Pūhau ana te rā: Tailwinds

Abstract

Secondhand shops are overlooked waste diverters in the sustainability sector, to measure their impact, my research seeks to understand their processes so that quantification strategies can be identified. The Green Island Rummage store is looking for data-gathering strategies so that the carbon emission reductions from their waste diversion efforts can be calculated. This is a difficult issue to tackle because of the pressures faced by secondhand shops due to limited resources. I interviewed local secondhand stores to identify barriers and strategies for waste diversion quantification and then surveyed Rummage employees to determine the applicability of potential measures. This research highlights the pressures faced by secondhand stores and their significance in our move to a circular economy.

Introduction

In the face of a devastating environmental alternative, our move to a circular economy has become more important than ever. The incessant production of waste is creating many pressures for our environment, including the release of greenhouse gas emissions which contribute to climate change (Mikhaylov et al., 2020). Secondhand stores are an important aspect of waste diversion because they keep items out of landfill (NACRO, 2020). In New Zealand, secondhand stores are understudied compared to other developed countries (CRA, 2024; Goodwill, 2024). Local research in cities such as Dunedin, New Zealand, will address the knowledge gap and support waste diversion (Toniolo et al., 2023).

The circular economy is a goal developed in response to unsustainable societies. It is a system based on three principles: the elimination of waste and pollution, the circulation of products and materials, and the regeneration of nature (EMF, 2024). This project aligns with the first and second of those principles. Data collection is a key step towards a circular economy because it supports meaningful policy, educates the public, and maximises waste reduction efforts (Bonvoisin, 2009; Mahajan et al., 2023). One of

the action areas identified in the Dunedin City Council's 2030 Net Carbon Zero plan is to improve data on resource use and waste (DCC, 2023). The net weight of items diverted through the secondhand industry is known in Australia, Canada, the United Kingdom, and the United States (CRA, 2024; Goodwill, 2024; MRA Consulting Group, 2021; Salvation Army, 2020). However, there is a no information on how to implement a system to collect these figures. An understanding of data collection systems in Dunedin secondhand stores will aid information gathering.

Green Island Rummage Store is a secondhand shop run by the DCC in the Green Island Resource and Recovery Area in Dunedin, New Zealand. It is an example of a store that would benefit from data collection to enhance our understanding of the New Zealand secondhand industry's role in waste diversion (DCC, 2024). This project sought to determine how to collect waste diversion measurements at Rummage. The research questions are: can a data collection system be implemented at Rummage; and, if so, how? A secondary objective of the research is to assess the secondhand industry in Dunedin, with a focus on data collection approaches and potentials. The secondary objective adds context to findings for wider insights.

Method

This was a qualitative study conducted between November 2023 and February 2024 to find a method for measuring the amount of waste diverted by Rummage. Data collection was composed of three parts: background research, a series of interviews, and a survey of Rummage employees. Research was undertaken with the aim of finding weight measurement systems documented online and the user experiences with these systems. It proved unsuccessful, with limited internet resources available.

Most research was collected during semi-structured interviews that lasted up to one hour with employees from Dunedin op shops. In total, there were six interviews with four managers and two staff members from four secondhand stores. Of these stores, three were charity-focussed and one was for-profit but with the aim of waste reduction. Interviews were conducted to find general trends relating to data collection. Stores were approached online and in-store to organise interviews that were done in-person to ease the burden of busy interviewees. General topics raised for discussion included background information about the organisation, a description of the team and the participant's role, the sorting process used by the store, ideas for streamlining the store's process, and the key successes and challenges faced by the store. The conversation was allowed flow naturally so that relevant topics could easily be discussed in-depth. This helped avoid time constraints for interviewees. Since it was unknown how much data collection occurred in Dunedin, the flexible style allowed the interview to switch focus to why no measurements were recorded if necessary. Recordings were made and transcribed verbatim then analysed using thematic content analysis (Maguire & Delahunt, 2017). There was a small number of interviews that

discussed broad, complex topics so this thorough approach was opted for. Themes were grouped into four wider categories: the current approach, direct barriers, indirect barriers, and successes. This was done to enhance the understandability of the complex and interlinked interview findings and increase their applicability. The current approach category contained findings related to the processes being used in op shops. A table was created to summarise the current data collection methods in the stores interviewed. The direct barriers category identified challenges that were directly affecting the ability of secondhand stores to collect data. The indirect barriers category contained themes relating to challenges which were affecting the overall running of secondhand stores, and therefore indirectly affected data collection capability. The final category, successes, identified themes where participants described what helps their store to succeed or enables them to collect data. A thematic map was created summarising the interview results, see figure 1. This was done to show how each category relates to the overall research question of the challenges and potential solutions for running secondhand stores.

