



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search  
<http://ageconsearch.umn.edu>  
[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

55<sup>th</sup> National Conference of the Australian Agricultural and Resource Economics Society

Melbourne, Australia  
8 – 11 February 2011

**Consumer willingness to pay for poultry products from biosecure farms in Bali**

RP Yusuf

Department of Agribusiness, Udayana University, Denpasar Bali; email: [riayusuf@ymail.com](mailto:riayusuf@ymail.com)

## **Abstract**

This study explores consumer perceptions and willingness to pay for clean and safe poultry products, particularly chicken meat and eggs, in Bali. The study also analyses the correlation between factors associated with the consumer's purchase decision. Four high-end markets in Denpasar were chosen and 80 respondents were randomly selected in order to explore these issues. Nine attributes were used to define clean and safe poultry products, while five variables were used to explore the correlation between consumer characteristics and their purchase decision. The results show that consumers have a good understanding of clean and safe poultry products. They are aware how the product should appear physically, and they are willing to spend up to an extra Rp.5,000<sup>1</sup> for whole chicken and Rp.10,000/kg for eggs. From the five consumer characteristic variables tested, only age and income have strong correlation with consumer purchase decisions. This information is useful for poultry producers as they seek to produce the type of product required by the supermarket consumer.

---

<sup>1</sup> USD1=Rp.9,020 as at Jan27, 2011

## **1. Background**

Today's business world needs to be able to change its orientation, moving from a product-oriented to market-oriented approach. Increasingly, producers are required to respond to the consumers' demands. Production needs to be oriented towards what consumers want, taking into account their values and preferences. To maintain or improve their position in the market, small scale poultry producers have to have a product that can compete or have a point of difference with other poultry products.

In terms of marketing, understanding the purchasing behaviour of consumers is complex. It involves a three-step process. Firstly, the consumer develops a set of beliefs about the product. Secondly, the consumer develops certain attitudes towards the product. Thirdly, the consumer makes a thoughtful purchase decision (Kotler, 2003). The purchase decision is also based on the buyer recognising a need, a recognition that arises from internal and external stimuli. Therefore, purchase considerations can also be affected by consumer perceptions about what they want or need.

Perception is the process by which an individual selects, organises, and interprets stimuli to construct a meaningful and coherent picture of the world (Schiffman and Kanuk, 2009). Perception is related to human behaviour in that it influences the decision of the individual to do what they want.

Poultry products, such as chicken meat and eggs, are purchased for many reasons including flavour and nutritional value. Their purchase decision will also be influenced by product's appearance which will give an indication its cleanliness, safety and health. For example, the appearance of a healthy egg is evident in its shell colour, as this reflects whether or not the egg comes from a healthy chicken or not. Furthermore, healthy and safe chicken meat can be determined from its texture and from the flavour of the meat. In general, consumers expect good quality poultry products at a reasonable price. This implies that consumers may be willing to pay more to obtain a product that more fully meets their demands.

Consumer purchase decisions are largely affected by personal factors such as the consumer's age, number of dependents and life style. It is possible that the recent Highly Pathogenic Avian Influenza (HPAI) outbreaks have made consumers more concerned with the food safety issues. Demand for safe and high quality products may increase. However, some consumers may choose to ignore safe and healthy products despite the HPAI outbreaks. Hence, it is necessary to explore consumer perceptions regarding clean and safe poultry products. The rationale is that the consumer is one of the key players in the marketing chain and can have a major influence on farm production and management systems. Understanding consumer perceptions of egg and poultry meat products may provide some background information that assists the industry to decide if there is a market for safe and high quality product. An anticipated outcome of the research is to contribute to both farm-level biosecurity and rural incomes, as well as to inform other players in the marketing chain of the willingness of consumers to pay for a perceived safe and healthy poultry product.

