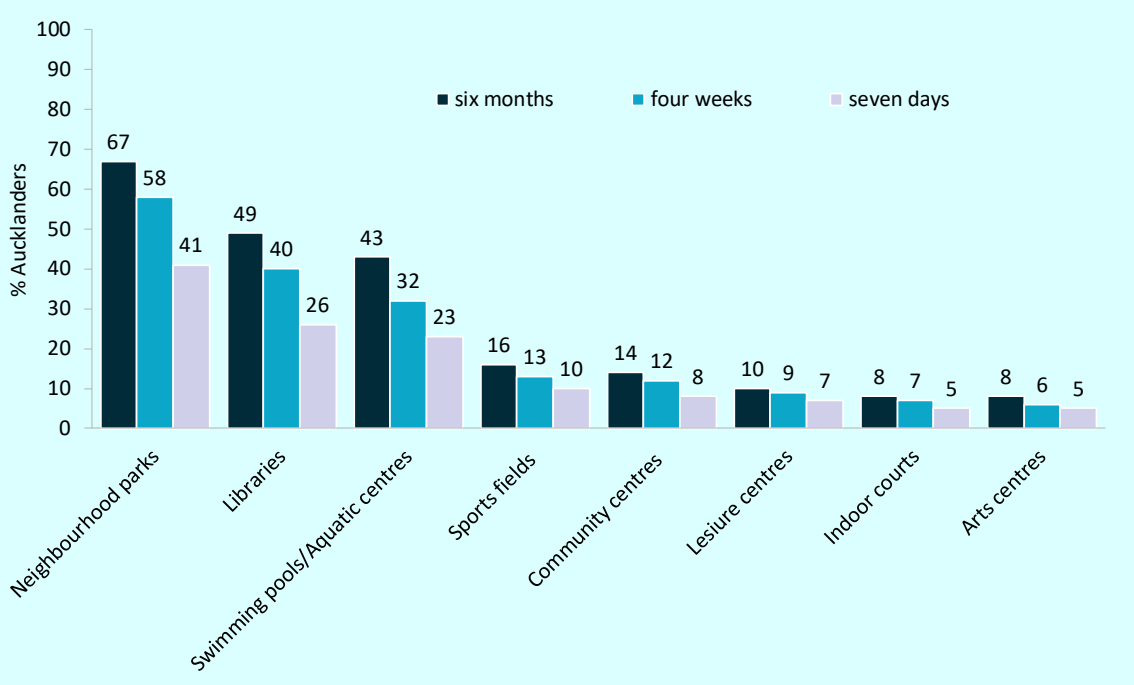
Usage of facilities

A key component of the survey was to measure usage of facilities by household members. Participants who lived with others were asked if they could answer questions on the use of specific local facilities on behalf of other members of the household. Overall, 87% of respondents indicated that they were able to answer confidently about usage of these facilities for themselves and others if applicable, 11% could answer for some others and 3% could not answer for others. The results of the usage questions represented 92% of all household members.

For each facility type, participants were first asked if they or anyone else in the household, if applicable, had visited the Council facility in Auckland in the last six months. If so, they were asked which facility was visited and then how often the facility or facilities were visited in the previous seven days and previous four weeks by them and/or anyone else in the household.

Main results are shown below by facility type.

Figure 1: Usage of facilities in preceding seven days, four weeks and six months



Swimming Pools/Aquatic Centres

- 43% of household members[1] had visited a Council swimming pool or aquatic centre in Auckland in the last six months.
- 32% of household members[1] had visited a pool in the preceding four weeks. The mean number of visits was 1.70.
- 23% of household members[1] had visited a pool in the preceding seven days. The mean number of visits was 0.66.

Libraries

- 49% of household members had visited a Council library in Auckland in the last six months.
- 40% had visited a library in the preceding four weeks. The mean number of visits was 1.53.
- 26% had visited a library in the preceding seven days. The mean number of visits was 0.61.

[1] i.e. the participant and anyone in the household they answered on behalf of

Community centres

- 14% of household members had visited a Council community centre in Auckland in the last six months.
- 12% had visited a community centre in the preceding four weeks. The mean number of visits was 0.42.
- 8% had visited a community centre in the preceding seven days. The mean number of visits was 0.21.

Arts centres

- 8% of household members had visited an arts centre in Auckland in the last six months.
- 6% had visited an arts centre at all in the preceding four weeks. The mean number of visits was 0.16.
- 5% had visited an arts centre in the preceding seven days. The mean number of visits was 0.09.

Neighbourhood parks

- 67% of household members had visited a neighbourhood park in Auckland in the last six months.
- 58% had visited a neighbourhood park in the preceding four weeks. The mean number of visits was 2.54.
- 41% had visited a neighbourhood park in the preceding seven days. The mean number of visits was 0.81.

Leisure centres

- 10% of household members had visited a Council leisure centre in Auckland in the last six months.
- 9% had visited a leisure centre in the preceding four weeks. The mean number of visits was 0.49.
- 8% had visited a leisure centre in the preceding seven days. The mean number of visits was 0.2.

- 10% of household members had visited a Council indoor court in Auckland in the last six months.
- 7% had visited an indoor court in the preceding four weeks. The mean number of visits was 0.28.
- 5% had visited an indoor court in the preceding seven days. The mean number of visits was 0.14.

- 16% of household members had visited a Council sports field in Auckland in the last six months.
- 13% had visited a sports field in the preceding four weeks. The mean number of visits was 0.6.
- 10% had visited a sports field in the preceding seven days. The mean number of visits was 0.22.

Participants were asked which types of facilities they would like to have better access to. 66% wanted better access to neighbourhood parks, 56% wanted better access to a library and 43% to a standard swimming pool/aquatic centre (as opposed to an 'enhanced' swimming pool/aquatic centre with extra services).

The value of local amenities from the stated choice experiments

There was a wide range of values that people were willing to pay for having access to culture, recreational and sport amenities. It should be noted that these values reflect the value of providing the amenity. The assumption is that if people have to pay to access facilities currently, for examples that adults will pay to access arts centre or sports facilities (swimming pool or indoor courts), then such payments would also be required in future. Also it should be noted that this study was conducted prior to the Covid-19 pandemic and thus the usage and valuations reflect conditions prior to the pandemic.

In the present study, we find that the resulting valuations vary according to the (reported) use of the amenity, although we also observe valuations for some amenities even if they aren't used by the household (called 'non-use' values). The use value refers to that at least one of the household members have used the amenity over the last six months.

These are summarised in the table below.

	Use value	Non - use value
	($ per month per household)*	
Libraries	$19.55	$7.81
Community centres	$7.32	$3.40
Arts centres	$7.56	$0.00
Leisure centres	$10.14	$0.00
Swimming pools/aquatic centres	$21.12	$11.15
Indoor courts	$12.29	$0.00
Sports fields	$10.73	$8.69
Neighbourhood parks	$27.44	$13.52

* Note: that these are values for individual amenities for those who can access the amenities in less than 20 minutes driving time

- We observe that:
  - Use values are higher than non-use values, reflecting that those who use the amenities value them more highly.
  - Households that do not use some amenities still value these amenities. This is true for libraries, community centres, aquatic centres, sport parks and neighbourhood parks.
  - We observe differences in values depending on frequency of use, where frequent users are willing to pay more for these amenities than less frequent users. This is true for libraries, arts centres (this effect is particularly observed for arts centres), leisure centres and indoor courts.

As part of the analysis we explored how the value of amenities varies depending on the characteristics of the individual, grouping of amenities and the distance travelled to amenities. We find that:

- The value of individual amenities depends on the presence of other amenities, which may act as substitutes or complements. These definitions of complements or substitutes apply only to some segments (e.g. non-users or users of specified facilities)

- The following amenities were found to be complementary, and therefore provision of both increases the value of providing both amenities:
  - leisure centres and pools (users)
  - library and community centres (both users and non-users)

- The following were substitutes, and therefore provision of both decreases the value of providing both amenities:
  - neighbourhood parks and sports fields (non-users for both amenities)

- The value of the amenity diminishes if people have to travel over 20 minutes (driving) to the amenity. Adjustments for households that are further than 20 minute (driving) time away from the amenity are set out in the main body of the report.

- Higher income households are less sensitive to cost changes in the experiments, which leads to higher valuations for amenities more generally. However, we recommend the use of average values across all household income groups for use in appraisal.

1 Introduction

1.1 Background

Auckland Council commissioned research to help them understand the value that the community places on the provision of the following amenities:

- Libraries
- Community centres
- Arts centres
- Neighbourhood parks
- Leisure centres
- Swimming pools/aquatic centres
- Indoor courts
- Sports fields.

In particular, Auckland Council, wished to know values of these amenities to people in the population, including those who use the amenities and those who do not, to help inform their business case evaluations for specific amenities being proposed.

The 'use' values are, for example, the value for those who actively use the amenities, for example going to a swimming pool or visiting a library. The 'non-use' value in this case is the value that can be attributed to the amenity even though not used. This may be, for example, because they think the amenity makes the place more pleasant or because they value the option of being able to use it in the future.

Auckland Council are also interested in measuring the usage of amenities across three groups of interest:

- the general Auckland population
- retirement village residents
- tertiary student accommodation residents.

This report covers the general Auckland population only. Supplementary studies of usage for retirement villages and student halls of residence have been postponed due to the Coronavirus pandemic.

The report is structured as follows:

- Chapter 2 describes the research methods, which cover the detailed explanation of design of the survey and stated choice experiments. It also describes the pilot survey testing and refinements that were undertaken before the main survey data collection, and the main data collection process.

- Chapter 3 presents the findings from the survey which includes: the description of the data that were collected for the study, including descriptions of the current usage of the local amenities by respondents who participated in this research, as well as their socio-economic characteristics. In addition this chapters describes the development of the discrete choice models to quantify respondents values amenities.

2 Methodology

2.1 Introduction

The overarching research objective is to estimate the values that the public place on the local amenities. More specifically, there are three main objectives:

- Provide evidence about the value placed on Council facilities that will allow Council to improve policy-setting on provision of these facilities.
- Provide data about value of Council facilities, for users and non-users, that will be used in cost-benefit analysis within business cases for different facilities for the general population.
- Provide data about usage of the different amenities, which will be used to help determine weightings of Development Contributions across different types of dwellings[2].

At the core of the study is a quantitative survey with a series of stated choice experiments (SCs) and collection of data about the usage of amenities and socio-economic characteristics of the respondent and their household.

Stated Preference methods (Stated Choice and Contingent Valuation) are recommended as appropriate methods for valuation of non-market goods (Ben-Akiva and Lerman, 1985; Train, 2003; HM Government, 2018). We used SCs for this research for the following reasons:

- SC experiments allow valuations to be broken down into a range of component parts, for example the impact of distance to an amenity, the quality of the amenity, etc. In contrast, contingent valuation questions would tend not to allow the same level of disaggregation of the valuation.
- Literature and our own experience suggests that contingent valuation (CV) approaches that simply ask respondents to provide the value of non-market goods are more open to gaming by participants because the task which they are being asked to consider is simplified to such an extent that it is easy to provide responses that seek to influence policy in a particular direction (NOAA, 1996; List and Gallet, 2001). This is particularly a concern over a topic such as the development of local amenities, which by its nature is a policy that many participants may wish to steer in a specific direction. The construct of a SC experiment is less open to such gaming and should therefore produce less biased valuation estimates.

[2] This objective relies on data collection from retirement village residents and students in student accommodation which was postponed due to the Covid-19 pandemic. Therefore, this report does not address the third objective.

- SC experiments are able to incorporate a number of services simultaneously, encouraging people to make trade-offs between how they would 'spend' money across these, whereas CV approaches tend to focus on one service at a time, which may encourage people to overinflate the values (because they may not consider the financial implications of all service improvements together).

- CV approaches are abstract requiring participants to place 'values' on goods and services in a way that they might not normally think about (and this can lead to a lot of people giving values of zero). SC experiments ask people to make choices – something with which people are much more familiar.

Therefore, in this study we employed SC experiments to measure the value of local amenities to people living in Auckland.

2.2 Amenities covered

The research covers eight amenity types:

- Libraries
- Community centres
- Arts centres
- Neighbourhood parks
- Leisure centres
- Swimming pools/aquatic centres
- Indoor courts
- Sports fields.

Below we show how these were described in the survey. This information was presented before people participated in the SC experiments.

It was made clear to participants that some of the council amenities had different service levels, which were described as 'standard local service' or 'enhanced local service'.

Library

- library books, DVDs etc.
- computers available for public use
- library-based events
- informal gathering spaces
- workroom areas

Community centre

- small and larger meeting rooms
- co-located working spaces
- spaces for clubs and social gatherings
- support for activities run by community members

Arts Centre

- Space for local community arts activity such as community drama, dance, local art classes and presentations

Neighbourhood park

- play spaces
- flat, unobstructed, kickaround spaces for informal games (30m by 30m)
- areas for socialising and relaxing
- landscaping
- specimen trees
- furniture such as benches and tables

Leisure Centre

- rooms for group fitness activities such as Pilates, yoga, pump, Zumba, high-intensity interval training, spin etc.
- weights and resistance
- exercise machines such as rowing machines, stationary bike etc.

Swimming Pool/Aquatic Centre

Standard local service:

- teaching pool
- water areas for games and play
- water-based fitness areas

Enhanced local service:

- teaching pool
- water areas for games and play
- water-based fitness areas
- deep-water for underwater sports or diving
- aquatic sport facilities such as dive-boards
- aquatic entertainment facilities such as slides, splash-pads

Indoor Court

Standard local service:

- at least 2 standard sized basketball courts
- rooms to run programmes or training
- fitness space

Enhanced local service:

- at least 4 standard sized basketball courts
- rooms to run programmes or training
- fitness space
- multiple changing rooms
- special leisure facilities such as rock-climbing, squash or skating

Sports Field

- about 10-12 rugby fields in size
- space for sports including rugby (including sevens), rugby league, cricket, soccer, hockey

In the amenity usage part of the questionnaire a list of specific amenity names were shown for the following six amenity types focusing on the area in which the respondent said they lived, as well as regional facilities:

- Arts centres
- Community centres
- Indoor courts
- Leisure centres
- Libraries
- Swimming Pools/Aquatic Centres.

Names of specific neighbourhood parks and sports parks were not listed because the number of these facilities made listing them impractical. Appendix B shows the list of

amenities used. The participant was free to add other amenities if the list did not include the specific one they went to.

2.3 Design of Facility Usage Questions

The survey included questions on attitudes and usage of the local amenities, as well as questions to collect the demographic and socioeconomic characteristics of participants and their households.

A Word version of the questionnaire used in the survey is included as Appendix A. The structure of the questionnaire was:

- Section 1: Scoping and background questions
  - Quota check: Area, age and gender
  - Type of dwelling
  - Tenure
  - $ paid in rates or rent
  - Household composition (including ages and gender of all members)

- Section 2: Information on amenity usage by individual and/or household members by each of the local amenities
  - Level of confidence in responding on behalf of other household members
  - Use of facilities in the last 6 months (Y/N)
  - If used in last 6 months, which specific facilities?
  - If used in last 6 months, ask if used in last 7 days (frequency by facility)
  - If used in last 6 months, ask if used in last 4 weeks (frequency by facility)
  - Distance from home to each facility used
  - Ease or difficulty of answering the usage questions

- Section 3: Choice experiments.

- Section 4: Demographics
  - Health and disability questions (from Census)
  - Number of vehicles available to each household
  - Personal income
  - Household income
  - Ethnicity.

2.4 Stated Preference Design

The choices in the Stated Choice (SC) experiments are based around a series of hypothetical choices. Participants were asked to imagine that they were moving into a new area in Auckland (ignoring the issues associated with a move and assuming that the new area doesn't yet have any local amenities) and to think about what sort of amenities they would like in this area The choice options included different amenities, with differing service levels, costs and access distances. It was judged important to present **hypothetical**

choice scenarios, rather than use real sites in a specific location, so that the amenities could be described consistently to participants instead of relying on descriptions like 'as now', which would introduce inconsistency (and unexplained variation) in the real and perceived quality of amenities.

Thus the SC task focussed on quantifying the impact of identifiable differences between amenities and their service quality. In future this methodology could be expanded to incorporate other amenities or it could be repeated as the city changes and grows.

Specifically, the choice experiment included four types of attributes:

- Service provision for each amenity, specifically whether the (hypothetical) local area has the amenity or not. In the design of the choice experiment, we considered that the value of a local amenity may depend on the presence (or not) of regional services and therefore we explicitly told respondents in the introduction to the experiments that regional amenities would be available at a driving distance of 45 minutes.
- Service standard of the amenities, standard of these services, e.g. regular or enhanced service levels, for aquatic centre and indoor court.
- Distance to the provided amenities, allowing exploration of how valuations vary depending on how near households are located to the amenities.
- The monetary cost associated in having the amenities. It is necessary to have a monetary cost attribute to calculate valuations.

The survey included two choice experiments, as we judged it is too arduous to ask participants to evaluate all eight amenities in one choice experiment.

- SC1: Sports facilities, including leisure centres, indoor courts, sports parks, aquatic centres and neighbourhood parks.
- SC2: Cultural and recreational amenities, including libraries, community centres, arts centres and neighbourhood parks.

We grouped amenities in this way to allow exploration of whether the value of an amenity depends on the presence of other amenities, either as substitutes or complements. For example, to explore whether the valuation of having indoor courts depends on the presence of leisure centres (the same argument would hold true across cultural and recreational amenities).

Among the eight amenities, neighbourhood parks serves for both purposes: cultural (such as place for socialising) and sports (places for playing or for jogging and walking). We therefore included neighbourhood parks in both experiments (as well as distance and monetary cost). This construction allowed us to explore consistency in valuations between the experiments and to ultimately pool the data across experiments and jointly estimate models across the experiments, improving the reliability of model parameters and the resulting valuation estimates.

Defining the attributes and their levels in the choice experiments

Table 1 presents the attributes and levels included in the choice experiments for each amenity. The values of all amenities are measured relative to **no provision,** i.e. not having the amenity. The amenities and service standards were largely drawn from the 'Community Facilities Network Plan'. We also solicited inputs from the project steering group. Indoor courts and aquatic centres have different possible service standards[3]. The 'enhanced' service levels reflect larger capacities, more functions of the facilities etc. In the choice experiment, services levels are described as "standard service" and "enhanced service" to reflect the differences between the service standards.

Detailed information on the differences in levels was presented in the introduction to the experiments (so as not to overburden participants with information presented in the choice experiment). However, in the choice experiment, people could refer back to more information on the specific level, if it was desired. The introduction text and introduction of the amenities and service standards can be seen in the questionnaire in Appendix A.

When developing the choice experiment design, we considered that the value of a local amenity could depend on the presence (or not) of regional services. For example, people might value a local swimming pool more if they do not have access to a regional swimming pool – or if that regional swimming pool is far away. Thus we considered the option of presenting regional and local services in the experiment. However, during the discussion with the steering group, this format was judged to be too complicated for participants, particularly given the online survey methodology. We do, however, present information on regional services in the introduction to the experiments, where participants were told to assume the highest service standards for each amenity were available regionally at a 45 minute driving distance. Thus the value of all amenities are valued relative to this baseline.

In previous studies we have found that distance is important in land type valuations. For instance, Tonin and Turvani (2017) found that a 10 per cent increase in distance to contaminated sites increased local property prices by 6.2 per cent (all else being equal). We therefore include distance to the amenities in the experiments to explore the impact of distance from the respondent's home location on their valuation. We tested six distance levels in the experiments, defined by drive and walk times for clarity of understanding for participants.

Lastly, we included the monetary cost of having the local amenities. It is essential to include a monetary cost attribute in the experiments to be able to calculate valuations. An important consideration was the payment vehicle to use for the choice tasks. It was important that the costs be presented in a way that was credible to participants and that applied equally to all participants in the sample.

In the UK, Lanz and Provins (2013) used an increase in council tax (£ per year) to measure the preference for spatial provision of local environment improvements in the context of

[3] We also tested an enhanced service levels for arts centres in the pilot survey, but this was dropped on the basis that respondents did not seem to perceive differences between the two standards in the pilot survey.

regeneration policies. The payment ranged from £0 to £30 per year. In a pilot study by Cambridge Economic Associates et al. (2010), additional council tax (on top of the current council tax) was used to account for improvements to the local environment to be maintained each year. The cost ranged from £0 to £50 per year (in addition to current tax levels). Damigos and Kaliampakos (2003) used a contingent valuation approach to estimate landscape and recreation impacts of the redevelopment of a quarry in Athens. The payment method was the maximum one-off payment participants would be willing to pay for reclaiming the site.

Based on the review of previous literature and the requirements for this study, we recommended the use of local taxes ('rates' in the Auckland context) or rent as the payment vehicle. In the introduction, the costs were defined as the costs of providing the local services that the participant or their household would pay through small increases in rates or rent. The costs were presented as $/month/household. For individuals who lived in shared accommodation, the costs were presented as $/month/individual. In the pilot survey, we tested six payment levels within a range of $0.00 to $50.00 per month ($0–$600 per year if local tax is paid in 12 instalments). In the pilot we observed that a sizeable proportion of respondents chose options at the highest cost levels (nearly 30% of participants selected options with the highest monthly costs). We therefore increased the highest cost level to $75 per month for the main survey to better capture the values for participants who may have higher values for local amenities (or for those who are less sensitive to the cost changes).

There was also a policy interest to understand if participants prefer co-location of the amenities, i.e. that two (or more) amenities could be located in the same facility. In the pilot survey we therefore attempted to incorporate a co-location attribute in the choice experiments. However, this was found to confuse participants and therefore it was dropped for the main surveys and respondents were asked directly about their preference for co-located facilities in general.

Table 1: Experiment attributes and their levels

Amenities		Service Level	Standard
Library	0	**Not available**	**No**
	1	• computers available for the public to use • library-based events • display of library books, DVDs etc • Informal gathering spaces • workroom areas	Standard
Community centre	0	**Not available**	**No**
	1	• small and larger meeting rooms • co-located working spaces • spaces for clubs and social gatherings • support for activities run by community members	Standard
Arts centre	0	**Not available**	**No**
	1	• space for local community arts activity such as community drama, dance, local art classes and presentations	Standard
Leisure centre	0	**Not available**	**No**
	1	• Rooms for group fitness activities such as Pilates, yoga, pump, Zumba, high-intensity interval training, spin etc. • Weights and resistance, • Exercise machines such as rowing machines, stationary bike etc.	Standard
Indoor court	0	**Not available**	**No**
	1	• at least 2 standard sized basketball courts • rooms to run programmes or training • fitness space	Standard
	2	• at least 4 standard sized basketball courts • rooms to run programmes or training • fitness space • multiple changing rooms • special leisure amenities such as rock-climbing, squash or skating	Enhanced
Neighbourhood park	0	**Not available**	**No**
	1	• play space • flat, unobstructed, kickaround space for informal games (30m by 30m) • areas for socialising and relaxing • landscaping • specimen trees • furniture such as benches and tables	Standard
Sports field	0	**Not available**	**No**
	1	About 10-12 rugby fields in size Space for sports including rugby (including sevens), rugby league, cricket, soccer, hockey	Standard
Swimming pool/Aquatic centre	0	**Not available**	**No**
	1	• Teaching pool • Water areas for games and play • Water-based fitness areas	Standard
	2	• Teaching pool • Water areas for games and play • Water-based fitness areas • Deep-water for underwater sports or diving • Aquatic sport amenities such as dive-boards • Aquatic entertainment amenities such as slides, splash-pads	Enhanced
Distance	0	5 minutes walking	
	1	10 minutes walking or 2 minutes driving	
	2	5 minutes driving	
	3	10 minutes driving	
	4	20 minutes driving	
	5	30 minutes driving	
Local tax	0	No additional cost	
	1	$10 more per month	
	2	$20 more per month	
	3	$30 more per month	
	4	$50 more per month	
	5	$75 more per month	

Structure of the choice experiments

In each experiment two hypothetical options describing the local amenities are presented to participants. These are described as "Local provision A" and "Local provision B". Each option is described by the amenities (i.e. provision level, service level if relevant, distance from the respondent's home and additional rates or rent). Detailed information on each amenity and what each service standard level means was included in the introductory text along with visual information. Assumptions on existing regional services were also provided in the introductory text. Appendix A shows the introductory text for each of the choice experiments in the survey.

The combination of attribute levels presented within each choice option was specified from an experimental design ensuring that the maximum information was obtained from the stated choices.[4] In total, the number of attributes and levels generated a design incorporating 60 choice scenarios, which is clearly too many to present to each respondent. Therefore, the 60 tasks were grouped into 12 blocks of five, with each respondent being asked to evaluate five choice scenarios.[5]

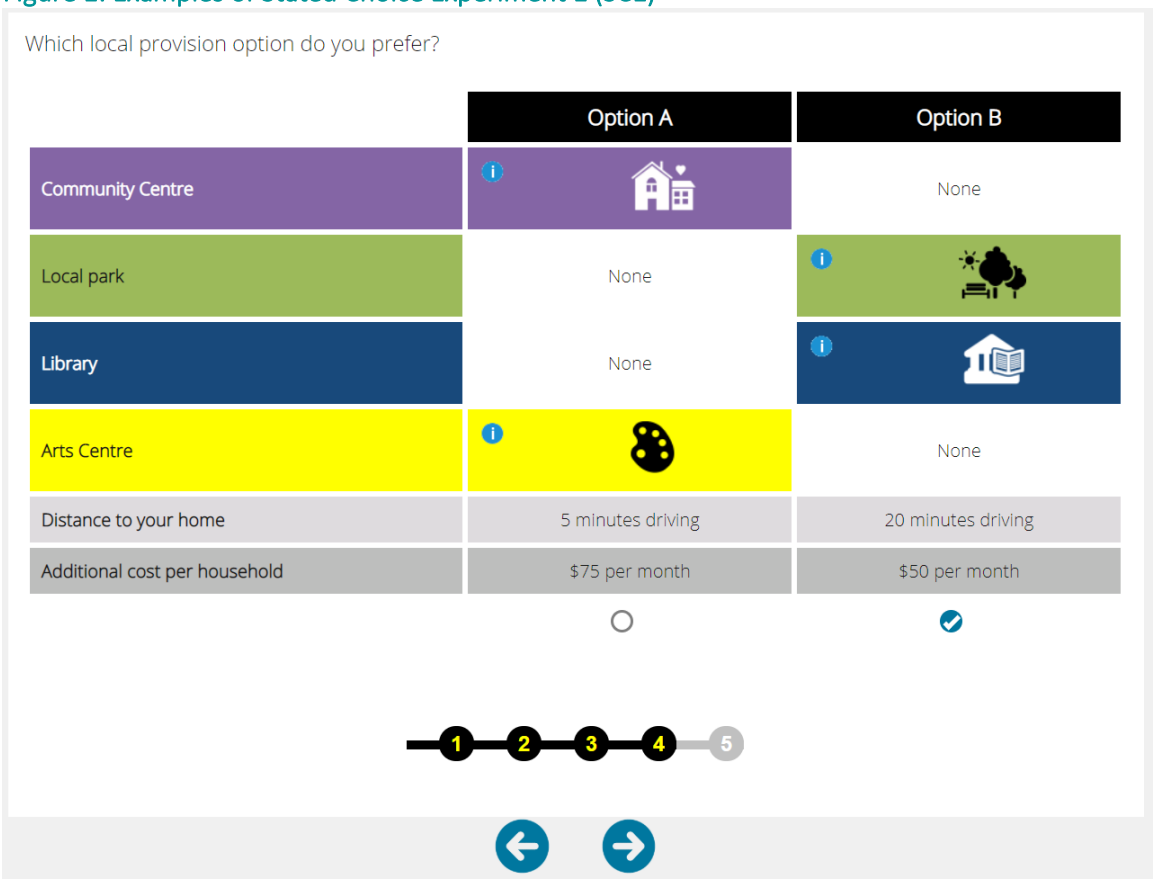
For both choice experiments, we also have included a 6th choice scenario being a choice between 'No service provision with zero cost' and 'highest standard service provision with highest cost'. More specifically:

- No service provision with zero cost option: no service provision for each of the amenities under the two categories (non-sports and sports related) with no additional rates or rent payment;
- Highest standard service provision with highest cost option: all the amenities included in the choice experiment provided with the highest service standard.

This specific choice scenario is designed to gauge participants' maximum willingness to pay for all of the amenities at their highest service level (relative to no provision).

[4] We have used the Ngene software package (version 1.2) to generate the experimental design (ChoiceMetrics, 2018).
[5] The Ngene blocking algorithm was used to minimise the total correlation values between the blockings and all of the attributes.

Figure 1: Examples of Stated Choice Experiment 1 (SC1)



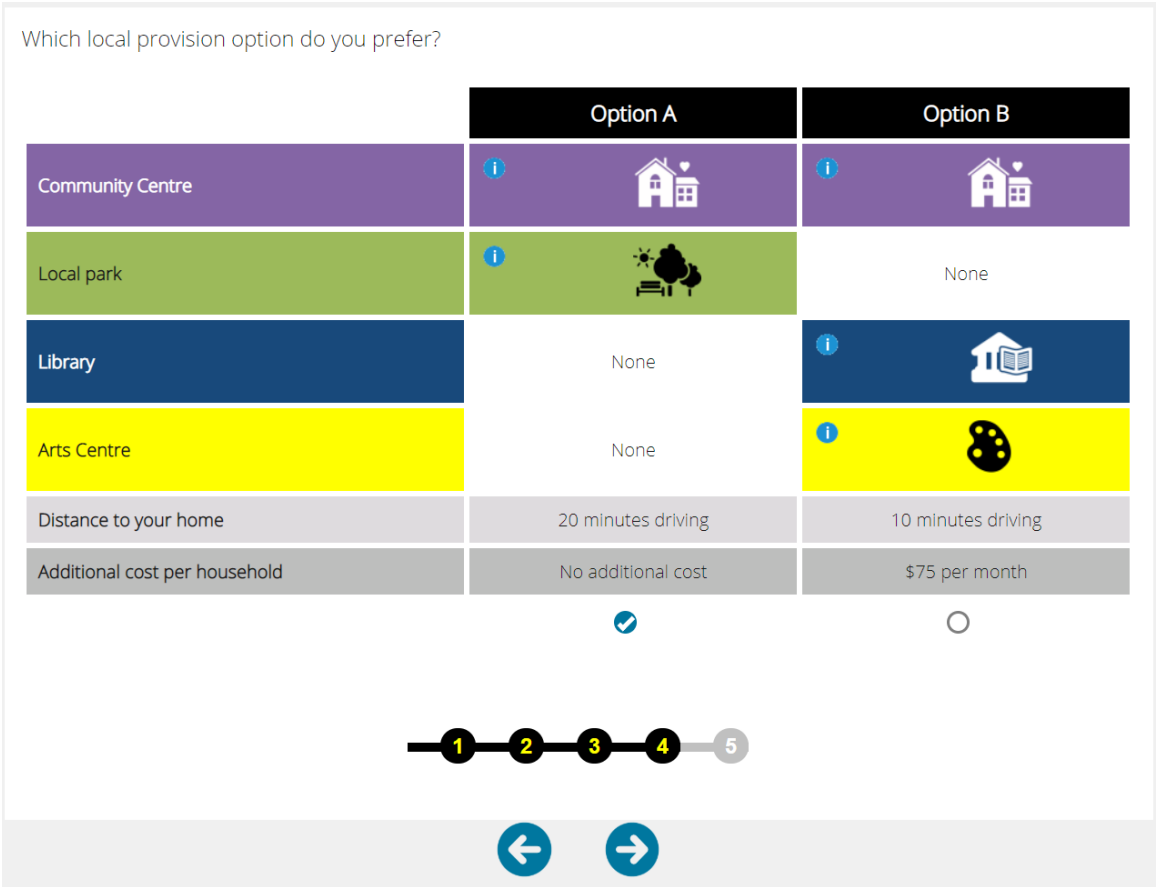
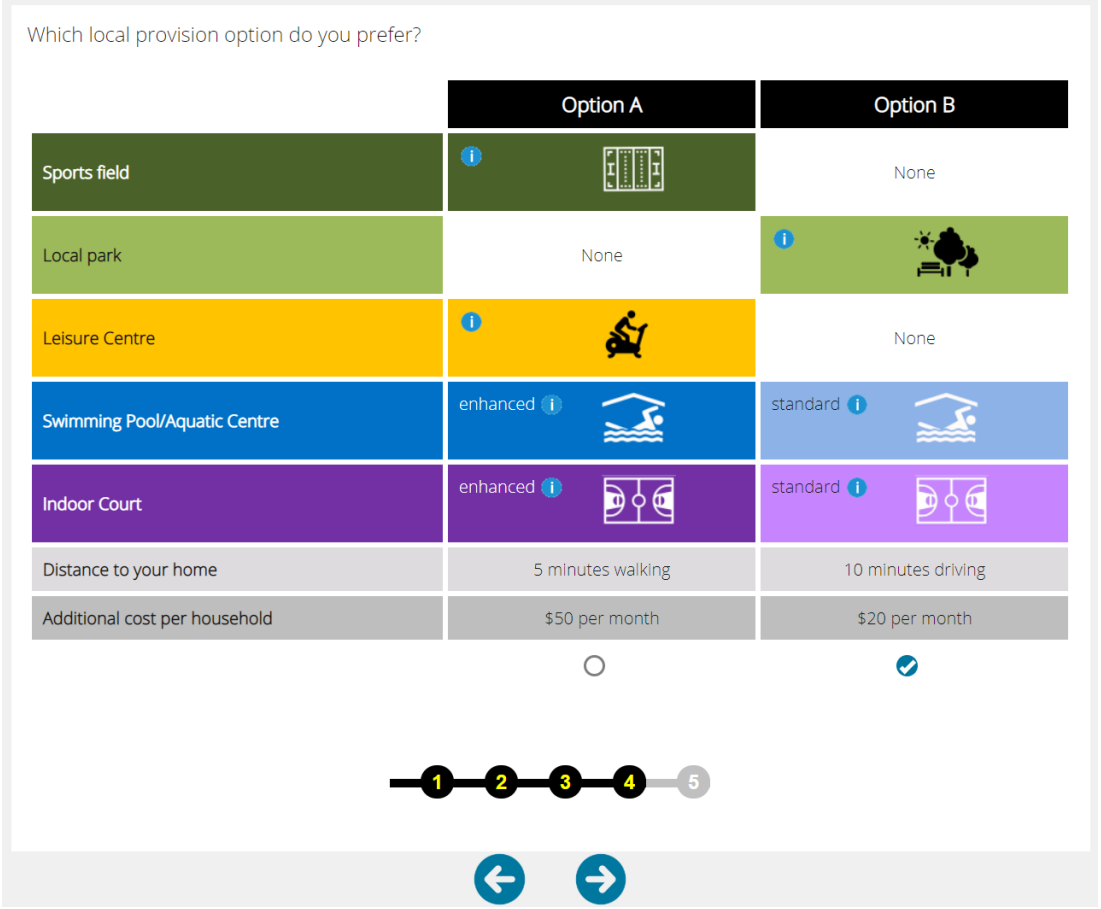


Figure 2: Examples of Stated Choice Experiment 2 (SC2)



2.5 Research method

For the general public survey an online panel approach was used with Dynata providing the panel sample.

The survey was administered by way of an email invitation from Dynata to their panellists, which included a link to the survey. The survey was programmed and managed by Accent Marketing and Research.

2.6 Sample and quotas

Quotas were set to ensure the sample was broadly representative of the Auckland adult population by age, gender and area. Auckland 2018 Census data was used to provide the quota targets as follows:

- Gender
  - Male 48%
  - Female 52%

- Age
  - 18-19 4%
  - 20-29 20%
  - 30-39 18%
  - 40-49 20%
  - 50-64 23%
  - 65-74 9%
  - 75+ 6%

- Auckland area
  - North 24%
  - Central* 29%
  - West 16%
  - South 31%

* includes East

2.7 General public pilot

The survey questionnaire and the choice experiments were tested in a pilot survey conducted in January 2020.

For the pilot a target of 150 was set. A soft launch of 25 was conducted on 7 and 8 January 2020 and then the remaining 125 were covered between 9 and 13 January 2020. This was before any changes in behaviour as a result of Covid-19.

Quotas were set to ensure the sample was broadly representative of the adult population by age, gender and area.

Overall 286 entered the survey and 151 (53%) completed.

93 (33%) were out of scope (9 because they did not accept the privacy statement at Q5 and the rest because they were out of quota on age or gender).

14 (5%) dropped out at the splash screen. 23 (8%) dropped out between Q11 (the first question after the quota questions) and just before the stated preference. Just three dropped out at the stated preference and none after it.

This shows a very low drop out rate and implies that the questionnaire was engaging.

Almost all (99%) who answered on behalf of others in their household were confident in the answers for other members of your household for each facility and 86% found it easy to answer the questions on usage of facilities.

The average completion time for the questionnaire was 16 minutes.

Analysis of the background and choice experiment data indicated that the questionnaire was generally working as intended. However, a few amendments were made to the survey, including:

- Increasing the range of tax levels (monetary cost) to $75 per month per household to try to capture those participants who may have higher values for the amenities (and to provide more reliable measures of willingness to pay).
- Re-specifying the distance categories to ensure consistency across these.
- Dropping co-location of services, on the basis that participants found this too confusing.
- Dropping the enhanced service description for arts centres.

It was recommended to proceed to the main stage. A copy of the pilot report is available on request.

2.8 Main stage

Overall, 3,284 entered the survey and 1,850 (56%) completed.

778 (23%) were out of scope (131 because they did not accept the privacy statement at Q5 and the rest because they were out of quota on age, gender or Auckland area).

There was a low drop out rate (20% of total sample) which implied that the questionnaire was engaging.

The average completion time for the questionnaire was 16 minutes.

2.9 Weighting

The initial plan was to weight the data for all household members in the households to match the Census population data by age and gender within geographic area and to weight as appropriate.

The Local Board Areas were allocated to geographic areas as follows:

- **Central**: Great Barrier, Waiheke, Waitemata, Albert-Eden, Puketāpapa, Ōrkei, Maungakiekie-Tāmaki
- **North**: Rodney, Hibiscus and Bays, Upper Harbour, Kaipātiki, Devonport-Takapuna
- **South**: Howick, Māngere- Ōtāhuhu, Ōtara-Papatoetoe, Manurewa, Papakura, Franklin
- **West**: Henderson-Massey, Waitākere Ranges, Whau.

Census-based quotas on the adult population by age, gender and area had been set for the lead participant. These were met as follows:

		(2018 Census[6])
Central	30%	(30%)
North	24%	(24%)
South	31%	(32%)
West	15%	(15%)
18 to 19 years old	3%	(3%)
20 to 29 years old	21%	(21%)
30 to 39 years old	19%	(19%)
40 to 49 years old	20%	(20%)
50 to 64 years old	20%	(20%)
65 to 74 years old	11%	(11%)
75 years or more	6%	(6%)
Male	47%	(46%)
Female	53%	(53%)

The survey collected details on other adult and child household members. First the numbers of other adults and children living in the household was collected. Then, for each, the age and gender was probed. We then compared the overall samples age and gender profile to the 2018 Census data for Auckland. This is shown in Table 2 below and displays a remarkably close match.

[6] Throughout the report percentages may not add to 100% because of rounding

Considering the Census is two years old and that it was a relatively close match to the Census data, we did not weight the data.

