Exploring consumer-driven food value chain and market opportunities in Pacific SIDS countries

a thesis by
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Abstract

Consumers and food systems are changing globally, presenting market opportunities for smallholder farmers. However, research into changes in agrifood systems in small island developing states (SIDS), such as Fiji, is rare. This thesis attempts to demonstrate the usefulness of using a value chain approach to better understand consumers and how their changing preferences impact the value chain back to smallholder farmers. Two significant consumer studies were performed; one focused on changes in the domestic Fijian food industry, and the other on a potential niche export market opportunity.

This first study involved a survey of 1000 urban Fijian households to better understand their food consumption and shopping patterns and how that has changed in recent years. The study found that modern supermarkets are now the dominant food retail outlet, although traditional markets are still the preferred retail outlet for fresh fruit and vegetables for the majority of urban Fijian consumers. Rising urban incomes and changing consumer preferences appear to be driving this transformation. A Latent Class (LC) cluster analysis of these urban Fijian households revealed five distinct household clusters based on food shopping behaviour. The cluster with the highest income level spent significantly lower amounts on fresh fruit and vegetables (FFV) at the main traditional market, preferring to buy their FFV from modern supermarket outlets. Considering the vast majority of local smallholder farmers rely on traditional market channels to sell their produce, the growth and dominance of Fijian supermarkets are of some concern with potential implications for the livelihood of rural smallholder farmers and the food security of the people of Fiji. Understanding this transformation is critical to Fiji's social structure and has implications for other Pacific SIDS facing similar challenges. Two key strategies to address this threat were discussed. The first is the opportunity for traditional markets to improve their facilities, quality and food safety to meet changing consumer needs and compete with more modern supermarkets. The second strategy is to find ways to better link smallholder farmers to supermarkets using specialist wholesale traders or horizontal farmer alliances with the help of government and donor stakeholders.

The second study examined the growing ethical consumer market and the potential pro-poor niche export market opportunities for a range of Pacific SIDS countries. A LC cluster analysis of ethically conscious Australian Oxfam consumers (n=637) has identified four distinct consumer segments. Two of these clusters are considered good target markets for value-added Pacific food products, with the 'origin' and 'story behind the product' found to be particularly important to these consumer groups. In addition to the direct insights for Oxfam and Pacific food companies looking to target new niche export opportunities, this study also contributes to the growing literature on ethical consumerism in the context of social, regional and pro-poor aspects in an emerging economy.

The final chapter combines the two consumer studies to highlight the importance of using a market-driven value chain approach to identify opportunities. A key opportunity for Fiji is for them to combine their competitive advantages of agriculture and tourism into value-added products for consumers willing to pay for them, whether that is via export or tourism within Fiji. This strategy can improve farmers' livelihoods and have spill over benefits to the wider economy, but it will require the collaboration of government, donors and the private sector to make it happen.

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Abbreviations

List of Abbreviations

- ACIAR Australian Centre for International Agricultural Research
- APDJ Asia-Pacific Development Journal
- BIC Bayesian Information Criterion
- BVR's Bivariate Residuals
- CSR Corporate Social Responsibility
- EA Enumeration Area (codes)
- ERP Enterprise Resource Planning
- FBOS Fiji Bureau of Statistics
- FDI Foreign Direct Investment
- FJD Fijian Dollars
- FFV Fresh Fruit and Vegetables
- FJD Fijian Dollar
- GCC Global Chain Commodity
- GDP Gross Domestic Product
- GVC Global Value Chains
- HACCP Hazard Analysis and Critical Control Points
- JADEE Journal of Agribusiness in Developing and Emerging Economies
- KMO Kaiser-Meyer-Olkin
- LC Latent Class (cluster analysis)
- MAP Maximum-Posterior (method)

- ML Maximum-likelihood (method)
- NGO Non-Government Organisation
- PARDI Pacific Agribusiness Research for Development Initiative
- PCA Principal Component Analysis
- PMCA Participatory Market Chain Approach
- PNG Papua New Guinea
- PVCA Participatory Value Chain Analysis
- REER Real Effective Exchange Rate
- SCM Supply Chain Management
- SIDS Small Island Developing States
- TQM Total Quality Management
- UK United Kingdom
- USA United States of America
- USP University of the South Pacific
- VAT Value Added Tax
- VCA Value Chain Analysis

Declaration

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint-award of this degree.

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To all of you, I say a heartfelt thank you.

Chapter 1: Introduction

1.1 Background

1.1.1 Changing global food value chains

Consumers are changing, food markets are evolving, global trade is increasing, and all of these components directly and significantly impact food value chains back to producers and farmers. Henry Ford famously said, "It is not the employer who pays the wages. Employers only handle the money. It is the customer who pays the wages"(Kou, 2018). This clear philosophy of focusing on the customer is the driver of value chain research (Ariyawardana and Collins, 2013; Mowat and Collins, 2000; Slater and Narver, 1992; Zokaei and Simons, 2006) and the basis of the approach used in this thesis.

This study focuses on the unique challenges and opportunities in Small Island Developing States (SIDS), specifically the Pacific Island country of Fiji, which has not experienced the full benefit and opportunities provided by changing consumer preferences and evolving food systems (Abbott and Pollard, 2004; Hein, 2004). Similarly, consumer research on target markets for SIDS has been limited (Croes, 2006), which is why this thesis centres on understanding consumers through a value chain approach to provide insights to Pacific stakeholders, including specific opportunities for Fijian smallholder farmers. Using market insights to benefit smallholder farmers can be a complicated process (Bawa and Ghosh, 1999; Boselie *et al.*, 2003; Humphrey, 2007; Reardon *et al.*, 2009). It isn't always successful, but if a collaborative approach along the value chain is used, farmers are much more likely to benefit from upgrading their practices (Giuliani *et al.*, 2005; Reardon *et al.*, 2009).

The economic development literature began drawing attention to how consumers within developing countries were fundamentally reshaping domestic food systems by the mid-2000s (Reardon *et al.*, 2003; Von Braun, 2007). Expanding literature highlighted how demand-side influences, including income, urbanisation and demographics, resulted in increased consumption of non-traditional high-value foods, including fruits & vegetables,

animal products, oils and prepared food (D'Haese and Van Huylenbroeck, 2005; Pingali, 2006; Popkin, 1998; Popkin *et al.*, 2012; Popkin and Reardon, 2018; Reardon *et al.*, 2000; Reardon *et al.*, 2009; Reardon *et al.*, 2003; Regmi and Dyck, 2001). Across China, India, South America and Southeast Asia, increasing consumer demand included new higher-income households seeking greater and more consistent quality, different varieties and safer food products (Deshingkar *et al.*, 2003; Farina and Reardon, 2000; Gale and Huang, 2007; Wertheim-Heck and Spaargaren, 2016). These new consumer drivers incentivise firms right along the value chain to innovate and 'upgrade' their activities, value chain partners and products. 'Upgrading' value chains can take the form of process or product upgrading, functional upgrading such as a grading step, or chain or inter-sectorial upgrading, where firms might change market channels or target higher-value markets (Matheis and Herzig, 2019). However, in practice, these opportunities do not suit all smallholder farmers and can exclude some of them as consumers, food markets and value chains evolve (Abdul-Rahaman and Abdulai, 2020; Amanor, 2019; Matheis and Herzig, 2019; Neven *et al.*, 2009; Reardon *et al.*, 2009).

These modernising value chains focussed the funding and research attention of the international development community, non-government organisations (NGOs), and national and local governments toward designing projects to mitigate against the risks and take advantage of new opportunities (Pelupessy and van Kempen, 2005; Tschirley *et al.*, 2004). At the core of these 'value chain' projects and initiatives is 'pro-poor growth' (Kakwani and Pernia, 2000), also known as 'inclusive growth' (Ranieri and Almeida Ramos, 2013), where the goal is for economic growth and poverty alleviation to operate together (Abbott and Pollard, 2004). Enhancing smallholder farmer incomes and local food security are key aims for justifying projects and evaluating the impact of research and development focused on evolving value chains in developing countries, such as Fiji (Altenburg, 2006; Godfray *et al.*, 2010; Graef *et al.*, 2014; Reardon *et al.*, 2009; Trienekens, 2011).

The early conceptual and theoretical literature on the role of value chains in international development identified how the rapidly transforming value chains presented smallholder farm households with opportunities to participate in modern and potentially more profitable value chains (Reardon *et al.*, 2009). Participating in modern chains provides opportunities to secure the benefits of high-growth economies that have largely eluded smallholder farmers in the past. Smallholder farmers and small rural-based agribusinesses

capable of participating in these new value chains have a chance to diversify, improve their products and services, and build collaborative links with consumer-driven markets. Farmers may upgrade from producing bulk commodities judged on basic quality attributes to increased production and processing practices, tailoring products to meet new customer and consumer requirements. These upgrades could include selecting preferred varieties, grading and value-adding produce, improved record-keeping, traceability along the value chain, new risk and quality management structure and incorporating environmental and social attributes (Barrett *et al.*, 2020; Dolan and Humphrey, 2004; Jaffee *et al.*, 2011; Jaffee *et al.*, 2018; Trienekens, 2011).

The importance of environmental and social attributes of products is part of a growing global consumer movement known as ethical consumerism, where consumers worldwide are increasingly putting their money where their values are for attributes and certification schemes such as Fairtrade, where greater returns go back to producers in emerging economies. The implications of this trend will be explored within this thesis from the perspective of understanding the market opportunities that ethically conscious consumers provide producers from emerging economies such as those found in Pacific SIDS.

As new markets and value chains develop, reorganise and grow, smallholder farmers encounter not only greater choices but also more difficult decisions on crop selection, what products they create and who to sell them to (Abdul-Rahaman and Abdulai, 2020; Neven *et al.*, 2009; Reardon *et al.*, 2009). Smallholder farmers have historically sold their products in more traditional markets, such as the town municipal market or roadside stalls, as raw and undifferentiated commodity products (Reardon *et al.*, 1999). The transformation of global food systems has introduced modern retailers and intermediates (Bignebat *et al.*, 2009; Hernández *et al.*, 2007), who can add another option for local farmers if they can meet the requirements and volumes required (Reardon *et al.*, 2003). This dynamic shift of market share for fresh produce between traditional and modern retail outlets has evolved and is evolving in various ways and speeds for different countries (Reardon *et al.*, 2003; Reardon *et al.*, 2012). The higher standards and guaranteed supply required by supermarkets can be challenging for smallholders (Boselie

et al., 2003; Humphrey, 2007; Reardon *et al.*, 2009), with examples of smallholder farmers being excluded from these more modern market channels (Alvarado and Charmel, 2002; Heijden and Vink, 2013). Conversely, if smallholder farmers are able to capitalise on these changes, rural economies can benefit from higher real wages and more jobs per hectare (Neven *et al.*, 2009), leading to less outward migration, which is an essential consideration for Pacific SIDS like Fiji (Sofer, 1993).

As discussed in the previous paragraphs, upgrading opportunities have the potential to greatly benefit smallholder farmers, but the upgrading process is not always successful, making the assessment and implementation of these value chain changes critical (Pelupessy and van Kempen, 2005). Any assessment needs to fully understand the specific circumstances in each country and sector under review (Amanor, 2019; Giuliani *et al.*, 2005; Ros-Tonen *et al.*, 2019), including consumer drivers, target markets, critical private-sector partners along the value chain (Kelly *et al.*, 2015; Matheis and Herzig, 2019), and the ability of smallholder farmers to participate (Stoian *et al.*, 2012).

The key components involved in an industry value chain analysis (VCA) are broadly described by Trienekens (2011) as 1) identifying the constraints, 2) categorising the value chain networks and governance needed to add value, and 3) the formation of an upgrading plan right along the value chain, including understanding markets and consumer demand. Research suggests that, ideally, donors involved in projects to help farmers upgrade to higher-value chains would engage a collaborative approach between donors, governments and the private sector to implement upgrading strategies (Neven *et al.*, 2006; Ros-Tonen *et al.*, 2019; Tschirley *et al.*, 2004; Weatherspoon and Reardon, 2003).

1.1.2 Small Island Developing States (SIDS)

Understanding how value chain research is implemented more broadly provides core insights for applying theoretical and empirical methods to identify development opportunities in a country like Fiji. Consumer-driven value chain research and development projects expanded rapidly across Asia (Cadilhon *et al.*, 2006; Reardon *et al.*, 2012), Latin America (Alvarado and Charmel, 2002; Arda, 2006; Reardon and Berdegué,

2002) and Africa (D'Haese and Van Huylenbroeck, 2005; Reardon *et al.*, 2003). Yet, initially, value chain approaches were either overlooked or ignored in the Small Island Developing States (SIDS) (Croes, 2006). The body of research work presented in this thesis provides strong empirical and practical evidence that the conceptual foundations embodied in value chain methods, particularly understanding market needs, are especially suited to identifying and addressing the many special features and challenges facing SIDS like Fiji.

Economists have agreed that SIDS countries need assistance with the challenges of trade globalisation, but the best way to offer this assistance has been less clear (Hein, 2004; Josling, 1998). The broad arguments of the challenges SIDS face in the economic literature focus on: (i) vulnerability to external shocks and natural disasters, principally cyclones (Bass and Dalal-Clayton, 1995; Connell, 2010; Douglas, 2006; Hein, 2004; Josling, 1998) (ii) smaller populations, constraining or preventing economies of scale (Ahmed and Mishra, 2020; Bass and Dalal-Clayton, 1995; Feeny and Rogers, 2008; Josling, 1998; McGillivray *et al.*, 2008); and (iii) poorly developed transport and communication infrastructure and large distances to export markets, increasing marketing costs (Abbott and Pollard, 2004; Connell, 2010; Feeny and Rogers, 2008; Hein, 2004; Josling, 1998; McGillivray *et al.*, 2008).

The literature review presented in this thesis illustrates the importance of understanding consumers and markets using a value chain approach. In a SIDS context, this can address how the distinctive economic characteristics common to SIDS influence specific food and agricultural value chains. Using the SIDS characteristics above, three examples help to highlight the advantages and effectiveness of understanding consumers and the opportunities along these value chains. The first is how these insights address the vulnerability of SIDS to external shocks and natural hazards (Ahmed and Mishra, 2020; Bass and Dalal-Clayton, 1995; Douglas, 2006; Feeny, 2010; Josling, 1998; McGillivray *et al.*, 2008; Pelling and Uitto, 2001)

The vulnerability problem relates to geography and marine ecosystems that increase the susceptibility of SIDS to natural hazards and weather events (Douglas, 2006; McGillivray *et al.*, 2008), especially cyclones and the effects of climate change (Bass and Dalal-Clayton, 1995; Pelling and Uitto, 2001). With most of the population residing near the shoreline, the extensive island coastline makes SIDS more vulnerable to flooding and rising sea levels (Ahmed and Mishra, 2020). Other coastal activities, such as fishing and tourism, are similarly susceptible to volatile weather and climate change-related events (Ahmed and Mishra, 2020).

In comparison to supply chain approaches, value chain approaches do focus on the customer and market end of the chain, but they also need to consider the context of the whole food system. In the Pacific, this includes a practical understanding of ways to address natural hazards by identifying and building on the existing experiences of SIDS communities. Their community-based traditional knowledge and resilience are recognised as a strength in facing these challenges (Bass and Dalal-Clayton, 1995; Beckford, 2018). Shocks can also take different forms and be more economic in nature (Bass and Dalal-Clayton, 1995; Josling, 1998). These shocks need not be local to have a massive impact, as shown by the effects of the COVID-19 pandemic on international tourist travel (Singh *et al.*, 2021). Although these vulnerabilities are collectively hard to predict, village and community-level social capital and networks can incorporate traditional approaches to minimise the negative consequences of disasters and shocks. Once consumer and market opportunities are better understood, domestic and global chain retailers can bring in new thinking, ideas and innovative solutions including, building more effective logistical systems and risk-sharing arrangements (Fleming *et al.*, 2021; Sagar *et al.*, 2020; Walters and Lancaster, 2000).

A second SIDS example is how they are disadvantaged by their size (Chen *et al.*, 2014; Josling, 1998) and remoteness (Chen *et al.*, 2014; Feeny *et al.*, 2015; McGillivray *et al.*, 2008). This leads to a lack of scale and an inability to diversify (Ahmed and Mishra, 2020; Feeny, 2010; Josling, 1998; McGillivray *et al.*, 2008). While larger economies have a wide variety of sectors with firms of various sizes, the relatively smaller SIDS economies are dominated by small-sized businesses and only a limited number of industries for which they are suited (Bass and Dalal-Clayton, 1995; Josling, 1998). Studies

in this geographic context need to extend to understanding tourist and domestic Fijian consumers.

Remoteness also restricts the flow of goods in and out of the country, limiting the ability of SIDS to take advantage of international trade routes, which are the lifeblood of globalisation (Grynberg and Razzaque, 2004). Consequently, SIDS must focus on industries with some existing activity and a competitive advantage over other countries (Gani and Scrimgeour, 2019). Once again, a value chain approach can be instrumental in comparing industries as well as gaining a better understanding of the consumers in those markets, so opportunities can be tailored to the end consumer and profitability along the whole chain, as opposed to just trying to minimise costs. If niche markets can be identified with consumers willing to pay more for products with special attributes aligned with SIDS capabilities, then reducing costs through economies of scale is no longer as important (Chen *et al.*, 2014; Josling, 1998). One of these niche opportunities is explored in greater detail in Chapter 5, where insights are gained by surveying ethically conscious Australian consumers to understand opportunities for Fijian producers.

Important to the illustrations above, the third example is how understanding consumers through a value chain approach can address the high transport costs in SIDS economies (Hein, 2004; Josling, 1998; McGillivray *et al.*, 2008). Transport becomes expensive because of the remoteness of SIDS, the absence of good road, rail and port infrastructure, the challenges of inter-island travel, and the low tax base to pay for infrastructure upgrades and maintenance when hazards like cyclones are continually causing damage (Abbott and Pollard, 2004; Connell and Lea, 2002; Josling, 1998; McGillivray *et al.*, 2008).

Instead of examining these issues in isolation, understanding consumers and specific target market opportunities can help identify the parts of the chain most impacted by these additional costs, allowing private sector stakeholders to provide collective chain-wide solutions. These could include emerging and innovative solutions such as digital information systems, chain-wide coordination schemes and new storage, preservation or distribution technology (Fleming *et al.*, 2021; Hill and Scudder, 2002; Walters and

Rainbird, 2007). From the processors' perspective, the incentive is to focus on value-added products with greater value by weight. This has the potential to increase shelf life and remove the need for refrigeration, which is critical in keeping transport costs lower and enabling enough time to meet the quality and quantity requirements for export destinations.

1.1.3 Fiji

This thesis focuses on understanding consumers and markets to better assess value chain opportunities for Fiji, which fits all the SIDS socioeconomic characteristics outlined above. Fiji has a population of 884,887 (2017 Census) and is comprised of more than 300 islands that regularly suffer from damage during the cyclone season. Fiji has several surrounding Pacific SIDS in similar circumstances but is considered to be more economically progressive than some of its developing neighbours, making it an ideal case study example of what market opportunities are possible for the rest of the region (Barbour and McGregor, 1998; Hinton *et al.*, 2020).

Another reason why Fiji is an excellent example of the broader opportunities for Pacific SIDS is its reliance on agriculture and tourism (Chen *et al.*, 2014; McGregor, 2010; Narayan and Smyth, 2005). Agriculture is the largest sector within most Pacific Island countries (Chen et al., 2014), and in Fiji, agriculture contributes over 13% of the Gross Domestic Product (GDP) (*National Agricultural Census Report*, 2009) and directly supports 27% of Fiji's population (Fiji Country Commercial Guide, 2023). An estimated 99% of Fijian households surveyed in rural and peri-urban areas consider agriculture their main economic activity (*2020 Fiji Agriculture Census*, 2021). There is only a small number of corporate farming enterprises in Fiji, focused mainly on poultry, beef and some vegetables, leaving most of Fiji's agricultural production to smallholder farmers (Finizio, 2019). These farmers produce fresh produce for their own families and sell the surplus through traditional market channels (Finizio, 2019). It is a risk for a country to be so reliant on one sector, but it is also an asset. Island communities involved in agriculture are cohesive, resilient and self-sufficient (Daye, 2009), making them a logical basis for exploring further growth and development opportunities.

Tourism is another key industry in Fiji. Tourism's share of Fiji's GDP could be as high as 40% when direct and indirect contributions are taken into account, making it critical to the Fijian economy (Kumar et al., 2018; Singh et al., 2021). Yearly tourist arrival figures, including inbound flights and cruise ships, peaked at 894,389 in the 2019 calendar year, with an estimated direct injection of $2,065.4 million Fijian dollars (FJD) into the local economy (*Tourism earnings*, 2021).

Building on agriculture and tourism and exploring synergies and opportunities between them is thus a logical strategy for many Pacific SIDS (Chen *et al.*, 2014; Hein, 2004). Josling (1998) identifies 'cultural' aspects of the country or region as a further comparative advantage not easily replicated elsewhere. The physical appeal, culture and 'story' of Fiji have already been hugely beneficial to the services industry in Fiji, thanks to tourism. A number of these tourists want an 'authentic' agritourism experience (Berno, 2011), whether a service-based tour, festival or educational event, or more product-based sales, either directly from the farm or through an intermediate (Shah *et al.*, 2020).

Food already makes up a significant amount of tourist expenditure in Fiji (*Fiji tourism development plan 2007-2016*, 2007); however, a large part of this supply currently comes from imported food (Berno, 2011; Salvioni, 2007; Young and Vinning, 2006). Fiji's challenge is to find more ways for local agriculture, particularly smallholder farmers, to benefit from these tourist opportunities (Chen *et al.*, 2014; McElroy, 2006)), particularly when the tourism sector is currently reliant on imported produce to meet demand (Fiji Country Commercial Guide, 2023). If farmers can form value chain partnerships to link into these markets by thinking about what tourists want and need, they will be much better placed to explore further upgrading market opportunities like export (Barrett *et al.*, 2020; Chen *et al.*, 2014). Some early examples of value added products being exported from Fiji include chocolate, kava, coconut and ginger (Fiji Country Commercial Guide, 2023).

The impacts of the COVID-19 virus have shown that 'in country' tourist opportunities can grind to a halt relatively quickly, with visitor arrivals into Fiji averaging less than 1000 per month in the first half of 2021 (Visitor Arrival Statistics, 2021). While there is an

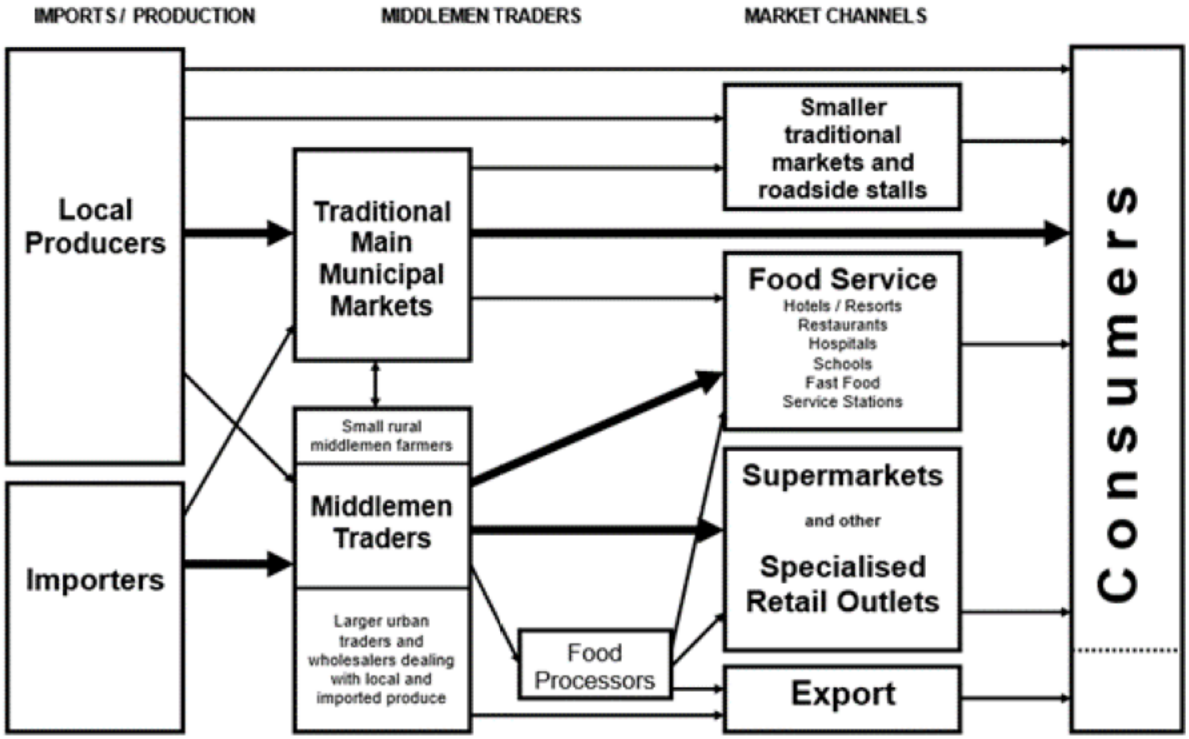
expectation that international travel will return to previous levels, the situation demonstrates the importance of including some economic diversity while still focusing on the country's comparative advantages. Josling (1998) suggested that SIDS, like Fiji, can have an advantage when focusing on niche export markets, and Chand et al. (2020) further proposed that Fiji's issues relating to COVID-19 could be mitigated through increased exports. Fiji conducts international trade with 23 countries, with Australia being the largest, taking 21% of Fijian exports (Gani and Scrimgeour, 2019). Australia has always had a strong affinity for Fiji, with Australians making up 41% of tourist arrivals in 2019 (Provisional Tourist Arrivals, 2019), making it logical to explore Australian consumer interest in Fijian agricultural products suitable for export. Further into this thesis, a growing global export opportunity is explored by studying a group of ethically conscious Australian consumers to understand the consumer drivers and the opportunity this may provide exporters from Fiji and the wider Pacific Islands.

The development and design of this thesis proposal shaped a key set of research activities as part of a broader research program, the 'Pacific Agribusiness Research for Development Initiative' (PARDI), funded by the Australian government's Centre for International Agricultural Research (ACIAR). The Fiji research proposal exemplifies the value chain and market-orientated design approaches used across all the associated PARDI project components. A major objective within the PARDI projects involved selecting high-potential markets and existing high-value products and value chains to improve industry competitiveness and provide a platform for national economic growth with rural development. The agricultural industry in Fiji was one of the first projects targeted by PARDI to gain a better understanding of the whole Fijian value chain and the opportunities for smallholders to upgrade into new markets.

This thesis analyses data from a large urban household consumer survey to understand the domestic market drivers, but there were also other broader PARDI project engagement activities with other key stakeholders along the Fijian food value chain. These included informal interviews with 1) senior management of Fijian supermarkets 2) leaders of the Suva municipal market 3) a selection of managers and chefs from the larger hotels and

resorts 4) a number of small food processors, and 5) several traders of local and imported fresh produce. While the data from these interviews were not used for any formal analysis of the value chain, the information did provide valuable context of the existing industry structure (Figure 1 below) and was used to shape this research study and the questions within the urban household consumer survey.

Figure 1. Fiji Food Industry Value Chain Map



While the Fijian Bureau of Statistics is known for regular household income and expenditure surveys, studies on consumer behaviour, changing food systems and potential implications for smallholder farmers are rare. One of the scarce studies on this research topic was undertaken by Chandra (1979), where consumers and retailers were interviewed about food shopping patterns in Fiji. The study's hypothesis predicted that changing consumer preferences and retail outlet formats would have significant and potentially detrimental implications for smaller farmers reliant on more traditional food retail outlets to sell their produce. The research presented in this thesis builds on Chandra's (1979) findings with a more comprehensive and recent data set on consumer

behaviour. Such insights are critical for countries like Fiji trying to use agriculture and tourism as part of their country's pro-poor growth strategy for economic development. The insights from Fiji are expected to have broader implications for other Pacific island countries and SIDS facing similar challenges.

The development and research community also welcome a better understanding of how value chains can upgrade, what incentives can contribute to their success, and why some products and countries succeed while many others fail (Amanor, 2019; Matheis and Herzig, 2019). More importantly, a comprehensive understanding is missing about the contribution made by donor projects, national and local government policies, private sector influence, and the implications of all of these on smallholder farmers. By gaining a better understanding of consumers and market opportunities along the Fijian food value chain, this thesis aims to contribute to the broader value chain upgrading research gap.

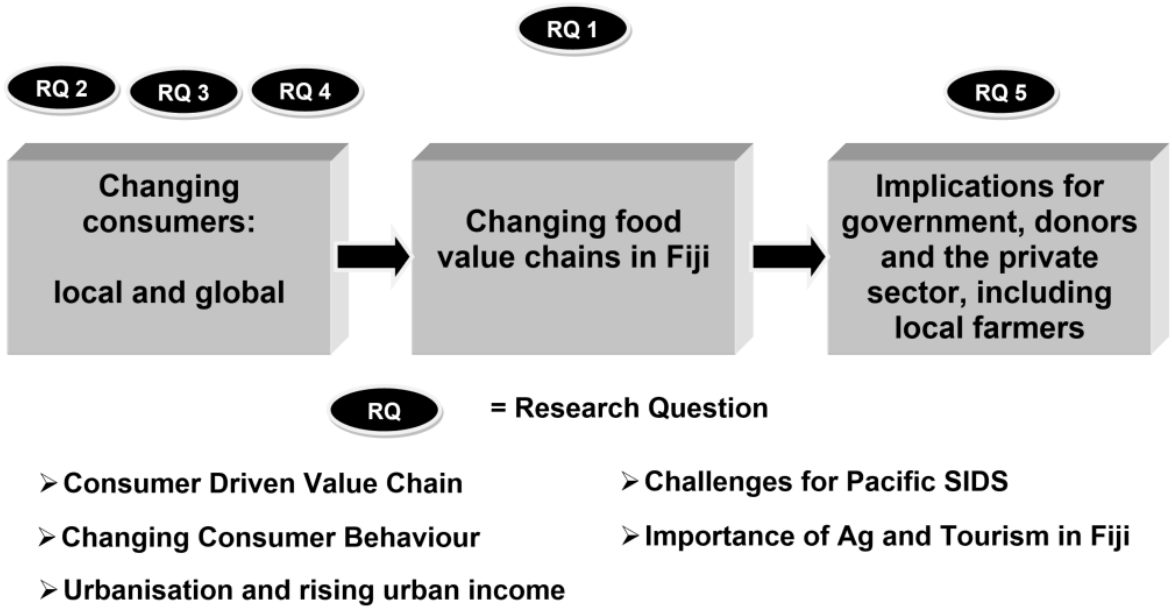
1.2 Research Questions and Conceptual Framework

The research questions this thesis investigates include the following:

1. Does understanding consumers and markets through a value chain approach provide a suitable framework for assessing opportunities and constraints for all stakeholders in a Pacific SIDS context?
2. How have urban Fijian food shopping behaviour and food consumption patterns changed over time?
3. What are the drivers of changes in urban Fijians' food shopping and consumption behaviour, and what are the implications of these changes on smallholder farmers?
4. What insights from ethically conscious Australian consumers can be used to inform Pacific trade opportunities?
5. What are the future implications for key Fijian stakeholders in government, donor agencies and the private sector, including smallholder farmers?

These research questions are displayed graphically in Figure 1. below.

Figure 2. Overview of the Research Questions addressed in the thesis



The central box represents the transition of food value chains in Fiji. The hypothesis is that the main driver for this transition is changing local and global consumers, which is displayed with a large arrow between the first two boxes. Understanding changing consumers in the left-hand box is the basis of research questions two, three and four. Two key factors behind these consumer changes are listed underneath, with Fiji experiencing urbanisation and rising urban incomes. Another critical factor affecting the situation in Fiji is the challenges faced by a range of Pacific SIDS and the importance of agriculture and tourism to Fiji's economy.

The last box in Figure 1 includes the implications along the value chain for various Fijian stakeholders. This comprises the final research question five, which focuses on how industry stakeholders can overcome key constraints to help capitalise on consumer demand in priority target markets.

1.3 Description of the surveys

Two extensive consumer surveys were undertaken to address this thesis's research questions. Detailed methods sections are provided in each of the published/submitted

articles, so this section will only explain the broad basis behind the two significant consumer surveys, how the research was conducted, and the broad analysis techniques used.

The first survey was in collaboration with the Fiji Bureau of Statistics (FBOS) to target a representative sample of 1000 urban Fijian households. Sampling procedures developed by the FBOS were used to distinguish between income classes. The questionnaire was tailored to examine shopping behaviour across 79 different food categories and eight separate modern and traditional retail formats, including the more recent supermarkets and the traditional main market. Data was collected on a range of household characteristics and focused not only on what urban Fijians consumed, but also on where they were purchasing their food from and how that had changed in recent years. Further details about the survey and how it was administered are included in the published articles presented in Chapter 3 and Chapter 4.

The second survey was conducted in collaboration with Oxfam Australia. A survey was distributed online to Oxfam's database of 55,000 ethically conscious Australian consumers, resulting in a detailed analysis of 637 survey responses. The survey was designed to provide insights for stakeholders across the Pacific on the niche market opportunities available through this consumer group. The survey included questions to better understand these consumers, their purchasing behaviour through Oxfam and their preferences for products from the Pacific. Additional information on this survey can be found in the submitted article within Chapter 5 of this thesis.

The articles from Chapters 3 and 4 utilised the same data set, but Chapter 3 contains more of an overview of the results showing current shopping patterns of urban Fijian households and how these have changed over the previous five years. Chapter 4 used a more focused Latent Class (LC) cluster analysis to segment Fijian consumers into distinct groups to better understand how their behaviour may change in the future. Similarly, the analysis of the Oxfam consumers in Chapter 5 also uses an LC cluster analysis to identify the consumer segments that Pacific producers, processors and exporters should target. Details about

how the analysis was conducted are contained within the following three chapters, 3, 4 and 5.

The hypothesis within the conceptual framework of this thesis is that changing consumers (local and global) can drive the transition of the food industry in Fiji. Urban Fijian households provide an interesting consumer group as urbanisation and urban incomes continue to increase. Similarly, while Australian Oxfam consumers only represent a small niche market, they epitomise the untapped and growing global potential for ethical consumerism, where consumers value products from developing countries and countries like Fiji can better market their products based on areas of competitive advantage.

1.4 Structure of this thesis

The thesis style is by publication. Chapters 3 and 4 have already been published separately in relevant journals, and Chapter 5 has been submitted and is undergoing peer review in a third journal. As such, all three chapters include background details, survey methods and data analysis specific to each publication. The individual chapter styles vary with the individual journal formatting requirements, and there is some repetition across the three article chapters. The following section summarises each chapter and how they combine and relate to form the thesis.

Chapter 2 provides an overview of the relevant value chain literature, its evolution, the different applications and methods used, the limitations of those methods, and the relevant previous research done in the context of a developing country and Pacific SIDS. This chapter will focus predominantly on research question 1. 'Does understanding consumers and markets through a value chain approach provide a suitable framework for assessing opportunities and constraints understanding changing food consumption behaviour and the implications along the chain for all stakeholders in a Pacific SIDS context?'. It will justify why understanding consumers through a value chain approach is applicable for this type of research and demonstrate a research gap, particularly for SIDS, which can be used as a pathway for similar future studies.

