



Indigenous Pork Market at Retail Level in Special Restaurants in Northern Vietnam.

Nguyen Van Phuong^{1*}; Ly Thu Cuc²

(1) Faculty of Political Economy, VNU University of Economics and Business, Vietnam National University, Hanoi, Vietnam . Email: phuonglangvan@gmail.com

(2) Faculty of Economics, Hanoi Industrial Textile Garment University, Le Chi, Gia Lam, Hanoi, Vietnam. Email: cuclt@hict.edu.vn

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*Corresponding Author

Nguyen V. Phuong

E-mail: phuonglangvan@gmail.com

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ABSTRACT

Previous researches were successful in indicating the good traits of this indigenous pig breed compared with other cross or exotic pig breeds in Vietnam. Most of these researches aim to conserve this valuable pig breed. However, in order to conserve this local breed and encourage local people keeping it, out of the biology approach, the other effective approach is sustainable utilization. This approach is only ensured through creating the market for this indigenous breed. Meaning the Ban pig keepers who are mainly small-households in remote and rural areas; as well the processors and customers do not have sufficient information of their market. Data was collected from the 52 random restaurants which were chosen randomly in Hoa Binh and Hanoi. These provinces representative for the results showed characteristics of the demand and supply of Ban pig market at retail level, as well as identify the elements affecting the demand and the Price of Ban pigs, it also suggest the solutions needed to conserve this indigenous breed through developing a sustainable Ban pig market.

1. INTRODUCTION

Agriculture plays an important role in the Vietnam economy which contributes 13.96% to the GDP and generating about 35.3% of employment in 2019 (GSO, 2020). In which, livestock husbandry accounts for 23% of the agricultural output value and gains a special

concern and priority for development from Vietnamese government. In the livestock husbandry sector, Pigs are considered to be one of the most important livestock species (Dzung, 2017). And pig production contributed remarkably to the success of the government policy of poverty alleviation, especially, in the rural and remote areas. Therefore, it can be said that Pig production is an

essential segment of the Vietnam livestock husbandry sector. Keeping pigs becomes a custom of households in the Vietnam rural and remote areas. However, the number of small households keeping Pigs in these areas has decreased steadily in recent years, which is attributed by the numerous reasons. One of them is the increasing cost of input materials, especially the cost of food and breed. Additionally, the spreading of many dangerous diseases also threatens to the livestock farming of many households. Hence, the profit that small keepers are gaining from feeding pigs is very low and even at a loss.

Along with the development of the economy, the customers tend to prefer the indigenous animals, which is due to health concern, the nutritive value and special tastes. Therefore, the market for these indigenous animals has great potentials in Vietnam, one of the indigenous pig breed that proved valuable in bringing high economic value for the people in the remote areas is the Ban pigs. Ban pigs have existed in Vietnam for a long time, they origins from the wild animal, then being fed and tamed by the local people in the North mountain of Vietnam. Ban pigs also are called by other names such as Cap Nach breed; or Man pig. Many researches have contributed to preserve these indigenous pig breeds. These researches indicated the good traits of this breed compared with other cross or exotic breeds. The input requirements for feeding this pig are very low

and the anti-infection ability of this breed is also higher than other breeds equivalents (Lemke, 2008; Herold et al, 2010). Additionally, the meat of this breed also has a higher lean rate and better tastes than the normal pig breeds (Phuong et al, 2014). However, in order to conserve this indigenous breed, besides the approach of biological preservation, the sustainable utilization approach is also very important. Then, in order to approach the method of sustainable utilization, the only possible way is to create the market for this type of pig breed. In fact, the researches supplying the market information for the Ban pig keepers are still limited. Deriving from the fact of increasing preference of customers for this meat and aiming to supply sufficient market information to the Ban pig keepers, this study was conducted with an objective to assess the characteristics of the Ban pork market at retail level in special restaurants.

2. METHODOLOGY

A survey to establish the profiles of restaurants selling Ban pork dishes was conducted. These restaurants are limited in the area of Ha Noi capital and its neighboring provinces. Then, 52 random restaurants from 02 provinces namely Ha Noi and Hoa Binh were chosen to collect data.