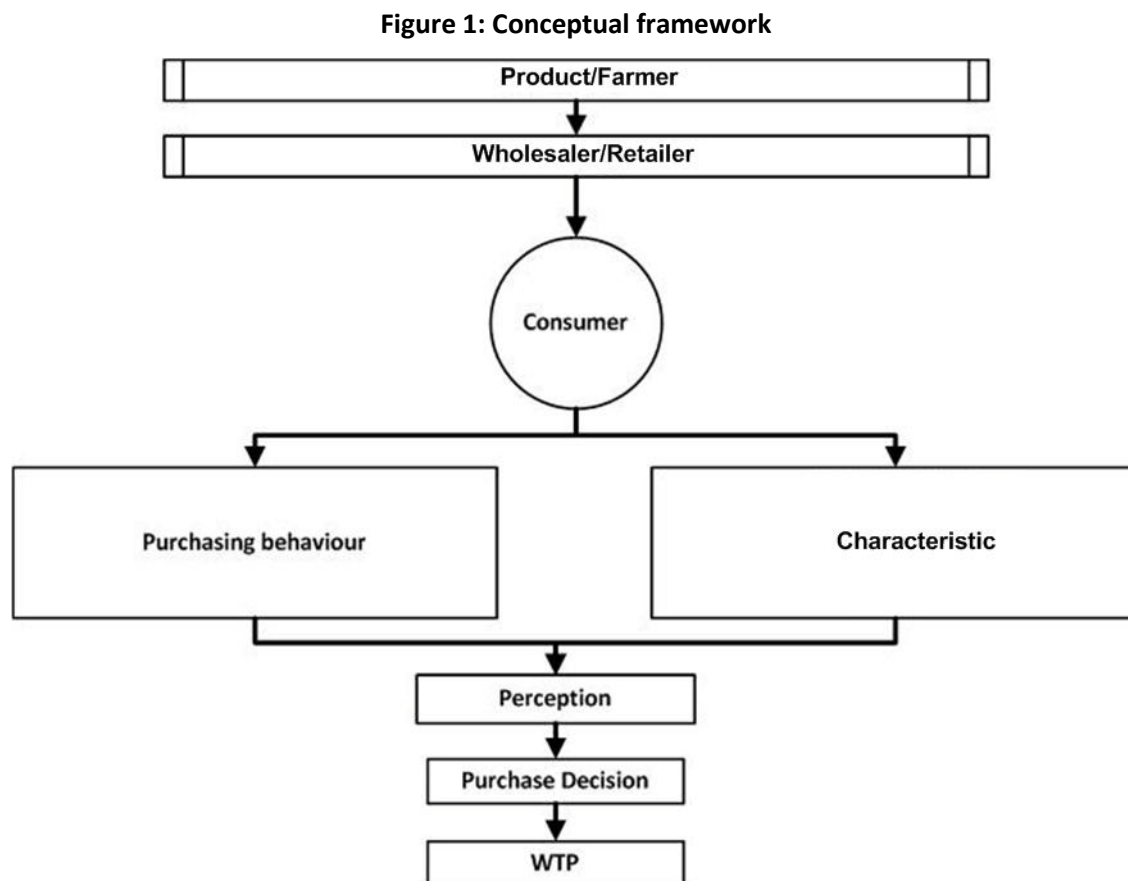
## **2. Aims of the study**

This study explores two important aspects of Indonesian poultry consumers. Firstly, consumer perceptions regarding purchase of clean and safe poultry products. Secondly, consumer willingness to pay a premium price for clean and safe poultry products. Analysis was also carried out to correlate consumer characteristics with their purchase decision.

## **3. Conceptual framework**

In order to assess consumer perceptions of this type of commodity, purchasing behaviour was observed allowing those perceptions influencing the decision to buy to be identified. When the

decision is made, the consumer's willingness to pay a premium can be measured using elicitation techniques. The relationship between consumer characteristics and the decision to buy clean and safe chicken meat and eggs is explained in Figure 1.



#### 4. Method

A consumer survey was conducted in February, 2010, at four supermarkets (high-end markets) in Denpasar; Hypermarket, Carrefour, Hero and Tiara Dewata. The markets were chosen deliberately on the assumption that they sell chicken meat and eggs from farms that have biosecurity procedures in place.

The response group was made up of consumers who purchase poultry products from the four supermarkets. There were 20 responses received from each market, divided equally into two types of consumers, that is, 10 respondents purchased chicken meat and the other 10 respondents were egg buyers. Data were collected by interviewing respondents using a prepared questionnaire and some photos showing biosecure and non-biosecure farms and products from these respective farms, to explore their perception of biosecure farms and their products. The data was analysed statistically using SPSS. The survey was designed to cover purchasing behaviours, attitudes and household characteristics that might impact chicken or egg consumption choices and preferences for clean and safe poultry products.

## 5. Results and discussion

### 5.1 Characteristics of consumers

Consumer characteristics were divided into two areas, namely household characteristics and purchasing behaviour.

