



**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.*

## **Trust as a determinant of consumer behaviour in Germany**

**Dr. Leef H. Dierks**  
ldierks@gmx.de



**Paper prepared for presentation at the 99<sup>th</sup> EAAE Seminar “Trust and Risk in Business Networks”, Bonn, Germany, February 8-10, 2006**

*Copyright 2006 by Leef H Dierks. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.*

## Trust as a Determinant of Consumer Behaviour in Germany

*Leef H. Dierks*

*Department of Agricultural Economics, Christian-Albrechts-University at Kiel*

*D-24098 Kiel, Germany,*

*ldierks@agric-econ.uni-kiel.de*

### Abstract

Against the background of diverse food scandals this article investigates the role of trust as a determinant of consumer behaviour in Germany. As empirical analyses indicate the impact of trust on consumer behaviour in a quotidian and presumably safe setting is to be neglected. In the environment of a food scandal, however, trust proves to be a crucial element with regard to a more in-depth understanding of consumer behaviour under uncertainty. Moreover, it is analysed whether different values of trust allow for deriving coherent population segments and whether these can likewise be identified on the basis of consumers' socio-economic features.

### Keywords

consumer behaviour, uncertainty, food safety, trust

### Introduction

The ever increasing number of food scandals in recent years has accentuated the need for an improved understanding of the motives behind consumers' reactions to random external shocks. Typically, such shocks trigger sudden and abrupt changes in consumer behaviour which, preconceiving contingent declines in consumption may *ceteris paribus* culminate in severe welfare losses. Regardless of their fundamental significance, the prevailing and established concepts of demand analysis such as neoclassical microeconomic approaches, for instance, do not provide an utterly adequate description of consumer behaviour in the environment of a food scandal which is evidently influenced through other than exclusively economic parameters. In order to allow for these features nonetheless, the traditional analysis of consumer behaviour under uncertainty is complemented by additionally considering behavioural aspects. Among the most relevant characteristics, particularly with regard to non-transparent and hazardous situations, is the element of trust.

As literature research suggests, incorporating the element of trust can be interpreted as a plausible strategy to reduce consumers' uncertainty in the context of decision making, most notably involving the purchase of goods possessing mainly credence qualities. Since this applies to nearly all foods, the significance of trust as a determinant of consumer behaviour under uncertainty might be considered as being equally important to economic factors such as income or price, for example.

For the purpose of ascertaining the impact of trust on consumer behaviour under uncertainty and discussing the conditions under which trust might be regarded as a market determinant, emphasis is placed on its conceptual and statistical evaluation under divergent scenarios.

Precisely, this publication studies consumers' trust in selected sources of information and discusses the settings and extent to which it influences consumers' behaviour. Also, it is analysed whether different values of trust allow for deriving coherent cross national population segments and whether these can likewise be identified on the basis of consumers' socio-economic features. Lessons learnt from this recent field of research provide a valuable insight into consumer behaviour in the environment of food safety scandals and could thus contribute to appropriate measures designed to sustainably safeguard consumers' trust.

### **The Element of Trust**

The imperative of gradually enhancing existing approaches to comprehensively illustrate consumer behaviour under uncertainty is mainly caused by the non-observance of potentially relevant aspects. *Prima facie*, a concentration on factors of evident significance appears to be consistent with an attempt to depict a simplified, yet realistic image of the consumer's process of decision making. At closer inspection, however, such *modus operandi* impedes an investigation of other than the examined variables and thus cannot reveal their meaning. Consequently, as no scientific paradigm taken alone can provide a comprehensive explanation of so complex a field as consumer behaviour, it does not seem appropriate to persist in the academic dominance of the Subjective Expected Utility Theory but to pursue multifaceted approaches such as Behavioural and Information Economics. These approaches explicitly consider the coherence between attitudes and information and their ambiguous impact on behaviour. Furthermore, the self-evident combination of these concepts provides a sound foundation for introducing the element of trust which emerges as a strategy to reduce subjective uncertainty in an environment of incomplete information into the analysis.

