



## **The bird flu in mind of Hungarian consumers- lesson and experiences of a direct-question survey**

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### **ABSTRACT**

*The emergence of avian flu in Europe means new challenges for the Hungarian food chain, highlighting the importance of risk-communication to the consumers. Based on a direct-question survey in end of 2005, the article analyses the consumers' preference structure and risk-perception. Basic information source is the electronic and printed media, but – especially in case of lower qualified consumers – the effect of friends and relatives is considerable, too. The level of thrust is especially high in researchers and medical authorities. This fact should be more utilised in communication. The pro-active strategy of Hungarian Poultry Product Council can be evaluated as a positive one. Beside the negative effects (decreasing consumption), the avian flu problem enhances the importance of place of origin of products. The system of factors, influencing consumer behaviour was analysed by the Fishbein-Ajzen model. Utilising the structural equation approach, it was possible to determine the system factors, influencing the consumer behaviour. It became obvious, that the attitudes of consumer exercise a determining effect on the practical behaviour in poultry consumption.*

(Keywords: consumer research, attitudes, Fishbein-Ajzen model)

### **INTRODUCTION**

Most influenza viruses occur in birds, particularly the aquatic waterfowl that are their natural reservoir. Only a few types of influenza virus have circulated widely in humans. "Bird flu" refers colloquially to both influenza in birds and to instances when these avian viruses jump the species barrier to cause human disease. In 1997, a cluster of avian influenza due to influenza A (H5N1) occurred in people in Hong Kong (5). This outbreak was unique and alarming because it was the first recognized direct transmission of influenza from birds poultry to people, it involved a unique strain (H5N1), and it was highly fatal: Six of 18 (33%) recognized case patients died.

In second half of 2005 the avian flu virus has been detected Europe. Even the average consumers had got the knowledge of the emergence of this zoonose-risk. The level of public interest can be seen well on base of an extract from the Newsweek magazine article: „The world is on edge, stalked by a virus that travels the great migratory flyways and kills where it lands. After incubating in 1997 in East Asia, where it was responsible for the death of 140 million birds (including those intentionally destroyed to stop its spread) and 68 people, the H5N1 variant of avian flu suddenly and mysteriously expanded its range this year, north to Mongolia and Siberia, then west into Ukraine, Croatia and Turkey. Through innumerable generations and hundreds of mutations, it maintained its extraordinary lethality, without yet evolving the ability to be

transmitted directly between people. Almost all cases have involved people who came into close contact with chicken blood or droppings; when and if that changes, it could be the trigger for a global pandemic that, in a worst-case extrapolation from the toll of the 1918 Spanish flu, could kill 150 million people – 2.5 percent of the world's population – in a matter of months.... Governments—indeed, civilizations—have collapsed from less...”.

Aim of this article is to determine the Hungarian consumer information sources, attitudes and behavior after the emergence of avian virus in Europe. We have been tested four work hypotheses:

1. H1 The most important sources of information of Hungarian citizens are the TV channels and the electronic media;
2. H2 The avian flu increased the importance of country of origin in case of majority of consumers;
3. H3 There is a rather low level of confidence among Hungarian consumers towards the different professional and governmental authorities;
4. H4 The food consumer behaviour can be explained by the general theory of the well-known Fishbein-Ajzen model of planned behaviour.

In trying to understand the basis of consumer behaviours psychologists, marketing specialists and health educators have together gathered an impressive list of factors and constructs which at one time or another have been said to be relevant, but these factors are hard to operationalise. That's why we have a rather simple, but easily operationalisable method of investigation: the Fishbein-Ajzen (*Collins and Wugelther, 1992; Fishbein and Ajzen, 1974*) model. Searching the causes of human behaviour Ajzen and Fishbein state, that: "the ultimate determinants of any behaviour are the behavioural beliefs concerning its consequences and normative beliefs concerning the prescriptions of others" moreover "variables other than these two components (are) shown to affect behavioural intentions and overt behaviours indirectly by influencing one or both of the components". This certainly prunes radically the number of relevant factors, influencing consumer behaviour, that's why this approach has been used to analyse the consumer behaviour. Behaviour is defined as "Observable acts ... that are studied in their own right". The model provides a framework to study attitudes toward behaviours. According to the theory, the most important determinant of a person's behaviour is behaviour intent. The individual's intention to perform a behaviour is a combination of attitude toward performing the behaviour and subjective norm. If a person perceives that the outcome from performing a behaviour is positive, she/he will have a positive attitude toward performing that behaviour. If relevant others see performing the behaviour as positive and the individual is motivated to meet the expectations of relevant others, then a positive subjective norm is expected. Attitudes and subjective norm are measured on scales (as an example the Likert Scale) using phrases or terms such as like/unlike, good/bad, and agree/disagree. A positive product indicates behavioural intent (*Glanz et al., 1997*). The third determinant of behavioural intention is the perceived behavioural control. This perception can reflect past experiences, anticipation of upcoming circumstances, and the attitudes of the influential norms that surround the individual (*McKenzie and Jurs, 1993*).