#### 5.1.1 Household characteristics

Five variables were used to describe the characteristics of consumers in this study. These were age, number of family members, education, occupation, and range of income. These variables may have some influence on the decision of a consumer to buy clean and safe poultry products. Table 1 shows the characteristics of respondents.

**Table 1: Characteristics of households**

Variable	Chicken meat consumer	Chicken egg consumer
Age (year)	37	35
Number of family members	3.9	3.5
Education (%):		
<i>High school</i>	37.5	32.5
<i>Diploma Degree</i>	17.5	10.0
<i>Bachelor Degree</i>	45.0	50.0
<i>Post graduates</i>	0	7.5
Occupation (%):		
<i>Housewife</i>	22.5	10.0
<i>Government employee</i>	15.0	12.5
<i>Private employee</i>	62.5	77.5
Income (Rp.million per month)		
<i>Less than 3.0</i>	32.5	42.5
<i>3.0 – 4.99</i>	47.5	32.5
<i>5.0 – 7.49</i>	7.5	10.0
<i>7.5 – 10.00</i>	2.5	2.5
<i>More than 10.0</i>	10.0	12.5

Source: primary data

The average age of consumers is 37 and 35 for chicken meat and eggs respectively. The number of family members is about the same, three to four, for both chicken meat and egg consumers. Most respondents had a good level of education, with 45 to 50 per cent of consumers having a university education. Most consumer respondents are private employees, with ranges of income less than Rp.3million for egg and Rp.3 to 5million for meat consumers. This might be a reflection that most poultry product buyers in this study came from educated, middle-income households.

#### 5.1.2 Purchasing behaviour

In order to observe the behaviour of consumers when purchasing poultry products, places of purchase and reasons for choosing these places may be used as indicators. Table 2 shows that 90 per cent of the respondents purchase chicken meat at the super market, whereas only 12 per cent purchase eggs at the same place. These findings may imply that consumers may be more likely to buy meat at the supermarket, compared to eggs.

**Table 2: Outlets to buy poultry products**

Places	Chicken meat		Chicken egg	
	Respondents	Percentage	Respondents	Percentage
Traditional market	4	10	35	88
Supermarket	36	90	5	12
Other places	0	0	0	0
<b>Total</b>	<b>40</b>	<b>100</b>	<b>40</b>	<b>100</b>

Source: primary data

More details on purchasing behaviour, including the reasons for choosing a super market as a place to buy chicken meat, are shown in Table 3. The largest reason for consumers to purchase at the supermarket (25 to 27 per cent), for both meat and egg, was clean and good quality products. It could be that the consumer believes implicitly that poultry products sold at supermarket are much better, or at least consistent, in terms of quality, than those from a traditional or wet market.

Moreover, the findings suggest that supermarkets are easier to access and more relaxing places to buy chicken meat. That is, some people go to the supermarket, if it is based in a shopping mall, with their family not only for shopping, but also for recreation.

**Table 3: Most important reasons for buying products at the super market**

Reason	Chicken meat		Chicken egg	
	Respondents	Percentage	Respondents	Percentage
Easy to access	8	20.0	3	7.5
Comfortable	8	20.0	3	7.5
Cheaper	1	2.5	3	7.5
Clean	11	27.5	10	25.0
Good quality	10	25.0	10	25.0
Good packaging	1	2.5	3	7.5
Good service	1	2.5	0	0.0
Other reasons	0	0.0	8	20.0
<b>Total</b>	<b>40</b>	<b>100.0</b>	<b>40</b>	<b>100.0</b>

Source: primary data

## 5.2 Consumer perceptions

Perceptions are closely related to attitudes, the words have a similar meaning, as perception is a cognitive component of attitude. In this study, nine attributes were used to determine the perceptions of consumers regarding clean and safe poultry products. These attributes included; smell, age, colour, texture, pesticide use, type of processing, packaging, government licensing and a producer's label. The scores of each attribute, as well as the perception category, are presented in Table 4. The findings show that consumer perceptions regarding clean and safe chicken meat is categorized at a very high level, with an overall score of 4.5 out of 5. This means that most of the nine attributes given to define clean and safe chicken meat are strongly supported by consumers.

Furthermore, Table 4 shows that two attributes, packaging and producer label, did not receive the same level of support from consumers. This is reflected by only 40 per cent of consumers strongly

agreeing that an attractive package is one of the criteria of a clean and safe product. The situation for producer labelling is similar, where only 30 per cent of consumers strongly agreeing, whereas the remainder are either ambivalent or disagree. Fancy packaging and labelling are considered unnecessary and costly, increasing the price of product.