Chapter 3 is the first published article, entitled 'Changing urban consumer behaviour and the role of different retail outlets in the food industry in Fiji', published in the *Asia Pacific Development Journal (APDJ)* in February 2017. This article addresses research question 2, 3 and 5, 'How have urban Fijian food shopping behaviour and food consumption patterns changed over time?' and 'What are the drivers of changes in urban Fijians' food shopping and consumption behaviour, and what are the implications of these changes on smallholder farmers?', This chapter provides detail on how consumers food expenditures compare between modern and traditional supermarkets and the potential implications for smallholder farmers who rely on more traditional market channels to sell their fresh produce.

Chapter 4 is the second published article entitled 'Changing Fijian food shopping behaviour: Implications for policymakers and smallholder farmers', which was published in *the Journal of Agribusiness in Developing and Emerging Economies (JADEE)* in July 2021. This article also addresses research question 2 and 3 by identifying five distinct consumer groups in Fiji based on their household food shopping behaviour. This analysis provides further detail on where different Fijian consumers are purchasing their fresh fruit and vegetables and the implications of these trends on various private and public sector stakeholders.

Chapter 5 is the third and final article which has been submitted to the '*International Food and Agribusiness Management Review'* journal and is under review. This chapter explores the growing ethical consumerism market by analysing a group of ethically conscious Australian consumers (n=637) to understand the market opportunities for Pacific SIDS and the implications for a range of private and public sector stakeholders. This addresses research question 4. 'What insights from ethically conscious Australian consumers can be used to inform Pacific trade opportunities?'.

Chapter 6 provides the conclusions and is the final chapter of the thesis. The chapter summarises the main findings from the three previous chapters and outlines the limitations and recommendations for further research. It will address all five research

questions, with a particular focus on research question 5, 'What are the future implications for key Fijian stakeholders in government, donor agencies and the private sector, including smallholder farmers?'

Following the conclusions, both survey instruments are provided in an Appendix, and the Reference list includes all the references from the thesis, including those listed in each published article.

Chapter 2: Literature Review

2.1 Value Chain context within the thesis

Understanding consumers and markets through a value chain approach provides this study's overarching framework. The purpose of these consumer and market insights is to identify opportunities for all stakeholders in the industry right along the value chain back to smallholder farmers. The literature most relevant to understanding how this framework and methodology has evolved centres around 'value chain analysis' (VCA). VCA is increasingly used as a tool to improve the profitability and sustainability of individual value chains and broader agribusiness industry networks (Francis, Simons & Bourlakis 2008; Simons et al. 2003; Taylor 2005). The flexibility of VCA as a methodology allows different research disciplines to apply value chain tools in various ways. The following chapter will explore some of these methods, their advantages and limitations, and their relevance back to understanding consumers and markets in the Fijian food industry.

The three core research articles (Chapters three, four and five) presented in this thesis apply the principles of VCA to better understand how to take advantage of pro-poor growth opportunities for smallholders and low-income food consumers. For example, the first article in Chapter three interprets a consumer survey to better understand shopping patterns in the retail food category and the implications of those changes on household welfare over the previous five years. Thus, chapter three draws on the literature examining evolving modern food retail and livelihood implications for smallholder households. Chapter four uses the same Fijian consumer survey data but probes it further to identify distinct household consumer clusters based on their shopping behaviour. These clusters provide insights into what may happen as urban income increases and the Fijian food industry continues to evolve. Accordingly, chapter four explores the literature on changing consumers and their ability to transform food systems. Chapter five also segments consumers, but instead of the domestic market, it focuses on an important and growing niche Australian market opportunity. Consequently, the literature review in chapter five focuses on understanding those target market consumers, what research has been done to segment those consumers in

the past, and how this relates to the competitive strengths of a Pacific SIDS country such as Fiji.

One consistent aspect across the use of value chain analysis in all three chapters is the focus on what consumers value, which allows an assessment of the specific links along the entire chain involved in creating the product or service. This is why the Fijian household food survey and Australian online survey was a necessary step in carrying out a VCA of the food industry in Fiji.

2.2 Value chain definition and evolution

VCA is currently used widely across business, economics and social science disciplines. This next section presents the VCA concepts and definitions used in the literature relevant to this thesis.

Kaplinsky (2000) defines 'the value chain' as a "full range of activities which are required to bring a product or service from conception, through the intermediary phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final customers, and final disposal after use". The concept of value chains was first introduced by Porter (1980) when he observed that information technology would replace physical technology as the best way for businesses to achieve a competitive advantage. Porter's value chain framework provided this information in a way that general managers could use to understand how they could improve their own business and the competitiveness of the whole value chain through to the end consumer. Understanding your own business's competitive advantage within the chain and against rival chains was revolutionary as a business management tool, but it wasn't until later that the concept was applied much more broadly and across many different fields.

Speed (1989) is one of the few researchers to critique Porter's framework negatively. The faults he identified were mainly concerned with a lack of diligence in Porter's referencing of previous work and the limited number of case study examples. However, while Speed was critical of some of Porter's methods and generalisations, he admitted that a value chain

framework is a useful analytical tool for assessing competitive advantage (Speed 1989). Rather than proposing alternative models and frameworks, new researchers in the field have chosen to follow the value chain model and adapt it in different ways to fit many new scenarios and tasks. As a result of the vast and ever-expanding applications for 'value chains' as a concept, the literature is now growing in the areas of industry analysis, pro-poor development and policy implications.

The following section explains some of these techniques and how value chain thinking and framework applications have evolved to make them ideal for studying the Fijian food industry.

Over the past decades, value chain techniques have evolved as the competitive environment has changed. Al-Mudimigh, Zairi and Ahmed (2004) observed that between 1960 and 1975, the focus was on optimising functions within the business and win-lose interactions with suppliers and customers. From 1975 to 1990, companies started using information to evaluate their operations, and quality initiative tools like TQM (Total Quality Management) became popular. Since 1990 global competition has increased, and strategic partnerships have been more common. To help with management decisions, information technology tools such as ERP (Enterprise Resource Planning) have emerged to improve the win-win relationships with suppliers. At the same time, the trend has been away from producer-driven mass production to more customised products where a consumer focus and flexibility along the chain have been more critical (Macchion et al. 2019).

The concept of understanding what consumers value and then using this information to assess all the separate links in the chain that go into creating the product or service is the essence of doing a 'value chain analysis'. French researchers developed an earlier type of VCA called the filière approach, which attempted to map out commodity flows by identifying chain members and activities (Raikes, Friis Jensen & Ponte 2000). Another analysis, called the global commodity chain (GCC), took the filière approach further and applied a more coherent framework for the analysis (Raikes, Friis Jensen & Ponte 2000). This framework and the methodology associated with GCC analysis were developed by

Gary Gereffi and were mainly concerned with the governance of industrial commodity chains and explaining the distinction between 'producer-driven' and 'buyer-driven' chains (Gereffi 1994). Historically multinationals used 'foreign direct investment' (FDI) to set up new producer-driven chains, but now consumer-driven chains rely more on global networks. Gereffi commented on the shift in power from producers to retailers and, more recently, to consumers (Gereffi 2001).

More recently, the GCC has adapted further into a new strand of research labelled global value chains (GVC) (Backer & Miroudot 2013; Gereffi & Lee 2012). In comparison to GCC, GVC has placed more emphasis on 'networks' as opposed to 'chains' and has been applied in the agrifood industry to help understand the roles of multinational food processors and retailers in the context of the supermarket revolution (Backer & Miroudot 2013; Gereffi & Lee 2012). This model has also investigated the role of innovation in emerging economies (De Marchi, Giuliani & Rabellotti 2018) and smallholder engagement into global chains (Gereffi & Lee 2012). One of the objectives of GVC analysis is to build on the understanding of value chains from a business perspective and expand it to look at the policy implications as well (Gereffi & Lee 2012; Schmitz 2005).

This is an essential evolutionary step in how the value chain framework can be used because the progression has been from individual company analysis to single value chains, value chain networks, and then industry networks with policy and pro-poor development implications. This evolution means the methodology is much more suitable for studying whole industries to obtain insights for both private and public sector stakeholders (Kaplinsky 2000; Kaplinsky & Morris 2001; Schmitz 2005).

Figure 3. Value Chain Evolution Map; how the focus and application of 'value chains' have changed over time



Other models for adapting the original value chain concept were also developed separately. Lazzarini, Chaddad and Cook (2001) introduced the concept of netchain analysis, a tool to map the structure of inter-organisational relationships. This model recognised that most of the other value chain techniques focus on the vertical interactions along the chain between producers and consumers, so this one looks mainly at the horizontal interactions between companies doing similar activities in the chain. A separate branch of research is dedicated to supply chain management (SCM), which focuses more on the efficiency within businesses and the logistics and strategy between them (Al-Mudimigh, Zairi & Ahmed 2004). SCM is also closely linked to 'lean thinking' (also known as 'lean production' or 'lean manufacturing'), which focuses on eliminating waste and all activities that don't add value during the production process (Jiménez et al. 2012). A study by Panizzolo (1998) looking at the challenges of implementing lean production principles in businesses observed that the most critical factor was the management of external relationships. Similarly, Al-Mudimigh, Zairi and Ahmed (2004) observed that the major limitation of techniques such as SCM is that while they effectively analyse the current business circumstance, they don't extend far enough to capture the needs of the end consumer and potential new market opportunities.

Even within the more modern VCA framework, several different research methodologies have been adopted. A few papers have described a well-defined methodology on how a VCA can be broken down into three critical areas of understanding; material flow, information flow and relationships (Bonney et al. 2007; Taylor 2005). VCA in this form is likely to give a lot more insight than a standard industry analysis (Kaplinsky & Morris 2001) because it attempts to understand each chain member's perspective and offer suggestions on how the whole value chain can be improved. Coupled with understanding ownership, finance and promotion along the value chain, these insights are often helpful for private-sector chain members and public-sector policy challenges (Kaplinsky 2000).

VCA has also become valuable in understanding agribusiness food value chains from a development perspective. Donor agency approaches to supporting pro-poor value chains and including smallholder producers in new market opportunities are widespread (Altenburg 2006; Trienekens 2011). There is now a range of toolkits and

manuals designed to help value chain practitioners select from a suite of available techniques[1].

The 'Participatory Market Chain Approach' (PMCA) has also been used effectively to address the challenge of how to engage value chain actors, particularly small-scale farmers in whole of chain opportunities (Bernet et al. 2005). The analysis itself uses the same general principle of understanding constraints and opportunities along the chain so efficiency can be gained by lowering costs, or value can be added by better meeting consumer demand, but the analysis method is more inclusive (Bernet et al. 2005).

Instead of being conducted externally, PMCA seeks to involve stakeholders in group workshops and activities to build interest, trust and collaboration throughout the analysis process (Bernet et al. 2005). Mayoux (2003) also describes a very similar technique named 'Participatory Value Chain Analysis' (PVCA) that also focuses on the participation of value chain actors in practical discussions to identify and test alternative strategies for whole of chain improvements and reduction of poverty. Another extension to this VCA methodology is the addition of a sustainability component. In a study of the wine industry in South Australia, a combination of VCA and lifecycle analysis was used, where the typical information gathering along the chain was supplemented with a calculation of greenhouse emissions. This enabled the value chain actors to simultaneously assess the trade-offs between supply chain efficiency, consumer value and environmental impacts (Soosay, Fearne & Dent 2012). Other researchers like Devanney (2006) have described the detailed

[1] A few of the more prominent value chain manuals include; M4P, Making value chains work better for the poor (DFID 2008); A handbook for value chain research (Kaplinsky & Morris 2001), ValueLinks Manual (Springer-Heinze 2007), Using value chain approaches in agribusiness and agriculture in sub-Saharan Africa (Webber 2007), Guidelines for rapid appraisals of agrifood chain performance in developing countries (Da Silva & de Souza Filho 2007), Pro-Poor Value Chain Development: 25 guiding questions for designing and implementing agroindustry projects (Riisgaard & Ponte 2011), Value chain development for decent work (Herr & Muzira 2009) and Chain-wide learning for inclusive agrifood market development (Vermeulen et al. 2008)

economic framework of a VCA and how firms can be motivated to enter value chain partnerships based on core win-win strategies when trying to satisfy consumer demand relative to competitor chains.

While there are a few studies that are starting to evaluate the impact of any improvement projects resulting from a value chain analysis (Devaux et al. 2018; Donovan et al. 2015; Prowse & Moyer-Lee 2014), it is intriguing that there is not more (Bernet et al.; Taylor 2005). A study of the tobacco industry in Malawi using Gereffi and Kaplinsky value chain methods partially addresses the evaluation research gap by comparing VCA studies over a six-year timeframe. During the time between analyses, they found that the industry had addressed some of the identified issues in the sector's structure, which had impacted farmer profits (Prowse & Moyer-Lee 2014).

Among the growing number of value chain themes in the literature, three areas are important to the research presented in this thesis. Firstly, we are interested in a country food focus rather than a broader global lens, a more specific food sector, or even a food product case study. Secondly, this study includes multiple stakeholder perspectives, including private sector value chain participants, as well as government, donor and academic viewpoints. Finally, some of the value chain literature uses the analysis to explore a range of global issues such as sustainability, climate change, nutrition/health, food safety, food waste, gender equity, globalisation and retail transformation, to name a few. While all of these research themes and methodologies have individual merit, this Fijian, multiple-stakeholder food study focuses more on pro-poor growth and development opportunities. The opportunity to use value chain methodologies in a variety of ways and combinations highlights the flexibility of these techniques, but Devaux et al. (2018) does caution that due consideration is critical when assessing the situation and deciding what the focus of the research will be and which techniques are going to be most suitable to use.

Even though the application of value chain frameworks and methodologies has evolved dramatically over time, many researchers have highlighted the significance of the final consumer in determining a product or service's actual value (Ariyawardana & Collins 2013;

Fearne 2009; Sahay, Gupta & Mohan 2006; Slater & Narver 1992; Zokaei, K & Hines 2007). Even back in the 1960s, it was noted that companies do much better if customers perceive them as meeting expectations and needs more than their rivals (Haley 1968). The concept of value chain thinking itself is built upon the benefits of collaboration along the chain to enhance value to the end consumer (Zokaei, AK & Simons 2006). Similarly, Devanney (2006) agreed that a value chain approach to business is fundamentally based on a core win-win strategy where all stakeholders in the chain benefit, including consumers.

2.3 Value Chain limitations and usefulness

Since Porter first introduced us to the concept of value chains, their flexibility and adaptability are to be admired. While the evolution of value chains has expanded the benefits and applications of the technique, some limitations have been reported. Compared to cluster analysis, which focuses more on horizontal links in the chain, value chain literature has been accused of focusing on the vertical links while not focusing enough on external relations (Webber 2007). This leads to another standard scientific limitation in that you can never find out everything about a particular chain or industry being investigated. To compound this issue, value chain and industry networks constantly change their structure, relationships and markets (Webber 2007). For this reason, it is important to capture the most essential information and tailor each research study to the specific circumstances to ensure the scale, timeframe and cost of the project are in keeping with stakeholder expectations for meaningful and timely results (Donovan et al. 2015; Orr, Donovan & Stoian 2018). However, it is also important that any interventions are appropriately planned, have a clear understanding of the consumer market and competitors and represent the best option for the whole chain (Webber 2007). The advantage of the more recent value chain framework is that it assumes dynamic relations within the chain, so it is better equipped as a real-world tool for identifying and implementing improvement projects.

In summary, value chain analysis has proven to be an extremely useful tool across multiple fields of study. The application of a value chain approach was less defined early in its evolution, but more recently, these techniques have been refined for different circumstances and are particularly suitable for studying the Fijian food industry.

Chapter 3: Results (APDJ Published Article)

Statement of Authorship (Article 1)

Title of Paper	Changing urban consumer behaviour and the role of different retail outlets in the food industry of F ji
Publication Status	☑ Published ☐ Accepted for Publication ☐ Submitted for Publication ☐ Unpublished and Unsubmitted work written in manuscript style
Publication Details	Johns, C., Lyon, P., Stringer, R. and Umberger, W., 2017. Changing urban consumer behaviour and the role of different retail outlets in the food industry of Fiji. *Asia-Pacific Development Journal*, 24(1), pp.117-145.

Principal Author

Name of Principal Author (Candidate)	Craig Johns		
Contr bution to the Paper	Literature review, survey development, data collection, interpretation of data, wrote the manuscript and acted as corresponding author.		
Overall percentage (%)	60%		
Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the primary author of this paper.		
Signature		Date	27/01/2023

Co-Author Contributions

By signing the Statement of Authorship, each author certifies that:

i. the candidate's stated contribution to the publication is accurate (as detailed above);

ii. permission is granted for the candidate in include the publication in the thesis; and

iii. the sum of all co-author contr butions is equal to 100% less the candidate's stated contribution.

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CHANGING URBAN CONSUMER BEHAVIOUR AND THE ROLE OF DIFFERENT RETAIL OUTLETS IN THE FOOD INDUSTRY OF FIJI

*Craig Johns, Pamela Lyon, Randy Stringer and Wendy Umberger**

The food industry is undergoing transformation globally. The set of circumstances specific to Fiji provides important insights into the drivers of this change, which have implications for private, government and donor agency stakeholders. A novel study of 1,000 urban households in Fiji found that among those surveyed, modern supermarkets have overtaken traditional markets as the dominant food retail outlet and now have 100 per cent patronage and take in 54 per cent of total household food expenditures. However, the battle for the fresh fruit and vegetable category appears to be in its infancy, with 97 per cent of households still shopping for products in this category at the traditional main market. Although foreign investment is a key driver of the retail food sector transformation in more rapidly growing developing countries, in Fiji, where foreign investment is relatively low, this transformation appears to be predominantly supported by rising urban income and changing consumer preferences. Consequently, policy attention should be directed towards market channels that can take advantage of changing consumer preferences, while still supporting local farmers.

JEL classification: E21, O19, R22.

Keywords: Consumer behaviour, food value chains, supermarket, small island developing States (SIDS), Fiji.

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I. INTRODUCTION: RETAIL TRANSFORMATION IN DEVELOPING COUNTRIES

Consumers globally are changing their food shopping behaviour, and the retail sector is transforming to meet their needs. In developing countries, this has resulted in an expansion in modern retail outlets along with a continuing trend of consumers purchasing a wider range of food products (Reardon and others, 2009). Some of the key factors behind this change are private sector investment in food chains, greater product choice, urbanization, time-poor consumers and greater disposable income (Godfray and others, 2010; Hazell and Wood, 2008; Pingali, 2007; Reardon, Timmer and Berdegue, 2004)

Evidence of "retail transformation" or a "supermarket revolution", and the subsequent transformation of global agricultural and food distribution and marketing systems, is well documented across the more rapidly growing developing countries (Pinstrup-Andersen, 2002; Reardon and Barrett, 2000; Reardon and others, 2003), with a number of studies targeting Asia (Cadilhon and others, 2006; Minten, Singh and Sutradhar, 2013; Reardon, Timmer and Minten, 2012; Tschirley and others, 2015) and Latin America (Alvarado and Charmel, 2002; Arda, 2006). Indonesia is an exemplar of rapid transformation in food retailing in a rapidly growing economy. In the decade from 1999 to 2009, modern food retailers increased more than ninefold (964 per cent) across the Indonesian archipelago, from 1,176 to 11,342 outlets (Dyck, Woolverton and Rangkuti, 2012).

Whether traditional outlets are capable of retaining their market share for fresh produce as modern retailers continue to grow — securing their continued importance to consumers, as suppliers of essential food, and to local producers, as reliable buyers of the fruits of their labour — is a matter of ongoing debate (Goldman, Ramaswami and Krider, 2002; Neven and others, 2006). The outcome of this retail tug-of-war has potentially profound implications in countries where agricultural production by smallholder farmers constitutes the dominant proportion of national economic activity.

The outcome is also not a foregone conclusion, as research shows considerable variation among different countries. In some development contexts, modern retailers tend to capture the processed food category first, while traditional outlets are able to hold market share for the fresh produce categories (Minten and Reardon, 2008). This has been the case in Hong Kong, China (Goldman, Ramaswami and Krider, 2002; Ho, 2005), Taiwan Province of China (Li and Houston, 2001), Thailand (Gorton, Sauer and Supatpongkul, 2009), Mexico (Anand, 2009) and Brazil (Zinkhan, Fontenelle and Balazs, 1999). However, in other countries, such as Malaysia (Chamhuri and Batt, 2009) and Kenya (Neven and others, 2006), traditional

retail outlets for perishable produce appear to be losing market share to modern outlets. Other contexts have produced conflicting results. In Viet Nam, for example, some studies suggest an ongoing role for traditional retailers (Maruyama and Trung, 2007), while others predict a continuing encroachment of modern retailing into the fresh food category (Mergenthaler, Weinberger and Qaim, 2009).

In virtually all of those countries, the transformation of the food retail landscape has been advanced by foreign direct investment, initially at least (Reardon and others, 2003). However, changing consumer demand and consumer preferences are other key factors behind retail change (Carpenter and Moore, 2006; Godfray and others, 2010). Understanding these preferences and how they lead to shopping behaviour, and then marshalling this knowledge to predict future trends is complex and difficult (Bawa and Ghosh, 1999; Cirera and Masset, 2010; Godfray and others, 2010). While food spending is typically correlated with income, and income is an important driver for change, it is not the only one, as shown by a recent comparison of food purchasing and the retail transformation in India and China. In both countries, culture played a significant role in how the retail food industry evolved. In India, for example, religious dietary restrictions prevented increases in the consumption of high-energy foods based on animal protein, which was a prominent feature in China, despite similar income levels in the two countries (Godfray and others, 2010).

Information concerning the transformation of food systems in small island developing States is strikingly limited, but much needed. The economies of these countries tend to have low levels of manufacturing, volatile agricultural production and share a cluster of identifiable challenges to productivity improvements in this sector (Douglas, 2006; McGillivray, Naudé and Santos-Paulino, 2008; Pelling and Uitto, 2001). In Fiji, for example, agriculture, livestock and subsistence farming generate income for approximately 65 per cent of the total population (Fiji, Department of Agriculture, 2009) and 13.1 per cent of gross domestic product (McGregor and others, 2010). Development of the entire food industry is a priority for the private sector, government and donor agency stakeholders, including Australia, which has a long-standing donor relationship with Fiji, and is strategically concerned with its economic development.

In 2010, the Government of Australia funded the Pacific Agribusiness Research for Development Initiative, a multidisciplinary research programme aimed at improving agricultural livelihoods in a number of Pacific Island countries, namely Fiji, Kiribati, Samoa, Solomon Islands, Tonga and Vanuatu. The collaborative project involved several Australian universities, Pacific government agencies, non-governmental organizations and the private sector on the respective islands where research was carried out. The strategy was to identify and prioritize potential development

inventions based on value chain and market analysis. A value chain analysis is a flexible framework capable of investigating food industry networks (Francis, Simons and Bourlakis, 2008; Simons and others, 2003; Taylor, 2005), with implications for poverty alleviation and policy development (Altenburg, 2006; Gereffi and Lee, 2012; Trienekens, 2011).

Fiji presents an interesting case study because its food retailing sector has developed in recent decades without the high level of foreign direct investment upon which other developing economies have relied. Nevertheless, Fiji features many of the other known drivers of food retail transformation at the consumer end of the value chain, for example, urbanization, rising urban income and changing consumer preferences. Thus, in Fiji, the usual significant "supply push" factors influencing consumer behaviour were notably absent, which led researchers to focus more strongly on the "demand pull" from consumers.

Understanding consumers and how they may be advancing change is particularly important with regard to small island developing States because the modernization of food retailing can bring a number of socioeconomic and health concerns. Although the impact of supermarket may differ by country and circumstance (Hawkes, 2008), one area of interest for a number of developing small island developing States, including Fiji, is the effect that increased consumption of heavily processed, imported food is having on diets, the prevalence of diet-related diseases and general health (Hughes and Lawrence, 2005; Popkin, 2006; Stamoulis, Pingali and Shetty, 2004; Thow and others, 2011a; 2011b). Increasing dependence on food imports is also raising food security concerns in Fiji, where it is feared that smallholder farmers may be being squeezed out of the value chain by supermarkets demanding higher quality, larger and more regular supply, and different payment methods, as what has already occurred in Africa and Asia (Boselie, Henson and Weatherspoon, 2003; Farina and Reardon, 2000; Hughes and Lawrence, 2005; Reardon and others, 2009). In small island developing States, if the local agricultural industry is at a disadvantage, this becomes a major development and political problem.

Under the auspices of the Pacific Agribusiness Research for Development Initiative, mapping of the entire horticultural industry in Fiji was conducted through surveys of consumers, producers and traders and interviews with the major supermarkets, food processors, hotels and municipal markets across the main island of Viti Levu, where 70 per cent of the population lives and works and the main urban centres of Fiji are located. The study of the entire horticultural industry was designed to better understand the changes occurring at each link in the value chain. While trying to understand this in the broad context of the entire horticultural industry, it has been hypothesized that consumer behaviour could be a leading factor in changes to

food retailing. The consumer survey, which is the focus of the present article, was conducted to better understand shopping patterns in the retail outlet and food category, and changes in consumption over the previous five years.

II. THE CONTEXT OF FIJI

While traditional markets (rural and urban) remain important for purchasing a variety of local foodstuffs in the urban areas of Fiji, over the years, it has become apparent that supermarkets have taken over a significant percentage of the market, with a mix of local, imported, processed and fresh food products. As elsewhere in the world, rural populations are dwindling in the Pacific as urbanization takes place (Jones, 2012). From 2002 to 2008, the rural population in Fiji is estimated to have declined by 2 per cent, while the total population grew by 6 per cent (to 815,408) and the urban population increased by 16 per cent (Narsey, 2011). During this period, the income of the average urban household increased by 51 per cent in nominal terms and 19 per cent in real terms, with about 25 per cent of the average household income being spent on food (Narsey, 2011).

The tourist industry has also affected the overall mix of products produced, imported and sold in Fiji. While these changes have been noted in a few studies (Chandra, 1979; Owen, 1999; Thaman, 1990), very little detailed analysis of the recent consumer behaviour in Fiji is available.

As part of the wider value chain mapping project in Fiji, a household consumer survey was designed to better understand changing urban consumer behaviour and the role of different retail outlets. In the absence of the kind of foreign retail investment seen in other developing countries, the focus of the present study was on how consumer behaviour might be influencing changes in food demand and how those changes could affect the horticultural industry. Furthermore, the study focused on the related policy implications for a range of public and private sector stakeholders. Throughout the evolution of different value chain methodologies, researchers have highlighted the importance of the final consumer in determining a product's or service's real value and hence the demand for it (Sahay, Gupta and Mohan, 2006; Zokaei and Hines, 2007). In a similar way, this study analyses consumer behaviour to better understand the effect it has along the value chain, and across the horticultural industry. The household food survey thus is the necessary first step to carrying out a value chain analysis of the horticultural industry in Fiji. While previous research has either looked at consumers or focused on specific sectors or links in the chain, it appears that this type of detailed analysis of an entire value chain has not been attempted in a small island developing State, such as Fiji.

III. METHODS AND DATA

Methods used by the Fiji Bureau of Statistics for previous surveys produced a representative sample of 1,000 households on opposite sides of the main island of Viti Levu in two of the key urban areas: Nadi, which hosts the international airport, and Suva, the capital city. Pre-existing enumeration area codes were used to distinguish between seven different income classes (high, middle, low, housing, squatter, urban village and misc./mixed). Using sampling procedures developed by the bureau, a representative sample of 50 enumeration area codes were selected across the Suva and Nadi urban areas. A random sample of 20 households was then chosen from each enumeration area code to make up the sample of 1,000 urban households in Fiji.

The survey questions and initial format were based on a similar survey conducted in Indonesia to investigate consumer and shopping behaviour across different food categories and retail outlets (Minot and others, 2015; Toiba, Umberger and Minot, 2015; Umberger and others, 2015). While the research provided a useful template for the study in Fiji, considerable effort was expended with the Fiji Bureau of Statistics and other project partners to tailor the survey to the context of Fiji. For example, previous food-related surveys in Fiji, including a 2008 household income and expenditure survey, were reviewed to help guide the methodology and identify gaps in the research. Thorough pre-testing was then conducted to further hone the questionnaire before it was finalized.

Through the questionnaire, information on household characteristics, assets and expenditure as well as on cooking and shopping attitudes and behaviour were collected. A major component of the survey covered 79 different food categories and captured the consumption of each category during the last month, including what was purchased, homegrown or exchanged. Novel questions that had not been previously asked in Fiji, identified the retail source from which each of the 79 food categories was normally purchased. These retail outlets were separated into the modern outlets of supermarkets, corner shops/butcher/bakery, restaurants, and fast food and service stations, and the more traditional outlets of the main market, fish market and roadside stall/hawker.

In the absence of suitable baseline data, questions were included to estimate how respondents' consumption and shopping patterns had changed in the previous five years. While subjective assessments of trends in purchasing behaviour are not an ideal comparator with current behaviour, they should provide some insight into self-perceived change over the recent past. The Fiji Bureau of Statistics has recently shown some interest in incorporating these types of questions into their household income and expenditure survey, so it is hoped that the current surveys will provide baseline data for future studies.

The survey was conducted in June and July 2012 using a team of 27 trained enumerators. While intercepting consumers in public areas, such as supermarkets and traditional markets, has become popular for its flexibility and lower cost (Hornik and Ellis, 1988), for this survey, face-to-face interviews targeting the person in the household most knowledgeable about food purchases were used. This method allows for a longer survey time and random representation across income levels, thus avoiding the issues associated with self-selection (Winship and Mare, 1992).

When surveys were completed by the enumerators, the quality of each one was checked in the field by team leaders to rectify any issues while access to the respondents was still possible. Completed surveys were then sent back to the Fiji Bureau of Statistics where the data were entered using a CSPro template to limit the number of entry errors before being cleaned and analysed.

IV. RESULTS

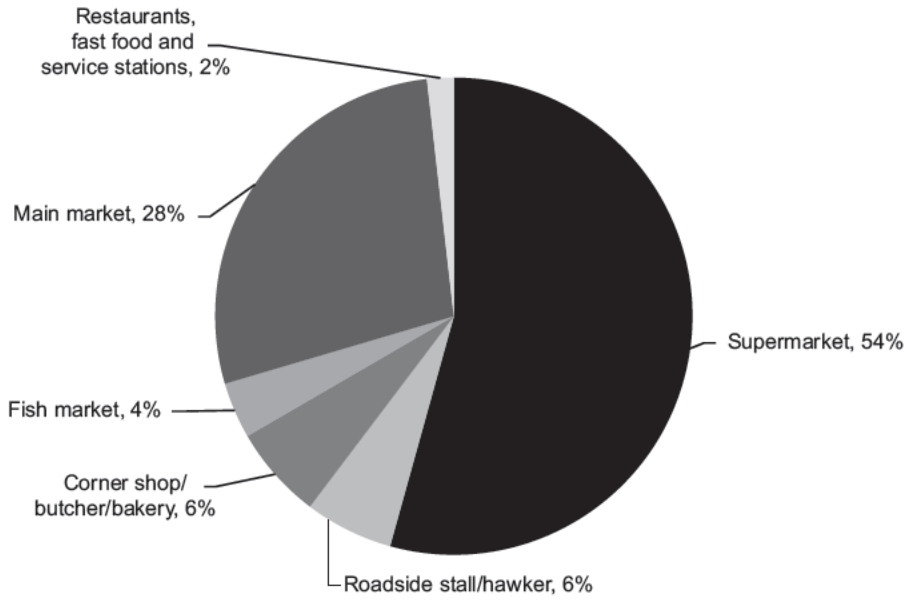
The results are reported in four sections. The first section describes the current shopping patterns of urban households in Fiji by retail outlet. The second section shows how household food purchasing is distributed across different food groups. The third explores respondents' beliefs about changes in consumption and shopping behaviour over the preceding five years and why these changes occurred. The fourth section investigates the share of food spending at different retail outlets by income level.

Current shopping patterns by retail outlet

Figure 1 displays the breakdown of urban household food expenditures in Fiji by retail outlet type. Most striking is how supermarkets have captured more than 50 per cent of the market share. In addition to supermarkets having the largest slice of urban food expenditures, table 1 illustrates that they have also recorded an impressive 100 per cent patronage from all the households surveyed, with 65 per cent of respondents reporting that they patronized a supermarket at least once per week.

While the urban population of Fiji has embraced modern supermarkets, the main traditional markets retain a substantial 28 per cent share of urban household food expenditure. Almost all, 97 per cent of the survey respondents, also reported patronage of traditional main markets. Thus, households' reported use of traditional markets is not far below supermarkets, with 63 per cent reporting that they visited a traditional market at least once a week. This suggests that urban consumers in Fiji make use of both modern and traditional outlets for their food purchases, with traditional markets still largely being preferred for fresh fruit and vegetables.

Figure 1. Share of urban food expenditure in Fiji by type of retail outlet



Source: Authors.

Table 1. Percentage frequency of food retail outlet use, n = 1,000

	Supermarket	Main market	Roadside stall/ hawker	Corner shop/ butcher/ bakery	Fish market	Restaurants, fast food and service stations
Every day	1	1	1	10	1	0
2 6 times/week	9	9	23	45	2	3
Once a week	55	53	22	18	30	4
2 3 times/month	27	23	15	12	26	7
Once a month	8	8	8	5	21	8
Few times a year	0	3	11	4	10	25
Never	0	3	20	6	10	53

Source: Authors.

Roadside stalls/hawkers present an interesting blend of traditional amenities and modern convenience, and enjoy a 6 per cent share of food expenditure by the urban dwellers in Fiji. Twenty-three per cent of survey respondents reported visiting roadside stalls/hawkers two to six times per week, while 22 per cent went once a week. However, approximately 20 per cent of households surveyed reported not patronizing roadside stalls/hawkers at all. On the other hand, corner shops/butchers/bakeries have a 6 per cent share of food expenditure but the highest rate of frequency of use. About 10 per cent of respondents said they had visited such shops every day, while 45 per cent went two to six times per week.

Perhaps surprisingly for citizens of an island country, dedicated fish markets command only a 4 per cent share of food expenditure among the urban population, with 77 per cent of urban households fairly evenly split between visiting once a week, two to three times per month, or once a month.

The remaining 2 per cent of food expenditure is shared among the following types of modern outlets: restaurants, fast food stations and service stations. However, more than half (53 per cent) of the households surveyed said they did not visit those outlets at all, which suggests they may be serving tourists more than the local population.

One factor in understanding the shopping patterns in Fiji is the distance to retail outlets and mode of transport from the surveyed households. One of the very few studies to cover this research topic in Fiji was undertaken in 1976 by Chandra (1979). Although restricted to intercept surveys at a limited number of retail outlets, the research of Chandra is interesting because he concluded that location and distance from the outlet was not a major factor behind purchasing behaviour. Even four decades ago, 45 per cent of people of Fiji surveyed had access to automobiles, and buses were also commonly used to get into town for food.

