

GEOG309 Final Report

Improving the Red Zone Census: An Evaluation of Methodology and Performance

Authors:

Katie Thompson (11082196)

Daniel Harrison (91028617)

Jake Simpson (42402679)

Hayden Zervos (54673978)

15/10/2018

Executive Summary

The Avon-Ōtākaro Red Zone (AORZ) is part of the Christchurch Red Zone, an area deemed unsafe for residential occupation. Therefore, it consists of open grassy areas with a few trees and footpaths/roading. Every year, a census is held in the AORZ to gauge the recreational use of the area. This report provides an analysis and evaluation of the Red Zone Census (RZC) methodology and how it could be improved for future years.

The research question formulated was “How can the RZC methodology and performance be enhanced?”, with sub-questions “What are the perspectives of the surveyors?”, “Was the RZC missing something?” and “Could Maptionnaire be used to enhance the RZC?”

Methods of analysis used include prior research, observation, survey and a focus group. Results from the primary survey and focus group indicated that the current methodology of the RZC was successful, however there were areas that could be improved. In particular, there was no option for the survey to be filled out by someone in their own time and no seasonal data was being recorded. Additionally, as the RZC is only held over a two-hour period on a Sunday, the sample of people obtained is not representative of the population of people using the AORZ for recreation.

The results from the primary survey, focus group and pilot survey provided insight on the benefits of having a Maptionnaire survey available for the RZC to help overcome these limitations. Recommendations for the community partner on how the performance and methodology of the RZC could be enhanced include:

- Running a Maptionnaire survey in tandem with the RZC
- Advertising only the Maptionnaire survey
- Running Maptionnaire as the original survey instead of Google survey

Further investigation on how the RZC can be enhanced in future is recommended, as numerous limitations surfaced upon critical analysis of the research methodology. Initially, the Emerging Leaders misunderstood what Maptionnaire was, potentially swaying their opinion on whether Maptionnaire would be beneficial to enhancing the RZC. This could have then affected the focus group results as demonstrating Maptionnaire may have influenced their opinions. Participation was also an issue with only three participants in the focus group. Lastly, the posters advertising the pilot survey were taken down, therefore, the number of responses to the Maptionnaire pilot survey was affected and potentially not representative of those frequenting the AORZ.

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1.0 Introduction

As a result of the 2010/2011 Christchurch earthquakes, over six thousand properties in Eastern Christchurch were deemed unviable to maintain and most were subsequently demolished (Carlton, 2012; LINZ, 2017). Currently, there is an ongoing process regarding how this vacant land could be used in the short, medium and long term.

The Avon-Ōtākaro Network recently conducted the RZC, a survey aiming to identify ways to activate the AORZ through examining its current utilization. The survey results indicated that there were over 600 people recorded to be interacting with the AORZ, from 1.30-3.30pm on Sunday 12th August (Smith, 2018). To build on these findings, there are plans for an additional RZC to take place next year.

The aim of this research was to investigate “how can the RZC methodology and performance be enhanced?”. This overarching question leads to three, more precise, questions of “what are the perspectives of the surveyors?”, “was the RZC missing something?”, “could Maptionnaire be used to enhance the RZC?”. The aim of asking these questions was to observe and analyse the performance of the current methodology, to create a new survey using Maptionnaire, test the performance of the Maptionnaire survey and discuss and evaluate how Maptionnaire could be implemented into the RZC.

These aims were addressed initially by conducting prior research on research methods, Public Participation Geographic Information Systems (PPGIS) and background on the AORZ. This research contributed to the methodological framework. That is, observations, primary survey, focus group and a pilot survey. Next, results were deduced from these methods and a critical analysis of the research design and results was completed. Finally, conclusions were drawn from the research and acknowledgements were made.

This report has been conducted on behalf of the community partner Evan Smith and the Avon-Ōtākaro Network to help them identify how to activate the AORZ. This research can be useful towards understanding how future methodology of the RZC could be enhanced. It is also useful in deciding whether the incorporation of Maptionnaire would be beneficial in gaining more community responses.

2.0 Literature Review

The literature explored focused on four areas: background to the AORZ, research design, crowdsourcing and how Geographic Information Systems (GIS) can be integrated into surveying methods. This literature helped connect, inform and sustain the research design set, to achieve an analysis of the performance of the RZC.

2.1 Background Literature

Literature on the background of the AORZ included previous public consultation initiatives. This reinforced how surveys and focus groups can be beneficial and, therefore, should be incorporated into the research design (Carlton, 2012; Meurk, Orchard & Smith, 2017; Orchard, 2017). This literature also helped develop an understanding of the context of the work done by the Avon-Ōtākaro Network, and the potential implications of the RZC findings (Meurk, Orchard, & Smith, 2017; Regenerate Christchurch, 2017). This literature was beneficial as it gave this research a base to build on by implementing new techniques such as Public Perception GIS (PPGIS) to enhance public participation.

2.2 Research Methodologies

Reviewing literature on research methods helped develop an understanding of various research approaches that could be implemented to address the aims of the research. Specifically, the

implementation of direct observations, surveys and focus groups (Levinson, et al, 2007; Parfitt, 2012). This influenced the methodological approach to apply a variety of research methods.

Cresswell (2014) stated that qualitative answers were key for a thorough understanding of results, while quantitative data provided numerical information that can be effectively displayed and analysed. Therefore, in the context of the research topic, having both methods yielding both qualitative and quantitative data was the ideal approach.

Observations were deemed to be beneficial in research design by Kumar (2008). Observations are a selective method of watching an interaction take place. They are appropriate to use when data cannot be elicited from questions or to further support data gathered. However, positionality in observations can lead to bias interpretation (Evans, 1998; Kahila-Tani, et al, 2015). This is relevant as observations were carried out on the performance of the RZC as it took place to support data gathered in the primary survey. Evans, (1998) & Kahila-Tani, et al, (2015) also completed research stating that positionality can affect observational results. This informed the research process that surveyors may have been more forward in their approach to surveying passer-by's when a GEOG309 student was observing, potentially leading to survey bias.