The survey assessed how the general trends in interviews applied to Rummage. Three potential systems arose from the research and interview discussions:

- System 1: Weighing baskets of items during sorting.
- System 2: Recording the number of items sold within predefined categories and finding the average weights of those items.
- System 3: Weighing trailers/cars as they come across the weighbridge and adding a category for Rummage donations into the weighbridge system.

Questions assessed the preferred system among employees and to raise issues with the systems suggested. These were distributed to available Rummage employees. Results were anonymised. Figure 2, is a pie chart showing the preferred system. Table 1 is a table of barriers for implementing each system. The suggestions for overcoming barriers were simply noted as there were only two. The survey tested the applicability of summarised findings from multiple interviews for specific stores and whether results were made redundant by generalisation.

The need to alleviate indirect pressures became clear as research progressed. This prompted the creation of a structured decision-making table, see table 2, to assess the connections between pressures and potential solutions discussed in interviews.

Results

Interviews

Current Approach

The purpose of this theme was to identify whether data collection occurred in Dunedin, and, if so, how and why.

Comprehensive data collection that could facilitate carbon emission reduction calculations was not observed. In two stores, the data communicates impacts and informs business decisions.

Table 1. Current data collection methods for four secondhand stores in Dunedin, New Zealand, based on descriptions from interviews with employees. Ticks indicate whether the store collects and categorises each type of data.

	Store 1		Store 2		Store 3		Store 4	
	Collect	Categorise	Collect	Categorise	Collect	Categorise	Collect	Categorise
Weight measurements			✓	(Loosely) ✓				
Number of items sold/received					✓	✓		
Earnings figures	✓		✓		✓	✓	✓	✓

All stores have the following in common:

- They take on as many items as they can and end up with a varying range of items.
- Pricing is kept low, even when the store is profit driven, to keep turnover high and reduce storage requirements.
- The quality and condition of items are assessed, usually in a sorting room, to decide whether they are sellable.
- Stores try to divert waste when it is feasible.

Direct Barriers

Direct barriers were identified to determine why data collection was uncommon. Three themes relating to direct barriers arose: a split focus, the inefficiency of systems, and staffing.

Split focus was noted by all participants as the most influential barrier because it draws resources away from data collection.

> "If I just had the op shops I think I could do so much." – Interview Participant 3.

> *"[Waste diversion] takes more time and staff than it ever used to." – Interview Participant 2.*

Two shops have the equipment to weigh donations but are too busy to do it because of time, staffing, and space limitations. Under-resourcing was linked to the sheer number of donations being processed in all interviews.

> "There's a car here every three minutes [to drop stuff off]." – Interview Participant 5.

"We always need more space. We always could do with more room. But then sometimes I think it would not matter how much room we had; it would still never be enough." – Interview Participant 1.

Op shops are unable to collect data because they are overloaded and have other priorities that need tending to more urgently. It is important that data collection systems do not worsen time constraints because rapid turnover is important.

Low staffing is a direct barrier linked to the split focus in all stores. This creates the indirect barriers mentioned next. This is particularly true for two stores reliant on volunteers; three interviewees said that work must be enjoyable for volunteers to ensure they keep coming back.

"If I say to [volunteers] 'oh we're going to do this and this, and I need somebody for that' it's like 'how much more blood do you want?'. You've got to be careful." – Interview Participant 5.

In three stores, respecting team dynamics is a priority. Four interviewees noted that their systems and staff have been in place for a long time and there may be resistance to change if a new system was introduced.

"It's a struggle when you've got people who have been here for 20 years and you try to do new things and it's like 'well, that's not how we do it'." – Interview Participant 3.

In three stores, once an item is priced or sorted, another team member will not vary it because team dynamics are prioritised. This can lead to some inconsistency in the value, and therefore price, assigned to items in-store.

"People's perception – that is a really hard one to overcome [because it leads to inconsistency]. People are entitled to their opinion ... that's how improvements happen." – Interview Participant 1.

This restricts the ability of stores to make assumptions and use averages to collect accurate data.

Staff numbers will need to be increased to deal with new processes which can increase the consistency between team member approaches.

The inefficiency of systems currently used directly prevents data collection. In two stores, processes are already time-consuming because of the equipment and systems that are available. They have old fashioned and overly complex systems with no means for data collection modifications.

"We only have one bulk, miscellaneous [category] ... it's not the friendliest till system for [categorisation]." - Interview Participant 2.

In two interviews, this was linked to diversity of items preventing accurate categorisation.

> "If you wanted to know [the items sold] by weight, that's hard because everything varies so much." – Interview Participant 2.