Table 1: Number of surveyed restaurants by province

Province	No. Rest.	%
Ha Noi	29	55.8
Hoa Binh	23	44.2
Total	52	100

Source: Survey, 2019

A structured questionnaire was designed and used in collecting structural data of 52 restaurants. The structural data contained in the questionnaire to collect the general information of restaurants included: the restaurants perceptions about their customer eating Ban pork, the general information about purchase arrangements and the information about the activities of restaurants in transporting, slaughtering and storing Ban pigs. Additionally, the restaurants also were asked the information about the quality attributes of Ban pork and other pork meats that they often consider when they purchase live Ban pigs; as well as their opinions about

the Ban pork supply chains and the economic situation of each restaurants.

Deriving from these above similarities, the 52 restaurants in 02 provinces were divided into two main groups. One group contained the restaurants located in the mountainous areas of each province and one group contained the restaurants that are located in the delta areas of each province. In which, there are four restaurants located in the mountainous areas of Ba Vi district.

Table 2: Distribution of Restaurants

Rest. Area	No.	%
- Delta	25	48.1
- Mountainous	27	51.9

Source: Survey, 2019

In the sample, the restaurants located in the delta areas account for 48.1%, and the rest of 51.9% contains the restaurants in the mountainous areas. And this criterion is used in the later analysis of the report.

SPSS software was used to analyze the data. In order to compare the characteristics of the demand and supply in Ban pig market, the comparative method was used.

3. RESULT AND DISCUSSION

3.1. Characteristics of Ban market

According to the result of the survey, Ban pigs often are raised in small households in mountainous areas such as Son La, Dien Bien, Lai Chau, Lao Cai, Hoa Binh, ect... The main markets for Ban pigs are the provinces in the lowland areas such as Hanoi, Bac Ninh, Vinh Phuc, Hung Yen, Hai Duong, Hai Phong, Ninh Binh, Phu Tho.... In fact, the different provenance of Ban pigs leads to the difference in their quality and the approach with the Ban supplying markets, in turn, it affects the demand level of Ban quality and quantity (Phuong et al. 2014).

Ban pork is rarely found in the wet markets due to its high price and the insufficient information about the

supplying sources. The final customers often could find Ban meat in special restaurants. These restaurants, therefore, play an important role in searching the supplying sources and accommodating them to the final customers in the form of processed dishes. Hence, in order to have a comprehensive picture of the Ban pig markets, restaurants were chosen to collect data for the research.

3.2. Characteristics of surveyed restaurants

The general characteristics of the surveyed restaurants are summarized in the Table 4. There are some differences between restaurants in the two types of area. The restaurants in the delta areas often have the smaller scale compared with those in mountainous area. Additionally, the tables in restaurants in delta area often are arranged very closely, in order to utilize the space and increase the number of seats. This makes the capacity of restaurants in delta area bigger than those of the mountainous area. However, the number of employees of the restaurants in the mountainous area is higher than those in delta area. In fact, the limited area and the high rent cost of land and labor limits the scale of restaurants in the delta area, especially in the city center or towns.

Table 4: Characteristics of restaurants

	Delta area		Mountainous area		All	
	N=25		N=27		N=52	
	Mean	SD	Mean	SD	Mean	SD
Rest. Condition						
- Area	651	639	1014	1869	842	1419
- No. of Seat	276	155	180	90	226	133
- No. of Employee	10.74	5	12	12	11.45	9.5
- Distance to other Rest.	1.8	1.8	1.65	1.3	1.7	1.5
Owner						
- Owner Age	43	11.3	41	9.3	42	10.3
- Owner Education	11.3	2.4	10.8	2.8	11.1	2.6

Source: Survey, 2019

The eating space is often narrow which do not bring a comfortable feeling to customers. Meanwhile, in the restaurants in mountainous areas, besides serving foods, these restaurants also do business on ecotourism. Therefore, these restaurants have a larger area to do their business. This advantage explains for the reason why customers often prefer to enjoy the Ban pigs here. Moreover, the near distance to the supplying source also is a big advantage for these restaurants who

are able to approach with the supplying sources of good quality of Ban pig. In fact, Ban pigs also are raised in some delta areas of such provinces as Hung Yen, Bac Ninh, Phu Tho, Vinh Phuc.... Ban pigs which are raised in these areas are raised mostly by the concentrated mixture. These pigs would be kept intensively and just be scavenged in the free grazing land for one to two months before being sold. The price of these pigs often is lower than those raised in upland areas. And the

restaurants in the lowland areas, for their convenience and other reasons, often purchase Ban pigs from these sources. That also is one the reason why the price of Ban pork in restaurants in mountainous area is higher than those in delta area and explains for the higher preference and of customer for the restaurants in mountainous area and their willingness to pay higher price.