Surveys provide an easy method to obtain inferences about a population from a sample of data. They allow for independent anonymous answers with no observer subjectivity (Hay, 2016). Answers are generally reliable (Brace, 2008; Creswell, 2014; Parfitt, 2012). Literature also provided insights on how to remedy potential issues with survey methods. For instance, flawed survey questions may dissuade participants from continuing the survey. Pre-testing surveys could help identify problems caused by intersubjectivity or positionality (Bridges, 2000; Colopicollo, 2015; Edgar, Murphy & Keating, 2016). This literature was very informative as it ensured that surveys were conducted in the research process as they were very successful with other researchers. The point of difference with the surveying techniques used in the primary survey of this report was that results were not independent because some participants discussed their answers. In hindsight, this may have improved the results as people that were unsure, may have learnt from their neighbours. However, this may also have swayed respondent's opinions, leading to surveying bias.

Focus groups promote discussion, allowing respondents answers to be better understood (Hay, 2016; Brace, 2008; Creswell & Bridges, 2000). Potential flaws were also acknowledged, as focus groups can lead to information bias. This is due to the independent ideas of participants' potentially being swayed by the perspectives of others. This literature influenced the research methodology of this report and supported the implementation of focus groups to further discuss Maptionnaire and the limitations of the RZC.

2.3 PPGIS /Crowdsourcing data

Literature provided insights on how online crowdsourcing applications such as Maptionnaire could be used to acquire non-biased seasonal data, while also providing a platform for the target population to share ideas efficiently. A case study was carried out by Kahila-Tani, et al (2015) in Finland where PPGIS was successfully implemented to enhance community engagement throughout development of a city. The authors stated that the online access surveys can be beneficial, however tend to contain an unrepresentative sample of the population. This is because members that participate in these surveys are of the younger generation (Kahila-Tani, et al, 2015). However, GIS involves a demographic of people who cannot be reached by traditional surveying methods and allows for independent responses (Bridges, 2000; Cetin, 2015 & King, 2009). Kahila-Tani, et al (2015) also highlighted how newspaper and social media advertising can be effective to promote online GIS surveys. This offered further insight on how Maptionnaire could be successfully implemented in the RZC and supported the conclusion that Maptionnaire would enhance the RZC's methodology.

One article compared traditional surveying methods with crowdsourcing methods, which Edgar et al. 2016, stated to be 'tapping into the collective intelligence of the public to complete a task' (Edgar et al. 2016, p. 2). This reading also indicated that on a common basis, crowdsourcing data techniques produced a larger return in participants than traditional methods (King, 2009). Dionisio et al (2015) investigated the potential of geospatial technologies being integrated into the development of the AORZ and the effect this would have on community involvement. The authors concluded that GIS provides a platform for community members to share their ideas easily. Therefore, this article again supports the implementation of Maptionnaire into the RZC to aid community engagement. The research completed on the RZC built on Dionisios et al (2015) research as it provides a case study in the AORZ of PPGIS being implemented. This could be used as an example for other studies regarding the success of PPGIS in the AORZ.

2.4 Relation to our Community Partner's interest

Evan Smith's research aims to identify the ways, and to what extent, people are utilizing the AORZ. Therefore, the research question seeking to identify how the RZC methodology and performance can be enhanced, is directly relevant to Smith's interest. If RZC attempts can be enhanced through this research, it will allow Smith to present a stronger argument to Regenerate Christchurch on how the AORZ should be further developed.

The research question of enhancing the methodology and performance of the RZC relates to wider literature as the techniques used to answer these research aims were well established before implementing them. Awareness was raised on the limitations of these research methods so when using them these limitations could be considered with the aim of controlling them. This allowed the development of a comprehensive report which could critically analyse its own methodology. Additionally, the research done on the RZC can be used as a case study for further research on trying to engage the community in filling out surveys.

3.0 Methodology

Both qualitative and quantitative methods were utilized to address the research questions of this report. Initially primary research was conducted followed by an observation, a primary survey, a focus group and finally a pilot survey of Maptionnaire.

3.1 Preliminary Research

To ascertain how to improve the methodology and performance of the original RZC, research was conducted on the past success of various surveying methods. This included interviews, online surveys and traditional surveys. Research was also undertaken to determine if GIS applications should be implemented, which was analysed and summarized for information that would aid research design.

3.2 RZC Observation

After preliminary research was completed, the RZC observation was undertaken (Figures 1 & 2). The RZC occurred on August 12th from 1.30-3.30pm. Observations were made on the RZC process, analysing how the original survey performed and how it could be improved. Limitations of the current methodology were also noted. A health and safety form and briefing were carried out prior to the event.



