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Food Security in Solomon Islands:
A Survey of Honiara Central Market

Preliminary Report
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Food Security in Solomon Islands: A Survey of Honiara Central Market is a preliminary report prepared largely by members of the Humanitarian and Development Research Initiative (HADRI) at Western Sydney University. Research was supported by funds awarded to the Chief Investigator under the Western Sydney University Early Career Fellowship Award, and conducted with ethics approval H12166, *Food Security in Solomon Islands: A Survey of Honiara Central Market (HCM).*

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This is a preliminary report of data gathered from a vendor survey and a consumer survey of Honiara Central Market in 2017. Other data is currently being analysed and prepared for publication as refereed journal articles.

Cover photograph by Charles Hawksley, June 2017.

EXECUTIVE SUMMARY

Solomon Islanders mostly rely on the productivity of smallholder agriculture for household income and food security. Agriculture has been identified as the most important sector of the Solomon Islands economy, and it sustains over 85% of the country's rural economy. Solomon Islanders generally grow their own food for consumption, however rural to urban migration has affected this traditional practice. Cities and towns such as Honiara, Auki, Gizo and Noro now host two-thirds of all urban Solomon Islanders (Georgeou and Hawksley 2017: 69). The increasing population density in and around Honiara creates major issues for food security as urban residents are less able to have and maintain the household gardens that rural Solomon Islanders rely on for their daily food needs and income security (SIG 2009: 118). Growing urbanisation is accompanied by changing patterns of food consumption, and Honiara's urban population is largely dependent on markets selling fresh produce for its food supply. Honiara residents are engaged in the cash economy and require money to purchase food, so increases in the cost of living place further strain on households. Cereals, such as rice, and cheaper imported foods like two-minute noodles, increasingly form part of Solomon Islander diets, with consequent health implications, including a rise in non-communicable diseases. Changing consumption patterns and rapid urban population growth in Honiara are key issues for food security in Solomon Islands.

The Honiara Central Market (HCM) is the largest fresh produce market in Solomon Islands. Understanding the interactions taking place at HCM between rural farmers and urban consumers is important both for rural producers who sell their produce to create wealth, and for urban residents who need fresh food. This study focuses on the HCM and examines the factors that affect linkages between rural smallholders and urban consumers of fresh produce. The findings of the study will contribute to public policy formation in Solomon Islands on future food supply and food security needs by identifying potential areas where stakeholders (i.e. Solomon Islands Government, development aid donors and non-government organisations (NGOs)) could cooperate to improve availability of, and access to, fresh produce at HCM.

This study employed quantitative research design, with data collected over a period of three months between 7 July 2017, and 22 September 2017 from: (i) vendors of fresh produce at the HCM (n=1214) and (ii) HCM consumers (n=760). Vendor data primarily aimed to understand the origins, diversity, quantity and quality of produce sold; the modes of transportation of produce; vendor perceptions of the types of consumers of their produce; and vendor length of stay at market and their demographic information. The consumer survey aimed to capture consumer demographics and shopping behaviours.

Demographic findings reveal that the majority of HCM vendors (82.9%) are female. Major findings indicate that a majority (70%) of the vendors are selling their own produce while 18% are resellers and 8.3% sell on behalf of their families. East Guadalcanal is the most common source origin of produce, followed by West Guadalcanal, and trucks are the most common form of transport. Over half of all consumers arrive at HCM by bus, followed by significant numbers traveling by car and taxi. Female consumers outnumber males by a ratio of 2:1. Most HCM consumers are between 30 and 40, and have finished high school, while around a third of consumers have university education. Most consumers spend around SBD$200 at market per visit. Most consumers visit the HCM once every two-three days, closely followed by daily shoppers. Almost two-thirds of consumers surveyed purchased produce at HCM to consume at home, while around one third purchased produce at HCM to resell elsewhere in Honiara.

Main conclusions

The data support seven significant conclusions:

Food Supply: HCM attracts vendors selling diverse produce from a variety of locations in Solomon Islands. The main supply origins are East Guadalcanal and West Guadalcanal. During the survey period produce also came from South Guadalcanal, Malaita, Savo Island, Nggela Islands,[1] Isabel and Temotu.

Transport to Market: There is a heavy reliance on trucks to transport most categories of produce to HCM. The data underscores the critical importance of the existing road system to ensure adequate food supply for Honiara. Ownership of the mode of transport and freight charges require further investigation to ascertain their effects on the cost of produce at HCM, and on vendor profits at HCM.

Fresh food availability: Four out of five vendors spend between half a day and one day at HCM, so the vast majority of produce at HCM is fresh daily. Except for vendors of Seafood, longer stays are rare.

Fresh food diversity: Produce at HCM includes categories that represent the main groups of dietary diversity: Beans/Legumes, Fruits, Gourds, Leafy Greens, Nuts, Root Vegetables, Poultry and Seafood. The quantities, freshness and diversity of available produce at HCM suggest that a nutritionally diverse diet is available to Honiara residents.

Buying at HCM: Consumers are overwhelmingly (96%) Honiara residents. They shop frequently at HCM for fresh produce for their own homes and are thus accessing the nutritionally diverse produce available from HCM. Consumers are shopping either 2-3 times per week (42%) or daily (35%). HCM consumers typically spend around SBD$200 per shop, and very few spend more than SBD$500.

Resellers: There are two main groups of produce resellers. One group resells produce at HCM, the other buys produce at HCM and resells elsewhere. The latter group disperses fresh produce throughout the Greater Honiara Area, facilitating access to diverse fresh produce for urban residents.

Gender and Income generation: HCM plays a vital role in linking women, rural food production, and rural and urban household income generation. Economic activity surrounding reselling and the transportation of produce to HCM suggest there are several HCM-related economic activities that support income generation for both women and men. Gender is therefore a central issue in food supply chains, food security, household income generation and economic development in Solomon Islands.

[1] Both Savo Island and the Nggela Islands are in Central Province. The Nggelas are also known as the Florida Islands and are sometimes spelt 'Ngella'.

Recommendations

The report has three main recommendations.

1. **Improve transport infrastructure:** Preliminary data show that much of the produce coming from East Guadalcanal is arriving at HCM from well past the end of the sealed road. To guarantee food supply and fresh food availability during extreme weather events such as flooding three possible approaches are suggested: (1) improve maritime links; (2) improve road links, (3) a combination of both approaches to ease congestion on the road network.

2. **Conduct gender-focused research on agricultural value chains to HCM**: Conduct gender-focused research on agricultural value chains linked to HCM which maps food value chains from source regions of high supply to inform a gendered understanding of social change in Solomon Islands as it transitions from a subsistence economy to a market society. Such research would provide a gendered analysis of the changing social, political and economic context in which production of food for sale in the market takes place, so as to identify issues with, and opportunities for, equitable engagement and economic development along agricultural value chains linked to HCM in Solomon Islands.

3. **Research reseller activities in Honiara:** Further research is required to map the dispersion of fresh produce from HCM into the Greater Honiara Area via resellers to ascertain whether all parts of Honiara have access to affordable fresh produce.

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A SURVEY OF THE HONIARA CENTRAL MARKET (HCM)

Introduction

Some 80% of Solomon Islanders live in rural areas, and rural Solomon Islanders rely on the productivity of smallholder agriculture for incomes and food security. While remittances from extended family (*wantoks*)[2] working in the capital Honiara, other urban centres, or overseas, is an important source of income for around a quarter of all Solomon Islands households, the sale of fish, crops and handicrafts contributed an average 44% of household income across the country (SIG 2009: 113-114). The smallholder agricultural sector is thus an important contributor to national development, and to the food security of all Solomon Islanders. An AusAID funded study (2006: 27) estimated that income derived from sale of market produce ranged from being a minor contributor to household income generation to the main source of cash income. Pollard (2000) identified women as vital to rural economic activity, while UN Women (2009; 2014) has focused on markets as a driver of household income generation for women in the Pacific through its *Markets for Change* Program.

Solomon Islands Government (SIG) Ministry of Agriculture and Livestock (2015: 9) has noted that "Agriculture is the most important sector for the Solomon Islands national economy. It provides for and sustains 85% of the rural population with food crops, cash crops and livestock for their daily livelihood, food and social security". Despite this, the Food and Agriculture Organization's 2017 *State of Food Security* noted Solomon Islands had the highest incidence of undernourishment in Oceania between 2014-2016 at 13.9%, and that it had actually increased from the 11.9% of 2012-2014 (FAO 2017: 82). Earlier, the FAO noted a decline in traditional crop production as agricultural land and natural resources become more limited, claiming food production in Solomon Islands faced increased threats from pests and disease, while intensification of land use in several provinces has led to soil degradation, which now challenges subsistence viability (FAO 2012: 125). Additionally, Solomon Islands is vulnerable to climate change, rising sea levels, earthquakes, tsunamis and extreme weather events such as floods and cyclones (ABM & CSIRO 2014: 260-279), all of which can have a major impact upon agricultural production and food supply.

Given the importance of agriculture to Solomon Islands, and of food security to the health of populations generally, this study focuses on the Honiara Central Market (HCM) and the trade between the rural producers and urban consumers. It aims to examine the factors that affect linkages between rural smallholders and urban consumers of fresh produce, so as to inform policy and planning decisions around food security for the future.

Background to study

Growing urban centres such as Honiara, Auki, Gizo and Noro are now home to two-thirds of all urban Solomon Islanders (Georgeou and Hawksley 2017: 69) so it is important to understand the economic relationships that exist between small holder agricultural producers and increasing urban populations, particularly concerning the provision of fresh food.

[2] *Wontok* (literally 'one talk') describes a range of relations that involve reciprocal obligations between people based largely on family, village and linguistic associations.

Increased population density in and around Honiara creates major issues for food security. Urban residents are less able to have and maintain the household gardens that rural Solomon Islanders rely on for their daily food needs and income security. Urban dwellers produce as little as 10-15% of their own food, while those in rural areas produce as much as 60% of their own food (SIG 2009: 118).

The capital has experienced significant urban growth in the past decade. In 2009, Solomon Islands had a national average population density of 17 people/km^2, but in Honiara this figure was 2,953 people/km^2 (SIG 2009: 5). The wards of Panatina (East Honiara), Nggossi and Mbumburu (West Honiara) all demonstrated annual average growth of 4% over the decade 1999-2009 (SIG 2009: 2-5). Former Special Coordinator of the Regional Assistance Mission to Solomon Islands (RAMSI), Nicholas Coppel reckoned that by using the 2009 census figure for Honiara of 65,000, and then adding in the 15,000 or so people estimated to be residing in the peri-urban settlements of White River (to the West of the CBD) and Burns Creek (to the East) there were at least 80,000 in 'Greater Honiara' (Coppel 2012: 7). In 2014, Honiara City Council (HCC) staff estimated there are were 85,000 residents within just the Honiara city limits (Georgeou and Hawksley, 2017: 69), so almost a decade on from the census, and with continued population growth and squatter settlements, the population of a 'Greater Honiara' in 2018 is quite likely now well over 100,000 (Keen et. al. 2017: 19).

A changing diet

Dietary diversity is recognised as a key part of good nutrition and is closely linked to agricultural production (Koppmair, et. al. 2017). In 2012 the FAO noted a rise in the consumption of cheaper processed foods (particularly instant noodles) as a proportion of diet in Solomon Islands, and farmers faced increasing competition from cheaper alternative imported food products, especially rice (FAO 2012: 131), which is a major staple across all provinces of Solomon Islands, comprising between 12-19% of all cash expenditure on food (SISO 2015: 40).

In any growing city, new forms of engagement in the market economy result in changes to lifestyles with altering patterns of household food consumption. Traditional dietary staples such as potatoes and tubers comprise 21-40% of food expenditure across all Solomon Islands provinces, except in urbanized Honiara, illustrating a decline in the consumption of traditional foods in the capital (SISO 2015: 40). Honiara residents spend twice as much on rice (17%) as on potatoes and tubers (7%), and they spent a combined 11% of their income on bread and biscuits, but just 9% on vegetables, and 5% on fruit (SISO 2015: 43).

People living in Honiara and other urban areas also have a greater dependency on cash income to purchase fresh food, so a price rise places greater stress on their food security. ADB figures (2016: 4) indicate that between 2009 and 2015 food prices in Solomon Islands rose around 11%.

Project Rationale

Changing consumption patterns and rapid urban population growth in Honiara are key threats to food security in Solomon Islands (FAO 2012), while food insecurity is exacerbated by the rise in the cost of living (ADB 2016). Poor nutritional diversity and quality lead to negative health outcomes, such as the increase in the incidence of non-communicable diseases and the poor nutritional status of children (World Bank 2016). Changes in consumption are particularly likely to impact those living in poverty (Renzaho & Mellor 2010: 7), especially women and children under five years of age in and around Honiara, and within the smallholder farming communities that supply food to Honiara residents (FAO 2012: 125-128).

The HCM is the largest fresh produce market in Solomon Islands, and is the 'Heart of Honiara' (Moore and Bouro 2107). Understanding the interactions taking place at HCM between rural farmers and urban consumers is important both for rural producers who sell their produce to create wealth, and for urban residents who need fresh food. This study therefore focuses on food supply at HCM as it is the main site of sale of fresh fruit and vegetables purchased by Honiara residents. Food supply is affected by the access of smallholder agricultural farmers to HCM, including transportation infrastructure and available modes of transport. This study examines food supply as measured by the diversity, volume and cost of fresh produce at HCM, as well as consumer spending at HCM.

Specific Aims of the Research

The report aims to contribute to public policy formation in Solomon Islands on future food supply and food security needs by identifying potential areas where stakeholders (Solomon Islands Government, development aid donors and NGOs) could cooperate to improve availability of, and access to, fresh produce at HCM.

Specifically, it aims to:

1. Map the supply of fresh produce to HCM and collect baseline data on:
    a. The vendors at HCM;*
    b. The origins of the fresh produce sold;*
    c. The modes of transport used to reach market;*
    d. The diversity of fresh produce sold;*
    e. The quality and volume of fresh produce sold;*
    f. Variation in produce over a three-month period; and
    g. The types of consumers who purchase food at HCM.*
2. Use this data on fresh food availability at HCM to assess:
    a. The factors affecting the supply and availability of fresh produce to HCM and its implications for nutritional diversity;
    b. The risks and vulnerabilities of smallholder farmers supplying the HCM with fresh produce.

Baseline data on those points marked with an asterisk (*) are presented in this report.

Scoping Framework

Assessing food security requires multi-layered measurement, comprised of four key components: food availability; food access; food utilization; and asset creation (Renzaho & Mellor 2010: 5). The pre-requisites for the consumption of a healthy diet are the availability of, and access to, nutritionally diverse food, as well as asset creation, which is understood as the ability of households to produce food i.e. home gardens (Renzaho 2008: 46; Renzaho & Mellor 2010).

The focus of this research into the HCM is food availability and food access. Food availability is understood as a function of food supply and is influenced by demand, transport and storage as well as the day-to-day operations of the sites of sale. Food access is determined by a number of factors including food environment, and includes physical access to sites of sale and how people interact with that environment (Rose & Richards 2004), as well as financial resources to purchase and produce food (e.g. home gardens) (Renzaho & Mellor 2010).

This study examines fresh produce sold at HCM. It includes the categories of Beans/Legumes, Fruits, Gourds, Leafy Vegetables, Nuts, Other (e.g. Eggs, Megapode Eggs and Salt Fish), Poultry, Root Vegetables, Seafood (including whole fish), and Vegetables (e.g. any vegetable sold not listed elsewhere in the survey).

Methodology

The site of Honiara Central Market (HCM)

For the purposes of this study, Honiara Central Market (HCM) is defined as a "farmers market" as it is "a multi-stall market at which farmer-producers sell agricultural products directly to the general public at a central or fixed location" (USDA 2014). HCM is the largest farmers market in Solomon Islands and the main market that supplies fresh produce to Honiara area residents (UNW 2014).[3] HCM is centrally located, adjacent to Honiara CBD. It has space for around 1,000 stalls, and approximately 500 of these are for fresh agricultural produce. Bringing fresh food to market can be costly and difficult as the sealed road network is limited. OBM travel sometimes results in damage to produce). The quality of food supply once at HCM is also affected by poor or limited food storage facilities (Georgeou et. al. 2015).

In 2016 and 2017, HCC and Solomon Islands Government made improvements to the main road around HCM (Mendana Avenue), including dedicated bus bays at bus stops, which have enabled easier access to the market (Alu/HCC, 2017). During the same period, UN Women and HCC made significant improvement to water availability and sanitation (Georgeou and Hawksley 2017: 70), however, overcrowding remains a significant issue. Tensions between farmers and resellers[4] have also been identified as a potential risk to food supply and access to fresh food (FAO 2012: 128; Georgeou et al. 2015). There is a lack of coordinated commercialization of fresh food among Solomon Islands farmers, and limited use of formal market contracts and market facilitation undertaken by farmers' organisations (Georgeou et. al. 2015).

[3] HCM and is one of two markets in Honiara manage by the Honiara City Council (HCC). The other is the Kukum market, which is for Betel nut sellers. There are numerous other unregulated markets, including those at Talise, Borderline, White River and Fishing Village. A study of Savo Island communities and their engagement with HCM (Georgeou et. al. 2015) found that some Savo farmers used these smaller markets to sell produce that would spoil quickly (e.g. seasonal Savo apple), or if HCM was difficult to access.

[4] Resellers often purchase a farmer's entire crop, removing the need for the farmer to travel to or remain at market. While the price paid to the farmer is less than if the farmer spent time at HCM and sold the entire crop in units, there are overheads in storage, food and stall fees that a farmer does not have to pay when dealing with a reseller.

Study design

The research adopted a quantitative research design. The research design was developed in collaboration with the Solomon Islands research team, comprised of two local research coordinators, three female enumerators and one male enumerator. This recruitment reflected the gender mix of market sellers, who are over three quarters women. The research coordinators contributed feedback and revisions to drafts of the survey prior to an in-country workshop at which the entire research team interpreted and refined the questions to be used in the survey. This process focused on ensuring questions would be understood in the local context, so that data and responses could be quantified and coded. The latter aspect presented a challenge given the diversity and fluidity of measures used at HCM for the produce sold. Some terms and questions used in international or regional studies were adapted to local market conditions.

The local research team also underwent one day of survey protocol training to ensure consistency in survey application and to address any queries about the survey instruments and data collection procedures.

Study Instruments

Vendor survey

The CI and Solomon Islands research team adapted Shanks et. al.'s (2015) validated Farmers' Market Audit Tool (F-MAT) to fit the Solomon Islands context and to meet the main aims of the study. The survey instrument was then tested by the Solomon Islands team on Friday 30 June, 2017 and adjustments were made to ensure consistency in information on the volume of fresh produce.

The final survey tool had five dimensions covering:

1. The origin of the produce sold; modes of transportation to market;
2. Whose produce was being sold;
3. Produce quantity; price; quality; and cleanliness;
4. Vendor perceptions of the types of consumers of their produce;
5. Vendor length of stay at market and their demographic information.

Sample size

Cochran's (1963) formula was used to calculate the minimum number of surveys required in order to obtain a sample large enough to make statements about a population with a given degree of confidence. This formula is for an unknown/potentially infinite total population.

$$n = \frac{Z^2 pq}{e^2}$$

where n = minimum sample size, Z = Standard normal deviate corresponding to 5% deviate level (Z = 1.96); p = prevalence in previous studies (80% of Solomon Islanders live in rural areas and are primarily engaged in agricultural food production, so p = 0.8); q = 1-p (q = 1 - 0.8 = 0.2); e = precision set at 0.03.

$$n = \frac{(1.96^2)(0.8)(0.2)}{(0.03)^2}$$

Applying the formula above, the minimum sample size was 683. The team collected 1214 surveys, 987 of which contained usable data about the quantity of food. The higher number of surveys reduces the margin of error and provides a more accurate account of the produce and vendors at HCM during the survey period.

Sampling procedures

The target population of this study were vendors of fresh produce at HCM. A stratified sampling method was utilised to control the distribution of fieldwork among enumerators, specifically to ensure that vendors were not surveyed twice in one day by different enumerators. It also enabled enumerators to capture the flow of vendors, i.e. those who sold fresh produce at HCM for less than one whole day. HCM was divided onto different sections (see figure 1), partitioning vendors into different groups. Each enumerator was allocated one and a half to two sections to survey.[5] Simple random sampling of 20-25 vendors in each enumerator's section was then undertaken. Enumerators worked from 9AM until 3PM each Friday to capture those vendors who might stay for only half of the day at the HCM. Each week, enumerators rotated sections so that enumerators had a "turn" in different sections of the market.