3.3. Characteristics of Ban pig supply.

The Ban pigs often are reared in the highland in North Vietnam. With different climate conditions and farming

systems, the food sources as well, the quality of Ban Pigs depends on its provenance. It can be said that with a special taste, Ban pork is one of the special product in Vietnam. The price of Ban pig, therefore, is also higher than normal pigs. In fact, with high retail price, it is hard to find the Ban pork at wet markets. The Ban Pigs are often mainly transacted directly to the restaurants through the free traders. This reason also makes the ban pork not to be popular in the market and the approach ability of customer to this special meat is limited, so a limited quality of Ban pig is supplied to the market.

Table 3: Restaurant owners' opinions about supplying chain of Ban Pig

	Delta area		Mountainous area		Both	
	Mean	SD	Mean	SD	Mean	SD
There is sufficient supply of ban in good quality throughout the year	1.3	0.8	1.7	0.6	1.5	0.8
It is difficult to manage supply shortages at some stages in the year.	0.2	1.2	-0.1	1	0.03	1.1
If supply of ban pork would be more stable, I could increase my sales of ban dishes.	0.2	1	0.3	0.9	0.3	0.9

Source: Survey, 2019

Relating to the supply chain of Ban pigs, in some recent years, most of the restaurants agreed that, it is easier for them to access the Ban sources. This is due to the fact that Ban pigs now are raised in many other provinces not only in mountainous provinces as it was earlier. Additionally, they are feed by commercial concentrate instead of just naturally which makes Ban pigs yield a higher output.

3.4. Characteristics of Ban Pig transactions.

3.4.1. Activities in Ban Pig market.

The higher number of customers finding to the restaurants in mountainous area also makes the number of Ban pigs sold per week in this area higher than those in delta area (Table 5).

Table 5: The number of Ban pigs sold per week and average price

	Delta area		Mountainous area		All	
	N=25		N=27		N=52	
	Mean	SD	Mean	SD	Mean	SD
No. Ban bought/week	3.8	-	4.3	-	4	-
Ban dishes Avg. Price (thos. VND)	82.1	28.4	84.5	24.6	83.4	26.13

Source: Survey, 2019

3.4.2. Supplying sources of Ban pigs

As described in the table 6, the survey restaurants do not get Ban pigs from one supplying source, Ban pigs are purchased from many suppliers. In average, each

restaurant has business relationship with more than 03 suppliers (Table 6). As the owner opinions, the various suppliers help them be flexible and more proactive in having stable supply sources. However, the restaurants in mountainous area often get Ban pigs from more

suppliers than those in delta area. This makes them have wider choice and more initiative in purchasing Ban pigs. In reverse, as the opinions of the owners of restaurants in lowland areas, they have to depend much

on the suppliers, if they supplied a good input source; they would have good input quality. If not, they have no choice rather than accept to buy the pigs with low quality.

Table 6: Number of Suppliers for Ban pigs

	Delta area		Mountainous area		All	
	N=25		N=27		N=52	
	Mean	SD	Mean	SD	Mean	SD
No. of Suppliers	2.7	0.8	3.6	1.5	3.2	1.3

Source: Survey, 2019

In regards to the provenance of Ban pigs, as showed in the table 7, Hoa Binh, Son La and Phu Tho are the main supplying sources of Ban pigs for majority of surveyed restaurants. As the Ban pig provenances decide the quality and price of input pigs that the restaurants bear, additionally, the provenance of Ban pigs could be

distinguished basing on their appearances and their meat quality. This requires that the buyers have experience in purchasing these pigs. Hence, sometimes the traders/middle men exploit the insufficient experience of buyers and hiding about the exact origin of the Ban pigs.