Similarly, the present study found that public transport, which consists mainly of buses, was the preferred method of transport to supermarkets (49 per cent), followed by walking (21 per cent) and automobile transport (21 per cent). Main market shoppers also used public transport, with 65 per cent preferring this mode of transport. By contrast, the roadside stalls/hawkers and corner shop/butcher/bakery outlets, which are visited more frequently, were generally accessed on foot. The majority of consumers walked to roadside stalls/hawkers (66 per cent) and corner shop/butcher/bakery outlets (79 per cent), which tended to be, on average, less than a kilometre from the patrons' homes (0.9 km and 0.7 km, respectively). This compares to the longer average distances travelled to supermarkets (1.9 km) and further to the main town market (3.1 km).

Shopping patterns by food category

To simplify the interpretation and gain clearer insights from the results, 79 food products were aggregated into seven core food groups to separate the fresh and processed food products and to categorize them nutritionally:

1 *Fresh fruit:* all fresh fruit and tamarind products

2 *Protein sources:* all fresh chicken, beef, lamb, mutton, duck, pork, seafood, eggs and nuts

3 *Fresh vegetables:* all fresh vegetables

4 *Fats, oils and seasoning:* all fats, oils, sugar, salt, herbs and seasoning

5 *Processed and manufactured food:* all processed food, snacks, meat and bottled drinks

6 *Carbohydrates:* all rice, wheat, flour, bread products, biscuits, noodles and breakfast cereals

7 *Dairy, cheese and yogurt:* all fresh milk and other dairy products (see appendix table A.1 for more details).

Table 2 shows the results of the survey, in which the average urban household in Fiji spends 568 Fiji dollar (F$) (US$273) per month on food. Processed and manufactured food accounts for approximately 28 per cent of this expenditure, followed by fresh vegetables (22 per cent), carbohydrates (18 per cent), protein sources (14 per cent), fresh fruit (11 per cent), fats, oils and seasoning (6 per cent) and dairy, cheese and yogurt (1 per cent). The protein sources category can be further broken down into fresh seafood 6.6 per cent, other fresh meat 4.4 per cent, eggs 2.5 per cent and nuts 0.4 per cent.

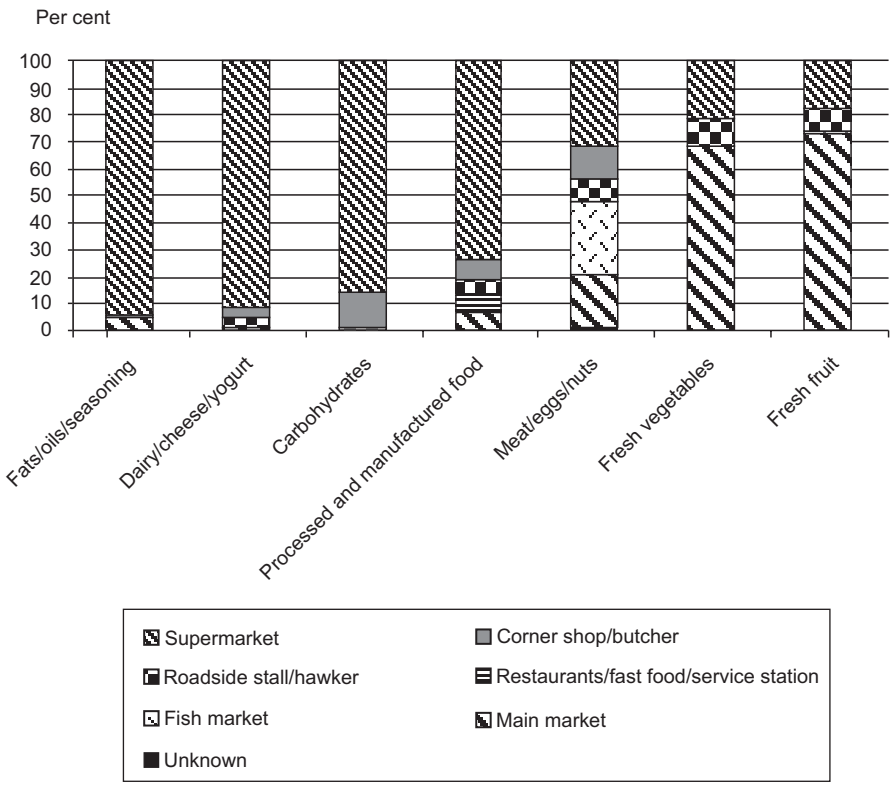
Table 2. Average household expenditure by food groups

Food group	Percentage
Processed and manufactured food	27.8
Fresh vegetables	22.3
Carbohydrates	18.4
Protein sources	13.9
Fresh fruit	10.6
Fats, oils and seasoning	5.8
Dairy, cheese and yogurt	1.2

Source: Authors.

Shopping patterns in the urban locations of Fiji also vary significantly, depending on the food category and type of retailer. Figure 2 highlights how supermarkets lead the processed food categories, while the main traditional markets dominate the fresh produce categories. As expected, the fish market collects a significant share of the protein sources category expenditure (27 per cent), with fresh fish dominating those figures. The specialty stores play a role in the carbohydrates, meat and processed food categories. When the meat category figures are explored in more detail, it becomes clear that butcher shops hold a significant market share in specific products, for example, non-processed pork (57 per cent), beef, lamb and mutton (47 per cent), other meat products (35 per cent), processed meat (20 per cent) and fresh poultry (17 per cent). Similarly, bakeries command 50 per cent of food expenditure for bread and bread products, although their overall share of the carbohydrates category is only 13 per cent.

Figure 2. Share of spending on each food category by type of retailer



Source: Authors.

Based on these results, it is clear that consumers strongly favour supermarkets for most of their processed and manufactured food products, but they choose alternative outlets for the majority of their fresh produce. Onions, garlic and potatoes seem to be the exceptions to this trend. Historically, those products were imported, which probably explains why supermarkets, which can source products through existing importer relationships, dominate the sales of them. In the future, this situation may change for potatoes, whose cultivation by local farmers is actively being encouraged by the Fiji Ministry of Agriculture. If potatoes become a successful local crop, they will join the other popular root crops of cassava, taro, sweet potato and yams. These traditional carbohydrates have a long history as subsistence crops in Fiji (Chandra, Evenson and De Boer, 1976) and are sold mainly through the main traditional markets.

In contrast to the supermarkets, main traditional markets focus much less on processed food products; instead, they tend to dominate the fresh and produce-based product categories. Of the 79 different food products included in the survey, respondents preferred to purchase about 50 per cent from the main traditional market. The vast majority of those products consisted of fresh produce.

The fish markets, along with the main traditional market, account for most of the purchases of fresh fish in Fiji, including tilapia, milkfish, kai, nama and prawns. Processed seafood that is not part of the product offering at traditional markets is predominately sourced from supermarkets.

Roadside stalls/hawkers provide a surprising array of foodstuffs, despite their size. Of the 79 products included in the survey, only four were not featured in the responses of those household consumers who frequent roadside stalls/hawkers. These outlets ranked second behind supermarkets for the sale of poultry (20.1 per cent), and are popular for other products, such as fresh milk, eggplant, rourou (a local green leafy vegetable), brassica (cabbage, cauliflower, broccoli and Brussel sprouts) and certain types of seafood (fresh tilapia and fresh water prawns). Roadside stalls/hawkers are the most popular retail outlet for kava (35.9 per cent), a culturally significant drink that is consumed in “kava bars”. The drink, which is popular across the Pacific islands, is made from the roots of the yaqona plant and has a sedative and calming effect.

Corner shops, butchers and bakeries, which are modern innovations, provide a variety of different types of food products. If it is assumed the butcher and bakery visits were predominantly for meat and bread products, respectively, then the results suggest that corner shops represent an alternative to the major suppliers for certain processed and fresh products. Although the percentages of purchasing at this type of outlet were low, corner shops represented a retail option for processed products,

including spreads (7.7 per cent), alcoholic beverages (7.7 per cent), snacks (7.2 per cent), soda (7.2 per cent), other dairy products (3.9 per cent), breakfast crackers (3.5 per cent), chocolate and sweets (3.5 per cent) and noodles (3.2 per cent).

The remaining retail outlets (restaurants, service and fast food stations) collectively account for only 2 per cent urban food expenditure in Fiji, but it will be interesting to see whether consumer preferences for these modern outlets change over time if socioeconomic conditions continue to improve.

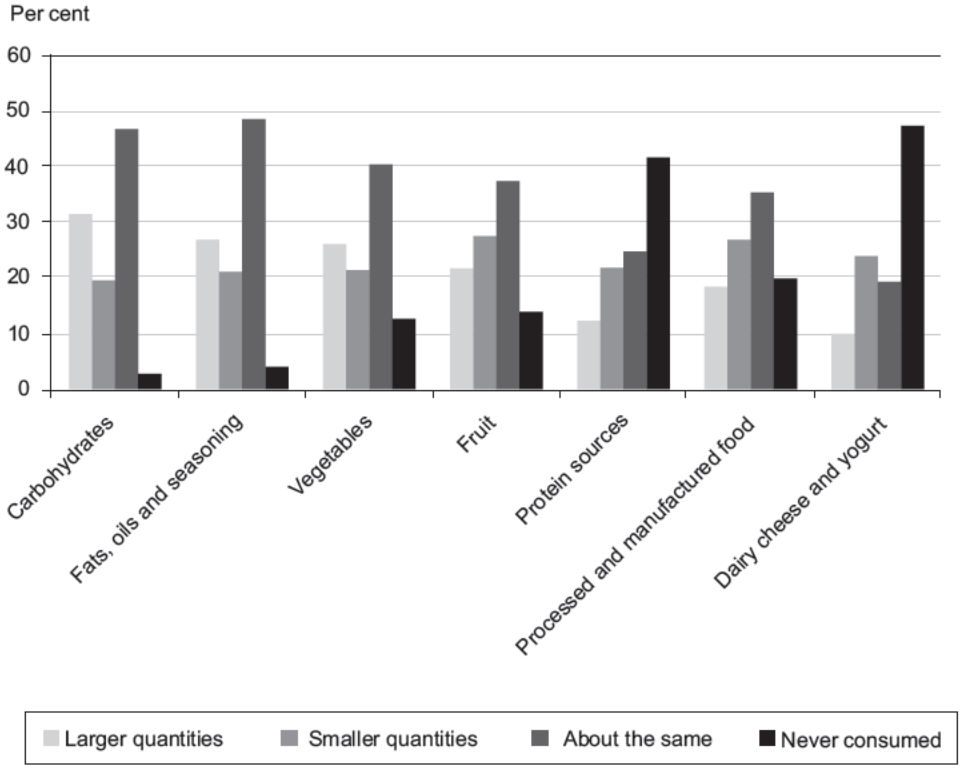
Changes in consumption

Respondents were asked to estimate how their household consumption of each of the 79 food categories had changed over the previous five years. In the absence of baseline data, the basis used was respondents' estimates of whether their household had consumed larger quantities, smaller quantities or "about the same" amounts compared to 2007. Again, to analyse the results, the food products were aggregated into seven core food categories (see appendix table A.1).

As illustrated in figure 3, a significant proportion of the respondents said they had either maintained their consumption level or did not eat the product in the first place. For those who did shift their consumption during that period, it appears that the food categories of "carbohydrates", "fats, oils and seasoning", and "vegetables" grew the most.

More respondents reported reducing rather than expanding their consumption of processed food products over the previous five years, along with fruit, protein and dairy. While a reduction by households in their consumption of processed food was not expected, in the period 2007-2012, a number of national and global changes took place, which were expected to have had an effect on expenditures for this category. This period was associated with a rise in global food prices along with the global financial crisis in 2008 (Brinkman and others, 2010). In April 2009, the Fiji dollar was depreciated by 20 per cent (Narayan and others, 2012) and although the real effective exchange rate (REER) recovered by 2012 (Gottschalk and others, 2016), the depreciation was a key factor behind an increase in the price of imported food products. As 79 per cent of processed food products sold in Fiji are imported (Snowdon and Thow, 2013), these changes appeared to have had an influence, particularly in comparison to a large number of essential local food items, which were under price control and are value-added tax (VAT) exempt. Sugar sweetened beverages are one of these imported processed products for which an import tariff has been applied since 2006 (Snowdon and Thow, 2013). These observations highlight the advantages of refining and repeating the survey in the future to allow for more meaningful comparisons and a longer-term analysis of trends.

Figure 3. Subjective estimates of respondents of changes in household food consumption

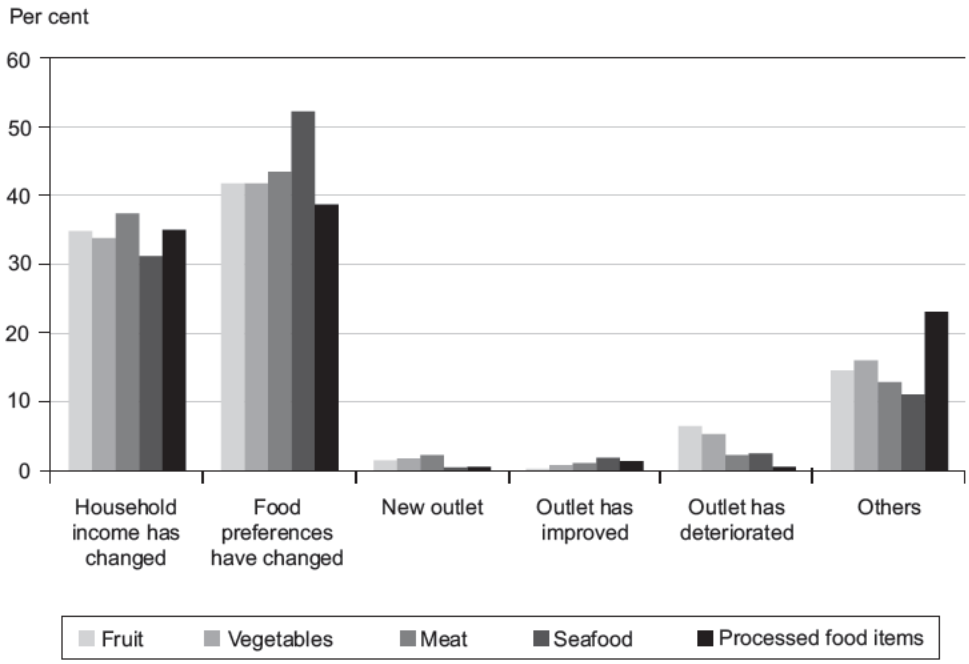


Source: Authors.

A cross-sectional subset of 21 food products split into five food categories (see appendix table A.2) was investigated in more detail by asking household consumers why their purchasing habits for those products had changed in the previous five years. Figures 4 and 5 illustrate that the primary reasons given were a shift in household income and changing food preferences. These two reasons dominated the responses across the six food categories, with more than 70 per cent of households indicating income or food preferences were the driving force behind the behaviour change, whether it resulted in an increase or a decrease in consumption.

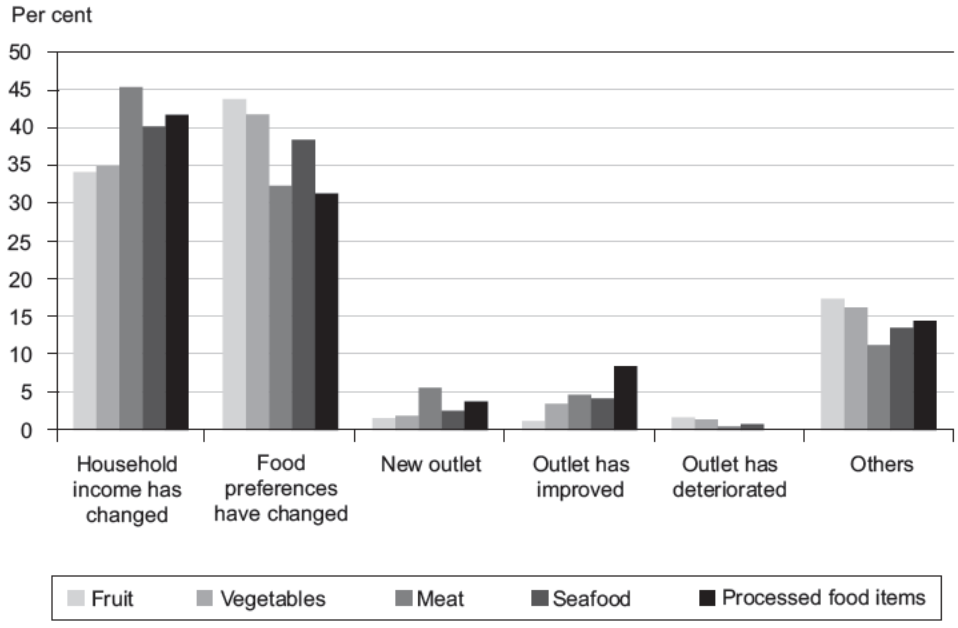
Analysis of household characteristics demonstrates that the standard of living of the vast majority of households surveyed (>90 per cent) has either remained the same or improved over the five-year period. Of those who said their standard of living had improved, 39 per cent reported a slight improvement (by 10 to 20 per cent overall), while 22 per cent reported a significant improvement (>30 per cent). Rising income allows the household to buy a wider range of products. However, increasing disposable income may be the result of extra work, which can affect time availability and increase the importance of convenience as a factor in the choice of both food products and retail outlets (Jabs and Devine, 2006).

Figure 4. Primary reason the purchasing habit of consumers has shifted to smaller quantities



Source: Authors.

Figure 5. Primary reason purchasing habit of consumers has shifted to larger quantities

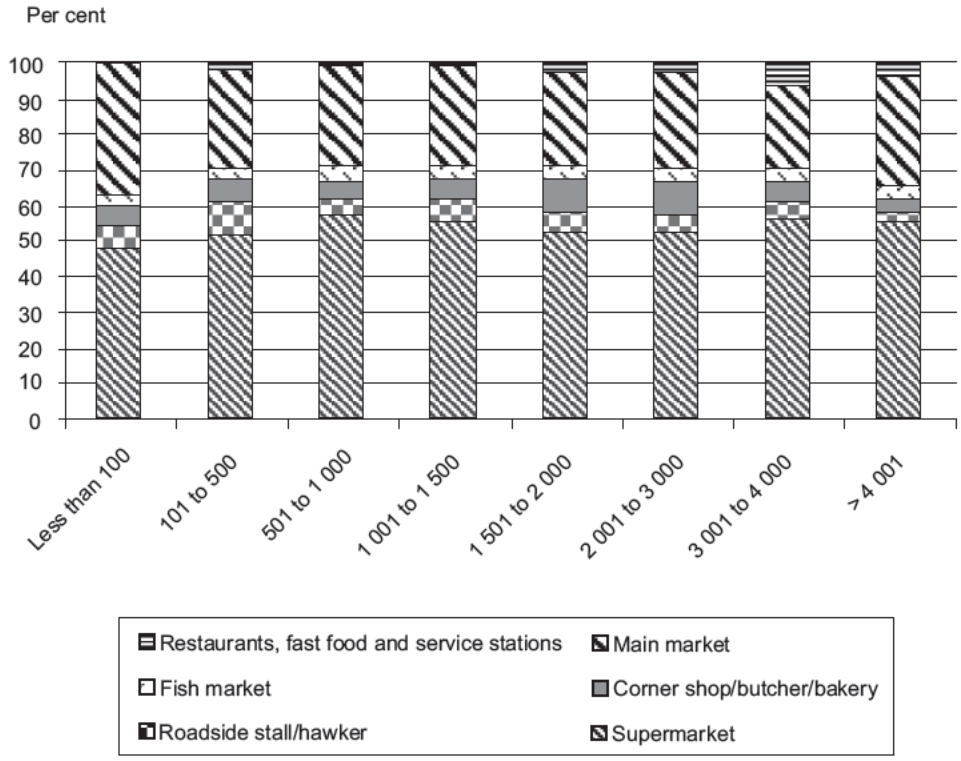


Source: Authors.

Food expenditure across different income levels

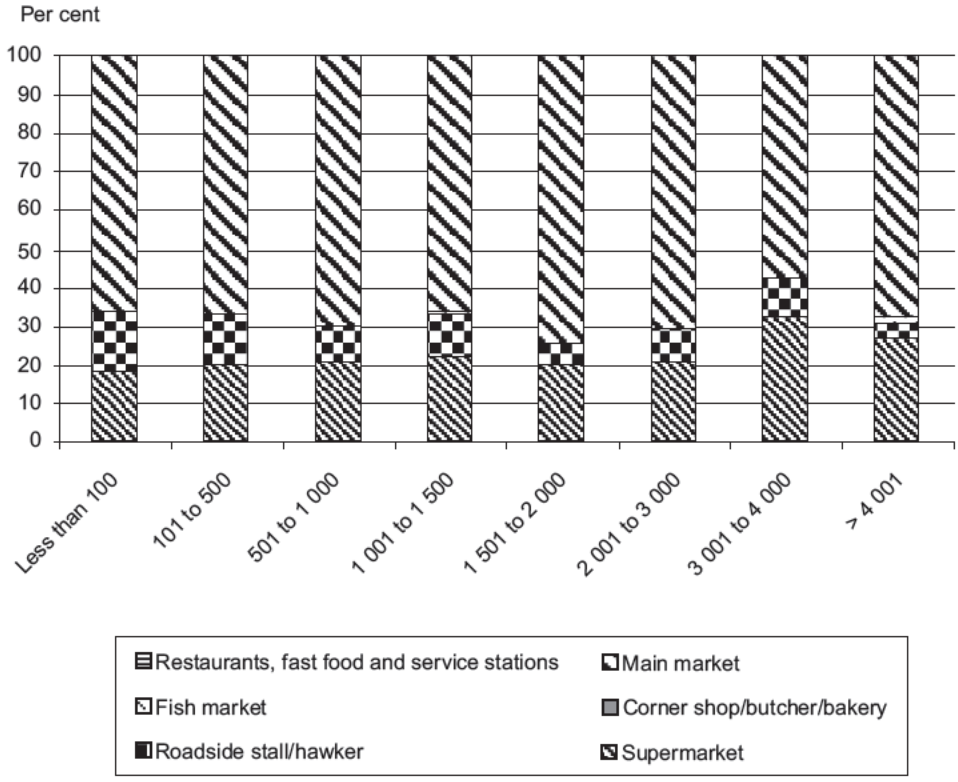
Figure 6 highlights how food expenditure varies little across the eight income levels. While this seems to contradict research from a number of other developing countries, parallels exist in East and Southern Africa (Tschirley and others, 2015) and Kenya (Neven and others, 2006). The Kenyan case study looked at food purchasing patterns across food categories and retail outlets, and found that 60 per cent of the poor and low income groups living in Nairobi bought some of their food from supermarkets (Neven and others, 2006). When low-income consumers in Kenya were asked why they shopped in supermarkets, the survey results showed that they found supermarkets cheaper for processed food and close enough to home to make the trip worthwhile (Neven and others, 2006). In the example of Kenya, researchers noted that modern retailing had penetrated the processed food category first to capture 20 per cent of urban food retailing, but only 4 per cent of the fresh fruit and vegetable category (Neven and others, 2006).

Figure 6. Share of food spending at different retail outlets by decile of per capita expenditure (F$)



In figure 7, only data for household expenditures on fresh fruit and vegetable are presented. What stands out clearly is the dominance of the main market for sales of fresh fruit and vegetables across all income levels. If those figures are averaged, the main market enjoys a 69 per cent market share of fresh fruit and vegetables food expenditure. While expenditure is still fairly even across the income levels, supermarkets appear to gain more market share in the two higher income levels, columns 7 and 8. This suggests that higher income earners may be switching more of their fresh fruit and vegetable shopping to supermarkets, which may be because of insufficient time for multiple-outlet shopping.

Figure 7. Share of fresh fruit and vegetable spending at different retail outlets by decile of per capita expenditure (F$)



V. DISCUSSION

Responses to a novel household survey show that consumers in the main cities of Fiji patronize an array of different food retail outlets. However, 82 per cent of the urban food expenditures in the country are shared between supermarkets and traditional main markets. The fact that more than 50 per cent of urban food expenditure in Fiji are now spent in supermarkets is highly significant, particularly considering that the country was historically a traditional-market food economy. While not ideal for comparative purposes, a study investigating the share of trade in rapidly moving consumer goods in several developing countries found that modern retail outlets accounted for less than 50 per cent of total expenditures (Nielsen, 2007). The countries included Malaysia (48 per cent), Thailand (45 per cent), Philippines (43 per cent) and Indonesia (35 per cent). All have had far greater foreign investment into

modern food retailing, and would be considered significantly more developed than Fiji. Another study in the Philippines two years later confirmed that supermarkets had expanded their share of urban food expenditure to 45 per cent (Romo, Digal and Reardon, 2009). A similar study in China showed that between 1999 and 2009, urban food expenditure in supermarkets increased from 30 per cent to 48 per cent (Reardon and Timmer, 2007; Stringer, Sang and Croppenstedt, 2009).

When net inflow figures for foreign direct investment are compared for those countries, it is clear that Fiji, at $0.27 billion, in 2013 is well behind the other more developed countries, such as the Philippines ($3.66 billion), Malaysia ($9.73 billion), Thailand ($10.69 billion), Indonesia ($19.62 billion) and China ($295.63 billion) (World Bank, 2013). Comparisons with other more developed countries highlight why understanding the "demand pull" drivers of retail transformation in Fiji is so important; precisely because the usual "supply push" of foreign investment has not been the principal engine of change.

The level of urban food expenditure in supermarkets is even more impressive considering that the increased cost of imported food over this five-year period, and its impact on disposable income, may have induced slight reductions in consumption of processed food by the average household. At the same time, however, the trend towards shopping at supermarkets has not resulted in households moving their expenditures away from the main traditional market to a significant extent. Instead, urban inhabitants in Fiji tend to patronize supermarkets and the main market to meet their food shopping needs. In a general sense, supermarkets offer a full range of food products, but dominate the sales in the processed food category, while the traditional main market is still the preferred choice for fresh produce, such as fresh fruit, vegetables and certain types of meat.

While expenditure at the supermarket did not vary greatly across different income levels, higher income households tended to spend more on fresh fruit and vegetables at the supermarket.

The remaining 18 per cent of urban food expenditure is shared between roadside stalls/hawkers, fish markets, specialty stores, restaurants, and fast food and service stations. While roadside stalls/hawkers only had a 6 per cent share of total food expenditure, their range of products is impressive. This variety coupled with their proximity to households enables them to compete with the supermarkets, while their connection to local farmers and the freshness of their produce compares well to the main traditional market. This combination of the best of both the modern and traditional outlet traits may stand them in good favour with consumer preferences for some time to come.

With the benefit of hindsight, it would have been prudent to separate the retail outlets of corner shops, butchers and bakeries. They are all examples of more modern retail outlets, and collectively account for a relatively small percentage of the total urban food expenditure (6 per cent). However, they deal in specialty products (meat and bread), which would have given greater clarity to the results had they been kept separately.

The other modern food retail outlets in Fiji (restaurants and fast food and service stations) together account for a mere 2 per cent of total food expenditure, with 78 per cent of urban households patronizing those outlets a few times a year at most. This suggests that those outlets survive mainly on tourists.

VI. CONCLUSION

The research shows that consumer preferences and changing urban household income are key drivers for food purchasing habits in Fiji. This has resulted in households spending more than one half of their food budget at supermarkets. In contrast to other developing countries experiencing a "supermarket revolution", there has been limited investment in Fiji in food retailing, which highlights the strong role consumer preferences may have had in shaping food shopping patterns.

If household income or investment into supermarkets were to increase in the future then previous studies in developing countries have indicated that the supermarket share of food expenditure would also continue to rise (Alvarado and Charmel, 2002; D'Haese and Van Huylenbroeck, 2005; Reardon and others, 2003). Further studies have shown that additional supermarket growth can involve a shift from the processed food category into the fresh produce area (Brown, 2005; Neven and others, 2006). Considering that smallholder farmers currently rely on traditional market channels to sell their fresh produce, shrinking of these traditional markets would have significant implications for them. Furthermore, if smallholder farmers are affected, then these changes raise broader concerns about the livelihoods, health and food security of the people of Fiji, which is of vital interest to local government departments and donor development agencies.

However, the future of the food industry in Fiji is far from clear. While higher income level households are showing some early signs of purchasing small amounts of fresh fruit and vegetables from supermarkets, 97 per cent of households are still shopping at the traditional main market, indicating that the competition for the fresh produce category is only in its infancy. There is also a body of research showing that traditional food retail outlets cannot only hold their market share but compete fiercely with modern supermarkets to retain their dominance in the fresh produce category

(Cadilhon and others, 2006; Humphrey, 2007). For this reason, it is important that these types of studies and surveys on consumers are repeated to better understand how these changes are affecting the whole value chain and what can be done to ensure that local farmers and the local economy are not being detrimentally affected.

Policy attention will need to be directed towards further investigation of how smallholder farmers can integrate into supply chains, which are growing as a result of changing consumer food and shopping preferences. These insights will also be vitally important for private sector and donor agency stakeholders trying to predict the future constraints and opportunities within the Fiji food system. While Fiji is a special case study in itself, it is also hoped that this type of research will provide insights for other small island developing countries that are experiencing similar global pressures.

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APPENDIX

Appendix table A.1. Aggregation of food products into seven core food groups

Fats, oils and seasoning	Dairy, cheese and yogurt	Carbohy-drates	Processed and manufactured food	Protein sources	Fresh vegetables	Fresh fruit
Cooking oil, vegetable oil, canola oil, etc.	Fresh milk	Rice	"Other" milk	Chicken not processed	Eggplant	Pawpaw
Sugar and salt	Other dairy	Wheat and flour	Spreads	Beef, lamb, mutton not processed	Mushrooms	Banana
Herbs and seasoning		Bread and bread products	Snacks	Duck not processed	Assorted beans	Lemon
		Noodles	Chocolate and sweets	Pork not processed	Ota	Mango
		Breakfast crackers and other biscuits	Chili sauce	Other meats	Brassica/ cabbage	Melon
		Breakfast cereals	Coffee, milo, tea	Eggs	Rourou	Pineapple
			Alcohol	Nuts	Other leafy vegetables	Papaya
			Kava	Fresh tilapia	Tomato	Apple
			Bottled water	Fresh nama	Capsicum	Orange
			Soda	Fresh water prawns	Broccoli	Grape
			Coconut milk	Fresh milkfish	Celery	Breadfruit
			Ready to eat meals	Fresh kai	Lettuce	Coconut
			Processed or frozen fruit	Other fresh seafood	Cucumber	Other fruit

Appendix table A.1. ***(continued)***

Fats, oils and seasoning	Dairy, cheese and yogurt	Carbohy-drates	Processed and manufactured food	Protein sources	Fresh vegetables	Fresh fruit
			Processed or frozen vegetables		Carrot	Tamarind paste
			Processed meat (sausages etc.)		Chillies	Other tamarind products
			Processed seafood		Okra/bhindi	
					Cassava	
					Taro	
					Sweet yams	
					Potato	
					Onion	
					Garlic	
					Ginger	
					Other vegetables	

Appendix table A.2. Subset of 21 food products aggregated into five food categories

Fruit	Vegetables	Meat	Seafood	Processed
Breadfruit	Lettuce	Fresh meat and poultry	Tilapia (maleya)	Processed food items
Tomatoes	Capsicum		Nama caulerpa (sea grapes)	
Melons	Eggplant		Fresh water prawns (ura dina)	
Other fresh fruit	Brassica		Milkfish (yawa)	
	Taro		Kai	
	Cucumber		Other fresh fish and seafood	
	Beans			
	Other fresh vegetables			

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Contr bution to the Paper	Literature review, survey development, data collection, interpretation of data, wrote the manuscript and acted as corresponding author.		
Overall percentage (%)	60%		
Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the primary author of this paper.		
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By signing the Statement of Authorship, each author certifies that:

i. the candidate's stated contribution to the publication is accurate (as detailed above);

ii. permission is granted for the candidate in include the publication in the thesis; and

iii. the sum of all co-author contr butions is equal to 100% less the candidate's stated contribution.

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Fijian food shopping behaviour: implications for policy makers and smallholder farmers

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Abstract

Purpose The study aims to identify different consumer groups to better understand changes in urban Fijian food shopping behaviour and the implications for the local food industry.

Design/methodology/approach The authors used a Latent class (LC) cluster analysis of survey data from 1,000 urban Fijian households to identify unique consumer segments based on household food shopping behaviour.

Findings Five distinct urban household clusters were identified based on food shopping behaviour. The cluster with the highest income level spent significantly lower amounts on fresh fruit and vegetables (FFV) at the main traditional market, preferring to buy their FFV from modern supermarket outlets. Considering the vast majority of local smallholder farmers rely on traditional market channels to sell their produce, the growth and dominance of Fijian supermarkets are of some concern.

Research limitations/implications Future research should consider repeating these types of detailed consumer surveys to better understand the implications of changes in shopping behaviour over time, and the role that key stakeholders can play in ensuring smallholder farmers is not excluded from the market.

Social implications Smallholder driven agriculture accounts for a significant share of Fiji's gross domestic product (GDP), so understanding how the retail food industry is transforming and how this is affecting smallholder farmers is critical to Fiji's social structure.

Originality/value Research on food retailing and the role of the consumer is rare in small island developing states (SIDS), such as Fiji. Fiji has a somewhat unique set of circumstances. In the absence of significant foreign investment in food retailing, key factors such as urbanisation and rising urban income mean consumer preferences are important drivers of changes in shopping behaviour. The study provides insights into Fiji's changing food industry with implications for other SIDS, while contributing to the global literature in this field.

Keywords Food, Shopping behaviour, Supermarkets, Small island developing states (SIDS), Fiji, Latent class cluster analysis

Paper type Research paper

1. Introduction

Agrifood systems are changing across the globe as consumers purchase a wider range of both processed and fresh food products from an expanding range of modern retail outlets (Barrett *et al.*, 2020; Nuthalapati *et al.*, 2020; Reardon *et al.*, 2009, 2019). The nature of these changes is dependent on the unique circumstances faced in each country. However, some of the common drivers include increasing disposable household incomes, time-poor consumers, urbanisation and investment in food retail outlets (Abdul-Rahaman and Abdulai, 2020; Ali and Abdullah, 2017; Godfray *et al.*, 2010; Hazell and Wood, 2008; Pingali, 2007; Reardon *et al.*, 2004; Seidu, 2019; Wertheim-Heck and Spaargaren, 2016).

The transformation of agrifood systems has been clearly established and documented in faster-growing economies within Asia (Bignebat *et al.*, 2009; Cadilhon *et al.*, 2006; Kelly *et al.*,

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2014; Pallegedara, 2019; Reardon and Minten, 2011; Reardon *et al.*, 2012), Latin America (Alvarado and Charmel, 2002; Arda, 2006), Africa (Amfo *et al.*, 2019; Kaneene *et al.*, 2015; Tschirley *et al.*, 2015) and more generally (Minten *et al.*, 2013; Pinstrup-Andersen, 2002; Reardon *et al.*, 2000, 2003). However, research into changes in agrifood systems in small island developing states (SIDS), such as Fiji, is rare.