Table 2: Survey age and gender compared to 2018 Census by area

	Total		Central		North		South		West	
	Census %	Survey %	Census %	Survey %	Census %	Survey %	Census %	Survey %	Census %	Survey %
Under 5 years	7.9	7.9	6.3	8.2	7.3	7.4	9.2	7.7	8.9	8.7
6-9 years	5.6	5.6	4.5	4.9	5.3	6.4	6.4	7.2	5.9	5.8
10-14 years	6.5	6.7	5.5	6.0	6.2	7.9	7.4	7.2	6.4	4.7
15-17 years	4.0	4.9	3.6	4.0	3.8	4.7	4.4	5.5	3.8	5.1
18-29 years	18.8	19.6	22.3	21.7	16.0	15.7	18.4	20.1	18.0	20.5
30-39 years	14.8	14.9	16.2	16.5	13.9	14.1	14.0	14.2	15.7	14.8
40-49 years	13.4	13.8	13.3	14.9	14.0	14.5	12.8	12.8	13.6	12.9
50-64 years	17.1	14.8	16.7	14.9	18.6	14.4	16.5	14.3	16.7	16.0
65-74 years	7.0	7.5	6.7	6.0	8.5	9.3	6.5	7.3	6.3	7.5
75+ years	5.0	4.0	4.8	3.0	6.5	5.7	4.4	3.7	4.7	3.9
Male	49.4	49.4	49.4	48.0	49.0	48.4	49.7	50.5	49.6	50.8
Female	50.6	50.6	50.6	52.0	51.0	51.6	50.3	49.5	50.4	49.2

Missing Data

For the amenity usage statistics, the lead participant was asked if they were comfortable answering on behalf of other members of their household. If they were only comfortable about answering on behalf of some, they were asked about who.

The usage data was collected only for the lead participant and other members of the household that the lead participant was comfortable answering for.

475 (26% of the sample) lived alone or were group flatting, students in halls of residence or retirement village residents and therefore were not asked about other household members.

Of the 1,375 (74% of the sample) who lived with other household members, 82% were confident answering on behalf of **all** other household members, 15% were confident answering on behalf of **some** household members and 3% on behalf of **none**.

3 Findings

3.1 Introduction

This chapter sets out the findings from the research with the general public (excluding the pilot). The findings are based on 1,850 responses.

The chapter is divided into the following sections:

- Nature of sample
- Usage of facilities
- Values from the stated choice experiments
- Demographics.

3.2 Nature of sample

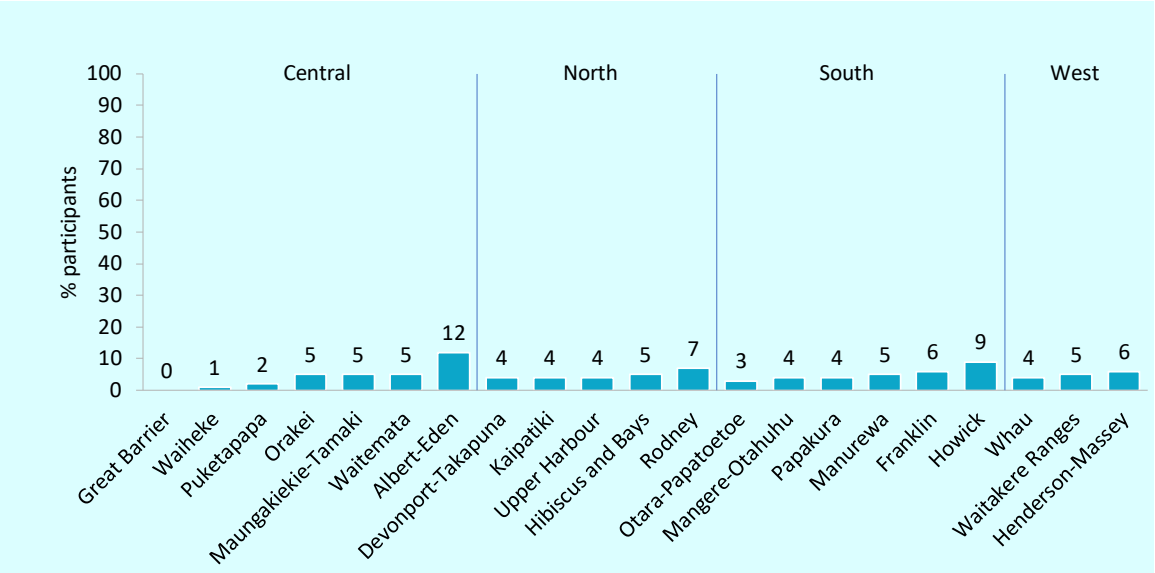
This section discusses the background data collected on the sample covering Local Board Area, dwelling type, household structure, household size and tenure.

Local Board Area

The participants' Auckland Local Board Area is shown in Figure 3 below grouped into area[7]. Quotas were set on area but not on Local Board Area. Even though there were no quotas at the local board area level the distribution shows that the sample is broadly representative of the sub-region. Note that the sample size is not sufficiently large to reliably report results at the local board level, but based on the data collected it is likely that results are similar between most local boards.

[7] Note, East is grouped with Central

Figure 3: Local board area



Base[8]: 1,850

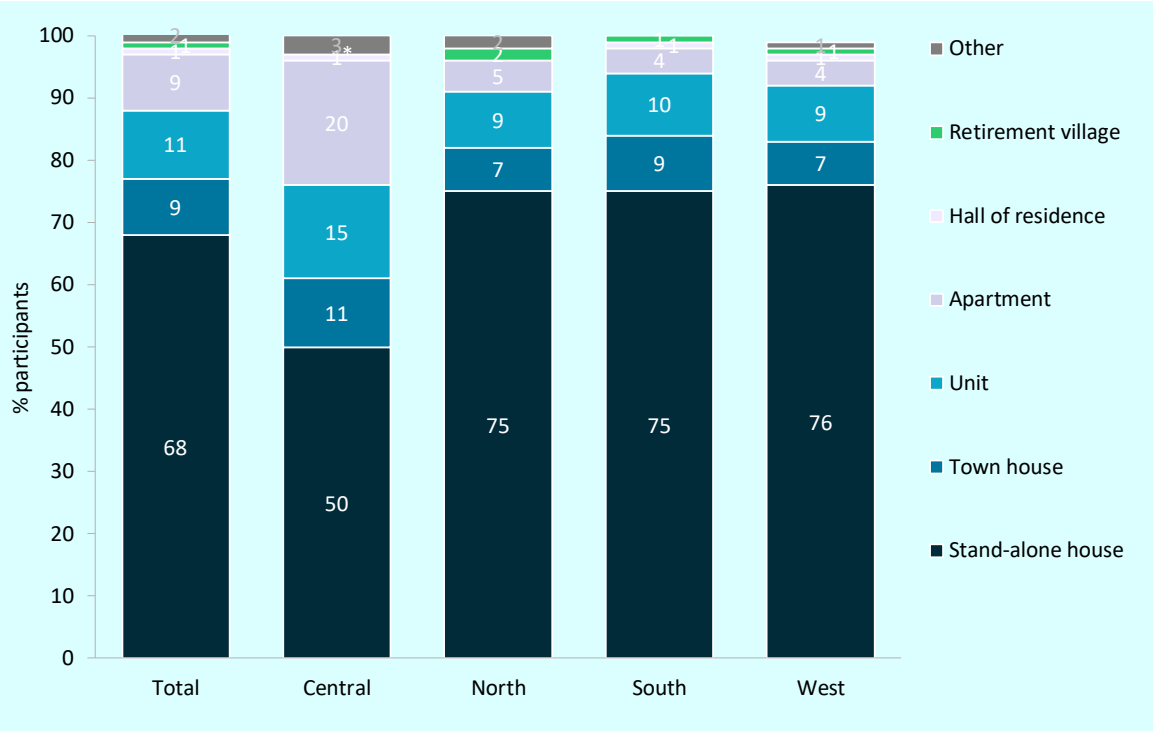
Dwelling Type

Overall, more than two thirds of participants' dwellings (68%) were stand-alone houses. Around a tenth each lived in units (11%), town houses (9%) or apartments (9%). See Figure 4.

Those in the central area were much more likely to live in apartments (20% compared to 4-5% for other areas) and units (15% compared to 9-10% for other areas) and less likely to live in standalone houses (50% compared to 75-76% for other areas).

[8] base here and for other figures and tables in the report refers to the number of observations

Figure 4: Dwelling type by area

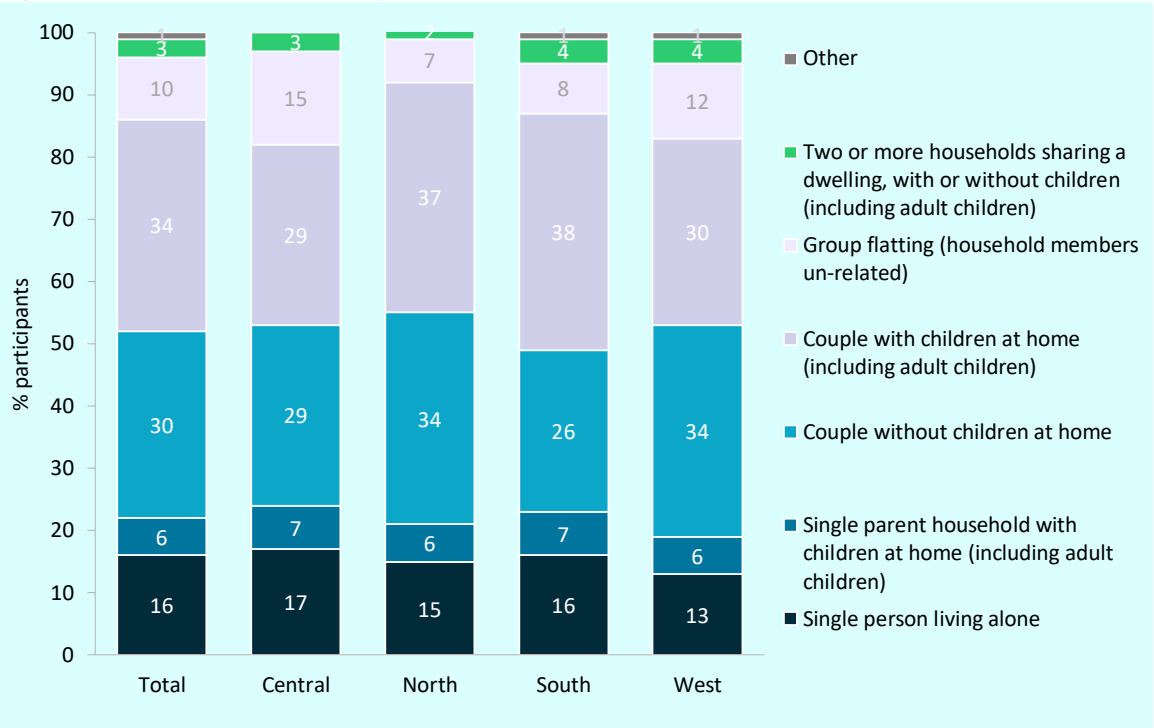


Base: Total 1,850, Central 553, North 435, South 583, West 279
* = less than 0.5%

Household structure

Over a third (34%) of households were couples with children at home (including adult children). Three tenths of households were couples without children at home. Sixteen per cent were single persons living alone and 6% were single parent households. See Figure 5.

Figure 5: Household structure by area



Base: Total 1,850, Central 553, North 435, South 583, West 279

We have compared the survey data to 2018 projections based on 2013 Census data[9] and it shows a good match:

	Census	Survey
Partner in couple-without-children family	30%	30%
Partner/parent in two-parent family	37%	34%
Parent in one-parent family	8%	6%
Person in one-person household	10%	16%
Other living arrangement types	16%	14%

Household Size

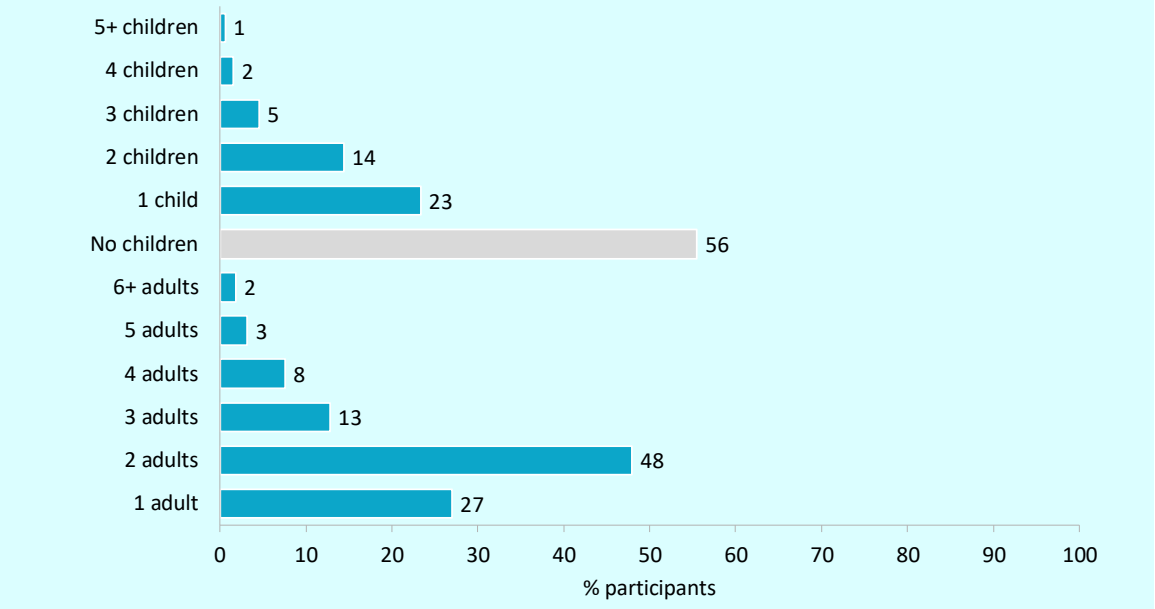
Those who were not living alone or group flatting were asked how many adults and, if relevant, children (aged under 18 years) lived in the household.

We have added in those living alone and group flatters as one person in Figure 6 (for the whole sample) and table (split by area) below.

Almost half the households (48%) comprised two adults. Forty four per cent had one or more children (including adult children) at home.

Households in the Central area were more likely to comprise of one adult (33% compared to 23-25% for other areas) and less likely to have children at home (40% compared to 42-50% for other areas).

Figure 6: Adults and children (aged under 18 years) in the household



Base: 1,850

9 http://nzdotstat.stats.govt.nz/OECDStat_Metadata/ShowMetadata.ashx?Dataset=TABLECODE7974&ShowOnWeb=true&Lang=en

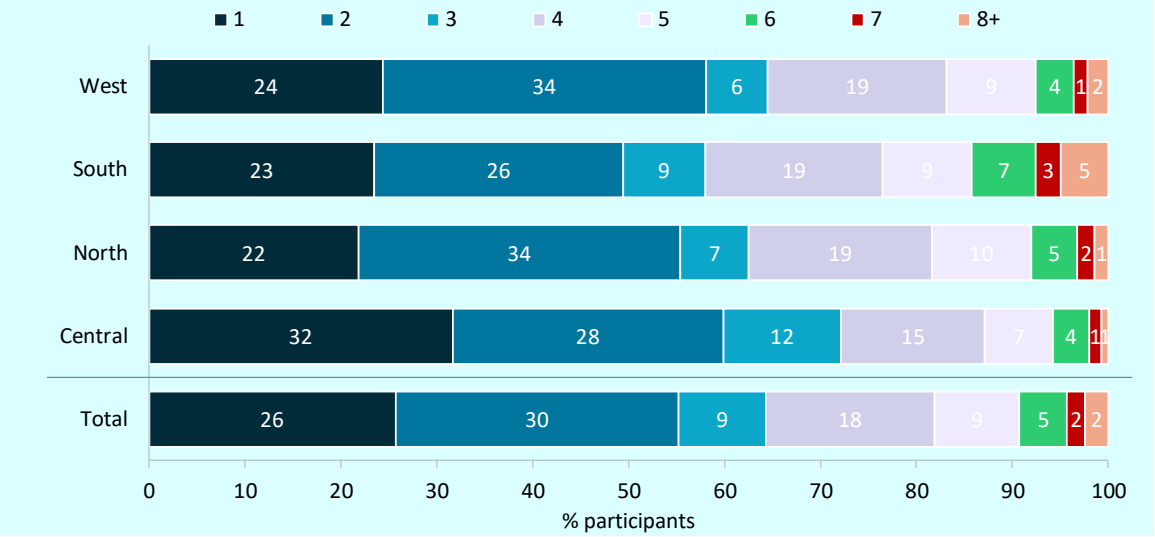
Table 3: Adults and children in the household by area

	Central %	North %	South %	West %
1 adult	33	23	25	25
2 adults	48	52	44	49
3 adults	10	13	15	13
4 adults	6	9	8	9
5 adults	2	3	5	3
6+ adults	1	1	3	1
No children	60	55	50	58
1 child	24	22	25	22
2 children	11	15	17	14
3 children	3	5	5	5
4 children	1	2	2	1
5+ children	*	*	1	*
Base	**553**	**435**	**583**	**279**

* = less than 0.5%

The overall household size was estimated from the number of adults and children. The Central area has the smallest households and the South the largest. See Figure 7.

Figure 7: Household size by area



Base: Total 1,850, Central 553, North 435, South 583, West 279

The survey data is compared to the 2013[10] Census data on number of usual residents in the household for households in occupied private dwellings. It should be noted that these are not directly comparable as the survey data includes a small proportion in halls of residence and retirement villages and also treats them and group flatters as single residents. Hence the survey data shows a higher proportion of single person households than the Census.

[10] Household data from 2018 Census is not available.

Table 4: Household size by area compared to 2013 Census

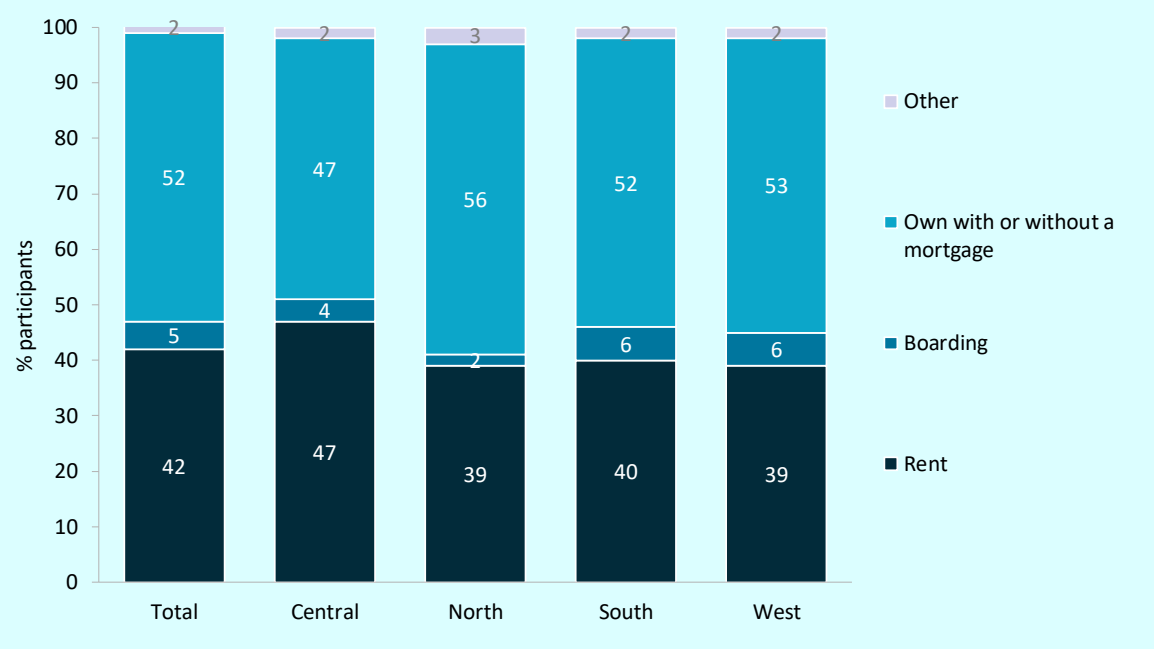
	Total		Central		North		South		West	
	2013 Census %	Survey %	2013 Census %	Survey %	2013 Census %	Survey %	2013 Census %	Survey %	2013 Census %	Survey %
One Usual Resident	18	26	23	32	18	22	15	23	18	24
Two Usual Residents	30	30	31	28	33	34	26	26	28	34
Three Usual Residents	18	9	18	12	18	7	18	9	19	6
Four Usual Residents	18	18	17	15	19	19	19	19	18	19
Five Usual Residents	9	9	7	7	8	10	10	9	9	9
Six Usual Residents	4	5	3	4	3	5	6	7	4	4
Seven Usual Residents	2	2	1	1	1	2	3	3	2	1
Eight or More Usual Residents	2	2	1	1	1	1	3	5	2	2
Base	**469,494**	**1,850**	**137,103**	**553**	**118,629**	**435**	**138,765**	**583**	**74,997**	**279**

Tenure

The sample, excluding those in retirement villages and halls of residence, were asked whether they rented or owned the property. Over half (52%) own their property, 42% rent and 5% board.

Those in the Central area were more likely to rent than those in other areas (47% compared to 39-40% for other areas).

Figure 8: Tenure by area



Base: Total 1,831, Central 552, North 425, South 579, West 275

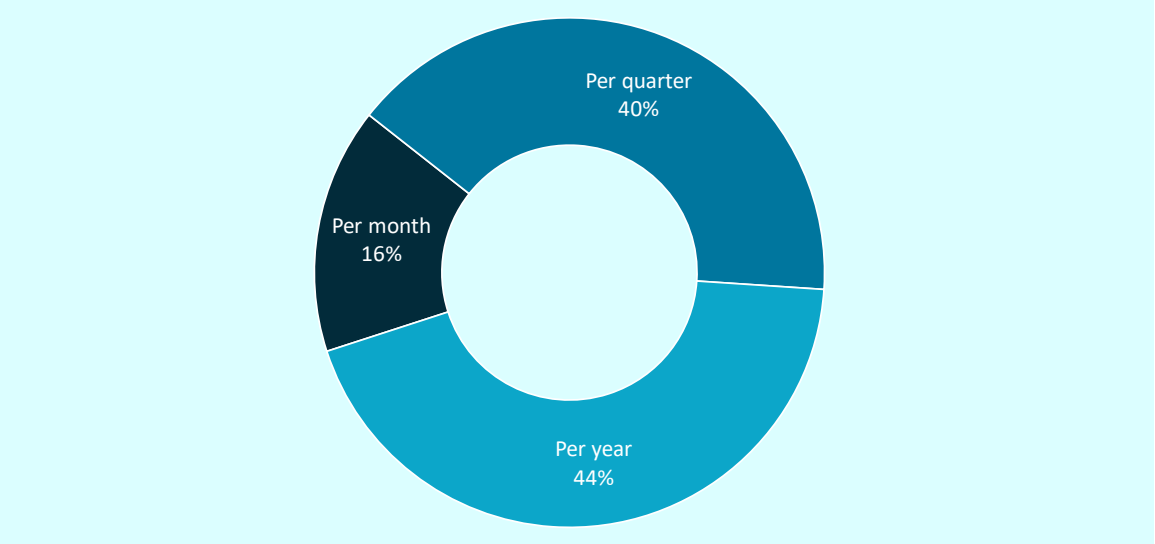
The 52% who owned their property (with or without a mortgage) were asked what the rates were and the frequency of paying.

The mean property rates by frequency of paying were:

- Monthly $1,222
- Per quarter $1,118
- Annual $2,673

The largest proportion (44%) paid rates annually, 40% paid quarterly and 16% monthly. Seventeen per cent did not respond. See Figure 9.

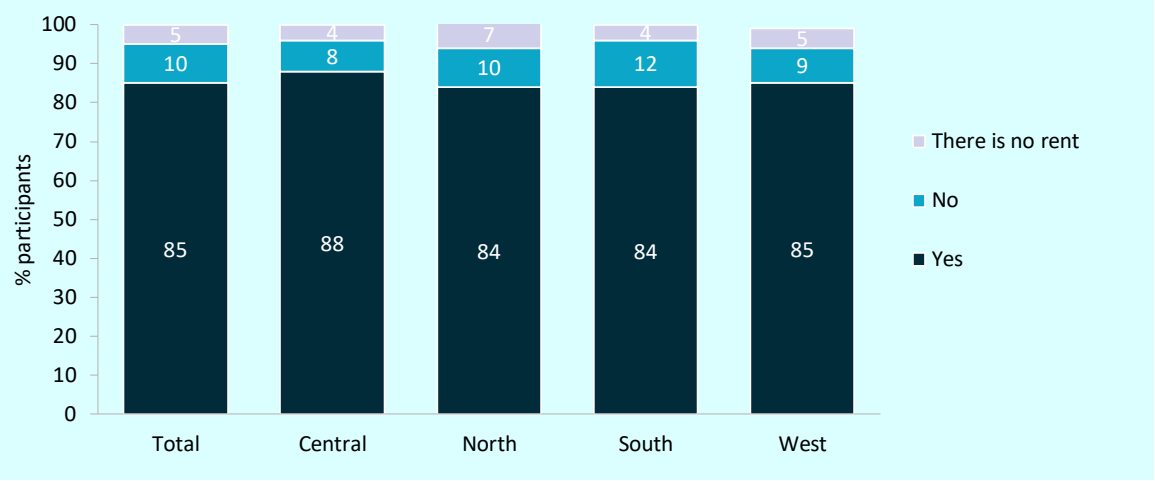
Figure 9: Frequency of paying rates



Base: 826 who owned their property and provided a rate

Those who did not own the property (48% of the sample) were asked if they paid their own share of the rent. Eight five per cent did. There was little difference by area. See Figure 10.

Figure 10: Whether paid own share of the rent



Base: Those who did not own the property: Total 887, Central 291, North 188, South 279, West 129

3.3 Usage of facilities

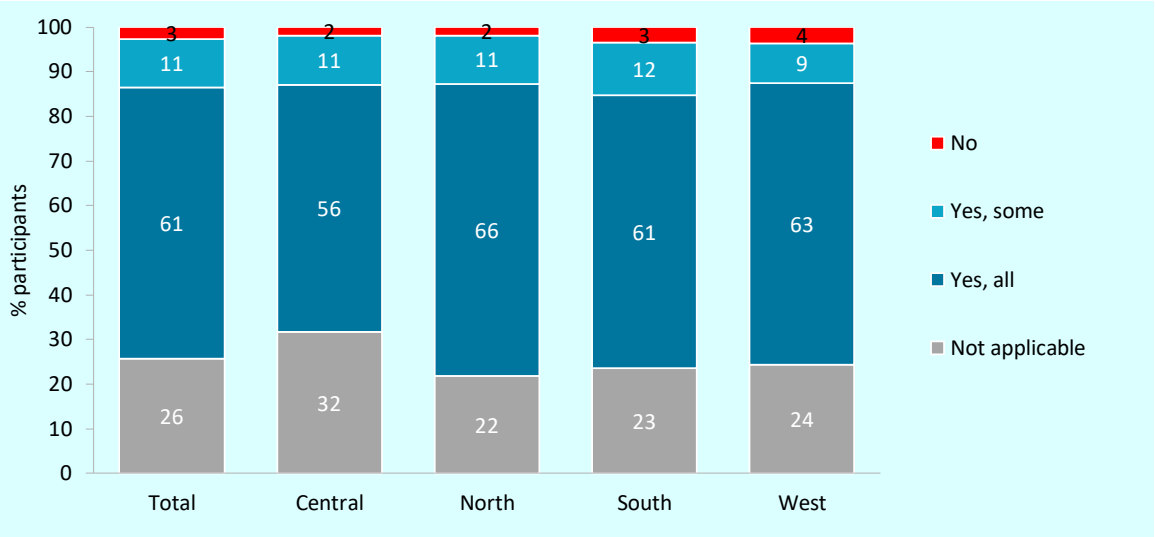
This section of the report covers the usage of the eight council facilities by the participant and the members of the participant's household if applicable.

Confidence in answers

Before asking participants about the household's usage of facilities we asked questions to gauge whether those who lived with other household members felt confident in being able to answer the usage of facilities questions for them.

First of all, participants who lived with others were asked if they could answer questions on the use of local facilities such as swimming pools, leisure centres, and libraries on behalf of other members of the household. Overall, 82% said they could for usage of all facilities, 15% for usage of some and 3% for none. When we include the 26% who live alone or are not asked to answer on behalf of others (as they live in a hall of residence, a retirement village or a group flatting) then 87% of the sample could answer confidently about themselves and others if applicable, 11% could answer for some others and 3% could not answer for others. See Figure 11.

Figure 11: Whether can answer questions on the use of local facilities such as swimming pools, leisure centres, and libraries on behalf of other members of the household



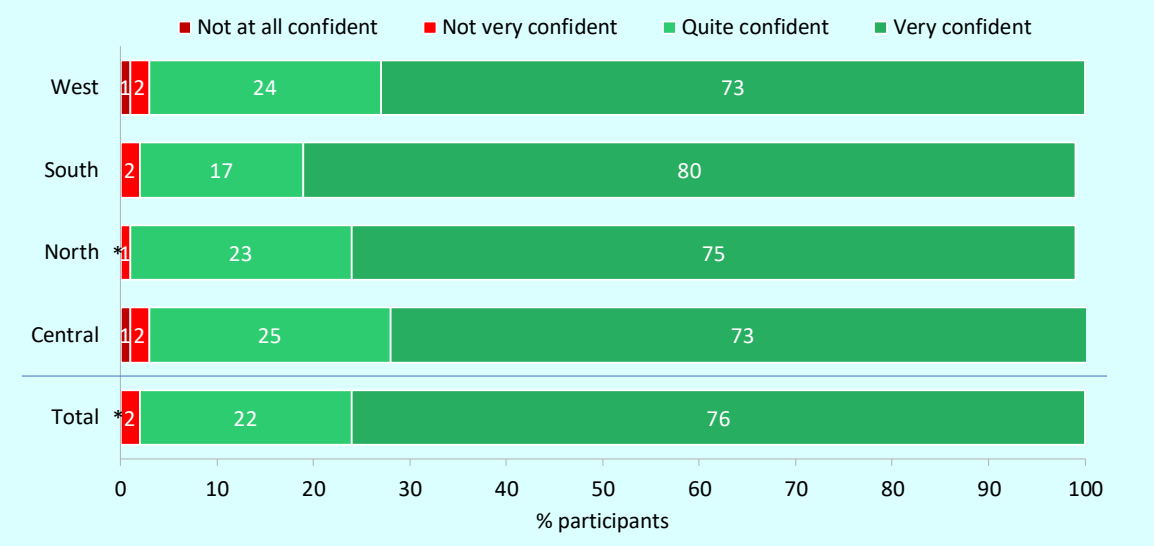
Base: Total 1,850, Central 553, North 435, South 583, West 279

The 11% of the whole sample who said they were not confident they could answer for all others were asked which others they could answer for.

Overall, they were confident that they could answer on behalf of 57% of the other household members.

After the questions on usage of facilities, participants who answered on behalf of other members of their household were asked how confident they were in the answers for other members of their household for each facility. The overwhelming majority (98%) were quite or very confident.

Figure 12: Confidence in answers for other members of the household for each facility



Base: those answering on behalf of other household members: Total 1,240, Central 341, North 311 South 399, West 189

Usage of facilities

For each facility type, participants were first asked if they or anyone else in the household, if applicable, had visited the Council facility in Auckland in the last six months. If so, they were asked which facility was visited and then how often the facility or facilities were visited in the previous seven days and previous four weeks by them and/or anyone else in the household, if applicable.

Finally, they were asked how far each facility was from their home.

For each facility we present the usage data by household members and then the total data disaggregated by area, age, gender, household structure, housing tenure and household income.

Swimming Pools/Aquatic Centres

Participants were asked if they and other members of their household, if applicable, had visited a Council swimming pool or aquatic centre in Auckland in the last six months (excluding school pools).

Overall, 43% of household members had visited a Council swimming pool or aquatic centre in Auckland in the last six months.

Table 5 shows the data for the participant (i.e. the adult who answered the questionnaire) and other adult and children members of the household. It also shows the mean number of pools visited in the last six months. Children (aged under 18 years) were more likely than

adults to visit pools and this may be driven by free access for under 16 year olds in Auckland.

The overall number of pools visited in the last six months by the participant is similar to the other adults in the household but much lower than children. 36-38% of adults had visited a Council swimming pool or aquatic centre in Auckland in the six months compared to 59% of children.

Table 5: Number of pools visited in previous six months

	Total %	Participant %	Other adults %	Children[11] %
None	57	62	64	41
1	29	27	25	39
2	9	7	7	13
3	2	2	2	4
4	1	1	1	1
5+	1	1	1	2
Mean	**0.68**	**0.61**	**0.58**	**0.92**
Base	**4,964**	**1,834**	**1,092**	**1,149**

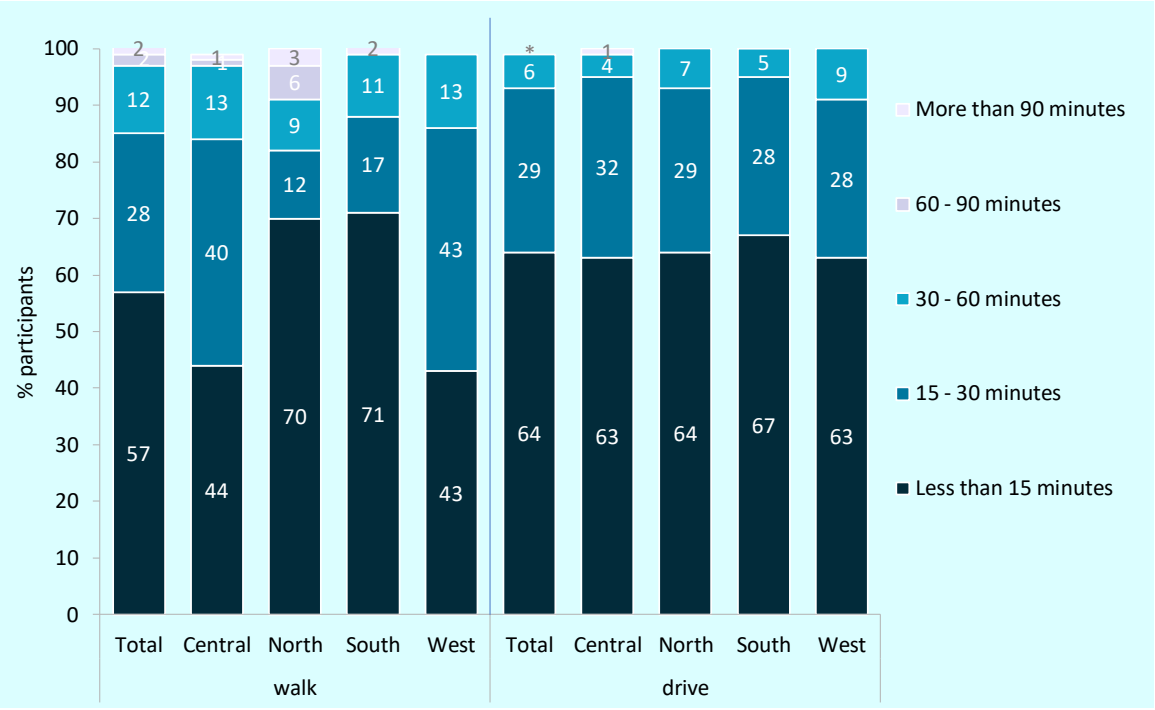
Participants were asked the travel time to each facility they visited[12]. They could answer with either walk or drive times. Twenty two per cent entered the walk time and 78% the drive time. The mean walk and drive times for all swimming pool or aquatic centres mentioned were:

- Walk 19 minutes (base: 196)
- Drive 15 minutes (base: 707)

Figure 13 shows the distribution of walk and drive times by area. In the Central and West areas the walk times were longer than in the North and South areas.

[11] Aged 17 years and under
[12] Distance was not asked for as participants often find that hard to estimate

Figure 13: Walk and drive times to pool by area



Base: Walk: Total 196, Central 75, North 33, South 65, West 23; Drive: Total 707, Central 192, North 160, South 257, West 98

* = less than 0.5%

Seven Days

The frequency of visiting any swimming pools or aquatic centres in the preceding seven days is shown for the participant, other adults in the household and children in the household in Table 6. There were some high values given[13] and these have been capped at 21.

Overall, 23% of household members had visited a pool in the preceding seven days. The mean number of visits was 0.66.

Children were more frequent visitors than adults: 32% had visited compared to 20-21% for adults.

Table 6: Frequency of visiting pools in previous seven days

	Total %	Participant %	Other adults %	Children %
0	77	79	80	68
1	11	10	9	17
2	5	4	5	8
3	2	2	2	2
4	1	1	1	1
5-10	2	2	2	3
11-21	1	1	1	1
Mean	**0.66**	**0.61**	**0.63**	**0.79**
Base	**4,964**	**1,834**	**1,883**	**1,247**

[13] Possibly because the question had been misread, e.g. assumed six months as in previous question or an error in entry

The mean frequency of visiting swimming pools or aquatic centres in Auckland in the last seven days was highest in the South and Central areas and lowest in the North area:

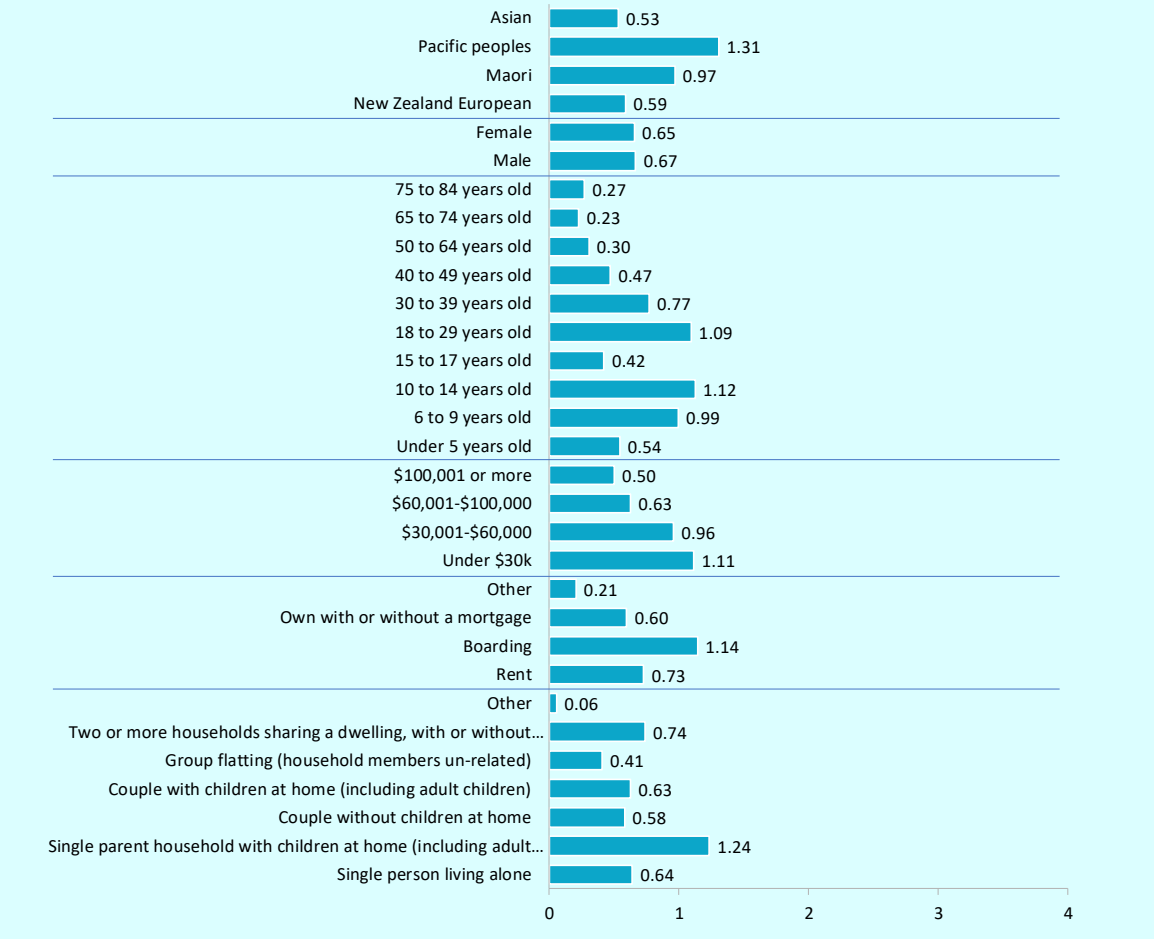
- Central 0.78
- North 0.55
- South 0.88
- West 0.58

The mean frequency of visiting swimming pools or aquatic centres in Auckland in the last seven days by the four main ethnic groupings, gender, age, household income, housing tenure and household structure is shown in Figure 14.