[5] Sections 3 and 4 (cooked food), and the car park area behind the small stores, were not surveyed as vendors did not sell fresh produce in these areas.

Figure 1: Market Haus Layout
(Adapted from Genova et. al. 2010)

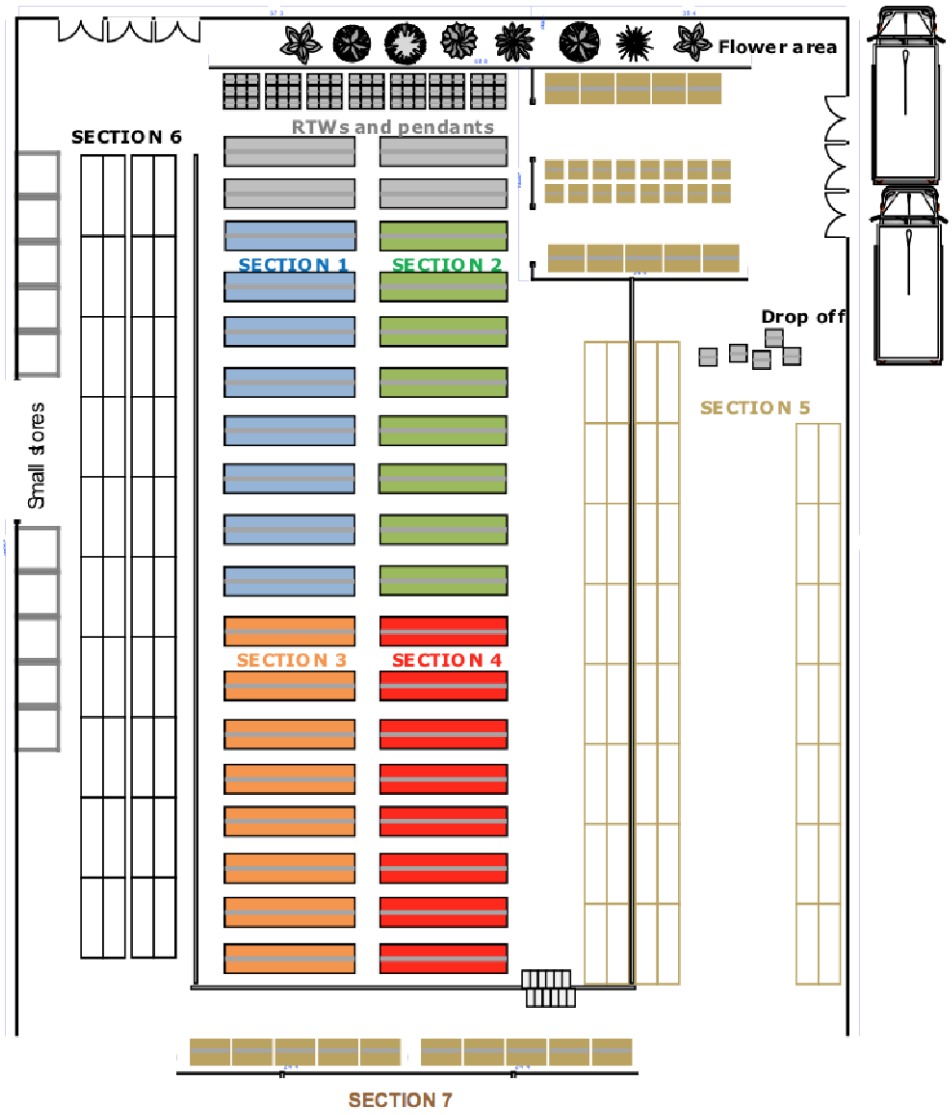


Table 1: HCM Sections and Vendors surveyed

Section	Produce Sold	Surveyed (Y/N)
Section 1	Fresh fruit and vegetables	Y
Section 2	Fresh fruit and vegetables	Y
Section 3	Cooked food	N
Section 4	Cooked food	N
Section 5	Fresh fruit and vegetables	Y
Section 6	Fresh fruit and vegetables, shell fish; crabs	Y
Section 7	Fresh poultry; eskys[6] of reef fish, squid and crayfish	Y
Left of Section 7	Fresh tuna and other whole fish	Y
Car park to the left of the Market Haus diagram)	Firewood, building materials and furniture	N
Above Sections 1 and 2	Clothes, handicrafts and flowers	N

[6] An esky is known as an 'ice chest' in other parts of the Pacific Islands (Pomeroy and Yang, 2014: 23)

Data Collection

Data collection commenced Friday 7 July 2017, and ended Friday 22 September 2017. Data collection was undertaken every Friday over a 12-week period.

Friday was selected for data collection for three reasons:

1. Friday is the second busiest market day after Saturday, so there are a large number of vendors present.
2. Friday is not the busiest trading day, so vendors have more time to speak to enumerators without interfering with their trade.
3. Friday has a high flow of fresh produce moving through the market.

The team of four local enumerators (three female and one male) administered the paper and pencil survey. Vendors were approached in the HCM during the day by the enumerators. Prior to requesting consent to participate in the survey the enumerators informed the potential project participants in Solomon Islands Pijin about the research and the limitations of the research. Oral consent was sought from all participants. Participation in the survey was voluntary and potential participants could decline on the spot without repercussion.

Approximately 500 vendors sell fresh produce at HCM each Friday, and a minimum of 120 surveys were completed each survey day. A total of 1214 surveys were collected throughout the survey period.

Consumer Survey

A survey tool of HCM consumers was developed by the CI and tested by the local research team. The survey was designed to provide a snapshot of the typical HCM consumer and to compare this with vendor perceptions of who buys their produce.

The final survey tool had two dimensions: consumer demographics; and shopping behaviours.

Sample size

In order to make claims about a proportion of the population to a certain level of confidence, the minimum number of samples must be above a defined threshold. Following Yamane (1967: 886) this sample size threshold can be calculated for a 95% confidence level using the formula:

$$n = \frac{N}{1+N(e)^2}$$

Where N is a population size of 100,000 (Honiara residents), and e is a level of precision of 5% (0.05) squared. Using the above formula:

$$\frac{100{,}000}{1+100{,}000(0.05)^2}$$

The sample size is 398 (n = 398). The enumerators collected 760 consumer surveys, which provides almost double the minimum sample size.

Sampling procedures

Participants were selected using a purposive non-probability sampling technique. Sampling was undertaken at HCM as it is the main site selling fresh produce to urban Honiara residents. Consumers were the target sample group and were visually identified as those carrying shopping bags of fresh produce out of the HCM.

Data collection

The consumer survey was undertaken daily by enumerators using a paper and pencil survey over a one-week period between 4 September 2017 and 9 September 2017 to capture a diverse sample of consumers of fresh produce at HCM. Enumerators approached customers at the exit to HCM, after they had completed their shopping. In the training session, enumerators were trained not to: approach customers who are busy or in a hurry; invade the personal space of the customers exiting the market; or to start talking to customers while they are moving toward them.

Enumerators were trained to position themselves so that customers exiting the market would walk into the enumerator's personal space. Many customers were approached while waiting at bus stations at the HCM exit (most consumers arrive on foot or via public transport). Enumerators then made eye contact with potential survey respondents and informed them about the research and requested consent. They initiated the discussion by asking in Solomon Islands Pijin: "How are you today? We are conducting a survey of customers at Honiara Central market to find out who shops here, and where they come from, and how much they spend. May I ask you some questions? Participation was entirely voluntary.

Picture 1: CI Dr. Nichole Georgeou and Solomon Island Research Team at Enumerator training day 26 June 2017.

Data analysis

Data analysis involved two steps: (1) descriptive analysis to check for data distribution and to identify outliers; then (2) multivariable analysis using linear regression when the dependent variable was a continuous variable, or logistic regression for a binary variable, adjusting for demographic, and socioeconomic variables.

This preliminary report presents only the descriptive analysis. The multivariate analysis is currently being prepared for publication in academic journals.

VENDOR SURVEY

Vendors at the HCM

Women comprise the majority of vendors at HCM. Of the total vendor respondents (n=1214), 1007 (82.9%) were female and 207 (17.1%) were male (Figure 2). This correlates with the findings of a smaller survey by Genova et al. (2010), which found 88% of 147 HCM vendors were women.

Figure 2: Vendors at HCM

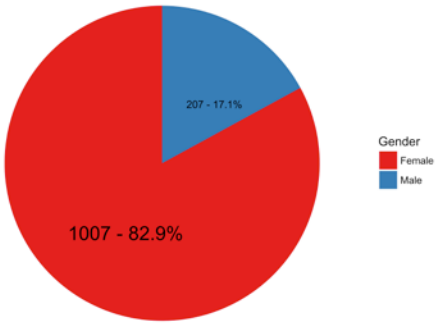


Figure 3 shows that of 753 of the 1007 (74.6%) female vendors were married, 77 were single, 51 were divorced, 89 were living with their partner and 37 were widowed. Of the 207 male vendors, 158 were married (76.3%), 27 were single, 11 were living with their partner, eight were widowed and three were divorced. Married people comprise 75% of all HCM vendors.

Figure 3: Vendor Relationship Status

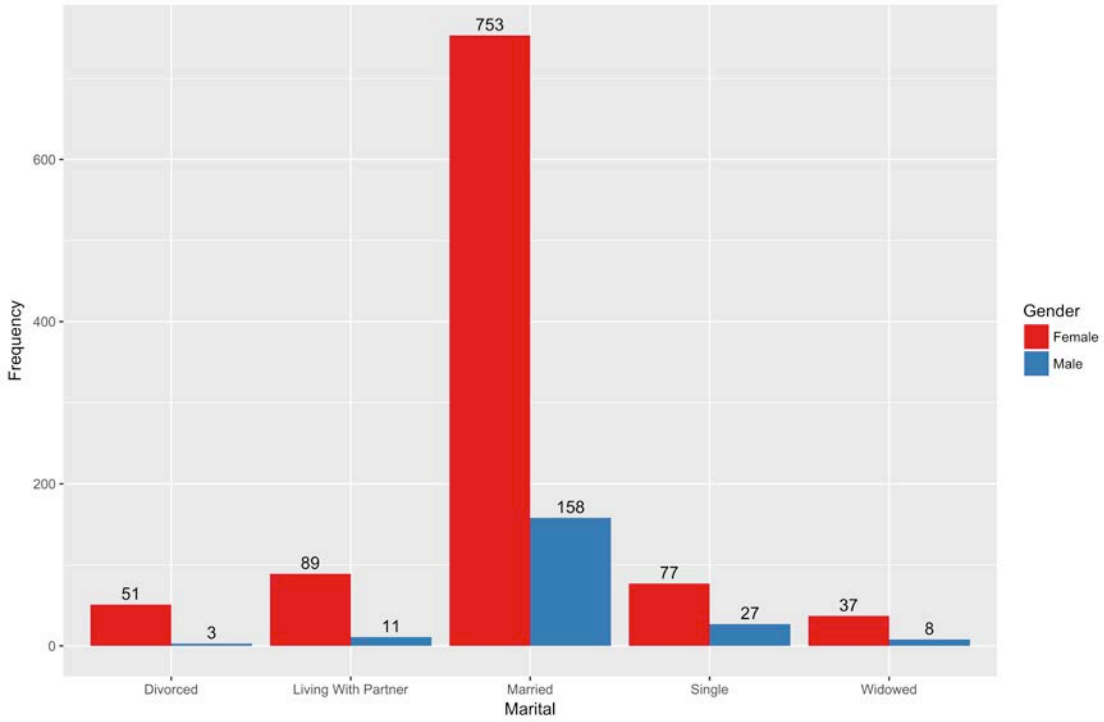
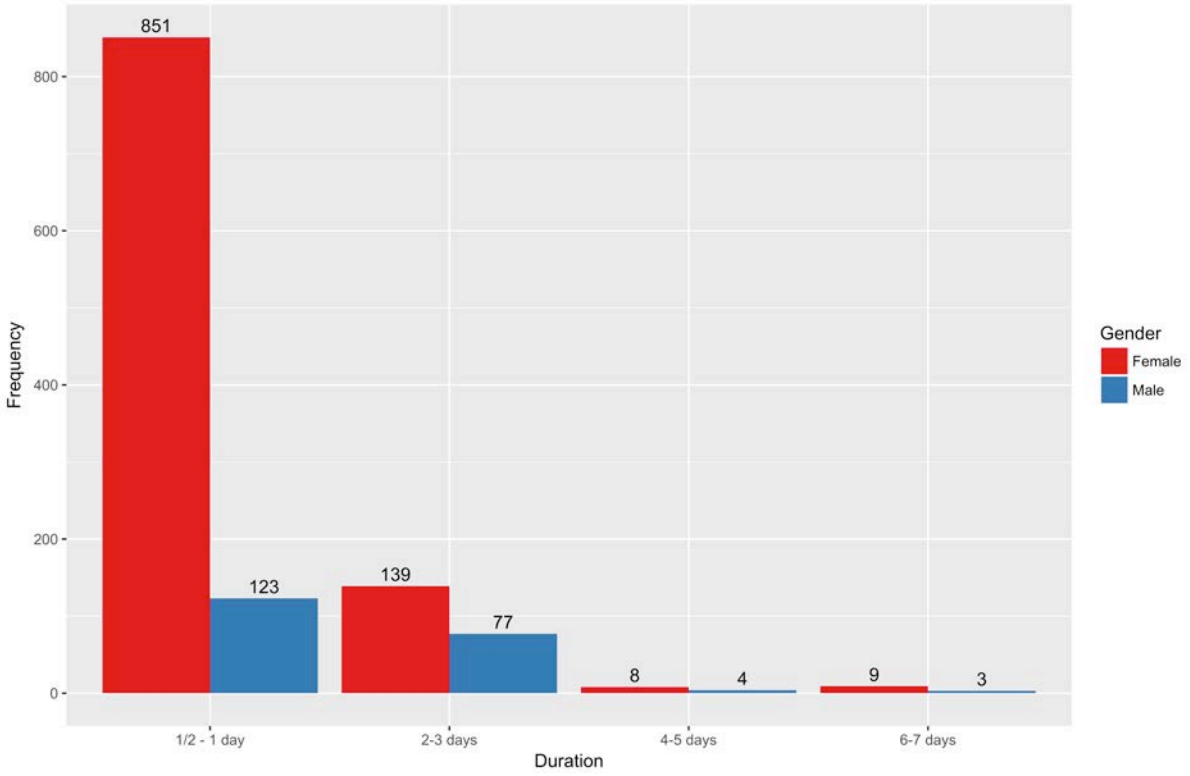


Figure 4 suggests the vast majority of vendors (974/1214 or 80.2%) stayed at HCM for between half a day to a day, and the second most common length of stay was 2-3 days (216/1214 or 17.8%). Very small numbers (21/1214 or 1.7%) reported staying over three days. A previous study (Genova et al. 2010: 8) found that the time vendors stayed at market ranged between one and six days. Data from this study suggests lengthy stays are uncommon. [7]

Figure 4: Duration of Stay at HCM

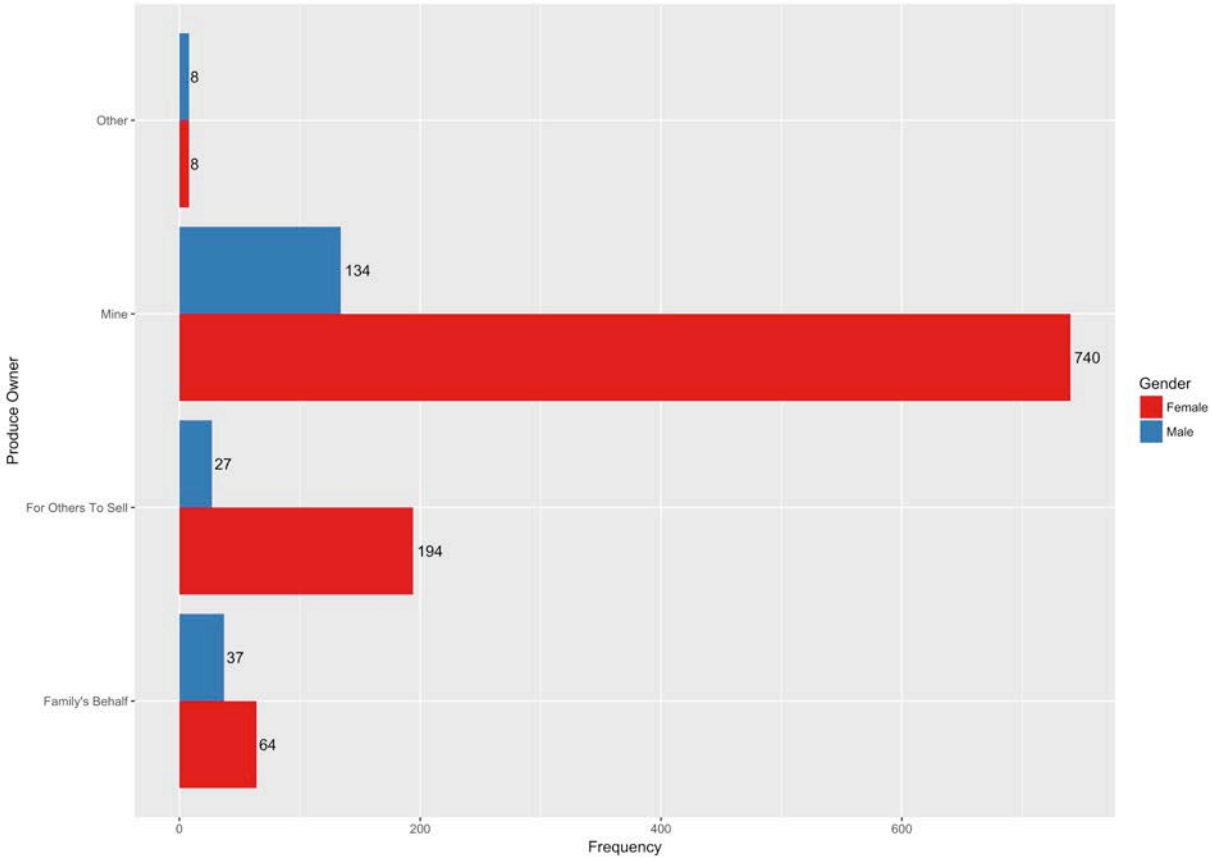


[7] It is possible that recent donor aid improvement to roads and bridges may have facilitated transport to and from HCM and removed the requirement for longer stays. It is also possible that there are fewer large bulk crops from distant locations during the survey period.

Whose produce is it?

In terms of the produce sold the HCM data presented in Figure 5 reveals that nearly 72% of vendors were selling their own produce (874/1214), with 221 resellers ('For Others to Sell') (about 18%) the next largest group, and 101 vendors (8.3 per cent) selling on behalf of their families. The clear indication here is that production for market is thriving, yet the role of the resellers remains significant. In a 2015 pilot study of food production and community sustainability on Savo Island, resellers were identified as having both positive and negative effects on vendor profits (Georgeou & Hawksley 2017: 77-78). From the data below, reselling accounts for 18.2% of HCM vendors, which is lower than in the 2010 study (Genova et al. 2010: 8) that identified 29% (43/147) of vendors as re-sellers.

Figure 5: Whose produce is being sold?