Regardless of the renascent interest in multifaceted behavioural elements like trust in comprehensive analyses of consumer behaviour an embedding of the concept into economics is only little beyond its fledgling stages (Hosmer, 1995). Trust and the conditions under which it might be considered as a market determinant have so far only been sketchily discussed and applied incompletely to consumer behaviour under uncertainty (Misztal, 1998). Despite these circumstances, the prevailing methodological diversity mostly circumvents a distinct definition of trust. Yet, the perhaps most commonly used concept – particularly in the environment of economics – implies a disposition towards trusting behaviour; i.e. a behaviour accepting vulnerability based upon the personal expectation. Thus, this article follows the definition of Nooteboom (1996) who remarks that 'X trusts Y to the extent that X chooses to cooperate with Y on the basis of a subjective probability that Y will choose not to employ opportunities for defection that X considers damaging, even if it is in the interest of Y to do so. The trustworthiness of Y depends on Y's true propensity to employ those opportunities'.

Among the first to analyse trust in the perspective of a rational choice model of neoclassical economics was Coleman (1990) whose approach is based on the postulate of maximizing utility under uncertainty and requires the trustor to decide between investing trust – which would yield an expected utility of the expected value of a potential gain less the expected value of a potential loss, and not investing trust – which would not change his utility. The decision whether or not to trust the trustee is based on the probability that the trustee is trustworthy, the

potential gain, and the potential loss that might occur if the trustee is not trustworthy. Coherently, trust is to be understood as a subjective probability in this context.

One of the first multilevel approaches to formally introduce the element of trust into decision making under uncertainty was undertaken in Böcker and Hanf's (2000) seminal model of individual information processing by means of a Bayesian revision process. The model proposes a two step risk perception process in which differences in the reliability between single types of suppliers are captured by subjective failure probabilities. As above, trust is understood as a subjective probability that the trustee, i.e. the supplier of a food, is reliable. Formally, a consumer C distinguishes between two different types of suppliers. Whereas suppliers of type A are regarded as reliable, those of type B are assumed to be less reliable. Consequently, C judges the probability  $P(G|A)$ , to purchase an unsafe item from type A to be smaller than  $P(G|B)$ , the respective failure probability assigned to type B. Referring to available information and personal experience, C generally purchases from supplier S which he presumes to be of type A. Since C does not possess perfect information, however, he cannot be sure that S actually belongs to type A. His trust in S to be reliable is expressed through the subjective probability  $P_J$ , leaving a residual probability of  $(1-P_J)$  for S belonging to type B. Naturally, C can modify his decision to purchase a potentially unsafe item X anytime by replacing it through substitute Y which he considers to be more secure. The substitution, however, would require that the expected utility of Y exceeds the expected utility of X. The likelihood for C to purchase X depends on the subjective probability  $P_J$ . Böcker and Hanf assume that if C comes to know about the occurrence of a disconcerting incidence, caused by good X which S has sold, C will revise any prior belief  $P_J$  about J's reliability to the posterior probability  $P_{PJ}$ .  $P_{PJ}$  is the conditional probability of S being of type A after having observed that X is unsafe.

The following paragraphs will discuss approaches that evolved as conceivable alternatives to the Expected Utility Theory. Among these are as well the Prospect Theory as the Theory of Reasoned Action, which are both considered as methodological precursors to Ajzen's (1991) Theory of Planned Behaviour, on whose enhancement this article will predominantly focus.

The Theory of Reasoned Action, as introduced by Fishbein and Ajzen (1975) and Ajzen and Fishbein (1980), aims at predicting consumers' volitional behaviours and at comprehensively explaining the underlying psychological determinants. In doing so, the theory combines Fishbein's (1963) Attitude Theory and Dulany's (1967) Theory of Propositional Control which previously did not explicitly address social behaviour. Consequently, the Theory of Reasoned Action emphasises the impact of behavioural and normative beliefs on the consumer's intention to conduct a given behaviour (East, 1997).