Table 7: The provenances of Ban pig

	Delta area		Mountainous area		All	
	No	%	No	%	No	%
	Dien Bien	1	3%	3	8%	4
Hoa Binh	9	27%	10	27%	19	27%
Lang Son	0	0%	2	5%	2	3%
Lao Cai	4	12%	3	8%	7	10%
Phu Tho	4	12%	6	16%	10	14%
Son La	5	15%	10	27%	15	21%
Bac Giang	2	6%	1	3%	3	4%
Ha Giang	0	0%	1	3%	1	1%
Ninh Binh	2	6%	1	3%	3	4%
Hanoi	1	3%	0	0%	1	1%
Thai Nguyen	1	3%	0	0%	1	1%
Thanh Hoa	1	3%	0	0%	1	1%
Tuyen Quang	1	3%	0	0%	1	1%
Lao	1	3%	0	0%	1	1%
Vinh Phuc	1	3%	0	0%	1	1%
Total	33	100%	37	100%	70	100%

Source: Survey, 2019

In fact, the restaurants in delta area purchase the Ban pigs from more various sources than those in mountainous area. If the restaurants in the mountainous area often focus on the sources from the provinces which are well known for the good quality of Ban pigs

such as Dien Bien, Hoa Binh, Son La, Phu Tho, Lang Son, then the restaurants in delta area also purchase Ban pigs from the other sources such as Vinh Phuc, Hanoi, Ninh Binh, Thanh Hoa....

Table 8: The restaurants' opinions about traceability of Ban pigs

	Delta		Mountain		Both	
	Mean	SD	Mean	SD	Mean	SD
- Is it important to know the origin of the Ban in order to source good quality?	1.4	0.7	1.2	0.7	1.3	0.7
- Is it difficult to know the origin of the ban as my suppliers try to obscure their suppliers?	1.2	0.9	0.3	1.3	0.73	1.2
- If traceability in Ban supply chains would be improved, I could increase my sales of ban dishes.	0.21	0.8	0.14	1.1	0.18	0.9

Source: Survey, 2019

Note: Fully agree (+2); Partly agree (+1); Neutral (0); Partly disagree (-1); Fully disagree (-2)

Therefore, according to the restaurant owners' opinions, majority of them agree that it is important to know the origin of the Ban Pigs, because it is an important feature to access the best quality of this animal and this influences the price of Ban pig that they have to pay. And as mentioned above, the suppliers often obscure the buyers about the origin of Ban Pig. This makes some restaurants difficult in defining the provenance and the quality as well of the live pigs. It is easier for the restaurant owners who have experience in predicting the origin of the pig basing on their appearances, but may be the risk of restaurant owners with lack of experience when the traders always want to hide the origin of Ban pigs in order to keep a high price.

3.4.3. The relationship between Ban pig sellers and the restaurants

As mentioned above, the sellers of Ban pigs are mainly assemblers. They procure the live Ban pigs from different areas before selling them to different restaurants. Most of them sell the live pigs to restaurants without slaughtering them. However, in many cases, Ban pigs are slaughtered before selling to restaurants. The price of slaughtered pigs is higher about 30%-40% than the live pigs. However, the slaughtered pigs are just purchased by the restaurants when they buy with small volume or serve for the sudden order of customers.

Table 9: The relationship between Ban suppliers and Ban restaurants

	Delta		Mountain		Both	
	Mean	SD	Mean	SD	Mean	SD
I have a professional relationship with my Ban suppliers.	1.3	0.73	1.6	0.75	1.4	0.75

Source: Survey, 2019

Note: Fully agree (+2); Partly agree (+1); Neutral (0); Partly disagree (-1); Fully disagree (-2)

The relationship with Ban sellers affects the business of restaurants a lot in the area of having a stable and quality pig source. Therefore, the restaurants often build a long-lasting relationship with their suppliers. Majority of

restaurants agreed that they have a professional relationship with their Ban suppliers.

3.4.4. The Price negotiation between the buyers and sellers in Ban transactions

Table 10: Bargaining in Ban transactions

	Delta		Mountainous		Both	
	N=25		N=27		N=52	
	No	%	No	%	No	%
Bargaining						
- Yes	8	32	9	33.3	17	32.7
- No	17	68	18	66.7	35	67.3

Source: Survey, 2019

Bargaining is not popular among Ban pig transactions. There is 67.3% of restaurants not bargaining when they

purchase Ban pigs. The reasons for bargaining or not bargaining are shown in the table 11:

Table 11: The reasons for bargaining and no bargaining of restaurants

	No Bargain		
	Delta N=17	Mountain N=18	Both N=35
Regular Seller	76.5	83.3	82.9
Contract Price	17.6	11.1	14.3
Other (Market price..)	5.9	5.6	2.9
	Yes Bargain		
	Delta N=8	Mountain N=9	Both N=17
Buying time	37.5	33.3	35.3
Buying volume	25.0	22.2	23.5
Physical appearance	25.0	33.3	29.4
Other	12.5	11.1	11.8

Source: Survey, 2019

67.3% of restaurants do not bargain when they buy Ban pig, then the reasons of 82.9% of these is to maintain a regular seller. Which means the long lasting relationship with sellers affects their agreements a lot in Ban transactions. 14.3% of the given reasons is the contract price, that means the price was fixed in informal/verbal contracts. The other reasons as they said are the price is similar in the markets, so they do not bargain.