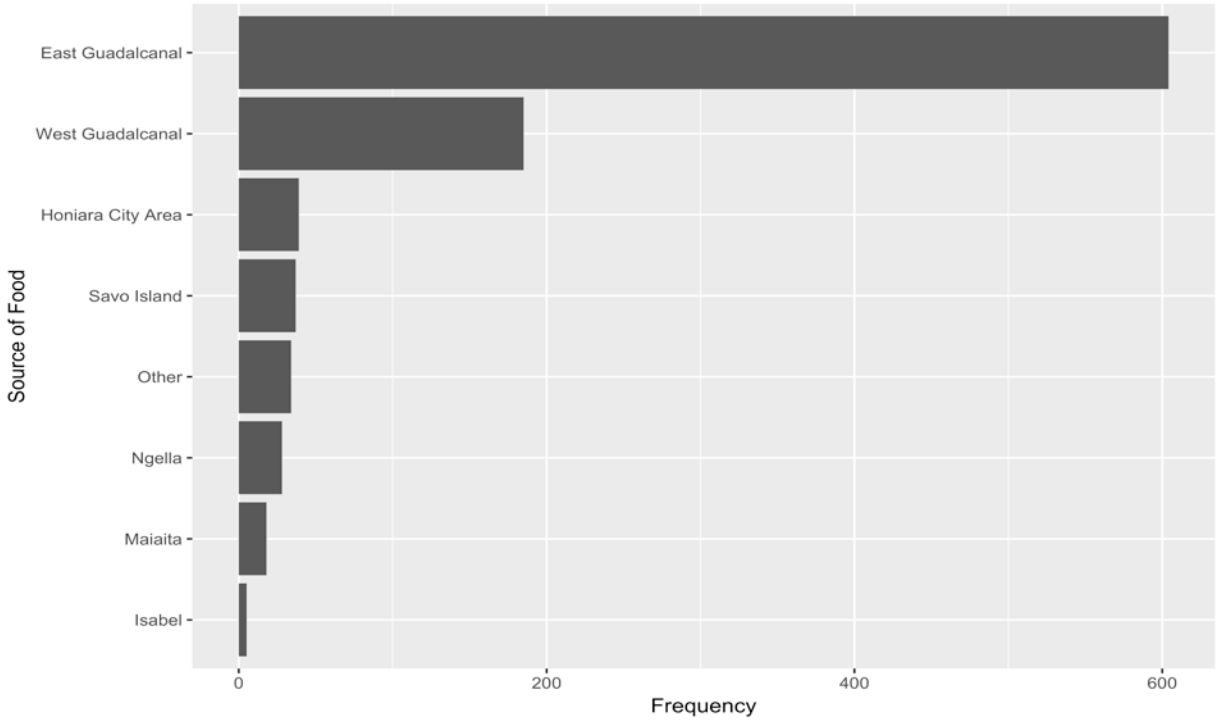


Sources of Produce

This section deals with the supply of produce to HCM in terms of the numbers of people selling each type of produce, the amount of the produce brought to MCH, and the activities of resellers.

Vendors were asked to identify the source of the produce they were selling by village or origin area. Figure 6 illustrates that East Guadalcanal is the most common produce origin, followed by West Guadalcanal.

Figure 6: Frequency of Source of Food (Origin Areas)



Categories of produce by region

Figures 7 and 8 show that a large proportion of produce categories originate in East Guadalcanal, in particular, Fruits, Leafy Greens, Nuts, Gourds and Root Vegetables. West Guadalcanal produces significant quantities of Fruit, Root Vegetables, Leafy Greens and Nuts. In others categories, such as Seafood, the origin of the produce is more evenly distributed (coming from Malaita, Nggela and 'Other' communities, which includes whole fish from Western Province). Savo Island is the second largest supplier of nuts to HCM, while Honiara City dominates the poultry trade. The high figure for Savo Islands in Figure 8 'Other' is for Megapode eggs.

Figure 7: Source Counts by Produce Category

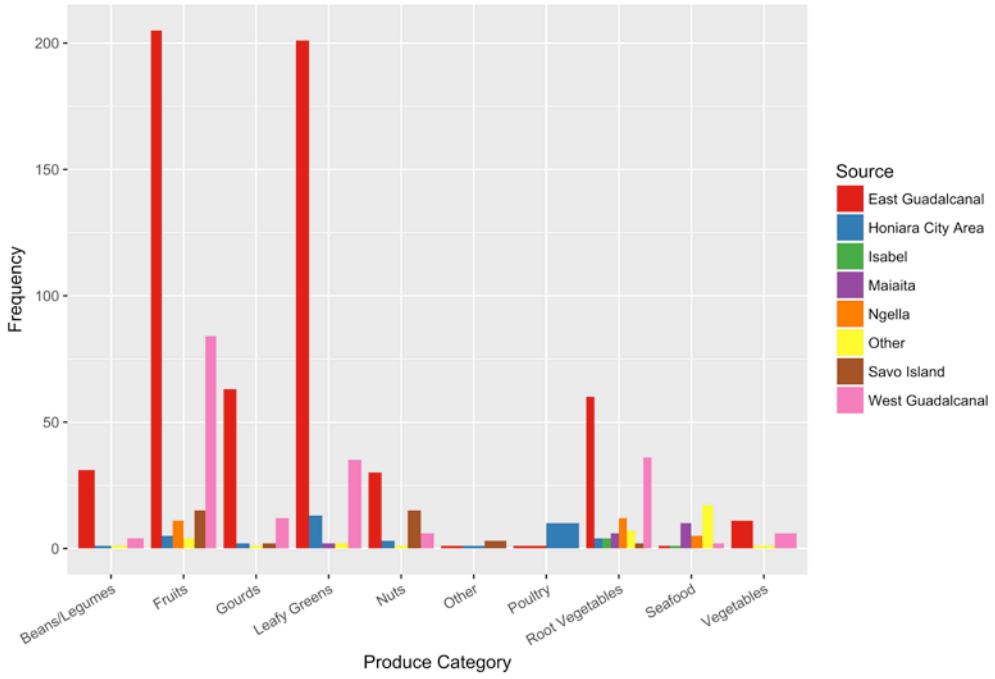
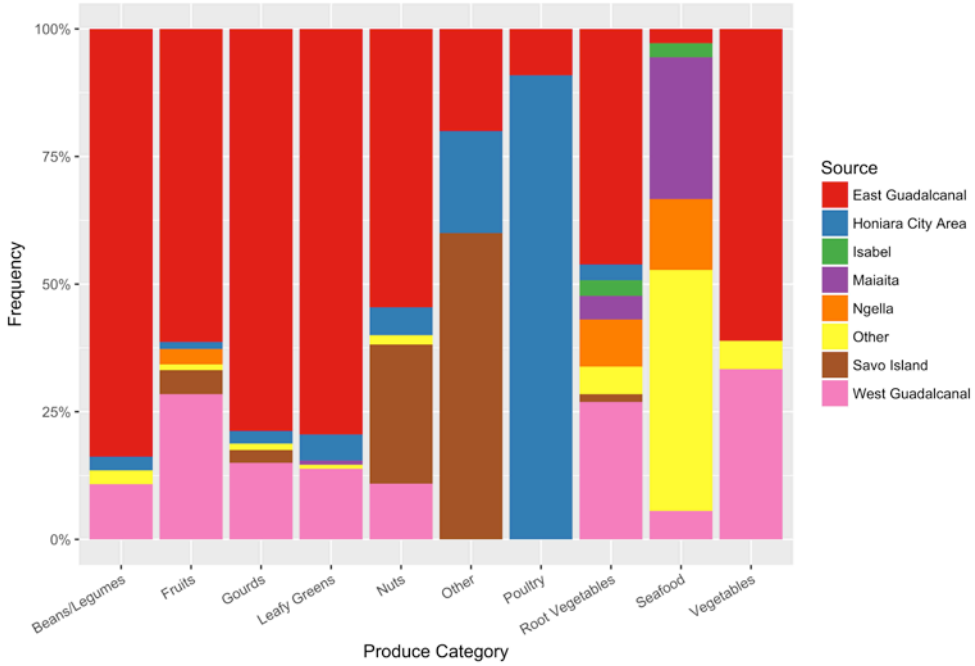


Figure 8: Source Proportions by Produce Category



Produce by source and weight

Figure 9 shows in which region of Solomon Islands the different produce categories sold at HCM originate, while Figure 10 shows the weight of the different produce categories by region. Figures 9 and 10 indicate some variation in origin across produce categories and in weight. Most Fruits are sourced from East and West Guadalcanal, followed by Savo Island, however Fruit from Nggela is heavier. Seafood is mostly coming from 'Other' places, including Western Province, and Figure 10 indicates a total weight by vendor stay (i.e. for all vendors surveyed) of around 10,000 kg. Given Seafood vendors usually stay for 2-3 days at HCM, we estimate the weekly weight of fish brought to HCM for sale to be at least double this, so possibly between 20,000 and 25,000 kg.

Figure 9: Total Quantity of Produce by Source

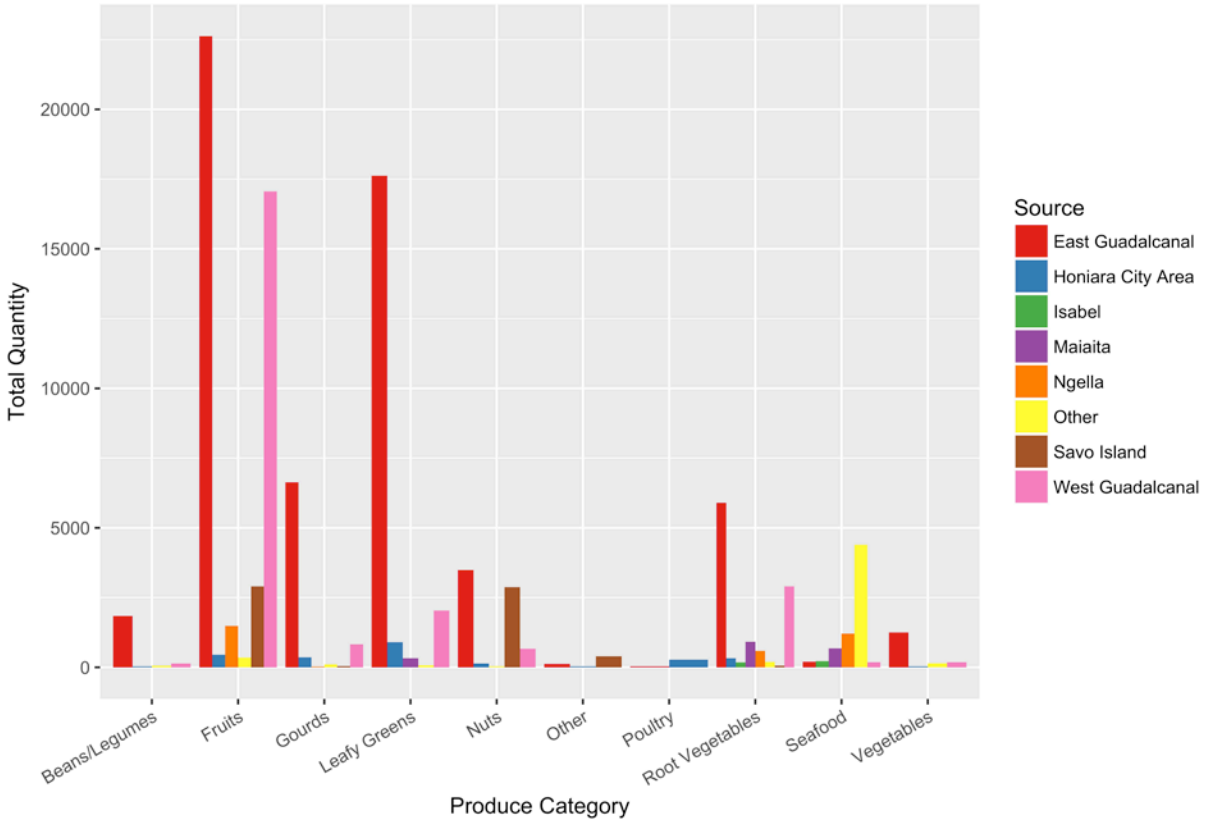
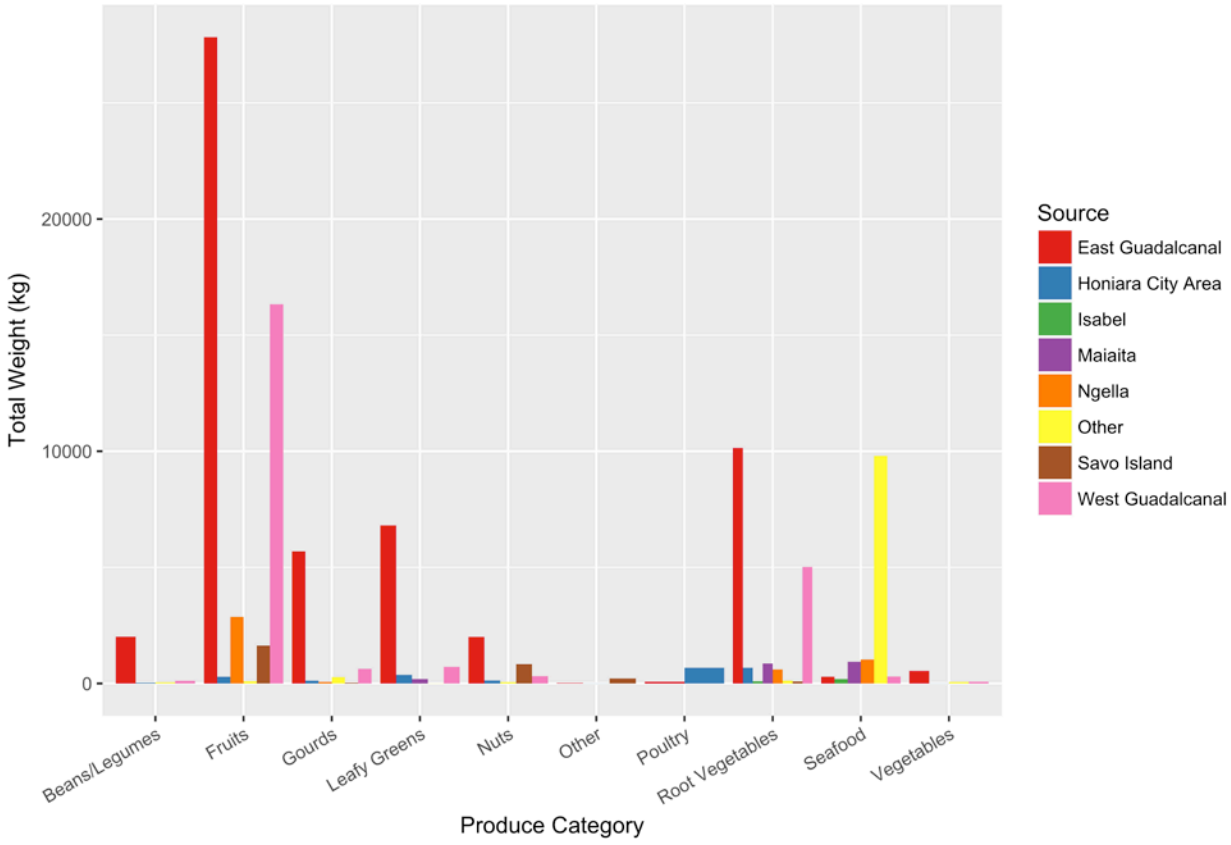


Figure 10: Total Weight of Produce by Source



Produce supply

Figure 11 indicates most vendors sell Fruits or Leafy Greens, however Root Vegetables are also relatively common. Other produce categories have lower sample sizes (indicating fewer vendors).

Figure 11: Total Count of Vendors Selling Goods by Produce Category

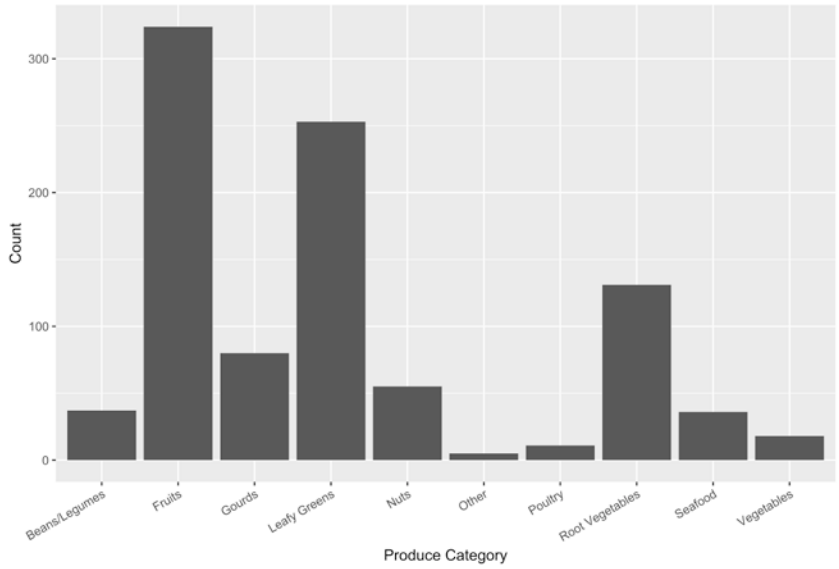
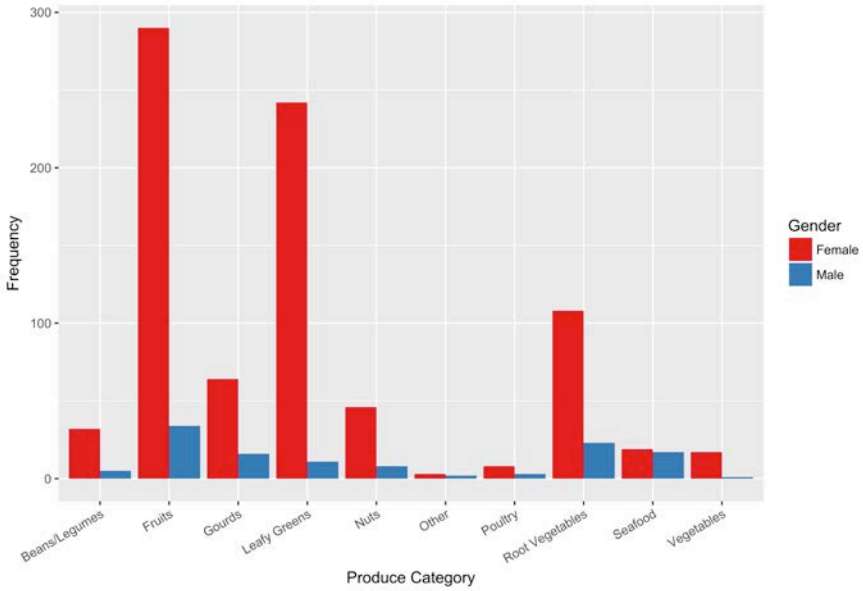


Figure 12 indicates the produce most commonly sold at HCM by gender. It shows women dominate most produce groups, but men make up a larger relative proportion of total vendors in the categories of 'Other' goods and 'Seafood'.[8]

Figure 12: Gender Counts by Produce Category



[8] Men dominate the esky fish trade, while women tend to sell whole fish. The crabs and shellfish are usually mixed female and male.

Relationship status and produce

Figures 13-15 show marital status by type of produce sold. Figure 13 presents produce by gender while Figure 14 presents the vendor relationship status by produce category. The high numbers of married people in the largest volume produce categories is very similar to the high numbers of female vendors overall. This indicates that there are large groups of married women selling these types of goods (namely Fruits, Leafy Greens and Root Vegetables).