Figure 1- Gathering observational data August 12th 1.30-3.30pm

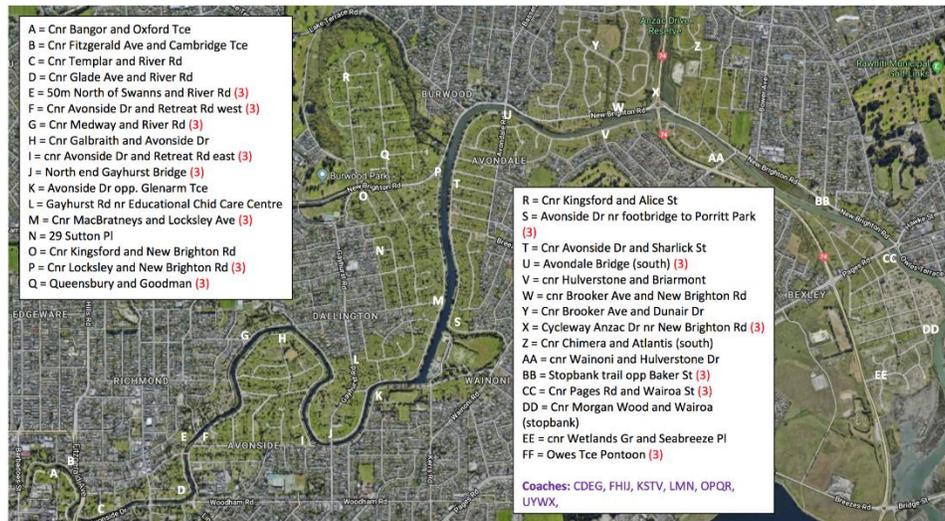


Figure 2- Locations of RZC surveyors in the AORZ

3.3 Primary Survey

At the RZC debrief, a survey was conducted on the Emerging Leaders who carried out the survey (Figure A1). The primary survey featured both open and closed questions which focused on identifying the surveyor's opinions on the methodology and performance of the RZC. The primary survey aimed to identify the surveyor's thoughts on the success of the RZC, potential improvements and whether an application like Maptionnaire would enhance it. There was also an optional section to fill out expressing interest in being part of a focus group. The survey was done so that ideas and insights gained from the observation could potentially be supported by information from the surveyors. It also allowed other people's thoughts on current limitations and ways to improve them to be recorded. The results of the survey were anonymous.

3.4 Creation of Maptionnaire Survey

Following the primary survey, it was decided that a Maptionnaire survey should be created (Figure B1) as it could potentially aid the RZC's methodology and performance in the future. This survey was created using the same questions from the RZC, so that the results could be easily compared. Some additional questions based around geographical information were also included.

3.5 Focus Group

After the draft of the Maptionnaire survey was created, a focus group was conducted. The aims of this were to confirm the feedback received from the primary survey, demonstrate the Maptionnaire survey

and to allow participants to express any additional thoughts regarding the RZC. Three individuals from the Emerging Leaders group participated and generated more ideas of how they thought both the original RZC and draft Maptionnaire survey could be improved. Ways to enhance the Maptionnaire survey included the creation of three new questions that uses Maptionnaire's point and line geographical drawing tools. These new questions included using pin point placement to answer, "What are some places you enjoy in the Red Zone?" and "What are some places you don't enjoy in the Red Zone?". "What route did you take through the Red Zone?" was answered using route tracing with lines.

3.6 Pilot Survey

Once the draft of the Maptionnaire survey was completed, a pilot survey was undertaken in order to determine the survey's viability. The aim of the pilot survey was to gauge participation response and see whether Maptionnaire is learnable and usable for the relevant research population. This pilot survey was carried out over a two-week period from the 3rd - 17th September 2018. This pilot survey was advertised using 50 posters that were displayed throughout the AORZ near the survey stations of the RZC (Figure C1). These posters featured both QR codes and links to the online Maptionnaire survey. The pilot survey was also advertised on the Avon-Ōtākaro Network Facebook page. Due to limited time and resources it was determined that these were efficient and realistic methods of testing the viability of Maptionnaire. The results of the Maptionnaire survey were anonymous.

3.7 Methods for Content Analysis

To analyse data collected from different methods, both individual analysis and Microsoft Excel were utilised. Individual analysis was used to identify information relevant to the research focus in the RZC results and record what was discussed in the focus group. Once patterns and themes were identified, a thematic analysis was used to analyse the feedback received in the primary survey. This allowed results to be better understood and easily presented. This was confined to the most important questions which aimed to understand if the RZC was lacking something. A full thematic analysis of the primary survey results including a breakdown of comments sections would have been useful, but this was secondary to identifying the surveyor's perspectives in response to our primary questions.

4.0 Results

4.1 Observational Results

The first results collected were from observing the RZC (Figure 1). These were collected to investigate what specifically about the RZC performance needed to be enhanced, enabling specific research to be carried out. From these observations, it was noted that the original survey had several issues including:

- Pedestrians moving by too fast and people using the river were not recorded,
- The cold weather on the day may have affected the number of participants,
- Prone to double counting as participants made their way past multiple surveyors, being recorded each time,
- No option for the participants to fill the survey out in their own time.

These results successfully identified that the RZC was missing something and that its performance could be enhanced, which relates directly to the research question of "Was the RZC missing something?".

4.2 Primary Survey Results

The primary survey results provided evidence of the surveyor's perspectives, which was relevant in the context of this research as they contribute to gaining an understanding of the ways in which the methodology and performance of the RZC could be enhanced.

It was found that 23% of the respondents thought the RZC could not be improved. However, 65% thought it could be improved (Figure 3). Respondents believed the survey could be improved by gaining more seasonal data, undertaking the survey on a warmer day and having a way a group could fill out the survey. This supported what the observations noted and indicated that the majority of surveyors believed that the RZC could be improved. This provides evidence as to why the research on improving the methodology and performance of the RZC is required.

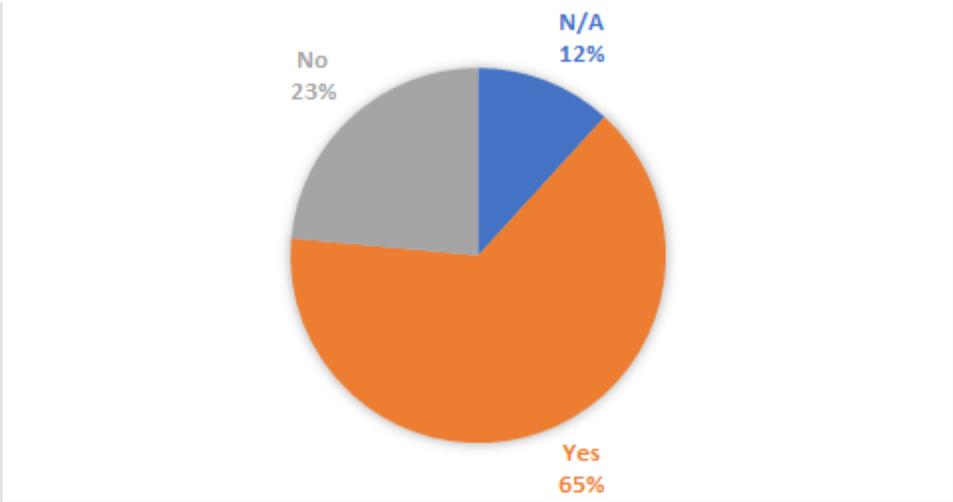


Figure 3- Pie chart displaying the percentage of people that thought this survey could or could not be improved

A total of 46% of the respondents thought Maptionnaire would benefit the RZCs methodology and performance, however, 45% thought it would not (Figure 4). This is not sufficiently supportive or unsupportive of the implementation of Maptionnaire, however with regard to the objectives of this research it is still beneficial as it helps provide an idea of how the RZC could be improved.

