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Beef4Market

**Domestic and international market
development for high-value cattle
and beef in South-East Cambodia**

ACIAR Project No. AH/2010/046

Working Paper No.1

**Consumer Survey Summary Results
Phnom Penh and Ho Chi Minh City, 2013**

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Glossary of Terms

FMD	Foot and Mouth Disease
HCMC	Ho Chi Minh City
PP	Phnom Penh
WTP	Willingness To Pay
QCB	Quality Certified Beef
ACIAR	Australian Centre for International Agricultural Research

1. Introduction

The ACIAR Project AH/2010/046 – Domestic and international market development for high-value cattle and beef in South-East Cambodia aims to assist smallholder cattle producers in Cambodia to be rewarded for producing better quality animals. Part of this may be assisting the smallholders and the traders and wholesalers that they deal with to access higher end retail outlets such as supermarkets. This study is the start of this process, providing an understanding of consumer preferences for beef in existing traditional markets and the developing supermarket sector. The project conducted a survey of beef consumers in the largest cities in Vietnam and Cambodia; Ho Chi Minh City (HCMC) and Phnom Penh (PP).

HCMC is the most populous city in Vietnam. The 7.7 million inhabitants account for 8.4% of the national population. It is also the most important centre for business, culture and education. Consumption of consumer goods is much higher than in other cities or provinces. There are various shopping centres, supermarkets and open markets throughout the 24 districts of the city. Demand for beef in HCMC in recent years has surpassed the supply causing high prices for beef in the markets. Supermarkets and open markets in HCMC are trying to vary and expand their beef supply to cope with the increasing demand.

Phnom Penh is the capital of Cambodia. The 2.3 million inhabitants account for 15.4% of the national population. Phnom Penh is Cambodia's economic centre as it accounts for the largest portion of the Cambodian economy. Double-digit economic growth in recent years have triggered an economic boom in Phnom Penh, with new hotels, restaurants, bars, high rises and residential buildings springing up around the city. Phnom Penh is also the main market for domestic beef in Cambodia.

2. Survey Methods

The project developed a consumer survey questionnaire with 27 questions (see appendix 1).

2.1 Consumer survey design

The consumer survey was designed to understand perceptions and behavior related to domestic and imported beef. The questionnaire included sections on:

- Consumer characteristics
- Consumer preferences and willingness to pay (WTP) for domestic versus imported beef:
 - Perceptions of domestic versus imported beef
 - Determinants of choosing imported beef
 - Identifying the attributes of domestic beef which need to be improved
- Food quality/safety perception and consumer WTP for traceable and certified beef
 - Perceptions of food quality/safety
 - Perceptions of traceable and certified beef
 - Factors explaining WTP for traceable and certified beef
- Media induced food scares and impacts on beef consumption
 - Impacts of food health scares
 - Changes in shopping behaviour
 - Probability of buying quality beef

2.2 Selection of interviewers/enumerators

In HCMC 8 interviewers were selected from the School of Industrial Management, University of Technology, National University of Vietnam at HCMC. In PP the 6 interviewers were from the Royal University of Agriculture, Cambodia.

The project provided interviewer training on 20/12/2013 in HCMC and 10/01/2014 in PP. This included orientation to the project, familiarisation with the terms used in the questionnaire, interviewing ethics, techniques and practices.

2.3 Selection of markets and consumers

2.3.1 Survey design parameters

- Target number of beef consumers interviewed was 1,000 (700 in HCMC and 300 in PP).
- Locations were chosen on the following criterion:
 - Geographic spread
 - Popular shopping places: open markets (60%) and supermarkets (which includes domestic and international supermarkets - 40%).
- There should be 30 respondents in each shopping place.
- Beef consumers were chosen randomly for the interviews. At each supermarket, open market, there are 2-3 interviewers, one of them at the beef counter, and the others at an interview desk located in a fast-food restaurant near the front gate of the supermarket. At the beef counter, the student approached beef consumers and asked them for an interview after they finished their shopping. If the consumer agreed, s/he was invited to the interview desk after they checked out their items. A soft drink was offered along with a small gift.

2.3.2 Ho Chi Minh City

In HCMC, there are about 3 main open (traditional) markets and many small/niche markets in each district. The project chose to conduct the survey at 15 open markets in 8 main districts: 1, 3, 7, 9, 10, Binh Thank, Tan Binh and Go Vap.

Supermarkets have been established in HCMC since 1993 and the number is increasing rapidly. Currently, there are 142 domestic and international supermarkets and shopping centers in the city including brands like Metro, Co-opmart, Lotte and Big C. About 50% of supermarkets have food sections (Appendix 2). Beef consumers were interviewed at 10 food supermarkets with beef counters belonging to 5 domestic and international business groups. These attract the largest number of customers from all districts in HCMC and nearby provinces.

- **Metro Cash and Carry Vietnam:** Belongs to Metro AG group, a German global

diversified retail and wholesale group based in Düsseldorf. There are 3 big modern Metro AG in HCMC out of total 10 Metro supermarkets in Vietnam. They are located in Districts 2, 6 and 12. Respondents were chosen from all 3 Metro supermarkets.

- **CoopMart** is the first retail supermarket of Saigon Coop group. The group owns the largest numbers of supermarkets in Vietnam. Among its 60 supermarkets, 16 of them are located in HCMC. Consumers were interviewed at two CoopMarts in the two central districts 1 and 3.
- **Maximark** runs 7 large supermarkets in the south of Vietnam. The Project conducted the survey at both Maximark in HCMC in District 10 and Tan Binh.
- **Big C** is a grocery and general merchandising retailer headquartered in Bangkok, Thailand. It is the leading hypermarket chain in Thailand, managed under the umbrella of Groupe Casino (France), with over 11,000 stores. Today, Big C owns 24 supermarkets in Vietnam of which there are 6 in HCMC. Consumers from two Big C supermarkets in district Tan Binh and Phu Nhuan were selected for the survey.
- **LOTTE** is the fifth largest business group in Korea. It's businesses in China, Indonesia and Vietnam includes retailers, food processing, construction and tourism. There are 4 LOTTE Marts in central HCMC and they aim to establish 60 LOTTE Marts in all regions in Vietnam by 2020. Beef consumers were interviewed at LOTTE Mart in the south of Saigon in a newly developed luxury residential area of HCMC.

2.3.3 Phnom Penh

Lucky Super Market is the largest supermarket chain in Phnom Penh. It was established in 1993 when the country started to open the free market after a general election supported by the United Nations. The Lucky Super Market has expanded their business by setting up 5 different branches in 3 locations in Phnom Penh. Interviews were conducted at three branches located in the centre of the city and 2 located in the east. The branches are located in the most populous and major tourism districts in Phnom Penh.

The traditional markets in Cambodia are where most local people buy food and meat in the

morning. The markets are most active in the morning when produce is still fresh. In Phnom Penh, there are 6 main open markets and many smaller niche markets. The project interviewed consumers at 5 open markets: Central market, Ouresey market, Toul Tompong market, Phsar Kand market and Phsar Doem Kor market.

2.4 Survey sampling intensity results

The project interviewed 1024 beef consumers. There were 711 consumers interviewed in HCMC, and 313 consumers in PP (Table 1).

Table 1: Number of survey participants in HCMC and PP

	Ho Chi Minh City		Phnom Penh		Total	
	Count	%	Count	%	Count	%
Supermarket	272	38	110	35	382	37
Open Market	439	62	203	65	642	63
Total	711	100	313	100	1024	100

37% of the respondents were interviewed at supermarkets and 63% at open markets. The number of respondents at each location within the respective cities is presented in Tables 2 and 3.

Table 2: Number of interviews conducted in Phnom Penh

Supermarket		respondents
1	Lucky City Mall	27
2	Lucky Sorya	27
3	Lucky Sovanna	29
4	Lucky Peth Chine	25
5	Thai Hout	3
Traditional Markets		
1	Phsar Doeun Kor	50
2	Phsar Ou Ressey	50
3	Phsar Toul Tom Pong	25
4	Central Market	50
5	Phsar Kandal	28

Table 3: Number of interviews conducted in HCMC

Supermarket		District	Respondents
1	Metro An Phú	District 2	36
2	Metro Binh Phú	District 6	32
3	Metro Hiệp Phú	District 12	28
4	Coopmart Nguyen Dinh Chieu	District 3	27
5	Coopmart Dam Sen	District 10	25
6	Big C Binh Tân	Binh Tan District	30
7	Big C Phu nhuan	Phu Nhuan District	30
8	Maximax Q10	District 10	31
9	Maximax Cong Hoa	Tan Binh District	27
10	LOTTE Mart Nam Sài Gòn	District 7	6
Open markets			
1	Bà Chiểu	Binh Thanh District	23
2	Tân Định	District 1	23
3	Phạm Văn Hai	Tan Binh District	44
4	Tân Sơn Nhất	Go Vap District	26
5	Hoà Hưng	District 10	18
6	Tân Bình	Tan Binh District	39
7	Bàn Cờ	District 3	37
8	Vườn Chuối	District 3	29
9	Nguyễn Tri Phương	District 10	35
10	Nhật Tảo	District 10	36
11	Xóm Chiếu	District 4	30
12	Cầu Ông Lãnh	District 1	14
13	Hoà Bình	District 5	32
14	An Đông	District 5	22
15	Văn Thánh	Binh Thanh District	31

Based on the survey numbers, the data represents an indicative sample of the beef consumer population in HCMC and PP

2.5 Data processing and analysis

Every questionnaire includes the name of the interviewer and a written code number. Data was analysed using SPSS software. Every variable was given a unique label on the

questionnaire and the same label in the SPSS data file. Data was verified by calculating maximum, minimum, average, and accounting for outlier values. Outliers were rechecked in the questionnaires and corrected or double checked with the interviewer if necessary.

The group of interviewers was accompanied by the market analysis team (Nam Hoang and Sok Muniroth) on the first day to gain firsthand experience of the issues faced. The project market study team met with the interviewers each day to receive their completed questionnaires, discuss and resolve issues regarding the use of the questionnaire. The market study team produced a draft data processing report after which preliminary data analysis was prepared by the market team and the result is discussed with other project members.