Key findings are:

- Pacific peoples were more frequent visitors than other ethnic groups
- There was little difference by gender
- Younger adults were more frequent visitors than older adults and children aged between 6 and 14 were more frequent visitors than younger or older children.
- Frequency of visit was higher for lower income households
- Those who were boarding were much more frequent visitors than renters or owners
- Single parent households were the most frequent visitors.

Figure 14: Mean frequency of visiting swimming pools or aquatic centres in Auckland in the last seven days by ethnic group, gender, age, household income, housing tenure and household structure



Base: Ethnic group: New Zealand European 2933, Maori 616, Pacific peoples 440, Asian 885; Gender: Male 2,382, Female 2,457; Age: Under 5 years old 386, 6 to 9 years old 312, 10 to 14 years old 317, 15 to 17 years old 216, 18 to 29 years old 960, 30 to 39 years old 738, 40 to 49 years old 701, 50 to 64 years old 733, 65 to 74 years old 386, 75 to 84 years old[14] 200; Household income: Under $30k 497, $30,001-$60,000 900, $60,001-$100,000 1,190, $100,001 or more 1,586; Housing tenure: Rent 1,998, Boarding 218, Own with or without a mortgage 2,603, Other 112; household structure: Single person living alone 292, Single parent household with children at home (including adult children) 438, Couple without children at home 1,119, Couple with children at home (including adult children) 2,581, Group flatting (household members un-related) 194, Two or more households sharing a dwelling, with or without children (including adult children) 286, Other 54

Four Weeks

The frequency of visiting any pools in the preceding four weeks is shown for the participant, other adults in the household and children in the household in Table 7. There were some high values given[15] and these have been capped at 56.

Overall, 32% of household members had visited a pool in the preceding four weeks. The mean number of visits was 1.70.

[14] No one in the research was aged over 84 years old

[15] Possibly because the question had been misread, e.g. assumed six months as in previous question or an error in entry

Children were more frequent visitors than adults: 46% had visited compared to 27-28% for adults.

Table 7: Frequency of visiting pools in previous four weeks

	Total %	Participant %	Other adults %	Children %
0	68	72	73	54
1	10	9	7	15
2	7	5	7	9
3	3	2	3	5
4	4	3	3	7
5-10	5	5	5	7
11-29	3	3	2	3
30-56	1	1	1	1
Mean	**1.70**	**1.54**	**1.47**	**2.06**
Base	**4,964**	**1,834**	**1,883**	**1,247**

The mean frequency of visiting swimming pools or aquatic centres in Auckland in the last four weeks was highest in the South and lowest in the North area:

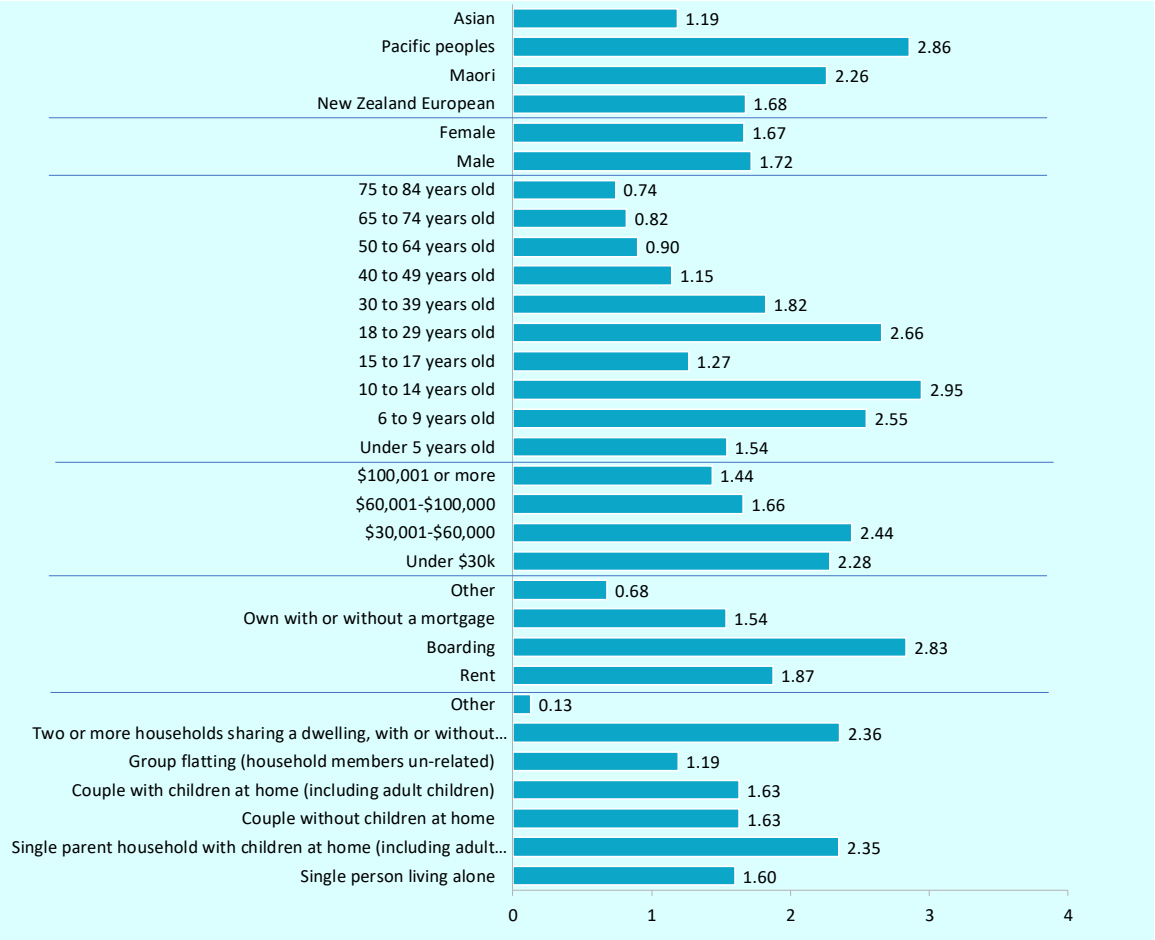
- Central 1.68
- North 1.30
- South 2.09
- West 1.48

The mean frequency of visiting swimming pools or aquatic centres in Auckland in the last four weeks by the four main ethnic groups, gender, age, household income, housing tenure and household structure is shown in Figure 15.

Key findings are:

- Pacific peoples were more frequent visitors than other ethnic groups
- There was little difference by gender
- Younger adults were more frequent visitors than older adults and children aged between 6 and 14 were more frequent visitors than younger or older children.
- Frequency of visit was highest for households with incomes between $30k and $60k and lowest for the highest income band
- Those who board were much more frequent visitors than renters or owners
- Single parent households and two or more households sharing a dwelling were the most frequent visitors.

Figure 15: Mean frequency of visiting swimming pools or aquatic centres in Auckland in the last four weeks by ethnic group, gender, age, household income, housing tenure and household structure



Base: Ethnic group: New Zealand European 2933, Maori 616, Pacific peoples 440, Asian 885; Gender: Male 2,382, Female 2,457; Age: Under 5 years old 386, 6 to 9 years old 312, 10 to 14 years old 317, 15 to 17 years old 216, 18 to 29 years old 960, 30 to 39 years old 738, 40 to 49 years old 701, 50 to 64 years old 733, 65 to 74 years old 386, 75 to 84 years old 200; Household income: Under $30k 497, $30,001-$60,000 900, $60,001-$100,000 1,190, $100,001 or more 1,586; Housing tenure: Rent 1,998, Boarding 218, Own with or without a mortgage 2,603, Other 112; household structure: Single person living alone 292, Single parent household with children at home (including adult children) 438, Couple without children at home 1,119, Couple with children at home (including adult children) 2,581, Group flatting (household members un-related) 194, Two or more households sharing a dwelling, with or without children (including adult children) 286, Other 54

Libraries

Participants were asked if they and other members of their household, if applicable, had visited a Council library in Auckland in the last six months.

Overall, 49% of household members had visited a Council library in Auckland in the last six months.

Table 8 shows the data for the participant and other members of the household. It also shows the mean number of libraries visited.

The overall number of libraries visited by the participant was much higher than other adults in the household and somewhat higher than children. 58% of participants, 53% of children and 37% of other adults had visited a Council library in Auckland in the previous six months.

Table 8: Number of libraries visited in previous six months

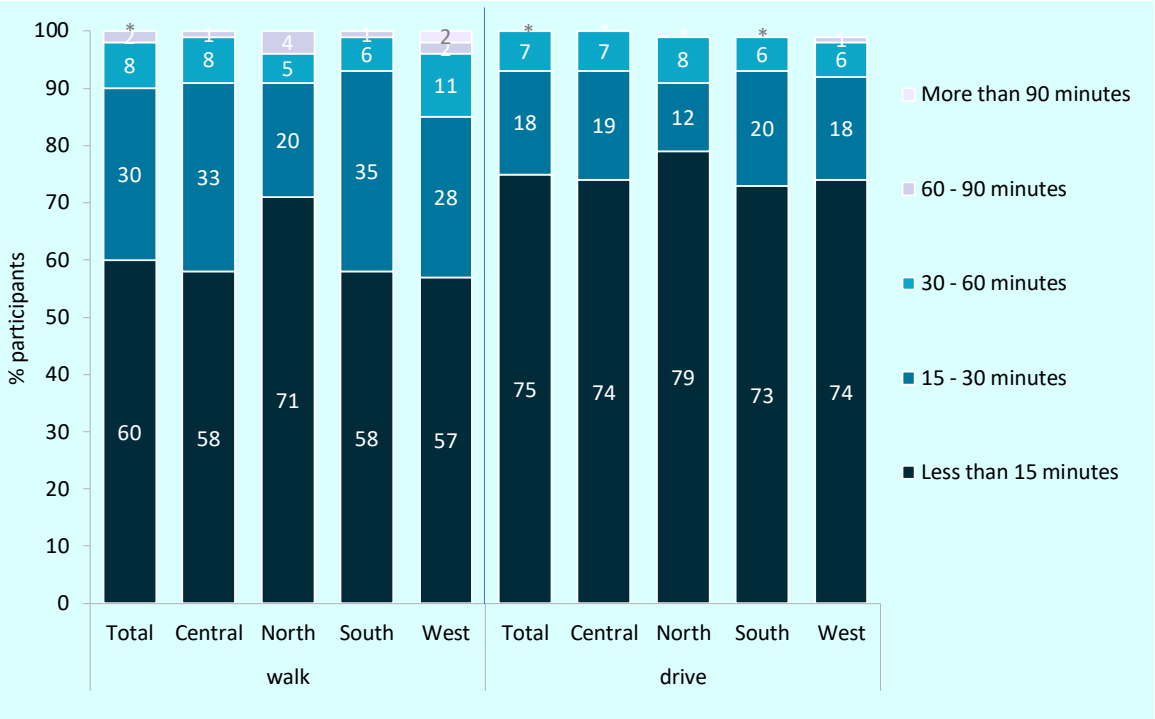
	Total %	Participant %	Other adults %	Children %
None	51	42	63	47
1	36	40	29	41
2	9	12	5	8
3	2	4	2	2
4	1	2	0	1
5+	1	1	1	1
Mean	**0.71**	**0.87**	**0.55**	**0.71**
Base	**4,964**	**1,834**	**1,092**	**1,149**

Participants were asked the walk or driving distance to each library they visited. Thirty one per cent entered the walk time and 69% the drive time. The mean walk and drive times for all libraries mentioned were:

- Walk 18 minutes (base: 397)
- Drive 13 minutes (base: 897)

Figure 17 shows the distribution of walk and drive times by area. In the North area the walk and drive times were shorter than in the other areas.

Figure 16: Walk and drive times to libraries by area



Base: Walk: Total 397, Central 167, North 76, South 101, West 53; Drive: Total 897, Central 239, North 229, South 280, West 149

* = less than 0.5%

Seven Days

The frequency of visits to libraries in the preceding seven days is shown for the participant, other adults in the household and children in the household in Table 9. There were some high values given[16] and these have been capped at 21.

Overall, 26% had visited a library in the preceding seven days. The mean number of visits was 0.61.

The participant was the most frequent visitor, followed by children and then other adults in the household.

Table 9: Frequency of visiting libraries in previous seven days

	Total %	Participant %	Other adults %	Children %
0	74	69	78	73
1	16	17	14	16
2	5	6	4	6
3	2	2	1	2
4	1	1	1	1
5-10	2	3	2	2
11-21	1	1	1	0
Mean	0.61	0.75	0.50	0.56
Base	**4,964**	**1,834**	**1,883**	**1,247**

The mean frequency of visiting libraries in Auckland in the last seven days was highest in the West and lowest in the South area:

- Central 0.67
- North 0.56
- South 0.54
- West 0.74

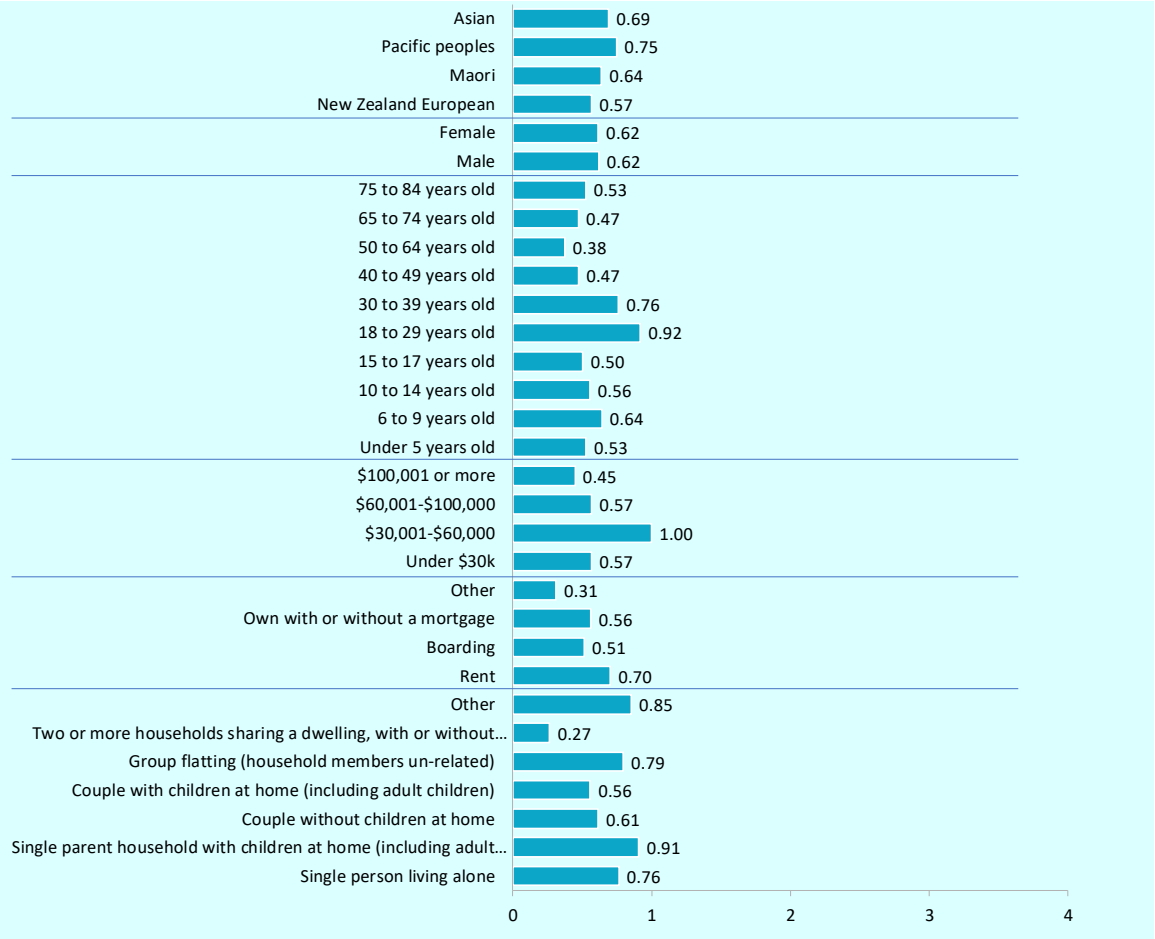
The mean frequency of visiting libraries in Auckland in the last seven days by the four main ethnic groups, gender, age, household income, housing tenure and household structure is shown in Figure 17.

Key findings are:

- Pacific peoples were more frequent visitors than other ethnic groups
- There was no difference by gender
- Adults aged 18-29 were the more frequent visitors to libraries and 50-64 year olds the least frequent
- Frequency of visit was highest for households with annual household incomes of $30-60k
- Renters were the most frequent visitors
- Single parent households were the most frequent visitors.

[16] Possibly because the question had been misread, e.g. assumed six months as in previous question or an error in entry

Figure 17: Mean frequency of visiting libraries in Auckland in the last seven days by ethnic group, gender, age, household income, housing tenure and household structure



Base: Ethnic group: New Zealand European 2933, Maori 616, Pacific peoples 440, Asian 885; Gender: Male 2,382, Female 2,457; Age: Under 5 years old 386, 6 to 9 years old 312, 10 to 14 years old 317, 15 to 17 years old 216, 18 to 29 years old 960, 30 to 39 years old 738, 40 to 49 years old 701, 50 to 64 years old 733, 65 to 74 years old 386, 75 to 84 years old 200; Household income: Under $30k 497, $30,001-$60,000 900, $60,001-$100,000 1,190, $100,001 or more 1,586; Housing tenure: Rent 1,998, Boarding 218, Own with or without a mortgage 2,603, Other 112; household structure: Single person living alone 292, Single parent household with children at home (including adult children) 438, Couple without children at home 1,119, Couple with children at home (including adult children) 2,581, Group flatting (household members un-related) 194, Two or more households sharing a dwelling, with or without children (including adult children) 286, Other 54

Four Weeks

The frequency of visits to libraries in the preceding four weeks is shown for the participant, other adults in the household and children in the household in Table 10. There were some high values given[17] and these have been capped at 56.

Overall, 40% had visited a library in the preceding four weeks. The mean number of visits was 1.53.

The participant was the most frequent library visitor with almost two visits every four weeks with other adults the least frequent library visitors.

[17] possibly because the question had been misread, e.g. assumed six months as in previous question or an error in entry

Table 10: Frequency of visiting libraries in previous four weeks

	Total %	Participant %	Other adults %	Children %
0	60	54	70	55
1	14	15	11	17
2	9	11	8	9
3	4	5	3	4
4	4	4	3	6
5-10	6	7	4	7
11-29	2	3	1	1
30-56	0	1	0	1
Mean	**1.53**	**1.91**	**1.10**	**1.63**
Base	**4,964**	**1,834**	**1,883**	**1,247**

The mean frequency of visiting libraries in Auckland in the last four weeks was highest by far in the West and lowest in the South area:

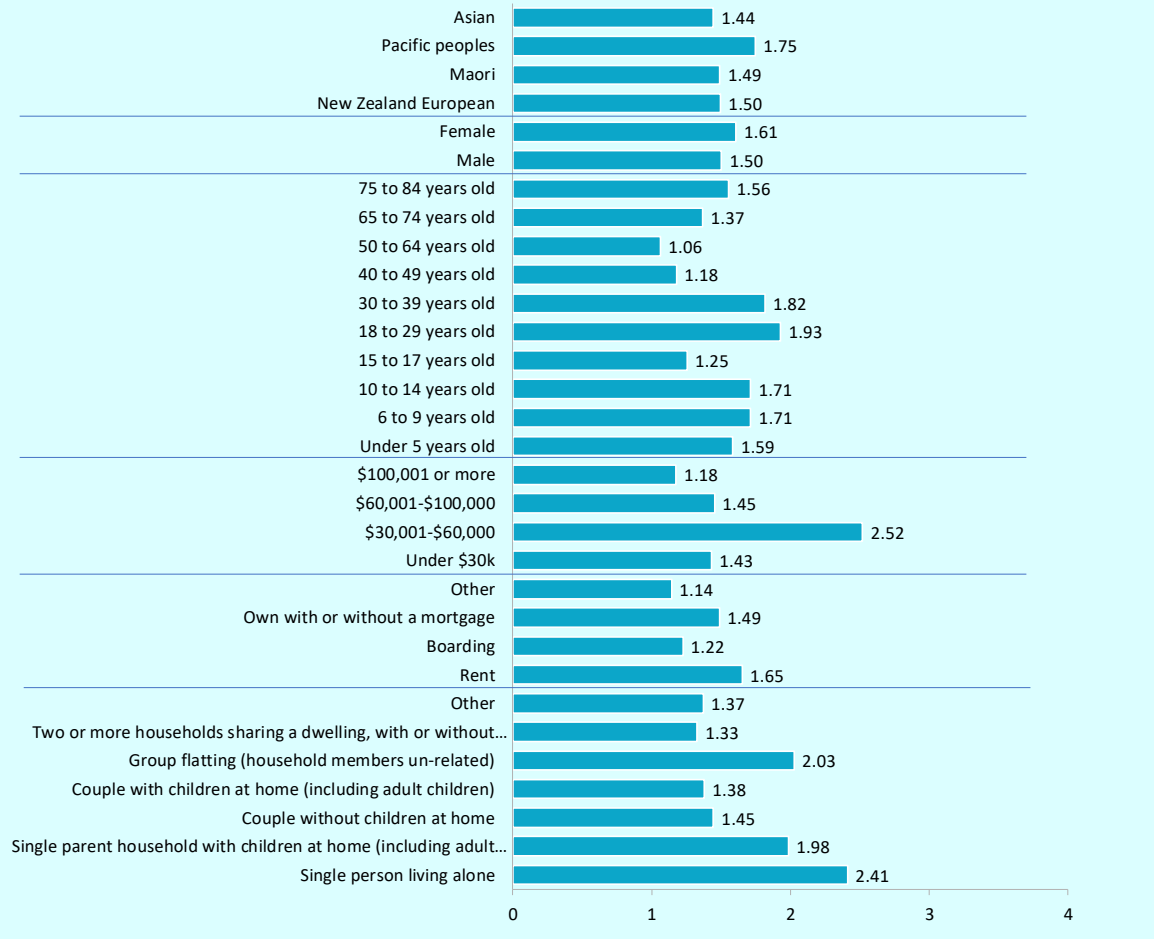
- Central 1.64
- North 1.47
- South 1.34
- West 1.89

The mean frequency of visiting libraries in Auckland in the last four weeks by the four main ethnic groups, gender, age, household income, housing tenure and household structure is shown in Figure 18.

Key findings are:

- Pacific peoples were more frequent visitors than other ethnic groups
- Women were more frequent library visitors than men
- Adults aged 18-39 were the most frequent visitors and adults aged 40-64 the least frequent visitors
- Frequency of visit was highest for households with incomes between $30k and $60k and lowest for the highest income band
- Those who rent were the most frequent visitors
- Single people living alone (this includes students in halls of residence) were the most frequent visitors.

Figure 18: Mean frequency of visiting libraries in Auckland in the last four weeks by ethnic group, gender, age, household income, housing tenure and household structure



Base: Ethnic group: New Zealand European 2933, Maori 616, Pacific peoples 440, Asian 885; Gender: Male 2,382, Female 2,457; Age: Under 5 years old 386, 6 to 9 years old 312, 10 to 14 years old 317, 15 to 17 years old 216, 18 to 29 years old 960, 30 to 39 years old 738, 40 to 49 years old 701, 50 to 64 years old 733, 65 to 74 years old 386, 75 to 84 years old 200; Household income: Under $30k 497, $30,001-$60,000 900, $60,001-$100,000 1,190, $100,001 or more 1,586; Housing tenure: Rent 1,998, Boarding 218, Own with or without a mortgage 2,603, Other 112; household structure: Single person living alone 292, Single parent household with children at home (including adult children) 438, Couple without children at home 1,119, Couple with children at home (including adult children) 2,581, Group flatting (household members un-related) 194, Two or more households sharing a dwelling, with or without children (including adult children) 286, Other 54

Community centres

Participants were asked if they and other members of their household, if applicable, had visited a Council community centre in Auckland in the last six months.

Overall, only 14% of household members had visited a Council community centre in Auckland in the last six months.

Table 11 shows the data for the participant and other adult and child members of the household. It also shows the mean number of community centres visited.

Very few people had visited more than one Community Centre in the last six months. 19% of participants, 13% of children and 11% of other adults visited a community centre in Auckland in the previous six months.

Table 11: Number of community centres visited in previous six months

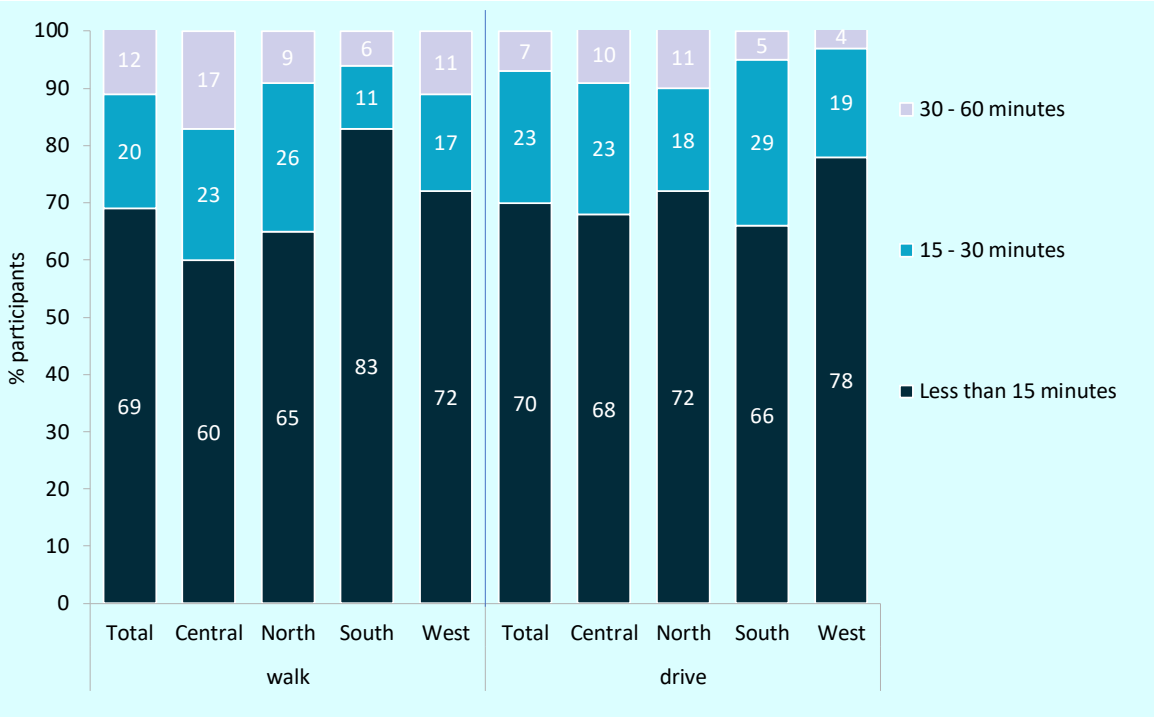
	Total %	Participant %	Other adults %	Children %
None	86	81	89	87
1	11	15	8	10
2	2	2	2	2
3	0	1	0	0
4	0	0	0	0
5+	0	1	0	0
Mean	**0.20**	**0.26**	**0.17**	**0.17**
Base	**4,964**	**1,834**	**1,092**	**1,149**

Participants were asked the travel time on foot or by driving to each facility they visited. Thirty one per cent entered the walk time and 69% the drive time. The mean walk and drive times for all community centres mentioned were:

- Walk 15 minutes (base: 128)
- Drive 14 minutes (base: 280)

Figure 19 shows the distribution of walk and drive times by area. In the South area the walk times were shorter than in the other areas. The walk times were longest in the Central area.

Figure 19: Walk and drive times to community centre by area



Base: Walk: Total 128, Central 52, North 23, South 35, West 18; Drive: Total 280, Central 84, North 57, South 85, West 54

Seven Days

The frequency of visits to community centres in the preceding seven days is shown for the participant, other adults in the household and children in the household in Table 12. There were some high values given[18] and these have been capped at 21.

Overall, just 8% had visited a community centre in the preceding seven days. The mean number of visits was 0.21.

The participant was the most frequent visitor, followed by other adults in the household.

Table 12: Frequency of visiting community centres in previous seven days

	Total %	Participant %	Other adults %	Children %
0	92	90	92	93
1	5	6	5	4
2	1	2	1	2
3	0	1	0	0
4	1	0	1	0
5-10	1	1	1	1
11-21	0	0	0	0
Mean	**0.21**	**0.24**	**0.21**	**0.16**
Base	**4,964**	**1,834**	**1,883**	**1,247**

The mean frequency of visiting community centres in Auckland in the last seven days was highest in the West and lowest in the North area:

- Central 0.21
- North 0.16
- South 0.21
- West 0.27

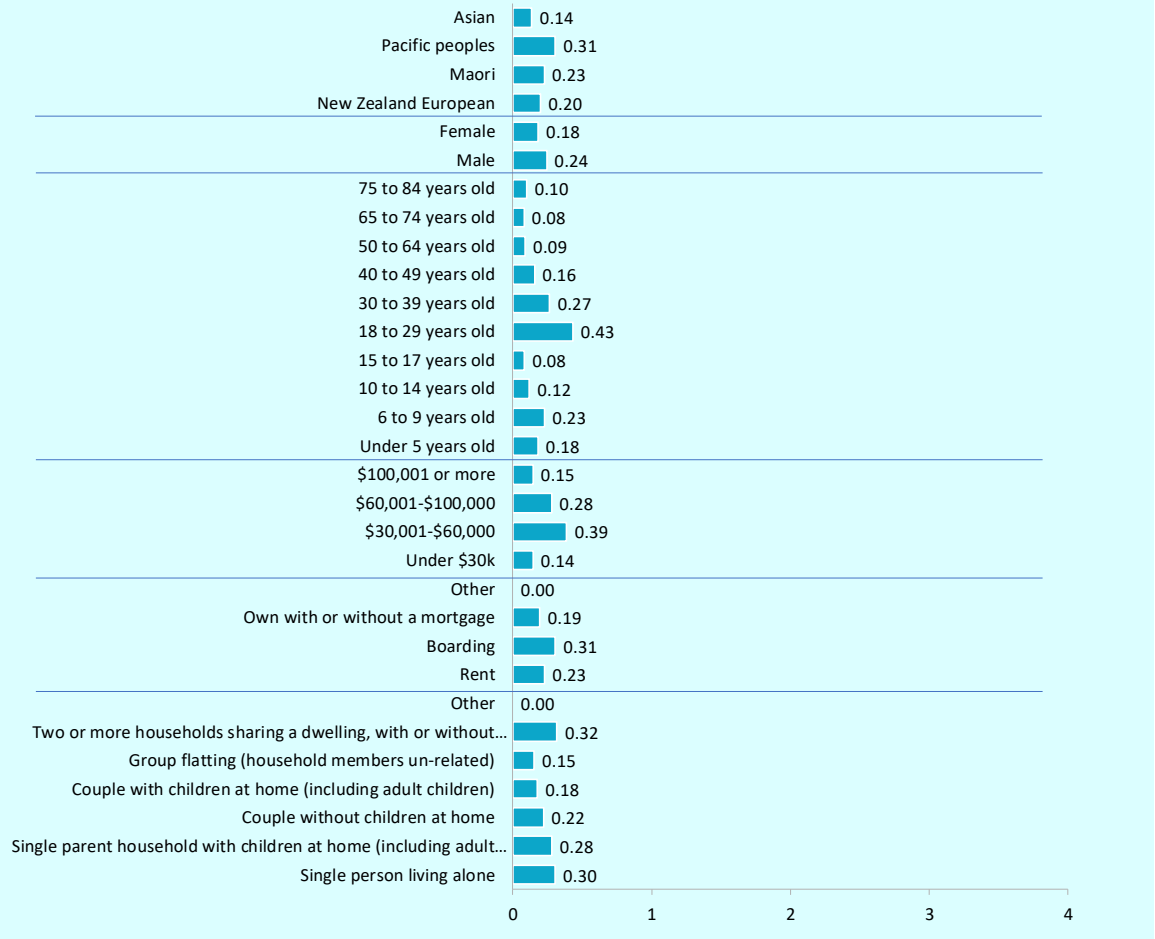
The mean frequency of visiting community centres in Auckland in the last seven days by the four main ethnic groups, gender, age, household income, housing tenure and household structure is shown in Figure 20.

Key findings are:

- Pacific peoples were more frequent visitors than other ethnic groups
- Males were more frequent visitors than females
- Adults aged 18-29 were the more frequent visitors to community centres
- Frequency of visit was highest for households with annual household incomes of $30-60k
- Boarders were the most frequent visitors
- Two or more households sharing a dwelling, with or without children were the most frequent visitors.

[18] possibly because the question had been misread, e.g. assumed six months as in previous question or an error in entry

Figure 20: Mean frequency of visiting community centres in Auckland in the last seven days by ethnic group, gender, age, household income, housing tenure and household structure



Base: Ethnic group: New Zealand European 2933, Maori 616, Pacific peoples 440, Asian 885; Gender: Male 2,382, Female 2,457; Age: Under 5 years old 386, 6 to 9 years old 312, 10 to 14 years old 317, 15 to 17 years old 216, 18 to 29 years old 960, 30 to 39 years old 738, 40 to 49 years old 701, 50 to 64 years old 733, 65 to 74 years old 386, 75 to 84 years old 200; Household income: Under $30k 497, $30,001-$60,000 900, $60,001-$100,000 1,190, $100,001 or more 1,586; Housing tenure: Rent 1,998, Boarding 218, Own with or without a mortgage 2,603, Other 112; household structure: Single person living alone 292, Single parent household with children at home (including adult children) 438, Couple without children at home 1,119, Couple with children at home (including adult children) 2,581, Group flatting (household members un-related) 194, Two or more households sharing a dwelling, with or without children (including adult children) 286, Other 54

Four Weeks

The frequency of visits to community centres in the preceding four weeks is shown for the participant, other adults in the household and children in the household in Table 13. There were some high values given[19] and these have been capped at 56.

Overall, just 12% had visited a community centre in the preceding four weeks. The mean number of visits was 0.42.

The participant was the most frequent community centre visitor with other adults and children having a similar frequency of visit.

[19] possibly because the question had been misread, e.g. assumed six months as in previous question or an error in entry

Table 13: Frequency of visiting community centres in previous four weeks

	Total %	Participant %	Other adults %	Children %
0	88	85	90	90
1	5	6	4	4
2	2	3	2	1
3	1	1	1	0
4	1	2	1	1
5-10	2	2	2	2
11-29	1	1	1	1
30-56	0	0	0	0
Mean	**0.42**	**0.53**	**0.36**	**0.34**
Base	**4,964**	**1,834**	**1,883**	**1,247**

The mean frequency of visiting community centres in Auckland in the last four weeks was highest in the West and lowest in the North area:

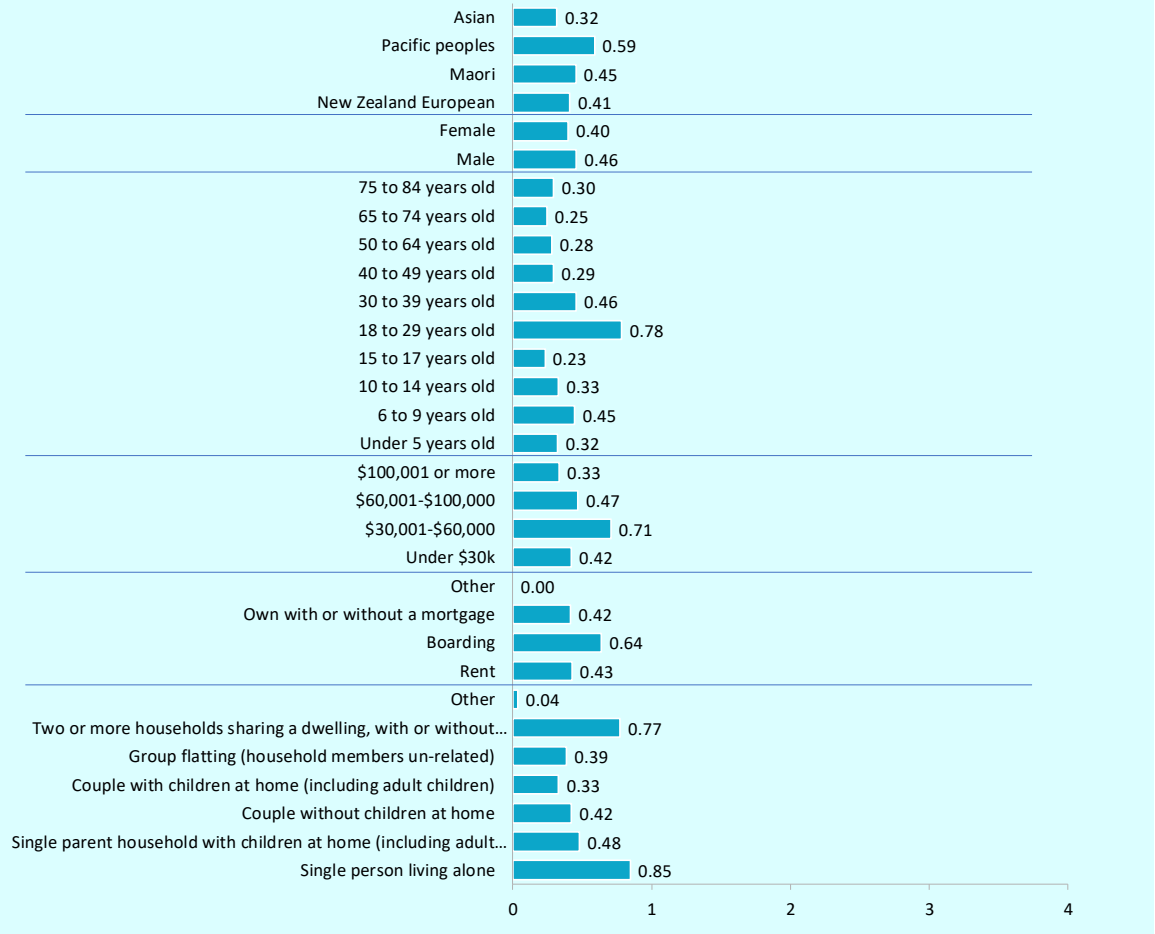
- Central 0.40
- North 0.30
- South 0.44
- West 0.59

The mean frequency of visiting community centres in Auckland in the last four weeks by the four main ethnic groups, gender, age, household income, housing tenure and household structure is shown in Figure 21.