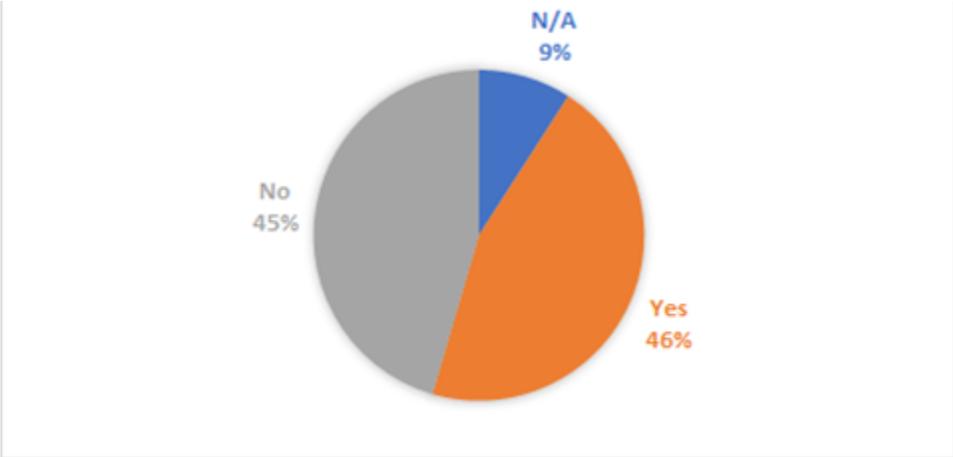


Figure 4- Pie chart showing if surveyors thought Maptionnaire should be implemented

It was found that 82% of the Emerging Leader respondents found that people were willing to participate in the RZC while 18% found people were not willing. This is beneficial for the research as it shows that the

majority of the community is willing to participate given the opportunity. It also shows that the original methodology of the RZC is effective in terms of public participation.

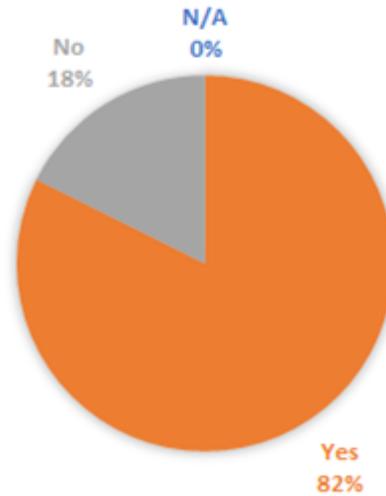


Figure 5- Pie chart showing if people were willing to participate in the RZC

4.3 Focus Group Results

The focus group had three participants who were all in favour of Maptionnaire. Qualitative results indicated their opinions on the Maptionnaire pilot survey created to enhance the RZC methodology. Their suggestions included adding sections on the places of enjoyment and displeasure, the route taken through the AORZ and adding a section for any additional comments. These results related to the research context as they supported the implementation of Maptionnaire while again providing viewpoints of the surveyors. Their suggestions were utilised in the Maptionnaire survey.

4.4 Pilot Survey Results

The pilot survey was held over a 2-week period. There were 15 respondents with four of these participants not completing the survey. These results provide an idea on the potential success Maptionnaire would have if implemented in the RZC, relating to the research question "Could Maptionnaire be used to enhance the RZC's methodology?".

Maptionnaire provides benefits over traditional surveying methods as it obtains geographical data. In this Maptionnaire pilot survey, geographical data was gathered on areas of enjoyment. The resultant heat maps use brightly coloured areas to indicate there is a clustering of points of enjoyment just above Woodham Road and another smaller cluster along Locksley Ave (Figure 6).