Figure 13: Gender Proportions by Produce Category

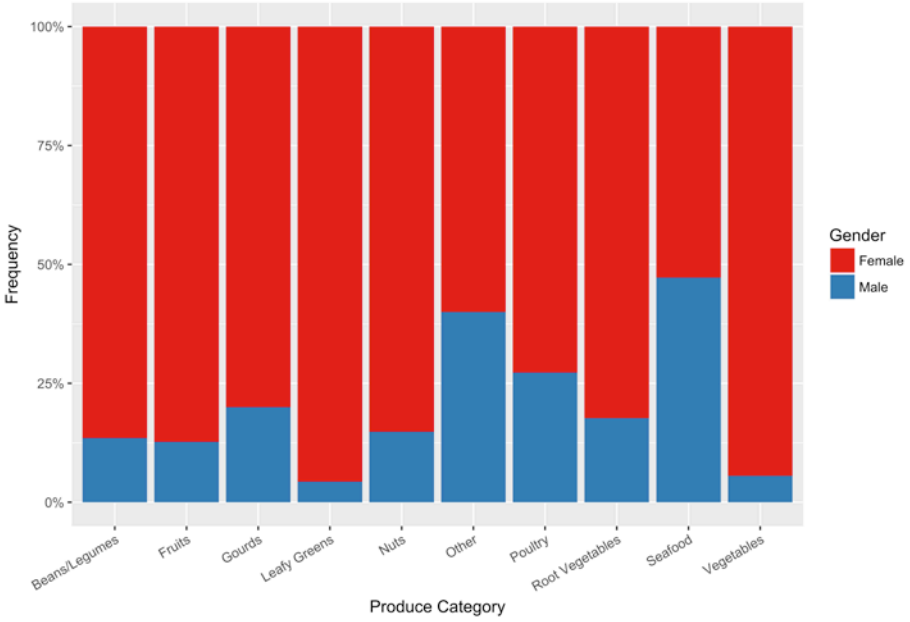
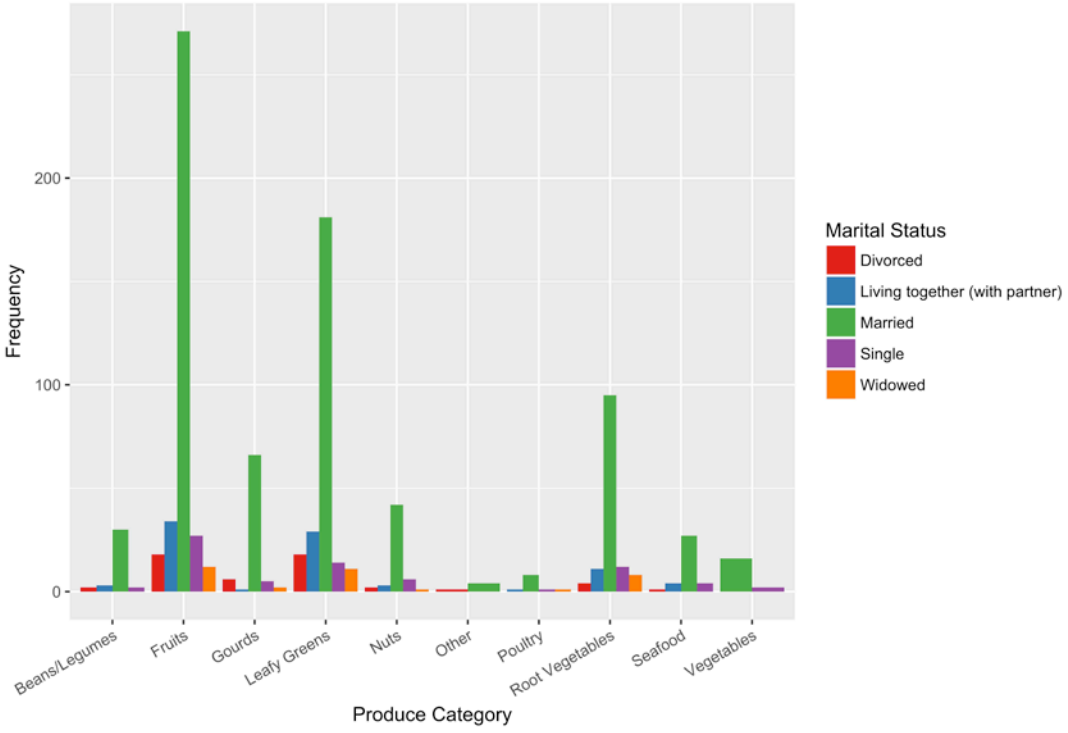
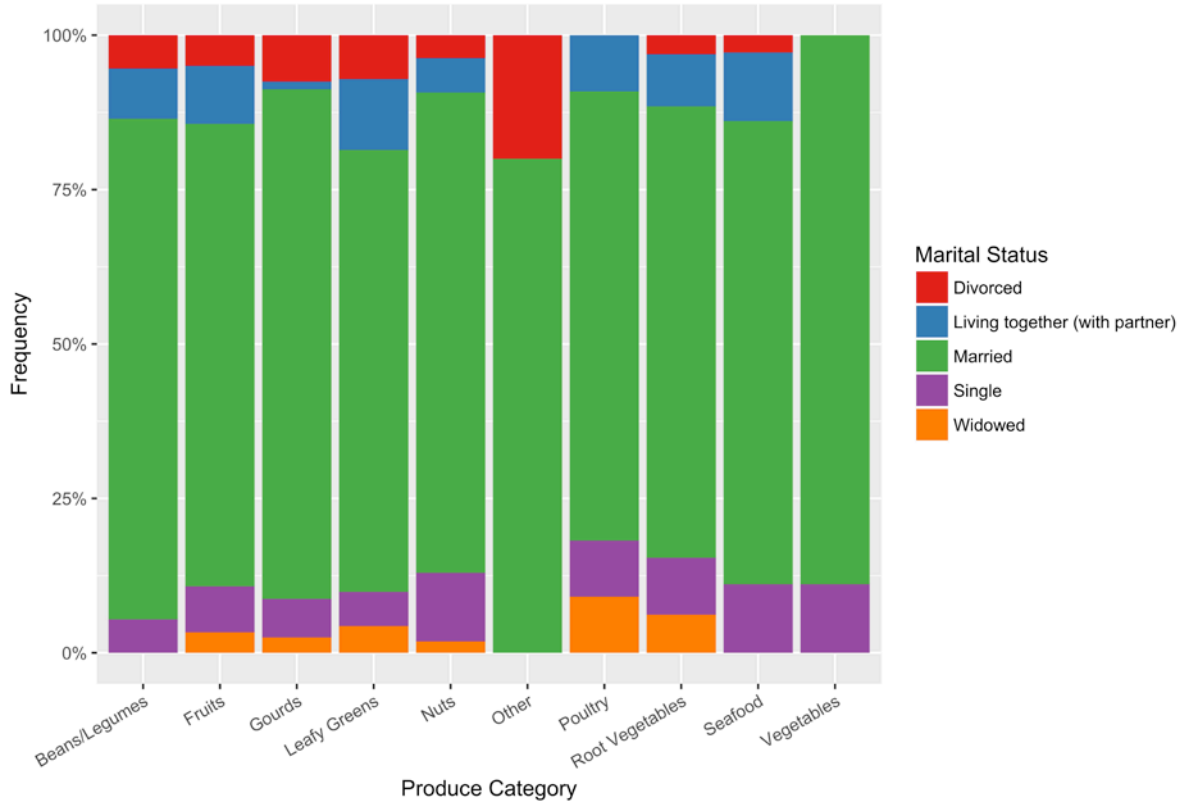


Figure 14: Marital Status Counts by Produce Category



The filled proportional bar chart in Figure 15 mirrors the gender and relationship status proportions of Figures 13 and 14 respectively. The category of 'Other' below has a very low sample size, which explains a relatively high frequency of divorcees selling produce.

Figure 15: Marital Status Proportions by Produce Category



Produce by marital status

Figures 16 and 17 indicate married people are the dominant group of vendors at HCM. With the exception of Leafy Greens there is little variation in quantity or weight of produce at HCM with respect to the marital status of vendors. Figures 16 and 17 show that for both Seafood and Fruits more single people are bringing heavier items to HCM, and given the categories and weights it is likely these vendors are unmarried men.

Figure 16: Total Quantity of Produce by Marital Status

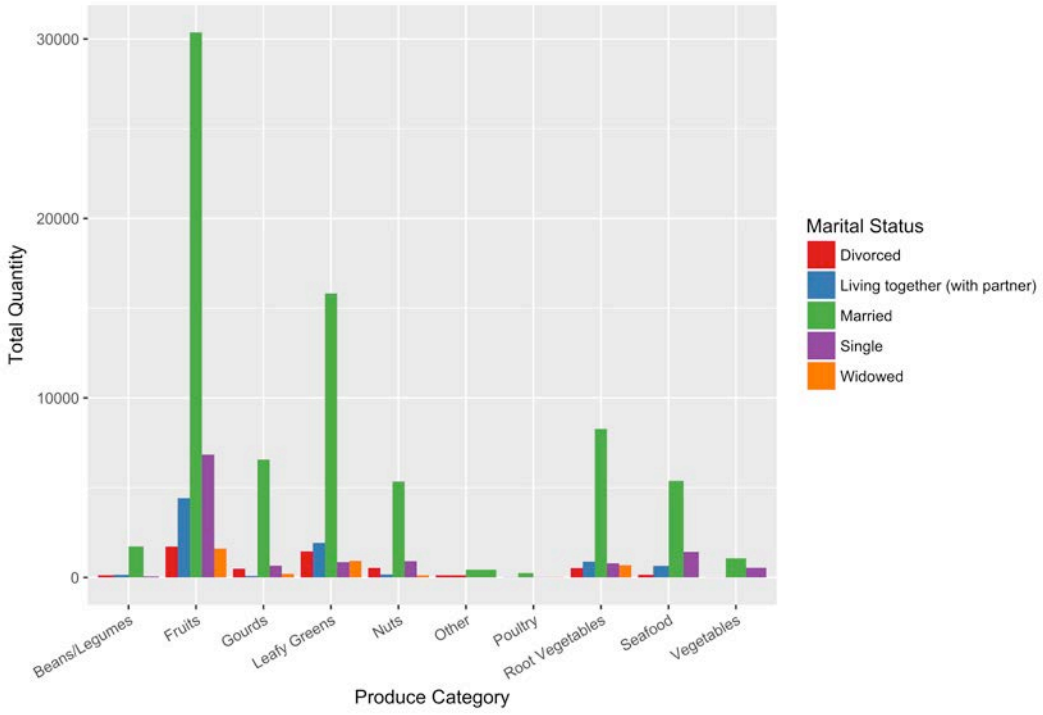
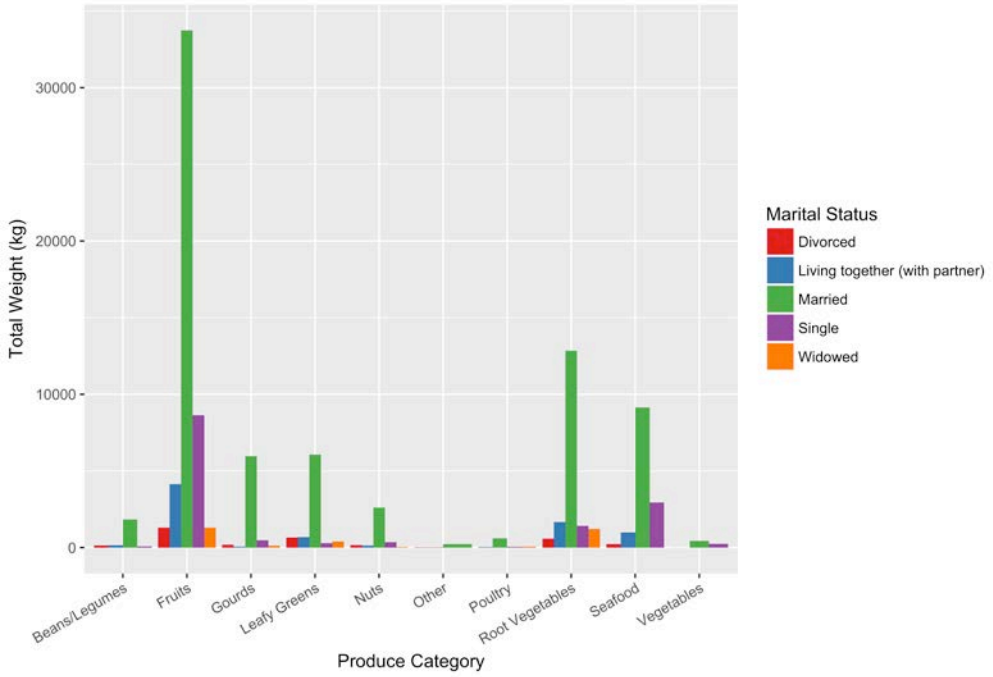


Figure 17: Total Weight of Produce by Marital Status



Length of stay at HCM by produce type

Figure 18 indicates that few vendors stay at HCM for more than one day. Figure 19 shows very few vendors selling Leafy Greens ever stay more than one day, especially when compared to vendors of other types of produce. Longer stays are more common for those selling Seafood and over half of Seafood vendors spend two to three days at HCM. Root Vegetables demonstrate both day sellers as well as those remaining for longer time periods, a possible indicator of a bulk crop from a distant region, i.e. taro from Temotu.

Figure 18: Time Spent Counts by Produce Category

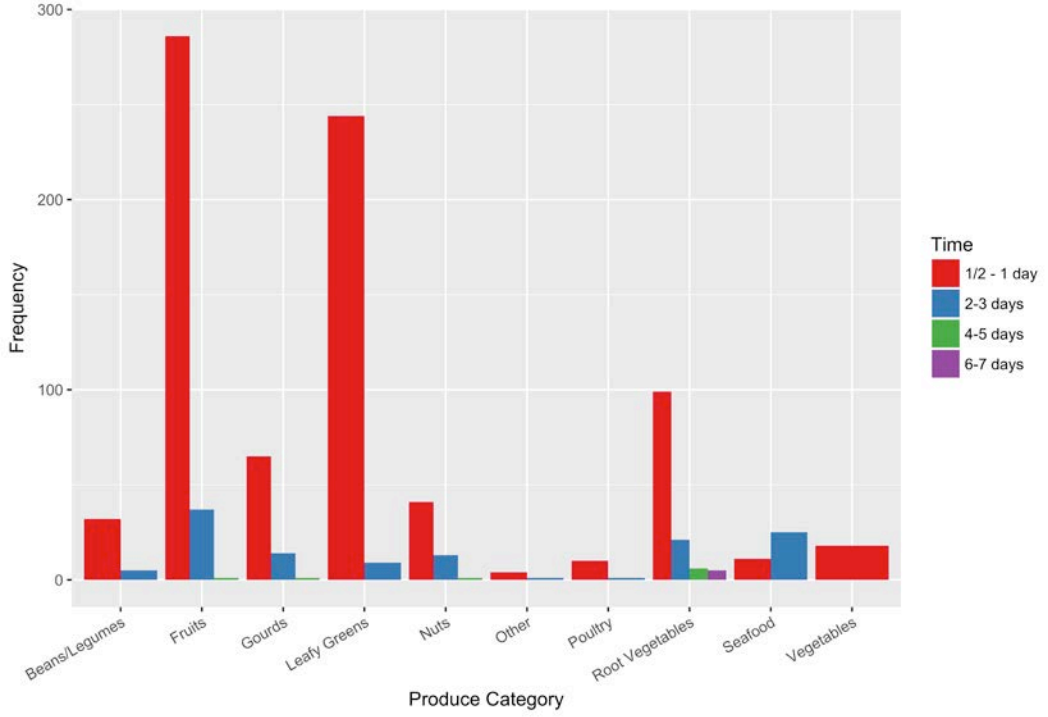
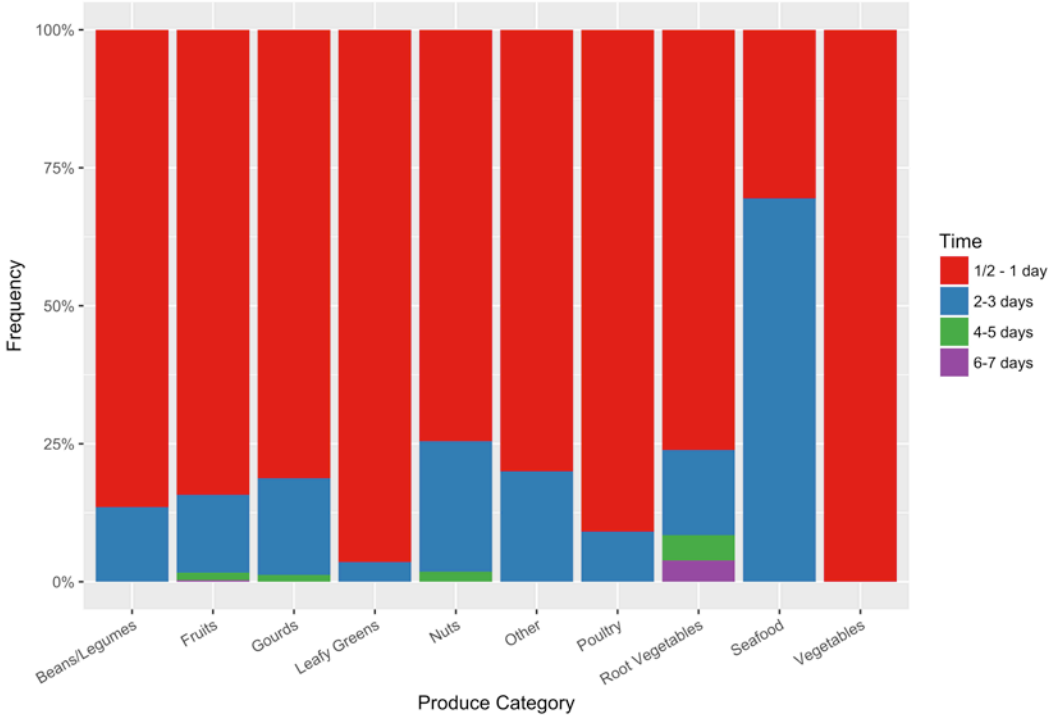


Figure 19: Time Spent Proportions by Produce Category



Quantity of produce

Figures 20 and 21 display the quantity of produce brought into HCM by units of sale (quantity) and by total weight (in kg). Fruit is dominant in both quantity and weight, indicating large numbers of heavy crops. Figure 20 correlates with Figure 11, which recorded vendors by category of produce sold with Fruits first, Leafy Greens Second and Root Vegetables third. Figure 20 indicates the Leafy Greens category is the second largest quantity (over 20,000 units), but Figure 21 indicates this category is fourth by weight (less than 10,000 kg). Leafy Greens are however considerably lighter than other forms of produce, such as Fruits or Root Vegetables. Figure 21 shows Root Vegetables and Seafood are proportionally heavier than other categories.

Figure 20: Total Quantity of Produce Categories

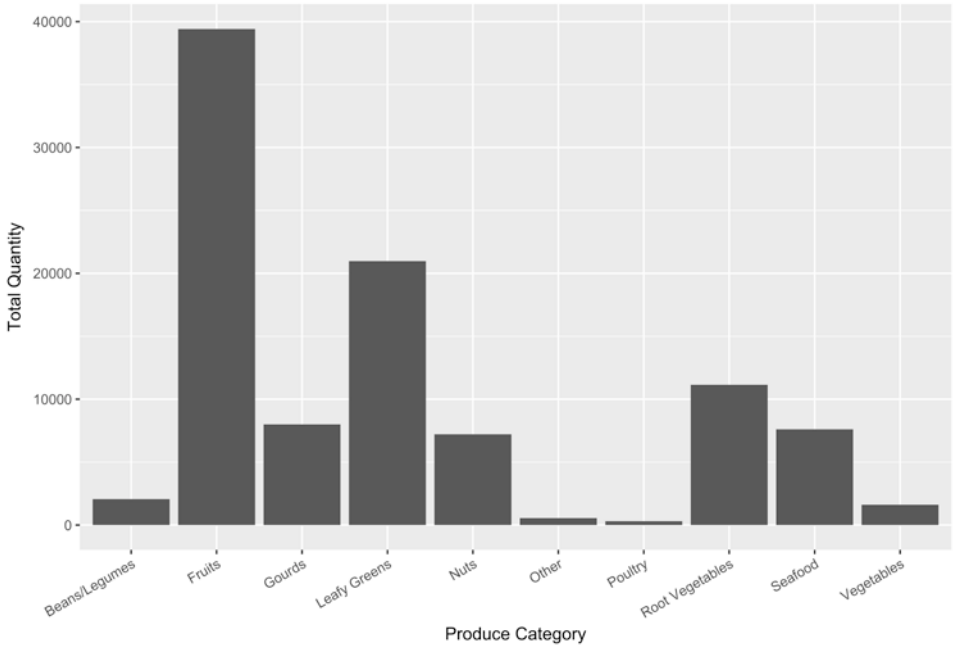
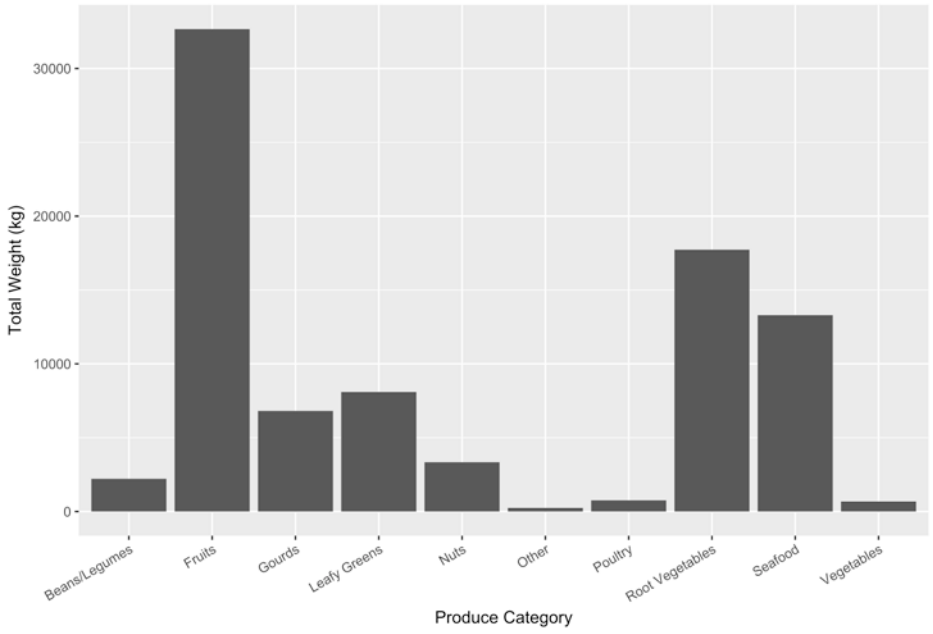


Figure 21: Total Weight of Produce Categories



Produce and gender

Figures 22 and 23 show little proportional variation between the amount of produce (units of sale or weight) being brought to HCM per visit by women and men. Women bring in most produce and weight for all categories with the exception of Seafood. In the category of Fruits men seem to bring marginally heavier fruits to HCM (e.g. melon).