3. Survey results

3.1 Customer characteristics

3.1.1 Age

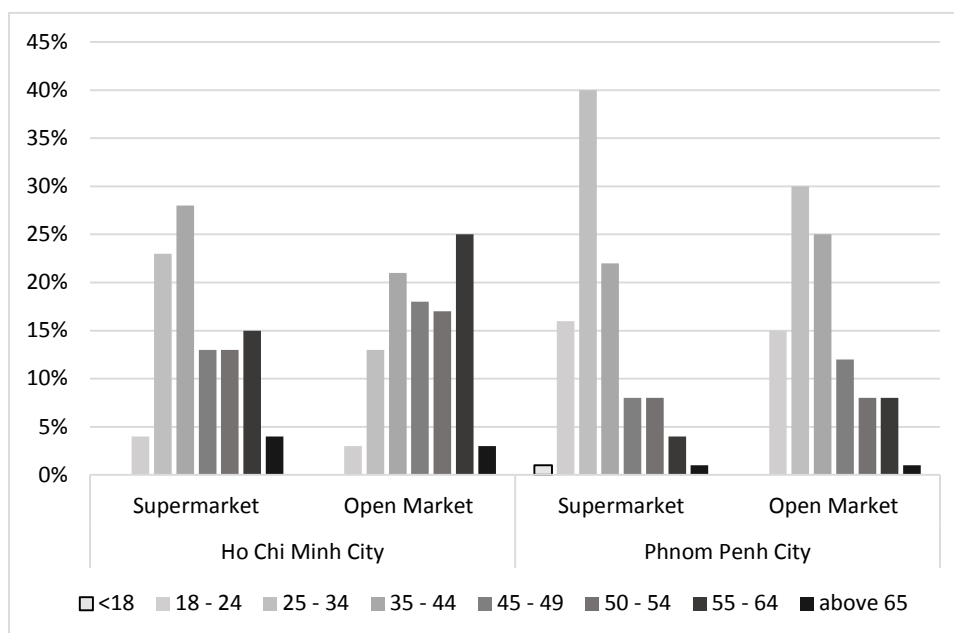
Most consumers in HCMC were aged between 18 and 64 with an average of 45, while in PP the average was 37 (Table 4).

Table 4: Summary statistics ages of consumers

	Mean	N	Std. Deviation
Ho Chi Minh City	45	711	11.595
Phnom Penh City	37	313	11.522
Total	43	1024	12.247

In HCMC, the distribution was more even across age groups from 25 to 64 while in the PP the largest percentage of respondents were in the age group 25 to 34 and smaller representations from older age groups.

Figure 1: Relative frequency of ages of consumers



In Phnom Penh supermarket shoppers were generally younger than those in HCMC. In HCMC open market shoppers were slightly older than supermarket shoppers. In HCMC the age of respondents was mostly between 25-64 and so are mature and experienced people with sufficient knowledge so that their answers related to consuming behaviours and decisions on the market may be more reliable.

3.1.2 Marital status and gender

Most of the respondents were married with 629 (89%) among the HCMC consumer group and 220 (70%) of the PP consumer group married (Table 5). As with age there was little difference between supermarket and open market respondents. Married people are expected to be more concerned about food choice for their families, and therefore to have more information on beef price and its quality.

Table 5: Marriage status of respondents - %

	Ho Chi Minh City		Phnom Penh	
	supermarket	traditional	supermarket	Traditional
Unmarried	12	11	39	25
Married	88	89	61	75

The majority of respondents were women in HCMC, with men better represented in PP (Table 6). As with marital status the difference is similar in both supermarkets and traditional markets and represents a difference in the sampled population between the two cities.

Table 6: Gender of respondents - %

	Ho Chi Minh City		Phnom Penh	
	supermarket	traditional	supermarket	traditional
Male	6	3	25	20
Female	94	94	75	80

In Vietnam and Cambodia, married women decide what food to buy so it is not a surprise that most of beef customers in both cities are mature women. The fact that most of the respondents are married people would make us believe that the answers to the questionnaire are made by those who are responsible for food and meals of other members in their families. Those married women should be also a target group of any advertising campaign for a new meat product. This would be useful information for the project in the process of making policies to encourage a certified beef product from Cambodia in HCMC markets.

3.1.3 Education

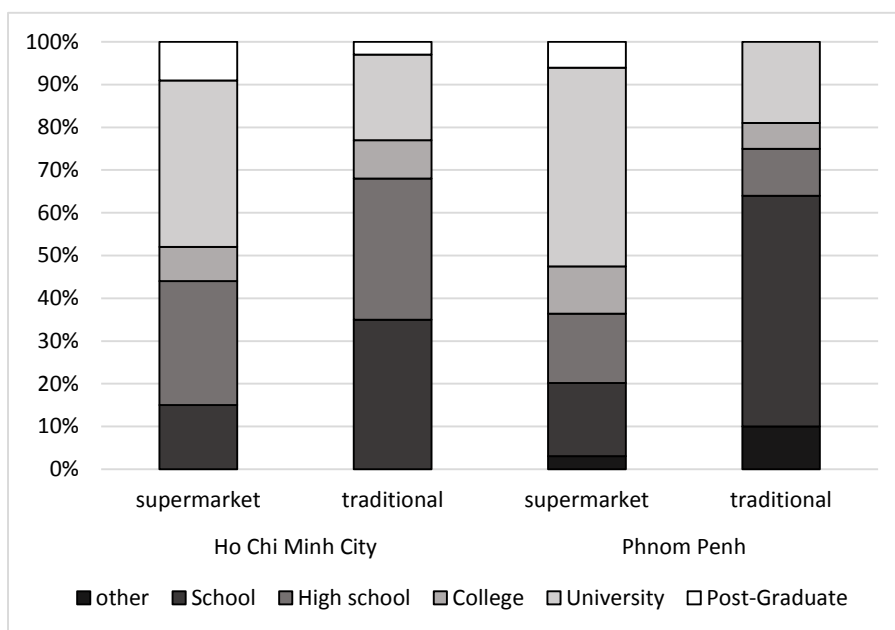
Education level is factor that may affect consumer behaviour. People with higher education would be expected to have a better understanding of the importance of food safety and animal biosecurity. They may be more aware of news concerning food safety and beef disease issues and adjust their shopping habits depending on their own evaluations of available meat products.

In HCMC, more than 80% of respondents from supermarkets had completed high school or higher, compared to only 65% of respondents in the open market. The education level in PP was similar in supermarkets but lower in traditional markets. Approximately 80% of respondents in supermarkets in PP had finished high school or higher while at traditional

markets more than 30% had finished high school or higher.

People in HCMC with high school or higher education tend to read newspapers. They can gain knowledge on food safety or be aware of food scare events through newspapers and TV. Such events may affect their shopping behaviours. If the project encourages introducing a certified or traceable beef from Cambodia, advertising will play a crucial role in getting people in the city to know about the new product.

Figure 2: Education level of respondents



People who choose to shop at supermarkets have a higher education level compared with those who shop at open markets. This is true in both cities although the gap is bigger in Phnom Penh. Higher education levels would be expected to correlate with higher income which would allow people to choose to shop at supermarkets, where prices are generally higher.

3.1.4 Employment status

This was a multiple choice question of the categories summarised in Table 7.

The main points to note and differences between the cities were:

- The great majority of respondents are either self-employed, full-time employed or undertake household work.
- Only 0.8% of people interviewed in HCMC and 6.0% in Phnom Penh are not working or unemployed.
- Only 2.1% of consumers are students in HCMC compared to 10.9% in Phnom Penh.

Table 7: Employment status – number of responses (multiple answers are possible)

	Ho Chi Minh City	Phnom Penh
Unemployed	5	13
Not seeking work	1	5
Student (studying)	15	34
Retire	64	5
Household work	261	48
Self-business	219	127
Working part-time	19	27
Working full-time	212	81

Employment may also be a factor which has a large impact on the consumers consumption of beef. In Vietnam and Cambodia, where the government welfare support is low, people need to work to support themselves and their family. It is clear that only those who are employed/self-employed with good salary/income can afford to buy beef regularly for their families. Beef is considered a more expensive product so that the potential consumers of a new branded beef would probably be households with higher than averages.

3.1.5 Monthly income

Income is one of the most important factors that will influence consumers' shopping habits for beef and especially for premium products. Based on the relationship between higher income and higher education levels it would be expected that individuals and families with higher income would be better educated, more aware of health and safety issues and be more willing to pay for premium beef products. The average monthly income of households and individuals is summarized in the Table 8.

Table 8: Household and individual income (US\$/month)

	Household average income	Individual average income
Ho Chi Minh City	1,001	421
Phnom Penh	628	403

Household monthly average incomes in HCMC and PP are US\$1,000 and US\$628 respective. There is a big gap between the family monthly average incomes of the two cities but this gap is much narrower for individual monthly average incomes, which are US\$421 and US\$403. The standard deviations are also large which means the inequality in income distribution is significant in both cities.

Figure 3 shows the household incomes in HCMC are higher than those in PP. Most households have incomes US\$500- US\$700 but many get more than US\$2,000 and less than US\$300 per month. The income data histogram for PP looks more like a bell shape with a smaller variation. By the first look, we can guess that the income inequality is less of a problem in PP than in HCMC.

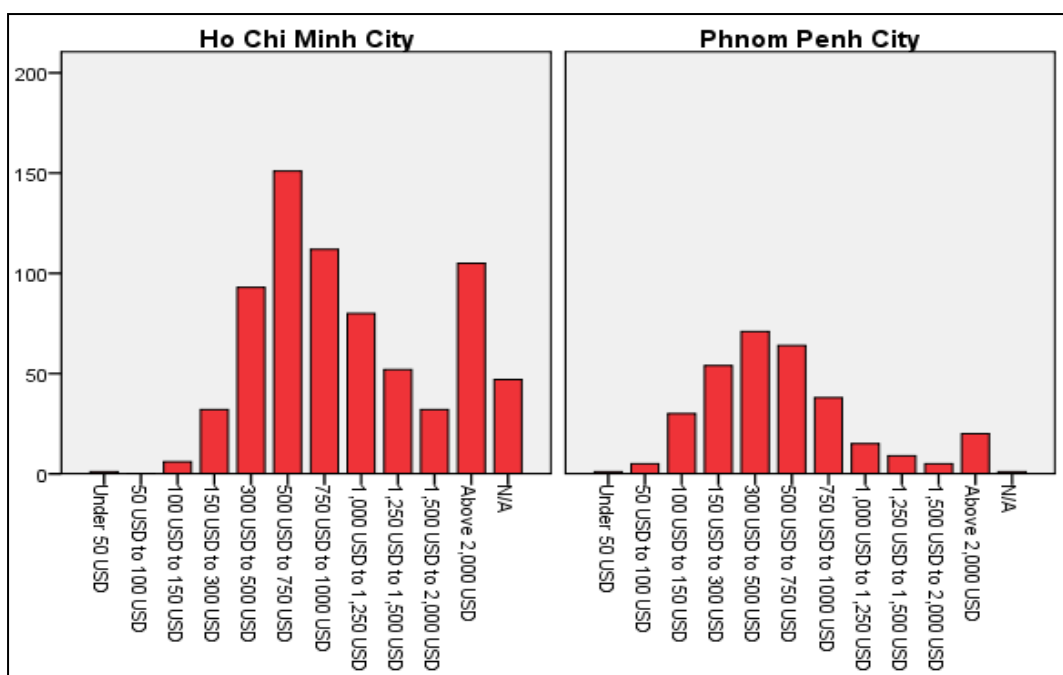


Figure 3: Distribution of average monthly household income.