Completely new equipment and processes will need to be introduced in these stores before they have the capacity to record data.

Indirect Barriers

The primary barrier to data collection seems to the lack of resources of secondhand shops given the size of their task. This category identifies the issues affecting resourcing to identify manageable steps to enable data collection.

All interviewees agreed that they would benefit from having more staff.

> "I work 40-50 hours a week, I get paid for 14." – Interview Participant 4.

> "We've got [over 50] volunteers and that's still not enough." – Interview Participant 5.

This adds more work further down the line and increases disposal costs because proactive steps cannot be taken to cope with workloads.

> "If we are available … we will go out and check what they have in their truck or trailer, and we'll say yes or no. [If not,] they place [items that are not suitable for resale] on the drop off table. We then collect it and take it out the back of the shop … to sort it in more detail and price things that need to be priced." – Interview Participant 1.

Two stores mentioned that when checking out is slow, the public can become agitated which makes it more difficult for staff. In one store, staff can be pulled away from the shop to other areas of the organisation because those are often busy too. If a shop is reliant on volunteers, they can become short-staffed over holiday periods and lack the ability to process the influx of donations that happens in this time.

> "Sometimes we do have to turn things away but that's generally around Christmas and the New Year when the volunteers all disappear for a month but the donations keep coming in. … We just don't have enough people sorting stuff and we have to say no." – Interview Participant 3.

Staff must implement most data collection systems, so low staffing must be addressed before employees can be allocated to this.

The public's motivation can be an issue because they are less focused on waste diversion. In some cases, the public get irritated with staff because their items cannot be accepted.

> "In anything that involves customers, you are going to get difficult customers who argue the point if you wont take what they're bringing in." – Interview Participant 1.

> "That's our biggest battle. People don't want to change their attitudes." – Interview Participant 2.

Two stores noted it can be difficult to get the public to follow store procedures with lack of staffing.

> *"It takes a lot to train the public to do things right." – Interview Participant 2.*

> *"We do have issues with customers swapping price stickers." – Interview Participant 1.*

Two interviewees noted that customers can struggle to adapt to new procedures. This could affect the feasibility of introducing new systems which allow data collection.

All stores sell donated items, they are very influential on how the store runs. Two interviewees observed that customers are now researching items before buying them. High quality items are now sold quickly or sold online rather than donated.

> *"Trade Me had a big impact but Facebook has had an even bigger impact because everybody can buy and sell themselves… that's changed what we get. The quality is not what is used to be." – Interview Participant 2.*

All interviewees noted that the quality of items is lessening.

> *"The quality we get is not what it used to be. … Over time, the shop will fade away and [the focus] will become the recovery of the materials." – Interview Participant 2*

> *"The poor quality of things that come in is an issue. If you buy a t-shirt for $6 from Kmart and wash it 5 times then it's out of shape and awful by the time it gets here." – Interview Participant 3.*

This increases the cost of disposal for shops because there are more unsellable donation.

> *"I'm mortified at the moment because the skip is getting emptied every day. So, we've stopped [taking donations] for a few days now." – Interview Participant 5*

Sorting is time consuming and requires a large space in all stores. In four stores, space for storage or display is limited, so they have reduced the range of items they sell.

> "We're not as big as some of the other [op shops] so we can't generally sell furniture and white ware and stuff like that." – Interview Participant 3.

Those stores said that if more space were to become available it would be used for storage.

> "We don't [have space for extra equipment] and [weighing] is going to take extra time. … when we're as busy as we have been it's just not possible. You'd need extra people." – Interview Participant 1.

Data collection methods that require large equipment are unworkable. This stresses the need for high turnover previously mentioned so costs must be kept low. In all stores, low running costs are necessary for low prices and high turnover.

> "On one hand we want to get rid of stuff as quickly as possible, on the other hand we need to pay our rent and so we need to get a fair price." – Interview Participant 4.

The staffing, storage, turnover, and cost issues that op shops face are interconnected. For a data collection system to be implemented, they will need to be addressed.

Successes

Successes were identified to determine what cannot be comprised when implementing a data collection system and what allows their implementation.

In all stores, high turnover is a crucial success. It eases burdens related to storage and enables the large scale of items being diverted from landfill. Turnover is controlled by price. If storage becomes full, stores will reduce prices to increase turnover.

> *"[We get donations] in, sorted, out, gone. It is amazing, it does happen like that. It's like [the shop] breathes. Just in and out and it's gone." – Interview Participant 1.*

> "We've got a sale on now … We'll keep the sale going until we get the boxes down." – Interview Participant 5.

This success cannot be compromised by the implementation of a data collection system. Turnover cannot be slowed by a time-consuming process.

Four interviewees noted that the store functioned well because it stuck to simple systems that have developed over time.

