

# A Study of Consumer's Price Sensitivity for Pork

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**Abstract**—The price of pork in China has been soaring since 2019, which has attracted much attention of the public. The price sensitivity of pork is an important reference for enterprises' pricing strategy. The paper studied consumer's price sensitivity of pork by 217 consumer questionnaires of Chuxiong in Yunnan province. The results show that: 1) the price sensitivity for pork between men and women is almost the same, indicating that gender shows no difference in pork price sensitivity. 2) Age is positively correlated with pork price sensitivity. 3) Those consumers, who bought pork at shopping malls, food markets and affordable supermarkets, are high in price sensitivity, while the ones who bought pork online were low. 4) Household income is negatively correlated with pork price sensitivity. 5) When the price of pork rises to a price that consumers can't afford, the proportion of consumers who choose chicken, duck, fish, beef and mutton as substitutes is 37%, 18%, 28%, 10% and 7%, respectively. Enterprises should develop pricing strategy accordingly.

## 1 INTRODUCTION

It appears that marketers appreciate the importance of assessing sensitivities, but their companies do not approach the task in a systematic, strategic fashion (Michael and Mary 1988) [1]. Therefore, it is important for scholars to conduct some study for price sensitivity which might offer some business suggestion for the marketers. Joel, Morris and Barbara Kahn (1986) used a multinomial logit formulation to measure price sensitivity. They found relatively lower price sensitivity when only brand names are provided as opposed to only quality ratings [2]. Kaul and Wittink (1995) analyzed the characteristics of previous studies about advertisement on price sensitivity and generated three empirical generalizations, which are 1) an increase in price advertising leads to higher price sensitivity among consumers, and 2) the use of price advertising leads to lower prices [3]. Alexandru, Arvind and Jianan (2000) found different store environments (online and traditional stores) can differentially affect consumer choices because their price sensitivity was different, and price sensitivity was higher online [4]. Tülin, Joffre and Jordan (2002)'s results indicated that brand credibility decreased price sensitivity and brand credibility's impact on consumer choices and price sensitivity varied across product categories [5]. An and En (2005) found that preparation, relationship building, information exchange and intervention could affect the purchase decisions, and first three dimensions were negatively associated with price sensitivity but the intervention dimension was not [6]. Ruth (2005) found it was an inverse relationship between

customer satisfaction and price sensitivity in B2B markets. The link under consideration was particularly strong in the case of high product/service specificity and product/service complexity [7]. Edward and Ronald (2009) tried to find some antecedents of price sensitivity and concluded that price sensitivity was positively related to perceived brand parity and negatively related to involvement, innovativeness, and loyalty. Innovativeness, brand parity, and brand loyalty appear to mediate the influence of involvement on price sensitivity [8]. Consumer's sensitivity to price had a significant impact on product innovativeness as most of the product purchase decisions were being made based on price rather than the brand or accessibility (Abdullah, Muhammad and Robel 2014) [9]. Chen and Guan (2013) found price discounts can stimulate sales because of the downward demand curve, but they can depress sales because consumers expected a lower price in the future. An increase in price sensitivity strengthened the aforementioned two effects, and the dominant effect determines whether price discounts can generate sales [10]. Graciola, Toni and Lima (2018)'s study results showed that store price image positively impacted on customer repurchased intentions, with low and high price levels moderating these effects. Price sensitivity also presented moderating effects [11]. André (2020) conducted a study of Millennial utilitarian consumer behavior by price sensitivity and ethical consumption. They found Millennial consumers were less price sensitive in regards to product attribute, and favor ethical consumption over price when CSR engagement was revealed [12]. Wang, Pham and Dand (2020) focused on the link between perceived food quality and environmental consciousness and organic food purchase intention. The result was that price sensitivity moderates

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the relationship between perceived food quality and organic food purchase intention. Furthermore, price sensitivity moderates the indirect effect of environmental consciousness on organic food purchase intention through perceived food quality [13]. In a low-cost switching environment, certain firm actions undertaken by service employees can improve consumer loyalty, satisfaction and reduce price sensitivity (Wonjoo and Nicole, 2020) [14].

The prior scholars focused on the antecedents of price sensitivity, the application for business, some universal character or person's price sensitivity etc. which indicates that few scholars have studied the price sensitivity towards specific products from a certain place. The paper focuses on consumer's price sensitivity for pork from Chuxiong, Yunnan province, China. By processing questionnaires distributed in several purchasing points, the price sensitivity for pork would be processed in several aspects.