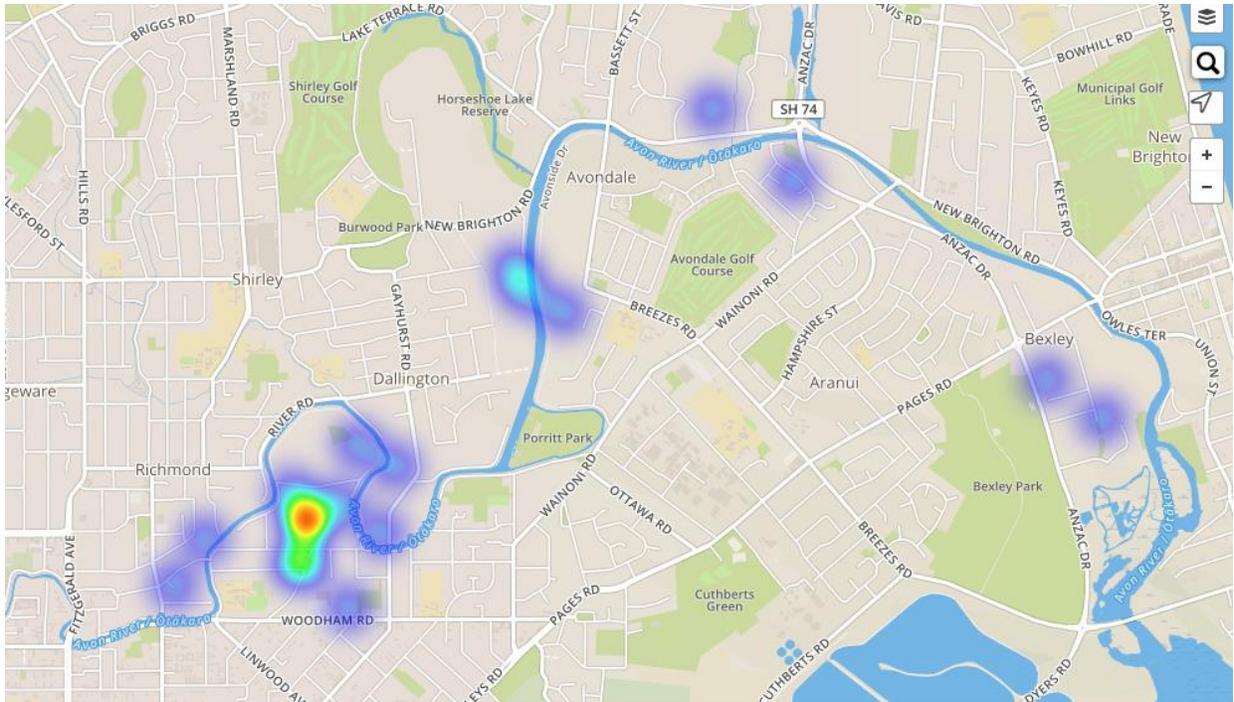


Figure 6- Heat map from the Maptionnaire survey detailing locations that respondents enjoyed in the AORZ

The paths people took through the AORZ can also be displayed by red lines on a map. This indicated that most people walk around River Road and Locksley Ave (Figure 7).

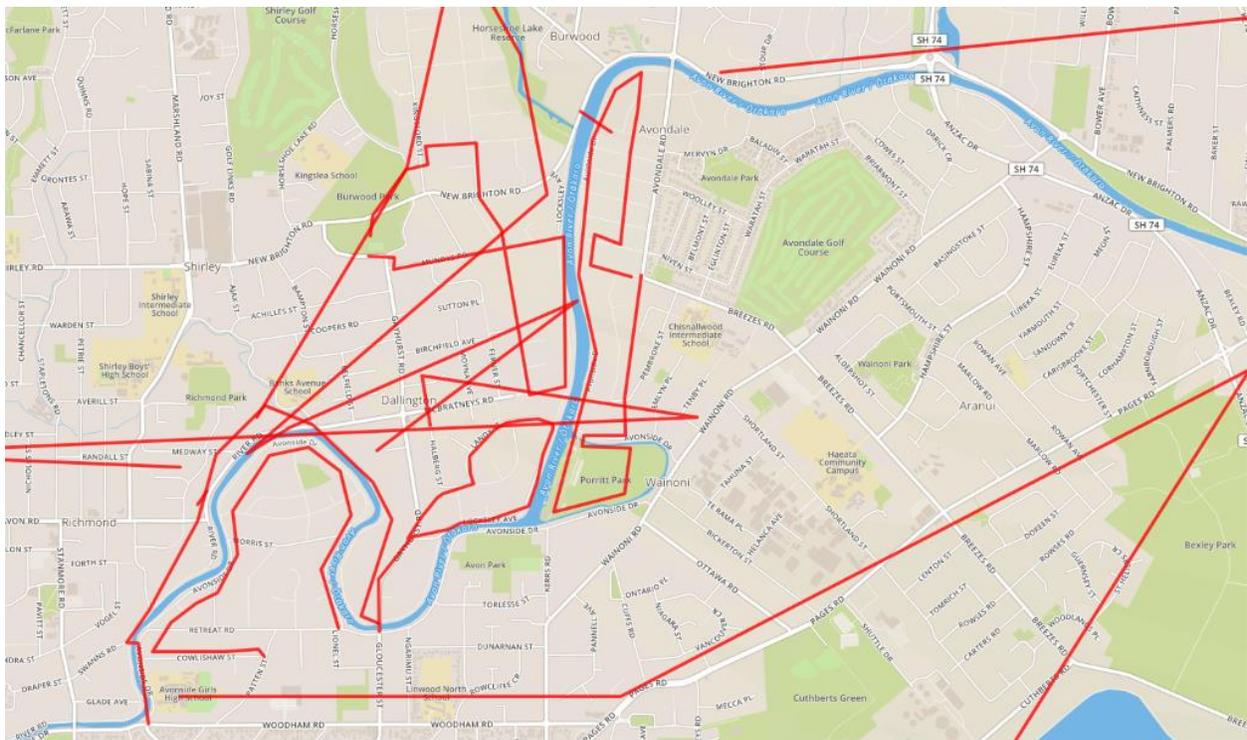


Figure 7- Map showing the routes participants took through the AORZ

5.0 Limitations

This report analysed the methodology and performance of the RZC with the aim of providing potential options to enhance these. The results obtained from observations indicated that the RZC could be improved by gaining a more representative sample of the population of people using the AORZ for recreation. This was because the survey only occurred on a 2-hour slot on a Sunday in winter. Thus, people present in the area available to complete the survey at this time did not represent the whole population of people using the AORZ as no seasonal data was being collected. This was expected as research by Cresswell (2014) states that surveys carried out over a short period of time can produce biased results. These limitations provide opportunities for research on remedies which can be applied in future RZC surveys.

The methodological framework used to investigate these remedies had both successes and limitations in obtaining an understanding of the surveyors' perspectives. The initial responses gathered from the primary survey were inconclusive (Figure A1). However, a further focus group with the Emerging Leaders resulted in full support of the appropriateness of the Maptionnaire survey. The primary survey results were deemed to be unexpected. This is because Maptionnaire has been deduced in previous studies to support community engagement with successful usability (Dionisio et al., 2015; Kahila-Tani et al., 2015 & Moller, 2018). Therefore, these inconclusive results could be a result of the Emerging Leaders misunderstanding what Maptionnaire was. It was explained to them, however, they may have forgotten or not listened initially. This would have affected the primary survey results, particularly in the questions regarding whether Maptionnaire should be introduced into the RZC.

Another limitation involving the Emerging Leaders was their focus group attendance, only three participated. This may have contributed to unrepresentative results, an issue many researchers face (Kumar, 2005). However, this is the nature of purposeful sampling and the awareness of this and its impacts on findings is the best remedy (Hay, 2016; Brace, 2008). On the other hand, the support of Maptionnaire in the focus group may have been due to the participants having a better understanding of what Maptionnaire was after the demonstration of how it works.