Table 9: Household average monthly income distribution at supermarkets and traditional markets (US\$)

	Ho Chi Minh City		Phnom Penh City	
	Super Market	Open Market	Super Market	Open Market
	%	%	%	%
Under 50	0	0	0	0
50 to 100	0	0	0	2
100 to 150	0	1	0	15
150 to 300	3	5	5	24
300 to 500	12	14	15	27
500 to 750	20	22	25	18
750 to 1000	14	17	18	9
1,000 to 1,250	12	10	9	2
1,250 to 1,500	11	5	7	0
1,500 to 2,000	5	4	5	0
Above 2,000	18	13	15	2
N/A	3	9	1	0

	Ho Chi Minh City		Phnom Penh City	
	Super Market	Open Market	Super Market	Open Market
	%	%	%	%
Under 50	0	0	0	0
50 to 100	0	0	0	2
100 to 150	0	1	0	15
150 to 300	3	5	5	24
300 to 500	12	14	15	27
500 to 750	20	22	25	18
750 to 1000	14	17	18	9
1,000 to 1,250	12	10	9	2
1,250 to 1,500	11	5	7	0
1,500 to 2,000	5	4	5	0
Above 2,000	18	13	15	2
N/A	3	9	1	0
Total	100%	100%	100%	100%

Household income distribution for supermarket respondents in HCMC was almost the same as traditional markets respondents although there was a higher proportion of high incomes above US\$2000. The difference between supermarket and traditional markets was much greater in PP where 15% of respondents had incomes above US\$2000 compared to only 2% at traditional markets. In HCMC supermarket customers pay higher prices for the same products although the income distribution is not very different to that of respondents from traditional markets.

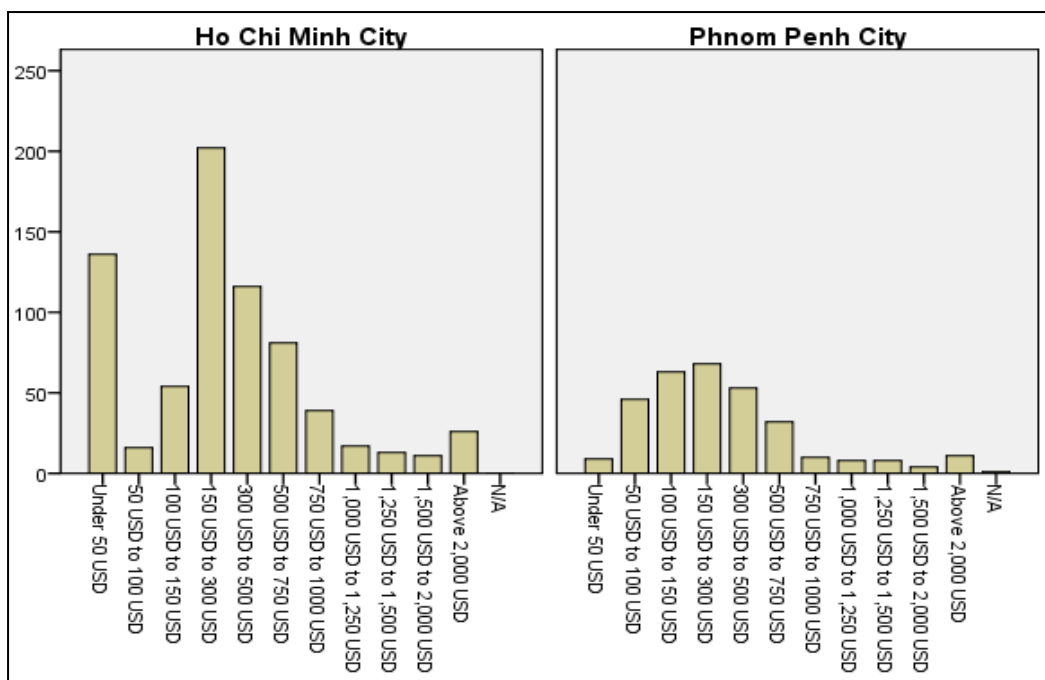


Figure 4: Distribution of individual monthly average income

Similar to employment, income is a crucial factor that affects the food choice of families. Beef is much more expensive than pork, which is a more popular meat in the region. One kg of domestic beef is currently (March-2013) priced from \$12-\$15 compare with 1 kg of good quality pork meat at around \$5. As salary for a low skilled worker in HCMC is around \$200 per month beef is not affordable for many households in HCMC and Phnom Penh. We could expect that a family of four people with average income higher than \$500 per month could consume beef on weekly basic if they want.

Similar to the family incomes, the individual incomes in HCMC also vary. Many respondents indicated individual incomes less than US\$50, probably reflecting the role of respondents who were engaged in household work rather than income generation. The variation in incomes of respondents indicates the sample is representative of a wide cross section of the community giving confidence in the data quality and results. Using econometric methods, we could estimate the impact on the possibility to buy beef more than one time a week if a family income increases US\$100 a month. This information will be useful to target the

potential buyers for a new certified beef products.

Table 10: Individual average monthly income (\$US)

	Ho Chi Minh City		Phnom Penh City	
	Super Market	Open Market	Super Market	Open Market
	%	%	%	%
Under 50	19	19	1	4
50 to 100	3	2	5	20
100 to 150	7	8	15	23
150 to 300	23	32	18	24
300 to 500	18	15	17	17
500 to 750	11	12	19	5
750 to 1,000	8	4	5	2
1,000 to 1,250	2	3	2	3
1,250 to 1,500	2	2	6	0
1,500 to 2,000	1	2	4	0
Above 2,000	6	3	7	1
N/A	0	0	1	0
Total	100	100	100	100

3.2 Current general demand for beef

We estimated the current demand for beef in HCMC and PP with the question: “How often do you buy/eat beef?” The results are follow.

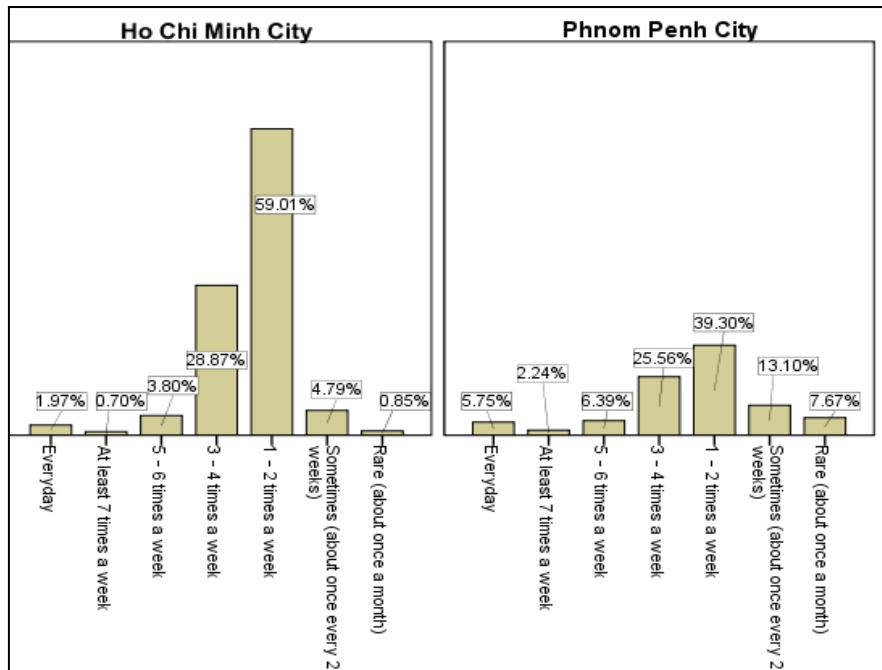


Figure 5: Current demand for beef

The demand for beef in both cities is a bell shape distribution with the peak of the bell at the consumption pattern of 1 or 2 times each week (Figure 5).

The demand distribution for HCMC is much narrower than that of Phnom Penh. About 90% of HCMC respondents buy beef 1-4 times a week, compared to 65% of PP respondents. However, the percentage of respondents who buy beef more than 4 times a week in PP is higher than that of HCMC, 14% in PP compare with 6% in HCMC. The demand for beef in HCMC seems more consistent than the demand for beef in Phnom Penh.

Using the consumer survey data, we could learn the determinants of beef consumption based on consumers' characteristics and other factors. These determinants would be used in the estimation of the demand for beef in near future in HCMC and PP.

The demand for beef in HCMC and PP will be presented in a separate report.

3.3 Perceptions of food quality

3.3.1 The product origin

Figure 6 may give a more direct picture of the consumers' interest in the origin of the product.

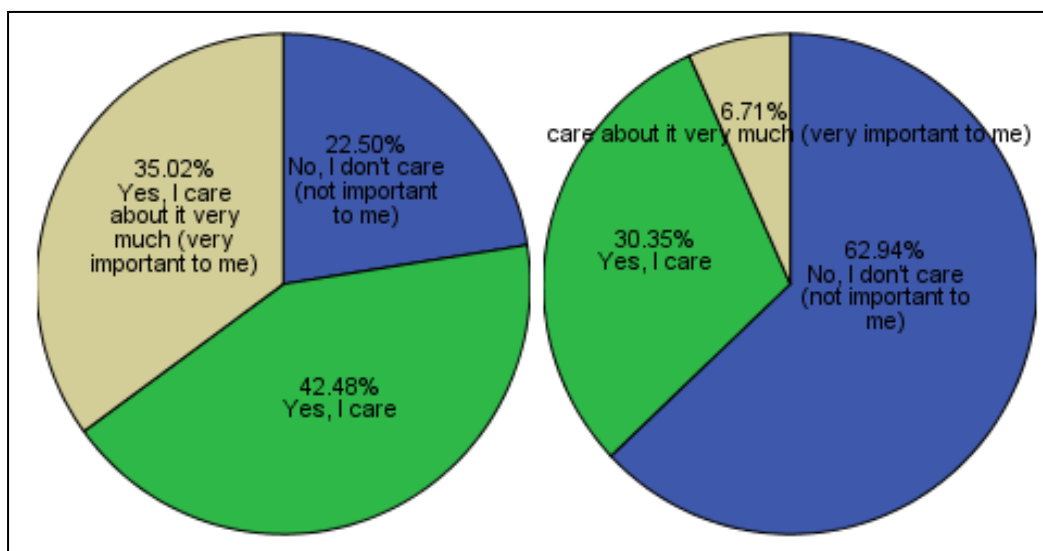


Figure 6: Response to the question "Do you care about beef origin that you are buying?" (HCMC left, PP right)

This figure shows that most HCMC respondents (about 80%) care about the origin of the beef they are buying compared to only 37% of PP respondents. This is confirmed further in the question 6: "Beef origin that you usually buy (can choose more than one answer)" (Table 11).