Figure 22: Total Quantity of Produce by Gender per visit to HCM

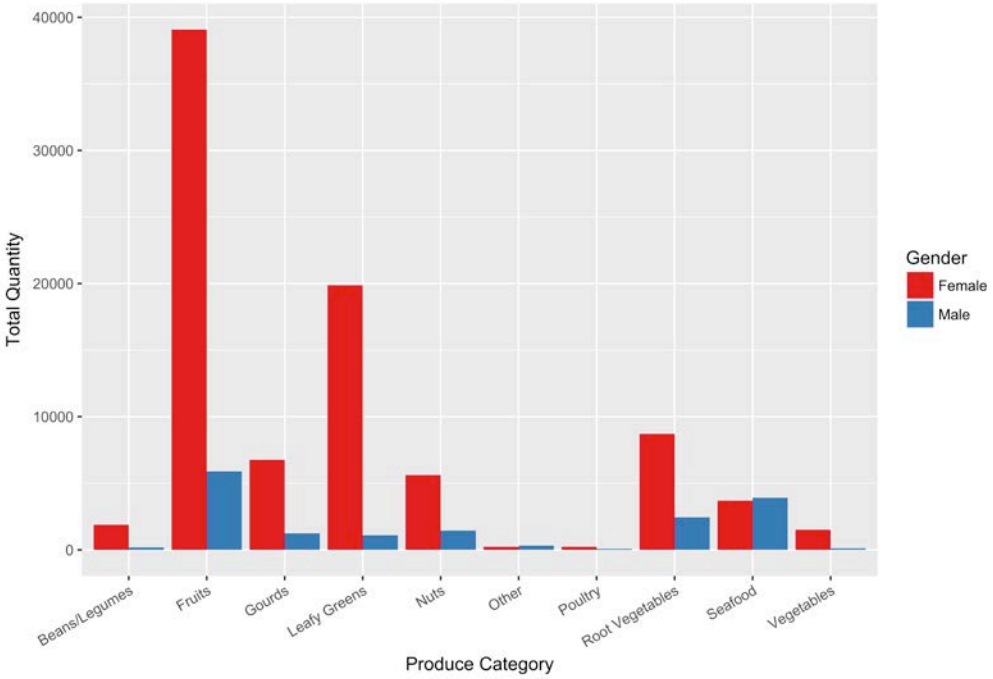
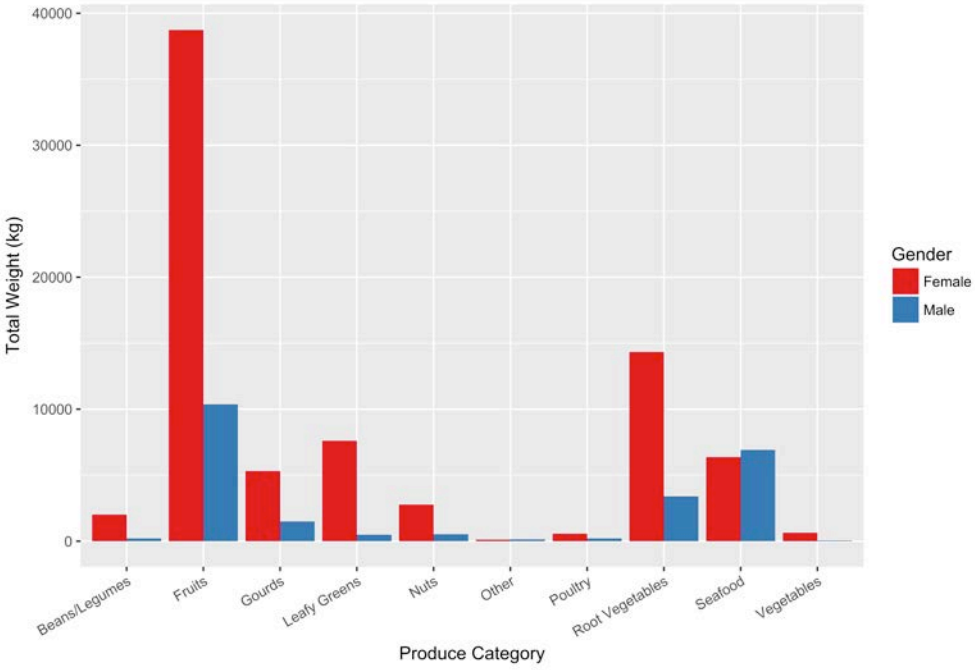


Figure 23: Total Weight of Produce by Gender



Time spent at market by produce type

Figures 24 and 25 indicate that there are relationships between Produce Category by quantity and the time spent at HCM, and between Produce Category by weight and the time spent at HCM. Compared to vendors of Leafy Greens and Fruits, Seafood vendors stay longer at HCM. When comparing length of time at HCM by weight, the trend is for vendors of heavier produce to stay longer at HCM (i.e. upwards of 1 day), although Nuts, which are relatively light and are sold in small quantities, go somewhat against this trend.

Figure 24: Total Quantity of Produce by Time Spent at HCM

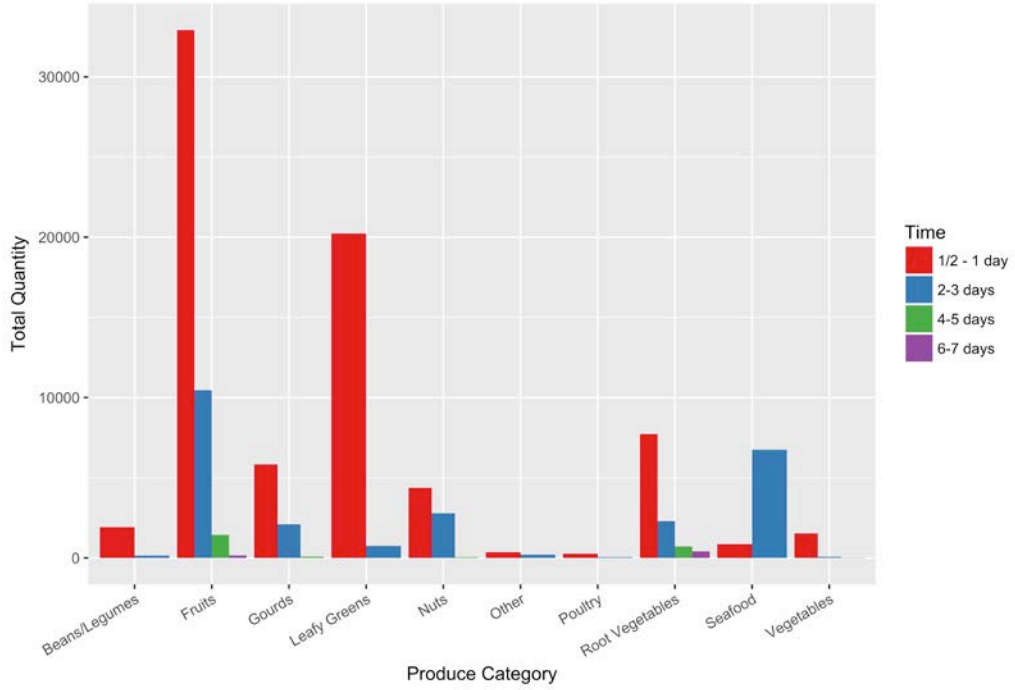
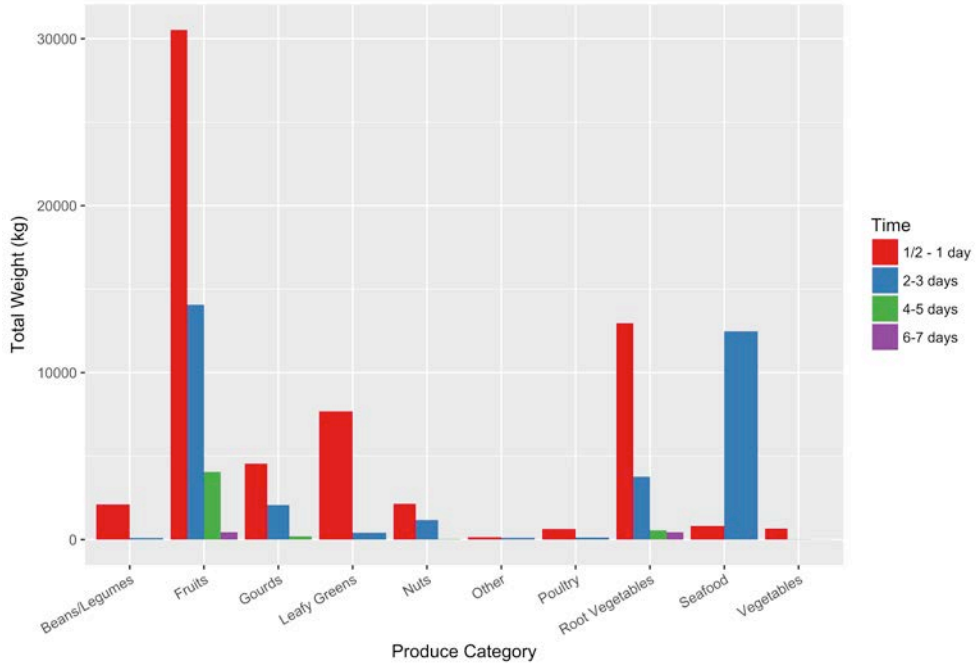


Figure 25: Total Weights of Produce by Time Spent at HCM



Transport of Fresh Produce from Source to HCM

This section illustrates a number of aspects of the transport of produce to HCM from origin source. It shows modes of transport from source, transport densities, modes of transport by produce category, quantity and weight.

Figure 26 illustrates that trucks are the most common form of transport. Figure 27 shows the densities of the main forms of transport in each of the regions. These two figures provide context for the visualisations presented in the following pages. 'Other' in the forms of transport includes ferries, small ocean-going boats and ships.

Figure 26: Main Forms of Transport

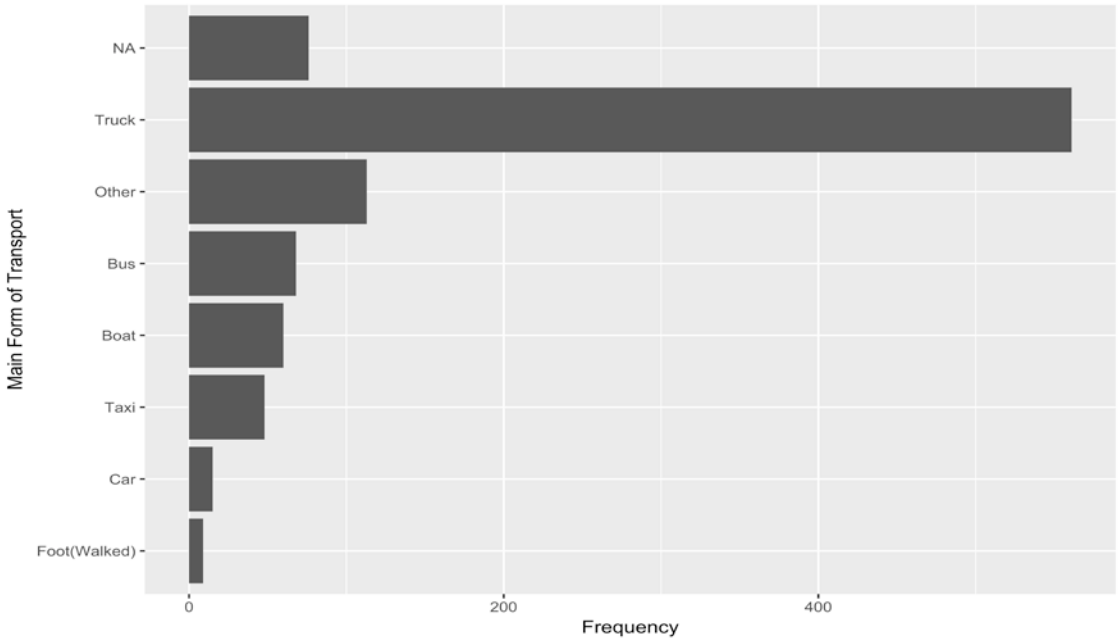
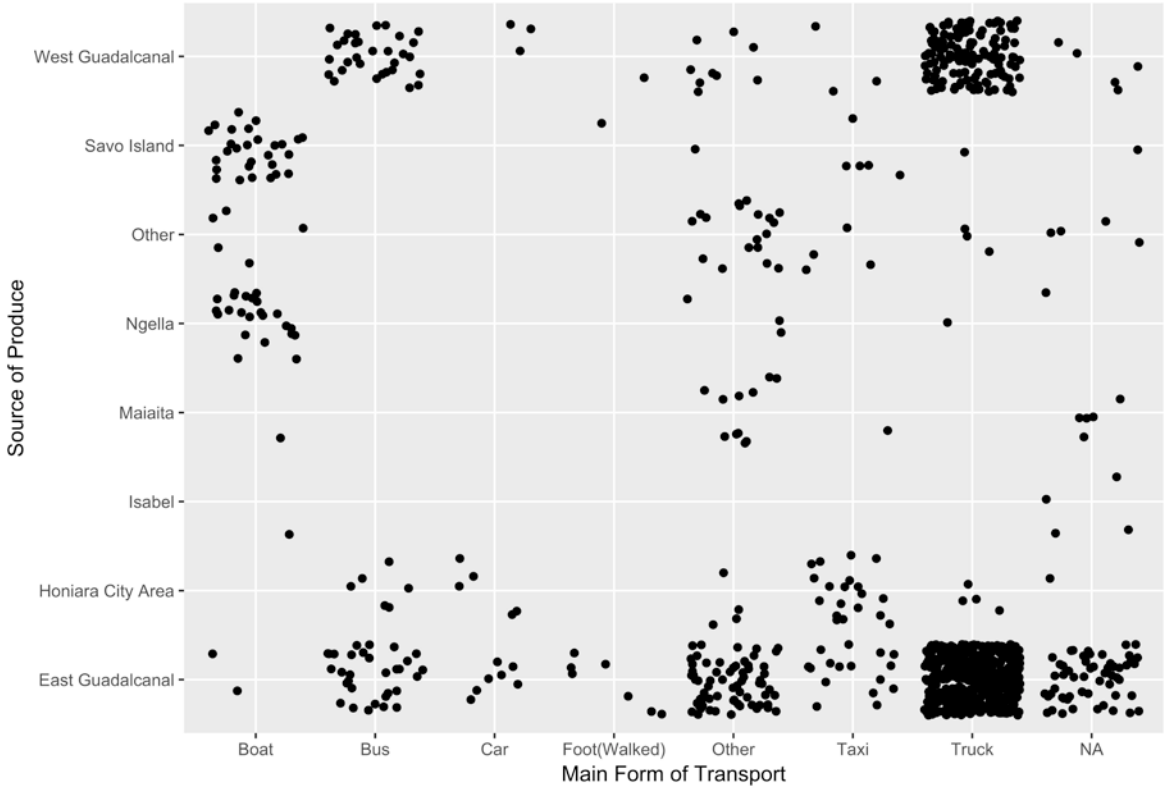


Figure 27 shows every observation in the data set and makes it possible to see where each type of transport is most common. Trucks are very common in East and West Guadalcanal, but boats are more common for Savo Island, Nggela and 'Other' locations—source areas remote to HCM such as Temotu, and Western Province, as well as South Guadalcanal.

The 'Other' in mode of transport includes ferries from Malaita, small ocean-going boats from East Guadalcanal, or ships from Temotu and Western Province.

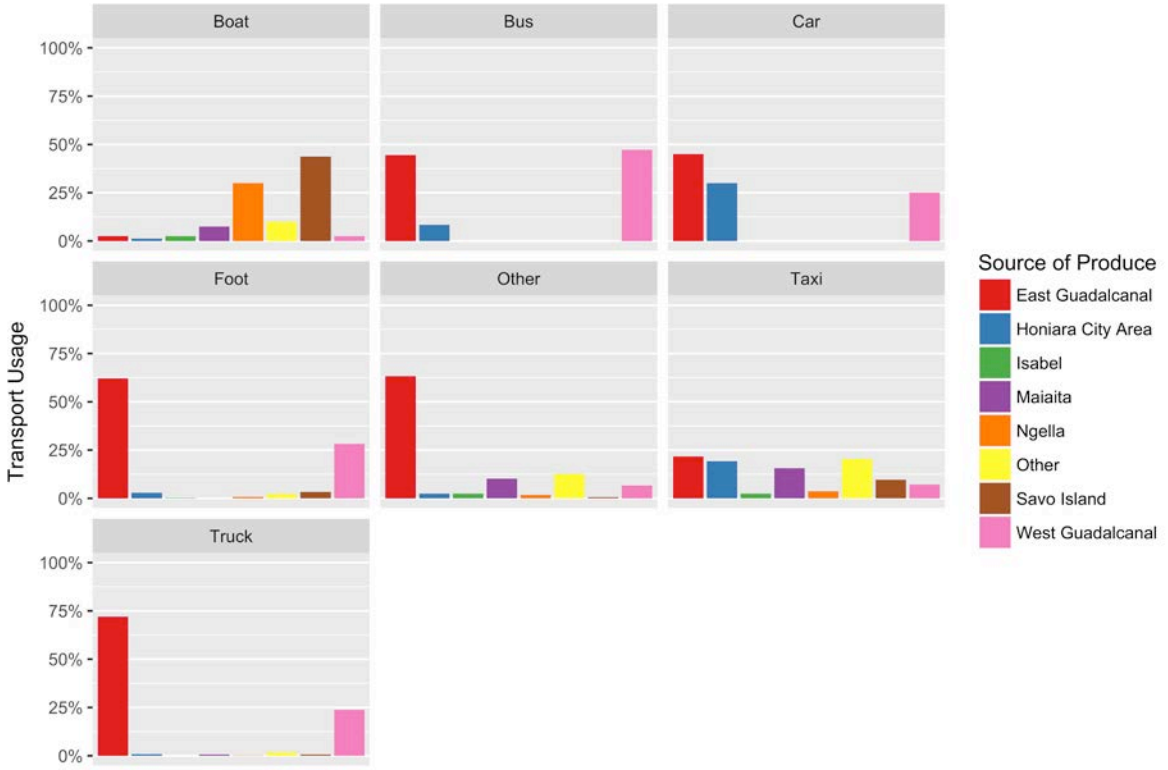
Figure 27: Main Transport Densities



Transport type by region

Figure 28 shows a breakdown of the transport types that are used in each of the regions. It gives information regarding the distribution of food transport. The majority of transport types are explained in large part by the dominance of East Guadalcanal (as the majority of vendors reported produce coming from this region). Some transport types such as boat and taxi, are more equally dispersed by origin area.