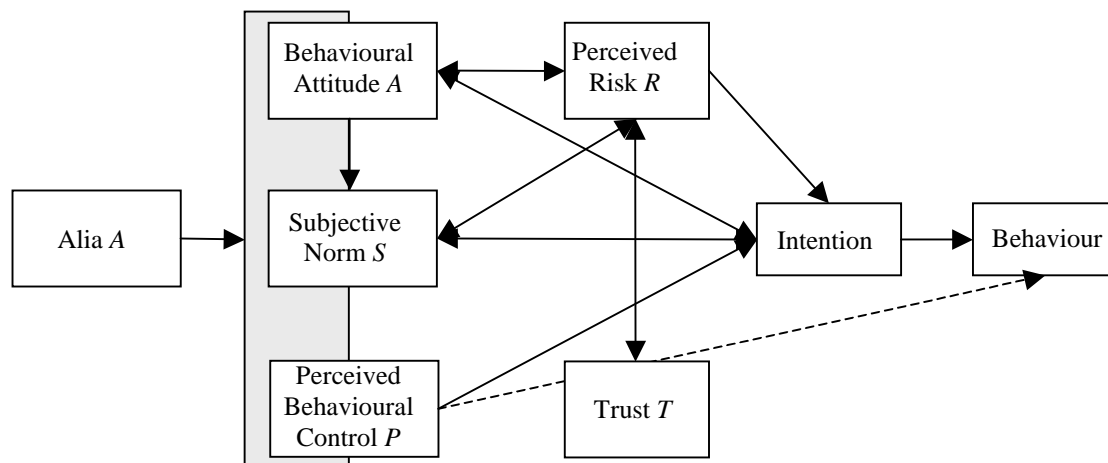
According to the Theory of Reasoned Action, intentions comprise two conceptually different determinants. The first predictor of intention is the consumer's attitude towards the behaviour, which refers to the degree to which a consumer has an either favourable or unfavourable evaluation of the behaviour in question. The second predictor of intention is a social factor termed subjective norm, and refers to the consumer's perception of contingent social pressures to perform the behaviour in question. Subjective norms are a function of normative beliefs that

indicate the influence important reference individuals or groups in the consumer's social environment have in his selection of behavioural patterns. The consumer will intend to perform certain behaviours when he perceives them as being positively evaluated and desired by the social environment – and vice versa (Ajzen, 1991).

The Theory of Planned Behaviour differs from the Theory of Reasoned Action in its addition of a third determinant of intention; the perceived behavioural control which refers to the consumers' perceptions of their ability to perform a given behaviour. In analogy to attitudinal beliefs, perceived behavioural control is determined by control beliefs, i.e. beliefs about the presence of factors that facilitate or impede the performance of the behaviour in question. Control beliefs are mostly determined through the consumer's individual experiences, but also through information and experience of the social environment that influences the subjectively perceived difficulty of performing the behaviour in question. The more resources and opportunities individuals assume to possess, and the fewer impediments they anticipate, the greater is their perceived control over the behaviour. Accordingly, the consumer's perceived behavioural control varies across situations and actions (Ajzen, 1991).

With reference to the previously discussed determinants of consumer behaviour under uncertainty, the Theory of Planned Behaviour was gradually enhanced by Mazzocchi et al. (2004) who included trust as an additional predictor of consumer behaviour. There is considerable empirical evidence that trust is a crucial prerequisite for consumers to engage in economic interactions under uncertainty when the obtainment of complete information can only be ascertained at prohibitively high costs. This applies particularly for the credence qualities of a good as illustrated by Darby and Karni (1973). Since trust under certainty, however, is tantamount to knowledge and thus redundant, emphasis needs to be placed on the individually perceived risk associated with certain behaviour patterns.

According to recent interpretations of the Theory of Planned Behaviour and denoted through the dashed line in figure 1, perceived behavioural control could also be assumed to directly influence consumer behaviour (Ajzen, 1991). This would imply a derogation of the intention's impact on consumer behaviour since the latter is at least partially determined through other antecedents. *Prima facie*, this assumption seems appropriate in an environment of certainty where a concentration on perceived behavioural control and behavioural intention might be sufficient to accurately predict consumer behaviour. On closer examination, however, the assumption appears to be reasonably misleading. The assumed direct link between perceived behavioural control and behaviour principally concerns repeated routine behaviours that, if any, involve only little cognitive and conscious reasoning. Therefore, the contiguity is incompatible with consumer behaviour in the environment of uncertainty – which inevitably focuses on intention as the immediate and exclusive antecedent of behaviour – and will not be the subject of any further consideration.