This implies that consumers are mainly concerned with the physical condition of the product, and many of them ignore any additional attributes such as packaging and labelling. That is why these two attributes only have a high and moderate category (Table 4).

**Table 4: Consumer's perceptions of clean and safe chicken meat**

Attributes	Attitude*					Total	Score	Category
	5	4	3	2	1			
No smell	40	0	0	0	0	200	5.0	Very high
Fresh	40	0	0	0	0	200	5.0	Very high
Light colour	36	0	4	0	0	192	4.8	Very high
Good texture	32	8	0	0	0	192	4.8	Very high
Contains no pesticides	36	4	0	0	0	196	4.9	Very high
Non-chemical process	36	4	0	0	0	196	4.9	Very high
Attractive packaging	16	16	12	8	0	136	3.4	High
Government licensed	36	4	0	0	0	196	4.9	Very high
Producer label	12	0	16	8	4	128	3.2	Moderate
<b>Overall value</b>							<b>4.5</b>	<b>Very high</b>

Source: primary data

\* 5: strongly agree, 4: agree, 3: moderate, 2: disagree, 1: strongly disagree

On the other hand, the other seven attributes are all categorised as very high, leading to the overall very high category rating for consumer perceptions in understanding clean and safe poultry products such as chicken meat. This indicator is useful for producers seeking to fulfil consumer needs.

### 5.3 Consumer willingness to pay

The very high rating of consumer perception of a clean and safe product will affect their decision when buying the product. They should not mind if they have to spend more money, so long as they get a better product. The question in the survey required a 'Yes' or 'No' answer. Table 5 indicates that 95 percent of consumers will buy clean and safe chicken meat even though it is at a higher price, while only five per cent of them will not. Meanwhile, about 81 per cent will buy and 19 per cent will not buy clean and safe eggs at a higher price. Consumers are generally quite prepared to spend more money, as long as they believe that the product has something more to offer (that is, the nine attributes above) when compared to the lower priced product.

**Table 5: Decision whether to pay a higher price for a guarantee of product safety**

Decision	Chicken meat		Chicken egg	
	Respondents	Percentage	Respondents	Percentage
Do not purchase	6	5.0	9	19.5
Purchase	34	95.0	31	81.5
<b>Total</b>	<b>40</b>	<b>100</b>	<b>40</b>	<b>100</b>

Source: primary data



Following the purchase decision, the question arises as to how much money consumers are willing to spend on higher quality products? The result is shown in Table 6.

**Table 6: Consumer willingness to pay for guarantees at higher prices**

No.	Accepted price increase (Rp. whole chicken)	Chicken meat		Chicken egg	
		Person	Percentage	Person	Percentage
1	5,000	32	94.1	15	48.4
2	5,000 – 10,000	1	2.9	15	48.4
3	More than 10,000	1	2.9	1	3.2
<b>Total</b>		<b>34</b>	<b>100</b>	<b>31</b>	<b>100</b>

Source: primary data

Most consumers (94 per cent) would spend only Rp.5,000 higher than the existing price of whole chicken meat. Only one consumer (3 per cent) would spend between Rp.5,000 to Rp.10,000\* higher than the usual price, and one (3 per cent) would spend more than Rp.10,000. On the other hand, quite similar numbers of egg consumers (about 48 per cent each) would spend Rp.5,000 and Rp.5,000 to Rp.10,000 more than the existing price.

This finding indicates that those who are already aware of healthiness would not think a lot about the price of clean and safe poultry product, especially chicken meat. Even though they are only a small number of consumers for the whole poultry product market in Bali, it is worthwhile, not only for producers but also for other key players in the market chain, to seek to establish a niche market in this commodity.

#### **5.4 Willingness to pay and consumer characteristics**

A simple linear regression was carried out to investigate if there was a significant relationship between the consumers' willingness to pay and their characteristics. Consumer characteristics tested in this regression comprise of age, education, occupation, and income. Consumer occupation was divided in to two, namely those who work as public servants and those working in private sectors. The results indicated that there was no significant relationship between willingness to pay and consumer characteristics for egg consumers (Table 7). Moreover, results showed similar profiles for chicken meat consumers. However, there was a slight difference in the income variable. Income has a significant (at 95% level) influence on consumers' willingness to pay for biosecure products.