> "I set up a system … to make it very simple for basic things so [the team] will do it." – Interview Participant 1

> "It's a simple system and there's not very many of us. I think that's important." – Interview Participant 4.

> "We've got a fairly consistent approach to everything and it works quite well." – Interview Participant 2.

Examples from interviews to reduce workload and simplify systems include:

- Three stores have set prices for certain common items,
- One used differently coloured tags for different months,
- In two stores, no categories are used so there are less steps at checkout,

- One store has a niche that reduces the number and diversity of items they receive and sell. This allows them to create more specific categories for more accurate data collection. It means that the store can have a smaller team which helps to keep decision making consistent and build expertise to help with pricing and sorting consistency.
- Two created pre-defined categories that workers are allocated to sort and price within, this has a similar effect to store specialisation.

Efficient layouts were mentioned in all interviews due to the creativity shown by staff. They allowed for the creation of simple systems. Examples include:

- Boxing up and stacking clothing,
- Stacking beds upright to maximise space,
- For two stores, this meant having offsite storage and only in-season displaying items.

In these stores, efficient utilisation of space expands what can be accomplished. In one, they have room for a washing station because they have used an overhead line to dry items.

All organisations see the strengths of individuals within their team and utilise them. For example, team members with niche knowledge are consulted when pricing items of that kind.

"We've got a guy that comes in and he helps us with our antiques and old stuff. … He used to be an antique dealer." – Interview Participant 5.

"When it comes to pricing the clothing, we've got … a young woman, and I'll always say to her 'what do you think?'."- Interview Participant 2.

All interviewees described how successful systems make use of the team's talents. This suggests that the best data collection system for each store will vary according to their team.

Three shops noted they communicate with other secondhand stores to share initiatives and receive inspiration. Two interviewees noted that they observe what items other stores sell well and how many items they have in-store which facilitates redonation if storage is full.

"I'll talk to [other stores] as well and get an idea on what they can move because it's no good giving [a redonation] to them if they can't move it." – Interview Participant 4.

Three interviewees noted that volunteers help to build connections because they often volunteer at more than one place. Two shops are actively seeking opportunities to collaborate with other secondhand stores and community groups with sustainable goals. Networking and collaboration was identified as a solution for easing the load that prevents data collection.

Overall

Figure 1 shows the ideas raised in interviews on how to enable data collection: by supporting current approaches and successes, and, by overcoming direct and indirect barriers.
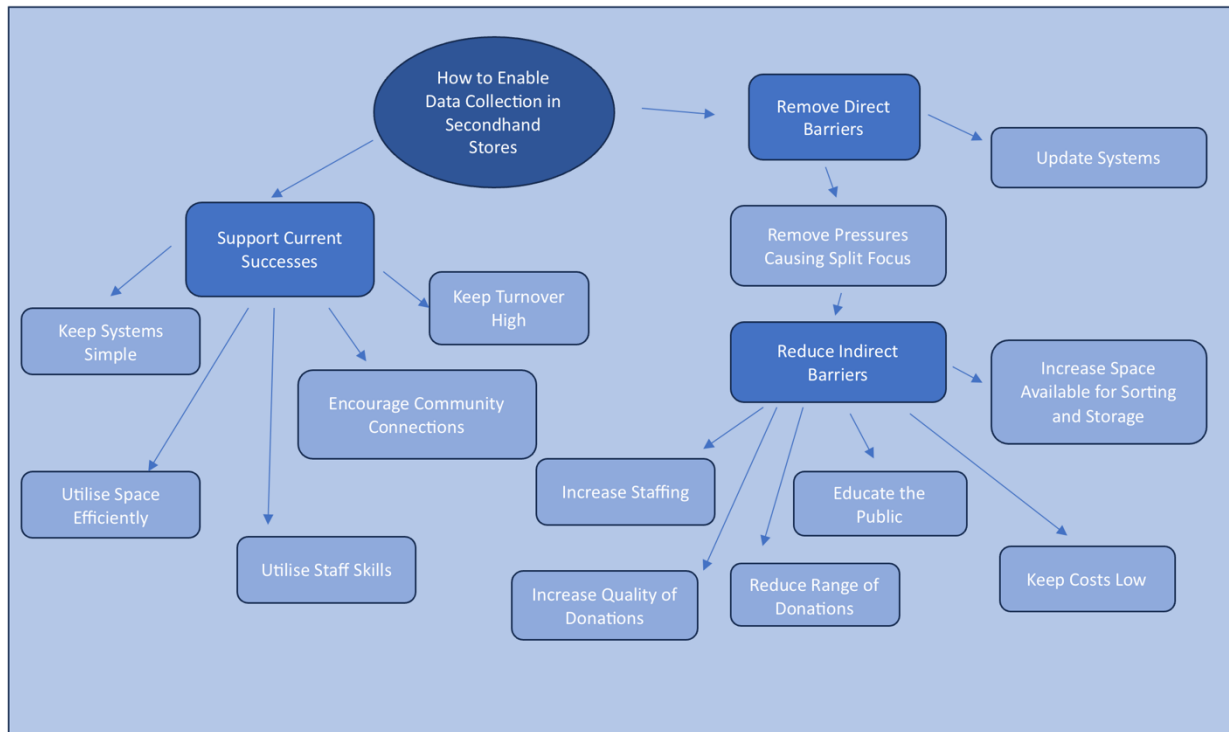