One of the few Fijian-based studies into food retailing and the role of the consumer were conducted in 1976 by Chandra (1979). Chandra's research aimed to better understand food shopping behaviour and involved interviews with retailers and consumer surveys of 510 participants. The consumer study was limited to questions on the main weekly food purchases using intercept surveys at defined retail outlets. Chandra found that education and ethnicity were the key factors influencing food-purchasing behaviour, with higher education being associated with a higher frequency of supermarket shopping.

The food retailing environment was very different at the time of Chandra's study compared to the present, although the ethnicity profile of Fijian consumers was similar (Chandra, 1979). Only 50% of supermarkets had refrigeration in Chandra's study period, and the term "modern supermarket" referred to a self-serve format, not counter service. Indo Fijian (47%) and Indigenous Fijian/iTaukei (36%) dominated then, as now. Chandra (1979) found that Indo Fijian consumers favoured shopping at supermarkets more than their Indigenous Fijian counterparts, which could be explained by supermarket ownership. Only 5% of supermarkets were then owned by Indigenous Fijians, compared to 92% ownership by either Indo Fijians or Chinese.

In 1976, 94% of fresh fruit and vegetable (FFV) sales were through traditional (municipal) markets, with 98% originating at the central Suva municipal market. While the FFV category was dominated by traditional channels, early supermarkets captured 48% of fresh meat expenditure, indicating how supermarkets have held a significant role in Fiji for some time.

Chandra (1979) predicted that the future of the Fijian food system would see the main market losing market share to more modern retail options as income and education increased and consumers became more sophisticated in their demands. Chandra warned that the demise of the main market would have major implications on the local agrifood system and recommended improvements in infrastructure, hygiene and parking to meet these new consumer demands. Observations from many developing countries undergoing food retail transformation indicate that modern retailers first target the processed food category, leaving the fresh produce category for traditional outlets (Minten and Reardon, 2008; Reardon *et al.*, 2003). Whether supermarkets attempt to compete in the fresh produce category varies by country and circumstance (Goldman *et al.*, 2002; Neven *et al.*, 2006), with traditional markets losing market share in some countries, such as Kenya and Malaysia (Chamhuri and Batt, 2009; Neven *et al.*, 2006) while in others (e.g. Mexico, Thailand, China, Taiwan, Brazil), local markets retain a significant role in the sale of perishable produce (Anand, 2009; Gorton *et al.*, 2009; Ho, 2005; Li and Houston, 2001; Zinkhan *et al.*, 1999).

The present study builds on Chandra's findings and those of another article (Johns *et al.*, 2017) based on parts of the data set analysed in this paper. This new interrogation of the data used a latent class (LC) cluster analysis methodology to identify different consumer groups in order to better understand current drivers of food shopping behaviour in Fiji, thereby providing an evidence base for potential ramifications back along the value chain to smallholder farmers.

1.1 A snapshot of the Fijian context

Fiji is comprised of 364 islands, the two largest islands—Viti Levu and Vanua Levu—contribute 93% of the country's population and 87% of the land area (Fiji, Ministry of Agriculture, 2009). Agriculture plays an important role in the Fijian economy given that 65%

of the total population relies on farming, agriculture and livestock for their main source of income (Fiji Ministry of Agriculture, 2009). Land tenure in Fiji is dominated by Native land (83%), with Crown and Freehold land making up the remaining 17% (Prasad and Tisdell, 1996). Indo Fijian peasant farmers are more likely to lease their land. With the constant decline of the sugar industry, due to the phase-out of preferential European Union prices, this ethnic group faces uncertainties related to their landholdings as their 30-years leases begin to expire (McGregor, 2010; Prasad and Tisdell, 1996; Young and Vinning, 2007). Therefore, ethnic and cultural differences in actors all along the value chain should be accounted for when considering implications of changes in the Fijian food system and potential measures to address them.

Fiji has a somewhat unique set of circumstances in the retail landscape compared to other developing countries undergoing food system transformation. In the absence of significant foreign investment in food retailing, the majority of supermarkets are locally owned. However, common consumer drivers of rising urban income, urbanisation and changing consumer preferences are present in Fiji. Between 2002 and 2008 the urban population increased by 16%, while urban incomes nominally increased by 51% (Narsey, 2011). Fijian household income and expenditure data have not been officially collected or reported since 2008/2009. Naidu *et al.* (2017) have estimated a population shift to Fijian urban areas of 42% over a 30-year period to 2014, when the urban population stood at 472,957 (up from 198,803 in 1985).

How governments have dealt with the impact of modern versus traditional retailing has also varied considerably as policy makers juggle the interests of consumers, traders and farmers in considering regulations that would encourage or restrict either form of retailing (Minten *et al.*, 2010). In India, the policy debate is divided. Gopalakrish and Sreenivasa (2009) argue that modern retailing is having a negative effect on the country's agriculture sector and new regulations should be considered to provide adequate space for traditional retailers while restricting the types of contracts supermarket can sign with farmers. Conversely, Kumar *et al.* (2008) claim that a free market approach, where competition is encouraged to allow greater efficiency across the industry, is preferable. Government policy should be restricted to ensuring no single retailer has too much market share and facilitating horizontal alliances between farmers and retailers to increase their negotiation power. This approach is supported by Ho (2005), where the government in Hong Kong is allowing expansion of modern retailing with a view that traditional wet markets will find a niche in the market if facilities and their management can be modernised.

In addition to the effect food transformations have on the market and consumer end of the value chain, these changes also have significant implications on local smallholder farmers, particularly those struggling to adapt (Neven *et al.*, 2009; Pelupessy and van Kempen, 2005; Poulton *et al.*, 2010; Tschirley *et al.*, 2004). This is significant for Fiji as poverty is more prevalent in rural areas, and the country is reliant on smallholder-driven agriculture (Fiji Ministry of Agriculture, 2009; Hone *et al.*, 2008; McGregor, 2010; Singh-Peterson and Iranacolaivalu, 2018).

While supermarkets can offer new opportunities for smallholder farmers, the increased emphasis supermarkets place on food standards and guaranteed volume presents challenges for smallholders (Boselie *et al.*, 2003; Faiguenbaum *et al.*, 2002; Farina and Reardon, 2000; Humphrey, 2007; Reardon *et al.*, 2000, 2009). Several studies outline situations where smallholder farmers have been excluded from modern value chains (Alvarado and Charmel, 2002; Heijden and Vink, 2013).

This study uses a LC cluster analysis to provide critical insights on the transformation of the food industry to the public and private sector stakeholders in Fiji, contributes to the global literature in this field and is particularly relevant to other SIDS that share similar challenges (Douglas, 2006; McGillivray *et al.*, 2008; Pelling and Uitto, 2001).

2. Methods and data collection

2.1 Data collection

In collaboration with the Fiji Bureau of Statistics (FBOS), a representative sample of 1,000 urban Fijian households was surveyed. The geographical focus was the main island of Viti Levu in two urban areas: Nadi and Suva (the capital city of Fiji). Pre-existing enumeration area codes (EA) developed for the national Fijian census were used to differentiate between seven levels of income (high, middle, low, housing, squatter, urban village and misc/mixed). The 1,000 households interviewed for this study were selected by choosing a representative sample of 50 EA codes followed by a random sample of 20 households from each EA code.

The survey instrument was adapted from a similar survey carried out in Indonesia in 2010 and 2011 (Minot *et al.*, 2015; Umberger, 2015). The survey obtained information on 79 distinguishable food categories and eight distinct modern and traditional retail formats including supermarkets, main traditional market, roadside stalls/hawker, corner shops/butcher/bakery, fish markets, restaurants, fast food and service stations. Data were also collected on household characteristics, food purchase decision making, shopping behaviour and perceptions and preferences for food retail outlets.

The survey was conducted in mid-2012 by a team of 27 trained enumerators in the main urban centres of Suva and Nadi. A detailed enumerator manual was developed to assist with training and to provide a reference point during survey implementation. Face-to-face household interview methods were chosen rather than supermarket intercept interviews to avoid self-selection issues, ensure a more random representation across different income levels and allow more time to interview the person responsible for food purchasing (Winship and Mare, 1992). After each survey was conducted it was inspected by FBOS staff to identify any obvious errors while the team was still in the field. Once the surveys were fully completed, the data was entered using a CSPro template to limit the number of entry errors. Stata (Version 14) was then used to clean and analyse the data.

2.2 Data analysis using LC cluster analysis

LC cluster analysis was used to identify distinct segments of consumers based on their food shopping behaviour. LC cluster analysis is a model-based clustering technique that estimates the probability of class membership based on model parameters and observed variables (Vermunt and Magidson, 2002). Individuals or cases belonging to the same class have similar observed preferences, which are assumed to come from the same probability distribution. Compared to other clustering techniques, a model-based clustering approach such as LC cluster analysis makes cluster assignment less arbitrary (Magidson and Vermunt, 2002).

Following Vermunt and Magidson (2002), the cluster model form with sets of indicators of different scale types is:

$$f(y_i|\theta) = \sum_{k\ 1}^{K} \pi_k \prod_{j\ 1}^{J} f_k\left(y_{ij}|\theta_{jk}\right) \tag{1}$$

where y_i is a vector of indicator variables, K is the number of clusters, π_k is the prior probability of belonging to a LC or cluster k, J denotes the total number of indicators and j is a particular indicator.

An extension of the LC cluster model is to include active covariates in predicting cluster membership. Covariates are exogenous variables that are included to predict to which cluster an individual belongs to (Vermunt and Magidson, 2002). Using the same basic structure as in Equation (1), inclusion of active covariates gives the following model:

$$f(y_i|z_i,\theta) = \sum_{k\ 1}^{K} \pi_{k|z_i} \prod_{j\ 1}^{J} f_k(y_{ij}|\theta_{jk}) \quad (2)$$

where, z_i is individual i's covariate values.

LC cluster model parameters are estimated using the maximum-likelihood (ML) method or the maximum-posterior method (MAP). Another important estimation component of the LC analysis is the classification of cases into LC (clusters), which can be based on the posterior class-membership probabilities (Vermunt and Magidson, 2002). Using these probabilities, cases are assigned to the LC with the highest posterior probability (Vermunt and Magidson, 2002).

Food expenditure shares and shopping frequency in different food retail outlets were used as indicator variables in the LC cluster analysis. Food expenditure shares are proportions of total food expenditure that each household spent at the following retail outlets: supermarkets, main traditional market and other outlets (i.e. roadside stall, corner shops, fish market, restaurants, fast food and service stations). Shopping frequency is the number of times the household shop in each food retail outlet. Active covariates used in the analysis included: household religion, ethnicity of the household head, income, factors affecting food purchase decision and an index measuring importance of eight attributes of modern retail outlets. The indicator variables and active covariates used in the analysis are described in Tables 1 and 2.

Latent Gold 5.1 was used to run the LC cluster analysis. Models were estimated ranging from one-to 10-clusters. To determine the optimal number of clusters, the Bayesian information criterion (BIC) values of the different models were compared. Bivariate residuals (BVRs) were then examined between pairs of variables (indicator variables and active covariates). BVRs larger than 3.84 indicated that there were correlations between variable pairs that were not adequately explained by the model (Vermunt and Magidson, 2005). Since BVRs larger than 3.84 were found, an allowance was made for direct association between pairs of indicator variables and direct effects of covariates on the indicators, as outlined in Vermunt and Magidson (2016).

Finally, a post-hoc analysis was conducted to examine whether there are differences in food shopping behaviour across clusters and to further characterise each cluster in terms of socio-demographic characteristics.

3. Results

Supermarkets were the dominant retail outlet for the urban Fijian households in our study, accounting for 57% of households' food expenditures.[2] In fact, all of the households in our study did at least some of their food shopping at supermarkets. Although the majority of households' food expenditures were made at supermarkets, 97% of households indicated that they still did some food shopping at the main traditional market, with an average of 26% of urban Fijian households' food expenditures occurring at the main traditional market. Most urban households indicated that they shopped at these two main market channels weekly or at least 2–3 times per month (Table 1). Other market channels, including roadside stalls/hawker, corner shops/butcher/bakery, fish markets, restaurants, fast food and service stations, accounted for 17% of total urban household food expenditures.

LC cluster analysis was used to determine if there were distinct segments of urban Fijian consumers based on their food shopping behaviour. The BIC values were used to determine the optimal LC solution (i.e. number of clusters), with a lower BIC value indicating a better fit of the model (Vermunt and Magidson, 2016). Considering this BIC values, the five-cluster solution was selected. Each unique cluster or segment is characterised in Tables 3–5 below.

[2] The difference in the supermarket expenditure share between Art 1 and 2 (54% in Art 1 vs 56.73% in Art 2) was due to the addition of some food items into the supermarket classification

Variable	Description	Mean	Std. deviation	Min	Max
Indicator variables					
Expenditure share					
Supermarket	Percent share of food expenditure in supermarkets	56.73	14.08	0.00	100.00
Main/traditional market	Percent share of food expenditure in main/traditional market	26.04	14.75	0.00	100.00
Other	Percent share of food expenditure in other retail outlets	17.23	13.68	0.00	94.34
Shopping frequency					
Supermarket	Number of times the household shop at this outlet: 0 Never, 1 only a few times a year, 2 once a month, 3 2 3 times per month, 4 once a week, 5 2 6 times per week, 6 Every day	3.68	0.80	1	6
Main/traditional market		3.52	1.06	0	6
Roadside stall/hawker		2.83	1.87	0	6
Corner shop/butcher/bakery		4.07	1.58	0	6
Fish market		2.62	1.36	0	6
Restaurants		1.20	1.32	0	6
Fast food (e.g. McDonalds)		0.73	1.13	0	6
Service station		0.87	1.44	0	6
Price	1 price influences food purchase decision, 0 otherwise	0.59	0.49	0	1
Food safety	1 food safety influences food purchase decision, 0 otherwise	0.02	0.14	0	1
Quality	1 quality influences food purchase decision, 0 otherwise	0.16	0.36	0	1
Freshness	1 freshness influences food purchase decision, 0 otherwise	0.07	0.26	0	1
Importance of modern retail attributes	Index computed based on the rating of importance (1 Not at all important to 5 Extremely important) of 8 attributes (maximum 40 points): (1) ability to purchase on credit, (2) availability of frozen and processed food, (3) food product information (weight, labels, etc.), (4) availability of produce all year round, (5) store is close to toilets, (6) cleanliness of store, (7) air conditioning, (8) store sells imported products	30.38	5.64	13	40

Table 1.
Description and summary statistics of indicator variables and active covariates

The five clusters identified in this analysis each have distinct characteristics reflecting heterogeneous food shopping behaviour among urban Fijians. Clusters 1 (35.2%) and Cluster 2 (28.3%) are the largest in size, comprising 63.5% of the sample and reflecting the food shopping behaviour of the majority of the urban Fijian population. Cluster 1 has a majority of i-Taukei (69.0%), while Cluster 2 has a majority of Indo Fijians (50.9%); therefore, these two clusters have been renamed "**Typical i-Taukei**" and "**Typical Indo Fijian**", respectively.

Cluster 3 (17%) is labelled "**High Income**" as the household income is significantly higher than all other clusters. Over one-half (54.1%) of the households in this cluster are i-Taukei; and 48.8% of the i-Taukei households in Cluster 3 are in the highest two income brackets. Cluster 3 are more likely than Cluster 1 to be self-employed (15.9%). Fijians within Cluster 3 spend a significantly lower share of their total food expenditures at the main traditional

Variable		Overall sample
Religion (%)	Muslim	6.20
	Christian	66.60
	Hinduism	25.80
	Other	1.40
Ethnicity (%)	Indigenous Fijian/i Taukei	54.60
	Indo Fijian	36.10
	Routmans	3.40
	Chinese	0.90
	Expats (non Pacific Island born)	0.50
	Other (includes other Pacific Island countries)	4.50
Income (%)	<501 $/month	24.04
	501 1,000 $/month	36.16
	1,001 1,500 $/month	21.92
	>1,500 $/month	17.88

Table 2.
Descriptive statistics of socio demographic variables used as active covariates

	Cluster 1 Typical i Taukei	Cluster 2 Typical Indo Fijian	Cluster 3 High income	Cluster 4 Traditional shopper	Cluster 5 Outskirts low income	Wald	*p* value
Cluster size (*n*)	352	283	170	153	42		
Cluster size (%)	35.2	28.3	17.0	15.3	4.2		
Indicators							
Expenditure share							
Supermarket	57.94^{a}	61.30^{b}	51.09^{c}	49.18^{c}	66.05^{d}	76.98	0.00
Main/traditional market	27.03^{a}	25.77^{a}	9.64^{b}	42.92^{c}	24.44^{a}	318.71	0.00
Other	15.03^{a}	12.92^{b}	39.27^{c}	7.89^{d}	9.51^{d}	676.58	0.00
Shopping frequency							
Supermarket	3.72^{a}	3.50^{b}	$3.77^{a,c}$	4.00^{c}	3.12^{d}	58.94	0.00
Main/traditional market	3.63^{a}	3.50^{a}	2.99^{b}	3.97^{c}	3.10^{b}	70.35	0.00
Roadside stall/ hawker	3.62^{a}	2.30^{b}	3.68^{a}	0.87^{c}	3.00^{d}	168.15	0.00
Corner shop/ butcher/bakery	4.77^{a}	3.26^{b}	4.26^{c}	4.01^{c}	3.05^{b}	109.71	0.00
Fish market	2.87^{a}	2.50^{b}	2.29^{b}	$2.56^{a,b}$	2.90^{a}	78.63	0.00
Restaurants	0.93^{a}	1.27^{b}	1.40^{b}	$1.27^{a,b}$	1.83^{c}	58.67	0.00
Fast food	0.45^{a}	0.91^{b}	$0.74^{a,b}$	0.87^{b}	1.41^{c}	30.07	0.18
Service station	0.66^{a}	0.91^{a}	0.74^{a}	0.95^{a}	2.74^{b}	109.77	0.00

Note(s): In each row, different superscript letters indicate statistically significant difference in values between columns at the 5% level

Table 3.
Summary statistics of indicator variables, by cluster

market (9.6% of expenditures) and they spend a significantly higher share (39.3%) at "other" types of food retail outlets. Unsurprisingly, these consumers visit the main traditional market less often than all other clusters.

Cluster 3's shopping behaviour may reflect the fact that their households are a greater distance from the main traditional markets and are in closer proximity to these "other" retail outlets. Cluster 3 has more males involved in food decision making and purchasing than Cluster 1 and Cluster 2. A significantly lower share (30.4%) of Cluster 3's expenditures on

Variable		Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Overall sample
Religion (%)	Muslim	4.55[a]	7.07[a]	9.41[a]	3.92[a]	9.52[a]	6.20
	Christian	78.41[a]	57.60[b]	66.47[b]	67.32[a,b]	26.19[c]	66.60
	Hinduism	15.63[a]	34.63[b]	22.94[a,b]	25.49[a,b]	64.29[c]	25.80
	Other	1.42[a]	0.71[a]	1.18[a]	3.27[a]	0.00[a]	1.40
Ethnicity (%)	Indigenous Fijian/i Taukei	69.32[a]	38.87[b]	54.12[c]	57.52[a,c]	28.57[b]	54.60
	Indo Fijian	24.72[a]	50.88[b]	34.71[a]	27.45[a]	69.05[b]	36.10
	Routmans	2.84[a]	1.06[a]	3.53[a,b]	9.80[b]	0.00[a,b]	3.40
	Chinese	0.00[a]	1.41[a,b]	1.18[a,b]	1.31[a,b]	2.38[b]	0.90
	Expats (non Pacific Island born)	0.00[a]	1.41[a]	0.59[a]	0.00[a]	0.00[a]	0.50
	Other (includes other Pacific Island countries)	3.13[a]	6.36[a]	5.88[a]	3.92[a]	0.00[a]	4.50
Income (%)	<501 $/month	21.20[a]	23.55[a]	25.29[a]	28.76[a]	28.57[a]	24.04
	501 1,000 $/month	42.12[a,b]	35.51[a,b,c]	25.88[c]	30.07[b,c]	54.76[a]	36.16
	1,001 1,500 $/month	24.93[a]	21.01[a]	22.35[a]	17.65[a]	16.67[a]	21.92
	>1,500 $/month	11.75[a]	19.93[b]	26.47[b]	23.53[b]	0.00[a]	17.88
Factors influencing food purchase decision (%)	Price	58.81[a]	57.95[a]	53.53[a]	56.21[a]	97.62[b]	58.90
	Food safety	2.56[a]	2.47[a]	2.94[a]	0.00	0.00	2.10
	Quality	11.08[a,b]	24.03[c]	17.06[b,c]	14.38[a,b,c]	0.00	15.80
	Freshness	9.94[a]	3.53[b]	8.24[a,b]	9.15[a,b]	0.00	7.30
Importance of modern retail attributes		31.09[a]	29.60[b]	28.40[b]	31.57[a,c]	33.40[c]	30.38

Note(s): In each row, different superscript letters indicate statistically significant difference in values between columns at the 5% level

Table 4. Summary statistics of active covariates, by cluster

FFV are made at traditional markets (versus modern and other retail outlets) compared to all other clusters'. The shopping patterns of this "**High Income**" cluster are further reinforced by the relatively higher importance they place on food safety and lower concern placed on price when shopping for food.

Cluster 4 (15.3%) is labelled "**Traditional Shopper**" and includes a majority of i-Taukei (57.5%). Relative to all other clusters, a significantly higher share of Cluster 4's food expenditures are made at the main traditional market (42.9% compared to the next highest, Cluster 1 at 27.0%). Furthermore, 84% of their FFV expenditures are made at traditional markets. In contrast to the Clusters 1–3, Cluster 4's food shopping decisions are not influenced by food safety concerns.

Cluster 5 is labelled "**Outskirts Low Income**". Households in this cluster have to travel the furthest distance to reach public transport, an average of 206.95m compared to the sample mean of 82.8m. Cluster 5 households have the lowest household income of all of the clusters with no households in the highest income bracket. This is the smallest cluster (only 4.2% of the sample) with 69.3% being Indo Fijian. The majority (99.5%) of Cluster 5's expenditures on FFV are made at the main traditional market. Price is the main factor influencing their food-purchasing decisions for 97.6% of the households in Cluster 5.

4. Discussion

Supermarkets are the dominant food retail outlet for urban Fijian households in this study, accounting for more than one-half of all urban household's food expenditures. Traditional

Variable	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Overall sample
Household size (number)	5.38[a]	4.45[b,c]	5.04[a,b]	4.31[b,c]	3.69[c]	4.82
Main activity of household head (%)						
Farmer or fisherman	5.34[a]	4.80[a]	1.22[a]	1.32[a]	4.76[a]	3.83
Self employed other/employed	5.34[a]	7.75[a,b]	15.85[b]	7.89[a,b]	0.00	7.97
Wage/Salary employee	53.41[a,b]	56.09[a,b]	51.83[b]	53.29[a,b]	76.19[a]	54.87
Unpaid family/community worker	7.42[a]	5.90[a]	1.83[a]	6.58[a]	2.38[a]	5.69
Student	1.78[a]	1.11[a]	2.44[a]	0.66[a]	0.00[a]	1.45
Unemployed/retired	26.11[a]	23.62[a]	26.83[a]	29.61[a]	16.67[a]	25.67
Other	0.59[a]	0.74[a]	0.00[a]	0.66[a]	0.00[a]	0.52
Who decides what food to buy (%)						
Male adult family member	24.15[a]	22.97[a]	37.65[b]	26.80[a,b]	11.90[a]	26.00
Female adult family member	75.57[a]	75.97[a]	58.24[b]	69.28[a,b]	88.10[a]	72.30
Children in family	0.28[a]	1.06[a,b]	2.35[a,b]	3.27[b]	0.00[a,b]	1.30
No one	0.00[a]	0.00[a]	1.76[a]	0.65[a]	0.00[a]	0.40
Who does food shopping (%)						
Male adult family member	17.61[a]	19.50[a]	31.76[b]	22.22[a,b]	16.67[a,b]	21.22
Female adult family member	82.10[a]	79.08[a]	63.53[b]	73.86[a,b]	83.33[a,b]	76.88
Children in family	0.28[a]	1.42[a,b]	2.94[a,b]	3.27[b]	0.00[a,b]	1.50
No one	0.00[a]	0.00[a]	1.76[a]	0.65[a]	0.00[a]	0.40
Expenditure share by food group (%)						
Fruits and vegetables	32.31[a]	32.21[a]	30.01[a]	40.27[b]	25.27[c]	32.81
Carbohydrates	21.03[a]	20.83[a]	19.11[a]	15.62[b]	38.87[c]	20.57
Meat, eggs, nuts	13.04[a]	13.83[a]	14.50[a]	12.51[a]	14.17[a]	13.48
Dairy	0.75[a]	1.19[b,c]	1.17[a,b,c]	0.90[a,b]	1.87[c]	1.02
Processed food	25.83[a,b]	24.88[a]	28.92[b]	24.82[a,b]	12.98[c]	25.39
Fats, oils, seasonings	7.04[a]	7.05[a]	6.29[a,b]	5.87[b]	6.85[a,b]	6.73
Expenditure share of fruits and vegetables by outlet type (%)						
Supermarket	23.36[a]	25.93[a]	27.13[a]	15.62[b]	3.94[c]	22.72
Main/traditional market	72.02[a]	69.31[a]	30.43[b]	83.95[c]	94.54[d]	66.99
Other	4.62[a]	4.76[a]	42.45[b]	0.43[c]	1.52[a,c]	10.29
Distance to nearest public transport (*m*)	61.68[a]	72.35[a,b]	89.84[a,b]	109.24[b]	206.95[c]	82.79

Note(s): In each row, different superscript letters indicate statistically significant difference in values between columns at the 5% level

Table 5. Other socio demographic and behavioural characteristics, by cluster and overall sample

main (municipal) markets have maintained just under one-third of urban household food expenditure and remain the major retail outlet for FFV. This is important for local smallholder farmers who rely on traditional outlets to sell their produce.

Analysis of the surveys of urban Fijian households identified five distinct clusters: Cluster 1: Typical i-Taukei (35.2%); Cluster 2: Typical Indo Fijian (28.3%); Cluster 3: High Income (17.0%); Cluster 4: Traditional Shopper (15.3%); and Cluster 5: Outskirts Low Income (4.2%).

Clusters 1 and 2 reflect the food shopping behaviour of the majority of the urban population. On average, these households do their shopping about once per week and they mainly shop for food at the supermarket and the main traditional market. These two clusters spend more at the supermarket relative to other types of retail outlets, but they still buy the majority of their FFV at the main traditional market. In comparison, Cluster 4 households are

more traditional in their shopping behaviour, spending more at the traditional market and a greater percentage of their total food budget on FFV.

A key insight comes from the comparison between Cluster 3: High Income and Cluster 5: Outskirts Low Income. Even though Cluster 5 is small in size, the lower income level correlates with a greater expenditure at the main traditional market with 94.5% of all FFV expenditures occurring at this outlet. This contrasts significantly with the higher income of Cluster 3, who only spend 30.4% of their FFV expenditures at the main traditional market. Another significant difference between the two clusters is the role of women in the household. In the outskirts low income cluster, females are responsible for the majority of the food shopping (83.3%); however, this share reduces to 63.5% for the high income cluster with males taking an active role in both food shopping and food decision making.

As the demographics and income levels continue to change in Fiji, the cluster analysis provides insight into the effect this may have across the industry. For example, if incomes continue to increase and the role of women in the household continues to evolve, Cluster 3 may increase in size. This would result in less FFV expenditure in the main traditional market which would ultimately result in fewer market opportunities for smallholder farmers who currently rely on this channel for the sale of their locally grown food products.

In addition to the likelihood of consumers seeking more FFV from modern retail outlets, research in other developing countries has revealed that supermarkets are strongly prioritising strategies to increase their market share in the FFV category (Brown, 2005; Nuthalapati *et al.*, 2020; Slamet *et al.*, 2017). A study by Neven *et al.* (2006) of retail transformation in Kenya found that supermarket managers had a clear strategy for making procurement of FFV more efficient in order to reduce prices and to increase their market share in this category. Neven *et al.* (2006) projected a threefold increase in supermarkets' FFV sales within three to five years in Kenya, which would make these supermarkets the dominant FFV food retail outlet for mid- and high-level income classes in the country. If Fijian supermarkets employed this strategy for FFV, the implications for smallholder farmers could be potentially devastating. A survey of local Fijian farmers across the main island of Viti Levu found that a mere 2% of farmers surveyed were currently selling into supermarkets (Finizio, 2019).

Linking smallholders to modern retailers was supported by Brown (2005), who emphasised the importance of fostering good competition within the food retail sector and the need to prepare smallholders with the skills required to trade in the modern era. Similar studies have shown that if smallholders can link to supermarkets, there would be potential to increase their productivity and income (Chege *et al.*, 2015; Michelson, 2013; Ogutu *et al.*, 2019; Qaim *et al.*, 2014). Elder (2019) suggested that interventions aiming to link smallholders farmers to supermarkets must consider farm and household characteristics, the sourcing strategies of the retailer and the potential role of intermediates. While circumstances differ by country, studies in Costa Rica showed how specialised wholesalers were able to provide a pivotal link between smallholders and supermarkets to help meet the requirements needed along the chain (Alvarado and Charmel, 2002). An alternative approach to using intermediates has been effective in India and Ghana, where smallholders have coordinated horizontally to market their fresh produce (Adbul-Rahaman and Abdulai, 2020; Kumar *et al.*, 2008). Similar studies in developing countries have promoted the benefits of multi-stakeholder platforms where government, donors and private sector stakeholders collaborate together to help smallholders meet the quality, safety and cost requirements needed for sustainable business (Iza *et al.*, 2020; Weatherspoon and Reardon, 2003).

In addition to exploring ways to link smallholder farmers to modern supermarkets, it is important to investigate opportunities for traditional retailers to better meet changing consumer preferences and retain some of their market share. An example of this approach was taken in Hong Kong, where the government funded a pilot scheme to improve wet market facilities and hired experienced retail managers to run four traditional markets (Ho, 2005).

A key recommendation for the Fijian government is to work with the private sector to ensure smallholder farmers maintain a viable market channel for selling their local produce. Lessons from other countries suggest that a private sector, government and donor agency partnership is the best model to deal with these challenges. The strategy should include a dual focus on (1) facilitating the linkage between local producers and modern retailers and (2) the development of traditional retailing to meet changing consumer preferences. While these recommendations are specific to Fiji, potential exists to adapt this type of methodology and the insights generated by it, for use in other countries facing similar challenges.

5. Conclusions

The study shows how consumers are important drivers of change in Fiji's agrifood system, which will continue to evolve. Research in the late 1970s warned of the potential implications for the Fijian food production and distribution systems of consumers' increasing use of supermarkets. Experience in other developing countries has shown how smallholder farmers can be disadvantaged when supermarkets increase their market share.

While supermarket dominance of urban food expenditure has not spread to the FFV category in Fiji yet, this study has shown that as income increases there is potential for reduced FFV shopping at traditional retail markets. Insights from other developing countries suggest that there are two main types of potential interventions to ensure smallholder farmers are not disadvantaged. First, smallholder farmers need to be linked to supermarkets through intermediates or horizontal alliances with other farmers. Second, traditional retailers, who provide smallholder farmers with a viable market channel**,** must improve their facilities and management to attract increasingly sophisticated consumers and to retain market share.

Both of these approaches require effective integration between government and the private sector and appropriate policy and regulations to suit each country's specific circumstances. Policy and regulatory changes should consider the needs of all actors in the value chain (e.g. farmers, traders, retailers and consumers). Rather than try to prevent the transformation of the food system, policy makers should try to anticipate the direction of evolution and help traditional retailers, traders and farmers to adapt. In addition to furthering the understanding of the changes occurring in Fiji, this study also aims to provide valuable insights for other SIDS facing similar challenges.

The types of consumer household surveys and analysis conducted in this research should be repeated at regular intervals to provide up-to-date insights on how the industry is changing and to justify recommendations on ways in which governments and the private sector can work together in the best interests of the country.