Key findings are:

- Pacific peoples were more frequent visitors than other ethnic groups
- Males were more frequent visitors to community centres than females
- Adults aged 18-29 were the most frequent visitors and 15-17 year olds were the least frequent visitors
- Frequency of visit was highest for households with incomes between $30k and $60k and lowest for the highest income band
- Boarders were the most frequent visitors
- Single people living alone (this includes students in halls of residence) were the most frequent visitors.

Figure 21: Mean frequency of visiting community centres in Auckland in the last four weeks by ethnic group, gender, age, household income, housing tenure and household structure



Base: Ethnic group: New Zealand European 2933, Maori 616, Pacific peoples 440, Asian 885; Gender: Male 2,382, Female 2,457; Age: Under 5 years old 386, 6 to 9 years old 312, 10 to 14 years old 317, 15 to 17 years old 216, 18 to 29 years old 960, 30 to 39 years old 738, 40 to 49 years old 701, 50 to 64 years old 733, 65 to 74 years old 386, 75 to 84 years old 200; Household income: Under $30k 497, $30,001-$60,000 900, $60,001-$100,000 1,190, $100,001 or more 1,586; Housing tenure: Rent 1,998, Boarding 218, Own with or without a mortgage 2,603, Other 112; household structure: Single person living alone 292, Single parent household with children at home (including adult children) 438, Couple without children at home 1,119, Couple with children at home (including adult children) 2,581, Group flatting (household members un-related) 194, Two or more households sharing a dwelling, with or without children (including adult children) 286, Other 54

Arts Centres

Participants were asked if they and other members of their household, if applicable, had visited an arts centre in Auckland in the last six months.

Overall, only 8% of household members had visited an arts centre in Auckland in the last six months.

Table 14 shows the data for the participant and other adult and child members of the household. It also shows the mean number of arts centres visited.

Very few people had visited more than one arts centre in the last six months. 10% of participants, 7% of children and 6% of other adults visited an arts centre in Auckland in the previous six months.

Table 14: Number of arts centres visited in previous six months

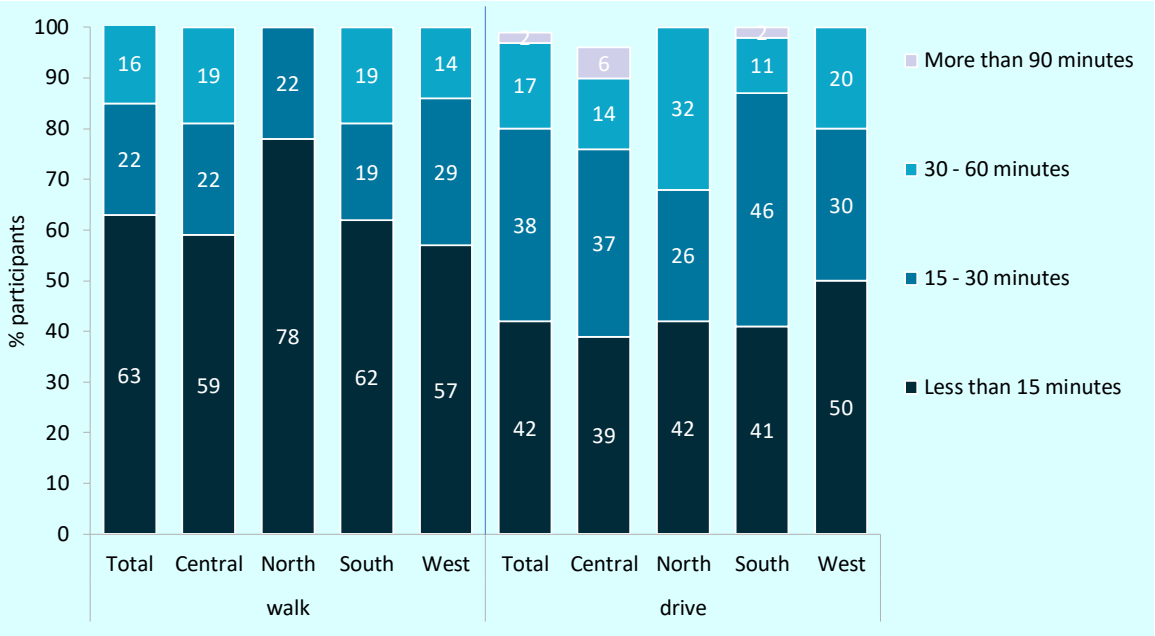
	Total %	Participant %	Other adults %	Children %
None	92	90	94	93
1	7	10	6	7
2	0	0	1	0
4	0	0	0	0
5	0	0	0	0
Mean	**0.08**	**0.11**	**0.07**	**0.07**
Base	**4,964**	**1,834**	**1,092**	**1,149**

Participants were asked the travel time to each facility they visited. They could answer with either walk or drive times. Twenty eight per cent entered the walk time and 72% the drive time. The mean walk and drive times for all arts centres mentioned were:

- Walk 16 minutes (base: 64)
- Drive 24 minutes (base: 165)

Figure 22 shows the distribution of walk and drive times by area. In the North area the walk times were shorter than elsewhere. The drive and walk times were longest in the Central area.

Figure 22: Walk and drive times to arts centres by area



Base: Walk: Total 64, Central 27, North 9, South 21, West 7; Drive: Total 165, Central 51, North 31, South 63, West 20
Note: very small sample sizes for walk for North and West

Seven Days

The frequency of visits to arts centres in the preceding seven days is shown for the participant, other adults in the household and children in the household in Table 14. There were some high values given[20] and these have been capped at 21.

Overall, just 5% had visited an arts centre in the preceding seven days. The mean number of visits was 0.09.

The participant was the most frequent visitor with children the least frequent.

Table 15: Frequency of visiting arts centres in previous seven days

	Total %	Participant %	Other adults %	Children %
0	95	94	96	96
1	3	4	3	3
2	1	1	0	0
3	0	0	0	0
4	0	0	0	0
5-10	0	1	0	0
11-21	0	0	0	0
Mean	**0.09**	**0.13**	**0.09**	**0.06**
Base	**4,964**	**1,834**	**1,883**	**1,247**

The mean frequency of visiting arts centres in Auckland in the last seven days was highest in the Central and South areas:

- Central 0.11
- North 0.08
- South 0.11
- West 0.06

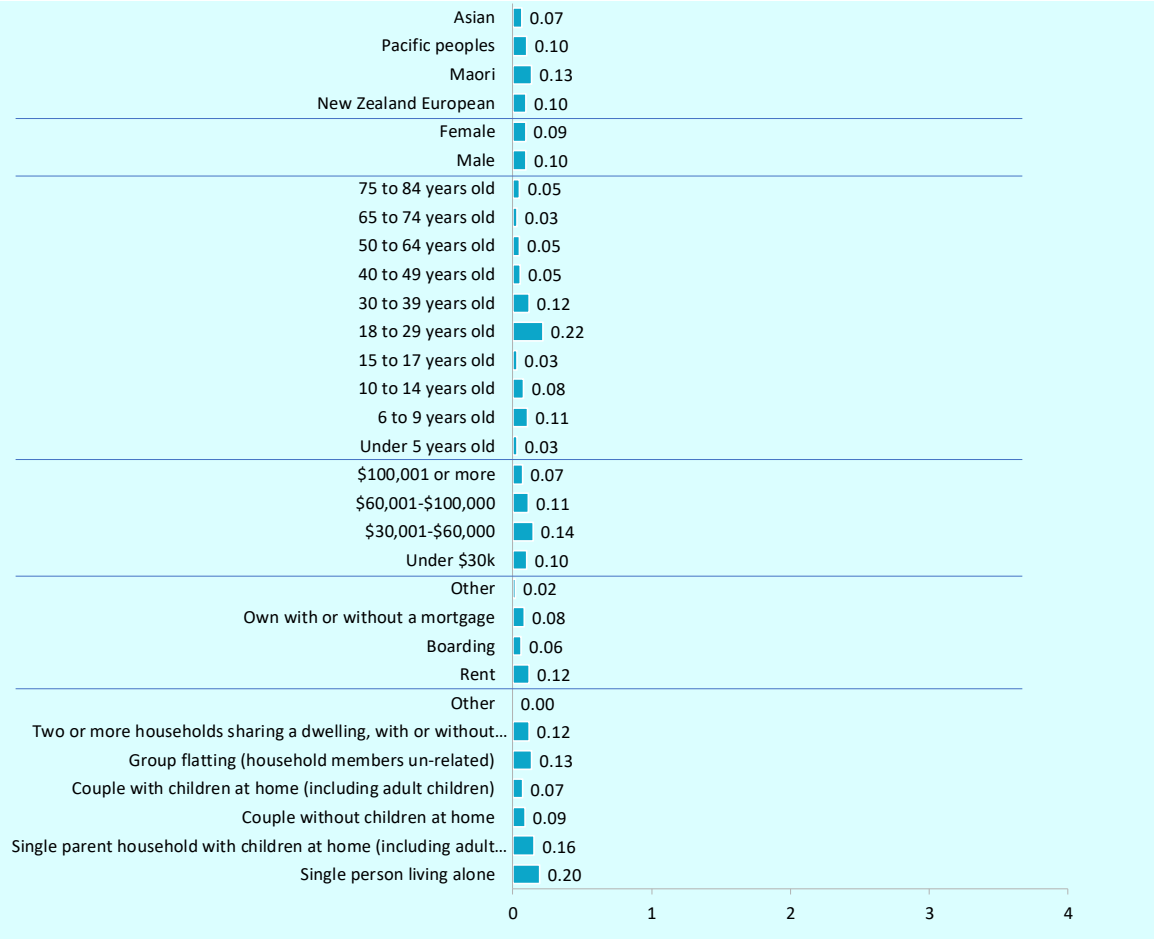
The mean frequency of visiting arts centres in Auckland in the last seven days by the four main ethnic groups, gender, age, household income, housing tenure and household structure is shown in Figure 23.

Key findings are:

- Māori visited arts centres more frequently than other ethnic groups
- There was no difference by gender
- Adults aged 18-29 were the more frequent visitors to arts centres
- Frequency of visit was highest for households with annual household incomes of $30-60k
- Those who rent were the most frequent visitors
- Single person households were the most frequent visitors.

[20] Possibly because the question had been misread, e.g. assumed six months as in previous question or an error in entry

Figure 23: Mean frequency of visiting arts centres in Auckland in the last seven days by ethnic group, gender, age, household income, housing tenure and household structure



Base: Ethnic group: New Zealand European 2933, Maori 616, Pacific peoples 440, Asian 885; Gender: Male 2,382, Female 2,457; Age: Under 5 years old 386, 6 to 9 years old 312, 10 to 14 years old 317, 15 to 17 years old 216, 18 to 29 years old 960, 30 to 39 years old 738, 40 to 49 years old 701, 50 to 64 years old 733, 65 to 74 years old 386, 75 to 84 years old 200; Household income: Under $30k 497, $30,001-$60,000 900, $60,001-$100,000 1,190, $100,001 or more 1,586; Housing tenure: Rent 1,998, Boarding 218, Own with or without a mortgage 2,603, Other 112; household structure: Single person living alone 292, Single parent household with children at home (including adult children) 438, Couple without children at home 1,119, Couple with children at home (including adult children) 2,581, Group flatting (household members un-related) 194, Two or more households sharing a dwelling, with or without children (including adult children) 286, Other 54

Four Weeks

The frequency of visits to arts centres in the preceding four weeks is shown for the participant, other adults in the household and children in the household in Table 16.

Overall, only 6% had visited an arts centre at all in the preceding four weeks. The mean number of visits was 0.16.

The participant was the most frequent arts centre visitor with children the least frequent.

Table 16: Frequency of visiting arts centres in previous four weeks

	Total %	Participant %	Other adults %	Children %
0	94	92	95	95
1	3	4	3	4
2	1	1	1	0
3	0	0	0	0
4	0	0	0	0
5-10	1	1	0	1
11-29	0	0	0	0
30-56	0	0	0	0
Mean	**0.17**	**0.25**	**0.15**	**0.11**
Base	**4,964**	**1,834**	**1,883**	**1,247**

The mean frequency of visiting arts centres in Auckland in the last four weeks was highest in the South area and lowest in the West area:

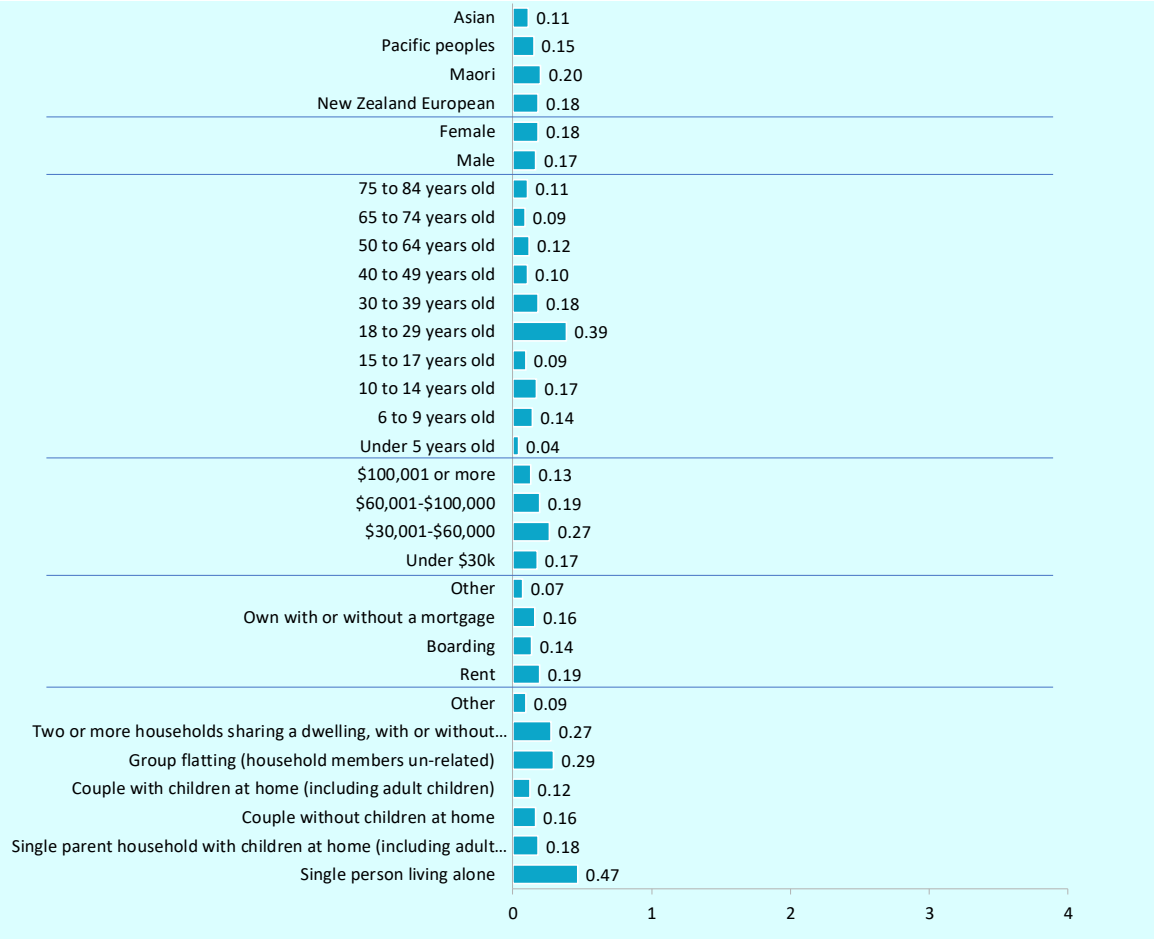
- Central 0.20
- North 0.12
- South 0.21
- West 0.11

The mean frequency of visiting arts centres in Auckland in the last four weeks by the four main ethnic groups, gender, age, household income, housing tenure and household structure is shown in Figure 24.

Key findings are:

- Māori visited arts centres more frequently than other ethnic groups
- There was little difference by gender
- Adults aged 18-29 were the most frequent visitors
- Frequency of visit was highest for households with incomes between $30k and $60k and lowest for the highest income band
- Those who rent were the most frequent visitors
- Single people living alone (this includes students in halls of residence) were the most frequent visitors.

Figure 24: Mean frequency of visiting arts centres in Auckland in the last four weeks by ethnic group, gender, age, household income, housing tenure and household structure



Base: Ethnic group: New Zealand European 2933, Maori 616, Pacific peoples 440, Asian 885; Gender: Male 2,382, Female 2,457; Age: Under 5 years old 386, 6 to 9 years old 312, 10 to 14 years old 317, 15 to 17 years old 216, 18 to 29 years old 960, 30 to 39 years old 738, 40 to 49 years old 701, 50 to 64 years old 733, 65 to 74 years old 386, 75 to 84 years old 200; Household income: Under $30k 497, $30,001-$60,000 900, $60,001-$100,000 1,190, $100,001 or more 1,586; Housing tenure: Rent 1,998, Boarding 218, Own with or without a mortgage 2,603, Other 112; household structure: Single person living alone 292, Single parent household with children at home (including adult children) 438, Couple without children at home 1,119, Couple with children at home (including adult children) 2,581, Group flatting (household members un-related) 194, Two or more households sharing a dwelling, with or without children (including adult children) 286, Other 54

Neighbourhood parks

Participants were asked if they and other members of their household, if applicable, had visited a neighbourhood park in Auckland in the last six months.

Overall, 67% of household members had visited a neighbourhood park in Auckland in the last six months.

Table 17 shows the data for the participant and other adult and child members of the household.

The overall number of parks visited by the participant and children are similar and higher than for other adults in the household: 73% of participants and 72% of children compared to 59% of other adults visited a neighbourhood park in Auckland in the previous six months. A mean number of parks visited has been calculated, assuming 3+ = 5. The overall mean was 1.82.

Table 17: Number of neighbourhood parks visited in previous six months

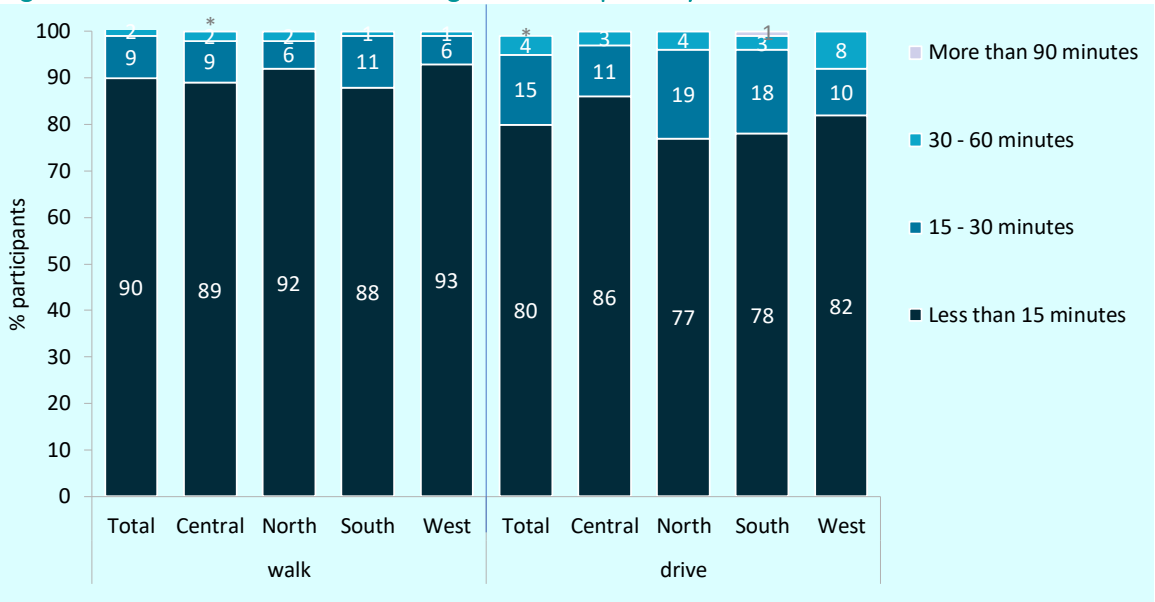
	Total %	Participant %	Other adults %	Children %
None	33	27	41	28
One	23	25	22	21
Two	21	24	18	22
Three +	23	24	19	28
Mean	**1.82**	**1.95**	**1.51**	**2.07**
Base	**4,964**	**1,834**	**1,092**	**1,149**

Participants were asked the travel time to each facility they visited. They could answer with either walk or drive times. Sixty two per cent entered the walk time and 38% the drive time. The mean walk and drive times for all neighbourhood parks mentioned were:

- Walk 8 minutes (base: 872)
- Drive 12 minutes (base: 526)

Figure 25 shows the distribution of walk and drive times by area. Walk times are longest and drive times shortest in the Central area compared to other areas.

Figure 25: Walk and drive times to neighbourhood parks by area



Base: Walk: Total 872, Central 327, North 177, South 246, West 122; Drive: Total 526, Central 128, North 133, South 175, West 90

* = less than 0.5%

Seven Days

The frequency of visits to neighbourhood parks in the preceding seven days is shown for the participant, other adults in the household and children in the household in Table 18. There were some high values given[21] and these have been capped at 21.

Overall, 41% had visited a neighbourhood park in the preceding seven days. The mean number of visits was 0.81.

The participant and children were the most frequent visitors with other adults in the household the least frequent visitors.

Table 18: Frequency of visiting neighbourhood parks in previous seven days

	Total %	Participant %	Other adults %	Children %
0	59	55	67	55
1	22	24	19	24
2	10	11	7	13
3	3	3	3	3
4	1	2	1	1
5-10	4	5	3	3
11-21	0	0	0	0
Mean	**0.81**	**0.97**	**0.65**	**0.83**
Base	**4,964**	**1,834**	**1,883**	**1,247**

The mean frequency of visiting neighbourhood parks in Auckland in the last seven days was highest in the Central area and lowest in the North and West areas:

- Central 0.91
- North 0.74
- South 0.82
- West 0.75

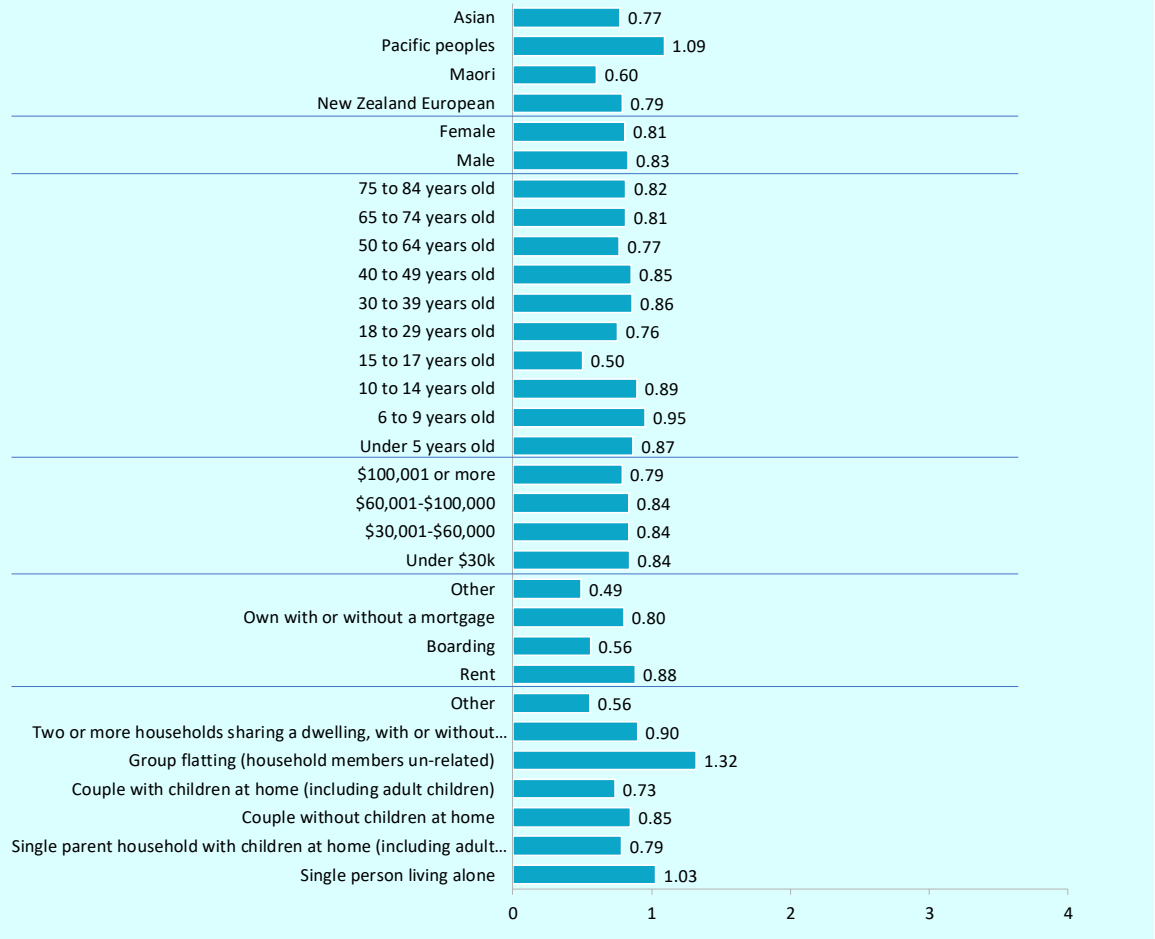
The mean frequency of visiting neighbourhood parks in Auckland in the last seven days by the four main ethnic groups, gender, age, household income, housing tenure and household structure is shown in Figure 26.

Key findings are:

- Pacific people are the most frequent visitors of neighbourhood parks
- There was little difference by gender
- There were similar levels of visiting neighbourhood parks by all age ranges except for those aged 15-17 who were notable less frequent visitors to parks
- There was little difference in frequency of visit by annual household income
- Those who rent were the most frequent visitors
- Group flatters and single people living alone were the most frequent visitors.

[21] Possibly because the question had been misread, e.g. assumed six months as in previous question or an error in entry

Figure 26: Mean frequency of visiting neighbourhood parks in Auckland in the last seven days by ethnic group, gender, age, household income, housing tenure and household structure



Base: Ethnic group: New Zealand European 2933, Maori 616, Pacific peoples 440, Asian 885; Gender: Male 2,382, Female 2,457; Age: Under 5 years old 386, 6 to 9 years old 312, 10 to 14 years old 317, 15 to 17 years old 216, 18 to 29 years old 960, 30 to 39 years old 738, 40 to 49 years old 701, 50 to 64 years old 733, 65 to 74 years old 386, 75 to 84 years old 200; Household income: Under $30k 497, $30,001-$60,000 900, $60,001-$100,000 1,190, $100,001 or more 1,586; Housing tenure: Rent 1,998, Boarding 218, Own with or without a mortgage 2,603, Other 112; household structure: Single person living alone 292, Single parent household with children at home (including adult children) 438, Couple without children at home 1,119, Couple with children at home (including adult children) 2,581, Group flatting (household members un-related) 194, Two or more households sharing a dwelling, with or without children (including adult children) 286, Other 54

Four Weeks

The frequency of visits to neighbourhood parks in the preceding four weeks is shown for the participant, other adults in the household and children in the household in Table 19.

Over nearly six tenths (58%) had visited a neighbourhood park in the preceding four weeks. The mean number of visits was 2.54.

The participant was the most frequent visitor with other adults in the household the least frequent.

Table 19: Frequency of visiting neighbourhood parks in previous four weeks

	Total %	Participant %	Other adults %	Children %
0	42	36	51	36
1	17	18	16	17
2	12	14	9	13
3	6	6	5	7
4	7	7	6	9
5-10	11	12	9	14
11-29	4	6	3	3
30-56	0	0	0	0
Mean	**2.54**	**3.02**	**2.02**	**2.64**
Base	**4,964**	**1,834**	**1,883**	**1,247**

The mean frequency of visiting neighbourhood parks in Auckland in the last four weeks was highest in the Central area and lowest in the South area:

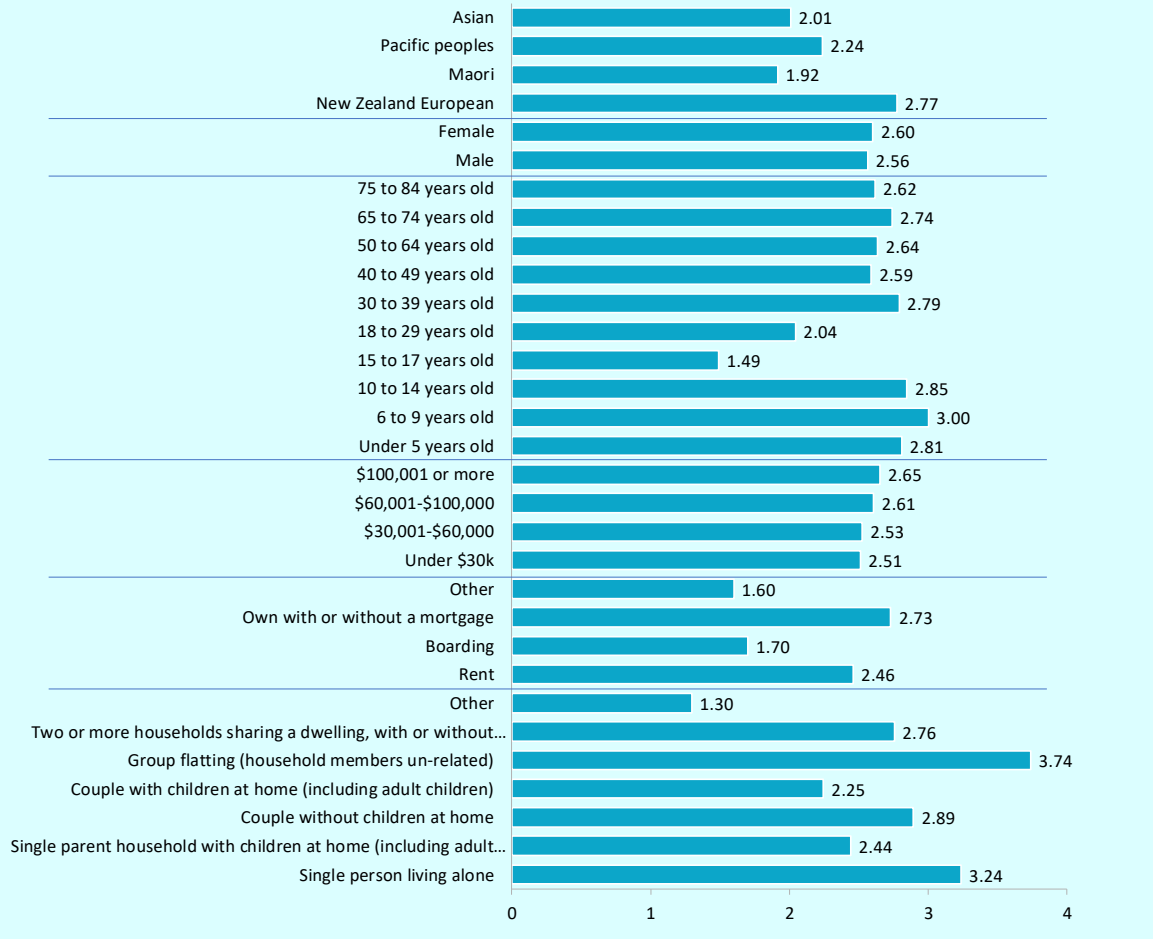
- Central 2.78
- North 2.51
- South 2.31
- West 2.73

The mean frequency of visiting neighbourhood parks in Auckland in the last four weeks by the four main ethnic groups, gender, age, household income, housing tenure and household structure is shown in Figure 27.

Key findings are:

- Pacific people are the most frequent visitors of neighbourhood parks
- Females were slightly more frequent visitors to neighbourhood parks than males
- Children aged up to 14 and adults aged 30-39 were the most frequent visitors and 15-17 year olds were the least frequent visitors
- Frequency of visit was highest for households with the lowest household incomes. Households with the highest incomes were the next most frequent visitors.
- Property owners were the most frequent visitors
- Group flatters and single people living alone were the most frequent visitors.

Figure 27: Mean frequency of visiting neighbourhood parks in Auckland in the last four weeks by ethnic group, gender, age, household income, housing tenure and household structure



Base: Ethnic group: New Zealand European 2933, Maori 616, Pacific peoples 440, Asian 885; Gender: Male 2,382, Female 2,457; Age: Under 5 years old 386, 6 to 9 years old 312, 10 to 14 years old 317, 15 to 17 years old 216, 18 to 29 years old 960, 30 to 39 years old 738, 40 to 49 years old 701, 50 to 64 years old 733, 65 to 74 years old 386, 75 to 84 years old 200; Household income: Under $30k 497, $30,001-$60,000 900, $60,001-$100,000 1,190, $100,001 or more 1,586; Housing tenure: Rent 1,998, Boarding 218, Own with or without a mortgage 2,603, Other 112; household structure: Single person living alone 292, Single parent household with children at home (including adult children) 438, Couple without children at home 1,119, Couple with children at home (including adult children) 2,581, Group flatting (household members un-related) 194, Two or more households sharing a dwelling, with or without children (including adult children) 286, Other 54

Leisure Centres

Participants were asked if they and other members of their household, if applicable, had visited a Council leisure centre in Auckland in the last six months.

Overall, only 10% of household members had visited a Council leisure centre in Auckland in the last six months.

Table 20 shows the data for the participant and other adult and child members of the household. It also shows the mean number of leisure centres visited.

The overall number of Leisure Centres visited by the participant is higher than children and other adults in the household. 12% of participants, 10% of other adults and 8% of children visited a leisure centre in Auckland in the previous six months.

Table 20: Number of leisure centres visited in previous six months

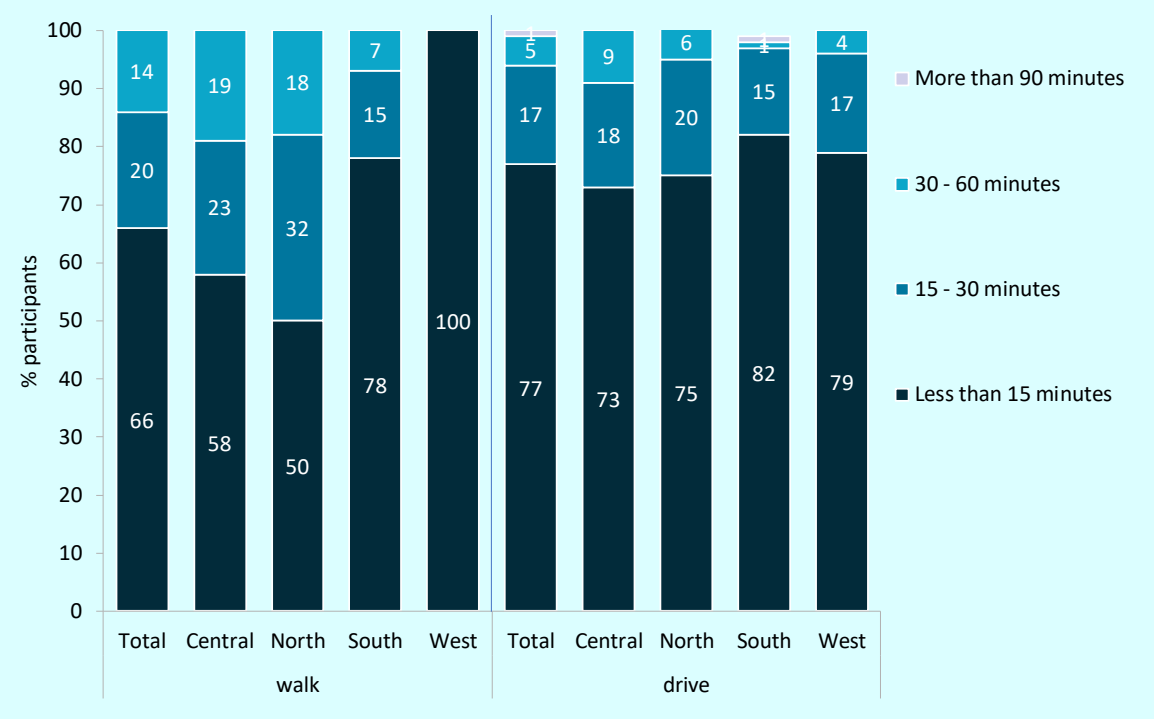
	Total %	Participant %	Other adults %	Children %
None	90	88	90	92
1	9	11	8	7
2	1	1	1	1
3	0	0	0	0
4	0	0	0	0
5+	0	0	0	
Mean	**0.13**	**0.15**	**0.13**	**0.09**
Base	**4,964**	**1,834**	**1,092**	**1,149**

Participants were asked the travel time to each facility they visited. They could answer with either walk or drive times. Nearly a third (32%) entered the walk time and 68% the drive time. The mean walk and drive times for all leisure centres mentioned were:

- Walk 16 minutes (base: 88)
- Drive 14 minutes (base: 191)

Figure 28 shows the distribution of walk and drive times by area. The longest travel times for both walk and drive were in the North and Central areas.

Figure 28: Walk and drive times to leisure centres by area



Base: Walk: Total 88, Central 31, North 22, South 27, West 8; Drive: Total 191, Central 45, North 51, South 71, West 24
Note: sample size for West walk is very small

Seven Days

The frequency of visits to leisure centres in the preceding seven days is shown for the participant, other adults in the household and children in the household in Table 21. There were some high values given[22] and these have been capped at 21.

Overall, just 8% had visited a leisure centre in the preceding seven days. The mean number of visits was 0.2.

The participant was the most frequent visitor with children the least frequent.