**Figure 1.** The SPARTA II Model. Source: Modified from Mazzocchi et al., (2005)

The integration of perceived risk and trust into the framework of the Theory of Planned Behaviour and the likewise consideration of the influence of different individual characteristics resulted in the development of the so-called SPARTA II Model outlined in figure 1. The acronym SPARTA is derived from the initials of the variables presumed to determine the consumer's behavioural intentions. These are subjective norm, perceived behavioural control, behavioural attitude, perceived risk, and socio-demographic variables subsumed to alia (Mazzocchi et al., 2005). With regard to the information paradox outlined above, trust is hypothesised to affect perceived risk exclusively, and thus has, through its prior interaction with other variables, an only indirect impact on the consumers' intention.

Based on these considerations, this article empirically assesses the impact of trust on consumer behaviour both in a quotidian and presumably safe setting and under uncertainty. The collected data were analysed employing several standard univariate and multivariate statistical methods.

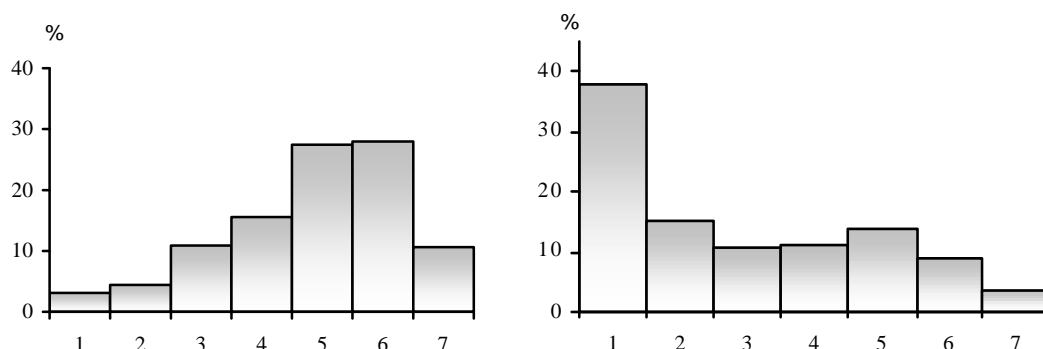
## Data

The alleged impact of trust on consumer behaviour under uncertainty was empirically assessed by means of a survey conducted among 451 German households in spring 2004, comprising thirty minute face-to-face, in-home interviews with the family member responsible for purchase and/or preparation of food. Apparently, these persons are more involved in the issue of food safety than the average. As a sampling frame significant at national level for those in charge of purchasing food is nearly impossible, it is obvious to maintain the household as the sampling unit and to ensure that the respondent is representative for the entire household. The sample is based on simple random sampling and probabilistic extraction which guarantees national representativeness.

Since a commensurable reaction to a (hypothetical) food scandal can only be expected if a multitude of consumers fears to be potentially affected, a familiar and popular food of frequent consumption needed to be selected. Consequently, chicken, which had already previously been

the centre of serious food scandals like the dioxin chicken scandal in Belgium in 1999, for example, was selected as the object of investigation. Taking into account the grave importance of food safety, chicken furthermore seems to be a suitable frame of reference of the survey since consumers mostly perceive the risk of its consumption as being below average. Any incidence will therefore strike consumers rather unexpectedly and might yield more severe reactions compared to its occurrence in other sectors. In accordance with the selection of chicken as an exemplary food within the survey, the food safety incident will in the following be concretised as a salmonellae outbreak (Dierks, 2005).

In a quotidian and presumably safe setting as depicted in figure 2a, an average of 66.06 percent of the respondents indicate that their likelihood of purchasing chicken in the present week exceeds the neutral value of four on a seven point Likert-scale. Merely 18.39 percent, in contrast, reveal a low likelihood, corresponding to three points or less on the seven point Likert-scale. 15.54 percent, finally, remain undecided. Unsurprisingly, this image abruptly changes following the respondents' confrontation with a hypothetical food scandal. As illustrated in figure 2b, 63.19 percent regard it as unlikely to purchase chicken for the household's home consumption in the aftermaths of a salmonella outbreak, thereby substantiating both an increase in the risk consumers perceive and a clear shift towards a more reserved behaviour in their consumption (Dierks, 2005).