Table 11: Origin of beef that consumers usually buy (% of respondents)

	Ho Chi Minh City	Phnom Penh
Domestic	83	88
Imported - Australia, US, Japan	25	11
Known company/slaughter house	13	3
Don't know about the beef origin	10	13

Beef in Vietnam and Cambodia is from different domestic and international supply sources including Australia, USA, Japan, India, Vietnam, Cambodia. However, customers only distinguish imported beef from Australia, USA and Japan. All other beef is considered to be domestic. Therefore, imported beef was defined as from Australia, USA or Japan.

Domestic beef is by far the most popular choice of respondents. The question “Beef from a known company/slaughter house” was expected to be more than the 10% of respondents. This indicates that there may not be enough certified or traceable beef available so that consumers do not know about its existence in HCMC. Most people who choose to buy domestic beef in both cities do not know from which slaughter house/company the beef comes from.

If a new certified beef is introduced from Cambodia, it would be considered as domestic beef by local people. Suppliers of this certified beef will need to identify strategies to attract beef consumers which must include price competitiveness with the current domestic beef price.

3.3.2 Outlet type where beef is purchased

The outlet type where beef is purchased is also an important factor affecting beef quality. In response to the question “Places where you usually buy beef (can choose more than one answer)”, the results are shown in Table 12.

Table 12: Places where consumers usually buy beef (% of respondents)

	Ho Chi Minh City	Phnom Penh
	%	%
Supermarkets	60	36
Convenient stores	17	37
Shops with frozen/cooling facilities	3	12
Open stores with known company names	41	3
Any meat stores	41	34
Street markets	1	36

This is also a multiple choice question. Places with meat preservation systems such as “supermarkets” and “open stores with known company names” are common choices. However, the options “any meat stores” and “street market” where there are no established meat preserved facilities are still chosen by many beef consumers.

The results from the question “The reasons you choose to buy beef at these places” are presented as below:

Table 13: The reasons for choosing to buy beef at these places (Likert scale: 1 strongly disagree → 7 strongly agree)

	Ho Chi Minh City		Phnom Penh	
	Mean	Std. Dev.	Mean	Std. Dev.
Believe in quality	6.24	1.17	5.30	1.76
Cheap price	2.91	1.85	3.00	1.98
Many consumers choose this place	4.54	2.25	3.56	1.89
Friends with the seller	4.70	2.47	1.98	1.89
Recommended by friends/relatives	2.83	2.17	1.95	1.68
Advertising on TV, newspapers,etc	2.05	1.62	1.44	1.09
Good service by the sellers	5.53	1.72	5.00	2.09

In both cities “Believe in quality” and “Good services by the sellers” are the most important factors. For these responses HCMC respondents were more consistent (smaller deviation) compared to PP respondents. The relationship with the seller and popularity with other consumers were also important in HCMC. Price was relatively unimportant (especially in HCMC) which is favourable for the introduction of a premium product.

For this question, we employ the factor analysis technique to create variables which proxy for the factors that affect the costumers’ decisions on location choices for beef purchase. From the factor analysis for the answers of this question, one reason consumers choose to buy beef at these places is "*friend with the seller*". Other reasons consumers choose to buy

beef at these places include "recommended by friends/relatives" and "good services by the sellers" for PPC consumers, "many consumers choose this place" for HCMC consumers.

3.3.3 Knowledge on beef brand names and meat quality standards

Knowing or understanding of beef brand names and meat quality standards is another indicator that a customer cares about the beef quality they are buying (Table 14).

Table 14: Knowledge on beef brand names and meat quality standards

		HCMC	PP
		%	%
Beef brand names that you know?	Don't know any	23	85
	Know at least one	77	15
Meat quality standards that you know?	Don't know any	53	93
	Know at least one	47	7

There was a difference between the cities in response to questions about standards and brand names. To the question "Beef brand names that you have ever heard or known", 77% of HCMC respondents mentioned that they "know at least one beef brand name", compared to only 15% of PP respondents. A great majority of consumers in HCMC had concern for the origin and beef quality that they are consuming. This would make HCMC a good target for introducing a certified or traceable beef product from Cambodia. Consumers in HCMC would benefit from a biosecurity certified beef from Cambodia, as they do not have to pay a much higher price for imported beef, which has the same biosecurity assurance. As we will see in the following results, they are willing to pay an extra amount for a certified beef from Cambodia and this would increase the value of imported cows from Cambodia to Vietnam.

Table 14 shows that PP respondents have little concern on meat standards while about 50% HCMC respondents knew or had heard of at least one meat quality standard.

3.3.4 Consumers' perceptions about beef quality

To understand the criteria that customers use to evaluate beef quality, the following question is included in the questionnaire: "According to you, the beef quality depends on", the list of most likely answers is also included using the typical seven-point Likert scale where 7 is strongly agree and 1 is strongly disagree, there is also a space for open answers (Table 15)

Table 15: Factors affecting beef quality

Descriptive	Ho Chi Minh City		Phnom Penh	
	Mean	Std. Dev	Mean	Std. Dev
Cow breed	5.98	2.37	3.93	2.21
Land condition and climate	5.90	1.06	2.82	1.86
Cowshed condition	5.97	1.08	2.90	2.03
Forage	6.36	0.91	4.85	2.22
Animal health care	6.48	0.85	5.34	1.84
Slaughter house hygiene	6.46	0.82	5.18	1.69
Meat store hygiene	6.48	0.75	5.56	1.44
Fresh meat (non-frozen)	6.36	1.12	5.92	1.31
Time from processing to meat consumption	6.36	1.04	3.71	2.03
Cooking/marinade methods	5.57	1.61	4.37	2.36

From the results, respondents give high scores for the factors on animal health care, slaughterhouse hygiene, meat store hygiene and fresh meat (non-frozen). Again, the answers by HCMC respondents rate these factors higher and more consistently than PP respondents. Similar to the previous question, factor analysis technique was employed to create the variables which proxy for consumers' perception on beef quality. From the factor analysis, we get: According to the consumers' perceptions, the beef quality depends on the following main factors: "*cow breed*", "*land & climate condition*" and "*cowshed condition*". In

addition, other factors are "Forage" and "Animal health care" for PPC consumers, "Fresh meat (non-frozen)" and "Time from cow processes to meat consuming" for HCMC consumers (see appendix).

3.4 Impacts of food scare incidents

3.4.1 Food safety (beef)

Respondents attitudes and responses to cattle disease outbreaks may well influence their beef purchase consumption decisions. How they choose to respond to knowledge of outbreaks (e.g. FMD and mad cow disease) is provided in Table 16.

Table 16: Customer response to food safety incidents

	HCMC	PP
	%	%
stop eating beef	45	64
buy less beef than the normal amount	37	25
buy beef as nothing happens	17	8
buy more beef because of the cheaper price	0	1
try to understand more about the cow disease so that I could adjust the beef consumption correctly	61	21
only buy beef when I could make sure the beef is from non-disease cows	76	15

Sum of the percentage is not necessary equal to 100% as the consumers could choose more than one option. Most of HCMC respondents chose "I only buy/eat beef when I could make sure the beef is from non-disease cows" and "I will try to understand more about the cow disease so that I could adjust the beef consumption correctly". Most of PP respondents chose the option: "I will stop eating beef". This shows the reaction to beef safety issues of HCMC beef consumers is more positive than the reaction of Phnom Penh consumers.

3.4.2 Other meat safety issues

Pork and poultry are more popular than beef in Vietnam and Cambodia. We need to understand the impacts of food safety incidents of other meat (super lean pork, H5N1, swine flu, etc) on beef consumption and to know if beef is a replacement meat or a supplementary meat for pork and poultry. Table 17 provides information on the respondents reactions to other meat safety issues.

Table 17: Customers response to other meat safety issues

	Ho Chi Minh City	Phnom Penh
	%	%
Replacing all pork/chicken by beef	4	69
Increasing beef consumption	51	13
Keeping the normal beef consumption	45	33
Decreasing beef consumption	1	10

From the results, there are issues that need to further study; For PP consumers, beef is a replacement for other kinds of meat while for HCMC consumers, beef is a supplementary product as it does not replace pork/chicken by beef, although they said they would increase beef consumption.

3.5 Perceptions of imported beef versus domestic beef

As noted previously, consumers in the two cities mostly buy domestic beef (83% in HCMC and 88% PP). For food safety, they consider buying imported beef as one possible solution. Having said that, as Figure 7 indicates, only 16% of PP respondents have ever bought imported beef while 55% of respondents have purchased imported beef in HCMC. As imported beef is defined as beef imported from USA, Australia or Japan, the beef stores in HCMC do not discriminate between domestic beef and beef imported from Cambodia,

Thailand, Laos, Myanmar or even India.

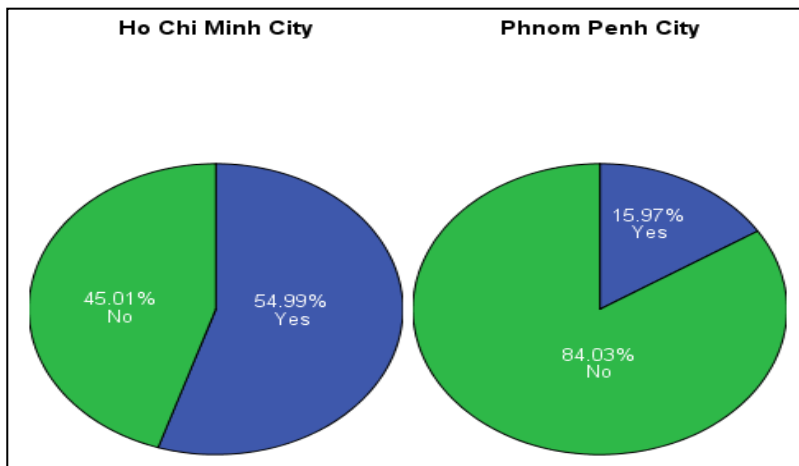


Figure 7: Proportion of respondents who have purchased imported beef

Determinants of choosing imported beef are shown at Table 18. The answer for this question is a typical seven-point Likert scale (with 1 - Strongly disagree to 7 - Strongly agree). Consumers generally agreed with all the reasons for buying imported beef. Consumers in HCMC strongly agreed that imported beef has better taste and nutrition, but didn't agree as strongly that imported beef was of better quality or safety. The differences between cities is not great compared to the variation in responses.

Similar to typical seven-point Likert scale, the factor analysis technique was employed to create the representative variables for the factors that affect the consumers' choice of imported beef.

Table 18: Reasons customers buy imported beef

	Ho Chi Minh City		Phnom Penh	
	Mean	Std. Dev	Mean	Std. Dev
Better taste	5.88	1.51	3.92	1.97
More nutrition	4.83	1.81	4.08	1.74
Believe in quality	5.21	1.66	5.72	1.33
Good packing and preserving	5.64	1.47	5.94	1.36
Believe in food safety regulations	5.60	1.45	5.20	1.29
Trying a different taste	5.60	1.44	4.56	2.01
Easier to cook/making good dishes	5.70	1.50	3.84	1.93

From the factor analysis, the main reason customers buy imported beef is "*more nutrition*". In addition, other reasons are "*better taste*" for PP consumers, "*believe in quality*" for HCMC consumers.