## **METHODS OF INVESTIGATIONS**

Between October and November 2005 (after the publication of pieces of information on indication of avian flu in Turkey, Romania and Bulgaria) a series of focus-group

interview has been carried out to determine the most important points of public interest, joining to avian flu problem. Based on these interviews, a questionnaire, containing 97 items has been compiled. The questionnaire consisted of closed questionnaires with purpose of facilitating of the anonym filling out. The respondents have been selected from participants of different meetings of a local rural library, form parents of students of a Budapest high school, as well as from relatives of students of different post-graduate courses of Corvinus University. Total number of respondents has been 526. The graphical representation of results has been realised by explorative data analysis (Hajduné, 2005). The boxes in the graphs represent the interquartile range, the thicker lines the mode of responses.

The basic socio-economic characteristic features of respondents are summarised in *Table 1*. The sample can't be considered as a representative one, but it seems to be suitable to determine the attitudes of Hungarian above average.

**Table 1**

**The basic socio-demographical indicators of respondents**

<b>Gender</b>		<b>Place of living</b>	
Female	65%	Budapest (capital of Hungary)	35%
Male	35%	Larger town (County centre)	20%
<b>Age</b>		Small town	27%
Below 35	37%	Village	18%
36–50	41%	<b>Level of qualification</b>	
Above 50	12%	Elementary school	18%
		High school	44%
		College, university	38%

**RESULTS**

The most important sources of information on avian flu for the respondents were the electronic and printed media (*Figure 1*). It is important to emphasise, that the relative importance of state and commercial television channels were practically the same. This highlights the responsibility of business oriented means of communication in information of consumers. Surprisingly, the importance of friends and relatives as sources of information was relatively high.

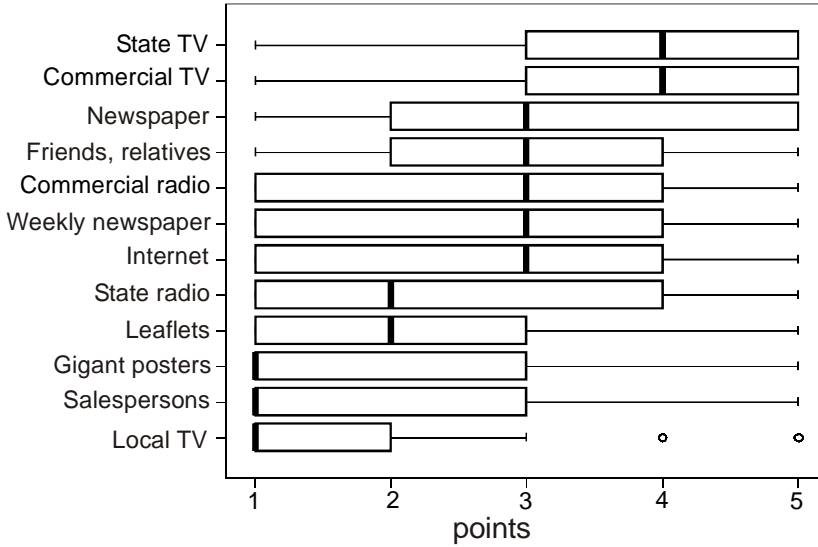
The level of confidence in different sources of information has shown considerable differences (*Figure 2*). The highest level of trust was in information from Hungarian scientists and competent medical authorities. The level of trust was considerable lower in case of Ministries. The emergence of avian flu has highlighted the importance of question of place of origin of the products. It can be estimated as a rather positive fact, that the products, bred or processed in Hungary have been preferred in an above average level (*Figure 3*).

The structural model describes two types of relationships: the relationships between observed variables and latent variables, and that among latent variables. The directly observed variables are indicated by ellipses. The continuous latent variables (attitude, norms, perceived control) are indicated by rectangles. The behaviour itself (marked by rectangle) has been measured by four indicators. The graph shows the unstandardized coefficients. Each unstandardized estimate represents the amount of change in the

outcome variable as a function of a single unit change in the variable causing it. By definition, the first estimate in each group of variables is set as 1.