However, the rest of 32.7% of restaurants still bargain when they buy Ban Pigs, they bargain the Ban pigs base price mostly on buying time (35.3%) and the physical appearance of Ban pigs (29.4%). The physical appearance which the buyers often consider are the skin, figure, hair, weigh, height...to know the origin of pigs and the feeding methods of producers, and then to predict the quality of meat.

The Ban transactions often are carried from four to six or seven transactions per month, depending on each

restaurant. According to the survey, after buying, restaurant owners often slaughter Ban pig one by one and store them in fridges. However, some restaurants which buy a big amount of ban pig, beside having a storing system for Ban pork, they also have a keeping system to keep live pigs. These pigs are just slaughtered when customers order to guarantee the fresh quality of meat rather than after storing in fridges.

3.4.5. Attributes of Ban pigs are considered by buyers.

According to the survey, a list of attributes were given and the restaurants owners were asked to score them in the liker line, in which 4 points means that attribute is very important, 3 points means that attribute is important, then 2 points for less important, and 1 point for not important.

Table 12: The important of attributes as the buyers' opinions

Attributes	Delta		Mountain		Both	
	Mean	SD	Mean	SD	Mean	SD
- Price	2.68	1.0	2.52	1.12	2.6	1.06
- Seller type	1.63	0.6	1.7	0.85	1.7	0.73
- Buying arrangement	1.3	0.7	1.5	0.68	1.4	0.7
- Origin	3.37	0.5	3.43	0.51	3.4	0.5
- Breed	3.3	0.67	3.2	0.87	3.25	0.78
- Cut	2.53	1.0	2.91	1.3	2.7	1.13
- Health	2.95	1.08	3.38	0.74	3.2	0.9
Physical Appearance:						
- Weight	2.47	0.77	2.8	0.81	2.65	0.8
- Figure	2.42	0.96	3.0	0.55	2.73	0.8
- Skin	2.68	0.95	3.1	0.77	2.9	0.87
- Kind of hair	2.53	1.02	2.67	1.07	2.6	1.03
Meat Quality:						
- Tenderness	3.05	0.97	3.38	0.87	3.2	0.92
- Intra-muscular fat	3.47	0.7	3.62	0.6	3.6	0.64
- Softness	2.95	0.85	3.14	0.91	3.1	0.88
- Taste	3.05	1.03	3.43	0.68	3.25	0.87

Source: Survey, 2019

Note: 4: very important, 3: important, 2: less important, 1: not important

According to table 12, most attributes are important to the buyers, among them, the intra-muscular fat of the pig is the most important attribute. This is because the Ban pig is more preferable to other pigs because of the high lean rate. This lean rate depends on the provenance of Ban pigs and the methods of feeding the animal. The lean rate is the most important attributes being considered by the buyers. And due to the importance of this attributes, sometimes, it makes some sellers instead of selling the right Ban pig, they sell the small supermeat pigs for the restaurants. After being processed, the customers find it hard to define whether it is the true Ban pig or not. In return, the lean rate is decided by the origin of the Ban pig and the breed.

As we discussed above, the traceability of Ban pigs to their origin decide their quality. Therefore, origin is the second most import attributes when the buyers buy Ban pigs. The following attributes, which are rated at the highly important level, are the breed and the taste of the pig. These days, Ban pigs are crossed with some other local pigs such as supermeat pigs, Mong Cai pigs...which contributes to reduce the quality of Ban pork. However, according to the survey, when restaurant owners were asked why their consumers like Ban pork than other pigs, most of them agreed that Ban pigs is tastier and especially healthier because it is not being

feed commercially like other pigs. Therefore, if crossbreeding the Ban breed is uncontrolled and the Ban pigs are feed commercially instead of with natural food, the preference of customers for Ban pig will be decreased and in fact it has decreased in the two recent years.