**Figure 2a and b:** The intention of German consumers to purchase chicken before (a) and after (b) a food scandal. The value one indicates a very low; seven a very high likelihood to purchase chicken for the household's home consumption in the week following the interview. The responses depicted above exhibit a mean value of 4.85 (2.88) and a standard deviation of 1.47 (1.90) on the underlying seven point Likert-scale. Source: Dierks (2005).

Within the scope of the survey, respondents were asked to indicate their trust in information provided by selected sources on a seven point Likert-scale. In an adjacent step, a factor analysis was performed on 451 German observations. Following a varimax rotation, the factor analysis yields five well distinguishable principal components whose loadings are depicted in table 1.



**Table 1.** Principal component loadings for trust in food safety information

Information Source	Components of Trust				
	T <sub>M</sub>	T <sub>F</sub>	T <sub>I</sub>	T <sub>A</sub>	T <sub>V</sub>
Shopkeepers	-0.001	<b>0.823</b>	0.156	0.010	0.129
Supermarket	0.119	<b>0.792</b>	0.175	-0.059	0.206
Organic Shop	0.175	<b>0.715</b>	0.121	0.368	-0.069
Specialty Store	0.220	<b>0.780</b>	0.160	0.168	0.078
Farmers /Breeders	0.131	<b>0.739</b>	0.133	0.035	0.186
Processors	0.107	<b>0.609</b>	0.243	-0.102	0.467
Health Officials	0.207	0.288	<b>0.755</b>	0.091	0.045
University Scientists	0.160	0.165	<b>0.687</b>	0.229	0.151
National Food Authority	0.041	0.182	<b>0.818</b>	0.056	0.081
Government	0.161	0.118	<b>0.561</b>	0.086	<b>0.569</b>
Political Groups	0.162	0.101	0.262	0.291	<b>0.733</b>
Environmental Groups	0.138	0.058	0.219	<b>0.844</b>	0.166
Animal welfare Organisations	0.105	0.070	0.053	<b>0.881</b>	0.135
Consumer Organisations	0.208	0.113	<b>0.540</b>	0.482	-0.056
European Food Safety Authority	0.206	0.136	<b>0.659</b>	0.005	0.282
Television documentary	<b>0.705</b>	0.082	0.195	0.211	0.113
Television news / current affairs	<b>0.801</b>	0.089	0.288	0.035	0.007
Television advertising	0.196	0.312	0.016	0.104	<b>0.695</b>
Newspapers	<b>0.786</b>	0.193	0.125	0.149	0.047
Internet	<b>0.520</b>	0.048	-0.072	0.000	0.203
Radio	<b>0.824</b>	0.139	0.229	0.056	0.124
Magazines	<b>0.577</b>	0.247	0.125	0.102	0.431
Product Label	0.272	0.426	0.190	-0.028	0.445
Component Label	Media	Food Chain	Independent	Alternative	Lobbies

Note: A varimax rotation with Kaiser Normalisation has been conducted. The rotation converged in six iterations. Values exceeding 0.5 are printed bold.

In an adjacent step, a hierarchical k-means cluster analysis preset to three clusters was performed on the observations. Results are illustrated in table 2.

**Table 2.** Categorization of clusters featuring the German data set according to the k-means method

Clusters	1	2	3
Trust in media	-0.23	0.04	0.20
Trust in food chain actors	-0.94	0.60	-0.04
Trust in independent sources	0.38	-0.34	0.22
Trust in alternative sources	0.61	0.20	-1.22
Trust in vested interests	-0.17	0.39	-0.59
Absolute Counts	133	216	102
Percentage	29.49	47.89	22.62

Source: Dierks et al., (2005).