**Figure 1**

**The relative importance of different sources of information, evaluated on a 1-5 scale**



**Figure 2**

**The level of trust in different sources of information on avian flu**

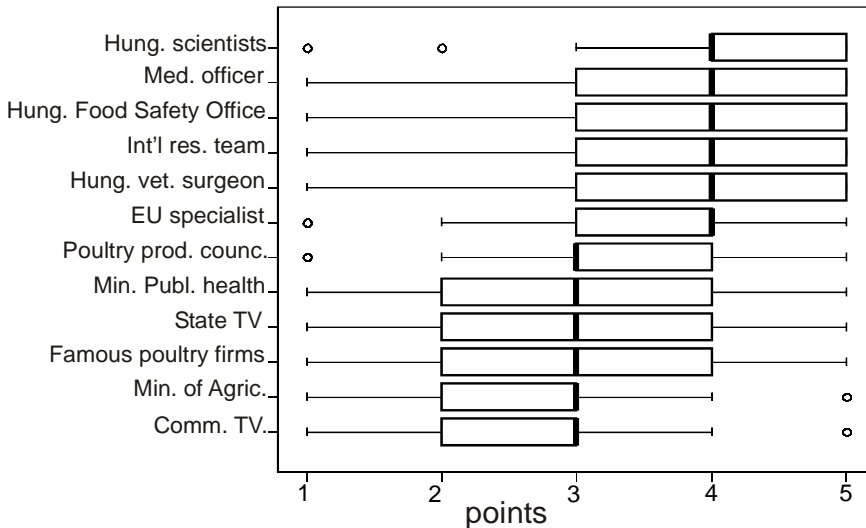


Figure 3

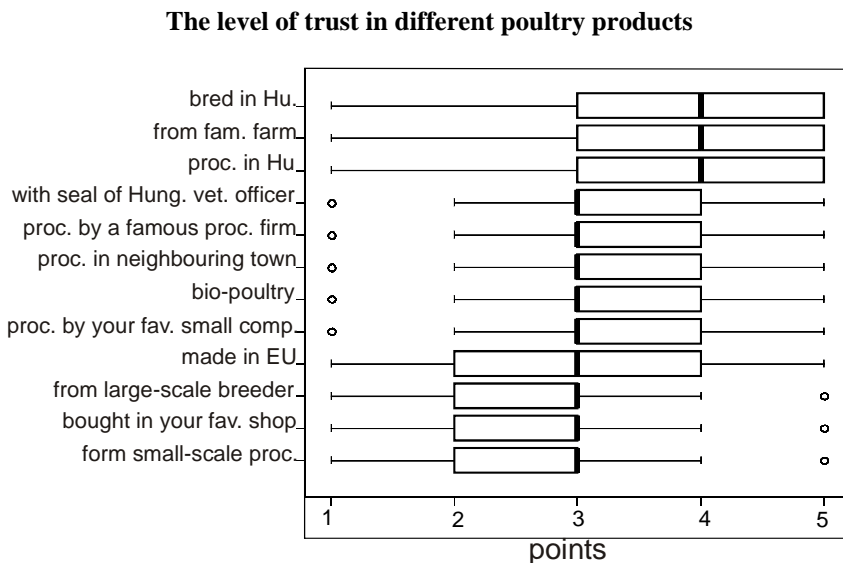
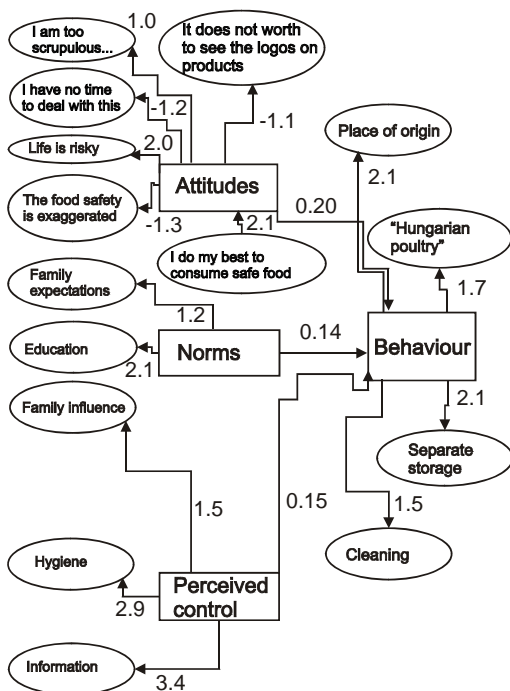


Figure 4

**Results of structural equation modelling, for the determination of the consumer behaviour**



Based on the data above, structural equation modelling was elaborated to determine the influence of different factors on the efficiency of a farm. The chi-square test showed that fitness of the model was significant, indicating that the null hypothesis, that the model fits the data, cannot be rejected. This finding was corroborated by the Root Mean Square Error of Approximation (RMSEA) statistics. According to *Muthén* (2000, 2004) the recommended cut-off value is 0.06. The RMSEA estimation was 0.1, that's why the model fits does not fits perfectly, but in our opinion there are important for practical purposes lessons. Values on the arrow indicate the regression coefficients.

## CONCLUSIONS

The  $H_1$  and  $H_2$  hypotheses have been proven. The  $H_3$  hypothesis has been proven only partially, because there is a rather high level of confidence for authorities. Mathematically, the Fishbein-Ajzen model (hypothesis No.  $H_4$ ) does not fits perfectly to the data, but this can be a consequence of the relatively low number of answers. At the same time, the model is well-interpretable, the regression coefficients mirror the expected relations between the different measurable and latent variables. It would be challenging to determine the correlations between the variables "attitudes", "norms" and "perceived control" but this model has not been a significant one.

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