3.4.6. Price characteristics of Ban pigs and Negotiation between the buyers and sellers

The fluctuation of Ban price

As the opinion of restaurants owners when they are asked about the price fluctuation, most of restaurants quite highly agreed that the price of Ban pig fluctuated through the year and this fluctuation depends on the seasonality and special occasions such as Tet holidays, independent day or other special days. However, the restaurant owners in the delta areas seem to experience the price fluctuation more than those in mountainous areas when the degree of agree between two areas is different (1.44 and 1.05). According to those restaurants, especially the restaurants in delta area, they partly agree that the fluctuation of Ban price is quite hard to manage, because it depends on many factors. However, in the restaurants in mountainous area, the management of price fluctuation seems to be less difficult, this may be

due to the fact that they have a long-standing relationship with suppliers who mainly are pig producers not traders. However, when they were asked whether

the fluctuation of price affect their decision to increase the volume of Ban dishes, most of the restaurants in both areas answered no.

Table 13: The restaurant owners' opinions about Ban pig price fluctuation

Price fluctuations	Delta		Mountain		Both	
	Mean	SD	Mean	SD	Mean	SD
Price for ban fluctuates throughout the year.	1.44	0.8	1.05	0.74	1.2	0.8
Price fluctuations of ban are difficult to manage.	1.3	0.7	0.7	0.7	0.95	0.8
If ban prices would be more predictable and stable, I could increase my sales of ban dishes.	0	1	-0.3	0.96	-0.18	1

Source: Survey, 2019

Note: Fully agree (+2); Partly agree (+1); Neutral (0); Partly disagree (-1); Fully disagree (-2)

The information source of Ban pig price

Wholesalers are the main source of supplying price information for most of restaurants in both delta and mountainous areas, especially the restaurants in Delta area that are far from the ban supplying sources and are just able to access certain suppliers, 68% of them get information from their wholesaler, and the following sources are the market and other restaurants. However, in the restaurants in mountainous areas, where they

have access to more supplying sources not only the wholesalers but also the pig producers, they become less dependent on the wholesalers channel to know the price information.

The source of information partly affects the price negotiation between the buyers and the sellers. The more the available source of information, the less the market depends on the offered prices of the wholesalers.

Table 14: The price information source of restaurants

Get Inform. from	Delta	Mountain	Both
	N=25	N=27	N=52
Wholesaler	64.0	48.1	55.8
Other Restaurants	20.0	44.4	32.7
Others (Market...)	16.0	44.4	30.8

Source: Survey, 2019

The farm gate price and market price of Ban pigs

The information of the farm gate price although is not mentioned in the survey, however, from the information from the traders, the margin between the farm gate price and the price that traders offer to restaurants is quite high which is from 30%-40% or even higher, this

depends again on the relationship among partners. Additionally, after being processed, the restaurants also increase the price from 20%-30% or even more, therefore, the final price to the customers is very high and that profit is held by the traders and processors, not the producers.

3.4.7. Activities of Transporting, Slaughtering and Storing Ban pigs of restaurants

Table 15: Transporting Ban pigs

	Delta are N=25 %	Mountainous area N=27 %	Both N=52 %
Transp. Methods			
- Motorbikes	92.0	63.0	76.9
- Trucks	8.0	37.0	23.1

Source: Survey, 2019

The transport methods for Ban pigs depend mainly on the buying volume of each restaurant. In general, the traders often use trucks to transport a big volume of Ban to a certain place. Then, Ban pigs would be delivered to each restaurant in that area by the traders' vehicle or buyers 'vehicle.

With the restaurants in the delta area, the buying volume often is small (from 2 to 3 pigs per time), therefore, their main vehicle to transport pigs is motorbike. The traders in their provinces or from other provinces use motorbike

to transport pigs, or the restaurants owners would transport Ban pigs by themselves. With the restaurants in mountainous area, most of these restaurants purchase Ban pigs in big volume, therefore, trucks often are used more frequently than motorbike (table). The traders also use trucks to deliver Ban pigs for some restaurants at a same time. And in many cases, the restaurants use their own truck to procure the Ban pigs from the producers in remote areas without through the traders.

Table 16: Slaughtering and Storing Ban pigs

	Delta area N=25 (%)	Mountainous area N=27 (%)	Both N=52(%)
		%	%
Storing system			
- Yes	89	48	68
- No	11	52	32
Slaughtering			
- Yes	92.0	88.9	90.4
- No	8.0	9.6	9.6

Source: Survey, 2019

After purchasing from the traders or producers, Ban pigs are kept in cages of restaurants and being slaughtered when customers order. 92% of restaurants slaughter pigs by their own, just 5% of those in delta area buy the Ban pork. Slaughtering Ban pigs not only help to keep to fresh quality of pork, the restaurants also process the fresh blood of Ban pigs into other special dishes.