The pilot survey gained 15 responses over a 2-week period. It's difficult to determine whether this was successful. During the trial period, the 50 posters displayed advertising the Maptionnaire survey were removed. This made it difficult to raise awareness of the availability of the survey and may have contributed to the low participation. The survey was also advertised online; however, this did not mitigate the impacts of the posters being removed. The timing of the survey may have also impacted on response rates as the pilot survey was carried out almost immediately after the RZC. Thus, AORZ pedestrians which had recently completed the RZC may have been less inclined to complete the pilot survey due to consultation fatigue (Carlton, 2012).

6.0 Discussion

The low response rate from the public makes it difficult to draw conclusions on the effectiveness of utilizing PPGIS to enhance the methodology and performance of the RZC. However, it can be concluded that having the Maptionnaire survey available for completion in the background, supporting the annual RZC would aid the RZC by recording seasonal data. The survey is already operational, so no additional work is required. It also gained 15 responses with minimal advertising. To overcome the limitations, advertising could be done using social media platforms (such as the community Facebook page) and newsletters, billboards and newspapers. Additionally, during the RZC cards could be handed out with the survey link for members of the public who lacked time to complete the survey on the day. Although the research completed did not yield a clear-cut answer, other research done by Møller et al, (2018); Dionisio

et al, (2015) believes Maptionnaire has potential for success in gaining residents' participation. Based on previous research and the limited success of the Maptionnaire survey despite unideal conditions it would be beneficial to include Maptionnaire in the future to enhance the methodology and performance of the RZC. This answers the overarching research question.

Maptionnaire would also improve results by recording geographical data such as the heat map and routes taken through the AORZ as seen in Figures 6 & 7. These geographical analytical tools are not available in traditional online surveying tools such as Google Surveyor (which was used in the previous RZC). Therefore, using Maptionnaire would allow for more appropriate data analysis as it incorporates geographical location. This is very beneficial in gauging how the AORZ is being used for recreation as it identifies where people are using the AORZ, not just how many people are using it. This information can then be used to decide where infrastructure needs to be constructed to maximize people's enjoyment when using the AORZ for recreation, leading to the successful rejuvenation of the AORZ in the future. This shows the results obtained from the Maptionnaire survey fulfil the research aim of improving the methodology of the RZC.

It is recommended for future research that care is taken when explaining something new like Maptionnaire to any demographic to ensure they obtain the required level of understanding. Additionally, removable posters are not the best method of advertising. Methods should be undertaken that are more permanent such as posts on social media, billboards and in community newsletters and newspapers. For future research using Maptionnaire as a surveying tool it would be beneficial to add a comments section to describe likes and dislikes about the places respondents selected in the AORZ. This would enable a more in-depth analysis of the geographical results. Additionally, the usability of Maptionnaire could be enhanced if Maptionnaire could have their branching questions in the actual section it applies to.

The research completed on the RZC relates to other literature where PPGIS has been implemented to enhance public participation as the internet becomes more used by a variety of demographics (Gulnerman & Karaman, 2015). A case study done in Berlin investigated the benefits of implementing PPGIS in gaining the public's opinion on introducing urban green infrastructure into the city (Rall, Hansen & Pauleit, 2018). It found that PPGIS was beneficial in gaining a wider demographic of public opinions and the results were independent and reliable. This supports the research completed on implementing Maptionnaire into the RZC to improve its methodology and performance. However, the research done in the AORZ can add to this literature as it also gained geographical data which this PPGIS did not utilise in Berlin. The research completed implementing Maptionnaire in the RZC can also be used for other researchers aiming to implement PPGIS. They can learn from the limitations identified in this research now that a pilot survey has been completed in Christchurch and its potential success has been recorded. There is more supporting evidence for PPGIS to be used for future planning in Christchurch as it develops into a more sustainable city.

It can be concluded for the community partner that Maptionnaire would be beneficial to have running in tandem with the RZC. This research has proven that Evan's efforts are very commendable in terms of their success in community participation. However, findings from this research conclude that the Maptionnaire survey would aid this successful procedure to develop in the future as society becomes more technologically reliant. It will also benefit the RZC by collecting seasonal data with a more diverse demographic within the sample (Babelon et al., 2017).

7.0 Conclusion

In conclusion, it was found that the original methodology of the RZC was prone to some limitations. To mitigate this, the implementation of Maptionnaire was explored and tested. The results showed that the

surveyors from the original census were in favour of Maptionnaire being utilised as it collects geographical and seasonal information that the RZC cannot. Therefore, in future, the Maptionnaire survey should be included with the RZC to replace the Google Survey previously used. Its link can also be added to cards handed out and other advertisements so that people fill it out year-round and at their leisure. This recommendation is supported by the results and information gathered. Therefore, it can be concluded that the results do adequately address the research question of how the RZC methodology and performance can be enhanced. The results are also of significance to the community partner's aims to gain more seasonal data so a representative sample of the AORZ recreational users can be obtained. This will enable them to meet their goals of a successful activation of the AORZ.

8.0 Acknowledgements

We would like to thank the help and support of:

- Community partner, Evan Smith
- Group of 40 UC Emerging Leaders
- Dr Rita Dionisio-McHugh
- Professor Simon Kingham and other geography staff

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10.0 Appendices

Appendix A



Survey for GEOG309

1. Do you think it was successful? Yes No
Why/why not? _____
2. Where were you located (your location code)? _____
3. Do you think the survey was missing something? Yes No
If so what was it missing? _____
4. Do you think the survey should have been pretested before conducting the census? Yes No
5. Do you think a crowdsourced website such as ~~Maptionnaire~~ could enhance the survey results? Yes No
If so why? _____
6. In general were people willing to participate? Yes No
7. Do you think the survey could be improved? Yes No
Why?