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Appendix

Outlet type	Frequency	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Overall sample
Supermarket	Only a few times a year	0.00[a]	0.00[a]	0.59[a]	0.65[a]	0.00[a]	0.20
	Once a month	2.56[a]	15.19[b]	7.06[a,b]	6.54[a,b]	2.38[a,b]	7.50
	2 3 times per month	28.41[a]	25.80[a,b]	24.12[a,b]	15.69[b]	88.10[c]	27.50
	Once a week	63.35[a]	53.71[a]	53.53[a]	50.33[a]	7.14[b]	54.60
	2 6 times per week	5.68[a,b]	4.59[b]	12.35[a,c]	22.88[c]	0.00[a,b]	8.90
	Every day	0.00[a]	0.71[a,b]	2.35[b]	3.92[b]	2.38[b]	1.30
Roadside stall/ hawker	Never	1.42[a]	22.66[b]	12.50[b,c]	72.73[d]	0.00[a,c]	19.67
	Only a few times a year	14.25[a,b]	18.71[b]	2.38[c]	2.10[c]	0.00[a,c]	11.11
	Once a month	5.98[a]	12.95[b]	2.98[a]	8.39[a,b]	0.00[a,b]	7.54
	2 3 times per month	19.66[a]	5.04[b]	11.90[a,b]	3.50[b]	100.00[c]	15.19
	Once a week	18.52[a,b]	33.09[c]	28.57[b,c]	9.09[a,d]	0.00[d]	22.22
	2 6 times per week	38.75[a]	7.19[b]	40.48[a]	4.20[b]	0.00[b]	23.45
	Every day	1.42[a]	0.36[a]	1.19[a]	0.00[a]	0.00[a]	0.82
Corner shop/ butcher/bakery	Never	0.00[a]	10.64[b]	6.47[b]	14.38[b]	0.00[a,b]	6.31
	Only a few times a year	0.28[a]	9.22[b]	5.29[b,c]	0.65[a,c]	0.00[a,b,c]	3.71
	Once a month	0.00[a]	13.12[b]	0.00[a]	7.19[b]	0.00[a,b]	4.81
	2 3 times per month	11.36[a]	7.09[a]	11.76[a]	0.65[b]	97.56[c]	12.12
	Once a week	0.00[a]	43.97[b]	11.18[c]	22.88[d]	0.00[a,c]	17.84
	2 6 times per week	87.22[a]	2.84[b]	50.59[c]	33.33[d]	2.44[b]	45.39
	Every day	1.14[a]	13.12[b,c]	14.71[b,c]	20.92[c]	0.00[a,b]	9.82
Fish market	Never	2.84[a]	8.90[b]	18.93[c,d]	24.50[d]	2.38[a,b,c]	10.55
	Only a few times a year	8.52[a]	14.23[a,b]	17.75[b]	0.00[c]	0.00[a,c]	10.05
	Once a month	22.16[a]	28.83[a]	11.83[b]	20.53[a,b]	2.38[b]	21.21
	2 3 times per month	34.38[a]	17.79[b,c]	20.71[c]	9.27[b]	95.24[d]	26.13
	Once a week	29.83[a]	28.11[a]	28.99[a]	41.06[a]	0.00[b]	29.65
	2 6 times per week	2.27[a,b]	0.36[b]	1.18[a,b]	4.64[a]	0.00[a,b]	1.81
	Every day	0.00[a]	1.78[a]	0.59[a]	0.00[a]	0.00[a]	0.60
Main/traditional market	Never	0.00[a]	3.53[b,c]	9.41[c]	0.00[a,b]	0.00[a,b,c]	2.60
	Only a few times a year	0.57[a]	2.83[a]	12.35[b]	0.00[a]	0.00[a,b]	3.10
	Once a month	8.81[a,b]	10.60[b]	7.65[a,b]	2.61[a]	0.00[a,b]	7.80
	2 3 times per month	27.84[a]	13.43[b]	25.29[a]	10.46[b]	92.86[c]	23.40
	Once a week	52.84[a]	62.90[a,b]	30.59[c]	75.16[b]	4.76[d]	53.30
	2 6 times per week	9.38[a,b]	6.36[b]	14.71[a]	11.11[a,b]	2.38[a,b]	9.40
	Every day	0.57[a]	0.35[a]	0.00[a]	0.65[a]	0.00[a]	0.40

Table A1. Shopping frequency in each outlet type, by latent class cluster

(*continued*)

Outlet type	Frequency	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Overall sample
Restaurants	Never	37.04^{a,b}	26.69^{b}	40.24^{a}	60.53^{c}	0.00^{d}	36.72
	Only a few times a year	46.72^{a}	43.06^{a}	24.26^{b}	2.63^{c}	24.39^{a,b}	34.21
	Once a month	7.41^{a}	13.88^{a}	13.02^{a}	7.89^{a}	68.29^{b}	12.78
	2 3 times per month	5.41^{a}	9.25^{a,b}	10.06^{a,b}	15.13^{b}	7.32^{a,b}	8.85
	Once a week	1.42^{a}	7.12^{b}	4.14^{a,b}	6.58^{b}	0.00^{a,b}	4.23
	2 6 times per week	1.99^{a,b}	0.00^{b}	6.51^{a}	6.58^{a}	0.00^{a,b}	2.82
	Every day	0.00^{a}	0.00^{a}	1.78^{a}	0.66^{a}	0.00^{a}	0.40
Fast food (e.g. McDonalds)	Never	65.24^{a}	46.59^{b}	65.29^{a}	67.79^{a}	0.00^{c}	57.68
	Only a few times a year	27.64^{a,b}	34.77^{b}	16.47^{a,c}	9.40^{c}	65.85^{d}	26.57
	Once a month	3.99^{a}	8.96^{a}	6.47^{a}	5.37^{a}	29.27^{b}	7.07
	2 3 times per month	3.13^{a}	1.79^{a}	5.88^{a,b}	9.40^{b}	2.44^{a,b}	4.14
	Once a week	0.00^{a}	7.17^{b}	2.94^{b}	2.68^{b}	2.44^{b}	3.03
	2 6 times per week	0.00^{a}	0.36^{a,b}	2.94^{b,c}	4.70^{c}	0.00^{a,b,c}	1.31
	Every day	0.00^{a}	0.36^{a}	0.00^{a}	0.67^{a}	0.00^{a}	0.20
Service station	Never	62.11^{a}	65.11^{a}	69.23^{a}	74.83^{a}	9.52^{b}	63.87
	Only a few times a year	23.36^{a}	11.51^{b}	15.98^{a,b}	1.32^{c}	0.00^{b,c}	14.43
	Once a month	7.69^{a}	7.19^{a}	0.59^{b}	1.32^{a,b}	4.76^{a,b}	5.25
	2 3 times per month	2.85^{a}	3.60^{a}	5.33^{a}	6.62^{a}	80.95^{b}	7.37
	Once a week	1.14^{a}	8.99^{b}	4.73^{a,b}	9.27^{b}	2.38^{a,b}	5.25
	2 6 times per week	2.85^{a}	3.60^{a}	2.96^{a}	5.96^{a}	2.38^{a}	3.53
	Every day	0.00^{a}	0.00^{a}	1.18^{a}	0.66^{a}	0.00^{a}	0.30

Note(s): In each row, different superscript letters indicate statistically significant difference in values between columns at the 5% level

Table A1.

Chapter 5: Results (IFAMR Submitted Article)

Statement of Authorship (Article 3)

Title of Paper	Australian ethical consumer segmentation of food and agricultural products and export opportunities for the Pacific Islands
Publication Status	☐ Published ☐ Accepted for Publication ☑ Submitted for Publication ☐ Unpublished and Unsubmitted work written in manuscript style
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Principal Author

Name of Principal Author (Candidate)	Craig Johns		
Contr bution to the Paper	Literature review, survey development, data collection, interpretation of data, wrote the manuscript and acted as corresponding author.		
Overall percentage (%)	60%		
Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the primary author of this paper.		
Signature		Date	27/01/23

Co-Author Contributions

By signing the Statement of Authorship, each author certifies that:

i. the candidate's stated contribution to the publication is accurate (as detailed above);

ii. permission is granted for the candidate in include the publication in the thesis; and

iii. the sum of all co-author contr butions is equal to 100% less the candidate's stated contribution.

Name of Co-Author	Professor Wendy Umberger		
Contr bution to the Paper	Contributed to development of ideas and design of methodology, assisted with data interpretation and provided feedback on the manuscript.		
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Name of Co-Author	Dr Rio Maligalig		
Contr bution to the Paper	Provided guidance on the analysis of the data and feedback on the manuscript		
Signature		Date	13 Feb 2023

Title: Australian ethical consumer segmentation of food and agricultural products and export opportunities for the Pacific Islands

Abstract

Ethical consumerism is one of this century's retail success stories and has continued to grow despite the global pandemic and economic contraction. Consumers worldwide are increasingly putting their money where their values are in purchases of food and drink, clothing, housing, and financial and other services. Understanding these consumers is key to competing successfully in markets for ethically sourced products and presents opportunities for reducing poverty in developing countries where food and agricultural production is the dominant economic activity, such as small island developing states (SIDS) in the Pacific. While ethical consumerism is an expanding research field, findings rarely are analysed in detail for market development. Rarer still is segmentation in terms of product attributes aimed explicitly at poverty reduction in slow-growth, emerging economies like those of the Pacific. Here we report a latent class cluster analysis of survey responses by ethically conscious Australian consumers (n=637) associated with Oxfam, the development charity. Four distinct consumer segments were identified with implications for Pacific producers. Product origin and 'the story behind the product' were particularly important to these consumers. The findings provide practical insights to agricultural stakeholders in the Pacific and those similarly situated around the globe that are in need of new economic opportunities.

Keywords: Fairtrade, Ethical Consumerism, Pacific, SIDS, Australia, latent class cluster analysis

1. Introduction

1.1 Ethical consumerism and the Pacific context

The number and proportion of food consumers concerned with the ethical sourcing of products and the equitable distribution of economic benefit from their sale have grown substantially in the developed world since the turn of the century (Beldad and Hegner, 2018; Coop, 2021; Nicholls, 2002). The rate of increase in ethical consumerism is predicted to increase worldwide as the incomes of Millennials in developed economies rise (Bollani et al., 2019). While consumer research on demand in large, developed markets for food and drink products that satisfy ethics-based goals is widespread and growing, studies exploring the different characteristics of consumers attracted to products which benefit low-income producers in smaller emerging markets are rare (Bangsa and Schlegelmilch, 2020). Small island developing states (SIDS) in the Pacific region, which desperately need growth and development opportunities matching their competitive strengths, need precisely this sort of consumer research to gain insight into these markets. The Pacific region is home to 25 political entities, including independent states, territories and other dependencies (McGregor, 1999). The larger nations in the region include Fiji, Papua New Guinea, Solomon Islands, and Vanuatu. Food production is the dominant economic activity of the populace on the vast majority of these remote islands, where annual per capita income tends to be low, in the USD$2,000-$6,000 (IMF, 2022) range.[1]

International trade and economic growth are essential for lifting undeveloped nations out of poverty (Chen et al., 2014; McGillivray et al., 2008). Pacific nations generally have been unable to capitalise on evolving food production and distribution systems, and so have missed market opportunities that emerged with globalisation (Croes, 2006; Douglas, 2006; Pelling and Uitto, 2001). Even the larger Pacific countries have difficulty attracting substantial global companies capable of providing beneficial economies of scale (Josling, 1998). Instead, these countries must focus on existing areas of competitive advantage, such as agriculture and tourism (Gani and Scrimgeour, 2019), which already make up a significant part of their gross domestic product (GDP) (Chen et al., 2014; McGregor, 2010).

[1] Of the 11 Pacific island countries included in the IMF analysis, 3 are outliers in terms of per capita GDP (PPP): Kiribati's is below USD$2,000, while Nauru (USD$10,010) and Palau (USD$15,080) are much higher. Nauru's GDP has been enhanced by Australia's offshore immigration program. Palau is closely associated with the United States and enjoys relatively high levels of foreign aid from that country and Japan.

The inclusion of smallholder farmers in the development of any new or expanding market opportunities is a vital part of poverty-reduction strategies in low-GDP countries where agriculture is the dominant economic activity. Understanding the characteristics and preferences of consumers interested in purchasing food products from low-income producers in developing countries, of which SIDS form a special class, is therefore critical to identifying new market opportunities.

When considering potential target markets for key trading Pacific countries such as Fiji, Australia is a logical choice, with approximately 41% of all tourist arrivals into Fiji in 2019 coming from Australia (FBOS, 2019). Australia is also one of Fiji's most important trading partners (Chand, 2019). It is the biggest investor in Fiji (Yang, 2011), and in 2010, Australia was the largest destination for Fijian products taking 21% of all Fijian exports (Gani and Scrimgeour, 2019).

Navigating the literature on ethical food consumption presents challenges because it is already extensive, spread across various disciplines and fields, and published in a variety of non-specific specialist journals using heterodox terminologies (Carrington et al., 2021). In important ways, it also paints a somewhat contradictory picture. Top of the list is the repeated finding that professed attitudes about ethical consumption do not always translate into purchasing behaviour (Bray et al., 2011; Burke et al., 2014; Carrington et al., 2014). Some studies have found that demographics substantially influence ethical consumption, for example, that ethics-driven buying is predominantly found in women (Bucic et al., 2012) and that values associated with such purchasing behaviour are likely to increase with age (Hines and Ames, 2000; Pelsmacker et al., 2006). Other studies have highlighted conflicting relationships between ethical values and demographic factors, or concluded that demographics are unreliable predictors of ethical purchasing (Bray et al., 2011; De Pelsmacker et al., 2005). Recent research examining consumers' awareness and/or perceptions of ethical attributes of food production and purchasing behaviour found a high degree of heterogeneity (Bangsa and Schlegelmilch, 2020; Palacios-González and Chamorro-Mera, 2020; Park, 2018), which suggests differentiation of consumers on the basis of socioeconomic, attitudinal and behavioural characteristics should be productive.

1.2 Objective of the Oxfam Australia / University of Adelaide ethical consumption survey

The study described here was instigated in partnership with Oxfam Australia. Oxfam is one of the largest ethically conscious organisations with a database of 55,000 donors, retail customers and mailing list subscribers in Australia. Oxfam management was interested in sourcing more

products from the Pacific region for its retail stores, and our research team was interested in understanding ethical consumer market opportunities for Pacific exporters, so we collaborated to develop an online survey. The survey resulted in the segmentation of 637 ethically conscious Australians.

The aim of the collaborative study was to better link Australian consumer markets to developing communities by focusing mainly on food and other agricultural products from the Pacific Islands, which hold a special place historically in Australia's foreign aid and security policies, to say nothing of tourism. Oxfam Australia sought to better understand supporters' and customers' product preferences as well as actual and potential buying behaviour. The survey was developed to gain consumer data in four key areas: (1) socio-demographics; (2) purchasing behaviour at Oxfam retail outlets, both bricks-and-mortar and online; (3) consumer preferences; and (4) opportunities for Pacific products. Multiple studies have shown that consumers who are positive about ethical products are also willing to pay more for them (De Pelsmacker et al., 2005; Lappeman et al., 2019; Sama et al., 2018; Verain et al., 2016), which underscores the rationale for studying and segmenting consumer groups aligned with organisations such as Oxfam. A better understanding of a relatively defined segment of the Australian market for ethical consumption will provide insights for exporters and policymakers concerned with economic development and improving household incomes of primary producers in the Pacific.

Research has previously suggested that Pacific island provenance might be perceived as more 'natural' and 'pure' or more socially responsible or environmentally friendly (Connell, 2006; Jones et al., 2017). A case in point is Fiji Water which is exported to over 40 countries in the highly competitive global market for bottled water (Jones et al., 2017) and is valued at over USD$ 35 billion (Jones et al., 2017; Reddy and Singh, 2010). Marketing themes of 'clean' and pure' were critical to Fiji Water's success (Connell, 2006), together with a consumer belief that the company is ethically and socially responsible (Jones et al., 2017) – this is despite Fiji Water never having been certified as such. The remarkable success of Fiji Water seemed to point to the latent export potential of niche products from Fiji and the Pacific.

The paper is organised as follows. Section 1 describes the genesis and justification of the research.. Section 2 covers the relevant literature on ethical consumption and the background on Fairtrade certification and Oxfam. Section 3 describes the methods used, data collection and analysis details. Section 4 sets out the results in a series of tables, which are linked back to the research objectives. The discussion in Section 5 and conclusion in Section 6 suggests the work's contribution to and implications for different stakeholders and discusses the limitations and possible future directions for research.

2. Literature Review

2.1 What is ethical consumption?

In one sense, investigation and discussion of the ethics of consumption are as old as philosophy and religion (Holbrook, 1994). Problems of clarity and consensus arise when "precise conceptualisation and delineation of the construct" of ethical consumerism is attempted in the academic sphere (Wooliscroft et al., 2014). In the interests of brevity, we will side-step academic debates about the definition, in favour of a characterisation pitched to a non-specialist reader with which (we believe) few would take issue:

> "At face value, ethical consumerism is the idea that your consumption has an impact on the world, so you want that impact to align with your values. This means understanding the footprint of the products you consume, how they were made, and how they will be disposed of (Kim, 2022)."

The crux of ethical consumerism is to avoid economic choices that damage the environment or cause harm to living communities around the globe and to promote or support efforts that benefit the environment, people and/or other classes of living things. Topics and issues that often arise in this space include sustainability and related 'green' concerns (Diamantopoulos et al., 2003); organics (Tallontire et al., 2001); fair trade (De Pelsmacker et al., 2005); workers' rights (Barnett et al., 2005); animal welfare, country of origin, and health related issues (Carrington et al., 2010; Wooliscroft et al., 2014). The most frequently researched aspects of ethical consumerism, identified by researchers of a study that characterised ethical consumption in New Zealand, appear to be (1) environmental concerns/green consumers; (2) fair trade (often associated with single product categories, such as coffee or chocolate); (3) voluntary simplicity or downshifting; (4) anti-consumption; (5) consumer ethics, including its moral dimension; and (6) the attitude-behaviour gap (Wooliscroft et al., 2014).

The value of the global ethical consumption market is unknown and difficult to estimate, but the growth of ethical consumerism in the UK over the past two decades may be instructive. According to The Co-op (formerly the Cooperative Bank) and Ethical Consumer, two UK-based non-profit organisations that have jointly reported on ethical consumption patterns for the past two decades, the value of ethics-based consumerism in the UK alone increased more than 10-fold between 1999 and 2020, from £11.2bn to £122bn (Coop, 2021). Although 2020 was the first year of the COVID-19 pandemic, when lockdowns were common and lengthy, ethical consumerism "broke through the £100bn mark" and finished the year 23.7% higher than the previous year (Coop, 2021). These figures reflect five main categories: ethical food and drink, green homes, eco-travel and transport, ethical personal products, community building,

and as ‘ethical money’ and boycotts of products and services considered unethical. In short, the ethical consumer market is substantial and growing rapidly. The opportunity to capitalise on this trend could be life-changing for poor producers and value chains in low-income developing economies.

2.2 Facilitating ethical consumption: Fairtrade and Oxfam:

Over the past two decades, the unrivalled standout in the ethical consumption space has been Fairtrade, one of the oldest ethical certification schemes worldwide, which is now a “well-established part of mainstream consumer decision-making” (Coop, 2021). In the Netherlands, for example, the number of households buying Fairtrade products increased nearly threefold in a decade, from 24% of Dutch households in 2007 to 69% in 2016 (Beldad and Hegner, 2018). In addition to the growth of Fairtrade in developed countries, there are also examples of strong growth in emerging markets, such as South Africa, which experienced a 220% increase in Fairtrade sales in 2012 (Hughes et al., 2015). According to its own figures, Fairtrade’s global network includes more than 1.9 million small-scale growers and workers in Latin America, Africa, the Middle East, Asia and the Pacific (Fairtrade, 2021a), that produce ingredients and products global consumers use every day. Fairtrade products range from fruit and vegetables, cane sugar, coffee, tea, cocoa, cotton, honey, herbs/spices, flowers and plants, rice, nuts/oil and quinoa to composite products (e.g., chocolate bars, cookies, ice cream), wine, sports balls, textiles and gold (Fairtrade, 2021b).

To the consumer, Fairtrade certification indicates that growers and other producers receive a premium over and above the market price for their products, ensuring their costs are covered, and they have access to credit when they need it during the production cycle. It also means that along the value chain, workers are treated fairly, child labour is not used, and environmentally sustainable methods are employed. At the heart of the enterprise is the transparent documentation of value chains for compliance regarding multiple issues of concern for each item produced and sold (De Pelsmacker and Janssens, 2007; Kim et al., 2010; Ladhari and Tchetgna, 2015; Ruggeri et al., 2019).

Traditionally, the United States (US), United Kingdom (UK) and Europe have dominated markets for certified products. Today an estimated 125 countries sell more than 30,000 Fairtrade-certified products (Ruggeri et al., 2019). In addition to the specialist stores where this movement originated, Fairtrade products are now sold through conventional supermarkets and online market channels (Doran, 2009; Ladhari and Tchetgna, 2015). In Australia, Fairtrade products have expanded to be available in supermarket chains, speciality shops and online, with coffee and chocolate being the dominant food items. In addition, some large companies

(e.g., Origin Energy and Lonely Planet) have introduced Fairtrade-certified tea and coffee in their Australian offices (Krier, 2008).

One of the principal specialist retailers of Fairtrade products is Oxfam, an international not-for-profit confederation of 20 independent charitable organisations focusing on reducing global poverty in 87 countries around the globe. Results of a 1994 survey conducted in the UK, which indicated 81% of consumers would buy products that returned more money to producers (Nicholls, 2002), led Oxfam to significantly expand its global retail networks. Oxfam Australia, one of the success stories, increased sale volume 50-fold over a three-year period from 2003-2006 (Krier, 2008). By late 2007, Fairtrade Labelling Association of Australia and New Zealand (FLAANZ), the company responsible for Fairtrade licenses, had approved 123 licensed partners to sell Fairtrade products in Australia.

At the time of this study, Oxfam Australia operated 13 retail stores, an online 'Oxfam Shop' and a wholesale business supplying Oxfam-branded coffee, tea and chocolate to Australian supermarkets[2]. When Oxfam Australia was approached about the opportunity to be part of a Pacific aid project to explore opportunities for smallholder farmers, they agreed to be part of the project and offered access to their database of 55,000 predominantly Australian donors, retail customers and mailing list subscribers. The database provided the means for exploring Oxfam's customer base for the dual purpose of understanding a market opportunity for Pacific exporters as well as informing Oxfam management decisions about developing new product lines.

2.3 Ethical consumer segmentation

While research on ethical food consumption has been conducted in other geographical regions, notably in developed countries in the Northern Hemisphere, studies in emerging and culturally diverse countries have been rare (Hughes et al., 2015). The global and local context, particularly the region's culture, is pivotal in shaping ethical consumption (Al-Khatib et al., 1997; Le and Kieu, 2019). Findings from studies in other regions do not always translate well to the Australian context, where there has been limited research to date (Brenton, 2013; Burke et al., 2014; Cheah and Phau, 2011; Chowdhury and Fernando, 2014; O'Connor et al., 2017). Specifically, we are unaware of any research characterising ethical consumption based on

[2] More recently, Oxfam closed their physical retail stores, but have continued their online and wholesale businesses.

potential preferences for food products originating from a particular region, in this case, the Pacific.

Cluster or factor analysis techniques have been used to classify groups of consumers on the basis of differing ethical motivations from the vantage of a particular country, including the UK (Bucic et al., 2012; Varul, 2009); US (Long and Murray, 2013; Uddin and Gallardo, 2021); Canada (Ladhari and Tchetgna, 2015); Germany (Varul, 2009); Belgium (De Pelsmacker and Janssens, 2007); Spain (Palacios-González and Chamorro-Mera, 2020); Turkey (Gunden et al., 2020); Nepal (Adhikari et al., 2012); and Vietnam (Le and Kieu, 2019). Specific products, such as coffee in South Africa (Lappeman et al., 2019) and Poland (Maciejewski et al., 2019), honey in Spain (Sama et al., 2018), juice in Brazil (Prell et al., 2020), and vegetables in Kenya (Macharia et al., 2013) have also been the focus of previous ethical food consumption studies.

Several studies using Fairtrade-related data have yielded multiple classifications of consumers, including on the basis of (a) a positive disposition to Fairtrade principles and ethical products, (b) a negative disposition or (c) indifference (Burke et al., 2014; Gunden et al., 2020; Verain et al., 2016). Not only are Fairtrade 'lovers' willing to pay more, Fairtrade 'likers' are believed to be amenable to buying Fairtrade products if marketing messages are more informative (De Pelsmacker et al., 2005). Clearer labelling and strategic marketing have the potential to overcome consumer scepticism and confusion, which are significant barriers to ethical consumption, another study found (Burke et al., 2014). More recent research segments ethical consumers slightly differently: (1) 'Fairtrade consumers' who value the type of production, (2) 'local consumers' who value the origin, and (3) 'price sensitive' consumers who don't value socially or environmentally responsible products (Sama et al., 2018). Research has also shown the advantage of comparing different food categories (Verain et al., 2016), especially with a product like coffee, where consumers have different levels of product-related sophistication (Maciejewski et al., 2019).

3. Methods: Data Collection and Analysis

3.1 Data Collection

Oxfam Australia was actively involved in developing the survey instrument to ensure that the insights gained could directly inform and influence management decisions on the development of the product range and future negotiations with Pacific exporters. On this basis, Oxfam Australia provided access to their database of 55,000 registered subscribers. We agreed that an online questionnaire would be the most practical and efficient method to collect quantitative data from the existing consumer base. While there are some disadvantages of online surveys (Shih and Fan, 2008), the benefits of flexibility, low cost, and quick access to a target group

(Evans and Mathur, 2005; Roberts and Allen, 2015) made online surveys a better option for this research study than traditional survey methods (e.g., intercept, mail out or telephone survey).

The Oxfam survey was conducted from August to September, 2018 (16 days) using an established online platform called 'Qualtrics'. Ethics approval was obtained from a University Human Research Ethics Committee (number H-2018-127). The voluntary survey was sent to all 55,000 Oxfam Australia members over the age of 18, and the anonymous data was returned to the researchers once the survey period had closed. As an incentive, respondents who completed the survey in full were entered into a draw for a chance to win a hamper filled with Pacific products plus a $100 Oxfam gift voucher. Oxfam awarded ten hampers and 10 gift cards with a total value of $2000.

The survey instrument was developed following a literature review on ethical consumers and a discussion with Oxfam Australia on their priorities for understanding opportunities for purchasing products from the Pacific. The survey was comprised of four key areas: (1) socio-demographics; (2) purchasing behaviour at Oxfam retail outlets, both bricks-and-mortar and online; (3) consumer preferences; and (4) opportunities for Pacific products. The 'socio-demographics' section asked questions about age, gender, residential location, education level, income and other household characteristics. The section on 'Oxfam purchasing' asked respondents about their existing purchasing behaviour, which market channel they used, what types of products they bought and how often. The questions within 'consumer preferences' investigated which attributes were important when purchasing these products. The final section of the survey instrument focussed on the Pacific and asked respondents about their previous travel, which countries and what products they were most interested in purchasing and why.

Of the 55,000 Oxfam Australia subscribers, 1030 consented to participate in the survey, resulting in 930 fully completed surveys included in the analyses. For the detailed analyses involving food products, only 637 survey responses were used, as this is the number of respondents that answered yes to purchasing food from Oxfam in the last two years. While this reduces the sample size, the responses from this particular cohort were considered to be much more relevant to the goals of the research study.

3.2 Data Analysis

A Latent Class (LC) Cluster Analysis was performed to segment ethically conscious Australian consumers based on their responses to several survey questions regarding Pacific food products. One of the advantages of using LC Cluster Analysis is that it can accommodate variables with different scale types (Vermunt and Magidson, 2002). We used both categorical

and continuous variables as indicator variables in the current analysis. Additionally, formal criteria can be used to decide the optimal number of clusters and other model features (Vermunt and Magidson, 2002).

Two sets of indicator variables were used in the LC Cluster Analysis to segment the consumers. The first set of indicator variables (categorical) included consumers' reasons for buying food products from Oxfam. In this section of the survey, respondents were asked to indicate or select their reasons for purchasing different products from Oxfam. Five reasons were included: quality, price, story behind the product, functionality, and uniqueness. Respondents were asked to select the one reason that best described why they purchase these products, and then each reason was subsequently coded with one (1) if the respondent considered that reason when buying from Oxfam and zero (0) otherwise. Only responses to the questions related to food were included in the analyses.

The second set of indicator variables was derived from respondents' rating of a range of food-category attributes important to them when buying Oxfam products. This question in the survey used a five-point Likert-type scale with end points 'not at all important' and 'extremely important'. A Principal Component Analysis (PCA) with varimax rotation was applied to the 16 food-category attributes to reduce the number of items and estimate the underlying factors that represent the characteristics of the original attributes in a simplified manner.

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity were used to check the suitability of PCA in reducing the number of items. KMO values range between zero and one. Values above 0.50 (either for individual variable or entire matrix) indicate the appropriateness of applying PCA (Hair et al., 2010). In the analysis carried out, the estimated mean value of the KMO measure of sampling adequacy was 0.85, suggesting that performing PCA was appropriate. The Bartlett's test of sphericity was significant at $p = 0.000$ level, rejecting the hypothesis that the correlation matrix was an identity matrix and accepting the alternative hypothesis of significant relationship between the food-category attributes used in the PCA (Hair et al., 2010). After checking the suitability of PCA in reducing the number of items using the KMO Measure of Sampling Adequacy and Bartlett's Test of Sphericity, communalities were then examined. Communalities less than 0.40 were removed one at a time (Costello and Osborne, 2005).

Of the 16 attributes, 12 were retained after considering communalities. PCA was performed on 12 items/attributes, and the number of components retained was based on eigen values greater than one. Based on this criterion, three components were retained. The three retained components explain 55% of the total variance of the food-category attributes considered most important by the respondents. The first component captures attributes related to ethical values

(i.e., ethical, certified Fairtrade, helps local producers, and origin). The second component reflects attributes related to experience and connection of the consumer to the product/s (i.e., experiences in the country of origin, using traditional methods, emotional connection). The last component includes attributes that reflect self-focused factors (i.e., price, taste, size, appearance, and packaging). These three components are consistent with the findings of Verain et al. (2016), one of the first studies to show the importance of using food category attributes as a basis for consumer segmentation, including the grouping of attributes related to a self-focused set of food choice motives.

Regression factor scores were then calculated in SPSS and were used as continuous indicator variables in the cluster analysis. The LC Cluster Analysis was performed using Latent Gold 6.0. Models ranging from one- to 10-clusters were estimated. The optimal number of clusters was chosen by comparing the Bayesian Information Criterion (BIC): the lower the value, the better the model (Vermunt and Magidson, 2016). Based on this criterion, a four-cluster solution was selected.

Post-hoc analysis was performed to characterise and examine whether there are differences between the segments in terms of consumers' motivations or reasons for buying food products from Oxfam and the importance ratings of food attributes. The clusters were also characterised by their socio-demographic characteristics, food shopping behaviour and interest in products from Pacific countries. The goal was to better understand the unique segments of ethically conscious Australian consumers.

4. Results

4.1 Product attributes

The survey collected information on what product attributes were important to Oxfam consumers by asking respondents to rate the importance of several food product attributes when purchasing from Oxfam. Table 1 summarises the factor loadings for 12 of those attributes and motives, which have been allocated to three broader factors:

Factor 1 Ethical values: which include four attributes - 'ethical', 'certified Fairtrade', 'helps local producers' and 'origin'.
Factor 2 Experience and connection: includes three attributes – 'experiences in the country of origin', 'using traditional methods' and 'emotional connection'.
Factor 3 Self-focused motives: which includes five attributes that are closely aligned to respondents' own personal benefits – 'price', 'taste', 'size', 'appearance' and 'packaging and labelling'.

Table 1. Food attribute importance ratings: Items and factor loadings (PCA)

	Mean	Communalities	Factor loadings	% Explained Variance	Cronbach's α
Factor 1: Ethical values				19.94	0.72
Ethical	4.59	0.71	0.84		
Certified Fairtrade	4.46	0.63	0.79		
Helps local producers	4.42	0.58	0.73		
Origin	3.93	0.51	0.50		
Factor 2: Experience and connection				17.82	0.63
Experiences in the country of origin	2.32	0.60	0.76		
Using traditional methods	3.08	0.56	0.70		
Emotional connection	2.86	0.48	0.67		
Factor 3: Self-focused motives				17.65	0.67
Price	3.27	0.53	0.73		
Taste	4.17	0.61	0.66		
Size	2.65	0.51	0.62		
Appearance	3.09	0.46	0.61		
Packaging and labelling	2.91	0.47	0.57		

Note: The items/attributes were assessed by the respondents using a 5-point Likert-scale (1 – not at all important to 5 – extremely important).

4.2 Cluster formation

This section addresses the segmentation of Oxfam consumers by providing insight on how they can be differentiated based on their buying preferences, purchasing behaviour and socio-demographic characteristics.

LC Cluster Analysis was used to determine if there were distinct segments of Australian Oxfam consumers based on their reasons for buying different products. After assessing the BIC values, a four-cluster solution was deemed optimal (Vermunt and Magidson, 2016). Each of these clusters is characterised in Tables 2-5 below. Cluster 1 (49.9%) and Cluster 2 (33.4%) constitute the largest two segments at a combined 83.3%. Clusters 3 and 4 were much smaller, accounting for 9.4% and 7.2% of respondents, respectively. ‘Quality’ and ‘Price’ were more important to Clusters 4 and 2, while the ‘Story’ behind the product and ‘ethical’ values were more important to Clusters 1 and 4. ‘Functionality’ was more important to Cluster 4, while uniqueness was valued by Clusters 3 and 4. ‘Experience and connection’ were more important to Cluster 4, and self-focused attributes were less important to Cluster 1.

As a result of these insights, the clusters have been named to better reflect their reasons for purchasing food from Oxfam:

- Cluster 1 **'Selfless':** Consumers' purchasing behaviour did not focus on themselves. Story and ethical values were more important to them, and they were less concerned about price, quality, or functionality.
- Cluster 2 **'Practical':** Quality and price were the most important to these consumers.
- Cluster 3 **'Unique':** Product uniqueness was emphasised by consumers when purchasing from Oxfam.
- Cluster 4 **'Want it all'**: This cluster placed relatively high importance on most categories. They indicated that quality, price, story, functionality and uniqueness were highly important, while high ethical values, experience and connection were also important. This cluster had the highest rating for focus on self.

Table 2. Summary statistics of cluster membership and indicator variables by cluster

	Cluster 1 Selfless	Cluster 2 Practical	Cluster 3 Unique	Cluster 4 Want it all	Total/ Mean
Cluster size (n)	318	213	60	46	637
Cluster size (%)	49.9	33.4	9.4	7.2	100
Indicator Variables					
Reasons for purchasing food from Oxfam [1]					
Quality	0.01[a]	0.70[b]	0.08[a]	0.83[b]	0.31
Price	0.00[a]	0.13[b]	0.02[a]	0.28[b]	0.06
Story	1.00[a]	0.33[b]	0.00[c]	1.00[a]	0.68
Functionality	0.00[a]	0.03[b]	0.00[a]	0.26[c]	0.03
Uniqueness	0.10[a]	0.00[b]	1.00[c]	1.00[c]	0.22
Food attribute factors [2]					
Ethical values	4.41[a]	4.30[a,b]	4.10[b]	4.50[a]	4.35
Experience and connection	2.74[a]	2.69[a]	2.59[a]	3.34[b]	2.75
Self-focused motives	3.12[a]	3.31[b]	3.35[b]	3.43[b]	3.22

Note: Different superscript letters in each row indicate a statistically significant difference in mean values between columns at the 5% level.

[1] Measured as a proportion: 1 – Yes, considered important when purchasing food from Oxfam, 0 – otherwise.

[2] Mean values of items (or attributes) measuring same factor (1 – not at all important to 5 – extremely important).

Notably, the highest total mean score for all attributes across all four clusters was the 'story' behind the product, which 68% of respondents deemed important to them, followed by 'quality' (31%). Only 6% of respondents said that 'price' was important, indicating that this group of respondents generally may be willing to pay more for the attributes they value.

Table 3 provides the socio-demographic characteristics of the sample. Survey respondents were predominantly female (88.77%), and a majority were aged over 35 (78.41%). Due to confidentiality, the characteristics could not be directly compared to the broader Oxfam Australia's membership base, but an interview with Oxfam Australia's national marketing manager verified that the sample demographic was consistent with the wider membership base (S Allan, personal communication, 7th June, 2019). This result provides support for Bucic et al. (2012) who found female consumers are more strongly guided by ethical values. The analysis showed no significant difference in living arrangements and income levels across the four clusters.

Consumers in Cluster 4 ('**Want it all')** were younger. The largest single cohort in this cluster (38.46%) was between 25-34 years old, which matches their higher rate of early career study (Graduate Certificate and Graduate Diplomas). Cluster 1 ('**Selfless')** had the greatest proportion of respondents with postgraduate degrees.