When the restaurants owners were asked about their storing system of Ban pigs after slaughtering them, most of the restaurants in the mountainous area answered no. According to them, storing pork affects the pork's quality and leads to loss of prestige with customers. Therefore, they often slaughter Ban pig one by one and just when the customer orders. However, in the restaurants in delta area, the consumption volume is smaller; therefore, they have to use fridges to store Ban pork.

3.4.8. Customer perception about Ban pigs

Table 17: Perception of restaurants about their customers

Criteria	Delta area		Mountainous area		All	
	Mean	SD.	Mean	SD	Mean	SD
Is the majority male or female?	2.4	0.76	2.34	0.44	2.3	0.6
Is the majority old or young?	3	0.7	2.95	0.67	2.98	0.66
Is the majority rich or poor?	2.5	0.61	2.24	0.54	2.35	0.58
Is the majority from the neighborhood or from far?	2.42	1.07	3.24	1.09	2.85	1.14
Is the majority low or highly educated?	3.5	0.61	4.05	0.81	3.8	0.77
Is the majority from a small or a big family?	3	0.58	2.7	0.8	2.83	0.71
Have the majority blue or white collar jobs?	3.74	1.1	4.14	0.8	3.95	1

Source: Survey, 2019

Table 17 shows the restaurants perception about the customer often eating Ban pigs. Majority of customers who often eat Ban pigs are male, they often are office staff and have high education. As the restaurants opinion, most of them are rich or have high income which is predicted through the vehicles they use and their appearance. However, with the restaurants in the

mountainous area, their customers are mostly from far places, meanwhile they mostly come from the nearby places with the restaurants in the delta area. And it seems to be that the number of rich customers that goes to the restaurants in mountainous area is much more than ones in delta area.

Table 18: Restaurants perception about the reasons for choosing Ban pigs for customers

Criteria	Delta Area		Mountainous Area		All	
	Mean	SD.	Mean	SD.	Mean	SD.
Ban pork is tastier than other pork	1.3	0.67	1.95	0.39	1.64	0.63
Ban pork is healthier than other pork	0.63	0.83	1.2	0.68	0.93	0.8
Ban pork is fattier than other pork	0.68	0.89	1.24	0.44	0.98	0.73
Ban pork supports small famers	-0.68	1.06	0.57	1.2	-0.03	1.3
Ban pork is less damaging to environment than other pork	-0.105	1.2	0.52	1.21	0.23	1.23
Ban pork contains less antibiotics than other pork	1.26	0.87	1.62	0.67	1.45	0.78
Ban pigs are fed more naturally than other pigs	1.58	0.69	1.24	0.83	1.4	0.78
Ban pork is a special food of restaurants in the cities	0.58	1.07	0.67	0.8	0.63	0.93
Eating Ban pork is a status symbol for wealthy people	0.32	1	-0.1	0.62	0.1	0.84

Source: Survey, 2019

Note: Fully agree (+2); Partly agree (+1); Neutral (0); Partly disagree (-1); Fully disagree (-2)

The restaurants owners' perception about the reasons for choosing Ban pigs for customers was requested. As the opinion of the restaurants, the biggest and clearest reason for customers choosing Ban pork is its taste. Ban pork is often tastier and more delicious than other pork.

Therefore, a lot of customer prefers this type of pig meat than others. The reasons that make customers like this food are related to health concerns. Ban pork are fed more by the natural food such as cassava, corn, vegetable... , therefore, contains less anti-biotic than

other pigs. However, in fact, some provinces are feeding these animals commercially by concentrate mixture, or other commercial food which aims to increase the growth rate of the pigs. This feeding method is seriously affecting the Ban pork quality and reducing the confidence of customers on the quality of Ban pork. If this situation continues, the preference of customers for this pig meat would absolutely reduce, which will then bring the bad effect to the Ban pig market and to the restaurants selling this pork.

Among the given reasons, the aspects of supporting small producers and protecting environment through eating Ban pigs are more of a concern in the restaurants in mountainous area rather than those in delta area. When the restaurants owners in delta areas were asked why they did not agree with those reasons, most of them said that their customers might not know much about the producers of Ban pigs, or care about the environment issue, they just eat them due to Ban's special tastes. With the customers in delta area, eating Ban pork might be a symbol for their wealth, meanwhile, the restaurants owners in mountainous area thought their customers might not agree with that.