Determinants of non-choosing imported beef were also rated (Table 19).

Table 19: Reasons customers do not buy imported beef

	Ho Chi Minh City Mean	Phnom Penh Mean
Too expensive	5.02	4.56
Imported beef is frozen (not fresh)	4.90	4.86
Time from processing to consuming is too long	5.09	4.09
Not sure about quality	4.62	3.14
Could not discriminate between domestic and imported beef	4.12	3.43
Don't like the taste	3.90	2.93
Like to buy domestic products	5.80	5.73
Inconvenient location of stores/ markets	3.91	3.51
Domestic beef quality is the same as imported beef quality	5.51	3.56

Price, time from processing to consuming and support for domestic product are the main reason consumers do not buy imported beef.

From factor analysis, reasons customers do not buy imported beef are "*imported beef is frozen (not fresh)*" and "*Time from processing to consuming is too long*". In addition, other reasons are "*too expensive*" and "*don't like the taste*" for PPC consumers, "*could not discriminate between domestic and imported beef*" for HCMC consumers (see appendix).

3.6 Willingness to pay for imported beef versus domestic beef

The project investigated the percentage of customers who were buying imported beef and the highest price they were willing to pay.

Imported beef was defined as beef imported from USA, Australia or Japan. The relative price customers are willing to pay for imported beef compared to the price of domestic beef are shown in Figure 8.

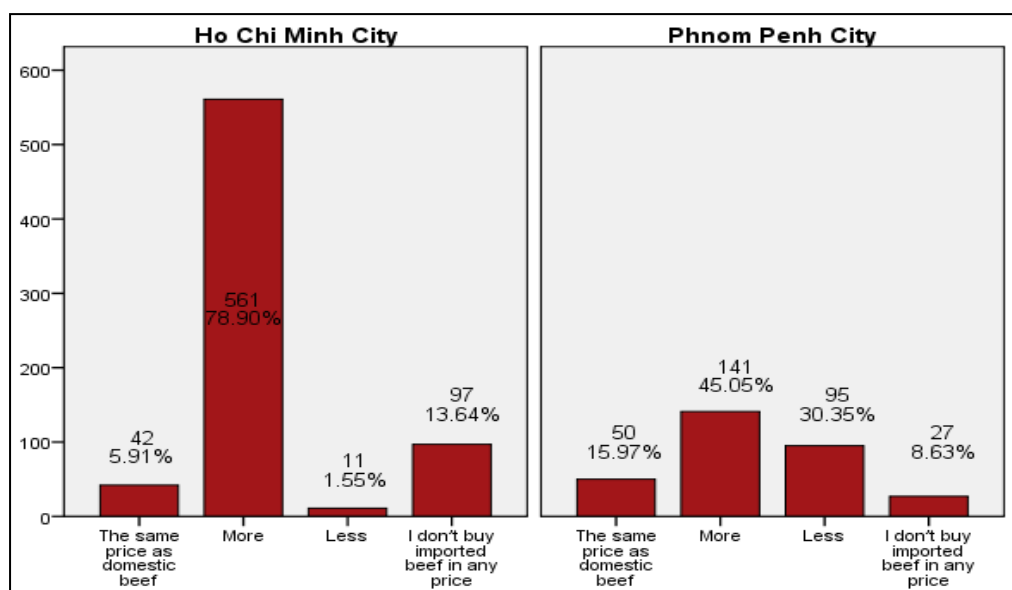


Figure 8: Customer's willingness to pay for imported beef

79% of HCMC respondents are willing to pay a higher price for imported beef compare to the price they pay for domestic beef. They were prepared to pay on average a 42% higher price. The imported beef price is currently very high (about 100% higher than the price of domestic beef). High price is the main reason imported beef is not popular. (See Figure 9 and Table 20).

Table 20: The maximum % increase in price customers are willing to pay for imported beef

	Mean	Median	Std. Deviation
Ho Chi Minh City	42.2	36.0	36.14
Phnom Penh	5.5	0.0	22.09

Figure 9 shows the maximum price customers are willing to pay more for imported beef (percentage extra compared to the price of domestic beef).

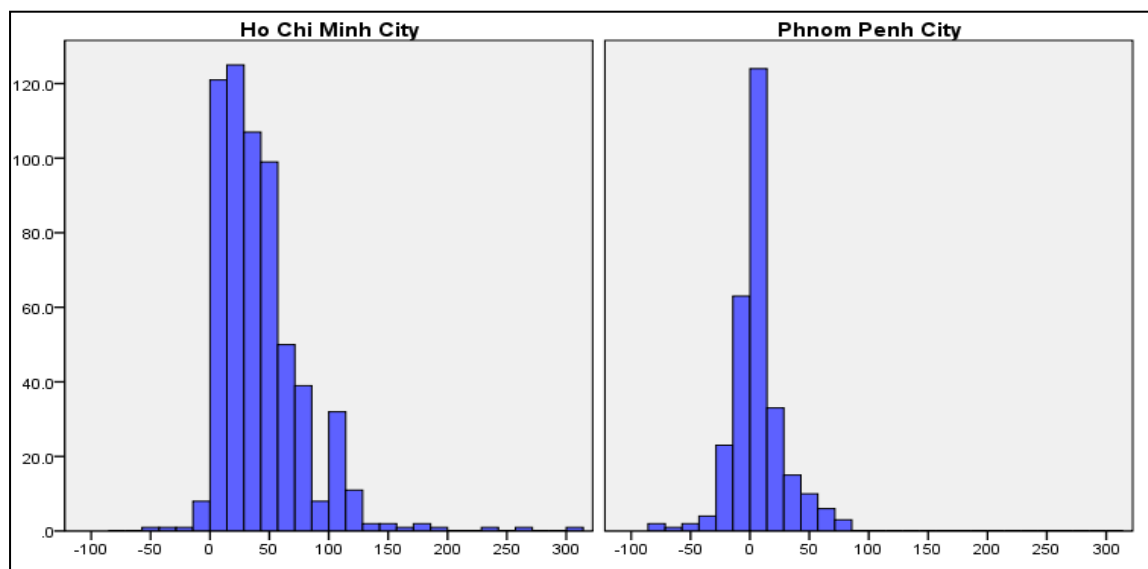


Figure 9: The maximum price customers are willing to pay for imported beef (percentage compared to price of domestic beef)

From this question, we also see that on average, PP respondents are not willing to pay anything extra for imported beef. Approximately one third of the PP respondents were only willing to pay less for imported while a half were willing to pay more.

3.7 WTP For quality certified beef versus domestic beef

The definition of ‘Quality Certified Beef’ used in the questionnaire: “There will be a project sponsored by Australia government to support small stakeholders/farmers and beef consumers in Cambodia and Vietnam. Beef from the project is considered domestic beef and it would be assured on bio-security, disease-free, traceable origin, good feeding, hygiene in processing and preserving. We will call this beef ‘Quality Certified Beef’”.

Some of the most important questions in the survey are those concerned with the possibility of introduced ‘Quality Certified Beef’ (QCB). The project investigated the customer’s reactions to the introduction of QCB. There results from these questions are presented in Figure 10, Figure 11 and Table 21:

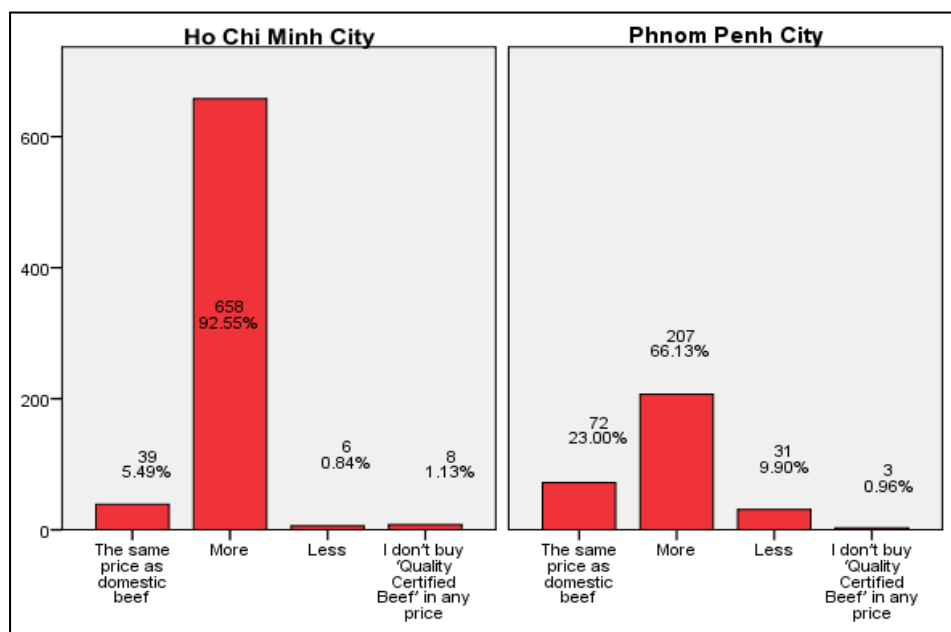


Figure 10: Customer’s willingness to pay for QCB

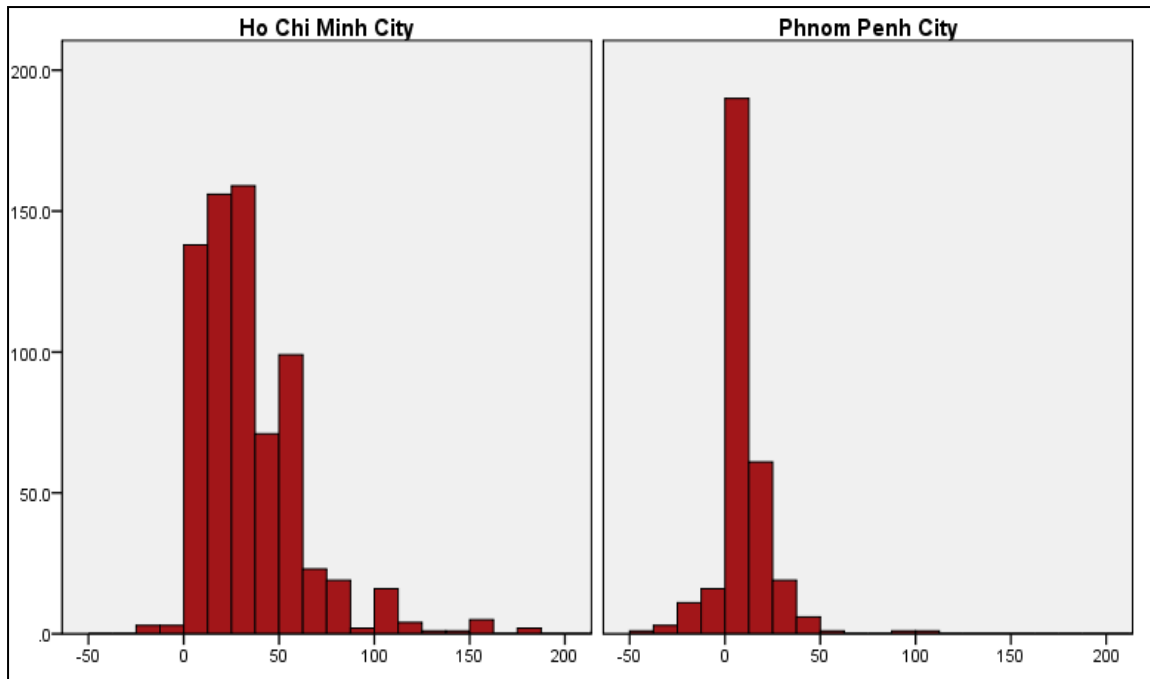


Figure 11: Maximum price customers were willing to pay for QCB (% compared to price of domestic beef)

Table 21: Maximum price customers were willing to pay more for QCB (% of domestic beef price)

	Mean	Median	Std. Deviation
Ho Chi Minh City	34.9	28	29.78
Phnom Penh	8.5	8	14.37

Although “Quality Certified Beef” is not currently available, the survey indicates that:

- 93% of HCMC respondents are willing to pay more for “Quality Certified Beef” compared to domestic beef. The average price is 35% higher compared to that of domestic beef (lower than the price they pay for imported beef). Most of the HCMC respondents would pay 28% higher than the current price of domestic beef.

