TESTING INDIRECT EFFECT OF CONSUMER ATTITUDES TOWARD A PRODUCT

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Abstract

The number of farmers´ markets has been increasing all around the world. This growth in the popularity of farmers´ markets has been attributed to factors of changing consumer interest in local traditional or innovative food products.

This paper focuses on familiarity bias in the Czech dairy market and on the indirect and direct effects of the perception of information through information behavior and the use of the model ordered. It is proposed that consumer levels of product familiarity of attributes affects behavior. Consumer attitudes towards agri-food products and behaviour were analyzed through a questionnaire in 2010-2011. The model is estimated using probit analysis to predict relationship between producer and consumer in decision-making when buying a new type of cheese and to examine consumer attitudes toward food origins and nutrient food security.

It can be concluded that the indirect effect (e.g. is the product grown locally, fresher, environmental issues, safety, etc.) on consumer attitudes toward products exists. The sustainability agenda has been adopted by the consumers' local community.

Key words: information behavior, consumer attitudes, indirect effect, testing mediation

JEL Code: D12, D71, D81

Introduction

Testing mediation with regression analysis has a long history. Many studies analyze the relationships between product attributes on consumer attitudes and product and buying intentions (Grunert et al., 2005; Thilmany, et al., 2008). Body of literature identifying direct and indirect effects of product attributes on consumers´ attitudes toward a product in the global agri-food market increases exponentially (van der Lans et al., 2001; Dentoni, 2006). Van der Lans et al. highlighted a direct effect as the impact of the *locally grown* attribute on consumer attitudes toward a product without mediation. Dentoni (2006) highlighted an indirect effect as the impact of *locally grown* on consumer attitudes toward a product

mediated by their belief that other desirable product attributes (etc. freshness or environmentally – friendliness) are present in the product.

The attributes of product have an impact on consumer attitudes because they are used as a cue for desirable attributes and other attributes. The indirect effect of place of origin as a cue of other attributes has been found by van der Lans et al. (2001). Erickson et al. (1984) proposed that the impact of place of origin of a product on consumer attitudes has an indirect effect - it is mediated by consumer beliefs in the presence of experience attributes.

Calculation of an indirect effect can be done in several ways. Several researchers (Baron and Kenny 1986; James and Brett, 1984; Judd and Kenny, 1981) proposed a four step approach in which several regression analyses are conducted and significance of the coefficients is examined at each step.

Compared with the most recent advances in this field, our previous study (Hrubá, 2014; Hrubá, 2016a; Hrubá, 2016b) was innovative in using probit regression. In line with (Dentoni et. al, 2009; van der Lans et al., 2001), an direct effect is an impact of *attitude toward producers* without any mediation. We consider an indirect effect to be an impact of *attitude toward producers* on consumer attitudes toward a product mediated by their attitude to other product attributes.

In this paper, we analyze the problem of those attitudes toward food that influence the behavior and decision-making of consumers when buying food from particular producers. The rationale comes from theoretically based relations between attitudes and behaviors. There is a large body of literature posing that attitudes influence consumer behavior directly and indirectly. Katona (1975) introduced the survey method to economic research. The rest of the paper is organized in the following way: In the next section, there is a description what data were collected and how, and how they were analyzed. The following section contains results of the analysis of direct and indirect effects of attitude toward producers on frequency of buying from particular producers. The last section offers conclusions.

1 Data and Methods

Data were collected using a questionnaire in 2010-2011 Respondents were 909 university students**.** The questionnaire contained also questions not analyzed in this paper. The dependent variable - frequency of buying from particular producers - was measured on a scale never-rarely-sometimes-always. Attitudes toward producers, name of the product, origin of milk, ingredients and safe food handling were measured on a scale unimportant-important-

very important. Due to type of data, a probit regression is used in the results section, confidence level $\alpha = 0.05$ is used to comment significance of investigated relationships.

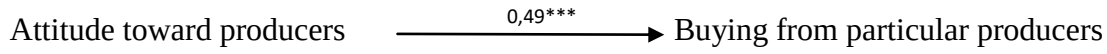
We acknowledge that wording of questions may influence answers and also variation in answers. For example, Suchánek et al. (2014) investigated consumer satisfaction with food in general, and they discovered that variation in answers depends on how exactly the question is posed - "recommendation" had a highest variability while "evaluation" the lowest. So it may be possible that due to wording of questions in our questionnaire, some relationships do not turn up significant though they are significant in practice.

An indirect effect of attitude toward producers on frequency of buying from particular producers is tested using the four step approach suggested in (Baron and Kenny 1986; James and Brett, 1984; Judd and Kenny, 1981). First, the direct effect is tested, i.e. if attitude toward producers influences frequency of buying from particular producers. Then plausible mediators are selected by testing if they are significantly influenced by attitude toward producers. The ones that are significantly influenced by attitude toward producers are then used as mediators in the model which also includes the independent variable - attitude toward producers. If the independent variable - attitude toward producers - is significant also in the model with mediators present, then it means that attitude toward producers has a direct effect on frequency of buying from particular producers. If the independent variable - attitude toward producers - is not significant in the model with mediators present, it clearly means that its influence is only indirect, i.e. there is a complete mediation. It is also possible that the effect is both direct and indirect, i.e. there is a partial mediation - that is in the case when at least one of the mediators has a significant effect on the dependent variable and, at the same time, the independent variable has a significant effect on the dependent variable.