## **2 CHARACTERISTICS & CURRENT SITUATION OF CONSUMERS OF CHUXIONG**

### **2.1 Characteristics of Consumers**

There are 22 ethnic groups living in Chuxiong City. The majority of the population are Han nationality, Yi nationality, Hui nationality, Bai nationality, Naxi nationality and Dai nationality. Lucheng town is the head of 19 towns in Chuxiong. Its economic development is good, and its residents' consumption ability is relatively strong compared with other places in the same city. However, compared with other places in China, the consumption ability is relatively low. The consumption mode has a big relationship with the regional factors and consumption customs.

### **2.2 Current Consuming Situation**

#### **2.2.1 Household Monthly Income & expenditure:**

All the data were all achieved through questionnaire survey. The study divides the family monthly income into four levels, namely, below ¥5000, ¥5000-10000, ¥10000-20000, and more than ¥20000. The monthly household expenditure is divided into four levels, namely, below ¥3000, ¥3000-5000, ¥5000-10000 and more than ¥10000. The data is as follows. For the household monthly income, the proportion of the four levels is 26.26%, 30.42%, 30.87% and 12.45% respectively, which indicates that about 1/4 of the families are at low income, and only 12.45% of the families are above ¥20000. For the monthly household expenditure, the four levels accounted for 31.80%, 39.63%, 21.66% and 6.91% respectively, indicating that about 1/3 of the household, the expenditure is only used to maintain the basic demand of the family, and there are no paid entertainment activities. From the comparison of household income and expenditure, the vast majority of families have different degrees of savings, which can be inferred that the

consumption concept of local residents is relatively conservative

**2.2.2 Daily Consumption Products:** Local residents' daily consumption products are mainly food, transportation, clothing, entertainment, tourism, etc. Among the residents surveyed, about 1/3 of the residents' daily consumption products are food, transportation and clothing, which shows that the consumption proportion of basic demand is very high, with less entertainment items such as tourism and fitness. Therefore, except for daily basic life consumption, only a small number of residents have consumption and entertainment projects, showing that the consumption concept of local residents is conservative again.

**2.2.3 Main Shopping Places for Residents:** The main places for local residents to buy pork are the internet, shopping malls, affordable supermarkets and food markets. The results show that 35 residents choose to buy pork online, accounting for 16.13%, with the least proportion. Most of them choose shopping malls, affordable supermarkets and food markets for pork purchase. 65 residents choose shopping malls, accounting for 29.95%, 57 residents purchase pork through affordable supermarkets, accounting for 26.27%, and 60 residents choose vegetable market for daily pork purchase, accounting for 27.65%.

It can be seen from the results that the income level and expenditure level of local residents are relatively low. As the region limits the development, the economic development of Chuxiong is also relatively backward, which leads to the residents to focus on the basic factors such as product quality and price when consuming. Meanwhile, the influence of ethnic and regional factors makes the local residents form a special consumption concept, says that on the premise of meeting the basic needs of daily life, spend less on entertainment projects. They don't pay much attention to the added value of products. On the premise of ensuring the quality of products, the biggest factor affecting the consumption behavior of local residents is the price. Therefore, it is particularly important to explore the price sensitivity of Chuxiong for pork.

## **3 RESULTS & DISCUSSION**

In this paper, 220 respondents were randomly selected to conduct a survey at some places with large population flow. All the 220 questionnaires were collected, 217 of which was valid questionnaires. The consumer's price sensitivity of for pork was studied from five aspects of gender, age, shopping place, household income and substitutes. The results and discussion are as follows.

### 3.1 Result and Discussion of Gender

First and the most important item for consumers is the highest accepted price of pork. Since the current price of pork is about 55 yuan, this study sets four options for the respondents, ¥40, ¥50, ¥60 and ¥70. As shown in Fig.1, 96 men and 121 women participated in the survey. The men's choice is (17, 23, 25, 31), the range is 14, while the women's choice is [22, 29, 32, 38], and the range is 16, indicating that the range of men and women is basically similar. Additionally, in order to study the gender differences of price sensitivity, the percentage of pork price that consumers can accept is calculated based on the data of Fig.1, which are shown in Fig.2. It can be seen from Fig.2 that with the rise of pork price, the number of buyers of men and women would decrease. The red and blue curves in the figure basically coincide, indicating that the decrease rate of purchasing desire of men and women with the rising price is basically the same, that is, the sensitivity of men and women to pork price is basically the same, and gender shows no difference in pork price sensitivity.