- In Phnom Penh, 66% interviewed customers are willing to pay more for “Quality Certified Beef”, only 10% said that they would pay less for QCB. The price was 8% higher on average compared to the price of domestic beef they are buying (higher than the price they pay for imported beef).

Some simple tests were conducted (see Appendix 4) with following preliminary results:

- A test confirmed the significant difference between consumers in HCMC and PP on prices they were willing to pay for QCB compared to domestic beef.
- In Ho Chi Minh City, 92% of interviewed costumers are willing to pay more for ‘Quality Certified Beef’. They are expected to pay 33% to 37% higher than the price they are currently paying for domestic beef (on average).
- In Phnom Penh, 66% of interviewed costumers are willing to pay more for QCB. They are expected to pay 7% to 10% higher than the price they are currently paying for domestic beef (on average)
- WTP for QCB and WTP for ‘Imported Beef’ are correlated (coefficient = 0.687). It implies that the factors that affect import beef consumption could be used to predict the QCB consumption.

4. Conclusion

The market study team in the project conducted a consumer survey for beef in Ho Chi Minh City and Phnom Penh in January and March 2013. Both supermarkets and open markets in the two cities were surveyed.

Imported beef tends to be purchased by a small group of high-income families who care about their health and the quality of beef. All beef except beef imported from USA, Japan, and Australia is considered as domestic beef.

The main group of the survey respondents who were buying beef were mature married women.

Most people who shop for domestic beef in both supermarkets and open markets don't know about the origin of the beef they are buying. Biosecurity and quality is not guaranteed for domestic beef.

Consumers who choose domestic beef really want assurances on its quality and biosecurity and they are willing to pay higher price for such beef if it is available.

If Cambodian quality certified beef were introduced it could gain a good market share in HCMC and Phnom Penh.

	agree						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Cow breed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Land condition and climate ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Cowshed condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Forage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Animal health care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Slaughter house hygiene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Meat store hygiene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Fresh meat (non-frozen)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Time from cow processing to meat consuming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Cooking/marinade methods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. When hearing/knowing about beef safety issues (FMD, madcow disease, ...), your behavior is (can choose more than one answer)::

- I will stop eating beef
- I will consume/buy less beef than the normal amount
- I will buy beef as nothing happens
- I will consume/buy more beef because of the cheaper price
- I will try to understand more about the cow disease so that I could adjust the beef consumption correctly
- I only buy/eat beef when I could make sure the beef is from non-disease cows

14. When hearing/knowing about other meat safety issues (super lean pork, H5N1, swine flu, ...), your behavior is (can choose more than one answer):

- Replacing all pork/chicken by beef
- Increasing beef consumption
- Keeping the normal beef consumption
- Decreasing beef consumption

15. Have you ever bought imported beef? (imported from USA, Australia or Japan)

- Yes → (don't answer question 17)
- No → jump to question 17

16. Reasons you buy imported beef:

	Strongly don't agree strongly agree						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Better taste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. More nutrition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Believe in quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Good packing and preserving	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Believe in food safety regulations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Trying a different taste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Easier to cook/making good dishes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. Reasons you don't buy imported beef:

	Strongly don't agree strongly agree						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Too expensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Imported beef is frozen (not fresh)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Time from processing to consuming is too long	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Not sure about quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Could not discriminate between domestic and imported beef	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Don't like the taste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Like to buy domestic products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Inconvenient location of stores/supermarkets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Domestic beef quality is the same as imported beef quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. The price you are willing to pay for imported beef compare to the price of domestic beef that you are paying: (imported beef from USA, Australia or Japan)

- The same price as domestic beef
- More
- Less
- I don't buy imported beef in any price

If you choose More/Less, with the kind of beef you choose in question 7, please let us know:

- The price of domestic beef you are buying: _____
- The maximum price you are willing to pay for imported beef: _____ (or _____% compare to price of domestic beef)

19. There will be a project sponsored by Australia government to support small stakeholders/farmers and beef consumers in Cambodia. Beef from the project is a domestic beef and it would be assurance on bio-security, non-disease, traceable origin, good feeding, hygiene in processing and preserving. We can call this beef is '*Quality Certified Beef*'

The price you are willing to pay for the '*Quality Certified Beef*' compare to the price of domestic beef that you are paying:

- The same price as domestic beef
- More
- Less
- I don't buy '*Quality Certified Beef*' with any price

If you choose More/Less, with the kind of beef you choose in question 7, please let us know:

The maximum price you are willing to pay for the '*Quality Certified Beef*': _____ (or _____% compare to price of domestic beef)

Individual information:

20. Gender:

- Male
- Female

21. Age:

- under 18
- 18 - 24
- 25 - 34
- 45 - 49
- 50 - 54
- 55 - 64

- 35 - 44 above 65

22. Marriage status:

- Single
 Married

23. Number of people in your family (including yourself): _____ people?

24. Number of sons and daughters: _____, including:

- At least 1 child under 5 years old
 At least 1 child from 5 to 12 years old
 At least 1 person from 12 to 18 years old
 All children are above 18 years old
 No children

25. Highest education:

- Post-Graduate degree
 University degree
 College degree
 High school degree
 Under high school
 Other:

26. Employment status (can choose more than one answer):

- Unemployment – looking for job
 Don't work (not looking for job)
 Student (studying)
 Retire
 Household work
 Self-business
 Working part-time
 Working full-time
 Other:

27. Yours/your family average income

(Income means all salary, benefit, profit, subsidy,... **after tax**)

	yourself	your family
Under 1.000.000 VNĐ	<input type="checkbox"/>	<input type="checkbox"/>
1.000.001 to 2.000.000 VNĐ	<input type="checkbox"/>	<input type="checkbox"/>
2.000.001 to 3.000.000 VNĐ	<input type="checkbox"/>	<input type="checkbox"/>
3.000.001 to 6.000.000 VNĐ	<input type="checkbox"/>	<input type="checkbox"/>
6.000.001 to 10.000.000 VNĐ	<input type="checkbox"/>	<input type="checkbox"/>
10.000.001 to 15.000.000 VNĐ	<input type="checkbox"/>	<input type="checkbox"/>
15.000.001 to 20.000.000 VNĐ	<input type="checkbox"/>	<input type="checkbox"/>
20.000.001 to 25.000.000 VNĐ	<input type="checkbox"/>	<input type="checkbox"/>
25.000.001 to 30.000.000 VNĐ	<input type="checkbox"/>	<input type="checkbox"/>
30.000.001 to 35.000.000 VNĐ	<input type="checkbox"/>	<input type="checkbox"/>
35.000.001 to 40.000.000 VNĐ	<input type="checkbox"/>	<input type="checkbox"/>
Above 40.000.000 VNĐ	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>

Full name of the person who answers the questionnaire (optional):

Address (optional):

District

Tel: _____

Appendix 2: Hệ thống siêu thị tại Tp.HCM

HỆ THỐNG SIÊU THỊ CITIMART:

- **SIÊU THỊ CITIMART SKY GARDEN**
Địa chỉ: 20 LÊ THÁNH TÔN, P.BN, Q.1, TP. HCM
Điện thoại: (08)8228868
- **SIÊU THỊ CITIMART SOMERSET**
Địa chỉ: 21-23 NGUYỄN THỊ MINH KHAI (SOMERSET CHANCELLOR COURT), P.BN, Q.1, TP. HCM
Điện thoại: (08)8244818

HỆ THỐNG SIÊU THỊ COOPMART:

- **SIÊU THỊ CO-OP MART AN ĐÔNG**
Địa chỉ: 18 AN DƯƠNG VƯƠNG, P.9, Q.5, TP. HCM
Điện thoại: (08)8352612
- **SIÊU THỊ CO-OP MART BMC**
Địa chỉ: 787 LŨY BÁN BÍCH, P.PHÚ THỌ HÒA, Q.TP, TP. HCM
Điện thoại: (08)9736308
- **SIÊU THỊ CO-OP MART CỐNG QUỲNH**
Địa chỉ: 189C CỐNG QUỲNH, P.NCT, Q.1, TP. HCM
Điện thoại: (08)9250725
- **SIÊU THỊ CO-OP MART ĐÀM SEN**
Địa chỉ: 3 HÒA BÌNH, P.3, Q.11, TP. HCM
Điện thoại: (08)8589968
- **SIÊU THỊ CO-OP MART ĐÌNH TIÊN HOÀNG**
Địa chỉ: 127 ĐÌNH TIÊN HOÀNG, P.3, Q.BT, TP. HCM
Điện thoại: (08)5100091
- **SIÊU THỊ CO-OP MART HẬU GIANG**
Địa chỉ: 188 HẬU GIANG, P.6, Q.6, TP. HCM
Điện thoại: (08)9600913
- **SIÊU THỊ CO-OP MART LÝ THƯỜNG KIỆT**
Địa chỉ: 497 HÒA HẢO, P.7, Q.10, TP. HCM
Điện thoại: (08)9572856
- **SIÊU THỊ CO-OP MART NGUYỄN ĐÌNH CHIỂU**
Địa chỉ: 168 NGUYỄN ĐÌNH CHIỂU, P.6, Q.3, TP. HCM
Điện thoại: (08)9301384
- **SIÊU THỊ CO-OP MART NGUYỄN KIỂM**
Địa chỉ: 571 NGUYỄN KIỂM, P.9, Q.PN, TP. HCM
Điện thoại: (08)9972475
- **SIÊU THỊ CO-OP MART PHÚ LÂM**
Địa chỉ: 6 BÀ HÒM, P.13, Q.6, TP. HCM
Điện thoại: (08)7514798
- **SIÊU THỊ CO-OP MART PHÚ MỸ HƯNG**
Địa chỉ: KDC PHÚ GIA NGUYỄN VĂN LINH, P.TÂN PHONG, Q.7, TP. HCM
Điện thoại: (08)4120084
- **SIÊU THỊ CO-OP MART THẮNG LỢI**