As depicted in table 2, the first population cluster shows significant trust being expressed towards food safety information provided by alternative and independent sources. Strong distrust, however, is expressed towards food chain actors, and milder distrust towards media

and vested interests. This implies that the first population cluster mainly comprehends alternative trusters with little confidence in classic institutions such as industry and media. The second cluster suggests that the respondents assigned to this cluster appear to be directly opposed to the first population cluster since consumers display trust in nearly all sources of information. Since distrust is only expressed towards information provided by independent sources, this cluster appears to comprise consumers characterised as conservative trusters. The third cluster is characterized by trust being expressed towards information provided by media and independent sources whilst strong distrust, in turn, is expressed towards information provided by alternative sources, vested interests, and, even though to a negligible extent, towards information provided by food chain actors. The inconsistency of this pattern allows for characterising it as predominantly comprising sceptic trusters.

### The Impact of Trust on Consumer Behaviour

Following the classification of German respondents into three different population clusters, emphasis is placed on estimating the determinants of consumer behaviour in both a standard situation and after an external shock. The estimation of the SPARTA II model as outlined in figure 1 for both a standard situation and a hypothesised salmonella infestation aims at precisely identifying changes in consumer behaviour directly attributed to the occurrence of a (hypothetical) food scandal.

As illustrated above, the consumers' intention to conduct a particular behaviour is determined through subjective norm, perceived behavioural control, behavioural attitude, and perceived risk. Trust, presumably has an indirect influence on consumer behaviour. The respective estimates for a standard purchasing situation, based on 377 German observations of which 31.8 percent correspond to alternative, 46.4 percent to conservative, and 21.8 percent to sceptic trusters, are depicted in table 3.

**Table 3.** Determinants of consumer behaviour in a standard situation

Variable	Cluster		
	Alternative Trusters	Conservative Trusters	Sceptic Trusters
Constant	-1.2942 (0.7499)	-0.6704 (0.6998)	-1.0010 (0.8474)
Subjective Norm	0.0691 (0.06956)	0.1587 (0.0577)	0.0943 (0.0866)
Perceived Behavioural Control	0.1588 (0.0951)	0.1388 (0.0802)	0.2281 (0.1127)
Behavioural Attitude	0.3989 (0.1061)	0.3814 (0.0942)	0.2723 (0.1306)
Perceived Risk	0.1057 (0.0786)	-0.0424 (0.0585)	-0.0043 (0.1049)

Standard errors are put in parenthesis. Perceived risk, PR, is expressed as a weighed average of the respondents' perception of risk factors. The weighs correspond to the level of knowledge of the respective risk factors.

The intention of German consumers to purchase chicken in a standard situation is particularly determined through their attitude. Differences regarding the impact of attitude across the clusters indicate that respondents characterised as alternative and conservative trusters are influenced in a clearly stronger manner than respondents characterised as sceptic trusters. Interestingly, the opposite applies to perceived behavioural control which has a stronger

impact on sceptic trusters than it has on alternative trusters or conservative trusters. Normative beliefs, i.e. subjective norm, have a positive impact on all population clusters. Perceived risk surprisingly has a positive impact on the intention to purchase chicken of respondents characterised as alternative trusters. Its impact on conservative trusters and sceptic trusters, however, is slightly negative – even though mainly negligible. As the impact of trust on consumer behaviour is understood to enter the estimates via the factor perceived risk – and considering that the latter has no significant impact on intention – it needs to be concluded that trust does not affect the behaviour of German consumers in a quotidian and presumably safe setting.

As expected, the above conclusions abruptly change once respondents are confronted with a hypothetical salmonella outbreak as emphasised through the increasingly negative impact of perceived risk. The respective estimates are illustrated in table 4.

**Table 4.** Determinants of consumer behaviour after a (hypothetical) salmonella outbreak

Variable	Cluster		
	Alternative Trusters	Conservative Trusters	Sceptic Trusters
Constant	-0.3650 (0.7405)	-2.7934 (0.7024)	-1.411 (0.8750)
Subjective Norm	-0.0162 (0.0689)	0.0708 (0.0556)	0.0118 (0.0875)
Perceived Behavioural Control	0.0009 (0.0883)	0.2377 (0.0790)	0.1395 (0.1086)
Behavioural Attitude	0.2698 (0.0910)	0.3941 (0.0914)	0.2617 (0.1116)
Perceived Risk	-0.2558 (0.0775)	0.0029 (0.0568)	-0.1503 (0.1009)

Standard errors are put in parenthesis. Perceived risk, PR, is expressed as a weighed average of the respondents' perception of risk factors. The weighs correspond to the level of knowledge of the respective risk factors.