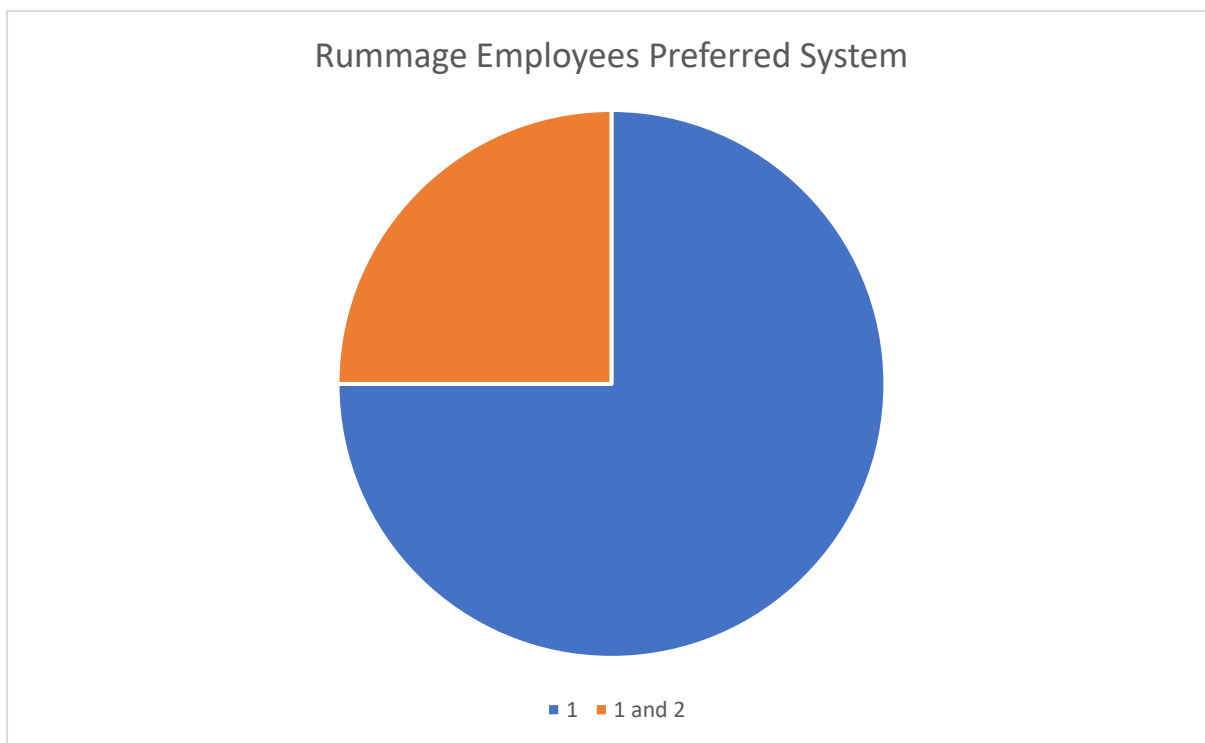Figure 1. Thematic map summarising interview findings.

Figure 2. Pie chart showing the preferred potential systems of Rummage employees.

Survey

In the survey, Rummage employees indicated system 1 was the only viable option. One team member suggested a combination of systems 1 and 2 where system 1 would be used for smaller items that could fit in baskets and a tally would be kept of large items, such as furniture, so that average weights could be used instead.

System 1	System 2	System 3
Furniture	Too time consuming	Requires multiple weighings
Busy days	Categories too varied	Customers would probably skip Rummage/recycle
Space in back room		Not all items accepted
Baskets often emptied one piece at a time		Customers are already frustrated with time delays at booth
Inaccurate		Added time pressure for operators
Would still need another way to measure categories		Maximum number of operators still results in queues

Table 2. The issues Rummage employees suspect would arise if each system were implemented.

There were only two suggestions for overcoming barriers to data collection in the survey: more staff and a new till system.