Table 3. Summary statistics of respondents' socio-demographic characteristics by cluster

		Cluster 1 Selfless	Cluster 2 Practical	Cluster 3 Unique	Cluster 4 Want it all	Mean
Gender (%)						
	Female	86.73	91.40	91.67	87.18	88.77
	Male	13.27	8.60	8.33	12.82	11.23
Age (%)						
	18 - 24	3.06	5.91	3.33	2.56	3.97
	25 - 34	11.90 [a]	25.81 [b]	6.67 [a]	38.46 [b]	17.62
	35 - 44	23.13	22.04	26.67	25.64	23.32
	45 - 54	24.49	14.52	26.67	15.38	20.90
	55 - 64	23.47	18.82	25.00	10.26	21.24
	65 - 74	12.59	10.22	10.00	7.69	11.23
	75 - 84	1.36	2.69	1.67	0.00 [1]	1.73
Living arrangements (%)						
	Single/Separated/Divorced/Widowed	36.39	39.78	30.00	33.33	36.61
	Married/Living with partner/De facto	63.61	60.22	70.00	66.67	63.39
Level of school (%)						
	Finished before year 12	3.74	3.23	6.67	0.00	3.63
	Finished year 12 (Secondary Education)	6.80	11.29	13.33	2.56	8.64
	Trade Qualification	1.02	1.61	3.33	5.13	1.73
	Graduate Certificate or Diploma	15.65 [a]	20.43 [a,b]	10.00 [a]	33.33 [b]	17.79
	Bachelor Degree	33.67	34.41	38.33	35.90	34.54
	Postgraduate Degree	39.12	29.03	28.33	23.08	33.68

Table 3. Continued

	Cluster 1 Selfless	Cluster 2 Practical	Cluster 3 Unique	Cluster 4 Want it all	Mean
Work status (%)					
Working full time	35.71	38.17	38.33	33.33	36.61
Working part time / casual	32.99	25.81	30.00	25.64	29.88
A full time student	1.70	2.15	1.67	5.13	2.07
A part time student	0.34	1.08	0.00 [1]	0.00 [1]	0.52
Both working and studying	3.74	3.76	1.67	10.26	3.97
Retired	14.97	15.59	13.33	7.69	14.51
Engaged in full time home duties	5.10	4.30	8.33	10.26	5.53
Not in paid work but looking	2.04 [a]	6.99 [b]	1.67 [a,b]	5.13 [a,b]	3.80
On a pension (other than age pension)	3.40	2.15	5.00	2.56	3.11
Household income, before tax, by year (%)					
Less than $24,999	7.17	11.29	5.00	5.13	8.13
$25,000 - $49,999	12.97	13.44	21.67	15.38	14.19
$50,000 - $99,999	23.55	27.42	20.00	23.08	24.39
$100,000 - $149,999	17.75	14.52	11.67	17.95	16.09
$150,000 - $199,999	10.58	8.06	5.00	2.56	8.65
$200,000 - $249,999	3.41	2.15	5.00	0.00 [1]	2.94
More than $250,000	2.39	1.08	3.33	5.13	2.25
Not sure / Rather not say	22.18	22.04	28.33	30.77	23.36
Number of people living in the household	2.60	2.30	2.67	2.49	2.50
Number of children under 18 years	0.96	1.04	0.86	0.88	0.96

Note: Different superscript letters in each row indicate a statistically significant difference in mean values between columns at the 5% level. Means in rows with no superscript are not statistically different across clusters.

[1]Not used in comparisons because its column proportion is equal to zero.

Food shopping behaviour is compared across the clusters in Table 4. Respondents from Cluster 3 (**'Unique')** were less likely to be frequent purchasers of food from Oxfam, which fit their label of looking for unique products. Conversely, Cluster 4 ('**Want it all')**, were much more likely to buy food from Oxfam every week or every few months. They were also more likely to purchase products online, which is consistent with the youth (between the ages of 25 and 34) of a high proportion of respondents (38.5%) in this group. By far, the largest proportion of respondents in all clusters (total mean 65.93%) shopped at Oxfam shops.

Table 4. Food shopping behaviour by cluster

	Cluster 1 Selfless	Cluster 2 Practical	Cluster 3 Unique	Cluster 4 Want it all	Mean
Frequency of buying food from Oxfam (%)					
Weekly	0.32	1.44	0.00	2.22	0.79
Monthly	7.28	10.53	1.67	6.67	7.78
Once every few months	43.67	53.11	38.33	60.00	47.46
Once a year	39.56 [a]	28.23 [b]	41.67 [a,b]	22.22 [a,b]	34.76
Once every few years	9.18 [a,b]	6.70 [a]	18.33 [b]	8.89 [a,b]	9.21
Purchase food from (%)					
Harris Farm	2.83	4.23	6.67	4.35	3.77
Online	43.00 [a,b]	33.00 [a]	37.00 [a,b]	59.00 [b]	40.19
Supermarket	25.47	30.05	21.67	26.09	26.69
Oxfam Shop	64.78	64.79	66.67	78.26	65.93
Service Station	0.00	0.00	0.00	4.00	0.63

Note: Different superscript letters in each row indicate a statistically significant difference in mean values between columns at the 5% level. Means in rows with no superscript are not statistically different across clusters.

4.3 Differences across Pacific countries

This section considers whether Oxfam consumer segments perceive Pacific countries differently. Table 5 compares interest (across segments) in products from the Pacific. More than 60% of respondents expressed an interest in food products from all four Pacific countries listed (Fiji, PNG, Solomon Islands and Vanuatu). Cluster 4 (**'Want it all')** were the most enthusiastic about purchasing food products from Pacific countries. An average 82.8% in this group expressed an interest; none said they were not interested.

Table 5. Interest in products from Pacific Countries

	Cluster 1 Selfless	Cluster 2 Practical	Cluster 3 Unique	Cluster 4 Want it all	Mean
Fiji (%)					
No	4.19	2.53	3.33	0.00[1]	3.26
Yes	61.61 [a]	60.61 [a]	60.00 [a,b]	82.22 [b]	62.64
Not sure	34.19	36.87	36.67	17.78	34.09
Papua New Guinea (%)					
No	1.29	2.02	3.33	0.00[1]	1.63
Yes	68.71 [a,b]	63.13 [a]	58.33 [a]	84.44 [b]	67.05
Not sure	30.00	34.85	38.33	15.56	31.32
Solomon Islands (%)					
No	1.94	2.02	1.67	0.00[1]	1.79
Yes	67.42	61.62	60.00	82.22	65.91
Not sure	30.65	36.36	38.33	17.78	32.30
Vanuatu (%)					
No	1.29	1.52	3.33	0.00[1]	1.47
Yes	66.45 [a,b]	63.13 [a,b]	56.67 [a]	82.22 [b]	65.58
Not sure	32.26	35.35	40.00	17.78	32.95

Note: Different superscript letters in each row indicate a statistically significant difference in mean values between columns at the 5% level. Means in rows with no superscript are not statistically different across clusters.

[1] Not used in comparisons because its column proportion is equal to zero.

5. Discussion

This research contributes to the literature on ethical consumption in several ways. First, the study supports and adds to the growing body of research targeting the social aspects of ethical consumerism, which are less studied than the environmental aspects (Bangsa and Schlegelmilch, 2020). Second, the research provides insight useful for food producers in Pacific SIDS, in contrast to previous research which focused on consumers in large, developed countries (e.g., US, UK, Europe), as well as large, densely populated developing economies (e.g., China and India) (Bangsa and Schlegelmilch, 2020). Third, the study was conducted with a specific aim of helping aid organisations and donors to government development programs to reduce poverty among smallholder farmers and others in primary production value chains who constitute the economic backbone of disadvantaged Pacific countries. Our study is the first to segment ethical food consumers relative to poverty-reduction opportunities in the Pacific via a LC cluster analysis. Finally, it provides practical information useful to Oxfam and Pacific Island exporters.

A key insight across all Australian Oxfam respondents is that price is very low on their priority list, which makes them an ideal target audience for Pacific exporters who are unlikely to compete as low-cost producers. Much higher on the consumer priority list is the 'story behind the product', which is consistent with Park (2018), who found that the stories are critical to engaging consumers on ethical grounds. Marketing 'stories' is something that the Pacific can do quite well, as exemplified by the case of Fiji Water (Connell, 2006).

While the insight gained from the 637 ethical food consumers at an aggregate level is helpful, the real benefit comes from segmenting this group relative to buying preferences, purchasing behaviour and socio-demographic characteristics. These insights can then be used to understand the individual drivers of each cluster so that marketing efforts can be more targeted. Studies have shown different segments of consumers with varying levels of passion for ethical purchases (Macharia et al., 2013; Palacios-González and Chamorro-Mera, 2020). The present study has gone a step further and identified different levels of passion within an already ethically conscious consumer base, in line with suggestions by other researchers for increasingly segmented studies because ethical consumers are not all the same (Bucic et al., 2012; Gorman et al., 2004).

The segmentation of a niche market does make it difficult to quantify the size of the market opportunity. However, this risk is mitigated by Pacific exporters typically being smaller rather than larger corporate enterprises. The types of exporters who can fulfil the expectations of ethical consumers and tell a 'story' about their products and the benefits back to farmers are not looking for large markets. The challenge for exporters in the Pacific is to understand what this opportunity looks like for them, whether that is Oxfam, Fairtrade, or simply having a clear awareness of their own products' unique story and selling points when navigating different channels into a range of global markets.

Although countries like Fiji and Vanuatu have much higher tourist intakes than PNG and the Solomon Islands, and all are culturally and linguistically distinct, our survey suggests that Australian Oxfam supporters perceive the four countries as a group, or very similar and previous travel was not a significant factor. This insight provides useful direction for funding agencies and Pacific governments looking to promote exports from the region and opens up the possibility for more 'Pacific-wide' marketing initiatives. Respondents' considerable interest in products sourced from the Pacific across the board is also relevant to Oxfam and the Pacific producers, processors and exporters capable of capitalising on the market opportunity presented by ethical consumerism. There were no clear standouts for Pacific products of interest, but some of the food products mentioned by respondents included chocolate, coffee, virgin coconut oil, spices, tea, vanilla and indigenous nuts.

Despite their association with Oxfam, respondents in two of the four clusters appeared less likely to be swayed principally by ethical considerations in their purchasing decisions. Cluster 2 (**'Practical')** consumers were more focused on quality and price. While some value-added Pacific food products may satisfy these criteria, the region is not a low-cost producer, which would make most products less attractive to this cohort. Similarly, Cluster 3 (**'Unique')** consumers were more interested in highly distinctive and rare products. While that does not prevent them from buying Pacific food products, the analysis suggests they are likely to purchase less often and may not be willing to pay higher prices for the ethical aspects of products.

By contrast, Cluster 1 (**'Selfless')** and Cluster 4 (**'Want it all'**) respondents appear to be much more promising potential targets for Pacific exporters, Cluster 1 (**'Selfless')** consumers being key. As the cluster name suggests, these consumers are less driven by their own advantage and have strong, ethical values focused on the welfare of others. At 49.9% of the Oxfam sample, 'Selfless' may provide a potentially lucrative market for Pacific-sourced products that target ethical consumers. Support for this claim comes from a consumer study of Amnesty International supporters, who were found to place greater importance on the ethical features of products they purchased than did university students in Hong Kong and Australia (Auger et al., 2008). Cluster 4 (**'Want it all'**) consumers, although comprising the smallest proportion of the sample (7.2%) in this study, also show promise as a potential target given the high importance they place on the 'story' behind the product, which was equal to Cluster 1 (**'Selfless'**) and higher than any other attribute except 'uniqueness'.

Our research has implications for a range of stakeholders, starting with Oxfam. The feedback from these Oxfam subscribers about the significance of the story behind the product reinforces previous research on the importance of the whole value chain being part of the marketing message to engage ethical consumers (Zerbini et al., 2019) and the need for this information to be transparent across all stakeholders (Toussaint et al., 2021). Oke et al. (2020) further suggested these marketing messages must stress the social benefits that accompany the purchase. If these messages can be communicated effectively to consumers, they can form a point of differentiation against market competitors (Haynes et al., 2012).

Despite its value, the study has important limitations. One is the gap between the intention to purchase ethical products and actual purchasing behaviour, highlighted by other researchers (Bray et al., 2011; Burke et al., 2014; Carrington et al., 2014). This gap is somewhat mitigated by surveying consumers who have already committed to supporting an ethics-driven non-profit organisation, but we have not matched their survey responses with any actual purchasing behaviour, data for which was unavailable. A second limitation is the survey sample itself.

Although the online survey was offered to all 55,000 Oxfam subscribers and the sample size is a respectable 637 respondents, it cannot be considered fully representative of this group of consumers. It also must be noted that the respondents are predominantly Australian, so while this study adds to the global literature in this field, care is needed when extrapolating these findings across Oxfam consumers around the globe or the broader ethically conscious consumer base.

These limitations highlight the need to repeat ethical consumer studies across different countries, sectors, products and even timelines to provide information about consumer behaviour in a way that can be most valuable for developing countries like SIDS and the Pacific countries.

6. Conclusion

This study is the first of its type to link the value chain between the growing number of ethical consumers wanting to satisfy their social ethics-based goals with producers in Pacific SIDS desperate for market opportunities matching their competitive strengths.

The survey of 637 ethically conscious Oxfam subscribers found they are very interested in food products from all four Pacific countries studied: Fiji, PNG, the Solomon Islands and Vanuatu. Further analysis and segmentation of these consumers identified the importance of a product's origin story and a heightened market opportunity for two of the clusters: Cluster 1 'Selfless' and Cluster 4 'Want it all' through traditional as well as online market channels. Engaging with these consumers and translating their interest into actual sales will require the whole value chain, including Pacific producers, to communicate a transparent marketing message on how these products meet their ethical needs and differentiate themselves from the competition.

This paper makes three primary contributions. First, it provides direct insights for Oxfam and Pacific exporters looking to target new niche market opportunities. Second, it offers broader insights to Pacific governments and aid organisations looking to alleviate poverty through smallholder farmer-inclusive development programs. Finally, the research contributes to the socially focussed ethical consumerism literature by providing the context of Pacific emerging economies and at a level of detail achieved by the segmentation of an already ethically conscious consumer group, which is rarely explored.

In the future, it is hoped that the research approach used here will be repeated in other emerging economies to benefit a full range of private sector, government, NGO and academic stakeholders.

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Chapter 6: Conclusions

6.1 Main Findings from Chapter 1 to 5

The thesis introduction provided a discussion of the role of changing consumers, food systems, globalisation and the impact these changes can have on the value chain, including smallholder farmers. The context of SIDS, their challenges, the lack of market research on their food sectors, and the current situation in Fiji's agriculture and tourism sectors were also discussed.

Within the literature review, the role of consumers in the evolution of value chain methodology was explored. An overview was provided on how value chain methodology has been previously applied in relevant research, and the potential advantages and limitations of the methodology to address issues in the value chain. The first research question was to investigate whether understanding consumers and markets through a value chain approach can provide a suitable framework for assessing opportunities and constraints for all stakeholders in a Pacific SIDS context. The literature demonstrated that the methodology has evolved to be a valuable framework for understanding consumer and market opportunities and the implications across key stakeholders, including pro-poor development upgrading strategies along the value chain to benefit smallholder farmers.

Research questions 2, 3 and 4 investigated the consumer opportunities for Fijian smallholder agricultural producers from a domestic and export perspective. Research question 2 asked how urban Fijian food shopping behaviour and consumption patterns have changed over time and the implications of these changes for Fijian smallholder agricultural producers. Research question 3 investigated the drivers of changes in urban Fijian food shopping and consumption behaviour and the implications for smallholder farmers. Research question 4 explored the insights from a growing global market of ethically conscious consumers by studying a group of Australian Oxfam consumers to understand the opportunity this may provide exporters from Fiji and the wider Pacific Islands.

Regarding domestic Fijian consumers, chapter three highlighted that urbanisation, rising urban households' disposable income, and changing consumer preferences have resulted in over 50% of all urban food expenditures being made at supermarkets. These modern retailers dominate the processed food category, however, the main traditional market is still the preferred choice for fresh produce, with 97% of households still shopping at this outlet regularly.

The cluster analysis in chapter four provided further detail on urban Fijian households' food shopping behaviour and identified five distinct clusters of households based on their food shopping behaviour. The highest income cluster spent significantly lower amounts on fresh fruit and vegetables (FFV) at the main traditional market, instead preferring to purchase FFV from supermarkets. In contrast, the lower income cluster spent 94.5% of all FFV expenditure at the main traditional market compared to only 30.4% for the highest income cluster. The role of women in the household also differed between these two clusters, with 83.3% of females being responsible for the majority of food shopping in the lower income cluster compared to 63.5% for the highest income cluster. If consumer preferences continue to change, driven by urbanisation, increasing income and the evolving role of women, then expenditure on FFV at supermarkets is expected to grow at the expense of the main traditional market. Considering only 2% of farmers surveyed currently sell into supermarket channels (Finizio, 2019), this is a concerning trend with potential implications for the livelihood of rural smallholder farmers and the food security of the people of Fiji.

While the trend is concerning, there are examples in the literature of traditional markets competing fiercely with supermarkets to retain their share of the FFV category (Cadilhon *et al.*, 2006; Humphrey, 2007). From the point of view of smallholder farmers, two key strategies to address this threat were discussed in the thesis. The first is the opportunity for traditional markets to evolve to meet changing consumer needs. For example, in Hong Kong, traditional markets modernised their facilities, and improved the quality and safety of food products to compete with more modern retail outlets (Ho, 2005). The second strategy is to find ways to better link smallholder farmers to supermarkets. Creating and

coordinating value chains between farmers and supermarkets can be difficult for both parties and will not suit everyone. There are examples of specialist wholesale traders that have been valuable links in the value chain for horticultural products in Costa Rica (Alvarado and Charmel, 2002), and horizontal farmer alliances have been observed in Ghana (Abdul-Rahaman and Abdulai, 2020). Numerous studies have highlighted the potential to increase income and productivity if smallholders can meet supermarket buying requirements (Chege *et al.*, 2015; Elder, 2019; Michelson, 2013; Ogutu *et al.*, 2019; Qaim *et al.*, 2014).

In chapter five of the thesis, the focus was switched to exploring export opportunities for Fijian smallholder farmers, with an understanding that exports can be part of economic development and growth, which are critical poverty reduction strategies for Pacific SIDS (Chen *et al.*, 2014; McGillivray *et al.*, 2008). Export in these countries has been even more important recently, with COVID-19 drastically reducing the number of tourists coming into countries like Fiji (*Visitor Arrival Statistics*, 2021).

While Australian ethical consumers are only a specific regional opportunity, they represent a much broader and increasing global ethical consumer base (Berry and McEachern, 2005; Bray *et al.*, 2011; Nicholls, 2002). This opportunity also provides an excellent example of an export opportunity where a country like Fiji can combine its competitive advantages of agriculture and tourism into value-added products for consumers willing to pay for them.

Analysis of data from the survey of 637 Australian ethical consumers found that the origin and story behind products are much more important than the price, indicating these consumers may be willing to pay more for the attributes they value. It was also discovered that clusters within broader ethical consumers are even more passionate about ethical values, making them significant targets for Pacific exporters. Insights from the survey suggested that marketing to these consumers not only needs to focus on the 'origin' and 'product story' but also should be transparent and include consistent messaging from the whole value chain, including Pacific producers. If this is communicated effectively to meet consumers' ethical needs, it provides a point of differentiation to competitive products.

6.2 Implications for Stakeholders

The final research question, number five, explored the implications for key Fijian stakeholders, including the private sector; particularly consumers and smallholder farmers, and the role government and donor agencies can play in addressing these challenges and capitalising on new market opportunities.

Consumers are the stakeholders that drive changes along value chains, and they are the ones who reach into their pockets to pay for a product or service with the attributes they value. This study has looked at domestic Fijians purchasing food products from different retail outlets and export opportunities targeting Australian ethical consumers.

The implications of changing consumers and new market opportunities are felt right along the chain, from the retailers back to the traders, processors and ultimately, the producers and smallholder farmers. From a poverty alleviation development point of view, it is crucial to understand the whole chain, but as part of international development projects, the focus of this thesis was particularly on smallholder farmers because of their importance in Pacific SIDS.

In addition to the direct private sector members of the value chain, governments also play an essential role. While policy reform has not been the focus of this thesis, the insights from this study have shown that the market, both consumers and retailers, are driving change, so instead of trying to prevent the food system from transforming, policymakers should attempt to predict any issues with these changes and support traditional retailers, traders and farmers to adapt.

In the case of the main traditional market, the Fijian government has direct management responsibility, so if the first strategy above was prioritised, the government could take action to improve parking, toilet facilities, drainage, cleanliness, food safety, quality and range of products available. These improvements would better meet changing consumer expectations and are likely to increase or at least halt the decrease of food expenditure share for the main traditional market.

The Fijian government also has a role to play in the second strategy linking smallholders to supermarkets. Even though the government is not able to directly make business decisions for these groups, they can facilitate and investigate ways to build capacity and incentivise linkages between the two, whether a direct link or through wholesalers or farmer alliances. The other links in the value chain that could be strengthened are those between farmers and the manufacturing and services sector. These partnerships would increase the capacity to add value and allow better access to the tourism sector, targeting tourists in Fiji or the export market (Gani and Scrimgeour, 2019; Weatherspoon and Reardon, 2003). Gani and Scrimgeour (2019) expand on this opportunity, suggesting that the Fijian government should maximise the country's comparative advantages by increasing the specialisation of the agriculture and tourism sectors. It is argued that this strategy will improve the livelihoods of stakeholders in these sectors and have spillover benefits to other parts of the economy (Gani and Scrimgeour, 2019).

Several studies have recommended that the best way to navigate these changes is to form a collaborative approach between government, donors and the private sector (Iza *et al.*, 2020; Tschirley *et al.*, 2004; Weatherspoon and Reardon, 2003). This collaboration can create a platform to help smallholders meet the market demand, particularly the quality, safety and cost requirements needed for some of these new market opportunities.

When donors get involved in projects of this nature, a cookie-cutter approach to what has worked elsewhere is unlikely to work, rather donors must assess the specific circumstances in the country and sector and match capabilities and comparative advantages to the relevant market opportunities. The other lens donors need to overlay on these opportunities is how the existing or new value chains will operate. What are the win-win scenarios, and how to ensure vulnerable groups like smallholder farmers, women and ethnic minorities are not excluded from these new developments.

6.3 Limitations and Further Research

It is important to acknowledge some of the limitations of this study. First, both surveys do not measure actual purchasing behaviour, as that data was unavailable. In the Fijian urban household survey, previous purchasing behaviour was assessed, and in the Oxfam survey, intention to purchase was explored. The accuracy of the Fijian household survey data is further limited by respondents needing to recall their household food consumption and purchasing over a period of time. While this approach provided a valuable data set over time, the respondents' memory may limit the accuracy of this data. Second, these surveys and subsequent analyses only represent one point in time (Webber, 2007). The very nature of this thesis is built on understanding changing consumers, so it will be essential to repeat these types of surveys to understand trends better and anticipate future opportunities and threats. The third limitation is the sample size. The urban Fijian households were a significant sample size, but it does not represent the wider rural households in Fiji and the effect their changing shopping behaviour may have on the Fijian food system. The Oxfam survey was also sent to a large group of 55,000 members, but it only resulted in the analysis of 637 surveys and these consumers are only considered to be a very small subset of the global ethically conscious consumer base, so the broader insights need to keep that perspective in mind.

Finally, Fiji was used as a case study to extrapolate the findings to other Pacific countries and SIDS that face similar challenges and opportunities. There are no doubt synergies across these countries that make this study very useful, but it needs to be noted that each country and sector will have its own unique set of circumstances that need to be taken into account before generalisations across the Pacific and other SIDS can be made.

At this point of the thesis, it is timely to reflect on how my own thoughts have evolved over the journey, particularly on the use of value chain methodology for the circumstance in Fiji. It has definitely reinforced my views on the usefulness and adaptability of the value chain framework and the importance of understanding consumers in target markets. It is one thing to read the literature, but it is another to use the theory to understand the current situation, the market opportunities and how that translates to meaningful recommendations for different stakeholders right along the value chain, including upgrading strategies for smallholder farmers.

In summary, very little research of this nature has been done on SIDS, especially focusing on a Pacific country like Fiji. There has also been very little consumer research on Australian ethical consumers, particularly in segmenting different types of ethical consumer groups, as has been done in this study. Consequently, there has been no research on upgrading strategies for Fijian smallholder farmers to access modern retailers and export markets with their value-added food products. In that sense, this is a significant contribution to the literature in this space.

In concluding this thesis, the final recommendation is that these types of studies need to be repeated. They need to be conducted across different countries, sectors, products, consumer groups, value chains and even timelines to track consumer behaviour and market opportunities in a way that can be of value to developing countries like Fiji and Pacific SIDS. If the relevant stakeholders can engage as part of the value chain process, there is a strong chance that the insights and recommendations can be used to improve the livelihoods of the people in these developing countries.

Chapter 7: References

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FIJI SURVEY OF URBAN CONSUMERS

June 2012

USP - THE UNIVERSITY OF THE SOUTH PACIFIC IN COLLABORATION WITH THE UNIVERSITY OF ADELAIDE AND THE FIJI BUREAU OF STATISTICS

---CONFIDENTIAL---

Objective:	The purpose of this survey is to improve our understanding of urban food consumption patterns, particularly the role of supermarkets and other "modern" outlets.
Use of data:	The data collected as part of this survey are for research purposes **ONLY.** Household-level data will not be shared with non-research organizations. . Only summary results will be included in published report.

Household ID number		
City/Town	EAS number	Household number
1. Suva 2. Nadi	[See Codes on back cover]	

Name of head family	
Name of respondent	
Address/location	
Phone number	
Name of Area	

Enumerator Code [ ][ ] See Codes on back cover

Hello, my name is _____. I work for the Fiji Bureau of Statistics and we are carrying out a survey on food shopping habits. The survey is intended to improve our understanding of how food shopping patterns are changing and how to help farmers adapt to those changes. You are one of 1000 household in Suva and Nadi selected to participate. The individual results are confidential - only summary results will be included in the report. We would like about 90 - 120 minutes of your time to ask you some questions. Please accept this gift as a small token of our appreciation and we will also enter you in a raffle with multiple prizes to be drawn when all the surveys are complete. Vinaka, thank you very much for your time.

	Date			Name	Sign
	Day	Month	Year		
Interview			2012		
Field check			2012		
Office Check			2012		
Data Entry - Start			2012		
Data Entry - Finish			2012		

Research funded by a grant from the Australian Centre for International Agricultural Research (ACIAR)

Version: 1 June 19th 2012

Australian Government
Australian Centre for International Agricultural Research

No.	EAS Code	HH Number
1		
2		
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Role	Code	Name
Suva Supervisor	01	Salesh Kumar
Suva Supervisor	02	Karishma Devi
Suva Supervisor	03	Kritika Devi
Suva Supervisor	04	Lenora D.
Suva enumerator	05	Niraj Chandra
Suva enumerator	06	Ronal Chand
Suva enumerator	07	Kinijgi Karokavawa
Suva enumerator	08	Anushka Maharaj
Suva enumerator	09	Taniela Ravubale
Suva enumerator	10	Semi Ratulele
Suva enumerator	11	Tupou Roiroi
Suva enumerator	12	Rafaele Maivalemisau
Suva enumerator	13	Alzima Elisha Bano
Suva enumerator	14	Antonio Sokomuri
Suva enumerator	15	Kasanita Tuimavanua
Suva enumerator	16	Sereimei Rokobuli
Suva enumerator	17	Venina Suguturaga
Suva enumerator	18	Monisha Sharon Lal
Suva enumerator	19	Jiutatia Seru Ravulo
Suva enumerator	20	Kushneel Prakash
	21	
Nadi Supervisor	22	Saimoni Nabukavou
Nadi enumerator	23	Shavneet Pravitesh Narayan
Nadi enumerator	24	Bailuma Yabakidrau
Nadi enumerator	25	Waisale Cava
Nadi enumerator	26	Litiana Seruvatu
	27	
	28	
	29	
	30	

A. CHARACTERISTICS OF MEMBERS OF THE HOUSEHOLD

	Please list the names of members of this household. [list in order of age, from oldest to youngest]	Is [name] a male or female? 1. Male 2. Female	What is the relationship between [name] and the head of household? 1. Head 2. Spouse 3. Son/daughter 4. Son/daughter in law 5. Grandchild 6. Parent or in-law 7. Other related 8. Other unrelated	How old is [name]? [age at last birthday, use 0 if less than 1 yr old] Years	Ask this question only for members 6 years or older How many years of schooling has [name] completed? (Year)	Ask these questions only for members 17 yrs and older What is the marital status of [name]? [Select first correct response] 1. Single 2. Married 3. Separated or divorced 4. Widowed	What is the main activity of [name]? [See activity codes on bottom of page]	On average how many hours a week does he/she work in this activity? [If A7 = 4, 5, or 6 then use '99' hours to save them estimating an answer for A8]	
	A1	A2	A3	A4	A5	A6	A7	A8	
1									1
2									2
3									3
4									4
5									5
6									6
7									7
8									8
9									9
10									10
11									11
12									12
13									13
14									14

Note: The household is defined as a group of people who live and eat together most of the time. Each member must live with others at least 6 months of the year or 4 days out of the week. The head of the household is defined as the member who makes most of the economic decisions.

Activity codes for A7	
1	Farmer or fisherman
2	Self Employed Other / Employer
3	Wage /Salary employee
4	Unpaid family / community worker
5	Student
6	Unemployed / Retired
7	Other (please specify)

B. HOUSING and ASSETS

Codes for B1	Codes for B2 & B3
1. Muslim	1. Indigenous Fijian / i-Taukei
2. Christian	2. Indo-Fijian
3. Hinduism	3. Routumans
4. Others	4. Chinese
	5. Expats (non Pacific Island born)
	6. Other (includes other Pacific Island countries)

What is the main religion of the household? [ ] B1

What is the ethnicity of the head of household? [ ] B2

What is the ethnicity of the spouse of the head of household? (If no spouse then write '10') [ ] B3

Do you have an indoor tap connected to the towns water supply?
1 Yes
2 No
[ ] B4

What type of fuel is used by your household for cooking?
1 Electricity
2 Gas
3 Kerosene/Benzine
4 Wood / Coal
5 Other, (specify) _____
[ ] B5

What is the distance (in meters) to the nearest public transport? (that is bus, taxis., etc) [ ] B6 meters

B7. How many of each of the following items do members of your household currently own or have in household?

[If household does not own any, write "0"]

		Number	
1	a refrigerator?		1
2	a microwave oven?		2
3	a rice cooker?		3
4	a stove?		4
5	a car or truck?		5
6	a mobile phone?		6
7	a landline telephone?		7
8	a computer or laptop?		8
9	Internet access? (incl. mobile)		9
10	a radio?		10
11	a television?		11
12	an outboard motor?		12
13	a generator?		13
14	a bank account?		14
15	a credit card?		15

C. COOKING AND SHOPPING ATTITUDES AND BEHAVIOUR

Who in the household is primarily responsible for…

C 1	…deciding what food products to purchase for the family meals?	C 1	1. Male adult family member
C 2	…doing the majority of food shopping for family meals?	C 2	2. Female adult family member
C 3	…deciding what food the family will have for a meal?	C 3	3. Children in family
C 4	…cooking the majority of the family meals?	C 4	4. No one

C 5 How many times per WEEK does the majority of your household eat dinner together? [Number should not be greater than 7] — C 5 — 0 to 7 (times)

In an average MONTH, how often is the food for the evening meal …

C 6	..."ready-to-eat" meals purchased outside the house, brought home, and eaten at home?	C 6	1. Every day
C 7	…purchased from a delivery service and eaten at home?	C 7	2. 2-6 times per week
C 8	…purchased and eaten at restaurants?	C 8	3. Once a week
C 9	…purchased from street stalls or vendors and eaten away from home?	C 9	4. 2-3 times per month
C 10	…purchased and cooked at home?	C 10	5. Once a month
			6. Few times per year
			7. Never

On a scale of 1 to 5, how important is each of the following characteristics when deciding where you will purchase food? (USE PINK CARD on back of survey)

1 = Not at all important; 2 = Somewhat important; 3 = Moderately important; 4 = Important; 5 = Extremely important

		Importance				Importance	
C 11	Low prices (good value)		C 11	C 24	Can purchase small amounts		C 24
C 12	Fixed price (no negotiation)		C 12	C 25	Product is unpackaged (can see and feel)		C 25
C 13	Flexible prices (able to negotiate)		C 13	C 26	Store is easy to get to		C 26
C 14	Store provides discount (sales)		C 14	C 27	Store is close to other non-food shopping		C 27
C 15	Ability to purchase on credit		C 15	C 28	Store is close to toilets		C 28
C 16	High-quality food products		C 16	C 29	Fast service (no waiting in lines)		C 29
C 17	Food is safe to eat		C 17	C 30	Cleanliness (including environment) of store		C 30
C 18	Food products are fresh		C 18	C 31	Better opening hours		C 31
C 19	Availability of Frozen and processed food		C 19	C 32	Air-conditioning		C 32
C 20	Food product information (weight, labels, expiry, etc)		C 20	C 33	Friendly staff / good relationship and service		C 33
C 21	Product display is good (easy to find products)		C 21	C 34	Delivery Service		C 34
C 22	Wide variety of food products (good selection)		C 22	C 35	Store sells locally produced food product		C 35
C 23	Availability of produce all year round		C 23	C 36	Store sells imported products		C 36

D. SHOPPING BEHAVIOUR

Code	Type of outlet (*See Outlet definitions below)	How much TIME does it take you to get to the nearest [outlet type]? (minutes)	What is the DISTANCE (km) to the nearest [outlet type]? (km) Code to nearest km (e.g. 0.5 = 0km) 999=don't know	How frequently does your household shop for **NON-FOOD** items at a [outlet type]? e.g.clothes, petrol etc 1. Every day 2. 2-6 times per week 3. Once a week 4. 2-3 times per month 5. Once a month 6. Only a few times a year 7. Never	How frequently does your household shop for **FOOD** at a [outlet type]? (**See Definition of Food Below) 1. Every day 2. 2-6 times per week 3. Once a week 4. 2-3 times per month 5. Once a month 6. Only a few times a year 7. Never	**Answer only if D5 = 1-6 (Household shops for <u>FOOD</u> at this outlet)**		
						How do you normally get to the nearest […]? 1. On foot 2. Bicycle 3 Car 4. Public transp. 5. Taxi 6. Other, (specify)	What are the main reasons that you purchase food at this outlet? [Do NOT Prompt. Categorize response using codes on back of page. If cannot respond then show list. Ask if second reason, but do not force.]	
							1st reason	2nd reason
D1		D2	D3	D4	D5	D6	D7	D8
1	Supermarket							
2	Roadside stall / Hawker							
3	Corner shop / Butcher / Bakery							
4	Fish Market			N/A				
5	Main Market in town/city							
6	Restaurants			N/A				
7	Fast Food (e.g McDonalds)			N/A				
8	Service Station							

Definitions: **Food includes anything eaten or drunk, including unprocessed food, processed food, meals, and beverages. It does not include tobacco/kava or betel nut.

*Supermarkets include MH's, CostULess, RB Patel etc (2-9 cash registers).

*Corner shop include modern fruit stores and speciality stores like butchers and bakeries (1-2 cash registers).

*Hawker is a mobile vendor that sells produce to your door

Back of D.