In contrast to table 4, the above estimates are based upon 424 German observations. Of these, 33.0 percent correspond to alternative, 43.9 percent to conservative, and 23.1 percent to sceptic trusters. As in the standard purchasing situation, attitude remains the decisive factor determining the consumers' intention to purchase chicken in the environment of a hypothetical food scandal. Again, this holds for all population clusters. Yet, whilst the impact of behavioural attitude on conservative and sceptic trusters remains nearly unchanged, the influence on alternative trusters deteriorates. Interestingly, this also applies to the impact of subjective norm on alternative, conservative, and sceptic trusters alike. Except for its influence on conservative trusters which nearly doubles, this furthermore applies to the impact of perceived behavioural control on sceptic and alternative trusters. With exception of its negligible influence on conservative trusters, the impact of perceived risk increases. Following a food safety incidence, perceived risk significantly affects the German consumers' intention to purchase chicken in a negative manner, most notably regarding sceptic and alternative trusters. Generally, the alternative trusters' intention to purchase chicken appears to be particularly influenced through changes in the impact of perceived risk attributed to the transition from a standard purchasing situation to the environment of a hypothetical food safety incidence, whilst other population clusters seem to react in a less distinctive manner.

### Predicting Trust by means of Consumers' Socio-Economic Characteristics

With reference to literature which generally considers personality traits as equally constituting consumer behaviour, the commonly postulated causal interrelations between socio-economic characteristics of German consumers and their relative trust in diverse sources of information were evaluated. Variables were analysed in terms of their contribution to a prediction of the consumers' classification into predefined population classes. Among others, variables chosen for this purpose comprise the consumers' gender and age, their marital state and level of education, their status of employment and categorised gross annual income and both the number of children and family members living in the respective household. With regard to the classification results denoted in table 5, it generally needs to be remarked that German respondents cannot be reliably classified into population classes exhibiting different levels of trust in principal components on the basis of their socio-economic characteristics since on average only 51.31 percent of the respondents are classified correctly.

This highly unsatisfactory overall success rate indicates that a classification of German respondents into population classes exhibiting different levels of trust in principal components on the basis of their socio-economic characteristics has failed – even if the percentage of correctly classified consumers clearly exceeds the expectancy value of a random guess (33.33 percent). Still, an overall success rate of merely 51.31 percent does not appear to be well suited to allow for a precise prediction of the respondents' trust in any of the five principal components.

**Table 5.** Classification Results

Principal Component	Percentage of correctly classified consumers
Food Chain Actors	52.30
Media	51.26
Independent Sources	53.00
Vested Interests	48.70
Alternative Sources	51.30

Moreover, the respondents' predicted group membership mostly appears to be deficient. Only respondents assigned to the second cluster, generally comprehending consumers who exhibit trust in the respective source, are accurately classified. The percentage of correctly predicted cluster memberships ranges from 79.00 in the case of food chain actors to 94.00 percent when considering vested interests. Both the respondents' membership in the first cluster, comprising strong distrust, and the third cluster, comprising mild distrust, in contrast, cannot be accurately predicted. Respondents originally assigned to the first cluster appear to be the least accurately classified with a portion of correctly predicted cases ranging from 0.00 to 13.64 percent. This unsatisfactory classification also applies to those respondents originally assigned to the third cluster. With a portion of correctly predicted cases between 4.41 and 32.89 percent, they also appear to be classified in a rather unreliable manner. Surprisingly, incorrectly classified respondents from the first cluster, i.e. those respondents generally exhibiting strong distrust are more likely to be classified as appertaining to the second cluster, featuring trust in the very principal components than to the third cluster, parallelly featuring mild distrust, as could have been expected in principle.