Địa chỉ: 2 TRƯỜNG CHINH, P.TÂY THẠNH, Q.TP, TP. HCM
Điện thoại: (08)8155483

- **SIÊU THỊ CO-OP MART TRẦN HƯNG ĐẠO**
Địa chỉ: 727 TRẦN HƯNG ĐẠO, P.1, Q.5, TP. HCM
Điện thoại: (08)8384552
- **SIÊU THỊ CO-OP MART XL HÀ NỘI**
Địa chỉ: 191 QUANG TRUNG, P.HIỆP PHÚ, Q.9, TP. HCM
Điện thoại: (08)7307551
- **SIÊU THỊ CO_OP MART BÌNH TÂN**
Địa chỉ: 158 ĐƯỜNG 19, P.BÌNH TRỊ ĐÔNG B, Q.BTÂN, TP. HCM
Điện thoại: (08)7626706
- **SIÊU THỊ CO_OP MART NHIÊU LỘC**
Địa chỉ: TRỆT CC SCREC P.12, Q.3, TP. HCM
Điện thoại: (08)2904803

HỆ THỐNG SIÊU THỊ ĐIỆN MÁÝ:

- **SIÊU THỊ ĐIỆN MÁÝ CHỢ LỚN**
Địa chỉ: LÔ G CC HÙNG VƯƠNG P.11, Q.5, TP. HCM
Điện thoại: (08)9505058
- **SIÊU THỊ ĐIỆN MÁÝ TỰ DO**
Địa chỉ: 62A XÔ VIẾT NGHỆ TĨNH, P.19, Q.BT, TP. HCM
Điện thoại: (08)8401396
- **SIÊU THỊ ĐIỆN MÁÝ VIETNAMSHOPS**
Địa chỉ: 600 ĐIỆN BIÊN PHỦ, P.22, Q.BT, TP. HCM
Điện thoại: (08)5126253
- **SIÊU THỊ ĐIỆN TỬ GOLDMART**
Địa chỉ: 89 ĐIỆN BIÊN PHỦ, P.ĐK, Q.1, TP. HCM
Điện thoại: (08)8298117
- **TT ĐIỆN MÁÝ & NỘI THẤT THIÊN HÒA**
Địa chỉ: 277B CÁCH MẠNG THÁNG TÁM, P.12, Q.10, TP. HCM
Điện thoại: (08)8633733
- **SÀI GÒN NGUYỄN KIM - TT MUA SẮM**
Địa chỉ: 63-65 TRẦN HƯNG ĐẠO, P.CÔL, Q.1, TP. HCM
Điện thoại: (08)8211211
- **SIÊU THỊ ĐIỆN MÁÝ 30/4**
Địa chỉ: 1 DƯƠNG VĂN CAM, P.LINH TÂY, Q.TĐ, TP. HCM
Điện thoại: (08)8966865
- **SIÊU THỊ ĐIỆN MÁÝ GILIMEX**
Địa chỉ: 2 LÊ QUANG ĐỊNH, P.14, Q.BT, TP. HCM
Điện thoại: (08)8412061
- **TOÀN CẦU - SIÊU THỊ MÁÝ LẠNH**
Địa chỉ: 1407 HUỖNH TẤN PHÁT, P.PHÚ THUẬN, Q.7, TP. HCM
Điện thoại: (08)2621886
- **SIÊU THỊ ICT HARDWARE**
Địa chỉ: 37 KINH DƯƠNG VƯƠNG, P.12, Q.6, TP. HCM
Điện thoại: (08)2980113

- **SIÊU THỊ MÁY TÍNH NGUYỄN HOÀNG**

Địa chỉ: 240 VÕ VĂN NGÂN, P.BÌNH THỌ, Q.TĐ, TP. HCM

Điện thoại: (08)7225044

HỆ THỐNG SIÊU THỊ MAXIMARK:

- **SIÊU THỊ MAXIMARK**

Địa chỉ: 3C ĐƯỜNG 3 THÁNG 2, P.11, Q.10, TP. HCM

Điện thoại: (08)8356617

- **MAXIMARK CÔNG HÒA**

Địa chỉ: 15 – 17 Cộng Hòa, Q. TB, TP. HCM

Điện thoại: (08) 811 7570

HỆ THỐNG SIÊU THỊ METRO:

- **TT METRO AN PHÚ**

Địa chỉ: P.AN PHÚ, Q.2, TP. HCM

Điện thoại: (08)5190390

- **TT METRO BÌNH PHÚ**

Địa chỉ: BÌNH PHÚ, P.11, Q.6, TP. HCM

Điện thoại: (08)8769719

- **TT METRO HIỆP PHÚ**

Địa chỉ: P.TÂN THỚI HIỆP, Q.12, TP. HCM

Điện thoại: (08)7172979

HỆ THỐNG SIÊU THỊ NỘI THẤT:

- **SIÊU THỊ NỘI THẤT PHỐ XINH**

Địa chỉ: 8 ĐƯỜNG 3 THÁNG 2, P.12, Q.10, TP. HCM

Điện thoại: (08)8633634

HỆ THỐNG KHÁC:

- **CHILDREN SQUARE - SIÊU THỊ**

Địa chỉ: 270 NAM KỲ KHỞI NGHĨA, P.8, Q.3, TP. HCM

Điện thoại: (08)9322841

- **CTY CP ĐẦU TƯ AN PHONG**

Địa chỉ: 3 ĐƯỜNG 3 THÁNG 2, P.11, Q.10, TP. HCM

Điện thoại: (08)8342002

- **CTY CP SÀI GÒN NHẤT NAM**

Địa chỉ: 5 NGUYỄN GIA THIỀU (THIENSON BLDG LẦU 3), P.6, Q.3, TP. HCM

Điện thoại: (08)9305323

- **CTY TNHH CƠ ĐIỆN LẠNH VÂN ANH**

Địa chỉ: 245 XÔ VIẾT NGHỆ TĨNH, P.17, Q.BT, TP. HCM

Điện thoại: (08)5125583

- **CTY TNHH GIANT SOUTH ASIA (VIỆT NAM)**

Địa chỉ: 307/6 LẦU 3 NGUYỄN VĂN TRỖI, P.1, Q.TB, TP. HCM

Điện thoại: (08)8478988

- **CTY TNHH NÔNG SẢN TÂN HOÀN MỸ**

Địa chỉ: 47 LÊ VĂN HUÂN, P.13, Q.TB, TP. HCM

Điện thoại: (08)8122172

- **CTY TNHH THỰC PHẨM XD CÔNG NGHIỆP THỜI TRANG VIỆT NHIÊN & DÁNG VIỆT**

Địa chỉ: 688 TÂN KỲ TÂN QUÝ, P.BÌNH HƯNG HÒA, Q.BTÂN, TP. HCM

- Điện thoại: (08)7670936
- **CTY TNHH TMDV ĐÔNG HƯNG**
Địa chỉ: 230 NGUYỄN TRÃI, P.NCT, Q.1, TP. HCM
Điện thoại: (08)9256778
 - **CTY TNHH TMDV PHƯỚC LẬP**
Địa chỉ: 207 NGUYỄN VĂN CỪ, P.3, Q.5, TP. HCM
Điện thoại: (08)8363979
 - **CTY TNHH TMDV SIÊU THỊ AN LẠC**
Địa chỉ: 1231 KP5 QL1A, P.BÌNH TRỊ ĐÔNG B, Q.BTÂN, TP. HCM
Điện thoại: (08)8770670
 - **CTY TNHH TMDV TOÀN GIA THỊNH**
Địa chỉ: GH1.57 TẦNG TRỆT A43 TRƯỜNG SƠN, P.4, Q.TB, TP. HCM
Điện thoại: (08)8486472
 - **CTY TNHH TMDV XNK QUANG ĐẠI**
Địa chỉ: 248 KINH DƯƠNG VƯƠNG, P.AN LẠC A, Q.BTÂN, TP. HCM
Điện thoại: (08)7521173
 - **CTY TNHH TT TM LOTTE VIỆT NAM**
Địa chỉ: 37 TÔN ĐỨC THẮNG (SAIGON TRADE CENTER PHÒNG 1908B), P.BN, Q.1, TP. HCM
Điện thoại: (08)9106615
 - **HTX DVTM BÌNH AN**
Địa chỉ: 292 ĐINH BỔ LĨNH, P.26, Q.BT, TP. HCM
Điện thoại: (08)5396885
 - **LỮ GIA - SIÊU THỊ MINIMART**
Địa chỉ: 125 CX LỮ GIA ĐƯỜNG 3, P.15, Q.11, TP. HCM
Điện thoại: (08)8651113
 - **SIÊU THỊ BÌNH DÂN**
Địa chỉ: 9 QUANG TRUNG, P.11, Q.GV, TP. HCM
Điện thoại: (08)9968909
 - **SIÊU THỊ CITIMART B & B HƯNG VƯỢNG**
Địa chỉ: S4-1 KP HƯNG VƯỢNG 3 NGUYỄN VĂN LINH, P.TÂN PHONG, Q.7, TP. HCM
Điện thoại: (08)4101040
 - **SIÊU THỊ FAMILY**
Địa chỉ: D1-09 KP MỸ TOÀN 3, PHÚ MỸ HƯNG, NGUYỄN VĂN LINH, P.TÂN PHONG, Q.7, TP. HCM
Điện thoại: (08)4101124
 - **SIÊU THỊ FIVIMART**
Địa chỉ: KP SKY GARDEN NGUYỄN VĂN LINH, P.TÂN PHONG, Q.7, TP. HCM
Điện thoại: (08)4101468
 - **SIÊU THỊ HÀ NỘI**
Địa chỉ: 189 CỐNG QUỲNH, P.NCT, Q.1, TP. HCM
Điện thoại: (08)8334225
 - **SIÊU THỊ HÀ NỘI**
Địa chỉ: 36A PHAN ĐĂNG LƯU, P.5, Q.PN, TP. HCM
Điện thoại: (08)8417284