Codes for D7 and D8	
Note: Ask respondent questions without prompting answers. Then code using table below.	
1	Low prices (good value)
2	Fixed price (no negotiation)
3	Flexible prices (able to negotiate)
4	Store provides discount (sales)
5	Ability to purchase on credit
6	High-quality food products
7	Food is safe to eat
8	Food products are fresh
9	Availability of Frozen and processed food
10	Food product information (weight, labels, expiry, etc)
11	Product display is good (easy to find products)
12	Wide variety of food products (good selection)
13	Availability of produce all year round
14	Can purchase small amounts
15	Product is unpackaged (can see and feel)
16	Store is easy to get to
17	Store is close to other non-food shopping
18	Store is close to toilets
19	Fast service (no waiting in lines)
20	Cleanliness (including environment) of store
21	Better opening hours
22	Air-conditioning
23	Friendly staff / good relationship and service
24	Delivery Service
25	Store sells locally produced food product
26	Store sells imported products

E. FOOD CONSUMPTION (staples and animal products)

		Food Consumption	Change in Consumption	ASK ONLY IF E2 = 1							
				Purchased food			Home Grown		Food Exchange		
		During the past 12 months, has your household consumed any [...]?	Are members of your household consuming smaller or larger quantities of [...] on a per person basis than 5 years ago?	During the past month, how many times did your household purchase [...]?	For each purchase, what is the normal value of […] bought for household consumption?	Where do you buy most of the […]?	How much[...] did your household consume from your own production during the past 12 months?		How much[...] did you exchange or transfer during the past 12 months?	
		1. Yes 2. No	1. Smaller quantities 2. About the same 3. Larger quantities 4. Never consumed	Number of times	Value in FIJIAN DOLLARS	1. Supermarket 2. Roadside Stall / Hawker 3. Corner Shop / Butcher & Bakery 4. Fish Market 5. Main Market in town / city 6. Restaurants 7. Fast Food (eg Mc Donalds 8. Service Stations	Quantity Kgs	Frequency 1. Daily 2. Weekly 3. Monthly 4. Yearly	Quantity Kgs	Frequency 1. Daily 2. Weekly 3. Monthly 4. Yearly	
E1	**Food product (fruit, vegetables, meat, staples, value added)**	E2	E3	E4	E5	E6	E7	E8	E9	E10	
1	Fresh Pawpaw										1
2	Fresh Banana										2
3	Fresh Lemons (Moli)										3
4	Fresh Mango										4
5	Fresh Melons (including watermelon)										5
6	Fresh Pinapple										6
7	Fresh Papaya										7
8	Fresh Apples										8
9	Fresh Oranges										9
10	Fresh Grapes										10
11	Fresh Breadfruit										11
12	Fresh Coconut										12
13	Other Fresh Fruits										13
14	Processed or Frozen Fruits										14
15	Fresh Eggplant										15
16	Fresh Mushrooms										16
17	All sorts of Fresh Beans (long bean, French & butter bean, etc)										17
18	Fresh Otta										18
19	Fresh Brassica / Cabbage										19
20	Fresh RouRou										20
21	Other fresh leafy vegetables										21
22	Fresh Tomatoes										22
23	Fresh Capsicum										23
24	Fresh Brocoli										24
25	Fresh Celery										25

				ASK ONLY IF E2 = 1							
		Food Consumption	Change in Consumption	Purchased food			Home Grown		Food exchange		
		During the past 12 months, has your household consumed any [...]?	Are members of your household consuming smaller or larger quantities of [...] on a per person basis than 5 years ago?	During the past month, how many times did your household purchase [...]?	For each purchase, what is the normal value of [...] bought for household consumption?	Where do you buy most of the [...]?	How much[...] did your household consume from your own production during the past 12 months?		How much[...] did you exchange or transfer during the past 12 months?		
		1. Yes 2. No	1. Smaller quantities 2. About the same 3. Larger quantities 4. Never consumed	Number of times	Value in FIJIAN DOLLARS	1. Supermarket 2. Roadside Stall / Hawker 3. Corner Shop / Butcher and Bakery 4. Fish Market 5. Main Market in town / city 6. Restaurants 7. Fast Food (eg Mc Donalds 8. Service Stations	Quantity Kgs	Frequency 1. Daily 2. Weekly 3. Monthly 4. Yearly	Quantity Kgs	Frequency 1. Daily 2. Weekly 3. Monthly 4. Yearly	
E1	**Food product (fruit, vegetables, meat, staples, value added)**	E2	E3	E4	E5	E6	E7	E8	E9	E10	
26	Fresh Lettuce										26
27	Fresh Cucumber										27
28	Fresh Carrots										28
29	Fresh Chilies										29
30	Fresh Okra / Bhindi										30
31	Fresh Cassava										31
32	Fresh Taro (Dalo)										32
33	Fresh Sweet Yams (Kumala)										33
34	Fresh Potato										34
35	Fresh Onion										35
36	Fresh Garlic										36
37	Fresh Ginger										37
38	Other fresh vegetables										38
39	Processed or Frozen Vegetables										39
40	Poultry – Chicken not processed										40
41	Beef, Lamb and Mutton not processed										41
42	Duck not processed										42
43	Pork not processed										43
44	Other meats (e.g Goat not processed)										44
45	Processed Meat (Sausages, smallgoods, seasoned, breaded etc)										45
46	Fresh Tilapia (Maleya),not processed										46
47	Fresh Nama (Sea Grapes, Caulerpa), not processed										47
48	Fresh water prawns (ura dina), not processed										48
49	Fresh Milkfish (yawa), not processed										49
50	Fresh kai, not processed										50
51	Other Fresh Fish and Seafood not processed										51
52	Processed seafood (breaded, salted, dried, tinned etc)										52

				ASK ONLY IF E2 = 1							
		Food Consumption	**Change in Consumption**	**Purchased food**			**Home Grown**		**Food Exchange**		
		During the past 12 months, has your household consumed any [...]?	Are members of your household consuming smaller or larger quantities of [...] on a per person basis than 5 years ago?	During the past month, how many times did your household purchase [...]?	For each purchase, what is the normal value of […] bought for household consumption?	Where do you buy most of the […]?	How much[...] did your household consume from your own production during the past 12 months?		How much[...] did you exchange or transfer during the past 12 months?		
						1. Supermarket					
						2. Roadside Stall / Hawker					
			1. Smaller quantities			3. Corner Shop / Butcher and Bakery					
		1. Yes	2. About the same			4. Fish Market					
		2. No	3. Larger quantities			5. Main Market in town / city	Quantity	Frequency	Quantity	Frequency	
			4. Never consumed	Number of times	Value in FIJIAN DOLLARS	6. Restaurants		1. Daily		1. Daily	
						7. Fast Food (eg Mc Donalds		2. Weekly		2. Weekly	
						8. Service Stations	Kgs	3. Monthly	Kgs	3. Monthly	
								4. Yearly		4. Yearly	
E1	**Food product (fruit, vegetables, meat, staples, value added)**	E2	E3	E4	E5	E6	E7	E8	E9	E10	
53	Rice										53
54	Wheat and Flour										54
55	Bread and bread products										55
56	Noodles (Instant and other)										56
57	Sugar, Salt										57
58	Nuts										58
59	Tamarind paste										59
60	Other Tamarind products										60
61	Fresh Milk										61
62	Other milk (powered, longlife)										62
63	Eggs										63
64	Other dairy products (yogurt, cheese, cream etc)										64
65	Spreads- Jam, Butter & Margarine										65
66	Snacks, Potato chips and Pastries										66
67	Chocolate and sweets										67
68	Breakfast crackers and other biscuits										68
69	Cooking oil, Vegetable, Canola /Soya Bean Oil / Coconut										69
70	Breakfast Cereals (Weetbix, Cornflakes, Muesli, Oats etc)										70
71	Chili sauce and other soya sauces										71
72	Coffee, Milo, Tea										72
73	Alcohol beverages (Beer, wine, spirits)										73
74	Kava										74
75	Bottled Water										75
76	Soda, Fruit juice & Soft drinks										76
77	Coconut Milk- Fresh/ tinned										77
78	Herbs, Spices & seasonings										78
79	Ready to eat meals (takeaway or supermarket or restaurant)										79

F. NON-FOOD EXPENDITURE

F1	How much does your household spend on [item] in a typical week, month, or year? [do not include food, durable goods, taxes, or business expenses]	**Time period** 1=weekly 2=monthly 3=yearly 4= N/A F2	**Value** ($) Code as "0" if no expenditure F3	
1	Household equipment and maintenance			1
2	Utilities; Electricity, water, gas, and kerosene			2
3	Communication (phone, computer etc)			3
4	Body products, cleaning supplies, cosmetics, tissue, etc			4
5	Health expenditures (insurance hospital, clinic, doctor, medicine, etc)			5
6	Education expenditures (school fees, tutors, books, uniforms, etc)			6
7	Transportation (bus fare, petrol, etc)			7
8	Domestic employees (housekeeper, driver, etc)			8
9	Clothing (including shoes)			9
10	Tobacco (cigarettes, cigars, leaves, etc)			10
11	Recreation and leisure spending (excluding food)			11
12	Misc; 0ther non-food consumption spending (e.g. gifts, life insurance)			12

Note: Do not include food, durable goods, taxes, or business expenses.

House details;

F4 What is the ownership status of your house? F4
1. Rented; 2. Owned; 3. Use without paying rent

F5 [If F4=1] How much rent does your household pay per month? F5
(in Fijian Dollars per month)

F6 [if F4=2 or 3] How much would it cost to rent housing like this in this neighborhood? (in Fijian Dollars per month) F6

G. RETAIL OUTLET USE, PREFERENCES QUALITY, SAFETY AND CONVENIENCE

		If G1 = 1-9 then Ask								
		Where do you usually buy [food type]?	What is the primary reason that you buy [food type] at this outlet?	In the last 5 years have you bought smaller or larger quantities of [food type] from the outlet specified in G1?	**Only ask if G3 = 1 or 3** What is the primary reason your purchasing habits have changed?	Which is the best type of outlet to buy [food type] at a <u>good price</u>?	Which is the best type of outlet to buy [food type] that is <u>quality</u>?	Which is the best type of outlet to buy [food type] that is <u>safe and hygienic to eat</u>?	Which is he best type of outlet to buy [food type] where you <u>trust</u> the <u>product information</u>?	
		1. Supermarket	Please use codes on the next page			1. Supermarket	1. Supermarket	1. Supermarket	1. Supermarket	
		2. Roadside Stall / Hawker			1. Household income has changed	2. Roadside Stall / Hawker	2. Roadside Stall / Hawker	2. Roadside Stall / Hawker	2. Roadside Stall / Hawker	
		3. Corner shop / Butcher and Bakery		1. Smaller quantities	2. Food preferences have changed	3. Corner shop / Butcher and Bakery	3. Corner shop / Butcher and Bakery	3. Corner shop / Butcher and Bakery	3. Corner shop / Butcher and Bakery	
		4. Fish Market		2. About the same	3. New Outlet	4. Fish Market	4. Fish Market	4. Fish Market	4. Fish Market	
		5. Main market in Town /City		3. Larger quantities	4. Outlet has improved	5. Main market in Town /City	5. Main market in Town /City	5. Main market in Town /City	5. Main market in Town /City	
		6. Restaurants			5. Outlet has deteriorated	6. Restaurants	6. Restaurants	6. Restaurants	6. Restaurants	
		7. Fast Food (e.g. Mc Donalds)			6. Other (please specify)	7. Fast Food (e g. Mc Donalds)	7. Fast Food (e.g. Mc Donalds)	7. Fast Food (e.g. Mc Donalds)	7. Fast Food (e g. Mc Donalds)	
		8. Service Station				8. Service Station	8. Service Station	8. Service Station	8. Service Station	
		9 From Producer				9 From Producer	9 From Producer	9 From Producer	9 From Producer	
		10. Never buy								
Food product catgories		G1	G2	G3	G4	G5	G6	G7	G8	
1	Breadfruit									1
2	Tomatoes									2
3	Melons									3
4	Other fresh fruits									4
5	Lettuce									5
6	Capsicum									6
7	Eggplant									7
8	Brassica									8
9	Taro									9
10	Cucumber									10
11	Beans									11
12	Other fresh vegetables									12
13	Fresh meat and poultry									13
14	Tilapia (maleya)									14
15	Nama (sea grapes, Caulerpa)									15
16	Fresh water prawns (ura dina)									16
17	kai									17
18	Milkfish (yawa)									18
19	Other fresh fish and seafood									19
20	Tamarind Products									20
21	Processed food items									21

Codes for G2	**1**	Low prices (good value)
	2	Fixed price (no negotiation)
	3	Flexible prices (able to negotiate)
	4	Store provides discount (sales)
	5	Ability to purchase on credit
	6	High-quality food products
	7	Food is safe to eat
	8	Food products are fresh
	9	Availability of Frozen and processed food
	10	Food product information (weight, labels, expiry, etc)
	11	Product display is good (easy to find products)
	12	Wide variety of food products (good selection)
	13	Availability of produce all year round
	14	Can purchase small amounts
	15	Product is unpackaged (can see and feel)
	16	Store is easy to get to
	17	Store is close to other non-food shopping
	18	Store is close to toilets
	19	Fast service (no waiting in lines)
	20	Cleanliness (including environment) of store
	21	Better opening hours
	22	Air-conditioning
	23	Friendly staff / good relationship and service
	24	Delivery Service
	25	Store sells locally produced food product
	26	Store sells imported products

H. FACTORS IN FOOD CHOICE

In choosing the food products you purchase, what are the 3 most important factors influencing your decision (apart from halal)?

	Most important H1	2nd most H2	3rd most H3
1. Food in general			

In choosing each of the following types of products, what are the 3 most important factors influencing your decision (apart from halal)?

	Most H1	2nd Most H2	3rd Most H3
2. Breadfruit			
3. Tomatoes			
4. Melons			
5. Other fresh fruits			
6. Lettuce			
7. Capsicum			
8. Eggplant			
9. Brassica			
10. Taro			
11. Cucumbers			
12. Beans			
13. Other fresh vegetables			
14. Fresh meat and poultry			
15. Tilapia (maleya)			
16. Nama (sea grapes)			
17. Fresh water prawns			
18. Kai			
19. Milkfish (yawa)			
20. Other fresh fish and seafoo			
21. Tamarind Products			
22. Processed food items			

Codes for H1 - H3			
1	Price	12	Diversity
2	Nutritional content	13	Smell
3	Food safety	14	Colour
4	Quality	15	Appearance
5	Taste	16	Firmness/texture
6	Freshness	17	Variety (e.g. apples)
7	Easy to prepare	18	Convenient packaging (size/type)
8	Production method (e.g. organic)	19	Expiry date
9	Brand	20	Other labelling info
10	Fiji Grown	21	Never purchase this item
11	Grade, Class, Size	22	Other (please specify)

H4. How often do you use food labels when shopping for food? H4

[If H4 is 1-3]

H5 What type of information do you use or look for the most (apart from price)? H5

Codes for H4	
1	Always
2	Often
3	Sometimes
4	Never

Codes for H5	
1	Nutritional information
2	Use by / Best before date
3	Local Origin
4	Other (please specify)

I. FOOD CONCERNS

SHOW RESPONDENT GREEN "AGREEMENT" SCALE PROVIDED ON CARD. RESPONDENT SHOULD POINT TO LEVEL OF AGREEMENT

I am concerned about;		Agreement	
I 1	having enough food available (adequate access to food and /or affording food)		I 1
I 2	the safety of my food		I 2
I 3	the nutritional content of my food		I 3
I 4	the use of pesticides to produce my food		I 4
I 5	the use of additives, preservatives and artificial colours in my food		I 5
I 6	bacterial contamination of my food		I 6
I 7	the accurracy of information on food labels and food displays		I 7
I 8	the accuracy of information regarding halal certification		I 8
I 9	food imported from outside Fiji		I 9
I 10	whether the food was stored properly (kept refrigerated)		I 10
I 11	availability of certain foods all year around		I 11
I 12	local growers being able to sell their products		I 12
I 13	the price of food		I 13
I 14	the quality of my food		I 14

LEVEL OF AGREEMENT				
STRONGLY DISAGREE	SOMEWHAT DISAGREE	INDIFFERENT/ UNSURE	SOMEWHAT AGREE	STRONGLY AGREE
1	2	3	4	5
---				+++

J. OTHER

J1. How has the **size** your household changed in the last 5 years? J1

1. Increased (more members)
2. No change
3. Decreased (fewer members)

J2. What is the approximate **income** of the household? J2
[This includes the income of all household members including children, but NOT domestic employees. For self-employed members, we want the net income, i.e. business revenue minus business expenses.]

1 Less than 100 $/month
2 101 to 500 $/month
3 501 to 1000 $/month
4 1001 to 1500 $/month
5 1501 to 2000 $/month
6 2001 to 3000 $/month
7 3001 to 4000 $/month
8 > 4001 $/month

J3. How has the **health status** of household members changed in the last 5 years? J3

1. Improved
2. No change
3. Deterioration
4. Don't know/not applicable

[If J3=1 or 3]
J4. What is the primary reason for the change in the health status of household members? J4

1. Household member had an accident
2. Household member fell ill due to disease
3. Medical intervention improved status
4. Change in diet
5. Change in lifestyle (e.g. exercise more, stopped smoking)
6. Other (specify)

_____

J5. How has the **standard of living** of your household changed in the last 5 years? J5

1 Improved significantly (>30%)
2 Improved somewhat (10-20%)
3 No change (-10% to 10%)
4 Deteriorated somewhat (-10-30%)
5 Deteriorated significantly (>-30%)

[If J5=1,2,4,5]
J6. What is the primary **reason** for the change in the standard of living? J6

1 Household member(s) found/lost job(s)
2 Household member(s) earning more/less from same job(s)
3 Change in health of household members
4 Losses associated with crime (e.g. theft)
5 Losses associated with natural disaster
6 New expenses associated with illness
7 New expenses associated with newborn
8 New expenses associated with education
9 Inheritance
10 Other (specify) _____

LEVEL OF IMPORTANCE				
NOT AT ALL IMPORTANT	A LITTLE IMPORTANT	SOMEWHAT IMPORTANT	IMPORTANT	EXTREMELLY IMPORTANT
1	**2**	**3**	**4**	**5**
---				+++

8.2 Enumerator Manual for Fiji Householder survey

ENUMERATOR MANUAL FOR THE

FIJI SURVEY OF URBAN CONSUMERS

Implemented by the
University of the South Pacific

In collaboration with the
University of Adelaide
and
Fiji Bureau of Statistics



Version: 19th June 2012

INTRODUCTION

This manual is designed to help the enumerators and their supervisor to carry out the Fiji Survey of Urban Consumers. It provides definitions and instructions for completing the questionnaire.

INTERVIEW

Starting the interview

To begin the interview, introduce yourself and explain the purpose of the survey. There is a suggested paragraph on the cover page, but you may wish to expand or modify this based on your experience. It is important to establish a good relationship with the respondent since we are asking for about 1-2 hours of their time. In addition, a respondent that is treated with respect is more likely to give accurate responses.

To improve the relationship with the respondent even further we have given you a small gifts to offer them as a token of our appreciation. You can offer this at the beginning or the end of the interview and also let the respondent know there is a raffle being run once the surveys are completed with lucky winners being drawn from both Suva and Nadi.

Next ask who in the household would be most knowledgeable about food purchases and preparation. Normally, this will be the wife/mother in the household, but not always. If the most knowledgeable person is not present, it may be possible to interview someone else who is well informed or it may be necessary to return to the household later.

The interview should be carried out privately, without neighbors, company representatives, or government officials. Family members may be present if it seems that they will not make the respondent reluctant to answer questions.

Filling in the questionnaire

No.1 Rule: Don't leave any blank boxes. Put a line through any boxes that do not need to be filled in so there is no misunderstandings when data is entered.

Below are some more guidelines for filling in the questionnaire:

- Use a blue or black pen. Don't use a pencil
- *Ask the questions in order*, skipping to questions when instructed to.
- The *boxes should have just numbers* in them, no words or symbols. Do not include units (such as 'kilograms' or '$' or '%') in the boxes.
- The only place where words are appropriate are:
  1) on the cover page,
  2) where the questionnaire says "Other (specify) _____", and
  3) in the margins where you can insert notes or comments to explain the response.
- If you need to specify the answer to "Other (specify)" and there isn't room in the box then put a * in the box and write the answer in the margin or at the bottom of the page next to another *
- There should be just *one number in each box*. If the respondent says "10 to 20 kilograms", ask him to estimate the average or use 15. If the respondent gives two reasons, but there is only one box, ask him to select the most important reason.
- Write a zero ("0") in the box if the quantity is zero. For example, if they don't own a radio, write "0" in B7, row 10. Or if they don't buy fresh mango, write "0" in E4, row 4. Do not leave the box empty in these cases. A zero indicates the question was asked and the answer was "none."

- Put a line through any box if the question is not relevant and was not asked. For example, if they do not purchase fresh mango, then you can put a line through the boxes for expenditure on fresh mango (E5 and E6, row 4) blank.

- For a partial row of boxes that are not used, such as in Section A, E, or G, draw a horizontal line through the boxes that are not going to be filled in.

- If the whole row of boxes is not used, put a line through them. For example, if there are 5 members of the household, rows 6-14 in Section A should be ruled out.

COVER PAGE

The cover page records information to identify the respondent and to monitor the process of data collection and quality control.

Information for household ID number: This section provides the codes that will be used to construct the household identification (ID) number. Fill in the codes for the city, EAS number and household number (BOS to advise). The Household number is not the street number, it is a number assigned to the house by the supervisor. The codes for city, EAS and household number are provided on the back of the cover page and will be assigned by the supervisor. The codes for each enumerator are also on the back of the cover page.

Information on the household: The name, address, and phone number of the respondents should also be filled in. There are no codes for this information. This information is important for identifying the household in case there is a mistake in the household ID. This information is also important in case we have a question about the information provided and we need to contact the respondent.

Enumerator code: Use the enumerator code on the back of the cover page that is assigned specifically for you

Questionnaire processing: The interviewer should record the date of the interview and his or her name here. The supervisor will check the questionnaire in the field and complete the second row. The office check will be carried out in the headquarters. The last row is completed by the data entry agent.

SECTION A: HOUSEHOLD MEMBER CHARACTERISTICS

The purpose of this section is to collect basic information on each member of the household.

What is a household? For this survey, a *household is defined as a group of people who normally live and eat their meals together*. To be a member, a person must live in the household for at least 6 months of the year or for at least 4 days per week. Make sure the respondent includes him or herself. To ensure that you get everyone who lives in the household, probe by asking if there are any employees or non-family-members living at the house. If so, ask more questions to see if they meet the criteria for household members. It is not necessary to record information about people who normally live elsewhere, such as someone who works in the city most of the year.

A household <u>includes</u>:

- Infants born within the family and living with the family within the past year.
- Servants, lodgers, farm-workers, and other individuals who have lived and eaten with the household over most of the last 12 months, even if they have no blood relation to the household head.
- Anyone who has lived and eaten with the household for most of the last 12 months.
- New members of the household (such as a son-in-law) who has lived in the household at least one month.

A household <u>does not include</u>:

- People who live in the same dwelling, but do not share food expenses and make economic decisions separately. For example, if two brothers, each having his own family, live in the same house but maintain separate food budgets and cooking facilities, and make their economic decisions separately, they would be two separate households.

- People who normally live away from the household for more than six months of the year, even if they are family members and are considered members of the household by the household itself. For example, if the father of the family lives and works in another city and only returns for 4 months of the year he is not considered a member of the household (under our definition). Similarly, a son who comes home only on weekends is not a household member.
- Children of the household who have lived and eaten elsewhere most of the past 12 months, such as students who live at a boarding school and children who live with relatives.

Order of questions. Tell the respondent that you would like to make a list of all members of the household starting with the head of household and the spouse. Try to organize the roster so that, after the head of household and spouse, the household members are listed by age, from eldest to youngest. This will make it easier to complete and check the questions that only apply to members 6 years and older and the questions that only apply to members 17 years and older.

After recording the names of all household members, ask questions A2 – A8 for the head, then ask these questions for the spouse, then continue with each other member of the household.

A1 NAME

As described above, list the name of the household members in the following order: 1) head of the household, 2) the spouse(s), and 3) others in order of age from oldest to youngest. Putting them in order of age will help ensure than the schooling question is asked of everyone who is six years or older. It will also help ensure that A6-A8 are only asked about members 17 years or older.

A2 SEX

Write the code for the gender of the household member (1=Male, 2=Female).

A3 RELATIONSHIP

Record the member's relationship to the head of the household. Who is a head of household? The head of household is defined as the household member that makes most of the economic decisions. The head is often the father or husband, but not always. Also, because the head of household must be a member of the household, it cannot be someone who lives elsewhere for most of the year. For example, if the husband lives in town and sends money or visits the household regularly, then the wife makes the day-to-day decisions and she is considered the household head. Enumerators may accept the judgment of the household members regarding who is the head of household, provided the person is a member according to our definition.

"Other related" refers to people with a blood or marriage connection to the head of household, including cousins and grandparents.

"Other unrelated" refers to people in the household but not related by blood or marriage to the head of household, including domestic employees, boarders (who eat with the family), or long-term visitors.

A4 AGE

Record the age of the member, expressed in years completed (i.e. age at the last birthday). For instance, if the person is 4 years and 10 months old, write "4". If it is an infant that is 9 months old, enter "0".

A5 EDUCATION

For members 6 years and older, record the number of years of schooling that the child has had. Include home schooling and exclude time spent in kindergarten. For example, if the member never completed any schooling, write "0". If the respondent completed 3 years of school, write "3". If s/he completed 7 years of school and only started the 8th, write "7". If they did 12 years and then 3 years of University then write "15".

A6 MARITAL STATUS

For members who are 17 or older, ask about his or her marital status. Marital status refers to whether the household member is or has ever been married. "Single" means never married. "Married" means the member is currently wedded to someone, usually but not necessarily another member of the household.

"Divorced/separated" means that the member was married but has legally or informally separated from his/her spouse. "Widowed" means the member was married but the spouse died. If the ex-spouse of a household member dies, the member is considered "Divorced/separated", not "Widowed."

A7 MAIN ACTIVITY

For members who are 17 years old or older, ask about his or her primary activity. The primary activity is defined according to the time it takes, rather than the money it generates. For example, a woman who spends 5 hours per day doing housework and 3 hours as a vegetable trader would have "Unpaid family /community worker" as the main activity, even though trading generates more income. The activity codes are given on the bottom of Section A.

- 'Farmer or Fishermen' includes people involved in crop production, livestock raising, aquaculture, and fishing. It includes independent farmers, farmers renting farmland, and sharecroppers. It does not include agricultural laborers working for a daily wage (these are "Wage / Salary Employee").
- The 'Self employed Other / Employer' category refers to people who aren't farmers or fishermen but own and work in their own business and are paid by the product or by the tasks (not by the time-period). They often have business expenses such as raw materials, rent and labor. They typically sell to various customers.
- The 'Wage / Salary Employee' category refers to people who are paid by the day, month, or year. They generally do not have business expenses.
- 'Unpaid family / community worker' includes an unpaid member of the family who cleans, cooks, and takes care of the children. It is often the wife/mother or an older child but does not have to be. If the person does housework as a paid job, this should be recorded as "Wage / Salary Employee."
- 'Student' includes school students, university student, and those in training.
- 'Unemployed / Retired' refers to people who are not working, either because they are retired, on the pension, cannot find work or because they choose not to work.
- Other (please specify) If the occupation does NOT fit into categories above then use "7- Other" and write the occupation on the margin of the survey, but try hard not to use code 7.

A8 HOURS WORKED

For members 17 and older who have a paid occupation (codes 1-3), ask about the number of hours per week that they spend on the primary activity. If the member has an unpaid primary activity (codes 4-6), then fill in the box with "99" since it would be difficult to estimate the time involved and not very useful for analysis.

SECTION B. HOUSING AND ASSETS

The objective of this section is to obtain general information on housing characteristics and ownership of assets, though we include questions on religion and ethnicity for convenience.

B1 RELIGION

Record the religion of the household using the four codes on the right.

B2 ETHNICITY OF HEAD

Record the ethnicity of the head of household. 'Expat' stands for Expatriate ie. Someone who has taken up residence in a foreign country and hence is not originally from the Pacific. If they are from other countries in the Pacific then classify them under 'Other'.

B3 ETHNICITY OF SPOUSE

Record the ethnicity of the spouse of the head of household. If there is no spouse, write "10" for no spouse.

B4 WATER SOURCE

If they can't answer yes or no then ask if you can take a look yourself. If an inside tap is present but is not working then answer 'no', code '2'.

B5 FUEL

This question focuses on the fuel used for cooking. If more than one fuel is used, pick the most important one.

B6 DISTANCE TO PUBLIC TRANSPORTATION

The distance to public transportation should be measured in **meters** from the edge of the household's property. If the public transport is immediately in front of the house, you can enter "0".

B7 ASSET OWNERSHIP

This question records the **number** of each type of consumer good owned and used by members of household. Record a "0" if the household does not own the item, "1" if they own one of the item, "2" if they own two, and so on.

Regarding internet access, we include the case where a member has a phone that provides access to email and/or the web. For example if the household has broadband internet access as well as two mobile phones with internet access then write "3" in B7.9

Do not count the assets owned by the parents of a household member if the member is living with his parents but is not considered part of the same household (for example, if he/she eats separately and maintains a different budget).

SECTION C. COOKING AND SHOPPING ATTITUDES AND BEHAVIOR

C1-C4 DIVISION OF RESPONSIBILITY

These questions ask who in the household has responsibility for deciding what to buy, for shopping, for deciding what to cook, and for cooking. If responsibility is shared, pick the person with more responsibility. 4 (No one) is a possible code for C1, C2, and C4 if the household eats at restaurants and always eats out.

C5 EATING MEALS TOGETHER

Asks how many times per *week* the household eats the evening meal together. A "meal together" refers to a majority of household members. The answer should be between 0 and 7.

C6-C9 EATING OUT FOR EVENING MEAL

Asks about the frequency that the household makes use of food prepared outside the house, including take-out, delivered food, eating in restaurants, and eating at street vendors. Use code 7 if 'never'.

C10 PURCHASED AND COOKED AT HOME

Asks about the frequency that the household stays home and cooks the evening meal

C11-C36 FACTORS IN CHOOSING A FOOD SHOPPING LOCATION

This question asks about the importance of different factors in deciding where a household buys its food. Each attribute should be rated on a scale of 1 to 5, where 1 means "Not at all important" and 5 means "extremely important." Use the PINK CARD at back of survey to remind respondents what the scale is.

SECTION D. SHOPPING BEHAVIOR

This section examines the shopping habits, distance, and reasons for shopping at different types of retail outlets. Food outlets are divided into eight types, which are defined at the bottom of the survey page.

D2. TIME to OUTLET

- THIS SHOULD NEVER BE BLANK- They should fill it out whether they shop at the outlet or not.
- This should be their best estimate.
- If it is a hawker that comes to their door then answer '0'

D3. DISTANCE to OUTLET

- THIS SHOULD NEVER BE BLANK- They should fill it out whether they shop at the outlet or not.

- If they do not know distance then the enumerator should try to ask a neighbor or someone else in the household. If this is impossible to know then you should indicate 999.
- If the enumerator thinks the distance reported by the respondent is incorrect then the enumerator should record the respondent's estimate in the box and write a note in the margin with his/her (the enumerator's) estimate.
- If it is a hawker that comes to their door then answer '0'
- The distance can be rounded to the nearest **kilometer**. For example, 400 meters = 0.4 km, which can be rounded to 0. And 1.6 km can be rounded to 2.

D4. FREQUENCY FOR NON-FOOD SHOPPING AT OUTLET TYPE

- This is just for non-food items at each outlet. E.g. clothes, petrol etc
- It is not applicable for Fish Markets, Restaurants and Fast Food Outlets so these boxes do not need to be filled out
- NO CELLS SHOULD BE BLANK. If they never shop there then code with 7 = Never.

D5. FREQUENCY FOR FOOD SHOPPING AT OUTLET TYPE

- NOTE: Definition of Food. Please tell respondent that FOOD: includes anything eaten or drunk, including unprocessed food, processed food, meals purchased, and beverages (including coffee, tea, soda, juice).
- We are only interested in "FOOD", NOT non-food products such as cleaning products, clothing etc.
- NO CELLS SHOULD BE BLANK. If they never shop there then code with 7 = Never.

D6. MODE OF TRANSPORTATION

D6, D7, and D8 are ONLY asked if the respondent shops for food at a given outlet type. In other words, they should be asked ONLY if D5 is not equal to 7.

- For this it is the method they use MOST frequently. Use one code only.
- If the outlet is a hawker then code as "1 = on foot"
- Try to avoid using category "6=Other" if possible

D7. MAIN REASONS TO SHOP FOR FOOD AT OUTLET

- Only ask if for question D5 the respondent answered 1-6.
- ASK UNPROMPTED- Enumerator should ask respondent to explain the reasons he/she uses outlets to shop for food, allow the respondent to answer in his/her own words, and use codes 1-26 provided on back of the page. After they tell the most important reason ask if there is anything else, and code the second most important reason.
- If respondent struggles to think of a reason then the enumerator can prompt them by showing them the coded list (1-26) and let them pick. For example if they answer 'convenience' then you will need to prompt them further to find out if what they mean ie. Is it convenient because it is close by, has fast service, has a variety of products all in one place or better opening hours etc etc.
- We only want the 2 most important reasons. If respondent mentions more than 2 reasons then enumerator should ask the respondent to specify the 2 most important reasons.

SECTION E. FOOD PURCHASES

The goal of this section is to collect information about food consumption patterns and where households buy different types of food. Although there are about 70 food categories across three pages, most households will not consume food from all of these categories.

Tell the respondent this is the hardest section of the survey so once it's done the rest of the survey is easier and much quicker.

In this section, the enumerator needs to distinguish between FRESH/FROZEN and PROCESSED food products. It is important that the enumerator specifies that they want information on Fresh versus Processed.

E2 FOOD CONSUMPTION OVER LAST 12 MONTHS

On each page, complete E2 before moving to E3-E10. Consumption includes purchased food as well as food from their own gardens or farms and food received as an exchange or gift. Record "1" for yes and "2" for no. Every box in E2 should have a "1" or a "2", with no boxes left blank.

- If E2=no for a given product, ask E3, but don't ask E4-E10 regarding this product and draw a horizontal line through the empty boxes in E4-E10.
- If E2=yes for a given product, at least E3 and E4 should be asked and the answer recorded. If E4 is greater than zero, E5 and E6 will be asked and recorded. Fill in E7and E8 if any product was consumed from home production and E9 and E10 if any product was received as a gift or transfer. Complete E3-E10 for each product, before moving to the next product.

E3 CHANGES IN CONSUMPTION OVER LAST 5 YEARS

- This should never be blank!
- E3 asks whether per capita consumption of this food item has increased or decreased over the past five years, that is, between 2007 and 2012. We want the per capita comparison because we do not want it to be affected by changes in the number of household members. If they didn't consume it 5 years ago and they do consume it now, write "3" for larger quantities.

E4 NUMBER OF TIMES FOOD PURCHASED IN LAST MONTH

Questions E4 to E6 refer only to *purchased* food. Ask how many times in the past month the household purchased the food item. If they do not purchase it, record "0" in the E4 column. It is possible that E4=0 even though E2=1 because E2 refers to consumption but E4 refers to purchases and 2) E2 refers to a whole year, while E4 refers to the past month.

- If E4=0 for a given product, do not ask E5-E6 and draw a horizontal line through these boxes.
- If E4 is greater than zero, ask E5 and E6 and record the responses

E5 VALUE OF AVERAGE PURCHASE

E5 asks about the average amount spent on the food item each time it is purchased. Record the response in Fiji Dollars, so "10" means $10 Fiji Dollars. Note that it is the value per purchase, not per week or per month. We will estimate monthly expenditure by multiplying E4 and E5. If the food item is a broad category, it may be easier to estimate the month expenditure and record E4=1 and E5= the monthly expenditure.

E6 OUTLET WHERE FOOD PURCHASED

E5 asks where most of this food item is purchased, meaning what type of food store. The different types of food stores are defined at the bottom of Section D. If the food item is bought at more than one type of store, ask at which store their spending on this food is greater.