Table 21: Frequency of visiting leisure centres in previous seven days

	Total %	Participant %	Other adults %	Children %
0	92	90	92	93
1	5	6	5	4
2	1	2	1	2
3	0	1	0	0
4	1	0	1	0
5-10	1	1	1	1
11-21	0	0	0	0
Mean	**0.20**	**0.24**	**0.21**	**0.15**
Base	**4,964**	**1,834**	**1,883**	**1,247**

The mean frequency of visiting leisure centres in Auckland in the last seven days was lowest in the North area:

- Central 0.21
- North 0.17
- South 0.22
- West 0.21

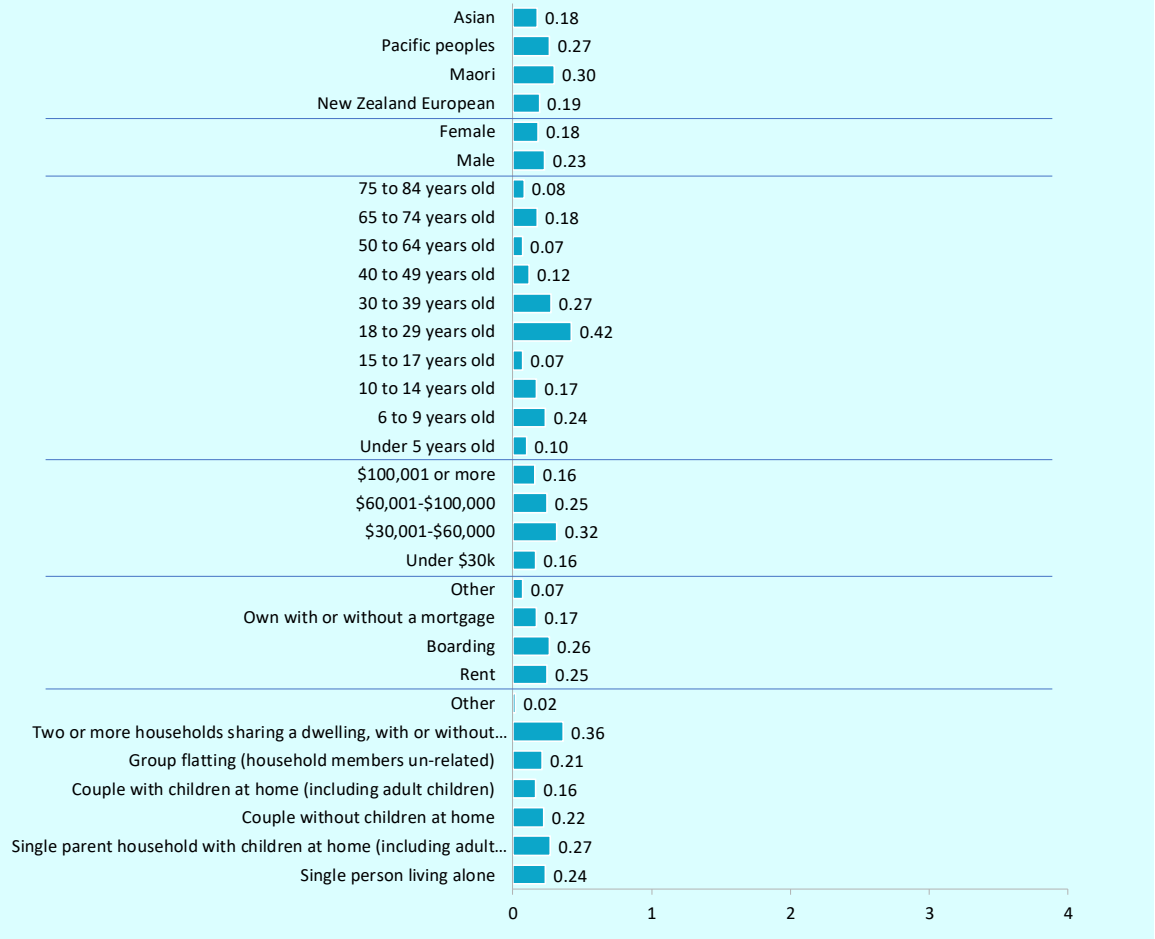
The mean frequency of visiting leisure centres in Auckland in the last seven days by the four main ethnic groups, gender, age, household income, housing tenure and household structure is shown in Figure 29.

Key findings are:

- Māori were the most frequent visitors
- Males were more frequent visitors than females
- Adults aged 18-29 were the more frequent visitors to leisure centres
- Frequency of visit is highest for households with annual household incomes of $30-60k
- Boarders and renters are the most frequent visitors
- Two or more households sharing a dwelling, with or without children and single parents households with children at home were the most frequent visitors.

[22] possibly because the question had been misread, e.g. assumed six months as in previous question or an error in entry

Figure 29: Mean frequency of visiting leisure centres in Auckland in the last seven days by ethnic group, gender, age, household income, housing tenure and household structure



Base: Ethnic group: New Zealand European 2933, Maori 616, Pacific peoples 440, Asian 885; Gender: Male 2,382, Female 2,457; Age: Under 5 years old 386, 6 to 9 years old 312, 10 to 14 years old 317, 15 to 17 years old 216, 18 to 29 years old 960, 30 to 39 years old 738, 40 to 49 years old 701, 50 to 64 years old 733, 65 to 74 years old 386, 75 to 84 years old 200; Household income: Under $30k 497, $30,001-$60,000 900, $60,001-$100,000 1,190, $100,001 or more 1,586; Housing tenure: Rent 1,998, Boarding 218, Own with or without a mortgage 2,603, Other 112; household structure: Single person living alone 292, Single parent household with children at home (including adult children) 438, Couple without children at home 1,119, Couple with children at home (including adult children) 2,581, Group flatting (household members un-related) 194, Two or more households sharing a dwelling, with or without children (including adult children) 286, Other 54

Four Weeks

The frequency of visits to leisure centres in the preceding four weeks is shown for the participant, other adults in the household and children in the household in Table 22.

Overall, only 9% had visited a leisure centre in the preceding four weeks. The mean number of visits was 0.49.

The participant was the most frequent category of visitor to leisure centres and children were the least frequent category of visitor.

Table 22: Frequency of visiting leisure centres in previous four weeks

	Total %	Participant %	Other adults %	Children %
0	91	89	91	93
1	3	3	2	2
2	2	2	2	1
3	1	1	1	1
4	1	1	0	1
5-10	2	3	2	1
11-29	1	1	1	0
30-56	0	0	0	0
Mean	**0.49**	**0.60**	**0.48**	**0.35**
Base	**4,964**	**1,834**	**1,883**	**1,247**

The mean frequency of visiting leisure centres in Auckland in the last four weeks was highest in the South area and lowest in the West area:

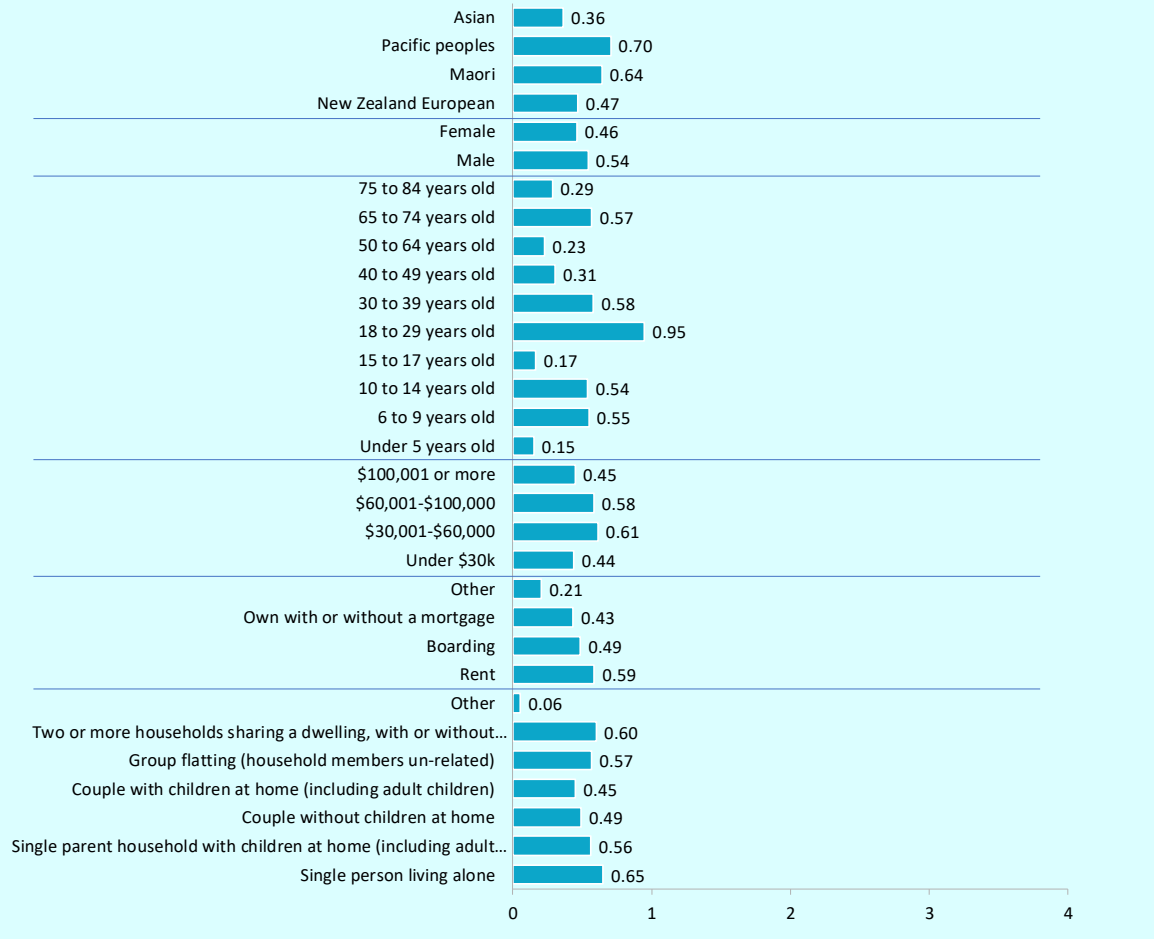
- Central 0.47
- North 0.39
- South 0.60
- West 0.44

The mean frequency of visiting leisure centres in Auckland in the last four weeks by the four main ethnic groups, gender, age, household income, housing tenure and household structure is shown in Figure 30.

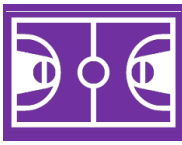
Key findings are:

- Pacific peoples and Māori were the most frequent visitors
- Males were more frequent visitors to leisure centres than females
- Adults aged 18-29 were the most frequent visitors
- Frequency of visit was highest for the lowest income households and lowest for the highest income bands
- Renters were the most frequent visitors
- Single parent households with children at home were the most frequent visitors.

Figure 30: Mean frequency of visiting leisure centres in Auckland in the last four weeks by ethnic group, gender, age, household income, housing tenure and household structure



Base: Ethnic group: New Zealand European 2933, Maori 616, Pacific peoples 440, Asian 885; Gender: Male 2,382, Female 2,457; Age: Under 5 years old 386, 6 to 9 years old 312, 10 to 14 years old 317, 15 to 17 years old 216, 18 to 29 years old 960, 30 to 39 years old 738, 40 to 49 years old 701, 50 to 64 years old 733, 65 to 74 years old 386, 75 to 84 years old 200; Household income: Under $30k 497, $30,001-$60,000 900, $60,001-$100,000 1,190, $100,001 or more 1,586; Housing tenure: Rent 1,998, Boarding 218, Own with or without a mortgage 2,603, Other 112; household structure: Single person living alone 292, Single parent household with children at home (including adult children) 438, Couple without children at home 1,119, Couple with children at home (including adult children) 2,581, Group flatting (household members un-related) 194, Two or more households sharing a dwelling, with or without children (including adult children) 286, Other 54



Indoor Courts

Participants were asked if they and other members of their household, if applicable, had visited a Council indoor court (e.g. basketball, badminton etc) in Auckland in the last six months.

Overall, only 10% of household members had visited a Council indoor court in Auckland in the last six months.

Table 23 shows the data for the participant and other adult and child members of the household. It also shows the mean number of indoor courts visited.

The overall number of indoor courts visited by the participant was higher than children and other adults in the household. 12% of participants, 10% other adults and 7% children visited an indoor court in Auckland in the previous six months.

Table 23: Number of indoor courts visited in previous six months

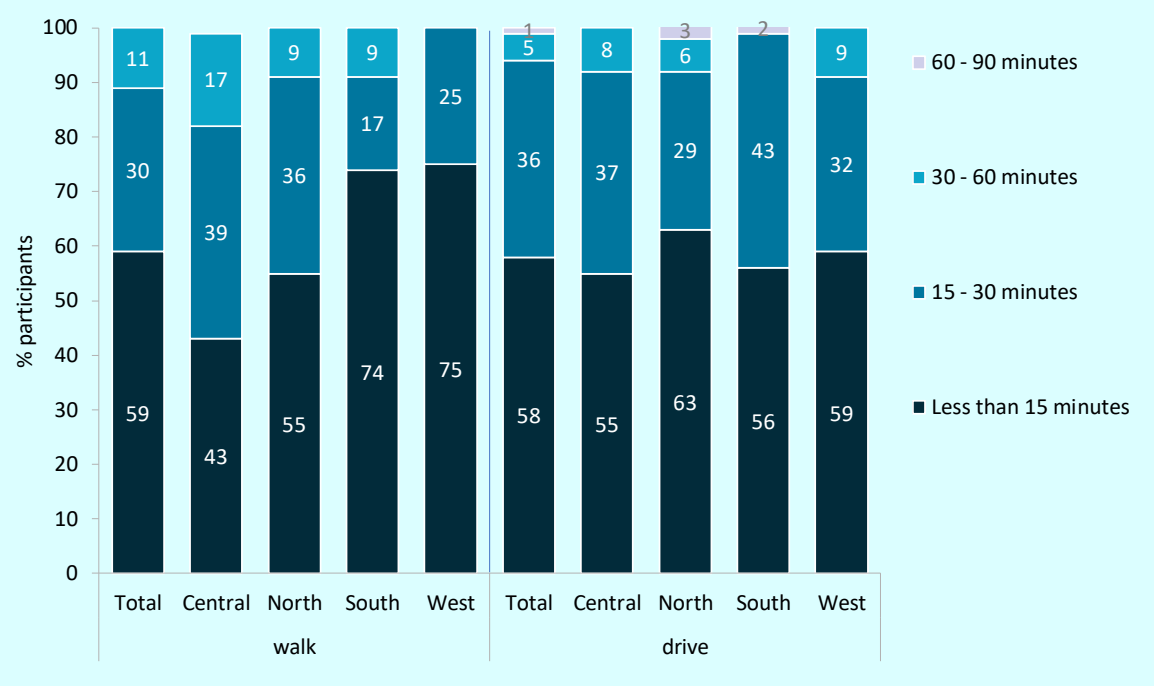
	Total %	Participant %	Other adults %	Children %
None	90	88	90	92
1	9	11	8	7
2	1	1	1	1
3	0	0	0	0
4	0	0	0	
5	0	0	0	
Mean	**0.13**	**0.15**	**0.13**	**0.09**
Base	**4,964**	**1,834**	**1,092**	**1,149**

Participants were asked the travel time to each facility they visited. They could answer with either walk or drive times. Under three tenths (29%) entered the walk time and 71% the drive time. The mean walk and drive times for all indoor courts mentioned were:

- Walk 16 minutes (base: 61)
- Drive 17 minutes (base: 149)

Figure 31 shows the distribution of walk and drive times by area. The walk and drive times are longest in the Central and North areas.

Figure 31: Walk and drive times to indoor courts by area



Base: Walk: Total 61, Central 23, North 11, South 23, West 4; Drive: Total 149, Central 38, North 35, South 54, West 22
Note: sample sizes for walk in the West and the North are very small

Seven Days

The frequency of visits to indoor courts in the preceding seven days is shown for the participant, other adults in the household and children in the household in Table 24. There were some high values given[23] and these have been capped at 21.

Overall, only 5% had visited an indoor court in the preceding seven days. The mean number of visits was 0.14.

The participant was the most frequent visitor with children the least frequent.

Table 24: Frequency of visiting indoor courts in previous seven days

	Total %	Participant %	Other adults %	Children %
0	95	95	95	95
1	3	3	3	3
2	1	1	1	1
3	0	0	0	0
4	0	0	0	0
5-10	1	0	0	0
11-21	0	1	0	0
Mean	**0.14**	**0.16**	**0.14**	**0.11**
Base	**4,964**	**1,834**	**1,883**	**1,247**

The mean frequency of visiting indoor courts in Auckland in the last seven days was highest in the Central area:

- Central 0.21
- North 0.15
- South 0.15
- West 0.16

The mean frequency of visiting indoor courts in Auckland in the last seven days by the four main ethnic groups, gender, age, household income, housing tenure and household structure is shown in Figure 32.

Key findings are:

- Māori were the most frequent visitors
- Males were more frequent visitors than females
- Adults aged 18-29 were the most frequent visitors to indoor courts
- Frequency of visit is highest for households with annual household incomes of $30-60k
- Renters were the most frequent visitors
- Single parent households with children at home were the most frequent visitors.

[23] possibly because the question had been misread, eg assumed six months as in previous question or an error in entry

Figure 32: Mean frequency of visiting indoor courts in Auckland in the last seven days by ethnic group, gender, age, household income, housing tenure and household structure

Base: Ethnic group: New Zealand European 2933, Maori 616, Pacific peoples 440, Asian 885; Gender: Male 2,382, Female 2,457; Age: Under 5 years old 386, 6 to 9 years old 312, 10 to 14 years old 317, 15 to 17 years old 216, 18 to 29 years old 960, 30 to 39 years old 738, 40 to 49 years old 701, 50 to 64 years old 733, 65 to 74 years old 386, 75 to 84 years old 200; Household income: Under $30k 497, $30,001-$60,000 900, $60,001-$100,000 1,190, $100,001 or more 1,586; Housing tenure: Rent 1,998, Boarding 218, Own with or without a mortgage 2,603, Other 112; household structure: Single person living alone 292, Single parent household with children at home (including adult children) 438, Couple without children at home 1,119, Couple with children at home (including adult children) 2,581, Group flatting (household members un-related) 194, Two or more households sharing a dwelling, with or without children (including adult children) 286, Other 54

Four Weeks

The frequency of visits to indoor courts in the preceding four weeks is shown for the participant, other adults in the household and children in the household in Table 25.

Overall, only 7% had visited an indoor court in the preceding four weeks. The mean number of visits was 0.28.

Children were the most frequent visitors with other adults the least frequent.

Table 25: Frequency of visiting indoor courts in previous four weeks

	Total %	Participant %	Other adults %	Children %
0	93	93	94	92
1	3	3	2	3
2	1	1	1	2
3	1	0	1	1
4	1	1	1	1
5-10	1	1	1	1
11-29	0	0	0	0
30-56	0	0	0	0
Mean	**0.28**	**0.31**	**0.29**	**0.24**
Base	**4,964**	**1,834**	**1,883**	**1,247**

The mean frequency of visiting indoor courts in Auckland in the last four weeks was highest in the West area:

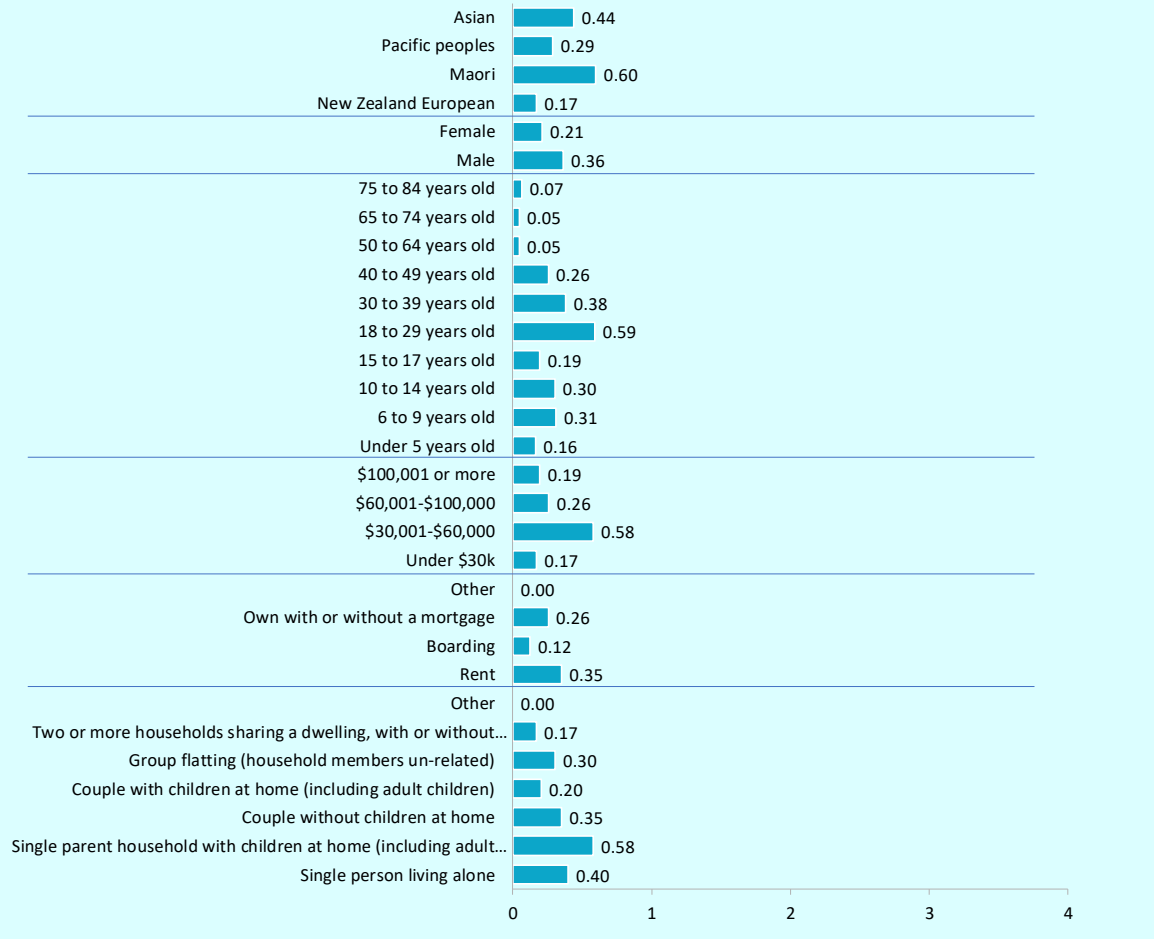
- Central 0.24
- North 0.25
- South 0.29
- West 0.37

The mean frequency of visiting indoor courts in Auckland in the last four weeks by the four main ethnic groups, gender, age, household income, housing tenure and household structure is shown in Figure 33.

Key findings are:

- Māori were the most frequent visitors
- Males were more frequent visitors to indoor courts than females
- Adults aged 18-29 were the most frequent visitors and adults aged 50 or over were the least frequent visitors
- Frequency of visit was highest for households with incomes between $30k and $60k and lowest for the lowest income band
- Renters were the most frequent visitors
- Single parent households with children at home were the most frequent visitors.

Figure 33: Mean frequency of visiting indoor courts in Auckland in the last four weeks by ethnic group, gender, age, household income, housing tenure and household structure



Base: Ethnic group: New Zealand European 2933, Maori 616, Pacific peoples 440, Asian 885; Gender: Male 2,382, Female 2,457; Age: Under 5 years old 386, 6 to 9 years old 312, 10 to 14 years old 317, 15 to 17 years old 216, 18 to 29 years old 960, 30 to 39 years old 738, 40 to 49 years old 701, 50 to 64 years old 733, 65 to 74 years old 386, 75 to 84 years old 200; Household income: Under $30k 497, $30,001-$60,000 900, $60,001-$100,000 1,190, $100,001 or more 1,586; Housing tenure: Rent 1,998, Boarding 218, Own with or without a mortgage 2,603, Other 112; household structure: Single person living alone 292, Single parent household with children at home (including adult children) 438, Couple without children at home 1,119, Couple with children at home (including adult children) 2,581, Group flatting (household members un-related) 194, Two or more households sharing a dwelling, with or without children (including adult children) 286, Other 54

Sports Fields

Participants were asked if they and other members of their household, if applicable, had visited a Council sports field (e.g. Rugby, Hockey etc) in Auckland in the last six months.

Overall, only 16% of household members had visited a Council sports field in Auckland in the last six months.

Table 26 shows the data for the participant and other adult and child members of the household. It also shows the number of sports fields visited.

The overall number of sports fields visited is highest for children and the participant: 18% children, 17% participant and 16% other adults visited a sports field in Auckland in the previous six months. A mean is included in the table using 5 for 3+.

Table 26: Number of sports fields visited in previous six months

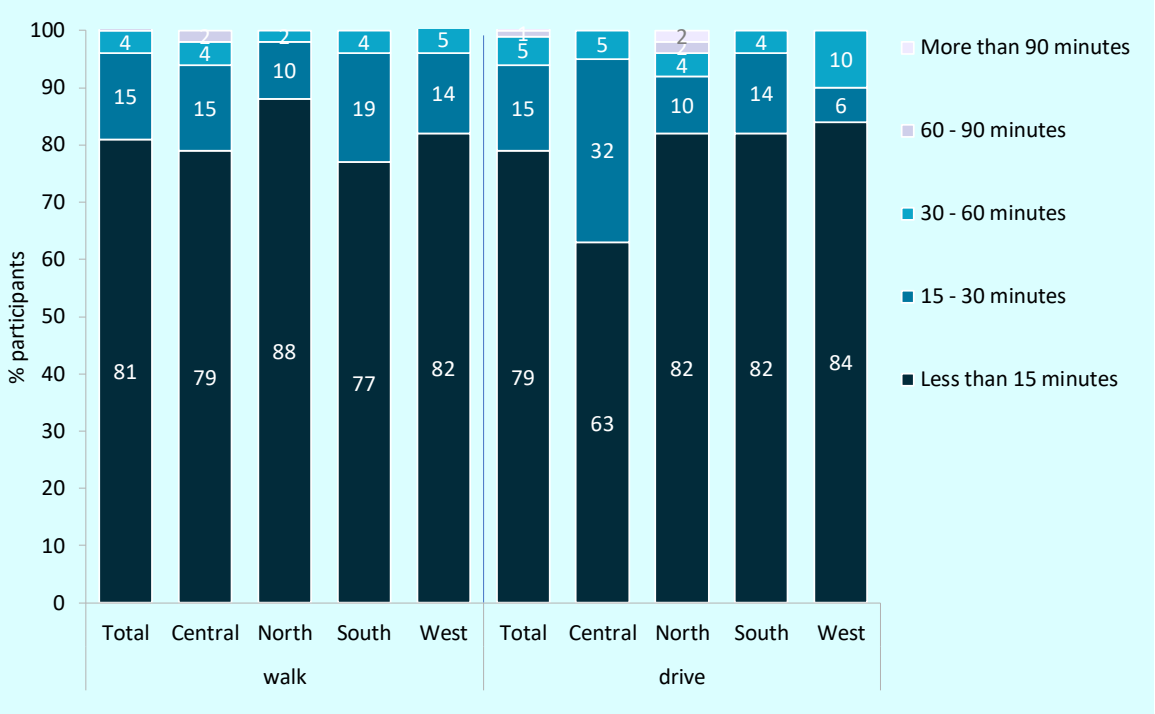
	Total %	Participant %	Other adults %	Children %
None	84	83	86	82
One	8	10	7	7
Two	4	4	3	5
Three +	4	3	4	5
Mean	**0.35**	**0.33**	**0.32**	**0.44**
Base	**4964**	**1834**	**1092**	**1149**

Participants were asked the travel time to each facility they visited. They could answer with either walk or drive times. Forty five per cent enter the walk time and 55% the drive time. The mean walk and drive times for all sports fields mentioned were:

- Walk 11 minutes (base: 158)
- Drive 13 minutes (base: 193)

Figure 34 shows the distribution of walk and drive times by area. The walk and drive times were longest in the Central area.

Figure 34: Walk and drive times to sports fields by area



Base: Walk: Total 158, Central 47, North 42, South 47, West 22; Drive: Total 193, Central 38, North 51, South 73, West 31

Seven Days

The frequency of visits to sports fields in the preceding seven days is shown for the participant, other adults in the household and children in the household in Table 27. There were some high values given[24] and these have been capped at 21.

Overall, just 10% had visited a sports field in the preceding seven days. The mean number of visits was 0.22.

Children were the most frequent visitor with other adults in the household the least frequent.

Table 27: Frequency of visiting sports fields in previous seven days

	Total %	Participant %	Other adults %	Children %
0	90	90	91	88
1	5	4	5	6
2	2	2	2	3
3	1	1	1	2
4	0	1	0	0
5-10	1	1	1	1
11-21	0	0	0	0
Mean	**0.22**	**0.23**	**0.19**	**0.26**
Base	**4,964**	**1,834**	**1,883**	**1,247**

The mean frequency of visiting sports fields in Auckland in the last seven days was highest in the West area and lowest in the Central area:

- Central 0.15
- North 0.26
- South 0.22
- West 0.31

The mean frequency of visiting sports fields in Auckland in the last seven days by the four main ethnic groups, gender, age, household income, housing tenure and household structure is shown in Figure 35.

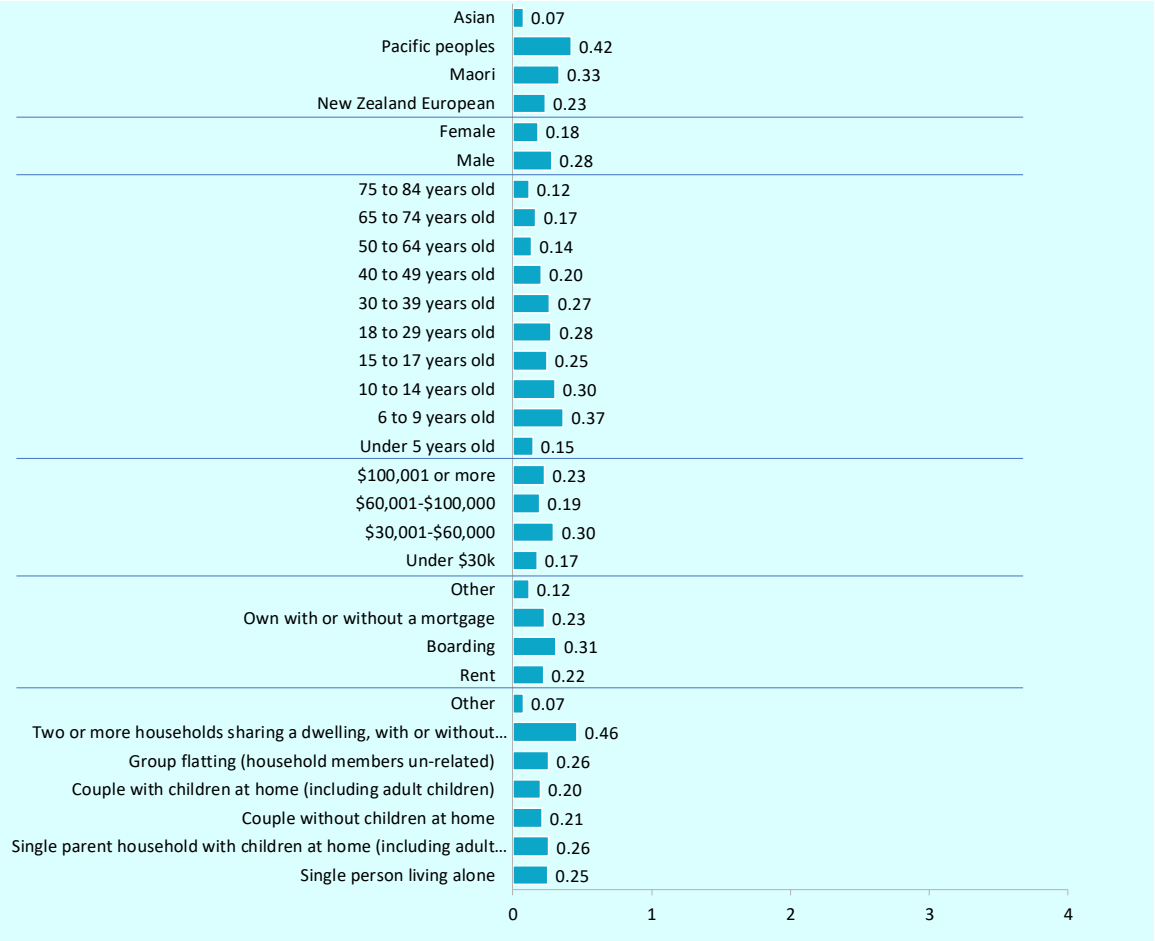
Key findings are:

- Pacific peoples were the most frequent visitors
- Males were much more frequent visitors to sports parks than females
- Children aged 6-14 were the more frequent visitors to sports fields and adults aged 50 or over were the least frequent
- Frequency of visit was highest for households with annual household incomes of $30-60k
- Boarders were the most frequent visitors

[24] possibly because the question had been misread, eg assumed six months as in previous question or an error in entry

- Two or more households sharing a dwelling, with or without children were the most frequent visitors.

Figure 35: Mean frequency of visiting sports fields in Auckland in the last seven days by ethnic group, gender, age, household income, housing tenure and household structure



Base: Ethnic group: New Zealand European 2933, Maori 616, Pacific peoples 440, Asian 885; Gender: Male 2,382, Female 2,457; Age: Under 5 years old 386, 6 to 9 years old 312, 10 to 14 years old 317, 15 to 17 years old 216, 18 to 29 years old 960, 30 to 39 years old 738, 40 to 49 years old 701, 50 to 64 years old 733, 65 to 74 years old 386, 75 to 84 years old 200; Household income: Under $30k 497, $30,001-$60,000 900, $60,001-$100,000 1,190, $100,001 or more 1,586; Housing tenure: Rent 1,998, Boarding 218, Own with or without a mortgage 2,603, Other 112; household structure: Single person living alone 292, Single parent household with children at home (including adult children) 438, Couple without children at home 1,119, Couple with children at home (including adult children) 2,581, Group flatting (household members un-related) 194, Two or more households sharing a dwelling, with or without children (including adult children) 286, Other 54

Four Weeks

The frequency of visits to sports fields in the preceding four weeks is shown for the participant, other adults in the household and children in the household in Table 28.

Overall, 13% had visited a sports field in the preceding four weeks. The mean number of visits was 0.6.

Children were the most frequent visitor with other adults in the household the least frequent.

Table 28: Frequency of visiting sports fields in previous four weeks

	Total %	Participant %	Other adults %	Children %
0	87	86	89	84
1	4	4	3	3
2	3	3	2	4
3	1	2	1	2
4	2	1	2	2
5-10	3	2	3	3
11-29	1	1	1	1
30-56	0	0	0	0
Mean	**0.60**	**0.59**	**0.49**	**0.79**
Base	**4,964**	**1,834**	**1,883**	**1,247**

The mean frequency of visiting sports fields in Auckland in the last seven days was highest in the North area and lowest in the Central area:

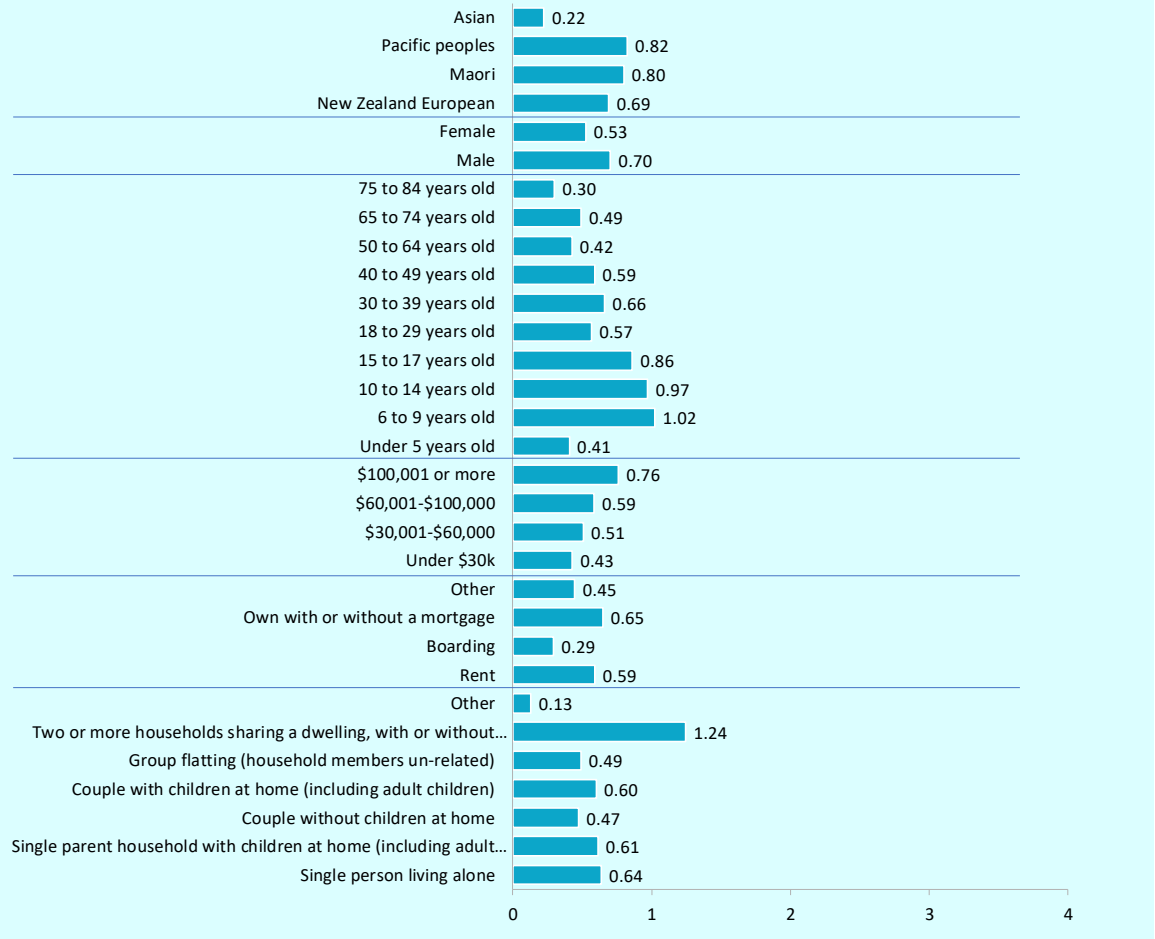
- Central 0.39
- North 0.84
- South 0.60
- West 0.62

The mean frequency of visiting sports fields in Auckland in the last four weeks by the four main ethnic groups, gender, age, household income, housing tenure and household structure is shown in Figure 36.

Key findings are:

- Pacific peoples and Māori were the most frequent visitors
- Males were much more frequent visitors to sports fields than females
- Children aged 6-17 were the most frequent visitors and adults aged 50 or over were the least frequent visitors
- Frequency of visit was highest for high income households and lowest for low income households
- Property owners were the most frequent visitors
- Two or more households sharing a dwelling, with or without children were the most frequent visitors.

Figure 36: Mean frequency of visiting sports fields in Auckland in the last four weeks by ethnic group, gender, age, household income, housing tenure and household structure



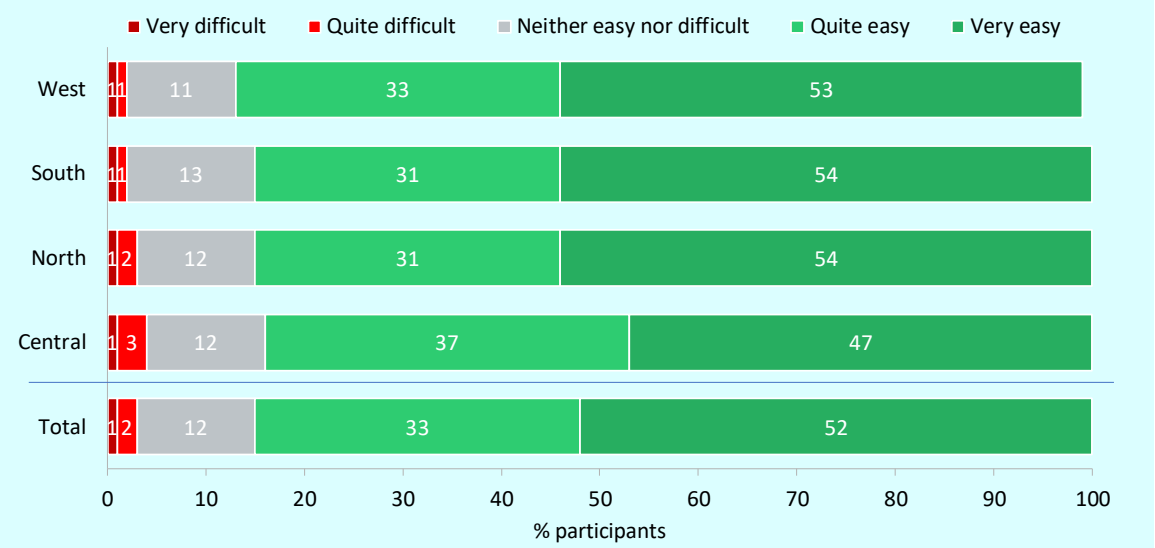
Base: Ethnic group: New Zealand European 2933, Maori 616, Pacific peoples 440, Asian 885; Gender: Male 2,382, Female 2,457; Age: Under 5 years old 386, 6 to 9 years old 312, 10 to 14 years old 317, 15 to 17 years old 216, 18 to 29 years old 960, 30 to 39 years old 738, 40 to 49 years old 701, 50 to 64 years old 733, 65 to 74 years old 386, 75 to 84 years old 200; Household income: Under $30k 497, $30,001-$60,000 900, $60,001-$100,000 1,190, $100,001 or more 1,586; Housing tenure: Rent 1,998, Boarding 218, Own with or without a mortgage 2,603, Other 112; household structure: Single person living alone 292, Single parent household with children at home (including adult children) 438, Couple without children at home 1,119, Couple with children at home (including adult children) 2,581, Group flatting (household members un-related) 194, Two or more households sharing a dwelling, with or without children (including adult children) 286, Other 54

Ease of answering questions

After the questions on usage of facilities, the whole sample was asked if they found it easy or difficult to answer the questions on usage of facilities.