Pressure Alleviation

Table 2 shows how the indirect pressures could be alleviated by suggestions. These were highlighted in my interviews and survey. They are displayed vertically. The potential solutions for these issues were identified in my interviews and research are displayed horizontally. Those that were highlighted as particularly applicable to Rummage in the survey are in bold. If a solution is likely to alleviate a pressure, there is a tick in that cell.

Table 3. Structured decision-making table of pressures facing Dunedin secondhand stores and potential solutions.						
	Redonation Network	Upcycling Network	**More Staff**	**Electronic POS System**	Public Education	Increased Space
Low Storage	✔	✔	✔		✔	✔
Time			✔	✔	✔	
Item Range	✔	✔	✔	✔		✔
Item Quality		✔			✔	
Public Attitude		✔			✔	
Low Costs Requirement	✔	✔				

The suggestions and potential steps are based on ideas raised in interviews. A redonation network would involve a collaborative group between secondhand stores for inspiration and item redistribution. It could facilitate specialisation and increase consistency. It might involve partnerships with organisations such as Drop for Good to relieve the storage issue that op shops face over the summer holiday period.[1] An upcycling network would be similar but would reach out to community organisations so that when storage is full, or certain categories are hard to move, items can be repurposed for projects. This could also facilitate public interaction and community

---

[1] Drop For Good is an initiative run in Dunedin, New Zealand, by the Otago University Sustainability Office in partnership with the Otago University Student Association.

connections (Albinsson & Perera, 2012; Bridgens et al., 2018). Increased staffing was deemed necessary in all interviews before new initiatives could be introduced. An electronic POS system with predefined categories was highlighted as incredibly useful for running an efficient system with fast, thorough data collection. Public education will help to tackle the overall waste problem that burdens stores (Cooper, 2005; Maddox et al., 2011). Increasing storage and sorting space will help stores divert more waste.

Discussion

This study evaluated the ability of Dunedin secondhand stores to collect waste diversion data. This focussed perspective makes it the first of its kind, as it relates specifically to Dunedin and how it experiences a global issue. This refined focus and local perspective makes an otherwise overwhelming task more manageable and practical (Toniolo et al., 2023). The research question – whether it is possible to implement a data collection system at Rummage – was answered in the negative. The results show that the waste collection and diversion system is already overrun and adding the time-costly process of data collection would hinder its key function. The secondary aim – assessing the state of other Dunedin secondhand stores – was achieved on a small scale. The research showed that Rummage is one of many stores facing similar pressures. Stores that were able to overcome those pressures provided guidance on how Rummage, and other New Zealand stores, might be able to do the same. Barriers that directly and indirectly affect the data collection ability of secondhand stores were found and the suggestions to overcome them were drawn from the current approach and successes that were discussed. The survey determined the applicability of these issues, and their potential solutions, to Rummage. These findings informed a series of flexible recommendations displayed as a structured decision-making table. This is important because although data collection is not yet possible, it is important to outline the steps necessary to make it workable.

Over the course of the interviews it became clear that secondhand stores are fine-tuned systems which have been running for a long time and are great at what they set out to do; if the goal of the store is to fundraise then they do it well, if their goal is to divert waste then they do it well. Another thing that became startling clear was that although these systems have been working well over time, the sheer scale of the modern waste issue has increased at a rate that their systems are struggling to keep up with. The burden of our increased consumption and the cost of its disposal is falling on secondhand stores (Bainbridge & Timms, 2018; Checkpoint, 2019; Nonstop Solutions, 2022; Woolf, 2019). This is a controlling factor for the manifestation of many issues. For example, space was identified as a limiting factor in almost every interview. However, because of the copious number of items donated, increasing space is not the simple fix it seems. This is an example of an issue seen frequently in sustainable areas where the tap needs to be turned off before you can start bailing water from a flooding

tub. Secondhand stores are relied on for waste diversion (NACRO, 2020). We are consuming more than ever and the quality of the goods we buy is plummeting (Cooper, 2005). This is affecting the secondhand industry which runs completely on donations of these items. There are a series of pressures affecting the ability of op shops to function, and therefore drawing resources away from the ability to collect data. These pressures were linked to both the large number of items being thrown away and the poor quality of those items. Until the waste issue can be minimised, it is necessary to find support systems to reduce the pressures being felt by secondhand stores.