E7-E8 HOME GROWN

E7 –E8 asks how much produce was consumed from their own production in the last 12 months. A7 is the amount in Kg and E8 gives 4 options for the frequency (daily, weekly, monthly, yearly). If they don't consume any home grown product then you can put a '0' or put a line through E7 and E8.

E9-E10 TRANSFERS RECEIVED

E9 –E10 asks how much was consumed from produce received as a gift or transfer in the last 12 months. A9 is the amount in Kg and E10 gives 4 options for the frequency (daily, weekly, monthly, yearly). If they don't receive or transfer any product then you can put a '0' or put a line through E9 and E10.

Section E is quite extensive so if the respondent needs a rest then offer a 5 min break before continuing

F. NON-FOOD EXPENDITURE

The goal of this section is to estimate non-food consumption expenditure, which will be combined with food consumption expenditure to calculate per capita consumption expenditure, a measure of the standard of living of the

household. This is an important variable because many variables such as food consumption and shopping patterns are expected to differ between low-income and high-income households.

The question is "How much does your household spend on [item] in a typical week, month, or year?" For each non-food item, we code the responses with two variables.

F2 TIME PERIOD

Record the time period in F2, with "1" meaning weekly, "2" meaning monthly, "3" meaning yearly and "4" meaning not applicable. This does NOT refer to the frequency of purchases. It is only to give flexibility to the respondent in the response. N/A is only to be used if no expenditure is made in that category.

- If the respondent says that the household spends $50 FJD per month on clothing, write "2" in F2 and "50" in F3.

- Again, the time period does NOT refer to the frequency of purchases. It is for the convenience of the respondent. Sometimes it is easier to estimate the amount on a weekly basis (such as soap and toiletries), other items may be easier to estimate on a monthly basis (such as water and electricity bills), while others may be easier to estimate on an annual basis (such as school fees). Let the respondent decide which time unit is easiest to estimate.

F3 VALUE OF NON-FOOD EXPENDITURE

In F3, record the value (in Fijian Dollars) of the expenditure on each non-food category. As elsewhere in the questionnaire, do not use units (e.g. $) in the box. As elsewhere in the questionnaire, "10" means 10 Fijian Dollars. If there is no expenditure for a given category and F2 =4 then record "0" for F3.

Do not include spending on the following categories:

- Food or beverages: Food expenditure is covered in Section E. We do count expenditure on city water delivered to the house in this Section, a portion of which is used for drinking. Bottled water, Aqua, and water refills are counted in Section E.
- Durable goods. Durable goods are large items that last for at least two years such as furniture, motorbikes, cars, and home improvements. Because the use (or "consumption) of these goods lasts for several years, it does not make sense to count their expenditure in one year as "consumption."
- Taxes. Taxes paid to central or local authorities are not directly linked to consumption, so we exclude these expenditures. We are not trying to estimate "income"; rather we are trying to estimate the value of consumption expenditure.
- Business expenses. We do not want to include business expenses because the items purchased do not directly contribute to the "consumption" and standard of living of the household. In other words, if a household owns a shop, we do not want to include the value of expenditures to restock the shop. Likewise, we do not want to count the cost of wood bought by a carpenter to make and sell furniture. These activities contribute to the household indirectly by providing income, but we count the value of consumer goods and services bought with those profits.

F4 OWNERSHIP STATUS

Ask the respondent whether the house is rented from the owner, owned by the household, or used by the household without paying.

- If a couple lives with his or her parents without paying rent but are sufficiently independent to be considered a separate household, F4 should be 3 (use without paying rent). In this case, F6 refers to the rental equivalent of the PORTION of the house occupied by the couple.
- If a household lives in one dwelling but owns another dwelling, questions F4-F6 should be asked regarding the dwelling where they LIVE, not the one they own elsewhere.

F5 RENT PAID

If F4=1 (rent), then ask the respondent how much rent the household pay in an average month. Estimate the rent if they haven't lived there for a month yet. Record the monthly rent in Fijian Dollars with all the zeroes and no decimal places. If F4=2or 3 then put a line through F5.

F6 RENTAL EQUIVALENT

If F4=2 (owned) or F4=3 (used without paying rent), then ask the respondent to estimate what it would cost to rent a house like this in a neighborhood like this for an average month.

- If this is difficult, ask how much they could get in rent if they rented out their entire house. What we want is the "rental equivalent".
- Another way to phrase the question is how much do households pay for similar houses in this neighborhood.
- We do NOT want the value of the house if they sold it or the cost if they had to buy the house. The rental equivalent is an important part of non-food consumption expenditure, so it is important to get an estimate of this value.

G. RETAIL OUTLET USE PREFERENCES, QUALITY, SAFETY AND CONVENIENCE

The following are explanations for the food product categories:

- Other fresh fruits: Any other fresh fruit products not included in other categories that is not frozen or processed (not dried, canned etc.)
- Other fresh vegetables: Any fresh vegetable product that is not frozen or processed (not dried, canned etc.)
- Fresh meat and poultry: Any fresh meat product that is not eggs, fish or seafood and has not been processed (not nuggets, not breaded, not salted, not smoked)
- Other fresh fish and seafood: Any fresh fish or seafood product not included in the previous seafood categories
- Tamarind products: Includes any product made predominantly from tamarind (ie Paste, sauce)
- Processed food items: Any processed or frozen foods, cakes, candies, biscuits, boxed food, processed meat, processed fruit and vegetables

G1. WHERE DO YOU USUALLY BUY [Food Product...]

- NO cell in column G1 can be blank.
- If the respondent NEVER buys the food product then code G1. As "10 = never buy"
- They may purchase as multiple locations, but only one answer is allowed. So emphasize to the respondent that we want to know the outlet that they purchase product at MOST frequently only.

G2 – G8. IF G1 = 1-9 then ask, but if G1 = 10 then put a line through G2-G8 for food product category.

G2. PRIMARY REASON THEY BUY [Food Product…] AT SPECIFIC OUTLET

- Only ask if G1 = 1-9 for food product category.
- ASK UNPROMPTED- Enumerator should ask respondent to explain the reasons they choose outlet for food product and then enumerator should use codes provided on next page, codes (1-26).
- If respondent struggles to think of a reason then enumerator can prompt them by showing them the coded list (1-26) and let them pick.
- Use only 1 code for each food product category- if respondent indicates more than one reason then ask them to specify the MOST important.

NOTE: THE RESPONSES FOR G5-G8 ARE NOT ALWAYS GOING TO BE EQUAL TO THE OUTLET INDICATED IN G1. In some cases they might be quite different.

Consider the following example for the case of Kritika.

Kritika shops for fresh meat most frequently at the Main City Market, but she only does so because it is very easy to get to and she has very little time. She hasn't changed the amount she buys in the last 5 years. She thinks the price at the markets is best, but she prefers the quality, safety and information provided by supermarkets. Therefore you would code G1.13 as "5", G2.13 as "16", G3.13 as "2", G4.13 "put a line through", G5.13 as "5", G6.13 as "1", G7.13 as "1" and G8.13 as "1".

G3-G4. CHANGE IN PURCHASING HABITS OVER THE LAST 5 YEARS AND WHY

- G3. Ask the question in relation to each of the food product categories and the outlet chosen in G1. The options are 1. They have bought smaller quantities of product from that outlet, 2. They have bought about the same, 3. They have bought larger quantities of product from that outlet
- G4. Ask only if answer to G3 is 1 or 3. Then ask what is the primary reason their purchasing habits have changed 1. Household income has changed, 2. Food preferences have changed, 3. New outlet, 4. Outlet has improved 5. Outlet has deteriorated, 6. Other (please specify). If the answer doesn't fit options 1-5 then write it in the margin next to the food product category.
- If the answer to G3 is '2' then draw a line through G4

G5. BEST OUTLET FOR PRICE of [Food Product...]

- Only ask if G1 = 1-9 for food product category, if G1 = 10 for then leave blank.
- They should choose which 1 retail outlet is best for price for that product in their opinion.

G6. BEST OUTLET FOR QUALITY of [Food Product...]

- Only ask if G1 = 1-9 for food product category, if G1 = 10 for then leave blank.
- They should choose which 1 retail outlet is best for quality for that product in their opinion.
- QUALITY is respondent's perceptions, enumerator should NOT give a definition.

G7. BEST OUTLET FOR SAFETY of [Food Product...]

- Only ask if G1 = 1-9 for food product category, if G1 = 10 for then leave blank.
- They should choose which 1 retail outlet is best for safety for that product in their opinion.
- SAFETY is their perception of the overall healthiness and safety of the product- that it will not make them sick or harm them.

G8. BEST OUTLET FOR TRUSTING INFORMATION of [Food Product...]

- Only ask if G1 = 1-9 for food product category, if G1 = 10 for then leave blank.
- They should choose which 1 retail outlet is most trustworthy for that product in their opinion.
- TRUST is whether they trust the information that the outlet or workers in the outlet provide. For example, if outlet says product is fresh (not frozen), expiration date, or organic that the respondent believes information to be truthful.

H. FACTORS IN FOOD CHOICE

H1.1-H3.1: FOR FOOD: Please ask this question UNPROMPTED (without showing them the code).

An example of how to ask: "*Think about Food Shopping that is done at retail outlets such as Municipal Markets, Supermarkets, Corner Stores etc. In general, aside from Halal, what are the most important attributes that you consider when making decisions about what food products you buy for your household?*"

- After Enumerator reads question for H1 then ask what is overall the most important for food? Enumerator should let the respondent explain what is most important and then use Codes (1-22). You can only have one code (one answer) for H1.1.
- **H1.1 should never be left blank**. There should be at least one answer here
  - Code "21 = Never purchase", should NEVER be used for FOOD as all people purchase some type of food.
- After filling in H1.1 then ask them what other things they consider and fill in 2nd and 3rd most important things they consider. Place codes in H2.1 and H3.1.
- If they cannot think of anything for H2.1 and H3.1 then put a line through them. H2.1 and H3.1 do not have to be filled in.
- Only one code in each box for H1.1-H3.1.

H1.2 –H3.22: SPECIFIC FOOD PRODUCTS:

- Please ask this question UNPROMPTED (without showing them the code).
- If H1=21 (Never purchase) then rule out H2 and H3 for that product

- H1.2 to H1.22 should ALWAYS be filled in for all food products. If they do not purchase then code as "21 = Never purchase this item".
- H2.2-H2.22 and H3.2 and H3.22 can be ruled out if respondent does not have second and third most important for specific food product categories.

The following is an example of how this question might be asked for tomatoes:

> *"If you are purchasing tomatoes for yourself or your family, aside from Halal, what is the Most Important attribute that you consider?"*

- Let them tell you what is most important. Put the answer in H1.3
- Then ask if anything else is important and put answers in H2.3 and H3.3.
- H2.3 and H3.3 do not have to have an answer if they cannot think of anything else.
- If they never purchase tomatoes then in H1.3 put "21 = never purchase", skip H2.3 and H3.3 (put a line through them) and skip to 4. "Melons"

Codes for H1 - H3		
1	Price	Fijian Dollar per unit
2	Nutritional content	Food is a good source of nutrition, energy, protein, vitamins, minerals
3	Food safety	Food that will not harm my health
4	Quality	Overall food product is good
5	Taste	Product will have a good taste and texture when I eat it
6	Freshness	Product is fresh, not old, rotten or frozen
7	Easy to prepare	Can prepare it quickly with minimal preparation time
8	Production method (e.g. organic)	Care about how product is produced – issues such as organic, pesticide-free, GMO free, chemical free.
9	Brand	Manufacturing company or food processor (e.g. Nestle)
10	Fiji Grown Origin	Locally produced rather than imported
11	Grade, Class, Size	This is an official grade or class used to distinguish quality or size of product.
12	Diversity	Many different types of food products (apples, and seafood, and milk NOT certain varieties (e.g. varieties of apples or varieties of mangoes)
13	Smell	How the product smells
14	Colour	That the colour is right according to beliefs about what is good
15	Appearance	Appearance overall- not just colour, for example if the product has blemishes, bruises, looks slimy or has flies on it.
16	Firmness/texture	Is product soft or firm?
17	Variety (e.g. apples)	Variety means type of a specific food product, for example Red Delicious or Granny Smith Apples.
18	Convenient Packaging (size / type)	Whether the package size is too big or too little- pre-packaged versus loose
19	Expiry date	Expiration date information (Use-by-Date)
20	Other labelling info	Any other labelling information
21	Never purchase this item	I never purchase this food item
22	Other (please specify)	Try not to use this if possible. If the answer given doesn't fit into any above categories then write the answer in the margin

H4. FOOD LABELS

- Here we are interested in their use food labels whether that be on processed food (e.g. biscuits, potato chips) or fresh products where information might be provided near product.
- Codes are provided to the right in box (Codes for H4).
- 1 = Always, 2 = Often (most of the time, but not always), 3 = Sometimes, but not very frequently, 4 = Never

H5. WHAT INFORMATION DO YOU USE

- This question should only be answered if H4 =1-3.
- Response is 1 = Nutritional information, 2 = Use by / Best before date, 3= Local Origin, 4= Other (please specify) and write in the margin.

I. FOOD CONCERNS

I1-I14: Before starting these questions, the enumerator should read the following statement (on top of page) to the respondent:

"*For the next set of questions I1-I14, I am going to read you several statements. After I read you each statement then I would like you to point at the scale and tell me how strongly you agree or disagree with what I have said. 1 = STRONGLY DISAGREE and 5 = STRONGLY AGREE. There is no right or wrong response – I am really just interested in getting your OPINIONS and BELIEFS***."**

- **SHOW RESPONDENT GREEN "AGREEMENT" SCALE PROVIDED ON CARD. RESPONDENT SHOULD POINT TO LEVEL OF AGREEMENT**
- Place 1-5 in the blanks for I1-I14.
- NO QUESTION SHOULD BE BLANK- ALL QUESTIONS SHOULD BE CODED 1, 2, 3, 4, or 5.

LEVEL OF AGREEMENT				
STRONGLY DISAGREE	SOMEWHAT DISAGREE	INDIFFERENT/ UNSURE	SOMEWHAT AGREE	STRONGLY AGREE
1	**2**	**3**	**4**	**5**
---				+++

J. OTHER

J1. CHANGE IN HOUSEHOLD SIZE

- J1 must have a code (1-3)
- Today compared to 5 years ago (2007 vs. 2012)
- 1 = increased could be because of birth, marriage, in-laws moving in etc.
- 2 = household is the same size as it was 5 years ago
- 3 = household size decreased could be because of a death, divorce/separation, child moving out, household member working away from home etc.

J2. APPROXIMATE INCOME per MONTH

- J2 Must have a code (1-8)
- Income of the household per MONTH, this should include any income coming into the household from all household members EXCEPT domestic employees. For self employed members income is business revenue minus business expenses.
- Use the code (1- 8) provided that gives the best estimate of total household income.
- People living off of savings with no income should be coded as "1 = less than)

J3. CHANGE IN HEALTH STATUS

- J3 must have a code (1-4)
- On average are people in the household more or less healthy than 5 years ago? (2007 vs. 2012)

- This is the respondent's opinion or perception.
- 1 = improved, 2 = no change (same as 5 years ago), 3 = deterioration (worse than 5 years ago), 4 = do not know (only use if respondent doesn't understand or really has no understanding)

J4. SPECIFY CHANGE IN HEALTH STATUS

- If J3 =2 (No Change) or 4 (Don't know) then rule it out
- Only answer if J3 = 1 (improved) or 3 (deterioration)
- Use codes 1- 6 provided
- Try not to answer if 6, 'Other, please specifiy' but if it can't be classified into the other 5 codes then write the answer in the margin.

J5. CHANGE IN STANDARD OF LIVING

- J5 must have a code (1-5)
- Standard of living today compared to 5 years ago? (2007 vs. 2012)
- This is the respondent's opinion or perception.

J6. REASON FOR CHANGE IN STANDARD OF LIVING

- If L5 = 3 then rule it out otherwise L6 must have a code (1-9) and only one response should be coded. If respondent says change is related to more than one reason then enumerator must ask them to specify the most important reason for the change.
- This is the respondent's opinion or perception.
- If their answer doesn't fit the options 1-9 then record the answer in "10 Other (specify)_____"

ENDING THE INTERVIEW

After completing the questions, review the questionnaire to make sure that all questions have been asked and that there is no missing information. Then thank the respondent for his or her time. As a matter of courtesy, it may be appropriate to ask the respondent if he or she has any questions about the survey or the study.

APPENDIX

SAMPLE SIZE AND PROCEDURE

Nadi Urban EAS by Class

Description	Class code	Number	%
High	0	19	38%
Middle	1	5	10%
Low	2	2	4%
Housing	3	2	4%
Commercial	4		
Institution	5		
Squatter	6	3	6%
Urban Village	7	5	10%
Misc/Mixed	8	14	28%
Others	9		
Total		50	100%

Nadi Urban Sampled EAS by Class

Description	Class code	Number	%
High	0	4	33%
Middle	1	2	17%
Low	2	1	8%
Housing	3	1	8%
Commercial	4		
Institution	5		
Squatter	6	1	8%
Urban Village	7	1	8%
Misc/Mixed	8	2	17%
Others	9		
Total		12	100%

Suva Urban EAS by Class

Description	Class code	Number	%
High	0	84	21%
Middle	1	79	20%
Low	2	10	3%
Housing	3	54	14%
Commercial	4		
Institution	5		
Squatter	6	46	12%
Urban Village	7	10	3%
Misc/Mixed	8	108	28%
Others	9		
Total		391	100%

Suva Urban Sampled EAS by Class

Description	Class code	Number	%
High	0	9	24%
Middle	1	9	24%
Low	2	1	3%
Housing	3	5	13%
Commercial	4		
Institution	5		
Squatter	6	5	13%
Urban Village	7	1	3%
Misc/Mixed	8	8	21%
Others	9		
Total		38	100%

- EAS code is selected randomly by BOS office once stratification by income class has been done
- Each EAS code corresponds to a geographical area which consists of around 100-150 households
- The map of that EAS code is printed out showing the location of each house
- Once the EAS is selected, all the HH in that area are approached by an enumerator. They are introduced to the survey, its background and importance. They are asked if they are willing to take part in the survey if their house is selected. If the answer is yes then they are assigned a number and a house sticker
- All of those number are then put in a hat and 20 are drawn out, with an additional 5 reserves
- Then enumerators can begin interviews with the 20 HH selected using the map and sticker to guide them.

ENUMERATOR TRAINING SCHEDULE

Suva Training Plan; 9am at USP, CDF room, train 20 enumerators to pick 16 and 1 supervisor

- Tues 12th June – FBOS will start by running their own introductory training for the enumerators (1/2 day). USP will give a quick introduction to the project. Copies of the survey and manual are then handed out for enumerators to familiarise themselves (read through while they are there) and then test with their family overnight to offer feedback on Weds
- Weds 13th June – Go through the survey and training manual page by page with enumerators to answer questions, get feedback and clarify any issues (Craig will arrive Tues night so will be there at start of the Weds session)
- Thurs 14th June – Survey trials in the field. Pairs of enumerators do 2 HH surveys, one each. One enumerator watches while the other one interviews before they swap over. They need to record the time each survey takes, write down any comments they have in the margin, otherwise treat the trial exactly the same as the real thing. Once finished, they bring the survey back to Craig and discuss any suggested changes or issues one on one. That night Craig reviews the surveys in detail, ranks enumerators and provides individual written feedback on each survey.
- Friday 15th June – Management meeting in the morning to review results, finalise survey and select 16 enumerators and the additional supervisor. Also to go through HH selection process with FBOS / Enumerator meeting in the afternoon to explain any changes page by page and explain the process and procedures for the following weeks. Group photo.
- Full team meeting planned for Friday 22nd June
- Start Suva household listing on Monday 25th June and surveys on Monday 2nd July

Nadi Training Plan; 9am at FBOS, GT Plaza, Vunavau Lane, Train 6 enumerators to pick 4 enumerators and 1 supervisor

- Mon 18th June – FBOS will start by running their own introductory training for enumerators (1/2 day). Craig will introduce the project. Copies of the survey and manual will be handed out for enumerators to familiarise themselves. Craig will go through the survey and manual page by page, answer any questions and then inform them of the schedule for the rest of the training. In the late afternoon they will practice the survey on each other in preparation for the field trial tomorrow.
- Tues 19th June - Survey trials in the field. Pairs of enumerators do 2 HH surveys, one each. One enumerator watches while the other one interviews before they swap over. They need to record the time each survey takes, write down any comments they have in the margin, otherwise treat the trial exactly the same as the real thing. Once finished, they bring the survey back to Craig and discuss any suggested changes or issues one on one. That night Craig reviews the surveys in detail, ranks enumerators and provides individual written feedback on each survey.
- Weds 20th June – Enumerator meeting in the morning to select 4 enumerators and 1 supervisor and explain any changes to the survey and any common problems. Notify Suva team of any changes and the names of the selected enumerators. Practice any problem sections again. Explain the process and procedures for the following weeks. Group photo.
- Start Nadi household listing on Monday 25th June and surveys on Monday 2nd July

8.3 Oxfam Survey

Oxfam survey instrument

Purchasing from Oxfam

1. Have you ever purchased something from Oxfam (either in-store, from the supermarket or online)?
    - Yes, then please proceed to Qu 3
    - No, then please proceed to Qu 2 before continuing the survey at Qu 10 about **Pacific Region Products**

2. Which of the following best describes why you **don't buy** Oxfam products/shop at Oxfam? *(please select all that apply)*
    - I have no interest in the product range
    - I have no need for the product categories offered
    - The price of the products
    - The shop is not conveniently located
    - I'm not willing to shop online
    - I don't believe the claims being made
    - The products do not work as well or taste as good
    - There is not enough information about the products to make an informed choice
    - Other reasons (please specify) _____

    Please proceed to Qu 10 about **Pacific Region Products**

3. What is your main reason for purchasing products from Oxfam? *(please select one)*
    - Personal use and consumption
    - Gifts for others e.g., birthday, wedding, housewarming, etc.
    - Business / group use and consumption
    - Other (please specify) _____

4. Which of the following products categories have you purchased from Oxfam in the past 2 years? *(please select all that apply)*

	Yes
Food	☐
Beverage	☐
Books	☐
Fashion (bags, jewellery, scarves, etc.)	☐
Furniture	☐
Giftware	☐
Home Décor	☐
Kitchenware	☐
Skincare	☐
Stationary	☐
Toys	☐
Other (please specify)	_____

Selected choices from Q4 are the only ones that come up for Q5 to Q7

5. How often do you buy these products from Oxfam? *(Please select one per row)*

	Weekly	Monthly	Once every few months	Once a year	Once every few years
Food	□	□	□	□	□
Beverage	□	□	□	□	□
Books	□	□	□	□	□
Fashion (bags, jewellery, scarves, etc.)	□	□	□	□	□
Furniture	□	□	□	□	□
Giftware	□	□	□	□	□
Home Décor	□	□	□	□	□
Kitchenware	□	□	□	□	□
Skincare	□	□	□	□	□
Stationary	□	□	□	□	□
Toys	□	□	□	□	□
Other (please specify)	□	□	□	□	□

6. Where do you purchase these products from? *(please select all that apply)*

	Harris farm	Online	Supermarket	Oxfam shop	Service station
Food	□	□	□	□	□
Beverage	□	□	□	□	□
Books	□	□	□	□	□
Fashion (bags, jewellery, scarves, etc.)	□	□	□	□	□
Furniture	□	□	□	□	□
Giftware	□	□	□	□	□
Home Décor	□	□	□	□	□
Kitchenware	□	□	□	□	□
Skincare	□	□	□	□	□
Stationary	□	□	□	□	□
Toys	□	□	□	□	□
Other (please specify)	□	□	□	□	□

7. Which of the following reasons best describes **why** you purchase these products from Oxfam?

(Please select one per row)

	Quality	Price	The story behind the product	Functionality	Uniqueness	Other
Food	□	□	□	□	□	□
Beverage	□	□	□	□	□	□
Books	□	□	□	□	□	□
Fashion (bags, jewellery, scarves, etc.)	□	□	□	□	□	□
Furniture	□	□	□	□	□	□
Giftware	□	□	□	□	□	□
Home Décor	□	□	□	□	□	□
Kitchenware	□	□	□	□	□	□
Skincare	□	□	□	□	□	□
Stationary	□	□	□	□	□	□
Toys	□	□	□	□	□	□
Other (please specify)	□	□	□	□	□	□

8. How often do you visit each of these places?

(Please select one per row)

	Weekly	Monthly	Once every few months	Once a year	Once every few years	Never
Local Oxfam Shop	□	□	□	□	□	□
Online Oxfam Store	□	□	□	□	□	□

If Yes on Qu 4 (food) then Qu 9 will display. If No, then survey will continue at Qu 10 (**Pacific Region Products)**

9. When buying **food** products from Oxfam, how important are the following to you.

(Please select one per row)

	Not at all important	Not very important	Somewhat important	Very Important	Extremely important
Price	□	□	□	□	□
Brand	□	□	□	□	□
Appearance	□	□	□	□	□
Size	□	□	□	□	□
Taste / flavour	□	□	□	□	□
Packaging and Labelling	□	□	□	□	□

	Not at all important	Not very important	Somewhat important	Very Important	Extremely important
Having an emotional connection to the shops you buy from	□	□	□	□	□
Nutritional characteristics	□	□	□	□	□
Knowing the exact origin of the product	□	□	□	□	□
The product specifies that buying it helps local producers	□	□	□	□	□
The product is produced locally and owned locally	□	□	□	□	□
The product specifies it is produced using traditional methods	□	□	□	□	□
Certified organic	□	□	□	□	□
Certified Fair Trade	□	□	□	□	□
Certified HACCP	□	□	□	□	□
Company is responsible and ethical	□	□	□	□	□
Having experiences in the product country of origin	□	□	□	□	□

Pacific Region Products

10.

	A. Have you visited these countries in the last 2 years?		B. Do you have any interest in purchasing products from these countries?		
	Yes	No	Yes	No	Not sure
Fiji					
Papua New Guinea					
Solomon islands					
Vanuatu					

If Fiji = yes/ not sure in Qu10b then progress to question 11
If PNG = yes/ not sure in Qu10b then progress to question 12
If Solomons = yes/ not sure in Qu10b then progress to question 13
If Vanuatu = yes/ not sure in Qu10b then progress to question 14
If no for all countries in Qu 10b then progress to question 15

11. How interested are you in purchasing any of the following products from **FIJI** ?*(Please select one per row)*

	Not at all interested	Not very interested	Somewhat interested	Very Interested	Extremely interested
Clothing made with local materials	□	□	□	□	□
Handicraft items made with local materials	□	□	□	□	□
Cosmetic products	□	□	□	□	□
Pearls and Pearl Handicraft	□	□	□	□	□
Virgin Coconut Oil	□	□	□	□	□
Coffee	□	□	□	□	□
Chocolate	□	□	□	□	□
Dried local fruit	□	□	□	□	□
Indigenous nuts	□	□	□	□	□
Honey	□	□	□	□	□
Sauces, syrups, jams and spreads	□	□	□	□	□
Tea	□	□	□	□	□
Flour	□	□	□	□	□
Oil	□	□	□	□	□
Vanilla	□	□	□	□	□
Spices	□	□	□	□	□
Kava (traditional Pacific drink)	□	□	□	□	□
Ginger	□	□	□	□	□
Others, please specify:_____	□	□	□	□	□

12. Indicate how interested you are in purchasing any of the following products from **Papua New Guinea** *(Please select one per row)*

	Not at all interested	Not very interested	Somewhat interested	Very Interested	Extremely interested
Clothing made with local materials	□	□	□	□	□
Handicraft items made with local materials	□	□	□	□	□
Cosmetic products	□	□	□	□	□
Virgin Coconut Oil	□	□	□	□	□
Coffee	□	□	□	□	□
Chocolate	□	□	□	□	□
Dried local fruit	□	□	□	□	□
Indigenous nuts	□	□	□	□	□
Honey	□	□	□	□	□
Sauces, syrups, jams and spreads	□	□	□	□	□
Tea	□	□	□	□	□
Flour	□	□	□	□	□
Oil	□	□	□	□	□
Vanilla	□	□	□	□	□

Spices	□	□	□	□	□
Kava (traditional Pacific drink)	□	□	□	□	□
Ginger	□	□	□	□	□
Others, please specify:_____	□	□	□	□	□

13. Indicate how interested you are in purchasing any of the following products from **Solomon Islands** *(Please select one per row)*

	Not at all interested	Not very interested	Somewhat interested	Very Interested	Extremely interested
Clothing made with local materials	□	□	□	□	□
Handicraft items made with local materials	□	□	□	□	□
Cosmetic products	□	□	□	□	□
Virgin Coconut Oil	□	□	□	□	□
Coffee	□	□	□	□	□
Chocolate	□	□	□	□	□
Dried local fruit	□	□	□	□	□
Indigenous nuts	□	□	□	□	□
Honey	□	□	□	□	□
Sauces, syrups, jams and spreads	□	□	□	□	□
Tea	□	□	□	□	□
Flour	□	□	□	□	□
Oil	□	□	□	□	□
Vanilla	□	□	□	□	□
Spices	□	□	□	□	□
Kava (traditional Pacific drink)	□	□	□	□	□
Ginger	□	□	□	□	□
Others, please specify:_____	□	□	□	□	□

14. Indicate how interested you are in purchasing any of the following products from **Vanuatu** *(Please select one per row)*

	Not at all interested	Not very interested	Somewhat interested	Very Interested	Extremely interested
Clothing made with local materials	□	□	□	□	□
Handicraft items made with local materials	□	□	□	□	□
Cosmetic products	□	□	□	□	□
Virgin Coconut Oil	□	□	□	□	□
Coffee	□	□	□	□	□
Chocolate	□	□	□	□	□
Dried local fruit	□	□	□	□	□

Indigenous nuts	□	□	□	□	□
Honey	□	□	□	□	□
Sauces, syrups, jams and spreads	□	□	□	□	□
Tea	□	□	□	□	□
Flour	□	□	□	□	□
Oil	□	□	□	□	□
Vanilla	□	□	□	□	□
Spices	□	□	□	□	□
Kava (traditional Pacific drink)	□	□	□	□	□
Ginger	□	□	□	□	□
Others, please specify:_____	□	□	□	□	□

Display Qu 15 only if the respondent said they have some interested in buying chocolates from any country (Qu11 to Qu14)

15. When making the decision to buy **chocolate** from the Pacific, what of the following do you consider important? *(Please select one per row)*

	Not at all important	Not very important	Somewhat important	Very Important	Extremely important
Taste	□	□	□	□	□
Packaging	□	□	□	□	□
Quality	□	□	□	□	□
Benefits to local communities	□	□	□	□	□
Island of origin	□	□	□	□	□
Story behind the product	□	□	□	□	□
Other chocolates being sold	□	□	□	□	□
Price	□	□	□	□	□
Fair trade certified	□	□	□	□	□
Organic certified	□	□	□	□	□
HACCP certified	□	□	□	□	□

16. Which of the following Pacific Island products **have you heard** about before? *(please select all that apply)*

- Barringtonia
- Breadfruit flour (gluten free)
- Canarium nuts
- Tavula nuts
- Vutu nuts
- Tahitian chestnut / Ivi
- Sago
- Tamanu oil
- Tamarind
- Terminalia / Natapoa
- Tuluk
- Laplap
- Island Cabbage Bele
- Kava
- Noni
- Virgin Coconut Oil
- None of them

17. Do you have a particular interest in products from any **other** region/country?

- No
- Yes (please specify)_____

18. For each logo below,

	A. Have you **seen** or are you aware of these logos?		B. Have you previously **purchased food products** with the logo?		
Label	Yes	No (if no in all logo, skip to Q 20)	Yes	No	Not Sure
					
					
					
					
					

19. Tick all statements which you **believe** apply to each logo.

If no statement is relevant then mark the bottom row to indicate “None of the statements apply”

					
Better value for money	☐	☐	☐	☐	☐
Guaranteed to be better quality	☐	☐	☐	☐	☐
From a more trustworthy source	☐	☐	☐	☐	☐
A healthier choice	☐	☐	☐	☐	☐
Allowing me to do something good/ charity	☐	☐	☐	☐	☐
Allowing me to support Oxfam Australia	☐	☐	☐	☐	☐
A unique product	☐	☐	☐	☐	☐
Allowing me to remember a holiday experience	☐	☐	☐	☐	☐
Allowing me to supporting communities	☐	☐	☐	☐	☐
The product has been FairTrade certified	☐	☐	☐	☐	☐
Products are ethically sourced	☐	☐	☐	☐	☐
Products are certified organic	☐	☐	☐	☐	☐

No different than others (i.e. marketing gimmick)	□	□	□	□	□
Don`t know	□	□	□	□	□
None of the statements apply	□	□	□	□	□

Consumer segmentation

20. Please specify your level of **agreement or disagreement** with the following statements. *(Please select one per row)*

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
Giving back to the community is extremely important to me	□	□	□	□	□
I like things that are different and unique	□	□	□	□	□
I am actively involved in charities to help those less fortunate	□	□	□	□	□
It is vital for me to remain true to my values and I keep in touch with my spirituality	□	□	□	□	□
I like living simply, spending time with friends and family	□	□	□	□	□
Socialising and enjoying the company of others is extremely important to me	□	□	□	□	□
I regularly read the paper and watch the news to remain informed	□	□	□	□	□
I am engaged in world affairs and keep up to date on topical issues	□	□	□	□	□
Travel and broadening my horizons is a high priority for me	□	□	□	□	□

I prefer to eat food made from pure, natural ingredients	□	□	□	□	□
I enjoy purchasing high quality products	□	□	□	□	□

Demographic Questions

21. What is your gender?
    - Male
    - Female

22. What is your age?
    - 18-24
    - 25-34
    - 35-44
    - 45-54
    - 55-64
    - 65-74
    - 75-84
    - 85 or older

23. Which State of Australia do you live in?
    - ACT
    - QLD
    - NSW
    - NT
    - SA
    - TAS
    - VIC
    - WA
    - Outside Australia

24. Which of the following best describes your arrangements?
    - Single/ Separated/Divorced/Widowed
    - Married/Living with partner/ De facto

25. How many people are living in your household? _____ (just numbers)

26. How many of them are **children under 18 years**? _____ (Display Qu 26 only if the respondent said >1)

27. What is the highest level of school you have completed?
    - Finished before year 12
    - Finished year 12 (Secondary Education)
    - Trade Qualification
    - Graduate Certificate or Diploma

- Bachelor Degree
- Postgraduate Degree
- Other, please specify:_____

28. Currently I am… (choose the option that best describes you)
    - Working full time
    - Working part time / casual
    - A full time student
    - A part time student
    - Both working and studying
    - Retired
    - Engaged in full time home duties
    - Not in paid work but looking
    - On a pension (other than age pension)

29. What was your total household Income during the past 12 months?
    - Less than $24,999
    - $25,000 - $49,999
    - $50,000 - $99,999
    - $100,000 - $149,999
    - $150,000 - $199,999
    - $200,000 - $249,999
    - More than $250,000
    - Not sure / Rather not say

We thank you for your time spent taking this survey.

Your response has been recorded and you are in the draw to win a hamper full of Pacific products.



We wish you good luck!

OXFAM

THE UNIVERSITY of ADELAIDE