4. CONCLUSION

The various supply sources of Ban pigs give a signal for the high supply volume in the future. However, the increase in the supply volume of Ban pigs is giving bad effects to the quality of this meat. In general, the Ban pig market still depends much on the assemblers who are the main collectors and play an important role in delivering pigs from the producers to the restaurants. The information of price and the provenance, as well the real quality of meat is mainly held by the traders. This creates, therefore, many difficulties for the buyers including the restaurants and the customers in distinguishing the origin and quality of Ban pork, as well mostly, they have to accept the offered price of the traders.

The price of Ban Pigs is almost not bargained because of the long relationship between the restaurant owners and the traders. If the restaurant owners bargain about the price, the buying time and Ban pigs appearance are the main criteria to make arrangement. The price of Ban pigs fluctuates seasonally. In fact, this fluctuation also depends on many other factors such as the difference in geographic locations, or the quality and provenance of Ban pigs. As the observation of restaurants owners, taste and the health issues are the criteria that the customers often concerned with when they eat Ban pork. Although, the Ban pork contain less antibiotics because they are feed natural foods, however, the issue of safe hygiene in their processing by the restaurants, has not gained enough attention of both the local authority and the restaurant owners.

The potential consumption of Ban Pig is quite large, especially in the delta areas. However, the supply in the delta area is lower than in the mountainous areas. Most of the Ban's pigs are being produced mainly in the mountainous areas and distributed from the mountain areas to the delta areas. Therefore, the owner of the restaurant in the mountainous area had more experience in selecting Ban's Pig than the restaurant owner in the delta districts and mainly based on physical characteristics; the prices of Ban's pigs in the lowlands are more volatile than in mountainous areas, and there is a difference in the source of price information.

As the evidence for Vietnam indicates that income elasticity for the demand of livestock are positive, and the demand for those products will most likely continue to increase with rising per capital incomes (Phuong et al., 2014). The rising incomes especially in urban areas of Vietnam have led to considerable changes in dietary preferences (Cuong, 2004; Mergenthaler, 2009). And public demand would be more and more towards food with high quality, and also delicious, special and safe for their health. Therefore, the indigenous products will absolutely have potential markets in future.

With a large population and increasing income, the customers in Vietnam tend to put their favorites on the food with high quality, having special taste and being delicious, especially being good for their health. And the indigenous animals seem to meet those requirements. Therefore, the market for Ban pigs is very potential to develop. Farmers, investors have many opportunities to invest in Ban pigs sector.

REFERENCES

1. Cuong TH (2004). Study on current and potential market supply and demand, marketing opportunities and consumer preferences for indigenous breed animals/products. Market and Marketing GEF-UNDP 2715-03-4709. Final Report. Development and Application of Decision-Support Tools to Conserve and Sustainably Use Genetic Diversity in Indigenous Livestock and Wild Relatives Livestock, Hanoi, Vietnam. Available at: http://www.fangrasia.org/admin/admin_content/files/83769.pdf
2. Dzung NM (2017). Pig production and marketing in Vietnam, working paper, National Institute of Animal Science (NIAS). Available at: <https://www.angrin.tlri.gov.tw/English/2014Swine/p145-152.pdf>
3. GSO (2020). Vietnamese Statistics Book, General Statistics Office of Vietnam.
4. Herold, P, Roessler R, Willam A, Momm H, Záratea VA (2010). Breeding and supply chain systems incorporating local pig breeds for small-scale pig producers in Northwest Vietnam. *Livestock Science*, Volume 129, Issues 1–3, April 2010, Pages 63-72

5. Lemke, U, Mergenthaler M, Roesler R, Huyen LTT, Herold P, Kaufmann B and Zarate VA (2008). Pig production in Vietnam – a CAB Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources 2008 3, No. 023.
6. Mergenthaler M, Weinberger K and Qaim M (2009). Consumer valuation of food quality and food safety attributes in Vietnam. *Review of Agricultural Economics*, 31(2):266-283.
7. Phuong NV., Hanh DTM, Cuong TH, Markemann A, Zárata A.V and Mergenthaler M (2014). Impact of quality attributes and marketing factors on prices for indigenous pork in Vietnam to promote sustainable utilization of local genetic resources. *Livestock Research for Rural Development. Volume 26 (7)*.

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