- **SIÊU THỊ NỘI THẤT NHÀ ĐẸP**
Địa chỉ: 202B HOÀNG VĂN THỤ, P.9, Q.PN, TP. HCM
Điện thoại: (08)9974931
- **SIÊU THỊ NƯỚC SẠCH CNC**
Địa chỉ: 2BIS NGUYỄN THỊ MINH KHAI, P.ĐK, Q.1, TP. HCM
Điện thoại: (08)9111222
- **SIÊU THỊ PARKLAND**
Địa chỉ: 628A AN BÌNH, P.AN PHÚ, Q.2, TP. HCM
Điện thoại: (08)8989000
- **SIÊU THỊ SÀI GÒN**
Địa chỉ: 34 ĐƯỜNG 3 THÁNG 2, P.12, Q.10, TP. HCM
Điện thoại: (08)8627298
- **SIÊU THỊ THẾ GIỚI GIÀY**
Địa chỉ: 132 CÁCH MẠNG THÁNG TÁM, P.10, Q.3, TP. HCM
Điện thoại: (08)5260245
- **SIÊU THỊ THIẾU NHI**
Địa chỉ: 1044-1046-1048 ĐƯỜNG 3 THÁNG 2, P.12, Q.11, TP. HCM
Điện thoại: (08)9629159
- **SIÊU THỊ THỜI TRANG STAR MART**
Địa chỉ: 9 QUANG TRUNG, P.11, Q.GV, TP. HCM
Điện thoại: (08)9870971
- **SIÊU THỊ THỰC PHẨM CHOLIMEX**
Địa chỉ: 629B NGUYỄN TRÃI, P.10, Q.5, TP. HCM
Điện thoại: (08)8552724
- **SIÊU THỊ TRỰC TUYẾN ONLINEMART**
Địa chỉ: A204 CC LINH ĐÔNG KHA VẠN CÂN, P.LINH ĐÔNG, Q.TĐ, TP. HCM
Điện thoại: (08)7203714
- **SIÊU THỊ VEGG'S**
Địa chỉ: 15 THÁI VĂN LUNG, P.BN, Q.1, TP. HCM
Điện thoại: (08)8230572
- **SIÊU THỊ VIỆT HÀN**
Địa chỉ: S23-1 SKY GARDEN, PHÚ MỸ HƯNG NGUYỄN VĂN LINH, P.TÂN PHONG, Q.7, TP. HCM
Điện thoại: (08)4101219
- **SIÊU THỊ VINATEX**
Địa chỉ: KHU TDTT ĐƯỜNG 48, P.3, Q.4, TP. HCM
Điện thoại: (08)9404311
- **SIÊU THỊ VLXD CMC**
Địa chỉ: 79B LÝ THƯỜNG KIỆT, P.8, Q.TB, TP. HCM
Điện thoại: (08)8646106
- **TT TM SÀI GÒN SQUARE**
Địa chỉ: 3 LÊ VĂN HỮU, P.BN, Q.1, TP. HCM
Điện thoại: (08)8233916
- **TT TM THUẬN KIỀU PLAZA**
Địa chỉ: 190 HỒNG BÀNG (THUANKIEUPLAZA), P.12, Q.5, TP. HCM

Điện thoại: (08)9550913

- **ZENPLAZA - SIÊU THỊ**

Địa chỉ: 54-56 NGUYỄN TRÃI, P.BT, Q.1, TP. HCM

Điện thoại: (08)9250339

- [Zen Plaza](#) (1995) – 54–56 Nguyen Trai St, District 1
- [Saigon Centre](#) (1997) – 65 Le Loi Blvd, Ben Nghe Ward, District 1
- [Tax Plaza](#) (1998) – 135 Nguyen Hue Blvd, Ben Nghe Ward, District 1
- [Diamond Plaza](#) (1999) – 34 Le Duan Blvd, District 1
- [Big C](#) (2002) – Multiple locations (District 10, Binh Tan District, Go Vap District, Phu Nhuan District, and Tan Phu District)
- [METRO Cash & Carry](#) – Multiple locations (District 2, District 6, and District 12)
- [Crescent Mall](#)
- [Lotte Mart](#) – District 7 and District 11
- [Parkson](#) (2005–2009) – Multiple locations (District 1, District 5, District 7, District 11, and Tan Binh District)
- [Saigon Paragon](#) (2009) – 3 Nguyen Luong Bang St, Tan Phu Ward, District 7
- [NowZone](#) (2009) – 235 Nguyen Van Cu Ave, Nguyen Cu Trinh Ward, District 1
- [Kumho Asiana Plaza](#) (2010) – 39 Le Duan Blvd, Ben Nghe Ward, District 1
- [Vincom Centre](#) (2010) – 70–72 Le Thanh Ton St, Ben Nghe Ward, District 1
- [Bitexco Financial Tower](#) (2010) – Hẻm số 2 Hàm Nghi Blvd, Ben Nghe Ward, District 1

Appendix 3: List of HCMC Administrative Units

Name of district (Dec. 2003)	Sub-division units (Dec. 2003)	Area (km ²) (Dec. 2006)	Population as of Census October 1, 2004	Population as of Census April 1, 2009	Population 2010 ^[25]	Population 2011 ^[26]
Inner Districts:						
<u>District 1</u>	10 wards	7.73	198,032	180,225	187,435	185,715
<u>District 2</u>	11 wards	49.74	125,136	147,490	140,621	136,497
<u>District 3</u>	14 wards	4.92	201,122	190,553	188,945	188,898
<u>District 4</u>	15 wards	4.18	180,548	180,980	183,261	183,043
<u>District 5</u>	15 wards	4.27	170,367	171,452	174,154	175,217
<u>District 6</u>	14 wards	7.19	241,379	249,329	253,474	251,902
<u>District 7</u>	10 wards	35.69	159,490	244,276	274,828	265,997
<u>District 8</u>	16 wards	19.18	360,722	408,772	418,961	421,547
<u>District 9</u>	13 wards	114	202,948	256,257	263,486	269,068
<u>District 10</u>	15 wards	5.72	235,231	230,345	232,450	234,188
<u>District 11</u>	16 wards	5.14	224,785	226,854	232,536	234,293
<u>District 12</u>	11 wards	52.78	290,129	405,360	427,083	451,737
<u>Gò Vấp District</u>	16 wards	19.74	452,083	522,690	548,145	561,068
<u>Tân Bình District</u>	15 wards	22.38	397,569	421,724	430,436	430,350
<u>Tân Phú District</u>	11 wards	16.06	366,399	398,102	407,924	419,227
<u>Bình Thạnh District</u>	20 wards	20.76	423,896	457,362	470,054	479,733
<u>Phú Nhuận District</u>	15 wards	4.88	175,293	174,535	175,175	175,631
<u>Thủ Đức District</u>	12 wards	47.76	336,571	442,177	455,899	474,547
<u>Bình Tân District</u>	10 wards	51.89	398,712	572,132	595,335	611,170
Total inner districts	259 wards	494.01	5,140,412	5,880,615	6,060,202	6,149,817
Suburban districts:						
<u>Củ Chi District</u>	20 <u>communes</u> , 1 <u>township</u>	434.5	288,279	343,155	355,822	362,454
<u>Hóc Môn District</u>	11 <u>communes</u> , 1 <u>township</u>	109.18	245,381	349,065	358,640	363,171
<u>Bình Chánh District</u>	15 <u>communes</u> , 1 <u>township</u>	252.69	304,168	420,109	447,291	465,248
<u>Nhà Bè District</u>	6 <u>communes</u> , 1 <u>township</u>	100.41	72,740	101,074	103,793	109,949
<u>Cần Giờ District</u>	6 <u>communes</u> ,	704.22	66,272	68,846	70,697	70,499

	1 township					
Total suburban districts	58 communes, 5 townships	1,601	976,839	1,282,249	1,336,244	1,371,321
Whole city	259 wards, 58 communes, 5 townships	2,095.01	6,117,251	7,162,864	7,396,446	7,521,138

Appendix 4: Descriptive Statistics

Table: Mean of the maximum price customers is willing to pay more for imported beef

	Mean	95% Confidence Interval for Mean		Median	Std. Deviation
		Lower Bound	Upper Bound		
Ho Chi Minh City	42.23	39.36	45.10	36.00	36.14
Phnom Penh	5.54	2.96	8.12	0.00	22.09

Table: Mean of the maximum price customers is willing to pay more for QCB

	Mean	95% Confidence Interval for Mean		Median	Std. Deviation
		Lower Bound	Upper Bound		
Ho Chi Minh City	34.89	32.52	37.25	28	29.78
Phnom Penh	8.46	6.78	10.14	8	14.37

Table : Mean of the maximum price customers is willing to pay more for QCB

	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Equal variances assumed	79.213	.000	14.515	1011	.000	25.13876
Equal variances not assumed			18.431	997.543	.000	25.13876

Correlations

		Your average monthly income	Your family average monthly income	WTP for imported beef (% compare to price of domestic beef)	WTP for QCB(% compare to price of domestic beef)
Your average monthly income	Pearson Correlation	1	.614**	.088*	.091**
	Sig. (2-tailed)		.000	.012	.006
	N	918	784	807	908
Your family average monthly income	Pearson Correlation	.614**	1	.201**	.176**
	Sig. (2-tailed)	.000		.000	.000
	N	784	865	762	854
WTP for imported beef (% compare to price of domestic beef)	Pearson Correlation	.088*	.201**	1	.687**
	Sig. (2-tailed)	.012	.000		.000
	N	807	762	900	896
WTP for QCB(% compare to price of domestic beef)	Pearson Correlation	.091**	.176**	.687**	1
	Sig. (2-tailed)	.006	.000	.000	
	N	908	854	896	1013

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

T-Test

Group Statistics

City_Code		N	Mean	Std. Deviation	Std. Error Mean
Your family average monthly income	Ho Chi Minh City	602	8.8704E2	511.50074	20.84721
	Phnom Penh City	263	5.8679E2	444.11315	27.38519

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Your family average monthly income	Equal variances assumed	8.118	.004	8.25	863	.000	300.2561	36.3675	228.876	371.635
	Equal variances not assumed			8.72	570.17	.000	300.2561	34.4173	232.655	367.856

Group Statistics

City_Code		N	Mean	Std. Deviation	Std. Error Mean
Your average monthly income	Ho Chi Minh City	670	3.5795E2	387.68323	14.97751
	Phnom Penh City	248	3.2117E2	401.45919	25.49268

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Your average monthly income	Equal variances assumed	.734	.392	1.264	916	.207	36.77841	29.09575	-20.323	93.8804
	Equal variances not assumed			1.244	428.1	.214	36.77841	29.56692	-21.335	94.8928

T-Test

Group Statistics

	City_Code	N	Mean	Std. Deviation	Std. Error Mean
WTP for imported beef (% compare to price of domestic beef)	Ho Chi Minh City	614	41.9772	36.24121	1.46258
	Phnom Penh City	286	5.5210	22.05220	1.30397

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
WTP for imported beef (% compare to price of domestic beef)	Equal variances assumed	41.458	.000	15.708	898	.000	36.45622	2.32080	31.90139	41.01105
	Equal variances not assumed			18.605	837.15	.000	36.45622	1.95946	32.61019	40.30225

T-Test

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
WTP for QCB (% compare to price of domestic beef)	Equal variances assumed	79.21	.000	14.51	1011	.000	25.138	1.73188	21.7402	28.5372
	Equal variances not assumed			18.43	997.54	.000	25.138	1.36395	22.4622	27.8153