Unexpectedly, prognoses for both the prediction of consumers' overall trust in food safety information and the respective trust in single principal components turn out to be highly imprecise. Even though the overall success rate exceeds the expectancy value of a random guess, it has to be concluded that the chosen socio-economic criteria do not allow for drawing reliable conclusions in reference to classifying German consumers into population clusters exhibiting different levels of trust in diverse sources of information.

### **Findings and conclusions**

Results indicate that in a quotidian and presumably safe setting, trust has a merely marginal impact on the behaviour of German consumers. In fact, attitude appears to be the most relevant determinant. This, however, significantly changes when respondents are confronted with a random external shock – during which their reactions appear to be non-linear. In the case of a food scandal, trust proves to be among the most decisive factors influencing the behaviour of German consumers.

Attempts to reliably predict the very trust on the basis of socio-economic characteristics did not yield satisfactory results which leads to questioning the widespread practise of tailoring information campaigns with regard to consumers' socio-economic characteristics as distinctive features and furthermore implies an often incorrect approach to addressing consumers on behalf of decision makers. Instead of appealing to consumers in terms of socio-economic attributes such as their gender or age, for example, emphasis should preferably be placed on approaches directly addressing population clusters according to their particular trustfulness which, as this publication has shown, is independent of the socio-economic variables selected. This, however, remains subject to further research.

### **References**

- Ajzen, I. (1991). The Theory of Planned Behaviour. *Organizational Control and Human Decision Processes*, 50, pp. 179-211.
- Ajzen, I., and M. Fishbein (1980). *Understanding attitudes and predicting social behaviour*. Englewood Cliffs, NJ, Prentice-Hall.
- Böcker, A., and C.-H. Hanf (2000). Confidence lost and – partially – regained: consumer response to food scares. *Journal of Economic Behavior & Organization*, 43, pp. 471-485.
- Darby, M. R., and E. Karni (1973). Free Competition and the Optimal Amount of Fraud. *The Journal of Law and Economics*, 16, pp. 67-88.
- Dierks, L. H. (2005). Trust as a Determinant of Consumer Behaviour under Uncertainty. An Empirical Analysis of Consumers' Reactions to a Random External Shock in Europe. Göttingen, Cuvillier Verlag.
- Dierks, L. H., M. Mazzocchi, and C.-H. Hanf (2005). Consumers' Reactions to a Food Safety Incidence in Germany. In: Maunsall, B., and D. J. Bolton (Eds.). *Food Safety Risk Communication: The Message and Motivational Strategies*. Dublin, Teagasc, p. 136.
- Dulany, D. E. (1967) Awareness, rules, and propositional control: A confrontation with S-R behaviour theory. In: Horton, D., and T. Dixon (Eds.). *Verbal behaviour and S-R behaviour theory*. Englewood Cliffs, NJ, Prentice Hall.

- East, R. (1997). *Consumer Behaviour: Advances and Applications in Marketing*. London, Prentice Hall.
- Fishbein, M., and I. Ajzen (1975). *Belief, attitude, intention, and behaviour: An introduction to theory and research*. Reading, MA, Addison-Wesley.
- Hosmer, L. T. (1995). Trust: The Connecting Link between Organizational Theory and Philosophical Ethics. *Academy of Management Review*, 20, pp. 379-403.
- Mazzocchi, M., A. E. Lobb, and B. W. Traill (2004). A strategy for measuring trust in food safety information: A literature review. University of Florence Working Paper Series on Trust No. 18, Florence, Florence University Press.
- Mazzocchi, M., A. E. Lobb, and B. W. Traill (2005). Causal Model Estimation results. TRUST-Project Deliverable No. 9, Florence, Florence University Press.
- Misztal, B. A. (1998). *Trust in Modern Societies. The Search for the Bases of Social Order*. 2<sup>nd</sup> ed., Cambridge, Polity Press.
- Nooteboom, B. (1996). Trust, Opportunism and Governance: A Process and Control Model. *Organization Studies*, 17, (6), pp. 985-1010.

Financial support on behalf of the European Commission, Quality of Life Programme, Key Action 1 – Food, Nutrition, and Health, Research Project „Food Risk Communication and Consumer’s Trust in the Food Supply Chain – TRUST” (contract no. QLK1-CT-2002-02343) is gratefully acknowledged.