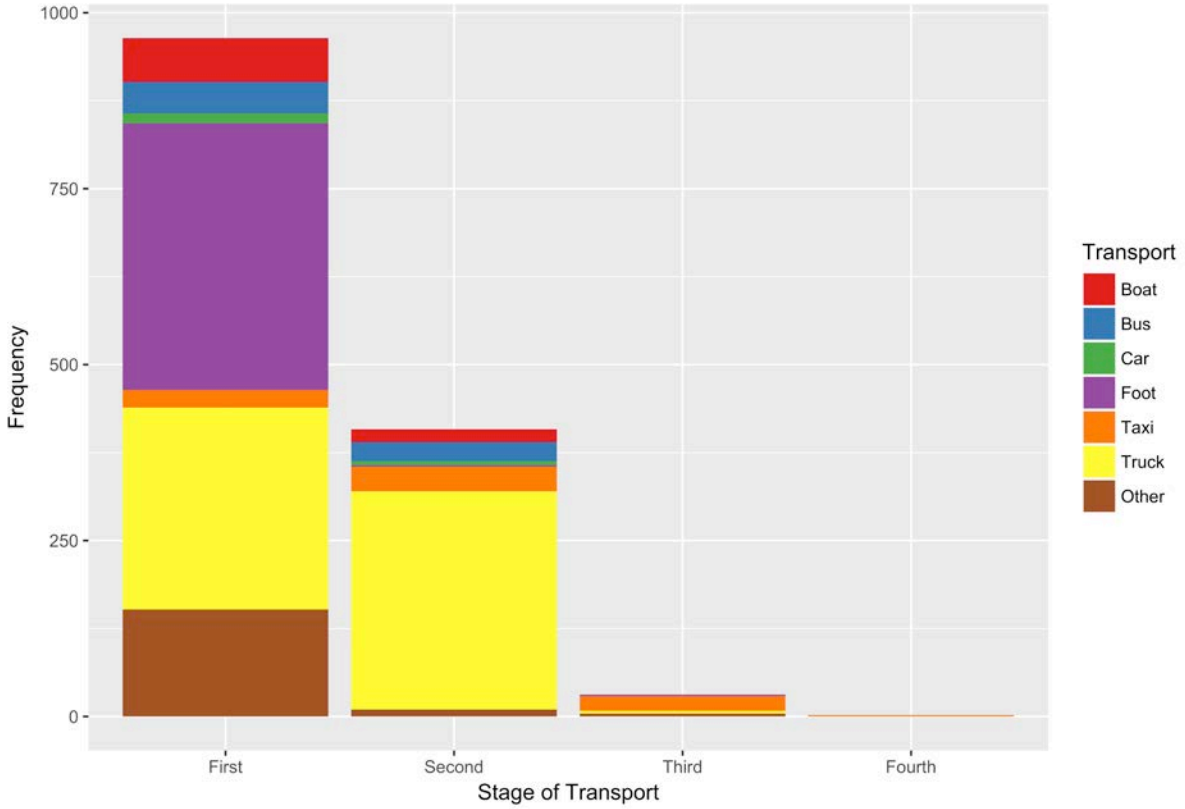
Figure 28: Usage of Each Mode of Transport



First transport used

Figure 29 illustrates the transport types used throughout the journey from the source. The first stage indicates that most people either carry their produce on foot, or use trucks to commence their journey. The second leg of the journey shows a small number of people carrying on foot, with the majority using trucks, and in some cases taxis, cars and buses. A very small number of people use more than two stages of transportation.

Figure 29: Journey Stage Breakdown by Type of Transport



Main transport type by region and all modes of transport

Figure 30 shows the main mode of transport by percentage from origin areas whilst Figure 31 shows the percentage of all modes of transport during all stages of the journey to HCM. These two figures show a breakdown of the methods that are used to transport the food from origin to the HCM. Figure 30 shows a more general summary overview, whilst Figure 31 shows a more granular breakdown. Figure 30 indicates that travel by foot is not very common, however Figure 31 shows foot travel takes up a larger percentage of the total mode of transport used from source areas, indicating vendors carry goods on foot for some portion of their journey, however it is often not the most important segment. The 'Other' in Figures 30 indicates maritime transport in larger vessels (e.g. ferry from Malaita, or ships from Western Province), while the 'Other' in figure 31 shows ships are being used from a number of source locations.

Figure 30: Transport Used to Deliver Food from Each Region – main mode of transport

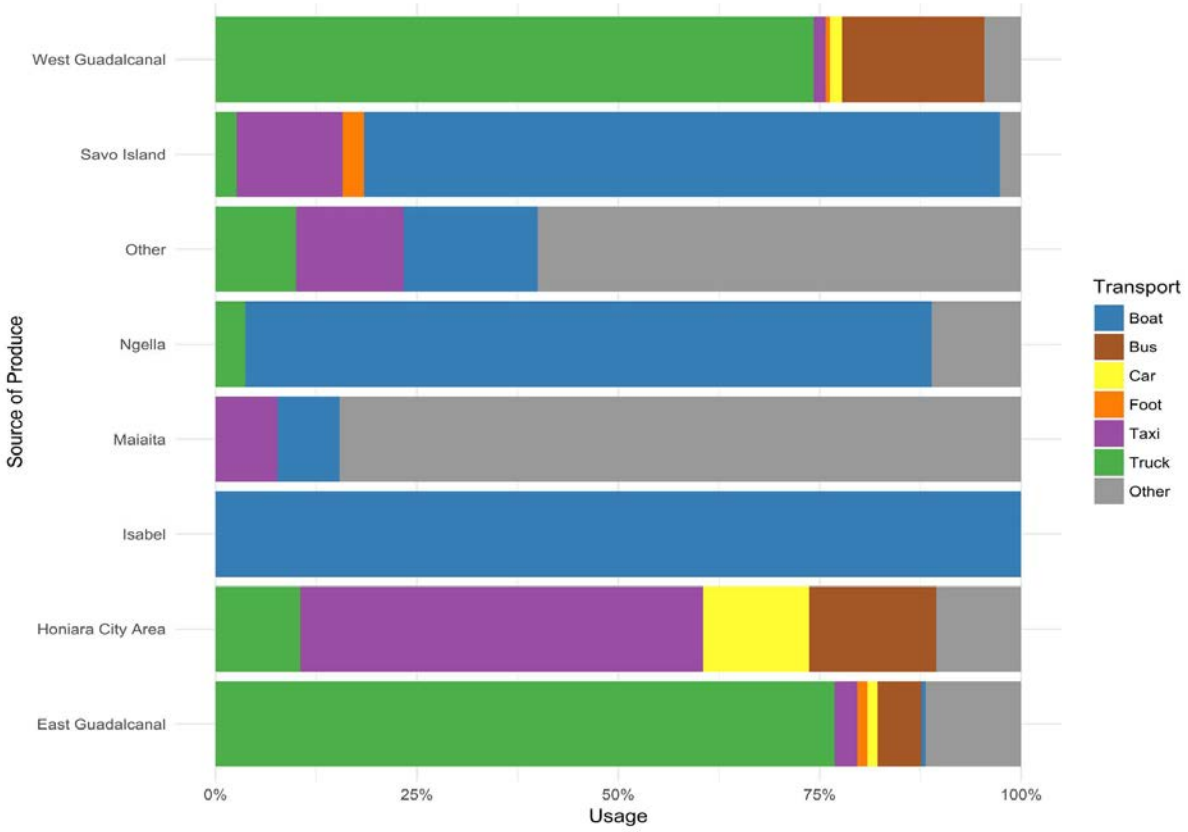
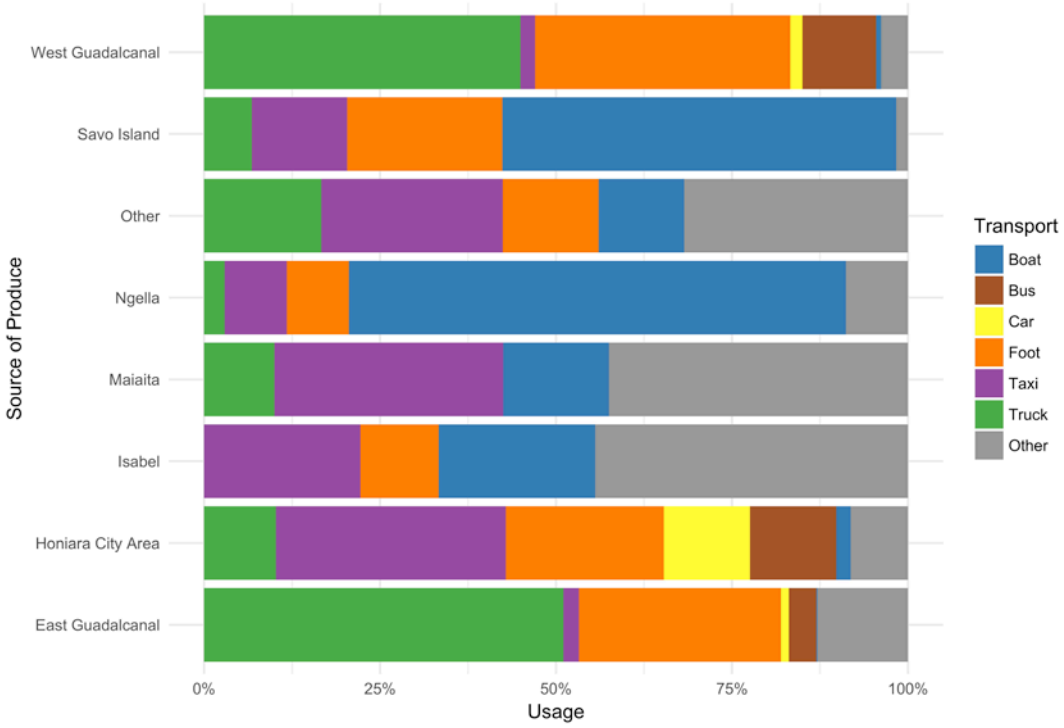


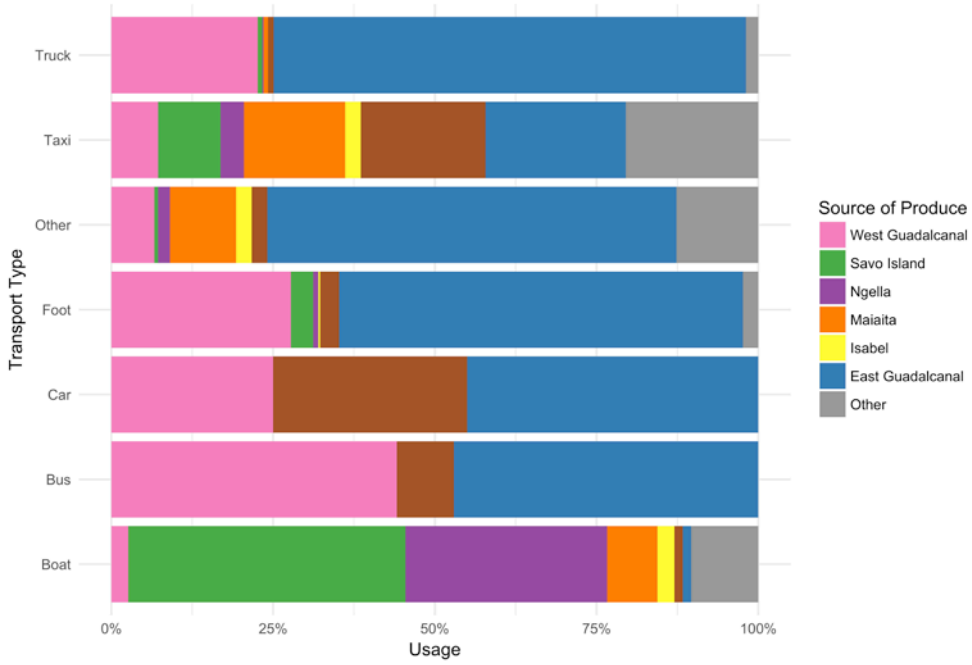
Figure 31: Transport Used to Deliver Food from Each Region – all modes of transport



Mode of transport by region

Figure 32 shows a breakdown of the types of transport used, broken down into percentages based on the region that uses that form. This plot can be read in a similar way to Figure 30 and Figure 31, but in a reverse fashion.

Figure 32: Usage of Each Type of Transport by Region



Transport to market by produce category

Figures 33 and 34 show the mode of transporting goods to HCM in terms of produce category. Beans/Legumes, Fruits, Gourds, Leafy Greens and Root Vegetables are mostly moved by truck. Boats are used for both Nuts and Seafood, while Poultry is mostly brought to HCM via Taxi or car. Figure 34 presents these modes of transport as percentages.

Figure 33: Travel Counts by Produce Category

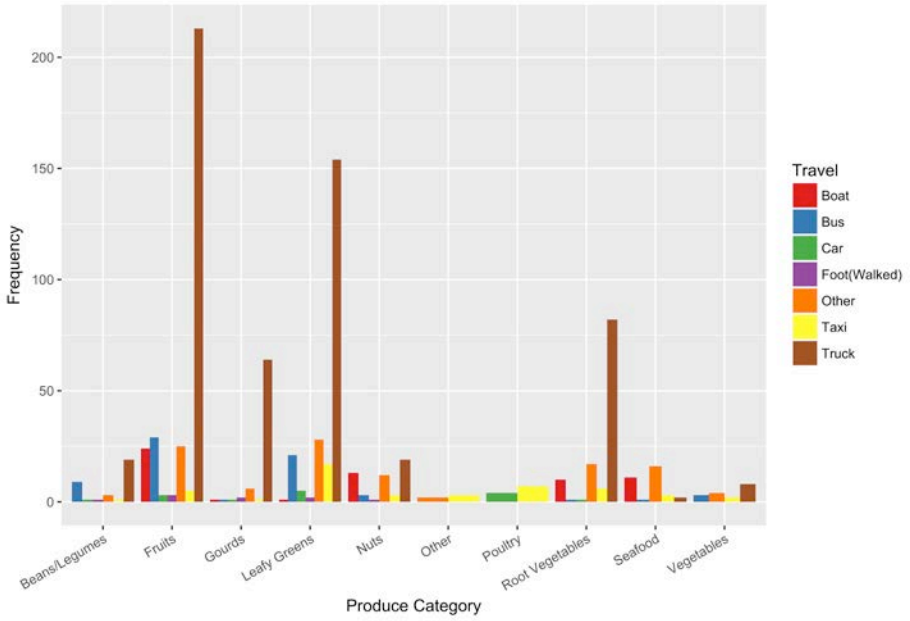
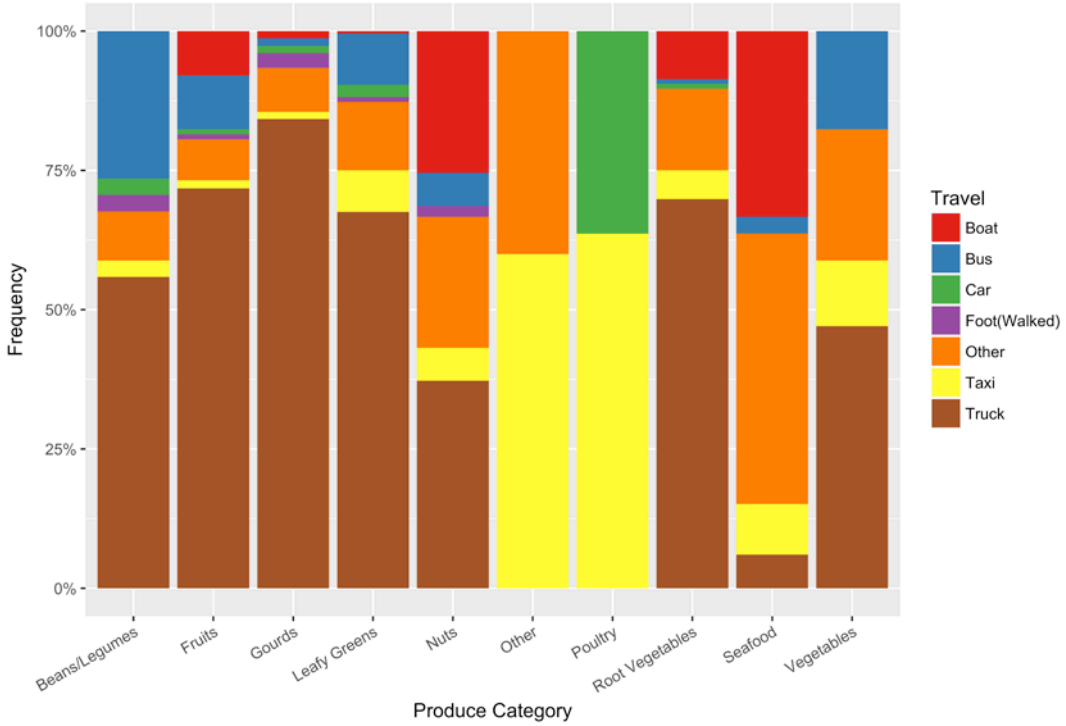


Figure 34: Travel Proportions by Produce Category



Produce by mode of transport

Figures 35 shows the mode of transport for different produce categories by quantity, while Figure 36 shows the weight of that produce. Figures 35 and 36 demonstrate trucks transport large quantities of heavier produce (e.g. Fruits, Gourds, Root Vegetables), as well as large quantities of lighter produce categories such as Leafy Greens. For Seafood, Figure 35 shows Boat (OBM) transport is second to 'Other'. In this case the 'Other' is both small and larger ships while Figure 36 suggests these ships transport the heaviest seafood.