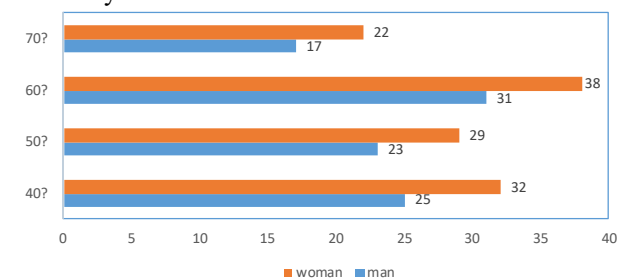


Figure 1. the highest acceptable pork price of male / female

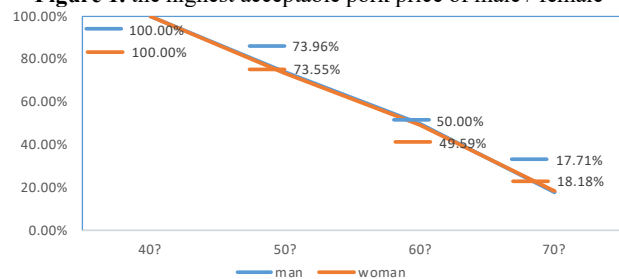


Figure 2. the percentage of acceptable pork price of male / female

### 3.2 Result and Discussion of Age

In order to explore the relationship between consumers' age and price sensitivity, residents were divided into four age stages, namely 10-25 years old (abbreviated as Y (10-25), the rest processed same), 26-40 years old, 41-60 years old and over 60 years old. A further statistical analysis on the issue of "the highest acceptable price of pork" is as follows. Among the 59 consumers aged 10-25, considering 40, 50, 60 and 70 ¥/kg as the upper limit price respectively, the number is 10, 14, 21 and 14. Among 67 consumers aged 26-40, the number is 19, 15, 20 and 13 respectively. Among the 60 consumers aged 41-60, the number is 17, 13, 20 and 10 respectively. Among the 31 consumers aged over 60, the number is 10, 14, 21 and 14 respectively. By further processing the above information and converting it into the percentage of population acceptable at different prices, Fig.3 is obtained. As shown

in Fig.3, the range of (40-50)¥/kg and (50-60)¥/kg, the slope of Y (10-25) blue curve is greater than that of Y (16-40) red curve, and the slope of Y (16-40) red curve is greater than that of Y (41-60) grey curve. Overall, the decline rate of all curve is as follows: Y (10-25) < Y (26-40) < Y (41-60) < Y (> 60), indicating that with the increase of age, consumers are more sensitive to pork price, that is, age has a positive correlation with pork price sensitivity.

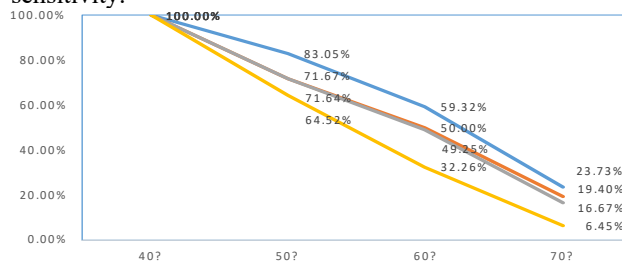


Figure 3. the highest acceptable pork price of male / female

Age is positively correlated with pork price sensitivity, that is, the older the age, the higher the sensitivity of pork price. The older consumers have experienced the life of food and money shortage and gone through many difficulties. They would like to save their money in case of unexpected needs. While younger consumers, due to better material conditions since their childhood, have no worries about food and clothing, pursue more material and spiritual enjoyment, pay attention to the quality of life and experience, and are more willing to spend money, so their price sensitivity is low comparatively.

### 3.3 Result and Discussion of Shopping Place

The place for consumers to buy pork are shown in Table 1. The main places are shopping malls, food markets, affordable supermarkets and online shopping, with the number 65, 60, 57 and 35 respectively. With the rise of pork price, the number of residents choosing online shopping decreased dramatically, from 35 to 14, a decrease of 60%, indicating that the residents who choose online shopping are sensitive to the rise of pork prices. The number of residents who choose shopping malls, food markets and affordable supermarkets, increases when the price of meat rises. Obviously, the increasing people are transferred from online shopping residents. Residents who choose these three ways are very low sensitive to the rise of meat price in channel choice.