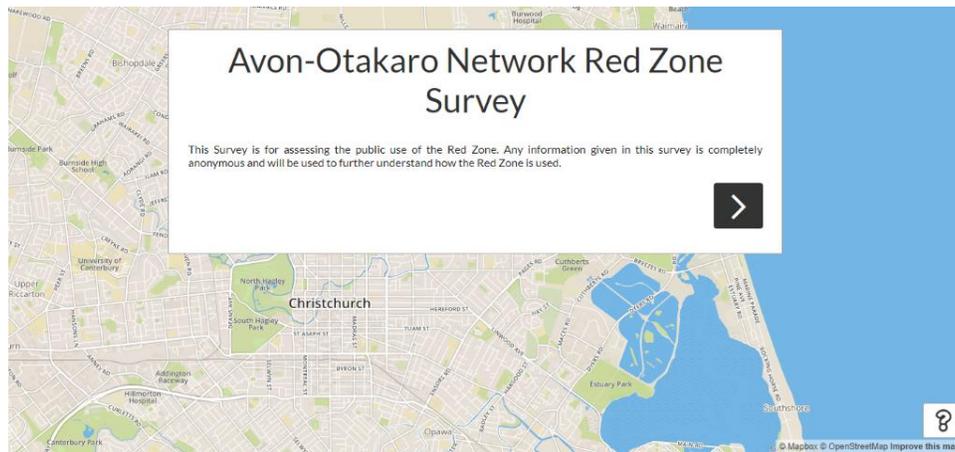
Thank you for filling out the survey. We really appreciate your time. If you have any queries or would like to withdraw your answers feel free to contact us at kth50@ucdive.ac.nz. Additionally, if you would like to be part of a focus group regarding how the survey could be improved for future years; please leave your name and email below.

Name: _____ Email: _____

Note: If you want your survey results to be anonymous please tear off your name and email.

Figure A1- Primary survey

Appendix B



⤴ Party Questions

How many people in your group?

- 1
- 2
- 3
- 4
- 5-20

Type of group?

- Individual
- Friends
- Family
- Couple
- Friends and Family
- Unspecified Group
- Other:

What are you doing?/Why are you here?

- Walking - Leisure
- Walking - Exercise
- Walking the Dog
- Jogging
- Running
- Cycling
- Other:

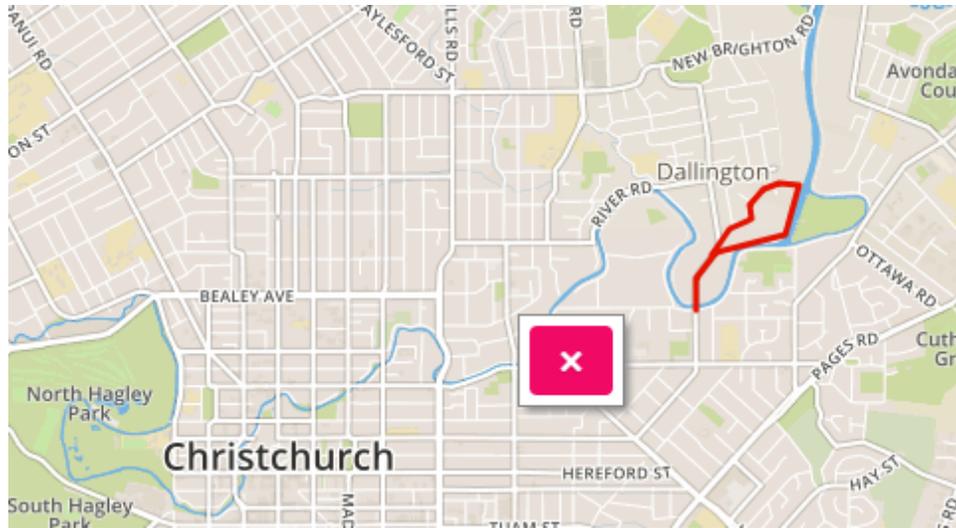
How did you get to the Red Zone?

- Walk
- Bike
- Bus
- Car
- Other:

What time and day did you visit the Red Zone?

What route do you typically take through the Red Zone?





Age Group?

- 0-12
- 13-24
- 25-40
- 41-55
- 56-70
- 70+

What Gender are you?

- Female
- Male
- Other:

What is your primary Ethnicity?

- Not Stated
- NZ Maori
- European/Pakeha
- African
- Australian
- British/Irish
- Chinese
- Cook Islands Maori
- Fijian
- Filipino
- Indian
- Japanese
- Korean
- Latin American
- Middle Eastern
- Other Asian
- Other European
- Other Pacific Peoples
- Tongan
- Other

What suburb do you live in?

Were you Red Zoned?

- Yes
- No

What do you value most about being in the Red Zone?

What single thing would enhance your experience in the Red Zone?

What are some places you enjoy in the Red Zone?