Figure 35: Total Quantity of Produce by Travel

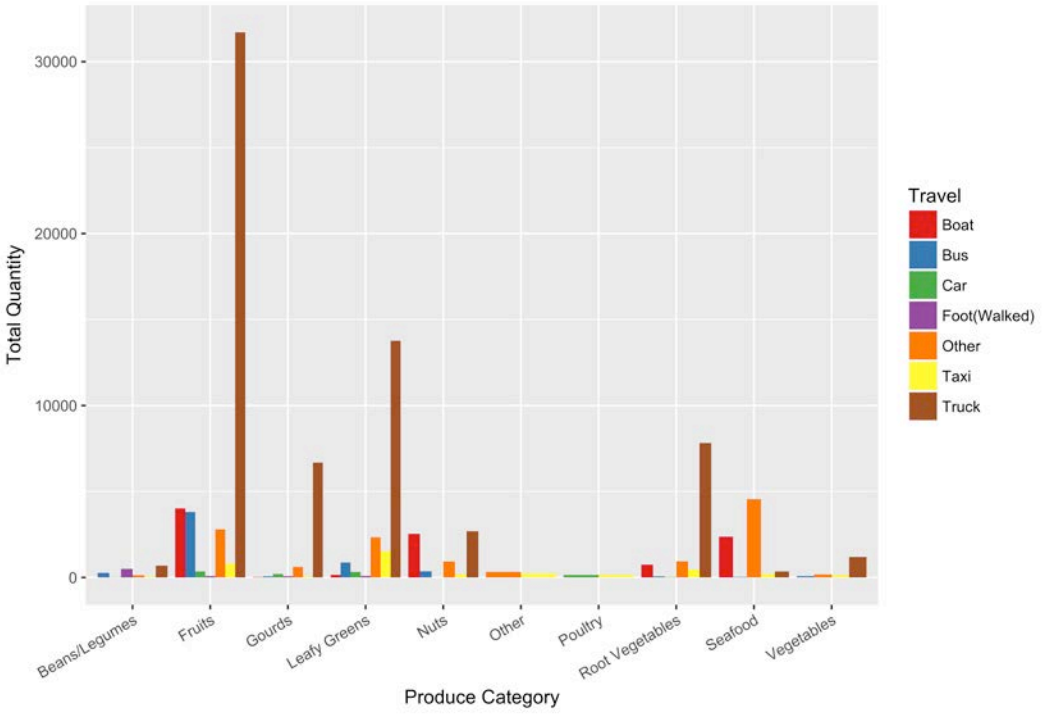
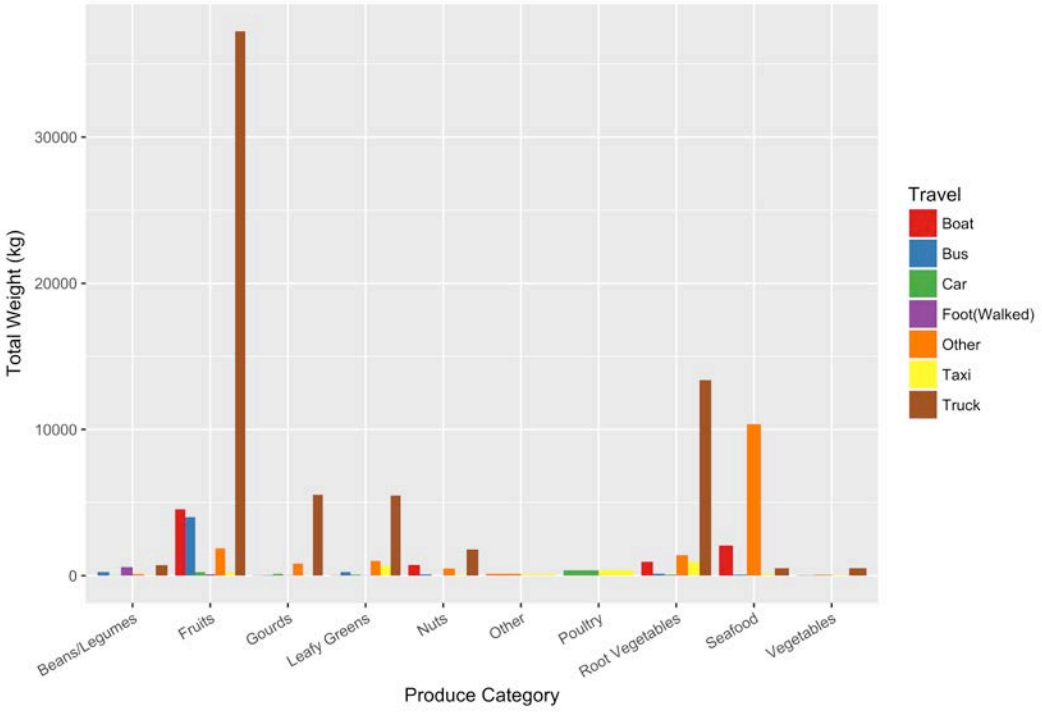


Figure 36: Total Weight by Produce by Travel



CONSUMER SURVEY

Figure 37 shows there are over twice as many women as men who shop at HCM. Figure 38 indicates the ages of shoppers (consumers) and illustrates the majority of consumers are between 30 and 40 years of age. There is a notable drop off in people over 40 years of age shopping at HCM, and even lower numbers of people over 60, as indicated by the long and low tail on the right hand side of the density chart. Figure 39 shows the number of consumers at HCM grouped into their respective education levels. The largest category of consumers has high school education, while similar numbers have attended university as have attended primary school.

Figure 37: Gender of Consumers

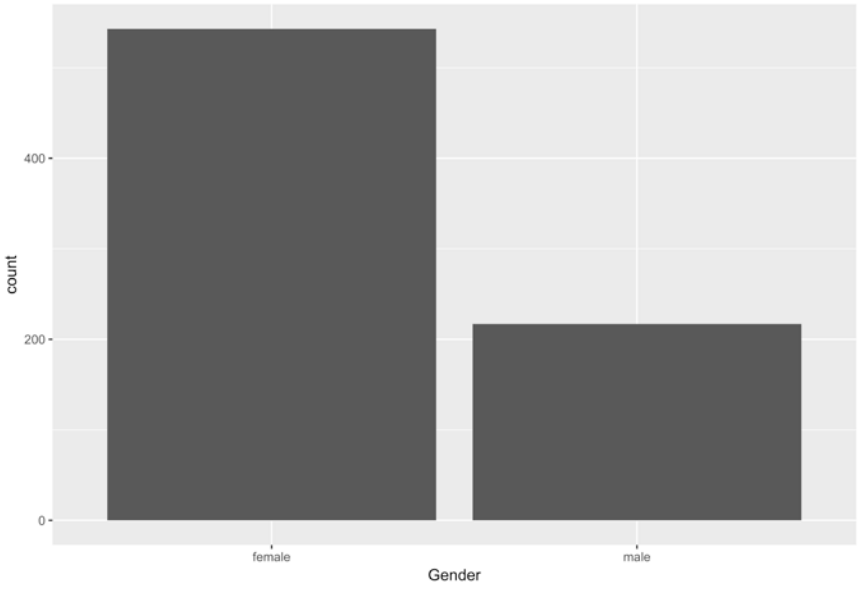


Figure 38: Age Distribution for consumers

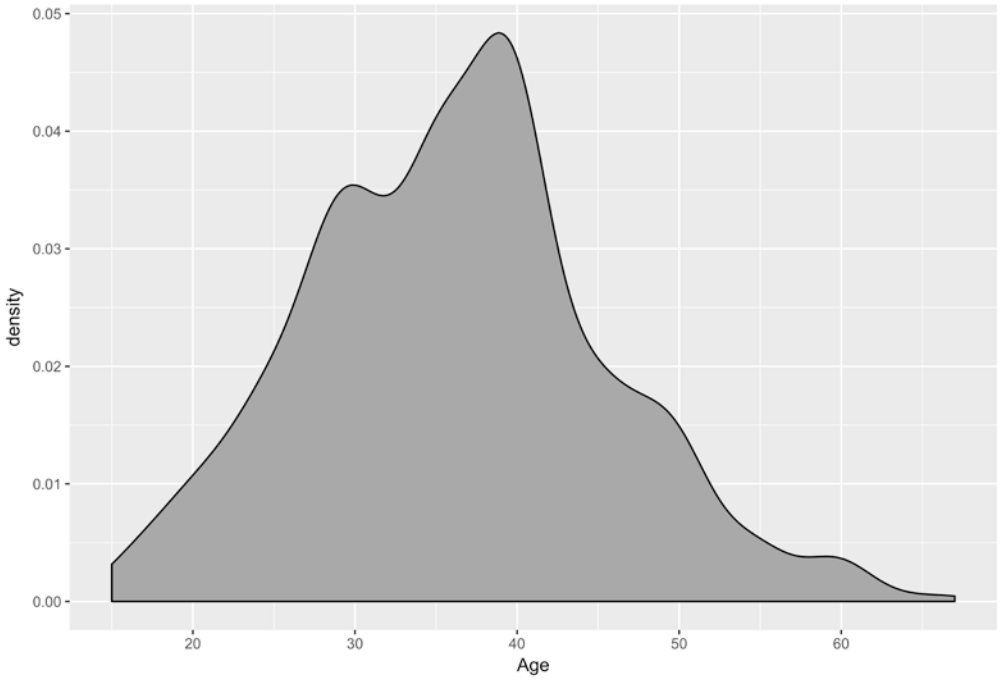
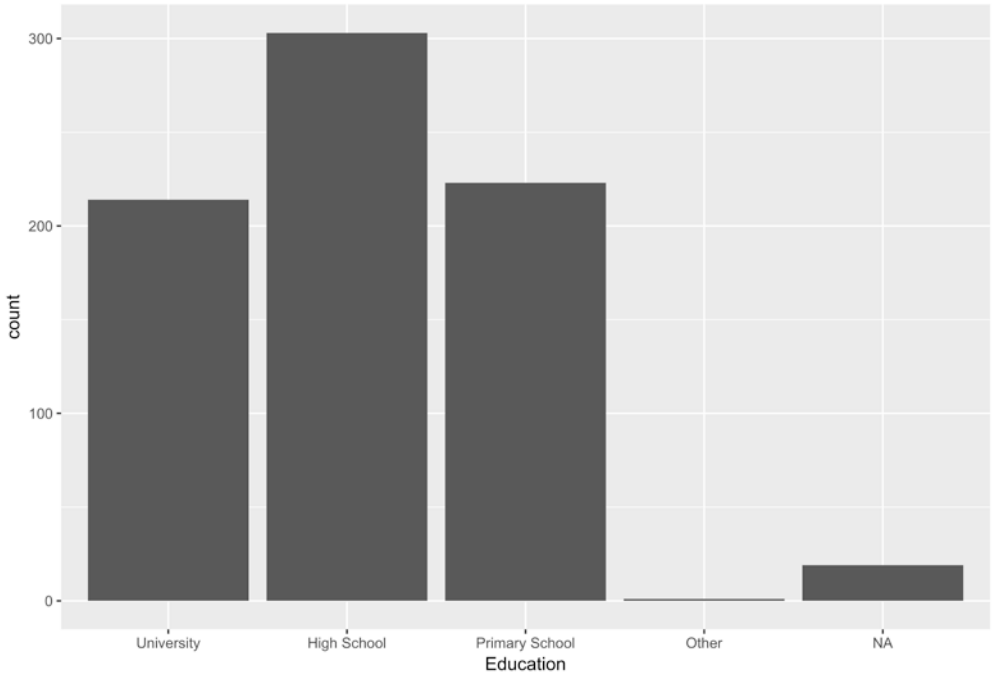


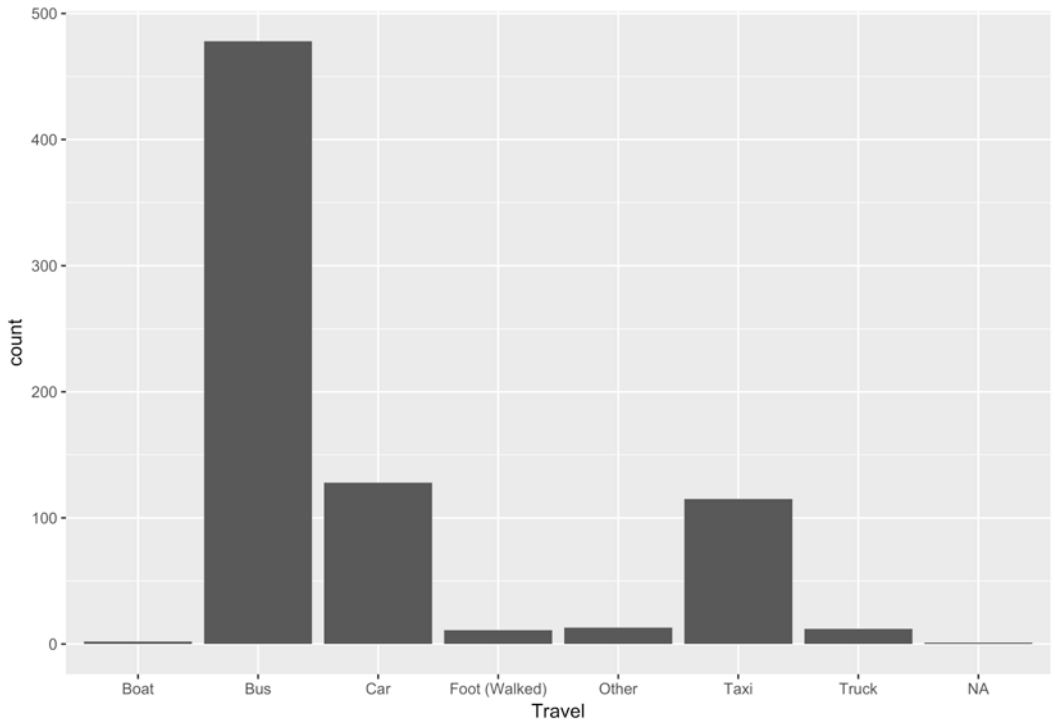
Figure 39: Education Level Attained by HCM Consumers



Consumers: Mode of transport

Of the 760 consumers surveyed, 730 live in Honiara (96%). Figure 40 depicts the mode of transport used by consumers to travel to HCM. Over half of the respondents arrived by bus, with significant numbers traveling to HCM by car and taxi. Very few consumers walk, come by truck or boat.

Figure 40: Consumer Mode of Transport to HCM



Consumer behaviour: Shopping frequency and expenditure

Figure 41 demonstrates about half of all HCM consumers shop 2-3 days per week. Just under a third shop every day, and around one fifth shop once a week. Very few consumers shop fortnightly. Figure 42 shows the distribution of expenditure from all of the consumers at HCM. It shows that the bulk of people are spending less than SBD$500 (Solomon Island Dollars) per visit, with the highest proportion spending less than SBD$200. A small number of people were spending large amounts of money, with some people spending around $2000.

Figure 41: Shopping Behaviours of Consumers

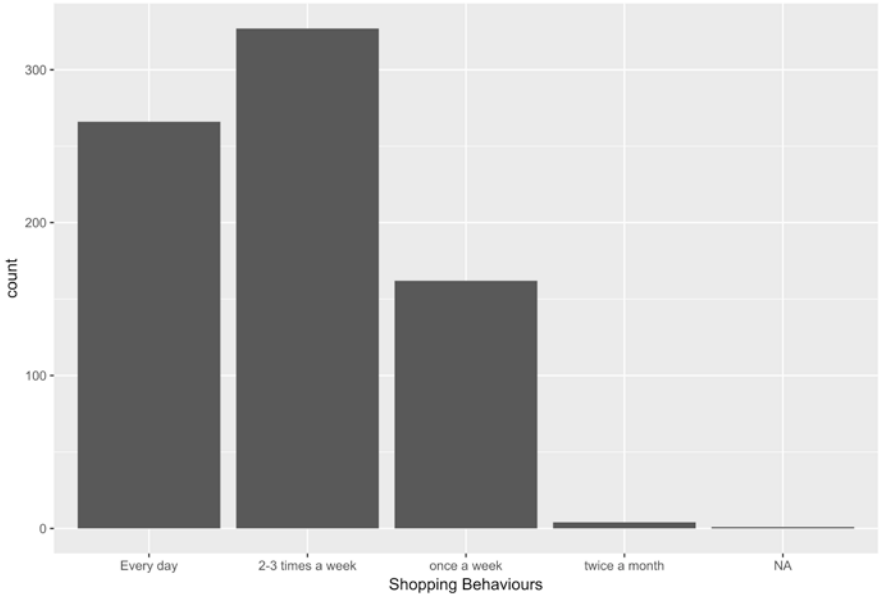
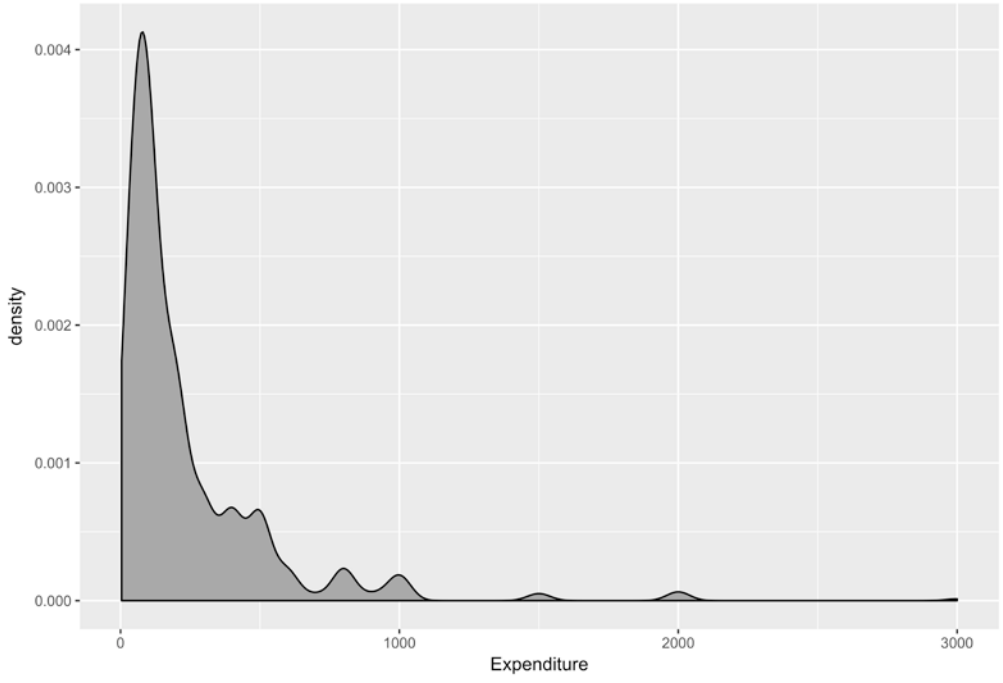


Figure 42: Expenditure Distribution



Consumer spending by day of week

Figure 43 shows the total expenditure throughout the week. Surveyed shoppers were spending less earlier in the week and more later in the week, especially on Friday and Saturday. The number of people sampled on each day was stable, and the mean expenditure (Figure 44) displays a very similar trend. Both Figures 43 and 44 indicate the average spending increases from Tuesday to Wednesday with a slight dip on the Thursday, before climbing on the busiest market days, Friday and Saturday. These increases are in part explained by government agencies and private companies paying workers on Wednesdays and Thursdays, while planning for weekend activities (family and church functions) accounts for higher spending on Fridays and Saturdays.

Figure 43: Total Expenditure

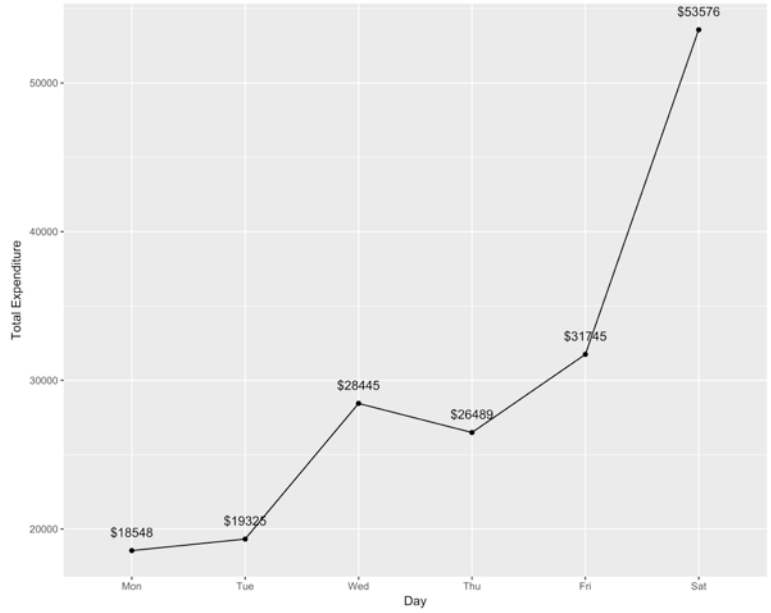
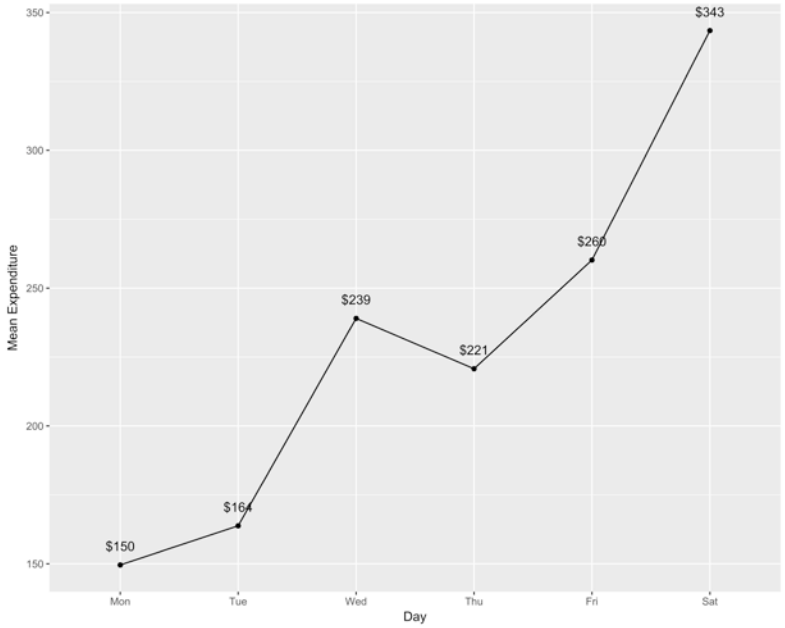