2 Results

As it was mentioned in the previous section, in order to estimate the type of effect of attitude toward producers on frequency of buying from particular producers, it is first necessary to test if the relationship between the two variables is significant. Results of the probit regression are presented in Fig. 1.

Fig. 1: Test of direct effect

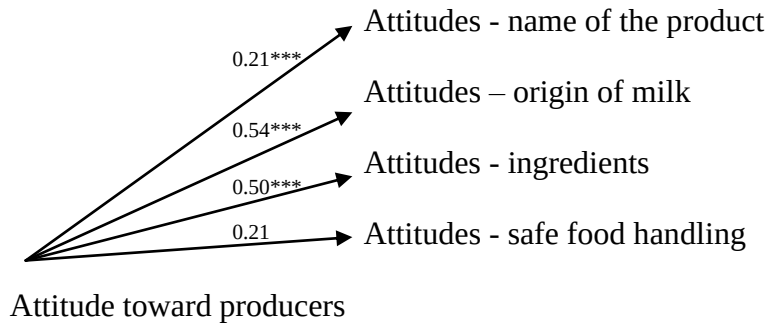


Legend:
Attitudes toward producers: unimportant/important/very important
Buying from particular producers: Never, rarely, sometime, ever
Significance: *** p-value < 0.001
Source: data of the survey

The coefficient is significant, so we established that the independent variable influences the dependent variable and, therefore, it is worth to continue with the evaluation of the type of the effect. The coefficient is positive, so as it was to be expected, higher importance of attitude toward producers results in higher frequency of buying from particular producers.

In the second step, we test if name of the product, origin of milk, ingredients, and safe food handling could be mediators. In order to figure out if they qualify for being a mediator, we test if attitude toward producers influences these four variables. Coefficients are provided in Fig. 2.

Fig. 2: Test of mediators



Legend:
Attitudes toward producer, name of the product, origin of milk, ingredients: unimportant/important/very important
Significance: *** p-value < 0.001
Source: data of the survey

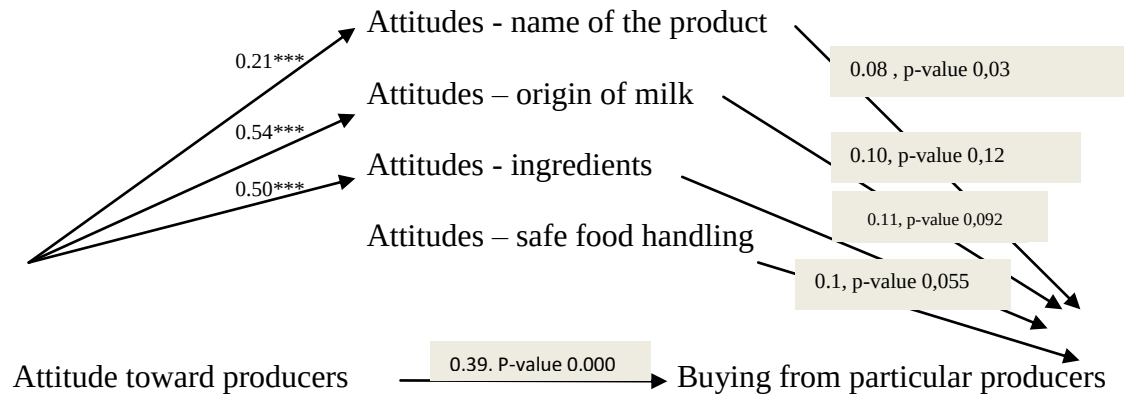
As it is obvious from the Fig. 2, safe food handling is not significantly influenced by attitude toward producers. Therefore, only name of the product, origin of milk, and ingredients will be tested as possible mediators. Attitude toward producers positively influences all the three variables.

In order to investigate whether attitude toward producers have a direct effect, an indirect effect, or both, on frequency of buying from particular producers, we test a model

with attitude toward producers and the four significant possible mediators - name of the product, origin of milk, safe food handling and ingredients. Coefficients are provided in Fig. 3.

Both effects of producer on buying from particular producers being observed and the results are presented; that is, familiarity to the local producer have a positive association with their responsible behaviour in the market. There is significant effect of producers on buying from particular producers, so the direct effect was confirmed. But we found differences in the probability of behaviour compared with first models.

Fig. 3: Test of indirect effect



Legend:
Attitudes toward variable: unimportant/important/very important
Buying from particular producers: never, rarely, sometime, ever
Significance: *** p-value <0,001
Source: data of the survey

There is a significant effect of attitude toward producers on frequency of buying from particular producers, so the direct effect was confirmed. From the three tested mediators only name of the product significantly influenced frequency of buying from particular producers. So, there is also an indirect effect of producers which is mediated through name of the product. This means that there is a partial mediation. Alongside attitude toward producers, name of the product also positively influences frequency of buying from particular producers.

Conclusion

The aim of the paper was to analyze the type of effect of attitude toward producers on frequency of buying from particular producers on a sample of Czech university students. There is a partial mediation. Attitude toward producers has a positive effect on frequency of

buying from particular producers. The indirect effect is mediated by name of the product. Attitude toward producers positively influences the attitude toward name of the product, and name of the product positively influences frequency of buying from particular producers.

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