Almost nine tenths (87%) found it quite or very easy and just 3% found it quite or very difficult.

Figure 37: Difficulty in answering questions on usage of facilities



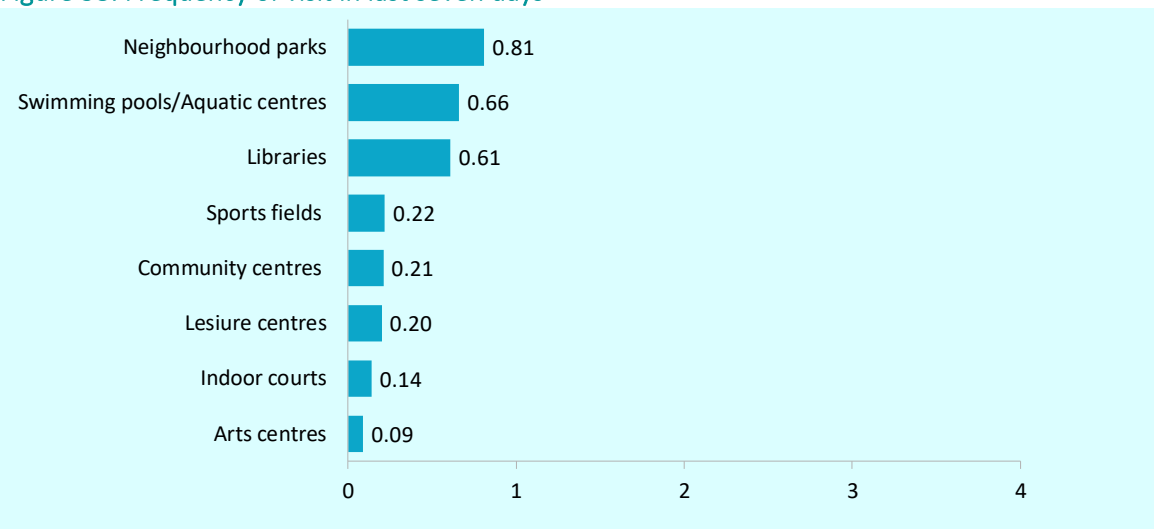
Base: Total 1,850, Central 553, North 435, South 583, West 279

Summary Usage

The research shows that the Council facilities used most by Auckland residents are neighbourhood parks, swimming pools/aquatic centres and libraries. Arts centres and indoor courts are used least.

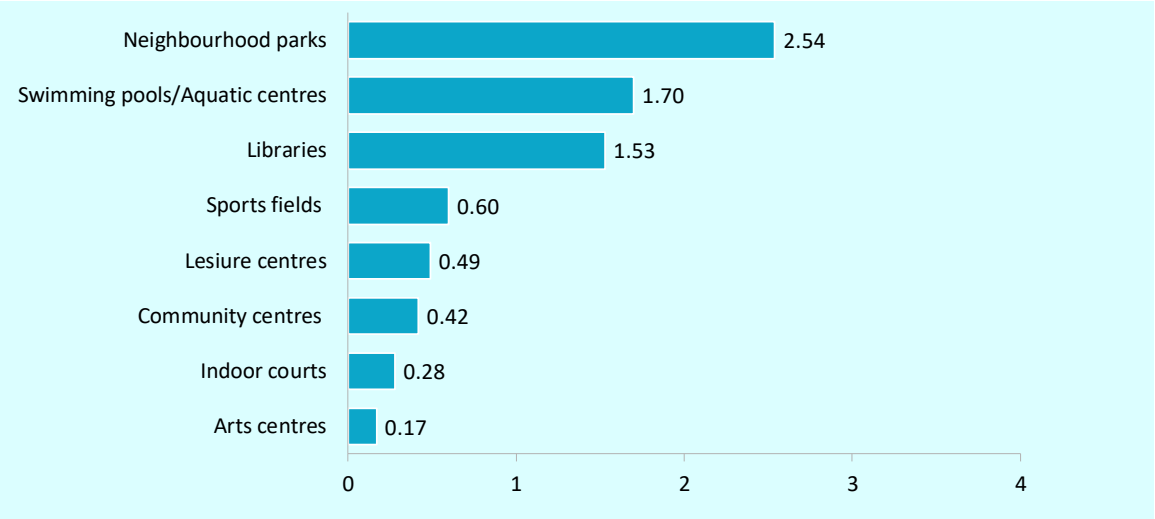
Figure 38 and Figure 39 below show the mean frequency of visit in the last seven days and last four weeks respectively for the sample.

Figure 38: Frequency of visit in last seven days



Base: 4,964

Figure 39: Frequency of visit in last four weeks



Base: 4,964

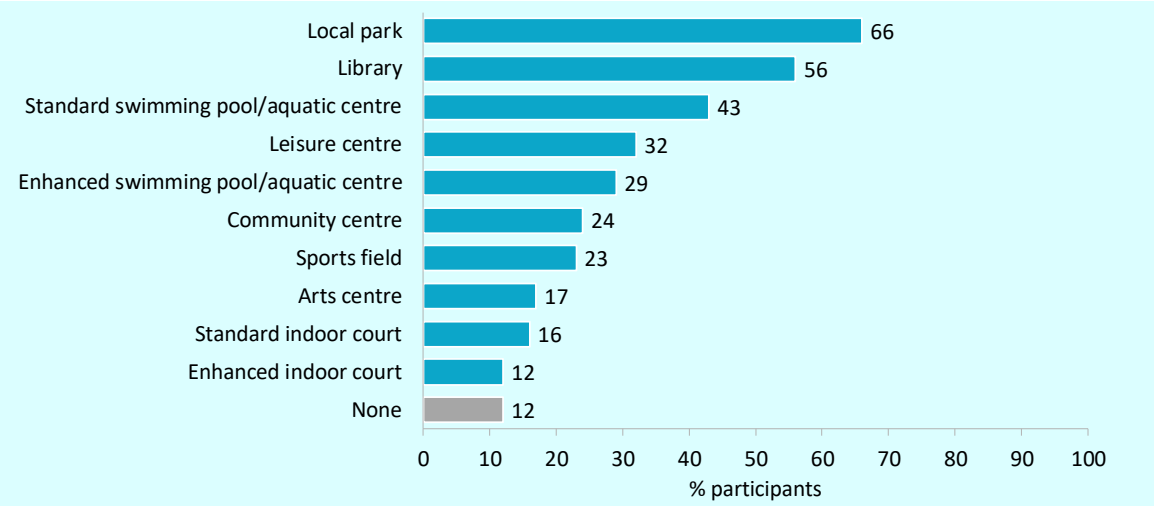
After the SC experiments, participants were asked which of the following types of facilities they would like to have better access to:

- Standard swimming pool/aquatic centre
- Enhanced swimming pool/aquatic centre
- Library
- Community centre
- Leisure centre
- Arts centre
- Standard indoor court
- Enhanced indoor court
- Neighbourhood park
- Sports field.

Participants were reminded to think about their own/household's needs when answering the question. More than one response could be given.

Two thirds wanted better access to neighbourhood parks, 56% wanted better access to a library and 43% to a Standard swimming pool/aquatic centre. Indoor courts were at the bottom of the list.

Figure 40: Type facilities participants would like better access to



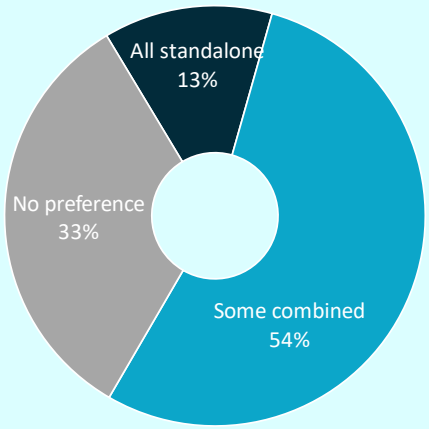
Base: 1,850

Preference between combined and standalone facilities

Participants were told that council facilities can sometimes be combined in the same place and were asked whether they prefer each facility that they use to be standalone or for some to be combined in the same place.

Overall, over half (54%) said some combined, 13% all standalone and the remaining third had no preference.

Figure 41: Whether prefer each facility to be standalone or for some to be combined in the same place



Base: 1,850

3.4 Values from the stated choice experiments

We have developed discrete choice models to quantify the importance of the different experiment attributes from people's stated choices. We have pooled the data from both experiments to improve the reliability of the model parameters included in both experiments (distance, cost and the value of neighbourhood parks). The final model is

based on 22,200 choice observations, collected from 1,850 participants. Appendix C presents details of the theory underpinning the discrete choice models, details of the steps undertaken during the model development and the model results.

From the model parameters describing the importance of different attributes (β) we can calculate the monetary value for each of the amenities (Xi):

$$monetary\ values\ of\ X_i = \frac{\beta_{X_i}}{\beta_{cost}}$$

Here, X_i represents the level *i* of amenity X; β is the coefficient estimated from the choice models for the amenity and cost. The unit of monetary value is dollar ($) per month per household[25].

We have also calculated the +/- 95% confidence levels for the monetary values, using the following formulae.

$$var\left(\frac{\beta_x}{\beta_{cost}}\right) = \left(\frac{\beta_x}{\beta_{cost}}\right)^2 * \left(\frac{var(\beta_x)}{{\beta_x}^2} + \frac{var(\beta_{cost})}{{\beta_{cost}}^2} - \frac{2cov(\beta_x, \beta_{cost})}{\beta_x * \beta_{cost}}\right)$$

The sample size (n) for each sub-group of population is also included in the table. 'Var' represents the variance of the relative value for attribute level x, and 'cov' is the covariance between the coefficients of attribute level x and cost.

We find that the resulting valuations vary according to the (reported) use of the amenity, although we also observe valuations for some amenities even if they aren't used by the household (called 'non-use' values). Non-use values are the value that people place on economic goods (including public goods) even if they never have and never will use it. They are distinguished from use values, which people derive from direct use of the good. The concept is most commonly applied to the value of natural (such as landscaping) and built resources (such as public facilities). In our analysis, usage information is based on participants reported usage of amenities by all household members over the last 6 months. The use household refers to that at least one of the household members have used the amenity over the last six months.

For use values, we also sometimes find differences in valuations by frequency of use of the amenity by the household, specifically that frequent users may be willing to pay more for having the amenities compared to less frequent users. In our analysis, frequent users are defined as households where members have visited the amenities 5 times or more over the past 4 weeks. This number of times (5 or more times) is determined based on the analysis of the frequency of usage to ensure a sufficient sample size for the different frequency categories (please see Table 38 in Appendix C). To use these values in appraisal, the usage frequency information should be collected (or estimated).

[25] In the choice experiment, the cost attribute was specified as additional rates or rent per household or per the individual for those who live in multiple occupancy dwellings or who live on their own).

We also examined the impact of household structure on valuations, particularly the presence of children in the family on the resulting valuations.

Below we summarise the key findings from the model analysis.

Willingness to pay for culture and recreational amenities

Below Table 29 and Figure 42 present the monetary values for each of the culture and recreational amenities, at different service standards and use, in each case relative to the base level for the amenity (i.e. 'no provision' of the amenity). The values associated with the lower and upper 95% confidence intervals are also presented.

We note that these values reflect the value of providing the amenity. The assumption is that if people have to pay to access facilities currently, for examples that adults will pay to access arts centre or sports facilities (swimming pool or indoor courts), then such payments would also be required in future.

In addition it should be noted that the values are for the households with a distance less than 20 minutes driving to the new amenity. We find impacts of distance on the values which will be discussed in the later section.

Table 29: Monetary values for culture and recreational local amenities ($/month/household)

Amenity	Values	Lower C	Upper C	Sample size
Library				
Library - no provision (base)	0.00			
Library (use)	19.55	16.92	22.18	990
Library (use) - less frequent	17.63	14.59	20.67	586
Library (use) - frequent	23.45	19.90	27.01	404
Library (non-use)	7.81	4.85	10.76	860
Community Centre				
Community centre - no provision (base)	0.00			
Community centre (use)	7.32	2.49	12.16	304
Community centre (non-use)	3.40	1.42	5.37	1,546
Arts Centre				
Arts centre - no provision (base)	0.00			
Arts centre - standard service (use)	7.56	3.78	11.33	173
Arts centre - standard service (use) less frequent	0.00	0.00	0.00	118
Arts centre - standard service (use) frequent	21.84	12.47	31.22	55
Arts centre - standard service (non-use)	0.00	0.00	0.00	1,677
Neighbourhood park				
Neighbourhood park - no provision (base)	0.00			
Neighbourhood park (use)	27.44	25.94	28.95	1,238
Neighbourhood park (non-use)	13.52	10.60	16.43	612

Note: All values are measured relative to the baseline of no provision of amenities. They reflect values for provision of single amenities that are accessible within 20 minutes of driving. Separate values are presented for use and non-use and for frequency of use, when these are significantly different to one another. Also, the values are per household, except for individuals who live in shared households where the values are for those individuals.

In general, we find that:

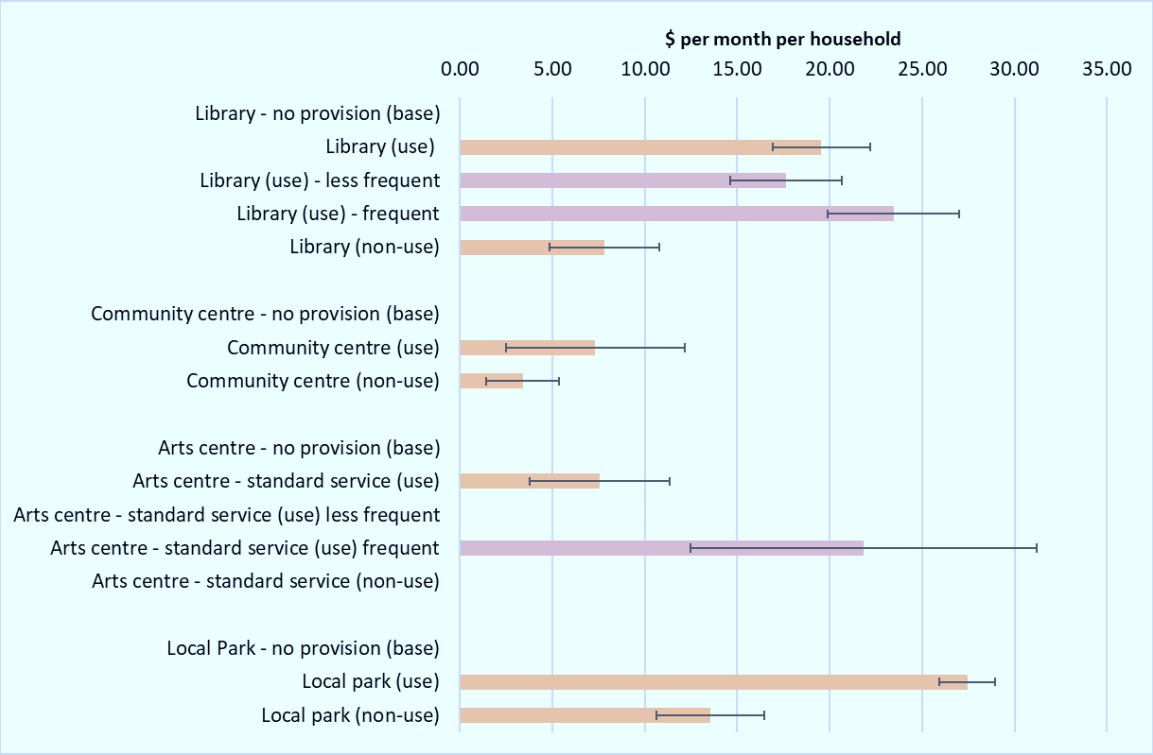
- Use values are higher than non-use values. For instance, those participants who reported they or their household visited a neighbourhood park over the past 6 months are willing to pay $26 per month per household to have a neighbourhood park. Whilst the value is $12.10 per month per household for those participants who reported that their household did not visit a neighbourhood park in the last six months (non-user value).

- Households that do not use some amenities still value these amenities, particularly for neighbourhood parks and libraries. We observe very low non-use values for community centres and zero non-use values for arts centres, compared to neighbourhood park and libraries.

- For libraries and (especially for) arts centres, we observe that frequent users are willing to pay more for these amenities than less frequent users. It should be noted the frequent user value for arts centre is based on a relatively small sample (n = 55). For the other amenities, we do not observe significant differences in valuations between frequent and less frequent users.

- We did not observe any impact from the presence of children on the resulting valuations for cultural and recreational amenities.

Figure 42: Monetary values for culture and recreational local amenities



Willingness to pay for sports amenities

Table 30 and Figure 43 present the monetary values for each of the sports related amenities at different service standards and use. The 95% confidence intervals of the values are also reported.

Table 30: Monetary values for the sports related local amenities ($/month/household)

Amenity	Values	Lower C	Upper C	Sample size
Leisure Centre				
Leisure centre - no provision (base)	0.00			
Leisure centre (use)	10.14	6.46	13.81	242
Leisure centre (use) - less frequent	6.84	1.25	12.44	104
Leisure centre (use) - frequent	13.13	7.19	19.06	138
Leisure centre (non-use)	0.00			1,608
Aquatic Centre				
Pools / Aquatic centre - no provision (base)	0.00			
Pools / Aquatic centre - standard and enhanced (use)	21.12	18.19	24.06	655
Pools / Aquatic centre - standard and enhanced (non-use)	11.15	9.21	13.10	1,195
Indoor Court				
Indoor courts - no provision (base)	0.00			
Indoor court - standard and enhanced (use)	12.29	6.19	18.39	171
Indoor court - standard and enhanced (use) but less frequent	11.04	3.09	18.98	95
Indoor court - standard and enhanced (use) frequent	14.20	5.88	22.53	76
Indoor courts - standard and enhanced (non-use)	0.00			1,679
Sport Park				
Sports park - no provision (base)	0.00			
Sports park (use)	10.73	7.24	14.22	293
Sports park (use) - no children	7.45	3.31	11.59	156
Sports park (use) - with children	14.69	8.89	20.50	137
Sports park (non-use)	8.69	6.11	11.26	1,557
Sports park (non-use) - no children	7.95	5.19	10.70	996
Sports park (non-use) - with children	9.96	6.54	13.38	561
Neighbourhood park				
Neighbourhood park - no provision (base)	0.00			
Neighbourhood park (use)	27.44	25.94	28.95	1,238
Neighbourhood park (non-use)	13.52	10.60	16.43	612

Note: All values are measured relative to the baseline of no provision of amenities. They reflect values for provision of single amenities that are accessible within 20 minutes of driving. Separate values are presented for use and non-use and for frequency of use, when these are significantly different to one another. Also, the values are per household, except for individuals who live in shared households where the values are for those individuals.

In general, we find that:

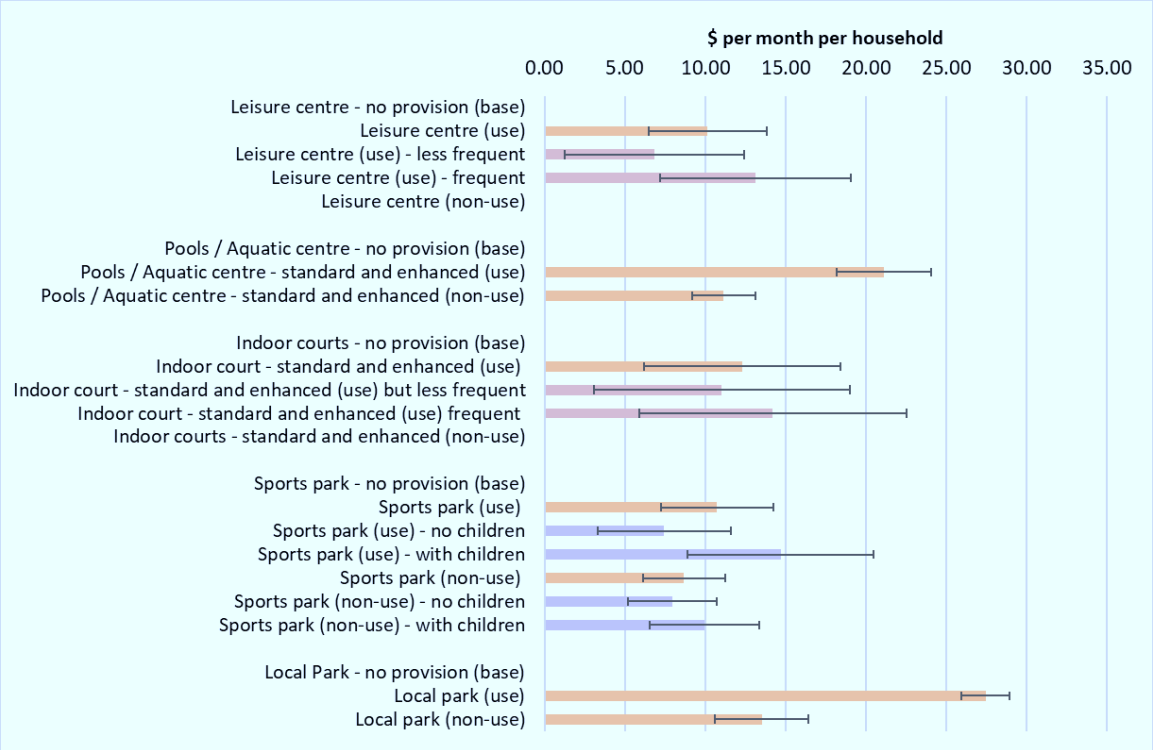
- Use values are higher than non-use values.
- Households that do not use some amenities still value these amenities, particularly for neighbourhood parks, sports parks and aquatic centres. We do not observe non-use values for leisure centres or indoor courts.

- In the choice experiment, different service standards (standard or enhanced) were offered for aquatic centres and indoor courts. However, we did not find significant differences in the resulting valuations for these different service standards.

- For leisure centres and indoor courts, we observe that frequent users are willing to pay more for these amenities than less frequent users. For the other sports amenities, we do not observe significant differences in valuations between frequent and less frequent users.

- We find that households with children are willing to pay more for some facilities, for instance sports fields. This is true both for use and non-use values.

Figure 43: Monetary values for sports related amenities



The value of combining amenities in one location

We find participants placed (significantly) higher or lower values when some of the amenities were presented in the same choice options, specifically we find:

- When leisure centres and pools were both presented in a choice option, users (for both amenities) were more likely to select the option. We calculate that the value of having both amenities is equivalent to $4.44 per month per household. This value reflects users of leisure centres and pools are willing to pay more for having both amenities. Note the value is on top of the values of leisure centres and pools when both amenities are provided. This is consistent with background information collected which shows that 54% of respondents preferred combined provision of facilities (see Figure 41).

- When library and community centres were both presented in an option, both users and non-users placed a higher value to the combination, equal to $6.79 (users) and $4.16

(non-users) per month per household/individual. It should be noted that the users' value of library and communitycentre have a wide confidence interval, which is caused by the lower statistical significance of the model parameter for users' preference of combination of library and community centres (t = 1.9).

- There appears to be a substitution effect between neighbourhood parks and sports fields, for non-users, whereby having both leads to a reduction in the value of the combined services by $10.16 per month per household for non-users. This reflects that people who do not visit neighbourhood parks or sports fields perceive that the amenities are substitutes, hence their values on the provision of both amenities would be less than the total values of two amenities separately.

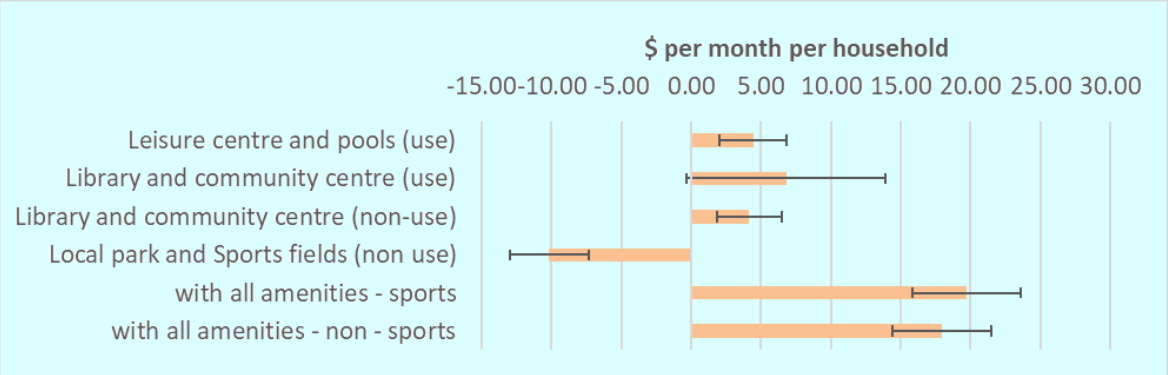
- Lastly, in the choice experiment, we offered a choice between no provision and a full complement of amenities (at the highest cost level). After controlling for all the factors, we find participants valued the provision of all (sports or cultural) amenities positively. The additional monetary values are $19.72 per month per household for sports amenities and $17.95 per month per household for cultural amenities, compared to no provision. This value is in addition to the values of the individual amenities.

Table 31: Monetary value additions for combinations of amenities ($ per month per household)

Substitutes or complements	additional values	-95%	95%	n
Leisure centre and pools (use)	4.44	2.06	6.82	207
Library and community centre (use)	6.79	-0.32	13.90	295
Library and community centre (non-use)	4.16	1.85	6.47	566
Neighbourhood park and Sports fields (non use)	-10.16	-13.00	-7.33	417
with all amenities – sports	19.72	15.85	23.59	1850
with all amenities - non - sports	17.95	14.39	21.50	1850

Note: All values are per household, except for individuals who live in shared households where the values are for those individuals.

Figure 44: Additional monetary values for combinations of amenities



The value of proximity

Finally, we find that participants dislike travelling far to their local amenities. We have examined the impact of distance (measured by driving times) on their stated choice behaviour. Participants were found to be insensitive to the travel distances up to 20 minutes driving (the model parameters for distance bands less than 20 minutes driving are all not statistically significantly different from zero). However, participants place a negative

value on driving times of between 20 minutes and 30 minutes (the highest distance bands) equivalent to $3.10 per month per household for provision of a single amenity and $12.30 for provision of multiple amenities (2 or more amenities).

This coincides with the qualitative finding based on the analysis of the participants' comments on the choice experiment (discussed in Appendix C) where some reported that distance and accessibility was important factor for them in making the choices.

It is emphasised that the values presented in the earlier section are the values for households who live within the 20 minutes driving distance catchment area of the amenity. In the later section, we explain how to use the values.

Impact of income on willingness to pay

We have examined the impact of income (both household income and personal income) on the participants' sensitivity to the cost changes presented in the choice experiments (see Appendix C Table 36 for the test results). We find that participants with higher income (both household and personal income) are less sensitive to cost changes. Specifically, that those with incomes greater than $100k per year have a lower sensitivity to cost change than those with incomes below $100k per year. This is intuitive and consistent with findings across a number of previous studies, both undertaken by ourselves and by others. Including such an income effect will lead to higher amenity values for higher income households. However, given the main focus of the study was to obtain average amenity values per household, in the main body of the report we present the average value across income groups only.

How to use the values derived from this study

Several aspects need to be considered when using the valuations from this study in appraisals or cost-benefit analysis. These are detailed below.

Step 1: Consider the values of introduction of new amenity

Table 29 and Table 30 present the values that public are willing to pay for having the new amenity, in the unit of dollars per household per month. We find the values differ by use and non-use, and some of them differ by usage frequency and/or household structure (i.e. whether or not they have children). It should be noted that:

- these values reflect the value of providing the amenity. If people have to pay to access facilities currently, for examples that adults will pay to access arts centre or sports facilities (swimming pool or indoor courts), then such payments would also be required in future.

- the values of use and non-use, and usage frequency should be applied if the usage information is available (or can be estimated). The high frequency definition is based on usage of 5 times or more over the past 4 weeks.

- The value by household structure (whether or not they have children) should be applied if the household structure information is available (or can be estimated).

Step 2: Consider multiple amenities provision

Sometimes, multiple amenities will be provided by local council. The values of amenities from the study are additive. For instance, the local council would like to introduce a library and a swimming pool to the local area, the value for a user of both amenities would be $40.68 (= $21.12 + $19.55) per month per household. The value for a non-user of both amenities would be $18.96 (= $11.15 + $7.81).

It should be noted that **complement or substitute effects** should be considered. Table 31 shows the complements or substitution effects of multiple amenities provisions. For example, when leisure centres and pools are both introduced, users (for both amenities) will place an additional $3.75 per month per household on top of the amenities values which are $35.01 (= $10.14+$21.12+$3.75). Another example is that when neighbourhood park and sports field are introduced together, non-users (for both amenities) will be willing to pay $12.04 (= $8.69 +$13.52 + [-$10.16]) per household per month for the amenities provision, which indicates a substitution effect between the two amenities for non-users.

Step 3: Consider the impact of distance on the values

The travel distance (from home to amenity) has shown a significant impact on the public's values of amenities provision, for those who have to drive 20 minutes or longer. The distance impact varies according to the number of amenities provided. For a single amenity provision, driving 20 minutes or more means that the value of the amenity should be reduced by $3.19, whilst for provision of multiple amenities driving 20 minutes or more should reduce the monetary value by $12.28. So, when using the values from this study, for households who will need to drive more than 20 minutes to access the new facilities, the values should be decreased by the appropriate distance amendment.

Below we present two examples of calculating the overall values of amenity provision:

Example 1: Introduction of a library in the local area

The value of introducing a library in a local area would be calculated as follows. For household within 20 minutes driving distance, the willingness to pay value for a user household would be $19.55 per household per month for the proportion of households that would be expected to use the facilities and $7.81 for households that would not be expected to use the facility. For households who would need to drive 20 minutes or more to access to the new library, the values would be $16.35 (for users) and $4.61 (for non-users).

Example 2: Introduction of a library and a community centre in the local area

In this example, we need to consider the complementary effects as well as distance impacts. Below are the values for each group by use/non-use and distance to the amenities:

Amenity 1	User Household	Amenity 2	User Household	Driving distance	Values ($/household/month)
Library	Y	Community centre	Y	less than 20 minutes	33.67
Library	Y	Community centre	Y	20 minutes or more	21.38
Library	N	Community centre	Y	less than 20 minutes	19.29
Library	N	Community centre	Y	20 minutes or more	7.00
Library	Y	Community centre	N	less than 20 minutes	22.95
Library	Y	Community centre	N	20 minutes or more	10.67
Library	N	Community centre	N	less than 20 minutes	15.36
Library	N	Community centre	N	20 minutes or more	3.08

Step 4: Consider the affected population

When applying the findings in the future appraisals (for instance, having a new facility in the local area), the predicted composition of the population should be considered, particularly the usage patterns and household structures. Appropriate values should be applied based on the use and non-use values in this report. In addition, possible adjustments for distance of the catchment to the facilities and potential adjustments should be considered based on planned co-location of different amenities. The appropriate values should be applied based on the findings in the report.

Step 5: Amending the values over time

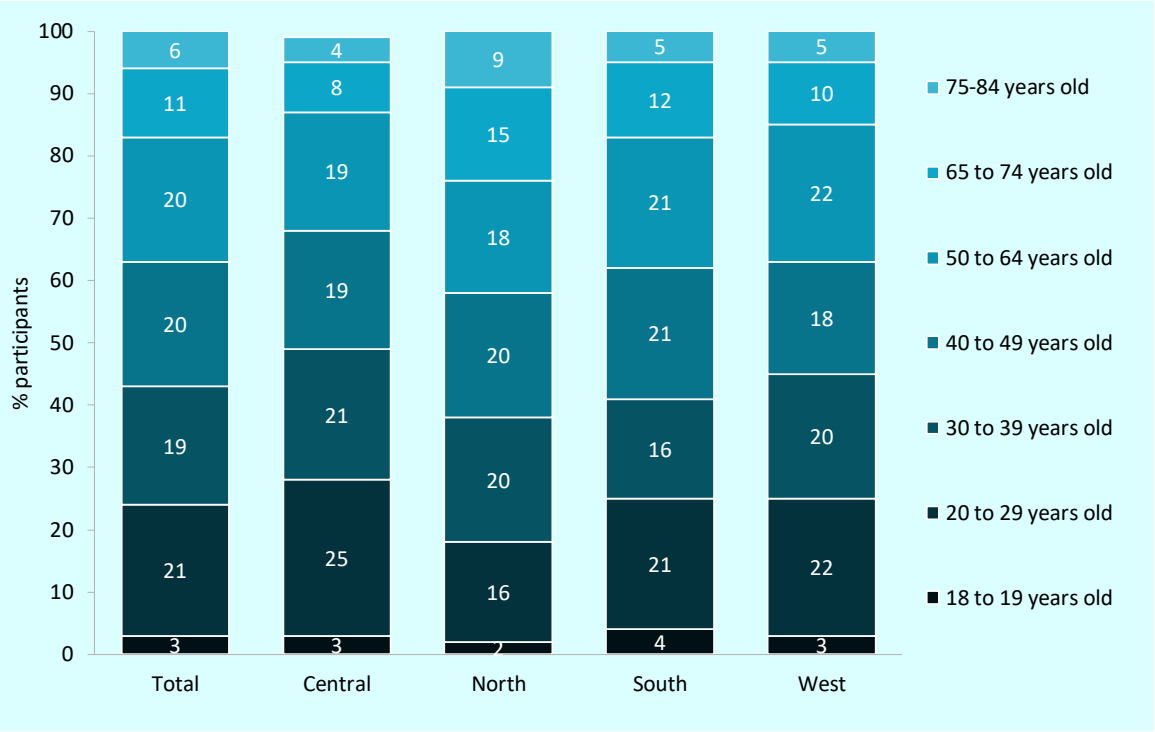
The values derived from this study reflect values in 2020. When the values are used for future appraisals, it will be necessary to consider how these values may change in line with changing factors such as income levels, preferences, household composition and travel patterns.

3.5 Demographics

Age

The age of the participant was collected at the beginning of the survey. Quotas based on the Auckland adult population were set so the overall distribution matches the Auckland adult population age. Figure 45 also shows the age distribution by area.

Figure 45: Age of participant by area

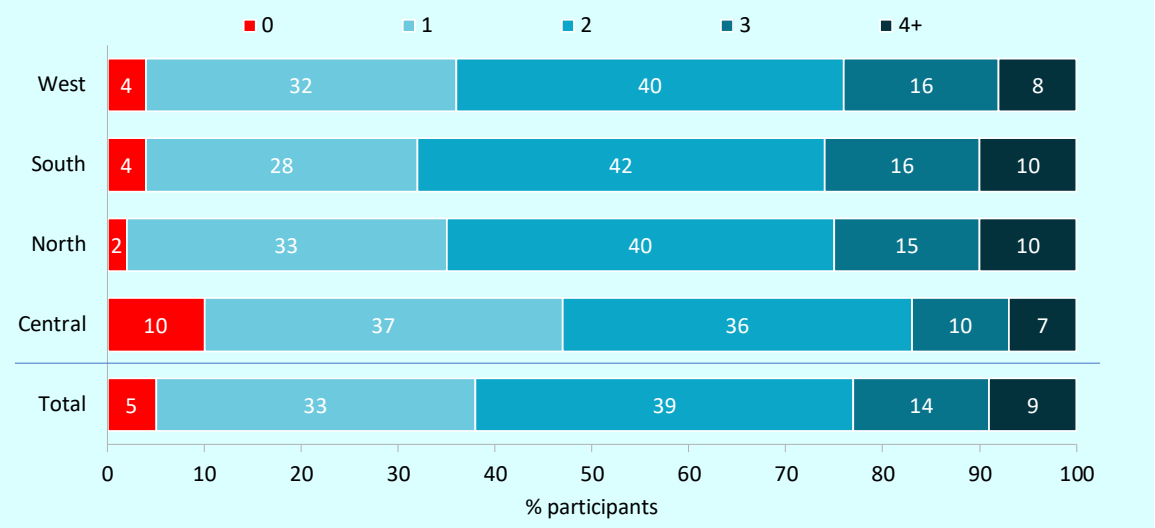


Base: Total 1,850, Central 553, North 435, South 583, West 279

Vehicles in household

Almost all households had one or more vehicles. The Central area has the least number with 10% having none.

Figure 46: Number of vehicles in household including company cars

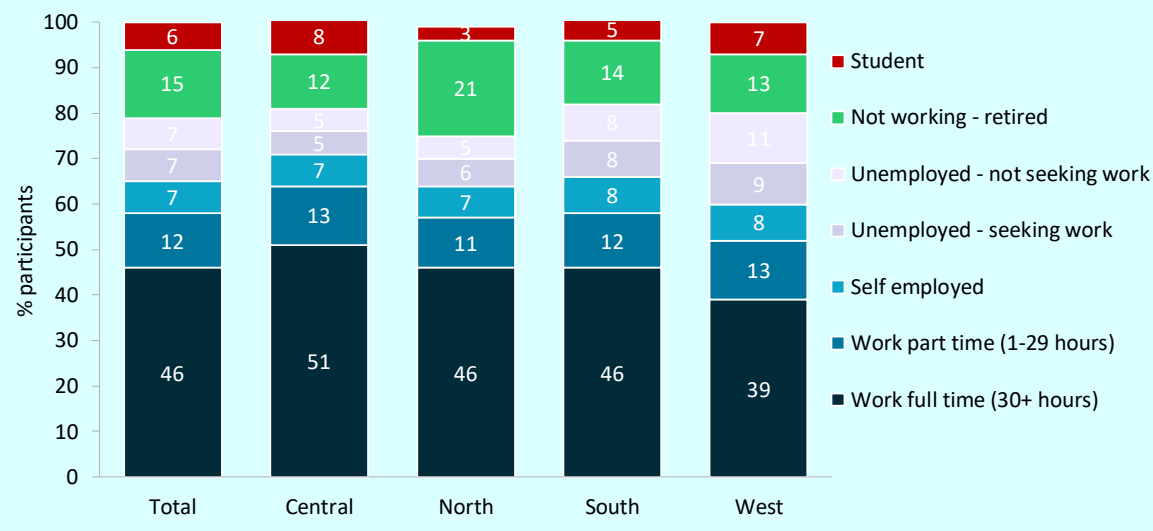


Base: Total 1,850, Central 553, North 435, South 583, West 279

Employment status

Overall, 58% were employed either full or part time, 14% were unemployed and 15% retired. Residents in the Central area were most likely to be employed and residents in the West least likely.