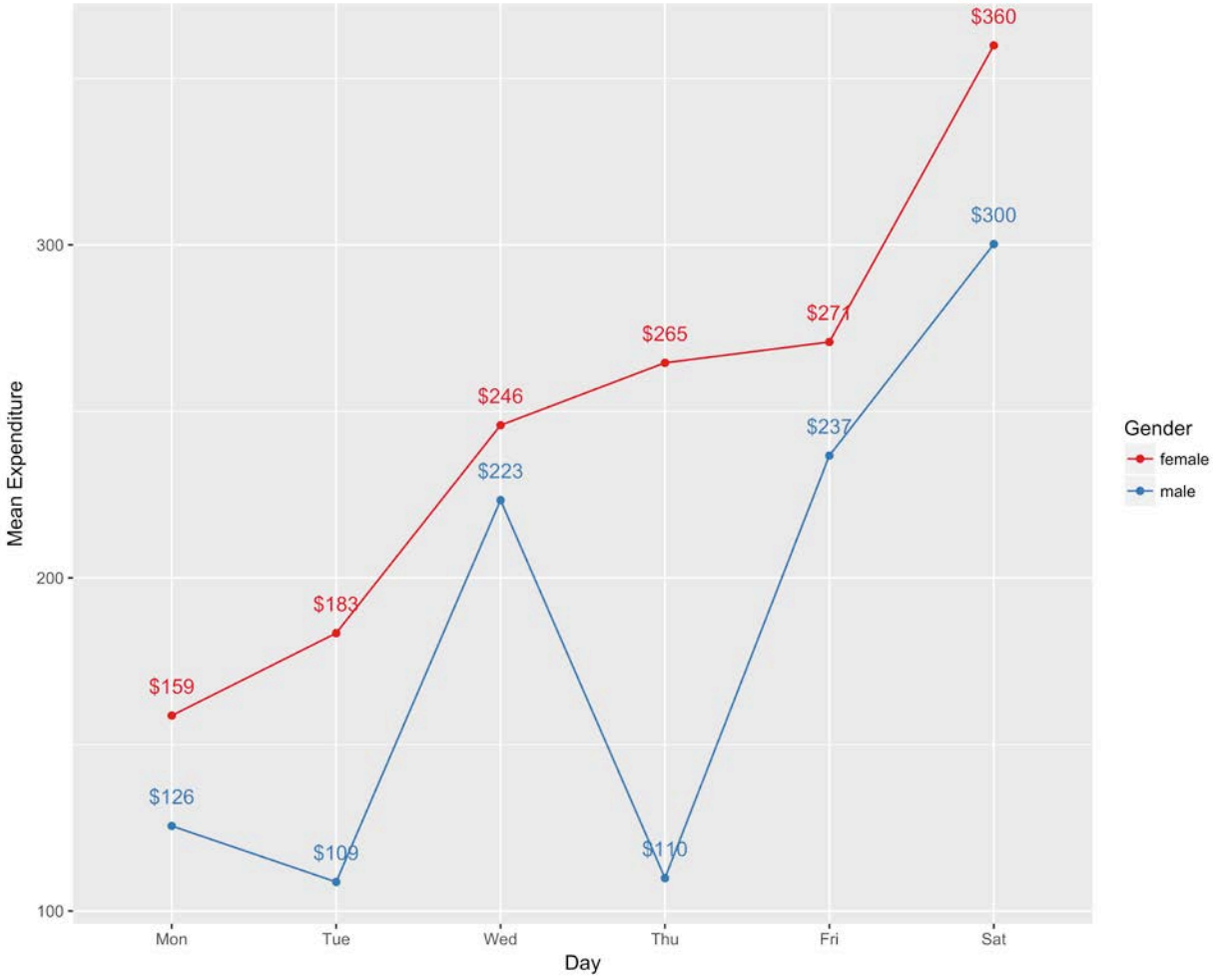
Figure 44: Mean Expenditure



Consumer spending by gender

Figure 45 shows the mean expenditure throughout the week by gender, allowing for comparisons to be made between female and male consumers. Figure 45 shows women are consistently spending more than men. There is approximately half the number of men as there are women involved in the survey which means that there is a potential for the mean of male spending to be less stable, however it is of consistently lower value when compared to female spending. It is also notable that there is a spike and dip on Wednesday and Thursday for males, but not for females, which suggests that men may be spending money elsewhere on Thursdays.

Figure 45: Mean Expenditure by Gender



Resellers as consumers

Figure 46 shows that almost two thirds of consumers surveyed purchased produce from HCM for household consumption, while around one third purchased produce to resell. Figure 47 shows women dominate reselling, while more men tend to buy for their households.

Figure 46: Counts of Reseller Consumers

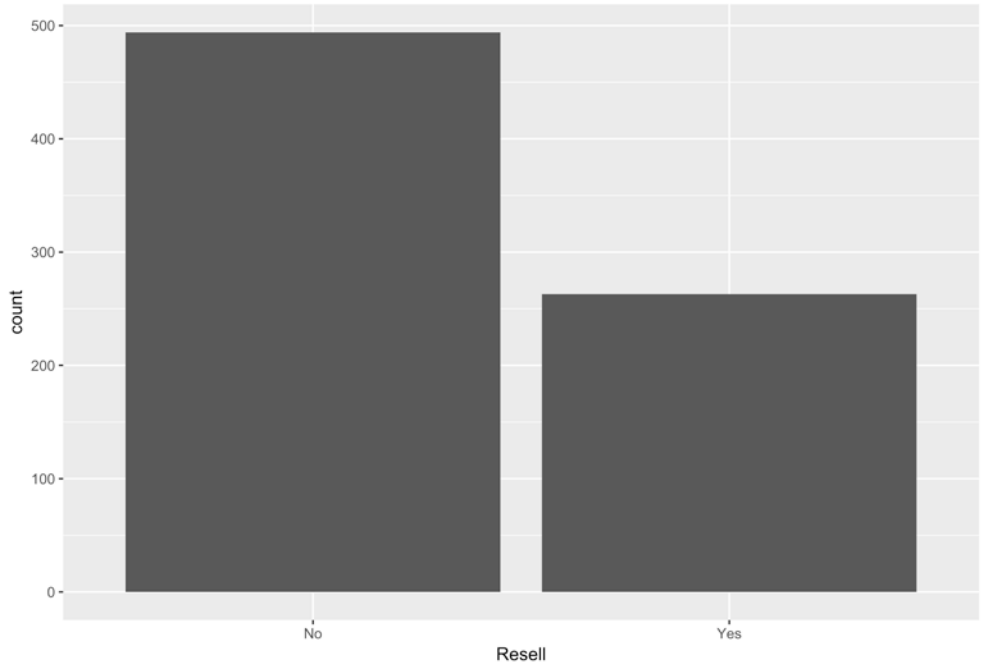
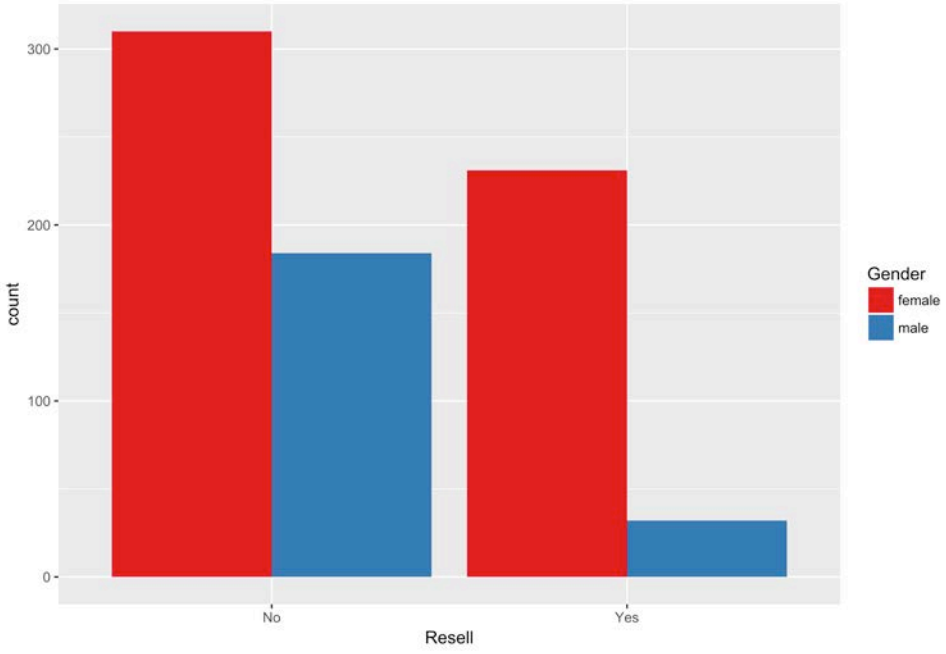


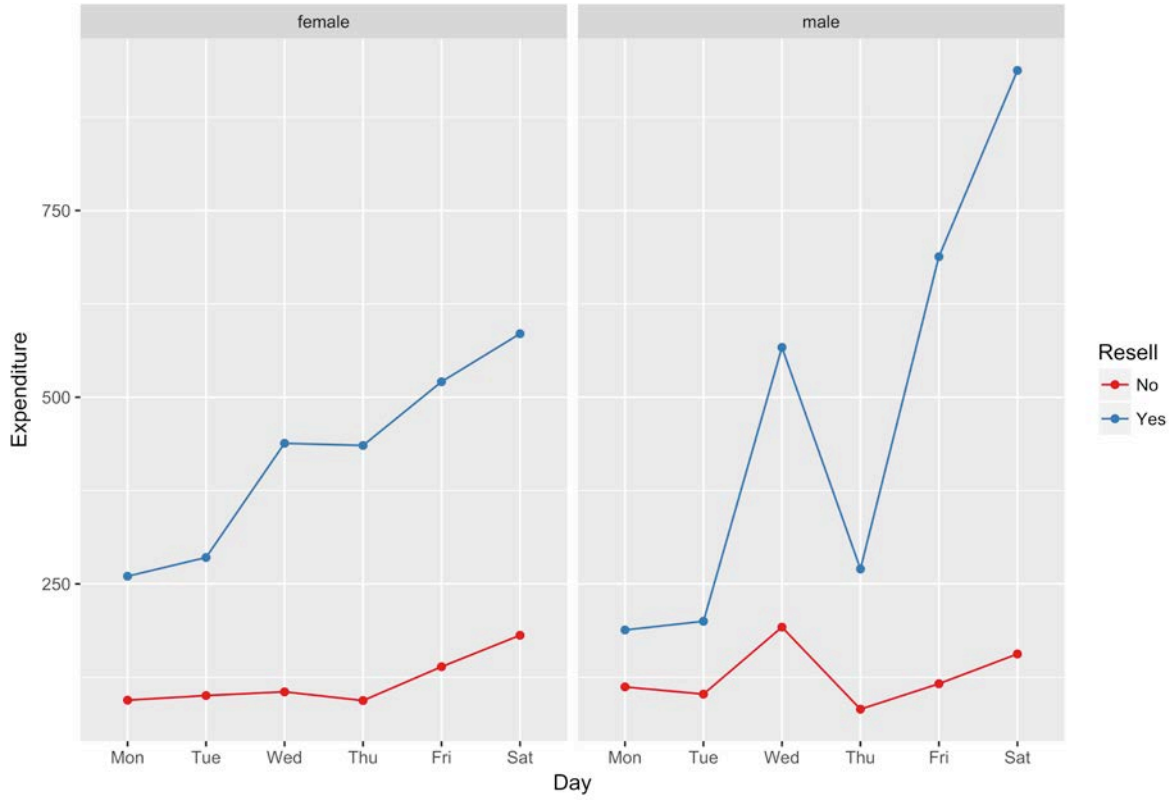
Figure 47: Reseller counts by Gender



Reseller spending by gender

Figure 48 shows that female and male resellers have a similar level of average expenditure, along with a similar weekly trend. The female resellers exhibit a consistent upwards trend throughout the week while the male resellers exhibit this same upwards trend, but with a lower level of consistency and the same Thursday 'dip', likely due to the lower sample size (around 30).
Both female and male consumers have very similar expenditure levels and trends through the week, however resellers display an upward trend toward the weekend. The difference in reseller spending by gender is partly explained by variations in the smaller sample size for male resellers. There are about eight times as many female resellers as males (Figure 47), leading to a smaller overall average expenditure for women.

Figure 48: Average Expenditure of Resellers by Gender



CONCLUSIONS

Seven significant conclusions can be drawn from this study.

Food Supply: HCM attracts vendors selling diverse produce from a variety of locations in Solomon Islands. The main supply regions are East and West Guadalcanal, although during the survey period produce also came from South Guadalcanal, Malaita, Central Province (Savo Island and the Nggela Islands), Isabel and Temotu. Over 75% of the Beans/Legumes, Gourds and Leafy Greens sold at HCM come from East Guadalcanal, which is also the origin of over half of the Fruits, Nuts and Other Vegetables (Figure 22). West Guadalcanal is the origin of about 10% of most categories, and up to 25% of Fruits, Root Vegetables, and Vegetables. Savo Island has a significant production of Nuts, while the Honiara area provides most of the Poultry. Seafood is sourced from a mix of locations including Malaita, Nggela, and Western Province. The quantity of Seafood sold per week at HCM appears be between 20,000-25,000 kg, which is highly likely to be mostly comprised of whole fish. This is a slight increase on the figure of 18,396 kg per week estimated by Pomeroy and Yang (2014: 26).

Transport to Market: About 75% of produce arrives at HCM by truck, which is the dominant source of transport from East and West Guadalcanal. Closer to Honiara, buses are used to bring goods to market. Some producers in East Guadalcanal are using ocean-going boats to bring produce to HCM, while Savo Island and Nggela vendors favour OBM. Ferries are used to transport produce from Malaita. Most people carry their transport by foot for at least some part of the journey. Heavier produce is reliant on trucks (Figure 33), however bulk produce such as Leafy Greens is also transported by truck. The heavy reliance (over 50%) on trucks to transport most categories of produce to HCM points to the critical importance of the existing road system to ensure adequate food supply for Honiara. A continuation of improvements to the sealed road, and extension further into East Guadalcanal would reduce transport times for truck travel for fresh produce to Honiara, and assist in maintaining food security for Honiara residents.

Fresh food availability: The vast majority (80.2%) of HCM vendors spend between half a day and one day at market. Except for vendors of Seafood, longer stays are rare. The highest proportions of vendors staying the shortest periods are those who sell Leafy Greens (96%) and Fruits (87.5%). Vendors of heavier foods in general stay longer at market, and stays of over three days are recorded for some Root Vegetables and for some Fruits. As storage is limited at HCM and storage costs cut into profits, we conclude that the vast majority of HCM market food is fresh daily in most categories.

Fresh food diversity: A diversified food supply system of fresh produce arguably improves dietary quality and nutrition (Koppmair, et. al. 2017). Produce at HCM includes categories that represent the main groups of dietary diversity: Beans/Legumes, Fruits, Gourds, Leafy Greens, Nuts, Root Vegetables, Poultry and Seafood. The freshness and diversity of available produce at HCM suggests that a nutritionally diverse diet is available to Honiara residents.

Buying at HCM: HCM consumers are overwhelmingly (96%) residents of Greater Honiara. They shop frequently at HCM for fresh produce for their own homes (or for resale) and are thus accessing nutritionally diverse produce through HCM. Consumers are shopping either 2-3 times per week (42%) or daily (35%). HCM consumers typically spend around SBD$200 per shop, and very few spend more than SBD$500. Over three in five consumers (62.5%) arrive by bus, with car and taxi being equally common (15%).

Resellers: Reselling accounts for 20% of vendors at HCM (Figure 5) and one third of consumers are also resellers. There are two main groups of produce resellers: one group resells produce at HCM, the other buys produce at HCM and resells elsewhere. The data on resellers suggests a substantial practice of reselling not only within the actual *Market Haus*, but in areas well away from the HCM. Resellers were recorded by Genova et. al (2010), and discussed by Georgeou et. al (2015) and Georgeou and Hawksley (2017). Resellers who purchase in bulk at HCM then sell at other points, for example from roadside stalls along the highway within and outside of the Honiara city limits, or at other non-HCC managed markets within Greater Honiara. This group disperses fresh produce throughout the Greater Honiara Area, facilitating access for urban residents.

Gender and Income generation: HCM plays a vital role in linking women, rural food production, and rural and urban household income generation. Women make up the majority of vendors at HCM by a ratio of over 4:1. Three quarters of all vendors are married, and 72% of all vendors at HCM sell their own produce. Data from this study shows married people from rural areas use HCM to generate income for their households. The increasing expenditure throughout the week by 240 female Honiara-based resellers from the consumer survey also shows that resale of produce is not restricted to weekends, and is an important form of income generation for urban households.

Reselling and the transporting of produce to HCM suggest there are economic activities related to sale at HCM that support income generation for both men and women. Previous studies by AusAID (2006), Pollard (2000), and Georgeou and Hawksley (2017), noted the centrality of women's income generation for households in rural economies, especially through farming and market sale, while (Knott, 2009: 112) has described the entrepreneurial activities of urban women. Pollard (2000) has highlighted the role of men in supporting women in getting produce to market, particularly in loading and off-loading produce onto and off trucks. Georgeou et. al. (2015) noted the dominance of men in OBM ownership on Savo Island. Further research on the ownership of the mode of transport, and on freight charges, requires investigation to ascertain its effects on the cost of produce and vendor profits at HCM. Gender is however a central concern in food supply chains to HCM, as it is for food security, household income generation and economic development.

PRELIMINARY RECOMMENDATIONS

This report has three main recommendations:

1. **Improve transport infrastructure:** HCM attracts vendors and produce from many parts of Solomon Islands, but over half of all vendors (and half of all produce) come from East Guadalcanal. Preliminary data show that much of the produce coming from East Guadalcanal is arriving at HCM from well past the end of the sealed road, and some producers are using boats (e.g. small launches) to transport produce. Three possible approaches are suggested: (1) Improve Maritime links; (2) Improve road links, (3) a combination of both (1) and (2). For (1), improving the existing docking facilities around the HCM site and at source areas will permit a larger volume of maritime transportation of fresh produce. For (2), truck transport is the primary mode of carrying goods to market, however the sealed road infrastructure is currently limited and many smallholder producers who travel to HCM spend many hours on dirt roads. Expanding the sealed road further to the east in Guadalcanal Province will enable more growers in what is already the main source origin for fresh produce to have more secure access to HCM. Expansion of the sealed road network will improve the likelihood of maintaining food supply quality and volume for Honiara residents should poor weather eventuate, causing flooding or road erosion. An expanded sealed road network would also provide greater accessibility to origin source areas for resellers, and enable direct cash transfers to rural communities. Aid donors and Solomon Island Government can of course continue to upgrade and maintain bridges and roads along the existing sealed road network to guarantee access to HCM. Approach (3) would ease congestion on the road network and ensure food supply during extreme weather events such as flooding.
2. **Conduct gender-focused research on agricultural value chains to HCM:** This study has confirmed that women predominate at HCM in selling, reselling, and purchasing at market. Mapping food value chains from source regions of high supply to HCM would identify existing networks of production to inform a gendered understanding of social change in Solomon Islands as it transitions from a subsistence economy to a market society. Such research would identify: (a) value-adding at different stages along the value chain, such as the cost of transporting produce to market; (b) key actors and their relationships in the agricultural value chain; (c) enterprises that contribute to production, services and required institutional support; and (d) how profit is deployed along the chain. Furthermore, such research would provide a gendered analysis of the changing social, political and economic context in which production of food for sale in the market takes place, so as to identify issues with, and opportunities for, equitable engagement and economic development along agricultural value chains linked to HCM. Arguably such research would reveal how best to provide affordable fresh produce to the residents of Honiara, while increasing opportunities for rural producers to grow their businesses and create wealth.
3. **Research reseller activities in Honiara:** A significant finding is that one third of consumers are resellers who disperse fresh produce throughout the Greater Honiara area. Further research is required to map the dispersion of fresh produce from HCM into the Greater Honiara Area via resellers to ascertain whether that all parts of Honiara have access to affordable fresh produce, or if there are areas where fresh produce is not readily available.

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Members of the Research Team, June 2017, Honiara. From left to right: Dr Nichole Georgeou, Dr Anouk Ride, Mirriam Resture, Mary Kivo, Emmanuelle Mangalle, Melinda Ki'i and Debbie Lukisi.