Figure 2 includes potential steps to alleviate the pressures op shops face. This is provided as a flexible recommendation. The two solutions in bold, hiring more staff and updating the till system, were identified as being particularly important for Rummage. This would allow for a faster checkout process and the collection of more details about each sale, depending on the selected system. Data collection is important because it could facilitate future change by highlighting target areas and creating powerful statistics for public education (Bonvoisin, 2009; Mahajan et al., 2023). This would be useful to support the creation of new policy which can be used in many ways to achieve economic, environmental, and societal ambitions. This includes incentivising designs for circularity (EMF, 2023). Currently, commonly used greenhouse gas emission models do not account for carbon emission reductions through waste diversion (Maalouf & El-Fadel, 2018). If we enhance our understanding of current systems, we can improve predictions and better identify the steps needed to become circular. Weight data is particularly covetable because it can be used to calculate emission reductions (Boyle, 2023; DCC, 2023). This would be incredibly useful in enabling and encouraging waste diversion. However, there are other steps that must be taken first because waste diversion is the key priority. At this stage, introducing a data collection system would hinder the ability of Rummage to divert waste.

Limitations and Suggested Future Research

The research process behind this article had many turns. The scale of the waste issue that secondhand shops face became very prevalent, and the level of specificity required to answer my research question also became clear the more I researched. I initially planned on finding weight averages to determine the best categories for a weighing system, but I had to redirect when I observed how busy Rummage is. I struggled to find information online about waste diversion quantification systems so rather than focussing on the literature I opted to interview local secondhand stores. This came with some difficulties because the employees of these stores are busy so it was difficult to find people who could spare an hour to be interviewed. However, those that generously volunteered their time were incredibly insightful. I quickly realised that the gap in the literature on waste diversion quantification methods existed because

they only exist if they are a natural part of the process for secondhand stores. They are all run in a unique way because they have been going for so long and because their employees and space available to them are so influential on their process and so diverse. This was an interesting outcome and allowed me to take a much more realistic approach to my research question. With more time, I would have loved to undertake more interviews as each participant had a wealth of knowledge and there were very interesting differences between stores. A follow-up article that undertook more interviews, perhaps nationwide, would likely create insightful results which could be as powerful as waste quantification for communicating the impact of secondhand stores. Other studies that could facilitate data collection include: finding averages for commonly donated items that could be used alongside a specialised till system; looking at the average weights of donated items and seeing if natural categories arise that could be integrated with a till system; and, analysing public knowledge and attitude regarding the creation and processing of waste to determine the best methods for education.

Conclusion

As we attempt to move to a circular economy, we must gather data to inform our efforts. It is well known that secondhand stores are incredibly important for waste diversion (NACRO, 2020). On a local scale, it is important to collect data that quantifies their impact (Toniolo et al., 2023). However, we are creating more waste than ever and creating pressures for secondhand stores. This article highlights the need to alleviate those pressures so that we can support waste diversion and build foundations for data collection systems.

Acknowledgements

References

Albinsson, P. A., & Perera, B. Y. (2012). Alternative marketplaces in the 21st century: Building community through sharing events. *Journal of Consumer Behaviour*, *11*, 303-315. https://onlinelibrary.wiley.com/doi/epdf/10.1002/cb.1389?src=getftr

Bainbridge, A. & Timms, P. (2018, October 4th). *Charities spending millions cleaning up fast fashion graveyard*. ABC News. https://www.abc.net.au/news/2018-10-04/charities-spending-millions-cleaning-up-fast-fashion-graveyard/10328758

Bonvoisin, N. (2009). *Decision Making for Sustainable Development: How assessment can help*. United Nations Economic Commission for Europe. https://unece.org/fileadmin/DAM/oes/nutshell/2009/6_SusDev.EIA.pdf

Boyle, R. (2023, December 12th). *How to Calculate Carbon Emissions from Waste*. Emission Index. https://www.emission-index.com/carbon-footprint/how-to-calculate-carbon-emissions-from-waste

Bridgens, B., Powell, M., Farmer, G., Walsh, C., Reed, E., Royapoor, M., Gosling, P., Hall, J., & Heidrich, O. (2018). Creative upcycling: Reconnecting people, materials and place through making. Journal of Cleaner Production, *189*, 145-154. http://doi.org/10.1016/j.jclepro.2018.03.317

Charity Retail Association (CRA). (Accessed 2024, January 28th). *10 environmental benefits of charity shops*. https://www.charityretail.org.uk/charity-shops-the-environment/

Checkpoint. (2019, March 1st). *Charities spending thousands to dump unsellable donations*. RNZ. https://www.rnz.co.nz/national/programmes/checkpoint/audio/2018684754/charities-spending-thousands-to-dump-unsellable-donations

Cooper, T. (2005). Slower consumption: reflections on product life spans and the "throwaway society". *Journal of Industrial Ecology*, *9*(1-2), 51-67. https://onlinelibrary.wiley.com/doi/epdf/10.1162/1088198054084671?src=getftr