Figure 47: Employment status

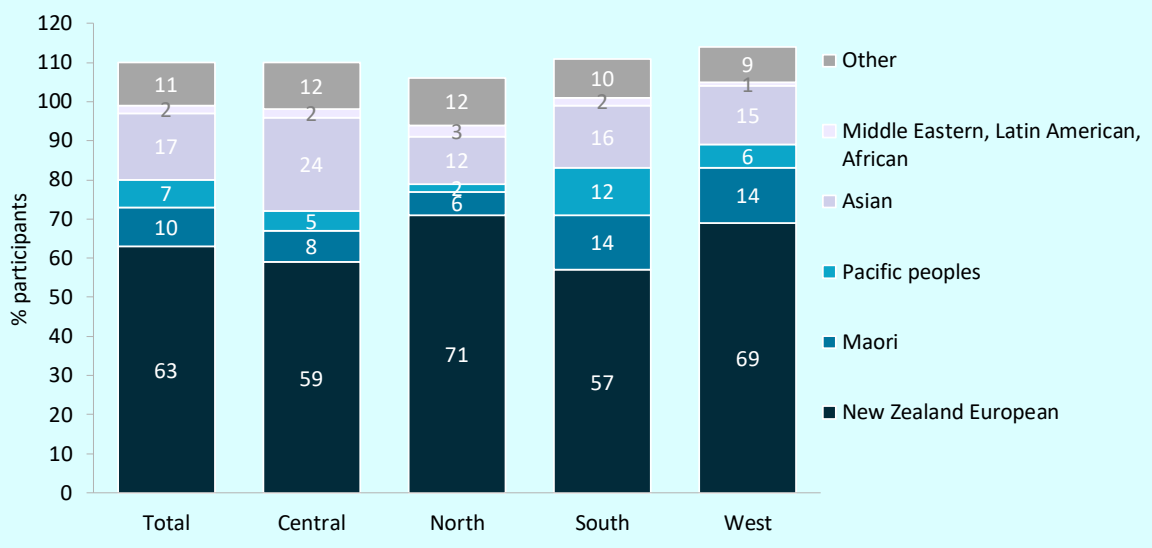


Base: Total 1,850, Central 553, North 435, South 583, West 279

Ethnic group

Nearly two thirds of the sample (63%) were New Zealand Europeans and 17% were Asians. There were most New Zealand Europeans in the North and West and fewest in the South and Centre. There were twice as many Asians in the centre as the North.

Figure 48: Ethnic group

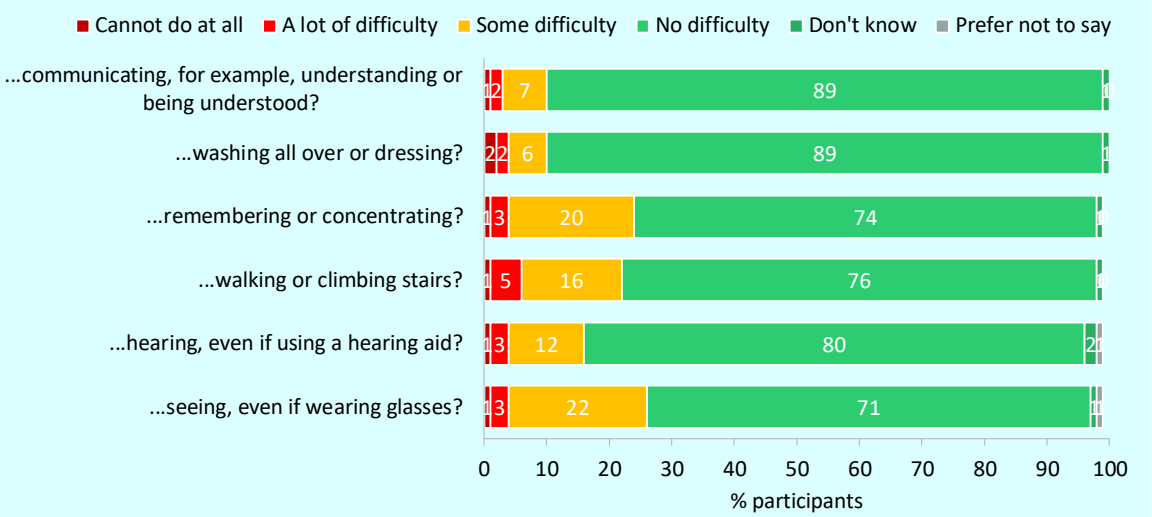


Base: Total 1,850, Central 553, North 435, South 583, West 279
Note: more than one ethnic group could be mentioned so percentages total more than 100

Difficulties in doing certain activities

Participants were asked about any difficulties they might have doing certain activities because of a health problem.

Figure 49: Difficulties faced by participants

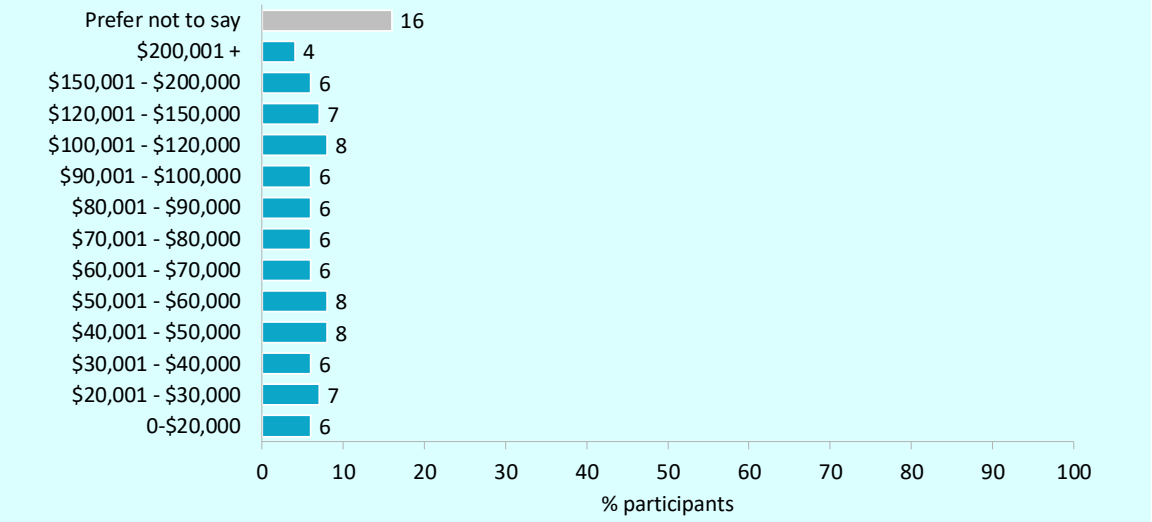


Base: 1,850

Income

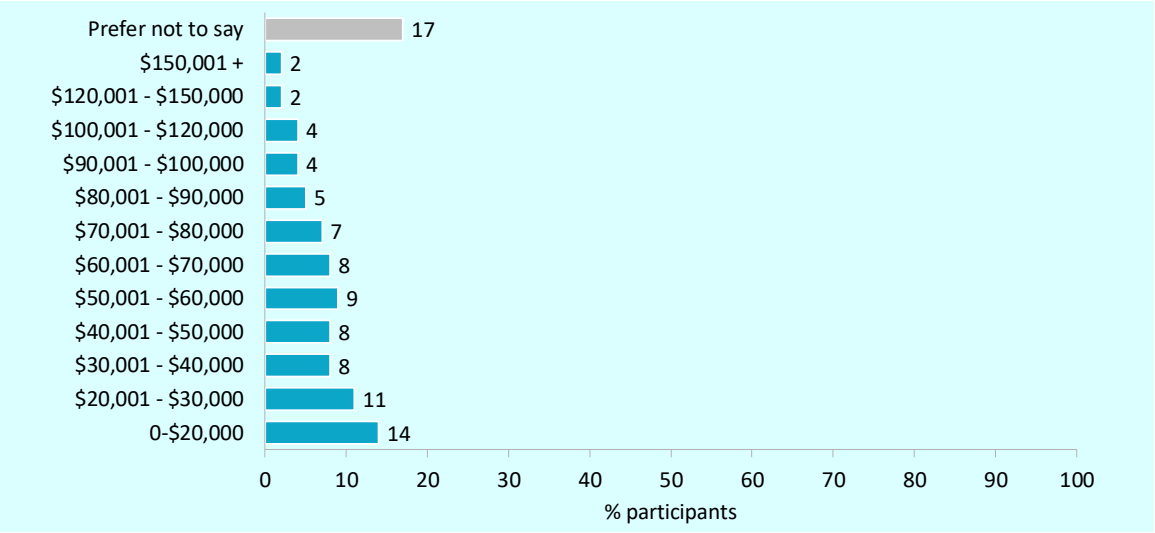
The annual personal income, and for those not living alone, the annual household income was probed. About a sixth declined to answer these questions. The distributions for household and personal income are shown in Figure 50 and Figure 51 respectively.

Figure 50: Annual household income



Base: 1,850

Figure 51: Annual personal income



Base: 1,850

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Appendix A:

Questionnaire

3360
Auckland Council facilities

SYSTEM INFORMATION:
IF NOT PANEL: Interviewer number:
IF NOT PANEL: Interviewer name:
Date:
Time interview started:

SURVEY TYPE
Panel

PANEL SURVEY (FOR GENERAL PUBLIC)

This questionnaire is for Auckland Council and is about local facilities.

We will just ask you a couple of questions to check that you are eligible to take part in this research.

Any answer you give will be treated in confidence in accordance with the Code of Conduct of the Research Association of New Zealand (RANZ). If you would like to confirm Accent's credentials type Accent in the search box at: https://www.mrs.org.uk/researchbuyersguide.

IF MOBILE DEVICE SHOW: **This survey is best undertaken on a tablet or a PC. If you do use a smartphone you can switch between desktop mode and mobile mode at any time by clicking the button at the bottom of the screen.**

Scoping questions

Q5. Any data collected over the course of this interview that could be used to identify you, such as your name, address, or other contact details, will be held securely and will not be shared with any third party unless you give permission (or unless we are legally required to do so). Our privacy statement is available at www.accent-mr.com/privacy/.

Do you agree to proceeding with the interview on this basis?
Yes
No **THANK AND CLOSE**

Q6. In which local board area do you live? **IF YOU ARE NOT SURE, YOU CAN FIND IT USING THIS LINK: FIND LOCAL BOARD AREA**

Albert-Eden
Devonport-Takapuna
Franklin
Great Barrier
Henderson-Massey
Hibiscus and Bays
Howick
Kaipatiki
Mangere-Otahuhu
Manurewa

Maungakiekie-Tamaki
Orakei
Otara-Papatoetoe
Papakura
Puketapapa
Rodney
Upper Harbour
Waiheke
Waitakere Ranges
Waitemata
Whau

CHECK QUOTAS

AREA
IF Q6=1 (Albert-Eden) AREA=C
IF Q6=1 (Devonport-Takapuna) AREA=N
IF Q6=1 (Franklin) AREA=S
IF Q6=1 (Great Barrier) AREA=C
IF Q6=1 (Henderson-Massey) AREA=W
IF Q6=1 (Hibiscus and Bays) AREA=N
IF Q6=1 (Howick) AREA=S
IF Q6=1 (Kaipatiki) AREA=N
IF Q6=1 (Mangere-Otahuh) AREA=S
IF Q6=1 (Manurewa) AREA=S
IF Q6=1 (MaungakiekieTamaKI) AREA=C
IF Q6=1 (Orakei) AREA=C
IF Q6=1 (Otara-Papatoetoe) AREA=S
IF Q6=1 (Papakura) AREA=S
IF Q6=1 (Puketapapa) AREA=C
IF Q6=1 (Rodney) AREA=N
IF Q6=1 (Upper Harbour) AREA=N
IF Q6=1 (Waiheke) AREA=C
IF Q6=1 (Waitakere Ranges) AREA=W
IF Q6=1 (Waitemata) AREA=C
IF Q6=1 (Whau) AREA=W

Q7. In which of the following age groups are you?

Under 18 **THANK & CLOSE**
18 to 19 years old
20 to 29 years old
30 to 39 years old
40 to 49 years old
50 to 64 years old
65 to 74 years old
75 years or more

CHECK QUOTAS

Q8. Are you…

Male
Female
Other
Prefer not to say

CHECK QUOTAS

Main Questionnaire

Thank you, I can confirm you are in scope for the survey. The questionnaire will take about 15 minutes to complete.

For convenience you can stop and return to complete the questionnaire as many times as you wish, although once submitted you will not be able to enter again.

Q11. What type of dwelling do you live in?

Stand-alone house
Townhouse
Unit
Apartment
Hall of residence
Retirement village
Other (please type in)

Q12. Which of the following best describes your household?

Single person living alone **GO TO Q16**
Single parent household with children at home (including adult children)
Couple **without** children at home
Couple **with** children at home (including adult children)
Group flatting (household members un-related)
Two or more households sharing a dwelling
Three or more households sharing a dwelling, with or without children (including adult children)
Other (please type in)

IF 2-4 AND 6 OR 7 ASK USAGE FOR ALL

Q13. How many people are there in your household aged 18 or more (including yourself)?
If Q12=6-8: If there is more than one household in the dwelling just consider your own household

NUMBER HAS TO BE GREATER THAN 0

Q14. **IF Q12= 1, 3, 5 GO TO Q16**
How many children aged under 18 are there in your household?
If Q12=6-8: If there is more than one household in the dwelling just consider your own household

HOUSEHOLD SIZE
IF Q12=1 HOUSEHOLD SIZE =1
IF Q12=3 HOUSEHOLD SIZE =2
IF Q12=2, 4, 6-8 HOUSEHOLD SIZE = Q13 AND Q14
IF Q12= 5 HOUSEHOLD SIZE =1

Q16. **IF Q11=6 (retirement village) GO TO Q17**
Do you rent or own the property?

Rent **GO TO Q18**
Boarding **GO TO Q18**
Own with or without a mortgage
Other (please type in)

Q17. What are the property rates for your accommodation? **Please enter the rates and how often they are paid. If you don't know please estimate**

DROP DOWN BOX WITH:
Per month
Per quarter
Per year

Don't know

Q18. **IF Q11=6 (retirement village) OR Q16 = 3 (own with or without mortgage) GO TO Q20**
Do you pay your own share of the rent?

Yes
No **GO TO Q20**
There is no rent **GO TO Q20**

Q19. **IF Q16=1 OR 2 ASK:** How much is the rent? **Please enter the rent and how often it is paid**

DROP DOWN BOX WITH:
Per week
Per fortnight
Per month

Don't know

Usage of facilities

Q20. **IF ONE PERSON (HOUSEHOLD SIZE=1 ASK:** For this survey we would like to find out about your use of Council-owned facilities in Auckland.
IF MORE THAN ONE PERSON (HOUSEHOLD SIZE>1) ASK: For this survey we would like to find out about the use of Council-owned facilities in Auckland for everyone in your household. First, we will ask for the first names of each person so that we can ask questions for each. You can type in an initial or other identifier if you don't wish to enter names.

YOUX
IF ONE PERSON (HOUSEHOLDSIZE=1) ASK: YOUX = "you"
IF MORE THAN ONE PERSON HOUSEHOLD SIZE=2 : YOUX = "you and the other member of your household"
IF MORE THAN ONE PERSON HOUSEHOLD SIZE=3+ : YOUX = "you and the other members of your household"

Q21. **IF MORE THAN ONE PERSON (HOUSEHOLD SIZE >1) ASK:**
What is your name?

IF Q13=2: What is the name of the other adult/**IF Q13 >3:** What is the name of the first other adult?
IF Q13 =3: What is the name of the second other adult?
IF Q13 =4: What is the name of the third other adult?
IF Q13 =5: What is the name of the fourth other adult?
IF Q13 =6: What is the name of the fifth other adult?

IF Q14 =1: What is the name of the child?/ **IF Q14 >1:** What is the name of the oldest child?
IF Q14 =2: What is the name of the second oldest child?
IF Q14 =3: What is the name of the third oldest child?
IF Q14 =4: What is the name of the fourth oldest child?
IF Q14 =5: What is the name of the fifth oldest child?

CREATE GRID WITH NAMES OF ADULTS AND CHILDREN

Q21B Which age group and gender are the other members of your household? **Please fill in the grid below.**

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
Under 5 years old 6-9 years old 10-14 years old 15 to 17 years old 18 to 29 years old 30 to 39 years old 40 to 49 years old 50 to 64 years old 65 to 74 years old 75 years or more											
Male Female Prefer not to say											

Q15. Can you answer questions on the use of local facilities such as swimming pools, leisure centres, and libraries on behalf of other members of the household?

Yes, all
Yes, some
No

IF Q15 = 3 TREAT AS SINGLE PERSON AND ONLY SHOW ADULT 1 IN GRIDS BELOW

Q15B **IF Q15=2 (yes, some) ASK:** Which of the following are you confident of asking about?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
TICK IF CONFIDENT											

FOR GRIDS BELOW JUST SHOW THOSE TICKED ABOVE

Swimming Pools/Aquatic Centres

Q22. **IF ONE PERSON (HOUSEHOLD SIZE =1 OR Q15=3 ASK:** First of all have you visited any Council swimming pools or aquatic centres in Auckland in the last **six months**? Please note this does not include school pools.
IF MORE THAN ONE PERSON (HOUSEHOLD SIZE >1) ASK: First of all have you or anyone else in the household visited any Council swimming pools or aquatic centres in Auckland the last **six months**? Please note this does not include school pools.

Yes
No **GO TO Q27**

Q23. **IF Q22=YES ASK:** Which swimming pool(s) or aquatic centre(s) did #YOUX# visit?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
LIST OF POOLS IN AREA Other											

Q24. **IF Q23=1 ANSWER:** How many times have #YOUX# used the swimming pool or aquatic centre in the last **7 days**?
IF Q23=2+ ANSWERS: How many times have #YOUX# used the swimming pools or aquatic centres in the last **7 days**?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
SHOW TICKED LIST											

Q25. **IF Q23=1 ANSWER:** How many times have #YOUX# used the swimming pool or aquatic centre in the last **four weeks**?
IF Q23=2+ ANSWERS: How many times have #YOUX# used the swimming pools or aquatic centres in the last **four weeks**?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
SHOW TICKED LIST											

Q26. **IF Q23=1 ANSWER:** How far away is the swimming pool or aquatic centre from your accommodation?
IF Q23=2+ ANSWER: How far away are the swimming pools or aquatic centres from your accommodation? **PLEASE ANSWER AS MINUTES WALK OR DRIVE. IF YOU DON'T KNOW, PLEASE GIVE YOUR BEST ESTIMATE**

	Minutes walk	Minutes drive
SHOW TICKED LIST		

Libraries

Q27. **IF ONE PERSON (HOUSEHOLDSIZE=1 OR Q15=3 ASK:** Have you visited any Council libraries in Auckland in the last **six months**? Please note this does not include school libraries.
IF MORE THAN ONE PERSON (HOUSEHOLDSIZE>1) ASK: Have you or anyone else in the household visited any Council libraries in Auckland in the last **six months**? Please note this does not include school libraries

Yes
No **GO TO Q32**

Q28. **IF Q27=YES ASK:** Which library(s) did #YOUX# visit?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
LIST OF LIBRARIES IN AREA Other											

Q29. **IF Q27=1 ANSWER:** How many times have #YOUX# visited the library in the last 7 days?
IF Q27=2+ ANSWERS: How many times have #YOUX# visited the libraries in the last 7 days?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
SHOW TICKED LIST											

Q30. **IF Q27=1 ANSWER:** How many times have #YOUX# visited the library in the last four weeks?
IF Q27=2+ ANSWERS: How many times have #YOUX# visited the libraries in the last four weeks?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
SHOW TICKED LIST											

Q31. **IF Q27=1 ANSWER:** How far away is the library from your accommodation?
IF Q27=2+ ANSWER: How far away are the libraries from your accommodation? **PLEASE ANSWER AS MINUTES WALK OR DRIVE. IF YOU DON'T KNOW, PLEASE GIVE YOUR BEST ESTIMATE**

	Minutes walk	Minutes drive
SHOW TICKED LIST		

Community centres

Q32. **IF ONE PERSON (HOUSEHOLDSIZE=1 OR Q15=3 ASK:** Have you visited any Council community centres in Auckland in the last **six months**?
IF MORE THAN ONE PERSON (HOUSEHOLDSIZE>1) ASK: First of all have you or anyone else in the household visited any Council community centres in Auckland in the last **six months**?

Yes
No **GO TO Q37**

Q33. **IF Q32=YES ASK:** Which community centre (s) did #YOUX# visit?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
LIST OF COMMUNITY CENTRES IN AREA Other											

Q34. **IF Q33=1 ANSWER:** How many times have #YOUX# visited the community centre in the last 7 days?
IF Q33=2+ ANSWERS: How many times have #YOUX# visited the community centres in the last 7 days?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
SHOW TICKED LIST											

Q35. **IF Q33=1 ANSWER:** How many times have #YOUX# visited the community centre in the last four weeks?
IF Q33=2+ ANSWERS: How many times have #YOUX# visited the community centres in the last four weeks?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
SHOW TICKED LIST											

Q36. **IF Q33=1 ANSWER:** How far away is the community centre from your accommodation?
IF Q33=2+ ANSWER: How far away are the community centres from your accommodation? **PLEASE ANSWER AS MINUTES WALK OR DRIVE. IF YOU DON'T KNOW, PLEASE GIVE YOUR BEST ESTIMATE**

	Minutes walk	Minutes drive

SHOW TICKED LIST		

Leisure centres

Q37. **IF ONE PERSON (HOUSEHOLDSIZE=1 OR Q15=3 ASK**: Have you visited any Council leisure centres in Auckland in the last **six months**? Please note that this doesn't not include school or privately owned leisure centres.
IF MORE THAN ONE PERSON (HOUSEHOLDSIZE>1) ASK: First of all have you or anyone else in the household visited any Council leisure centres in Auckland in the last **six month**s?

Yes
No **GO TO Q42**

Q38. **IF Q37=YES ASK:** Which leisure centre(s) did #YOUX# visit?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
LIST OF LEISURE CENTRES IN AREA Other											

Q39. **IF Q38=1 ANSWER:** How many times have #YOUX# visited the leisure centre in the last 7 days?
IF Q38=2+ ANSWERS: How many times have #YOUX# visited the leisure centres in the last 7 days?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
SHOW TICKED LIST											

Q40. **IF Q38=1 ANSWER:** How many times have #YOUX# visited the leisure centre in the last four weeks?
IF Q38=2+ ANSWERS: How many times have #YOUX# visited the leisure centres in the last four weeks?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
SHOW TICKED LIST											

Q41. **IF Q38=1 ANSWER:** How far away is the leisure centre from your accommodation?
IF Q38=2+ ANSWER: How far away are the leisure centres from your accommodation? **PLEASE ANSWER AS MINUTES WALK OR DRIVE. IF YOU DON'T KNOW, PLEASE GIVE YOUR BEST ESTIMATE**

	Minutes walk	Minutes drive
SHOW TICKED LIST		

Arts centres

Q42. **IF ONE PERSON (HOUSEHOLDSIZE=1 OR Q15=3 ASK:** Have you visited any Council art centres in Auckland in the last **six months**?
IF MORE THAN ONE PERSON (HOUSEHOLDSIZE>1) ASK: First of all have you or anyone else in the household visited any Council art centres in Auckland in the last **six months**?

Yes
No **GO TO Q47**

Q43. **IF Q42=YES ASK:** Which art centre(s) did #YOUX# visit?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
LIST OF ART CENTRES IN AREA Other											

Q44. **IF Q43=1 ANSWER:** How many times have #YOUX# visited the art centre in the last 7 days?
IF Q43=2+ ANSWERS: How many times have #YOUX# visited the art centres in the last 7 days?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
SHOW TICKED LIST											

Q45. **IF Q43=1 ANSWER:** How many times have #YOUX# visited the art centre in the last four weeks?
IF Q43=2+ ANSWERS: How many times have #YOUX# visited the art centres in the last four weeks?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
SHOW TICKED LIST											

Q46. **IF Q43=1 ANSWER:** How far away is the art centre from your accommodation?
IF Q43=2+ ANSWER: How far away are the art centres from your accommodation? **PLEASE ANSWER AS MINUTES WALK OR DRIVE. IF YOU DON'T KNOW, PLEASE GIVE YOUR BEST ESTIMATE**

	Minutes walk	Minutes drive
SHOW TICKED LIST		

Indoor courts

Q47. **IF ONE PERSON (HOUSEHOLDSIZE=1 OR Q15=3 ASK:** Have you visited any Council indoor courts (e.g. basketball, badminton etc) in Auckland in the last **six months**? Please note this does not include school courts.
IF MORE THAN ONE PERSON (HOUSEHOLDSIZE>1) ASK: First of all have you or anyone else in the household visited any Council indoor courts (e.g. basketball, badminton etc) in Auckland in the last **six months**? Please note this does not include school courts.

Yes
No **GO TO Q52**

Q48. **IF Q47=YES ASK:** Which indoor court(s) did #YOUX# visit?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
LIST OF INDOOR COURTS IN AREA Other											

Q49. **IF Q48=1 ANSWER:** How many times have #YOUX# visited the indoor court in the last 7 days?
IF Q48=2+ ANSWERS: How many times have #YOUX# visited the indoor courts in the last 7 days?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
SHOW TICKED LIST											

Q50. **IF Q48=1 ANSWER:** How many times have #YOUX# visited the indoor court in the last four weeks?
IF Q48=2+ ANSWERS: How many times have #YOUX# visited the indoor courts in the last four weeks?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
SHOW TICKED LIST											

Q51. **IF Q48=1 ANSWER:** How far away is the indoor court from your accommodation?
IF Q48=2+ ANSWER: How far away are the indoor courts from your accommodation? **PLEASE ANSWER AS MINUTES WALK OR DRIVE. IF YOU DON'T KNOW, PLEASE GIVE YOUR BEST ESTIMATE**

	Minutes walk	Minutes drive
SHOW TICKED LIST		

Local parks

Q52. **IF ONE PERSON (HOUSEHOLDSIZE=1 OR Q15=3 ASK:** Have you visited any local parks in Auckland in the last **six months**?
IF MORE THAN ONE PERSON (HOUSEHOLDSIZE>1) ASK: First of all have you or anyone else in the household visited any local parks in Auckland in the last **six months**?

Yes
No **GO TO Q57**

Q53. **IF Q52=YES ASK:** How many different local park(s) did #YOUX# visit?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
None											
One											
Two											
Three +											

Q54. How many times have #YOUX# visited any local parks in the last **7 days**? **Enter number in each column**

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5

Q55. How many times have #YOUX# visited any local parks in the last **four weeks**? **Enter number in each column**

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5

Q56. How far away is the nearest local park from your accommodation? **PLEASE ANSWER AS MINUTES WALK OR DRIVE. IF YOU DON'T KNOW, PLEASE GIVE YOUR BEST ESTIMATE**

	Minutes walk	Minutes drive

Sports fields

Q57. **IF ONE PERSON (HOUSEHOLDSIZE=1 OR Q15=3 ASK**: Have you visited any Council sports fields (e.g. Rugby, Hockey etc) in Auckland in the last **six months**? Please note this does not include school sports fields.
IF MORE THAN ONE PERSON (HOUSEHOLDSIZE>1) ASK: First of all have you or anyone else in the household visited any Council sports fields (e.g. Rugby, Hockey etc) in Auckland in the last **six months**? Please note this does not include school sports fields.

Yes
No **GO TO Q62**

Q58. **IF Q57=YES ASK:** How many different sports field(s) did #YOUX# visit?

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5
None											
One											
Two											
Three +											

Q59. How many times have #YOUX# visited any sports fields in the last **7 days**? **Enter number in each column**

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5

Q60. How many times have #YOUX# visited any sports fields in the last **four weeks**? **Enter number in each column**

	Adult 1	Adult 2	Adult 3	Adult 4	Adult 5	Adult 6	Child 1	Child 2	Child 3	Child 4	Child 5

Q61. How far away is the nearest sports field from your accommodation? **PLEASE ANSWER AS MINUTES WALK OR DRIVE. IF YOU DON'T KNOW, PLEASE GIVE YOUR BEST ESTIMATE**

	Minutes walk	Minutes drive

Confidence in answers

Q62. **IF Q15=3 SKIP. IF MORE THAN ONE PERSON (HOUSEHOLDSIZE>1) ASK:** How confident are you in the answers for other members of your household for each facility?

Very confident
Quite confident
Not very confident
Not at all confident

Q62x Did you Did you find it easy or difficult to answer the questions on usage of facilities?

Very easy **GO TO SP**
Quite easy **GO TO SP**
Neither easy nor difficult **GO TO SP**
Quite difficult
Very difficult

Q62b Why did you find it difficult?

Non-sports related council services choice

IMAGINE....

- Imagine that you are moving to a new area in Auckland. Please don't think about moving costs or any other issues about the move.
- Imagine the new area doesn't yet have any local facilities such as parks, swimming pools libraries etc and also that you're not paying for them in your rates or rent.
- We are going to show you some options for some more local facilities, which would be paid for by increasing your rates or rent.
- **IF HOUSEHOLD SIZE =1 ASK:** Please think about the increase of rate or rent for you.
  IF HOUSEHOLD SIZE >1 ASK: Please think about the increase of rate or rent for your household.
- We will talk to other households for their views, so please consider your #own/household# views only.
- In the options we show you please assume that if you don't have local facilities your nearest facilities will be 45 minutes' drive away.

The options will cover the following local council facilities:

- libraries
- community centres
- arts centres
- local neighbourhood parks.

Below are descriptions of what these services would be like. If you need to remind yourself of these descriptions in the choices, please use the ⓘ buttons.

Library

- library books, DVDs etc.
- computers available for public use
- library-based events
- informal gathering spaces
- workroom areas

Community centre

- small and larger meeting rooms
- co-located working spaces
- spaces for clubs and social gatherings
- support for activities run by community members

Arts Centre

- Space for local community arts activity such as community drama, dance, local art classes and presentations

Neighbourhood park

- play spaces
- flat, unobstructed, kickaround spaces for informal games (30m by 30m)
- areas for socialising and relaxing
- landscaping
- specimen trees
- furniture such as benches and tables

Each option also contains information on:

- **Distance from your home:** This is the approximate distance between your accommodation ;] and the local council services.

- Cost **for the council services (#$/month/household# or #$/month/individual#'):** These costs reflect the costs of providing the local council services. You or your household would pay for these council services through some small increases in rates or rent.

Please assume that in all other respects the local areas are exactly the same.

On each screen please indicate which option you would prefer. There are no wrong answers. We are only interested in your preferences.

An example is shown as below:

	Option A	Option B
Library	ⓘ	none
Community Centre	ⓘ	ⓘ
Arts Centre	ⓘ	ⓘ
Neighbourhood park	ⓘ	ⓘ
Distance to your home	5 minutes' walk	10 minutes' walk or 2 minutes' drive
Additional cost per household	$30 per month	$10 per month

Sports related council services choice

For the next set of choices we will be looking at the following local council facilities:

- leisure centres
- Swimming pools/aquatic centres
- indoor courts
- sports fields
- neighbourhood parks

Below are descriptions of what these services would be like. Note that some of the council services have different service levels, which we describe as 'standard local service' levels or 'enhanced service levels'. If you need to remind yourself of these descriptions in the choices, please use the ⓘ buttons next to the word 'standard' or 'enhanced'.

Leisure Centre

- rooms for group fitness activities such as Pilates, yoga, pump, Zumba, high-intensity interval training, spin etc.,
- weights and resistance,
- exercise machines such as rowing machines, stationary bike etc.

Swimming Pool/Aquatic Centre

Standard local service:

- teaching pool
- water areas for games and play
- water-based fitness areas

Enhanced local service:

- teaching pool
- water areas for games and play
- water-based fitness areas
- deep-water for underwater sports or diving
- aquatic sport facilities such as dive-boards
- aquatic entertainment facilities such as slides, splash-pads

Indoor Court

Standard local service:

- at least 2 standard sized basketball courts
- rooms to run programmes or training
- fitness space

Enhanced local service:

- at least 4 standard sized basketball courts
- rooms to run programmes or training
- fitness space
- multiple changing rooms
- special leisure facilities such as rock-climbing, squash or skating

Neighbourhood park

- play space
- flat, unobstructed, kickaround space for informal games (30m by 30m)
- areas for socialising and relaxing
- landscaping
- specimen trees
- furniture such as benches and tables

Sports Field

- about 10-12 rugby fields in size
- space for sports including rugby (including sevens), rugby league, cricket, soccer, hockey

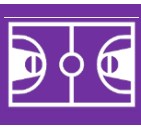
Each option also contains information on:

- Distance **from your home:** This is the approximate distance between your home and the local council services.
- Cost **for the council services (#$/month/household# or# $/month/individual#):** These costs reflect the costs of providing the local council services. You or your household would pay for these council services through some small increases in rates or rent.

Please assume that in all other respects the local areas are exactly the same.

On each screen please indicate which option you would prefer. There are no wrong answers. We are only interested in your preferences.

An example of the choice is shown as below:

	Option A	Option B
Leisure Centre	none	standard ⓘ 
Swimming Pool/Aquatic Centre	standard ⓘ	enhanced ⓘ 
Indoor Court	standard ⓘ	enhanced ⓘ 
Neighbourhood park	ⓘ 	none
Sports field		none
Distance to your home	5 minutes' walk	10 minutes' walk or 2 minutes' drive
Additional cost per household	$30 per month	$10 per month

Diagnostics

Q62a Did you find it easy or difficult to make the choices?

Very easy **GO TO Q63**
Quite easy **GO TO Q63**
Neither easy nor difficult **GO TO Q63**

Quite difficult
Very difficult

Q62b Why did you find it difficult?

Attitudes towards facilities

Q63. **IF MORE THAN ONE PERSON (Q18=2 OR Q12 2-4) ASK:** Now we would like to ask you about which of the following types of facilities you would like to have better access to. For this question we would like you to think about your household's needs.
IF ONE PERSON (Q18=1 (SINGLE ADULT IN SHARED HOUSEHOLD) OR Q12=1 (LIVE ALONE) ASK: Now we would like to ask you about which of the following types of facilities you would like to have better access to. For this question we would like you to think about your needs.
MULTI RESPONSE

Standard swimming pool/aquatic centre ⓘ
Enhanced swimming pool/aquatic centre ⓘ
Library ⓘ
Community centre ⓘ
Leisure centre ⓘ
Arts centre ⓘ
Standard indoor court ⓘ
Enhanced indoor court ⓘ
Neighbourhood park ⓘ
Sports field ⓘ
None

Q63b Council facilities can sometimes be combined in the same place. For example, a community centre and indoor courts or a library and arts centre.

Would you prefer each facility that you use to be standalone or for some to be combined in the same place?
All standalone
Some combined
No preference

Classification Questions

Finally, we would like to ask you some questions about yourself. This is for classification purposes only. The personal information you provide during this survey will only be used in aggregated form and will be kept confidential by Accent and will not be disclosed to third parties. It will be used only for this study, which is being undertaken for Auckland Council.

Q64. The next question asks about difficulties you may have doing certain activities because of a health problem. For each of the below please indicate whether you have any difficulties:

	No difficulty	Some difficulty	A lot of difficulty	Cannot do at all	Don't know	Prefer not to say
Do you any difficulty seeing, even if wearing glasses?						
Do you any difficulty hearing, even if using a hearing aid?						

Do you any difficulty walking or climbing stairs?						
Do you any difficulty remembering or concentrating?						
Do you any difficulty washing all over or dressing?						
Using your usual language, do you have difficulty communicating, for example, understanding or being understood?						

Q65. How many vehicles are there in your household including company cars available to household members?

0
1
2
3
4+

Q66. What is your employment status?

Work full time (30+ hours)
Work part time (1-29 hours)
Self employed
Unemployed - seeking work
Unemployed - not seeking work
Not working - retired
Student

Q67. Into which of the following groups does your annual household income, from all sources, before tax fall into? DON'T ASK FOR INDIVIDUALS

0-$20,000
$20,001 - $30,000
$30,001 - $40,000
$40,001 - $50,000
$50,001 - $60,000
$60,001 - $70,000
$70,001 - $80,000
$80,001 - $90,000
$90,001 - $100,000
$100,001 - $120,000
$120,001 - $150,000
$150,001 - $200,000
$200,001 +
Prefer not to say

Q68. What is your personal income, before tax and other deductions?

0-$20,000
$20,001 - $30,000
$30,001 - $40,000
$40,001 - $50,000
$50,001 - $60,000
$60,001 - $70,000
$70,001 - $80,000
$80,001 - $90,000
$90,001 - $100,000

$100,001 - $120,000
$120,001 - $150,000
$150,001 +
Prefer not to say

Q69. Which ethnic group do you belong to? MULTI RESPONSE

New Zealand European
Maori
Pacific peoples
Asian
Middle Eastern, Latin American, African
Other

Q71 Thank you. Would you be willing to be contacted again if we need to clarify any of the answers you have given today? And would you be willing to be invited to take part in other research for Auckland Council?

Yes, for both clarification and further research
Yes, for clarification only
Yes, for further research only
No

Thank you. This research was conducted under the terms of the Research Association of New Zealand code of conduct and is completely confidential.