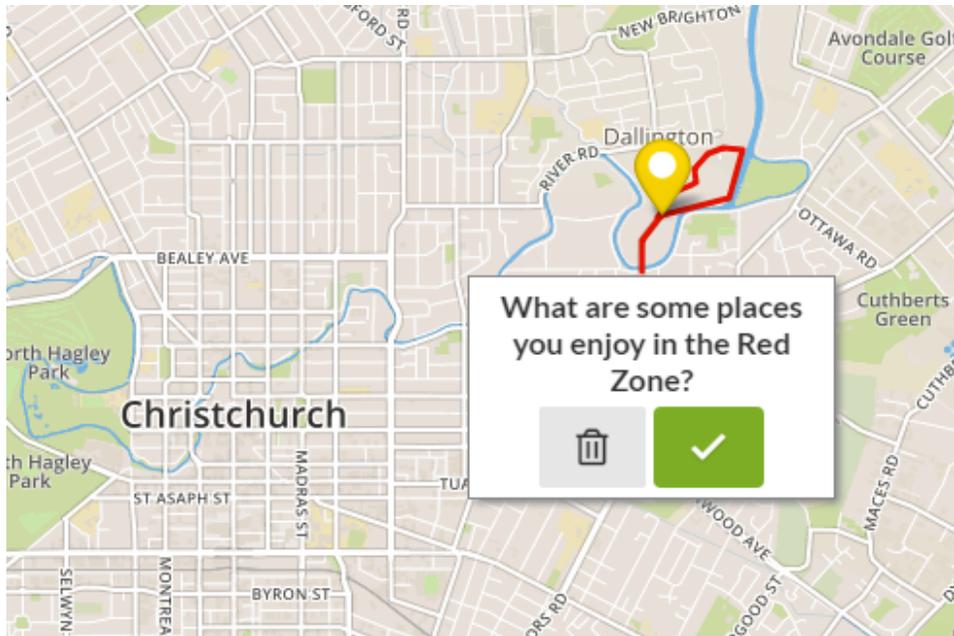


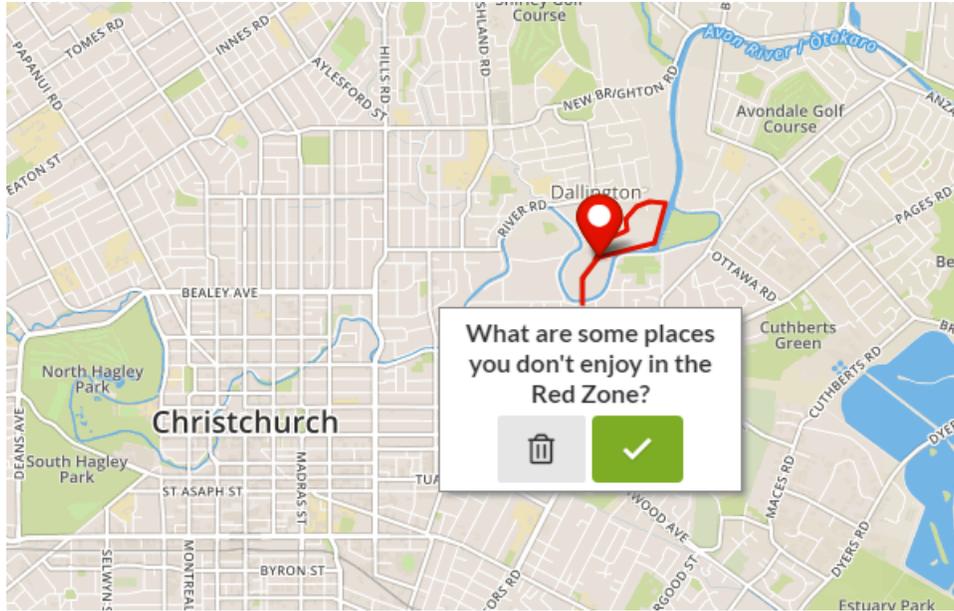
What are some places you don't enjoy in the Red Zone?



Do you have a health condition or disability that has lasted, or is expected to last, 6 months or more AND that restricts your everyday activities?

- Yes
- No
- Prefer Not to Say





⏪ **Final Section**

What other Ethnicity Are You?

Do you have any other comments or opinions about the Red Zone?

< **Done**



Thank you!

Thank you for taking the time to participate in this questionnaire.

Daniel Harrison,
dha101@uclive.ac.nz

Figure B1- Maptionnaire survey

Appendix C

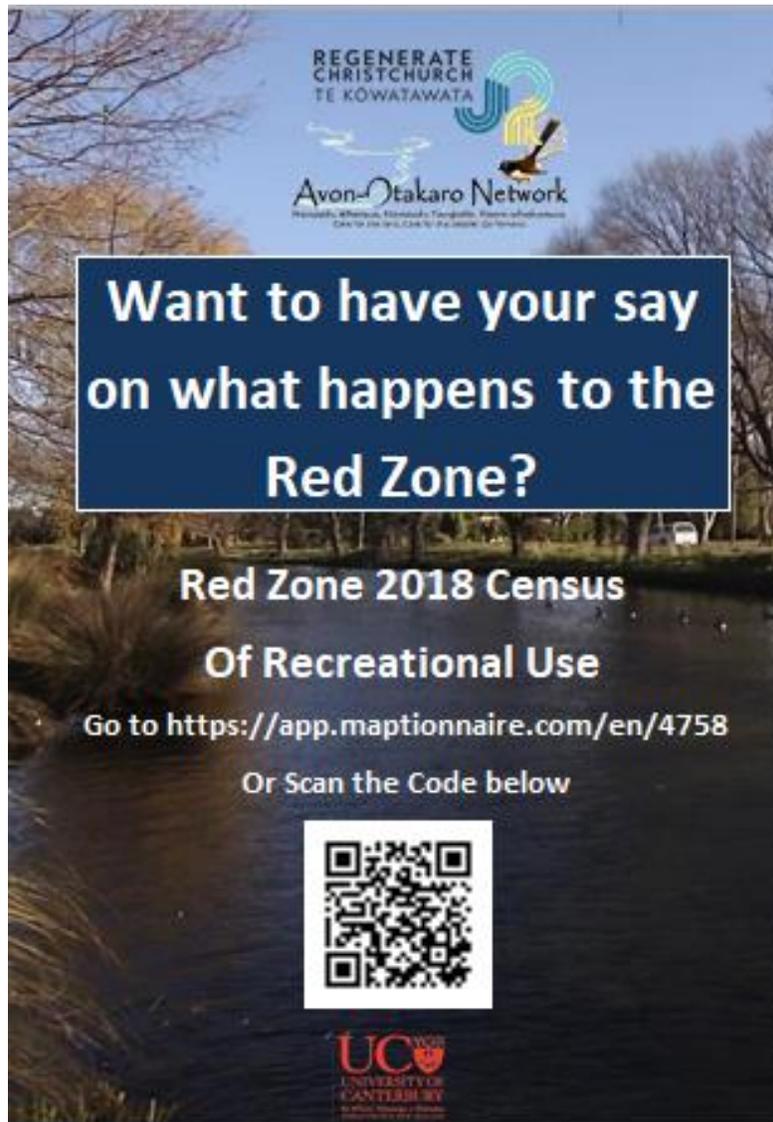


Figure C1- Poster used to advertise availability of Maptionnaire survey throughout the AORZ