The pork price sensitivity of the one who purchase by shopping malls, food markets and affordable supermarkets is low, while that of online shopping is high, which is closely related to the characteristics of places and needs of consumers. Shopping malls offer good shopping environment, good the quality of goods, complete commodities etc., which can meet the one-stop purchase for consumers. The meat and vegetable in the food markets are fresh, various kinds and reasonable price, which fit for ordinary people. Affordable supermarkets are generally located in residential areas or suburbs, convenient for consumers to buy on and off work, and the price is relatively low. Online shopping is more suitable for consumers who are busy with work, pursuing shopping experience and paying attention to price, and the

price is a very important factor for online shopping at present. When the price rises, especially when it rises sharply, the sensitivity of such consumers will work very clearly, and they will turn to other shopping places. Therefore, those consumers, who buy pork at shopping malls, food markets and affordable supermarkets, are high in price sensitivity, while the ones who buy pork online are low.

### 3.4 Result and Discussion of Household Income

It's clear from the survey that 57 residents are in the low-income level, 66 are in the middle-income level, 67 are in the high-income level, and only 27 are in the upper-high-income level. As shown in Tab.2, with the rise of pork price, the number of upper-high-income residents remains unchanged, and the number of consumers with high, medium and low household income has decreased to some degree. Moreover, with the decrease of family income level, the greater the extent of decline, the greater the rate of decline, indicating that the residents with higher income level are less sensitive to pork price. The lower the income level, the higher the sensitivity of pork price.

The number of people, with higher the family income level, is relatively stable when the price of pork is gradually increasing. The residents with higher income level have better living conditions, transportation and working environment. They could choose shopping methods, shopping places, shopping products, etc. as they like, and they don't need to

**TABLE I.** THE NUMBER OF PEOPLE PURCHASING AT 4 SHOPPING PLACE

place	shopping mall				food market			
price	40	50	60	70	40	50	60	70
number	65	66	68	71	60	63	65	68
place	affordable market				internet			
price	40	50	60	70	40	50	60	70
number	57	61	63	64	35	27	21	14

**TABLE II.** THE NUMBER OF PEOPLE WITH DIFFERENT INCOME

level	low-income below ¥5000				middle-income ¥5000-10000			
price	40	50	60	70	40	50	60	70
number	57	37	17	2	66	55	30	4
level	high-income ¥10000-20000				upper-high-income ¥Over 20000			
price	40	50	60	70	40	50	60	70
number	67	59	35	6	27	27	27	27

consider the economic problems, so their sensitivity is low. The lower the income level, the heavier the burden. Most of their income is spent on children's education and family daily living expenses, so they are more sensitive to pork price.

### 3.5 Result and Discussion of Substitutes

When the price rises to a level that consumers can't afford, consumers will choose other meat to replace pork. At present, the main substitutes on the market are chicken, duck, fish, beef and mutton. The results show that the percentage of consumers who choose chicken, duck, fish, beef and mutton are 37%, 18%, 28%, 10% and 7%

respectively. The reasons are 1) chicken, duck, fish, beef and mutton, the same as pork, are of high nutritional value, which can meet the needs of consumers. 2) The prices of chicken, duck and fish are relatively low, so consumers who choose them as substitutes account for 83%, while beef and mutton are relatively high, account for 17% only. 3) Although the price of beef and mutton is high, some consumers will still buy beef and mutton because of their special preference or high income.

## 4 CONCLUSION

The results of the study can serve the enterprises and provide reference for them to develop pricing strategies, so as to maximize their profits. The conclusions, says suggestions, are as follow. 1) Price according to pork's quality. Consumers have different demand for pork due to their preferences, income, demands etc. Additionally, the cost, taste and nutrition of different pork products are different, which forms different product quality. Therefore, differential pricing can maximize enterprise's profits on the premise of meeting consumer demand. For example, feedstuff pork and non-feedstuff pork, ordinary pork and local pork can be priced according to different pork costs. The price can be classified according to different parts of pork, such as foreleg, streaky pork, pig head, sparerib. 2) Price higher after processing or packaging. If pork is processed to ham, sausage, moon cake raw materials etc., and given some packaging, high price could be set to meet the needs. Of course, for low-income groups, the best way is to directly sell the original products without any processing or packaging. 3) Price according to shopping place. For shopping malls, reputation pricing is reasonable, and consumers' psychology "low price, low quality, and high price, high quality" is used to increase customers' trust. The affordable market attracts the middle-income people and low-income people, and they could achieve their profits by mass quantity, so the best price strategy is loss-leader-pricing. For the online consumers, some coupons should be issued within a limited time, or a special commodity should be designated at a low price every day. On the premise of ensuring the quality, logistics and service-after-sales should be paid much attention.

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