Dunedin City Council (DCC). (2024, February 7th). *Rummage and resource recovery area*. Dunedin. https://www.dunedin.govt.nz/services/rubbish-and-recycling/rummage

Dunedin City Council (DCC). (2023). *Zero Carbon Plan 2030*. Dunedin. https://www.dunedin.govt.nz/__data/assets/pdf_file/0011/992873/zero-carbon-plan-2030.pdf

Dunedin City Council (DCC). (2021, January 22nd). *Waste Assessment for the Dunedin City District 2018*. Dunedin. https://www.dunedin.govt.nz/council/policies,-plans-and-strategies/plans/waste-minimisation-and-management-plan-2020/waste-assessment-for-the-dunedin-city-district-2018

Ellen MacArthur Foundation (EMF). (Accessed 2024, February 22nd). *Circular economy introduction*. https://www.ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview#:~:text=It%20is%20based%20on%20three,%2C%20people%2C%20and%20the%20environment

Ellen MacArthur Foundation (EMF). (Accessed 2023, December 5th). *Government and Policy*. https://www.ellenmacarthurfoundation.org/resources/government-and-policy/overview

Goodwill. (Accessed 2024, January 28th). *What is Goodwill's diversion rate from the landfills?*. https://www.goodwill.ab.ca/faq/what-is-goodwills-diversion-rate-from-the-landfills/

Maalouf, A. & El-Fadel, M. (2018). Carbon footprint of integrated waste management systems with implications of food waste diversion into the wastewater stream. *Resources, Conservation and Recycling*, 133, 263-277. http://doi.org/10.1016/j.resconrec.2018.02.021

Maddox, P., Doran, C., Williams, I. D., & Kus, M. (2011). The role of intergenerational influence in waste education programmes: The THAW project. *Waste Management*, *31*(12), 2590-2600. http://doi.org/10.1016/j.wasman.2011.07.023

Maguire, M. & Delahunt, B. (2017). Doing a Thematic Analysis: A Practical, Step-by-Step Guide for Learning and Teaching Scholars. *Aishe-J*, *8*(3), 3352-33514. http://ojs.aishe.org/index.php/aishe-j/article/view/335

Mahajan, S. L., Tanner, L., Ahmadia, G., Becker, H., DeMello, N., Fidler, R., Harborne, A. R., Jagadish, A., Mills, M., Cairney, P., Cheng, S., Farsi's, B., Masuda, Y. J., Pabari, M., Tengo, M., Wyborn, C., & Glew, L. (2023). Accelerating evidence-informed decision-making in conservation implementing agencies through effective monitoring, evaluation, and learning. *Biological Conservation*, *286*, 110304. https://doi.org/10.1016/j.biocon.2023.110304

Mikhaylov, A., Moiseev, N., Aleshim, K., & Burkhardt, T. (2020). Global Climate Change and Greenhouse Effect. *Entrepreneurship and Sustainability Issues*, *7*(4), 2897-2913. https://jssidoi.org/jesi/article/560

MRA Consulting Group. (2021, March 3rd). Measuring the Impact of the Charitable Reuse and Recycling Sector: A comparative study using clothing donated to charitable enterprises. Charitable Recycling Australia. https://www.charitablerecycling.org.au/wp-content/uploads/2021/06/Charitable-Recycling-Australia-Recycled-Clothing-Impact-Assessment-240521.pdf

Nonstop Solutions. (2022, October 29th). *Have op shops become our 'guilt free landfills'?*. https://www.nonstopsolutions.co.nz/blog/have-op-shops-become-our-new-guilt-free-landfills

Salvation Army. (2020, October 19th). *Celebrate Waste Reduction Week by Shifting to Thrifting*. https://salvationarmy.ca/blog/celebrate-waste-reduction-week-by-shifting-to-thrifting/

The National Association of Charitable Recycling Organisations Inc (NACRO). (2020). *The Charitable Reuse and Recycling Sector's Commitment to Circularity: The Inquiry into Australia's Waste Management and Recycling Industries*. https://www.charitablerecycling.org.au/wp-content/uploads/2020/02/NACRO-Submission-to-Federal-Inquiry-2020.pdf

Toniolo, S., Pieretto, C., & Camana, D. (2023). Improving sustainability in communities: Linking the local scale to the concept of sustainable development. *Environmental Impact Assessment Review*, *101*, 107126. http://doi.org/10.1016/j.eiar.2023.107126

Woolf, A-L. (2019, July 12th). *New Zealand landfills are becoming full of unloved clothes as 'fast fashion' grows*. Stuff. https://www.stuff.co.nz/environment/114298459/new-zealand-landfills-are-becoming-full-of-unloved-clothes-as-fast-fashion-grows