**Table 7: Relationship between willingness to pay and consumer characteristics**

Variable	Egg		Meat	
	Coefficient	T-test	Coefficient	T-test
Constant	-0.526	-0.463	-0.600	-0.313
Consumer characteristics:				
Age	0.010	0.396	0.035	1.346
Education	0.085	1.447	0.158	1.160
Occupation	-0.056	-0.088	0.239	0.258
Income	0.203	1.419	-0.448	-2.030*

Remark:  $R^2$  for eggs=0.120,  $R^2$  for meat=0.194, \*significant at 95% level

To find out more about the relationship between consumers' willingness to pay and their characteristics, further regression analysis was conducted to try to deal with potential multicollinearity. Consumer characteristics that have low T-test value were eliminated. Variables that had higher T-test value for eggs were education and income and for meat were respondent age and income (Table 8).

**Table 8: Relationship between willingness to pay and selected consumer characteristics**

Variable	Egg		Meat	
	Coefficient	T-test	Coefficient	T-test
Constant	-0.260	-0.291	1.403	0.108
Consumer characteristics:				
Age			0.046	2.155*
Education	0.084	1.500		
Occupation				
Income	0.225	1.744	-0.433	-2.048*

Remark:  $R^2$  for eggs=0.115,  $R^2$  for meat=0.161, \*significant at 95% level

Similar to the results in the previous analysis, these results suggests that education and income have no significant influence on consumers' willingness to pay for eggs. However, the results for the meat consumers indicate that consumer age and income have a significant influence on consumer's willingness to pay.

Although the expected coefficient sign for consumer income was positive, the results showed that this was not, in fact, the case with regard to poultry meat consumption. With regard to meat consumption for every one unit increase of income the willingness to pay for this premium product was reduced by 0.433. This may be due to the differentiated product characteristic. It is different from normal good, where increase in income, to some extent will increase the willingness to pay. It may also be that the wealthier more educated consumers are better informed about food safety and realise that the product may not, in fact, be healthier or safer.

## 6. Conclusions and recommendations

Based on the above discussion, it may be concluded that:

- The consumer in Bali has a very good perception of clean and safe chicken meat and eggs.
- The consumer willingness to pay for whole chicken meat is Rp.5,000 higher than the existing price, and Rp.5,000 to Rp.10,000 for kg of eggs.
- There is no strong correlation between consumer characteristics and the decision to purchase clean and safe chicken meat and eggs.

It is hoped that the findings of this study will motivate and challenge poultry producers and other key players in the market chain to fulfil consumer needs and build a niche market for a high quality commodity.

## Acknowledgments

This study is funded by ACIAR Project AH/2006/169. I would like to show my great appreciation to Dr. Ian Patrick as the Project Leader, who has always provided strong motivation and support from the beginning, since the proposal was designed until this paper was finished.

My appreciation also goes to Dr. Tristan Jubb, who has guided all the project members in writing and presenting the results of the study.

I would also like to thank Dr. Phil Simmons, who help me with data analysis.

Last but not least, to the survey team in UNUD, Handayani, Joko, Annie and Putri, I highly appreciate you helping me to carry out the survey, data analysis and all your other contributions to this paper. Thanks to you all.

## References

- . 2010. Dinas Pertanian, Perikanan, dan Kehutanan Kabupaten Sleman. 2010. Yogyakarta.
- . 2009. *Trik Mengolah Daging Ayam*. Kompas.com
- Kotler, Philip. 2003. *Manajemen Pemasaran. Edisi Milenium*. Penerbit Erlangga. Jakarta.
- Kotler, Philip. 2005. *Manajemen Pemasaran, Jilid I*. Edisi Bahasa Indonesia. PT. Intan Sejati. Klaten.
- Rangkuti, Freddy. 2005. *Riset Pemasaran*. PT SUN, Jakarta.
- Schiffman and Kanuk, 2009. in Wahyuni, Dewi Urip. Pengaruh Motivasi, Persepsi dan Sikap Konsumen terhadap Keputusan Pembelian Sepeda Motor Merek Honda di Kawasan Surabaya. 2005 <http://www.petra.ac.id/-puslit/journals>
- Singarimbun, Masri. 2001. *Metode Penelitian Survei*. LP3ES – Jakarta.
- Simamora, H. 2000. *Manajemen Pemasaran Internasional*. Salemba Empat. Jakarta