SYSTEM INFORMATION
Time interview completed:

Appendix B:

List of Amenities

Simplified Function name	Name (to go in questionnaire)	Local Board	Area
Arts centres	Te Oro	Maungakiekie-Tamaki	C
Arts centres	Waiheke Island Artworks	Waiheke	C
Arts centres	Artworks Theatre	Waiheke	C
Arts centres	Phoenix Theatre	Devonport-Takapuna	N
Arts centres	Mairangi Arts Centre	Hibiscus and Bays	N
Arts centres	Northart	Kaipatiki	N
Arts centres	The Art Centre - Helensville	Rodney	N
Arts centres	Franklin: The Centre	Franklin	S
Arts centres	Mangere Arts Centre	Mangere-Otahuhu	S
Arts centres	Nathan Homestead	Manurewa	S
Arts centres	Hawkins Centre	Papakura	S
Community centres	Epsom Community Centre	Albert-Eden	C
Community centres	Mt Albert War Memorial Reserve	Albert-Eden	C
Community centres	Mt Eden War Memorial Hall	Albert-Eden	C
Community centres	Point Chevalier Community Centre	Albert-Eden	C
Community centres	Sandringham Community Centre	Albert-Eden	C
Community centres	Dunkirk Road Activity Centre	Maungakiekie-Tamaki	C
Community centres	Onehunga Library And Community Centre	Maungakiekie-Tamaki	C
Community centres	Oranga Community Centre	Maungakiekie-Tamaki	C
Community centres	Riverside Community Centre	Maungakiekie-Tamaki	C
Community centres	Meadowbank Community Centre	Orakei	C
Community centres	Orakei Community Centre	Orakei	C
Community centres	Glendowie Community Hall	Orakei	C
Community centres	Roskill Youth Zone	Puketapapa	C
Community centres	Grey Lynn Community Centre	Waitemata	C
Community centres	Ponsonby Community Centre	Waitemata	C
Community centres	Parnell Library & Community Centre	Waitemata	C
Community centres	Sunnynook Community Centre	Devonport-Takapuna	N
Community centres	Devonport Community House	Devonport-Takapuna	N
Community centres	East Coast Bays Community Centre	Hibiscus and Bays	N
Community centres	Birkdale Community House	Kaipatiki	N
Community centres	Bayview Community Centre	Kaipatiki	N
Community centres	Marlborough Park Hall	Kaipatiki	N
Community centres	Kumeu Community Centre	Rodney	N
Community centres	Albany House	Upper Harbour	N
Community centres	Sanders House	Upper Harbour	N
Community centres	Franklin: The Centre	Franklin	S
Community centres	Te Puru Community Centre	Franklin	S
Community centres	Highland Park Community House	Howick	S
Community centres	Mangere Centre Community Hall	Mangere-Otahuhu	S
Community centres	Mangere Community House	Mangere-Otahuhu	S
Community centres	Otahuhu Community Centre	Mangere-Otahuhu	S
Community centres	Nathan Homestead	Manurewa	S
Community centres	Clendon Park Community House	Manurewa	S
Community centres	East Tamaki Community Hall	Otara-Papatoetoe	S
Community centres	Clover Park Community House	Otara-Papatoetoe	S
Community centres	Te Puke o Tara Community House	Otara-Papatoetoe	S
Community centres	Smiths Ave Community Hall	Papakura	S
Community centres	Kelston Community Centre	Henderson-Massey	W

Community centres	Zeal West	Henderson-Massey	W
Community centres	Glendene Community Hub	Henderson-Massey	W
Community centres	Te Atatu Peninsula Community House	Henderson-Massey	W
Community centres	Te Manawa	Henderson-Massey	W
Community centres	Ranui Community Centre	Henderson-Massey	W
Community centres	Sturges West Community House	Henderson-Massey	W
Community centres	Triangle Park	Henderson-Massey	W
Community centres	Ceramco Park Function Centre	Waitakere Ranges	W
Community centres	Avondale Community Centre	Whau	W
Community centres	Green Bay Community House	Whau	W
Community centres	Blockhouse Bay Community Centre	Whau	W
Community centres	Kelston Community Hub	Whau	W
Community centres	New Lynn Community Centre	Whau	W
Indoor courts	Mount Albert Community and Leisure Centre	Albert-Eden	C
Indoor courts	Lagoon Leisure Centre	Maungakiekie-Tamaki	C
Indoor courts	Sir William Jordan Recreation Centre	Maungakiekie-Tamaki	C
Indoor courts	Tamaki Community Recreation Centre	Maungakiekie-Tamaki	C
Indoor courts	Lynfield Leisure Centre	Puketapapa	C
Indoor courts	Waiheke Recreation Centre	Waiheke	C
Indoor courts	East Coast Bays Leisure Centre	Hibiscus and Bays	N
Indoor courts	Stanmore Bay Pool and Leisure	Hibiscus and Bays	N
Indoor courts	ActivZone	Kaipatiki	N
Indoor courts	Beach Haven Sports Centre	Kaipatiki	N
Indoor courts	Birkenhead Pool and Leisure Centre	Kaipatiki	N
Indoor courts	Glenfield Pool and Leisure Centre	Kaipatiki	N
Indoor courts	Mahurangi East Community Centre	Rodney	N
Indoor courts	Howick Leisure Centre	Howick	S
Indoor courts	Pakuranga Leisure Centre	Howick	S
Indoor courts	Moana-Nui-a-Kiwa Pool and Leisure Centre	Mangere-Otahuhu	S
Indoor courts	Toia Otahuhu	Mangere-Otahuhu	S
Indoor courts	Te Matariki Clendon Community Centre and Library	Manurewa	S
Indoor courts	Allan Brewster Leisure Centre	Otara-Papatoetoe	S
Indoor courts	Kolmar Community and Sport Facility	Otara-Papatoetoe	S
Indoor courts	Otara Pool and Leisure Centre	Otara-Papatoetoe	S
Indoor courts	Papakura Leisure Centre	Papakura	S
Indoor courts	Massey Leisure Centre	Henderson-Massey	W
Indoor courts	West Wave Pool and Leisure	Henderson-Massey	W
Leisure centres	Mt Albert Community and Leisure Centre	Albert-Eden	C
Leisure centres	Glen Innes Pool & Leisure Centre	Maungakiekie-Tamaki	C
Leisure centres	Lagoon Leisure Centre	Maungakiekie-Tamaki	C
Leisure centres	Sir William Jordan Recreation Centre	Maungakiekie-Tamaki	C
Leisure centres	Tamaki Leisure Centre	Maungakiekie-Tamaki	C
Leisure centres	Elerslie Leisure Centre	Orakei	C
Leisure centres	Cameron Pool & Leisure Centre	Puketapapa	C
Leisure centres	Lynfield Leisure Centre	Puketapapa	C
Leisure centres	Waiheke Recreation Centre	Waiheke	C
Leisure centres	Tepid Baths	Waitemata	C
Leisure centres	The Olympic Pools & Leisure	Waitemata	C
Leisure centres	Takapuna Pool & Leisure Centre	Devonport-Takapuna	N
Leisure centres	East Coast Bays Leisure Centre	Hibiscus and Bays	N

Leisure centres	Stanmore Bay Pool & Leisure	Hibiscus and Bays	N
Leisure centres	Activzone (formerly Skatelands)	Kaipatiki	N
Leisure centres	Birkenhead Pool and Leisure Centre	Kaipatiki	N
Leisure centres	Glenfield Pool and Leisure Centre	Kaipatiki	N
Leisure centres	Franklin Pool and Leisure	Franklin	S
Leisure centres	Howick Leisure Centre	Howick	S
Leisure centres	Pakuranga Leisure Centre	Howick	S
Leisure centres	Moana Nui A Kiwa Pool & Leisure Centre	Mangere-Otahuhu	S
Leisure centres	Otahuhu Pool & Leisure Centre	Mangere-Otahuhu	S
Leisure centres	Manurewa Leisure Centre	Manurewa	S
Leisure centres	Manurewa Pool & Leisure Centre	Manurewa	S
Leisure centres	Te Matariki	Manurewa	S
Leisure centres	Allan Brewster Leisure Centre	Otara-Papatoetoe	S
Leisure centres	Otara Pool and Leisure Centre	Otara-Papatoetoe	S
Leisure centres	Papakura Leisure Centre	Papakura	S
Leisure centres	Massey Leisure Centre	Henderson-Massey	W
Leisure centres	West Wave Pool and Leisure	Henderson-Massey	W
Libraries	**Te Manawa**	**Henderson-Massey**	**ANY**
Libraries	**Auckland Central Library**	**Waitemata**	**ANY**
Libraries	Epsom Community Library	Albert-Eden	C
Libraries	Mount Albert Community Library	Albert-Eden	C
Libraries	Point Chevalier Library	Albert-Eden	C
Libraries	Great Barrier Island Library	Great Barrier	C
Libraries	Onehunga Library And Community Centre	Maungakiekie-Tamaki	C
Libraries	Panmure Library	Maungakiekie-Tamaki	C
Libraries	Glen Innes Library	Maungakiekie-Tamaki	C
Libraries	Remuera Community Library	Orakei	C
Libraries	St Heliers Community Library	Orakei	C
Libraries	Mt Roskill Library	Puketapapa	C
Libraries	Waiheke Library	Waiheke	C
Libraries	Grey Lynn Library and Hall	Waitemata	C
Libraries	Leys Institute Community Library & Hall	Waitemata	C
Libraries	Parnell Library	Waitemata	C
Libraries	Devonport Library	Devonport-Takapuna	N
Libraries	Takapuna Library	Devonport-Takapuna	N
Libraries	East Coast Bays Library	Hibiscus and Bays	N
Libraries	Orewa Library	Hibiscus and Bays	N
Libraries	Whangaparaoa Library	Hibiscus and Bays	N
Libraries	Birkenhead Library	Kaipatiki	N
Libraries	Glenfield Library	Kaipatiki	N
Libraries	Northcote Community Centre and Library	Kaipatiki	N
Libraries	Puhoi Town Library	Rodney	N
Libraries	Helensville Library	Rodney	N
Libraries	Kumeu Library	Rodney	N
Libraries	Leigh Library	Rodney	N
Libraries	Mahurangi East Library	Rodney	N
Libraries	Point Wells Library	Rodney	N
Libraries	Warkworth Library	Rodney	N
Libraries	Wellsford War Memorial Library	Rodney	N
Libraries	Albany Village Library	Upper Harbour	N

Libraries	Beachlands Library	Franklin	S
Libraries	Clevedon Library	Franklin	S
Libraries	Franklin: The Centre	Franklin	S
Libraries	Kawakawa Bay Library	Franklin	S
Libraries	Maraetai Library	Franklin	S
Libraries	Orere Point Library	Franklin	S
Libraries	Waiuku Library	Franklin	S
Libraries	Clarks Beach Library	Franklin	S
Libraries	Botany Library	Howick	S
Libraries	Highland Park Library	Howick	S
Libraries	Howick Library	Howick	S
Libraries	Pakuranga Library	Howick	S
Libraries	Mangere Bridge Library	Mangere-Otahuhu	S
Libraries	Toia Otahuhu Library	Mangere-Otahuhu	S
Libraries	Mangere East Library	Mangere-Otahuhu	S
Libraries	Mangere Town Centre Library	Mangere-Otahuhu	S
Libraries	Manurewa Library	Manurewa	S
Libraries	Te Matariki Clendon Community Centre & Library	Manurewa	S
Libraries	Otara Library	Otara-Papatoetoe	S
Libraries	Papatoetoe Library	Otara-Papatoetoe	S
Libraries	Tupu Youth Library	Otara-Papatoetoe	S
Libraries	Te Paerangai - Manukau Library	Otara-Papatoetoe	S
Libraries	Drury Library	Papakura	S
Libraries	Sir Edmund Hillary Library	Papakura	S
Libraries	Ranui Library	Henderson-Massey	W
Libraries	Te Atatu Peninsula Library	Henderson-Massey	W
Libraries	Waitakere Central Library	Henderson-Massey	W
Libraries	Glen Eden Library	Waitakere Ranges	W
Libraries	Titirangi Library	Waitakere Ranges	W
Libraries	Waiatarua Library	Waitakere Ranges	W
Libraries	Avondale Library	Whau	W
Libraries	Blockhouse Bay Library	Whau	W
Libraries	New Lynn War Memorial Library	Whau	W
Pools/Aquatic Centres	**West Wave Pool and Leisure**	**Henderson-Massey**	**ANY**
Pools/Aquatic Centres	Mt Albert Aquatic Centre	Albert-Eden	C
Pools/Aquatic Centres	Glen Innes Pool & Leisure Centre	Maungakiekie-Tamaki	C
Pools/Aquatic Centres	Onehunga War Memorial Pool	Maungakiekie-Tamaki	C
Pools/Aquatic Centres	Lagoon Pool - Swimarama	Maungakiekie-Tamaki	C
Pools/Aquatic Centres	Cameron Pool & Leisure Centre	Puketapapa	C
Pools/Aquatic Centres	Grey Lynn Park Todder Paddling Pool	Waitemata	C
Pools/Aquatic Centres	Parnell Salt Water Baths	Waitemata	C
Pools/Aquatic Centres	The Olympic	Waitemata	C
Pools/Aquatic Centres	Pt Erin Pool	Waitemata	C
Pools/Aquatic Centres	Tepid Baths	Waitemata	C
Pools/Aquatic Centres	Takapuna Pool & Leisure Centre	Devonport-Takapuna	N
Pools/Aquatic Centres	Stanmore Bay Pool and Leisure Centre	Hibiscus and Bays	N
Pools/Aquatic Centres	Glenfield Pool and Leisure Centre	Kaipatiki	N
Pools/Aquatic Centres	Birkenhead War Memorial Park	Kaipatiki	N
Pools/Aquatic Centres	Albany Stadium Pool	Upper Harbour	N
Pools/Aquatic Centres	Jubilee Pool	Franklin	S

Pools/Aquatic Centres	Whiteside Pool	Franklin	S
Pools/Aquatic Centres	Franklin Pool and Leisure	Franklin	S
Pools/Aquatic Centres	Lloyd Elsmore Park Pool & Leisure Centre	Howick	S
Pools/Aquatic Centres	Otahuhu Pool & Leisure Centre	Mangere-Otahuhu	S
Pools/Aquatic Centres	Moana Nui A Kiwa Pool & Leisure Centre	Mangere-Otahuhu	S
Pools/Aquatic Centres	Manurewa Pool & Leisure Centre	Manurewa	S
Pools/Aquatic Centres	Totara Park Pools	Manurewa	S
Pools/Aquatic Centres	Papatoetoe Centenial Pool & Leisure Centre	Otara-Papatoetoe	S
Pools/Aquatic Centres	Otara Pool and Leisure Centre	Otara-Papatoetoe	S
Pools/Aquatic Centres	Massey Park Pool - Papakura	Papakura	S

Appendix C:

Choice Modelling Analysis

Choice Modelling Analysis

Participants' engagement with the choice experiments

Before choice model analysis, we firstly examine the participants' engagement with the choice experiments using sensitivities analysis on the impact of attribute levels on choices and the diagnostic questions.

Exploration of the impact of attributes on choices

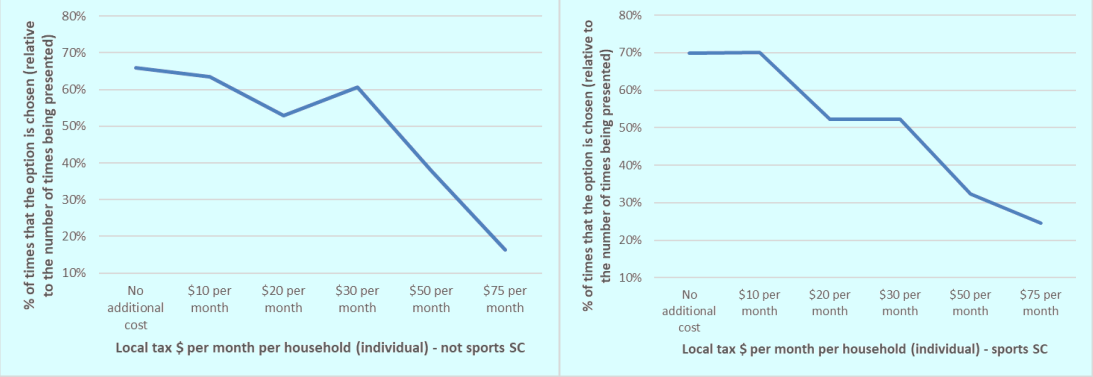
Figure 52 presents information on how the level of local tax (rates in New Zealand) or rent influences the choices that people made in the experiment. Specifically, it shows the percentage of time an option with a particular local tax level is chosen over the total number of times this attribute level is presented. For both SC experiments, a clear downward trend can be seen which indicates that participants are sensitive to the local tax level in the choice experiment, i.e. they are less likely to choose options with higher local tax levels. In cases where the highest pay level was presented ($75 per month), this option was chosen less than 25% of the time, across both experiments.

In the non-sports related amenities SC experiment, we found the change of sensitivity is relatively flat at the beginning from no additional cost to $30 per household and then trend gets steeper when the monthly payment level increased further.

In the sports related amenities SC experiment, we found that the change is steady below $10 per month and gets steeper afterwards.

In the choice models, we have examined the impact of participants socio-economic characteristics (such as income) on participants' sensitivity to local tax change.

Figure 52: Local tax attribute choice sensitivity



As mentioned in the main report, in both choice experiments we included a choice between 'No service provision with zero cost' and 'highest standard service provision with highest cost'. The table below shows the proportion of participants who chose each option. Interestingly we find that in both experiments, about 40% of participants selected the option with the highest service standard (and highest cost) in preference to no provision with zero cost.

Table 32: Proportion of sample who choose the highest standard option with highest local tax levels

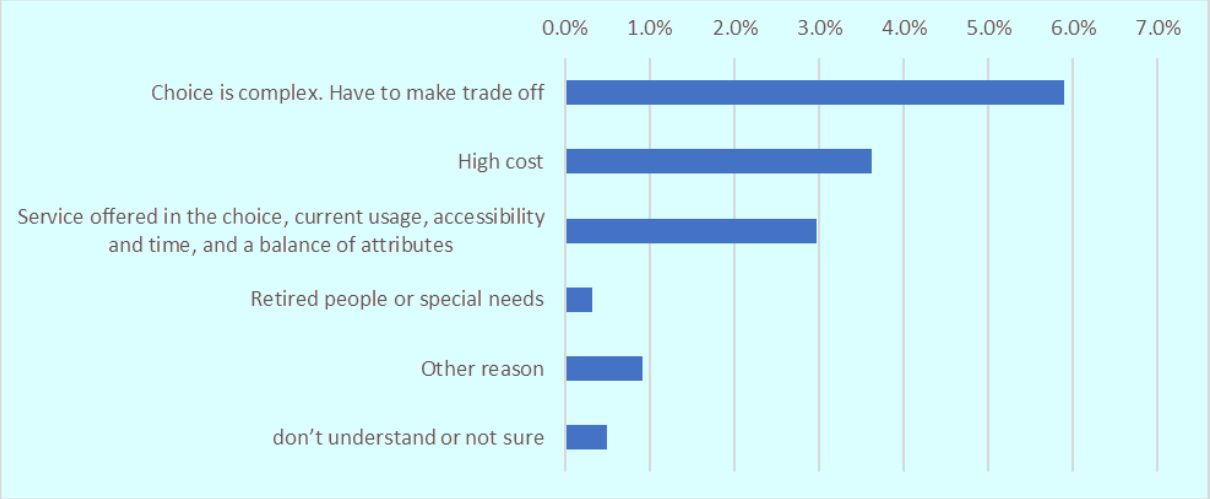
	No provision with zero cost	Highest standard option with highest local tax
Non-sports related amenities	61%	39%
Sports related amenities	57%	43%

Diagnostic questions

Following the choice experiments, the survey included diagnostic questions to provide information on how difficult participants found the choice experiments. 65 per cent of participants indicated that they thought that the choices were very easy or quite easy. 14.5 per cent of participants thought that the choices were very difficult or quite difficult. The rest - 21 per cent of participants – thought that the choices were neither easy nor difficult.

For participants who stated that they found the choices difficult or very difficult, we explored the reasons for their response. Of the 1,850 participants, 266 left a comment on the choice experiments explaining why they felt the choices were not easy. We analysed the comments and identified a few main themes, as shown in Figure 53.

Figure 53: Participants comments on the choice experiment (n =1,850)



Below we highlight some of reasons given in their responses:

- About 5.8% of the participants think the choice experiments are complex. More specifically, some of them stated the choices contained many aspects for them to consider. Some of them stated that the options offered are not what they mostly preferred and were forced to make the trade-off.

- 3.6% of the participants think the cost offered in the choice is too high. For instance, one of the comments says: *"Cause I think every community needs and benefits from these facilities but paying an extra $50 or $75 a month is to much for my household and many others"*.

- Some of them stated their choice is a balance between cost, travel distance and current usage.

- Some of them state they would not be willing to pay for the extra facilities or the facilities that they don't want to use. For instance, one of the comments says: *"I find it difficult because I do not personally use all of those facilities and I would rather spend the money on my family by being with them, going out with them. The rent are already really expensive in Auckland where the wages are not that high. Including more fees onto peoples' rent that don't necessarily use those facilities is not fair. "*

- Some participants (aged and those disabled) state that it is difficult to evaluate their needs. For instance, one of them comments is *"It's not easy to evaluate for my own personal needs because I am disabled and partially sighted. I get to the Library regularly to pick up audio books I've ordered online. Without a library in my area I could arrange for my Carer to collect them, as she often does now (thus distance would be irrelevant) or subscribe to the Libraries "disability service" which I have used in the past and, if it's still going, sometimes delivers. I have free transport to the pools for regular swimming, via St John Shuttle. If I moved out of the area where they service, no amount of Council facilities would work for me as I can't drive or use public transport. I can only use them if accompanied. So they would be totally lost to me and anyone in my situation. As it is, I can't use any Council facility which is NOT health-related which allows me to use St John; , or within the bounds of what my Carer can do for me. For instance, unless I am driven to a Community House (which I was recently for a Comm…",*

- 0.5% (9 participants) stated that they did not understand the choices offered or they were not sure about the choices. We did not exclude these participants from choice models as this only accounts for very small proportion of the participants.

Theory underpinning the discrete choice models

We have developed a series of discrete choice models to explain the choice behaviour of participants in the pilot survey. The basic tenet of discrete choice modelling (DCM) is utility maximisation, that is, given a set of alternatives, each individual chooses the alternative which brings them the most utility. It is assumed that utility is derived from the underlying characteristics or attributes (Lancaster 1966) and typically on the Random Utility Model developed by McFadden (1973) and by Manski (1977), under which utility has a systematic and a random component. The random component may result from unobserved or unobservable attributes, unobserved taste variations, measurement errors or specification errors (Ben-Akiva & Lerman, 1985).

The model estimation can therefore be conducted within the framework of random utility theory, thus accounting for the fact that the analyst has only imperfect insight into the utility functions of the participants. Mathematically, the utility function for an alternative, i, being chosen (from of a set of J alternatives) is decomposed into the systematic component, labelled V_i, and a random component ε_i:

$$U_i = V_i + \varepsilon_i \, \forall \, J$$

The observable part of the utility function (V_i) for each alternative contains the characteristics of the alternatives (the attributes and levels from the choice experiment) and the individual, and can be written as:

$$V_i = \sum_k \beta_{ik} X_{ik}$$

where β_{ik} are coefficients multiplying attributes in the choice experiment and background variables, i.e. X_{ik}. The attributes included in the experiment are detailed in Table 1. The values of these can vary across alternatives (k) and individuals (i). The probability of choosing alternative i can be written as:

$$P_i = \frac{e^{Y_i}}{\sum e^{Y_j}}$$

Table 33 describes the interpretation of the resulting model fit statistics and model coefficients.

Table 33: interpretation of the model fit statistics and coefficient estimates

Statistic	Definition
Observations	The number of choice observations included in the model estimation (reflecting the number of participants and number of choice scenarios).
Final log (L)	This indicates the value of the log-likelihood at convergence. The log-likelihood is defined as the sum of the log of the probabilities of the chosen alternatives, and is the function that is maximised in model estimation. The value of log-likelihood for a single model has no obvious meaning; however, comparing the log-likelihood of two (nested) models estimated on the same data allows the statistical significance of new model coefficients to be assessed properly through the Likelihood Ratio test.
DOF	Degrees of freedom, i.e. the number of coefficients estimated in this model. Note that if a coefficient is fixed to zero then it is not a degree of freedom.
Rho2(c)	If we compare the log-likelihood (LL(final)) value obtained with the log-likelihood of a model with only constants (LL(c)) we get: Rho2(c) = 1 – LL(final)/LL(c) A higher value indicates a better-fitting model.
Interpreting the coefficient estimation	
Sign	The sign of the coefficient indicates the preference for that attribute. A positive sign indicates that the attribute has a positive impact on participants' choices, and therefore the attribute is preferred by participants and vice versa. In the case of attributes with different levels that have been coded as categorical variables in the choice models it indicates the preference for an attribute level relative to its base level. The base level is a fixed attribute level relative to which the effects of other attribute levels are measured. A positive sign indicates that the attribute level is preferred relative to the base level by participants and vice versa.
Magnitude	The magnitude of the coefficient indicates the degree of preference. The larger the coefficient the stronger the preference for the attribute.
Base level	In the case of categorical variables it is necessary to fix a coefficient related to one of the levels to zero in order to estimate the model. The coefficients estimated for all other levels in that variable are then estimated with reference to the base level.
t-ratio	This indicates the significance of the coefficient. A 't-ratio' numerically greater than (+/-) 1.96 indicates that the corresponding coefficient is significant at a 95 per cent level and in practice is a commonly accepted level at which the effect implied by the coefficient is called significant. A 95 per cent significance level indicates that the corresponding effect identified has only a 5 per cent chance of being purely random.

Testing for differences between subgroup of populations

A key part of the model analysis is to explore how preferences may vary across different groups of participants and conditions. A wide range of background characteristics have been tested to identify whether specific subgroups respond in ways that the model was not capturing. Table 34 lists the characteristics that we have examined in the model development stage.

A key requirement of the study was to examine whether values of amenities vary by usage patterns and a number of usage tests were undertaken. We also undertook tests looking at a number of socio-economic characteristics, including the impact of income, household structure (specifically presence of children) and dwelling types on valuations. We did not explore age and gender impacts as this information was collected for individuals (the survey participant) rather than the whole household, which was more informative for appraisal. Lastly, we examined the impact of SC design to control the impact of potential design effects when calculating the amenity valuations.

Table 34: List of the characteristics that is examined

Local amenity usage characteristics	Socio-economic characteristics	SC design effects
Usage or non-use	Income (household income, personal income)	Position of alternatives (left and right)
Total usage by household (individual) over the past 4 weeks	Household structure (i.e. with or without children)	Position of amenities (top, bottom)
Usage frequency (low or high frequency)	Dwelling types	

The impact of participants' current usage and their socio-economic characteristics may interact with the observed decision making in two possible ways:

- There may be some subgroups of population that have differing sensitivity to cost. These would be picked up through covariates on the cost attributes in the models.
- There may be some subgroups of population that have differing sensitivity to the amenity values.

When testing the impact of SC design characteristics, the impacts are incorporated in the model in two ways:

- The response of tending to choose options on the left (or right) is incorporated in the model as a constant term.
- The position of amenity (attributes on the top or bottom of the choices) is incorporated in the model as a covariate on the amenity attribute levels to reflect if the position affect participants' valuations on the choices.

Correcting for the repeated measures nature of the choice data

One of the benefits of undertaking discrete choice experiments is that it is possible to collect multiple observations from the same individuals. In this study each participant provided six choices for each choice experiment providing twelve responses in total. However, because the observations are provided by the same individual, it cannot be assumed that they are independent. Such a naïve model does not provide true estimates of the reliability of the parameter estimates.

A bootstrap technique has therefore been applied to the final model to provide an accurate estimate of the standard errors compared to those provided by the naïve estimation that assumes independence between observations. The bootstrap procedure (Efron, 1979) is a very general resampling procedure for estimating the standard errors in cases where the theory does not provide an exact estimate of the error[26]. This resampling technique also identifies and corrects for other aspects of model misspecification.

Cost specification test

A key component in quantifying participants willingness to pay for non-market goods is quantifying their sensitivity to cost (which forms the denominator in the calculation of valuations). We have tested the participants' sensitivity to the cost changes presented in the experiments using different cost specifications (such as linear, log, both linear and log and piecewise linear formulations, with two segments). We found that the piecewise linear specification (two segments model v9[27]) has the best fit (with the lowest loglikelihood) as shown in Table 35 and Figure 54. However, use of a piecewise linear or logarithmic specification means that the sensitivity to cost is not constant and therefore the value would change with different cost changes. This would add un-needed complexity to future applications of the results, particularly given that the linear specification has a good fit to the data will lead to more straightforward calculation of the monetary values. Thus we adopted the linear cost specification in our subsequent model tests.

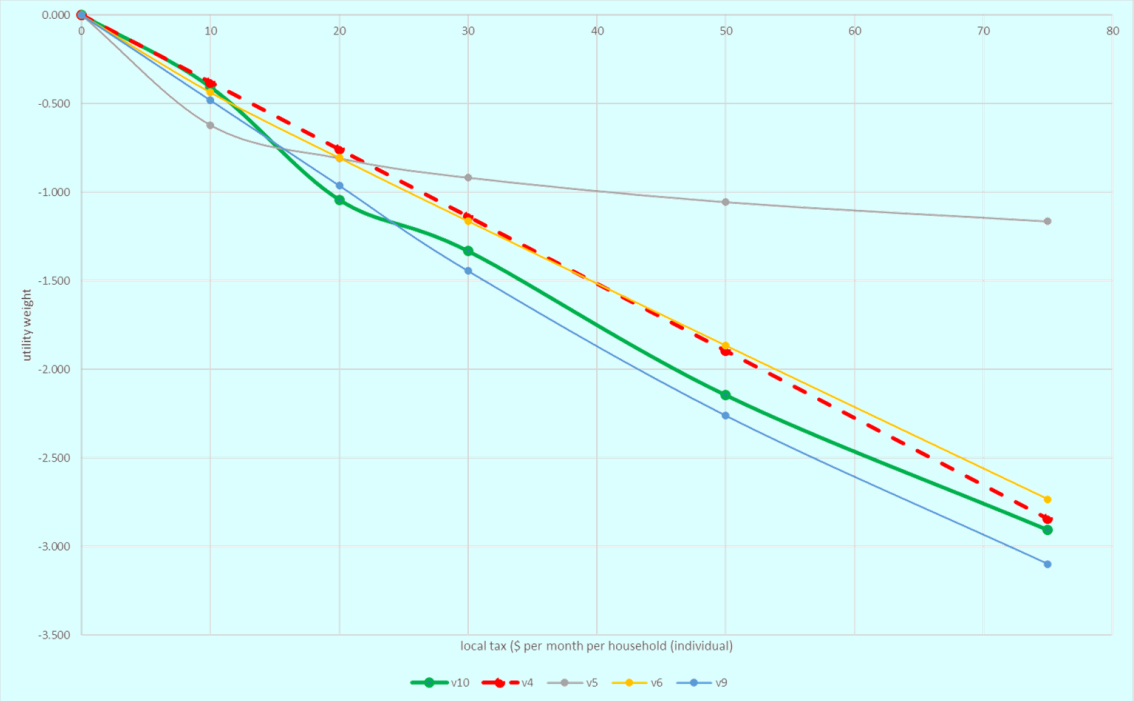
[26] Efron, B. (1979). Bootstrap methods: another look at the Jackknife. Ann. Statist. 7 1-26

[27] A steep slope is found for the cost ranging from 0 to $50 per month per household (individual) level, which implies that within this interval, participants show a higher disutility for cost increase. The slope then flattens slightly after the $50 per month per household (individual) level, indicating that participants still dislike cost increase, but the decrease in its utility is relatively diminishing.

Table 35: testing for cost term specification

	v10	v4	v5	v6	v9
Definition	categorical	linear	log	linear and log	two segments (40)
Final log (L)	-11971.4	-12009.5	-12645.2	-11993.3	-11982.7
$0	0.000	0.000	0.000	0.000	0.000
$10	-0.406	-0.379	-0.622	-0.437	-0.482
$20	-1.043	-0.758	-0.809	-0.807	-0.963
$30	-1.332	-1.138	-0.918	-1.164	-1.445
$50	-2.145	-1.896	-1.056	-1.866	-2.262
$75	-2.906	-2.844	-1.165	-2.734	-3.099

Figure 54: testing for cost term specification (utility weights)



We have also tested the impact of participants' income (both household income[28] and personal income) on their sensitivity to cost changes in the choice experiments. As shown in Table 36: testing for cost term specification – the impact of income on cost specification, we found with increase of the income (both household and personal income), participants are less sensitive to cost changes. Specifically, those with incomes greater than $100k per year have a lower sensitivity to cost than those with incomes below $100k per year (the parameters for the two bands below $60k and between $60 – 100k were not statistically estimated and therefore combined in the model). This is an intuitive finding and one that we have observed across a number of studies. Including such an income effect will lead to higher amenity values for higher income people.

[28] For the single household that participants stay on their own or who stay in a multiple occupancy dwelling, the 'household income' is their personal income.

Table 36: testing for cost term specification – the impact of income on cost specification

		SP12_v68.F12			SP12_v69.F12	
Observations		22197			22197	
Final Log Likelihood		-11967.1			-11967.8	
D.O.F		32			31	
$Rho^2(0)$		0.2220			0.2220	
$Rho^2(c)$		0.2210			0.2210	
	Estimate	**t-ratio**	**%**	**Estimate**	**t-ratio**	**%**
below $60k per year	-0.0383	-36.15	24%			
$60 - 100k per year	-0.0394	-34.03	25%			
below $100k per year				-0.0387	-39.30	49%
higher than $100k per year	-0.0346	-33.18	35%	-0.0346	-33.18	35%
not reported	-0.0433	-33.38	16%	-0.0433	-33.38	16%

However, the main focus of the study is to measure the average value of the amenity per household. In subsequent tests, we have used a generic cost term. However, if desired we could run the final model with differing cost coefficients by income band.

We find that the model using personal income has a slightly better than the model using household income, but the difference is not large and again it is judged that household data may be more intuitive for appraisal.

Main survey final model specification

Separate models were developed initially for SC1 (non-sports related) and SC2 (sports related) respectively. A joint model was then developed pooling the choice observations from both experiments. The common attributes are cost term, neighbourhood park and distance. Table 37 presents the final model results. The final model is therefore based on 22,200 choice observations for choice experiments, collected from 1,850 individuals.

The model fit ($Rho^2(c)$ in the table) is 0.218 which is satisfactory.[29] This indicates that the model can interpret participants' choice behaviour well.

The amenities attributes (levels), distance and co-location attributes are included in the model as categorical variables; whilst the local tax attribute is included as a continuous variable.

The presence of all amenities are measured relative to no provision. Separate parameters were tested for those who use and those who do not use the amenity. Usage was determined from last 6 months reported usage data for all members of the household.

Usage terms were also tested for those who use the amenities frequently and not so frequently. Usage information is based on participants reported usage of amenities by all household members over the last four weeks. The survey has collected the usage information for the past week (7 days) and 4 weeks, as shown in Table 38. The self-reported usage of the past 4 weeks is used in the model analysis as the sample size of users and frequent users are higher to support a more robust analysis. The sample size

[29] In discrete choice models, the model fit 0.2-0.4is judged to be satisfactory (equivalent to 0.8 or above in regression model), see McFadden (1974) for more details.

for frequent usage (used 5 times or more) of past 7 days is much smaller, especially for amenities such as arts centres or community centres.

For use values, we also examined the differences in valuations by frequency of use of the amenity by the household. In the current analysis, frequent users are defined as households where members have visited the amenities 5 times or more over the past 4 weeks. This number of times (5 or more times) is determined based on the analysis of the frequency of usage to ensure a sufficient sample size for the different frequency categories (please see Table 38). To use these values in appraisal, the usage frequency information should be collected (or estimated).

We have also examined if there are any substitution or complement effects between different amenities, i.e. if participants valued amenities differently if some amenities were presented in the same choice alternative. These effects were introduced in the choice models as covariates for the combination of different amenities, such as library and community centre, or neighbourhood park and sports park. We differentiate use and non-use values when testing the substitution and complement effects of amenities.

From the model results, we found individuals placed different values (more positive or negative) when some amenities were presented together in the choice option, indicating the provision of both amenities at the same time. For instance, participants placed more positive value for the leisure centres and pools (the utility weight is 0.1416). Note that this is on top of the values of the leisure centre and pool and it is an additive term. We find participants placed a negative value on the combination of neighbourhood park and sport park (non-users), which indicates a substitution between the two amenities.

In the choice experiment, we have included distance to amenities as one of the factors. Six different bands were included. In the model, we first included the distance bands as categorical variables (for each band) and found that the coefficients for the first four bands (ranged from 5 minutes walking to 10 minutes driving) were not statistically significantly estimated, which indicates participants were less sensitive to the distance changes within this range. These values have therefore been constrained to zero. On the contrary, the distance bands (20 minutes driving and 30 minutes driving) are very strongly and negatively estimated, although the coefficients for these two bands are not statistically significantly different. Therefore in the final model, we estimated a constant distance term for the two longest distance bands together (20 and 30 minutes driving). The term is negatively estimated, which indicates participants do not like to travel far for using amenities. This is in line with the qualitative analysis of the participants' comments on the choice experiment where some of them think distance and accessibility is an important factor for them to make the choice.

We observe a significant left-side bias, suggesting that participant were less likely to choose the left side option. The resulting valuations account for this bias. We did not identify any significant impact of the position of the amenity attributes (i.e. placed at the top or bottom of the choice) on the valuations, and therefore did not report it here.

A scaling parameter (Bradley and Daly, 1991) is included in the model to allow different error variance in the two experiments. The scale parameter for SC2 was slightly smaller than for SC1 (although the difference was not statistically significant).

Table 37: final model specification

Model file		v66		v63	
Observations		22200		22200	
Final Log Likelihood		-12015		-11997.5	
D.O.F		24		29	
$Rho^2(0)$		0.219		0.220	
$Rho^2(c)$		0.218		0.219	
Description	**Coef**	**t**	**Coef**	**t**	**n**
Leisure Centre					
Leisure centre - no provision (base)	0.0000	n/a	0.0000	n/a	
Leisure centre (use)	0.3888	5.5			
Leisure centre (use) - less frequent			0.2628	2.4	104
Leisure centre (use) - frequent			0.5041	4.3	138
Leisure centre (non-use)	0.0000	n/a	0.0000	n/a	1195
Aquatic centre					
Pools / Aquatic centre - no provision (base)	0.0000	n/a	0.0000	n/a	
Pools / Aquatic centre - standard and enhanced (use)	0.8148	14.3	0.8112	14.2	347
Pools / Aquatic centre - standard and enhanced (non-use)	0.4240	10.9	0.4283	11.0	1195
Indoor court					
Indoor courts - no provision (base)	0.0000	n/a	0.0000	n/a	
Indoor court - standard and enhanced (use)	0.4713	3.9			
Indoor court - standard and enhanced (use) but less frequent			0.4238	2.7	95
Indoor court - standard and enhanced (use) frequent			0.5455	3.4	95
Indoor courts - standard (non-use)	0.0000	n/a	0.0000	n/a	1679
Indoor courts - enhanced (non-use)	0.0000	n/a	0.0000	n/a	1679
Local park					
Park - no provision (base)	0.0000	n/a	0.0000	n/a	
Local park (use)	1.0518	25.9	1.0540	26.2	1238
Local park (non-use)	0.5227	9.0	0.5191	9.0	612
Sports park					
Sports park - no provision (base)	0.0000	n/a	0.0000	n/a	
Sports park (use) - no children	0.4115	6.4			
Sports park (use) - no children			0.2861	3.6	156
Sports park (use) - with children			0.5643	5.0	137
Sports park (non-use)	0.3331	7.0			
Sports park (non-use) - no children			0.3051	6.0	996
Sports park (non-use) - with children			0.3825	5.6	561
Library					
Library - no provision (base)	0.0000	n/a	0.0000	n/a	
Library (use)	0.7499	13.6			
Library (use) - less frequent			0.6770	10.9	586
Library (use) - frequent			0.9007	12.1	404
Library (non-use)	0.3054	5.1	0.2998	5.1	860
Community centre					
Community centre - no provision (base)	0.0000	n/a	0.0000	n/a	
Community centre (use)	0.2718	2.8	0.2812	3.0	304
Community centre (non-use)	0.1297	3.4	0.1305	3.4	1546
Arts centre					
Arts centre - no provision (base)	0.0000	n/a	0.0000	n/a	
Arts centre (use)	0.2899	4.0			
Arts centre (use) frequent			0.8388	4.6	55
Arts centre (non-use)	0.0000	n/a	0.0000	n/a	1677
Local tax			-0.0384	-37.1	

Distance					
distance constants - 20 minutes driving or more	-0.1191	-1.9	-0.1226	-1.9	
- with 2 or more amenities provision	-0.3528	-5.2	-0.3491	-5.1	
Substitutes or complements					
Leisure centre and pools colocation (use)	0.1661	3.5	0.1707	3.6	207
Library and community centre (use)	0.2973	2.2	0.2607	1.9	295
Library and community centre (non-use)	0.1566	3.4	0.1597	3.5	566
Local part and sports park (non use)	-0.3914	-6.9	-0.3903	-6.9	417
with all amenities - sports related	0.7595	9.8	0.7572	9.8	
with all amenities - non sports related	0.6717	8.6	0.6892	9.3	
Model parameters					t(1)
Model left bias	-0.0356	-2.1	-0.0353	-2.1	
Scale parameter for SC2 sports related amenities	0.9711	28.0	0.9698	28.5	0.89
Scale parameter for SC1 non-sports related amenities (base)	1.0000	n/a	1	n/a	

Table 38: usage information by amenity type (total household usage over the past 6 months)

frequency	Pools	Library	Community centre	Leisure centres	Arts centre	Indoor courts	Local parks	Sports fields
0	1195	860	1546	1608	1677	1679	612	1557
1- 4	308	585	190	104	118	95	578	145
5-10	117	199	66	57	39	38	260	56
10 - 30	176	163	35	65	13	27	303	69
30 and above	54	42	13	16	3	11	96	23